

6/28/16

Recording Requested By and
When Recorded Return to:
Jan Olsen, IDEQ
1005 W. McKinley Ave.
Kellogg, Idaho 83837-2513

487532

SPACE ABOVE THIS LINE FOR RECORDERS USE ONLY

ENVIRONMENTAL COVENANT

THIS PROPERTY IS SUBJECT TO AN ENVIRONMENTAL COVENANT GRANTING ACCESS AND IMPOSING ACTIVITY AND USE LIMITATIONS PURSUANT TO THE UNIFORM ENVIRONMENTAL COVENANTS ACT, IDAHO CODE § 55-3001, et seq.

This instrument is an Environmental Covenant executed by Enyeart Cedar Products LLC (hereinafter "Grantor"), the United States Environmental Protection Agency ("EPA") and the Idaho Department of Environmental Quality ("Department"). Grantor is also the "holder" ("Holder") pursuant to Idaho law including but not limited to the Uniform Environmental Covenants Act, Idaho Code §§ 55-3001 through 3015. Grantor, as the current property owner grants this Environmental Covenant to all signatories to this instrument.

Property. This Environmental Covenant concerns real property located in the County of Shoshone, State of Idaho, and identified by the tax parcel identification number 49N02E355620 (hereafter referred to as "the Property"). The general location of the Property is depicted on the map in the attached Exhibit "A".

Property Ownership. Grantor hereby represents and warrants to the other signatories to this Environmental Covenant that it is the sole owner of the property, holds fee simple title to the property and Grantor has the power and authority to enter into this Environmental Covenant.

Reason for Activity and Use Limitations. Historic mining activity in the Coeur d'Alene Basin (hereinafter "Basin") has left residual contamination throughout the communities and flood plains of the Basin. Pursuant to CERCLA, EPA and the Department have been implementing remedies throughout the Basin designed to protect human health and the environment. This instrument is necessary because the EPA and/or the Department have implemented remedial actions on Government Creek within the Property. Government Creek was remediated to provide a clean barrier in the channel protecting against contaminant migration and to create a stable channel that will carry larger flows protecting against flooding and recontamination of previously remediated areas. This work also aids in reducing flooding impacts to property in the vicinity of the Property. This instrument provides EPA and the Department necessary access to the Property to protect and ensure no interference with the Government Creek channel as reconfigured by the remedial action on the Property.

Name and Location of Administrative Record. A copy of the administrative record for EPA decision-making at the Bunker Hill Mining and Metallurgical Complex Superfund Site (which includes the Property) can be found at the Molstead Library, North Idaho College, 1000 Garden Avenue, Coeur d'Alene 83814 or Superfund Records Center, EPA Region 10, 1200 Sixth Avenue (Suite 900), Seattle, Washington 98101.

Access and Activity and Use Limitations. By acceptance and recordation of this Environmental Covenant, Grantor and any successor in interest with respect to the Property, are hereby restricted from using the Property, or any portion thereof, now or at any time in the future, as specifically set forth below unless such use has been expressly approved in writing by the Department:

1. **Access.** A right of access is granted to the Department and EPA, their respective contractors and third parties authorized by them to the northern portion of Government Creek channel, as depicted in Exhibit "B" together with all necessary fixtures and appurtenances "facilities" on, over, across and under the Property. Right of access is granted for the purpose of ensuring and/or conducting continued inspection, maintenance, and repair consistent with *the Government Gulch Operation and Maintenance Manual*, dated June 2, 2014 (or its most recent revision) as depicted in Exhibit "C".
2. **Activity and Use Limitations.** By acceptance and recordation of this instrument, Grantor, and any successors in interest with respect to the Property, are hereby restricted from using the Property, or any portion thereof, now or at any time in the future, in a manner that will materially interfere with or adversely affect the integrity or function of the remedial action measures taken on the Property relative to the Government Creek channel, unless such use has been expressly approved in writing by the Department and EPA.

Grantor's Use of the Property. Except as provided herein, Grantor reserves the right to the use and enjoyment of the Property subject to this Environmental Covenant, but such use shall not conflict or interfere with the Department's, EPA's or the Holder's rights herein granted.

Amendment by Consent. This Environmental Covenant may be amended by consent pursuant to Idaho Code § 55-3010. Except for an assignment undertaken pursuant to a governmental reorganization, assignment of the Environmental Covenant to a new holder is an amendment.

Duration, Amendment and/or Termination by Consent. The Access and Activity and Use Limitations shall apply to the Property, or any subdivided portion thereof, in perpetuity unless terminated by court action as provided in Idaho Code § 55-3009 or by consent pursuant to Idaho Code § 55-3010.

Provisions to Run With the Land. Each and all of the Access and Activity and Use Limitation provisions herein shall run with the land, and pass with each and every portion of the Property, and shall apply to and bind the respective successors in interest thereof. Each and all of the Access and Activity and Use Limitation provisions herein are imposed upon the entire Property unless expressly stated as applicable to a specific portion of the Property.

Concurrence of Subsequent Owners Presumed. All purchasers, lessees, or possessors of any portion of the Property shall be deemed by their purchase, leasing, or possession of such Property, to be in accord with the foregoing and to agree for and among themselves, and their successors, that the Access and Activity and Use Limitations as herein established must be adhered to and that their interest in the Property shall be subject to the Access and Activity and Use Limitations contained herein.

Recording/Filing. This Environmental Covenant, once fully executed, and any amendment or termination of the Environmental Covenant, shall be recorded for the Grantees by the Grantor in the county recorder's office of every county in which any portion of the Property subject to the Easement and Environmental Covenant is located and a copy shall be provided to the Department and EPA. Upon receipt of the copy of the recorded Easement and Environmental Covenant, and any amendment or termination therein, the Department shall post the copy of the fully executed instrument in the Registry as required by Idaho Code § 55-3012(1).

Non-Waiver. No failure on the part of the Department, EPA or any Holder at any time to require performance of any term of this Environmental Covenant shall be taken or held to be a waiver of such term or in any way affect the Department's, EPA's or any Holder's rights to enforce such term.

Partial Invalidity. If any portion of this Environmental Covenant or terms set forth herein is determined to be invalid for any reason, the remaining portion shall remain in full force and effect as if such invalidated portion had not been included herein.

Headings. Headings at the beginning of each section of this Environmental Covenant are solely for the convenience of the parties and are not a part of the Environmental Covenant.

Idaho Code References. All references to the Idaho Code sections include successor provisions.

Reservation of Rights. Notwithstanding any provision of this Environmental Covenant, the Department and EPA retain all of their respective access and enforcement authorities under any applicable statute or rule. Nothing in this Environmental Covenant shall affect the Department's and EPA's ability to enforce the terms of any voluntary consent order or other agreement relating to remediation of the Property entered into between the Department and/or EPA and OWNER or any other responsible party. Nothing in this Environmental Covenant shall affect the obligations of OWNER or any other responsible party under such voluntary consent order or other agreement. The Department's and EPA's acceptance hereunder is based upon the information presently known or available to the Department and EPA with respect to the environmental condition of the Property, and the Department and EPA reserve the right to take appropriate action under applicable authorities in the event the Department or EPA determine new information warrants such action.

No Third-Party Beneficiaries. There are no intended third-party beneficiaries, and the parties hereto expressly disclaim any unintended third-party beneficiaries to this Environmental Covenant or any part hereof.

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Effective Date. The effective date of this instrument shall be the date the fully executed Environmental Covenant is recorded at the county recorder's office.

Signature and Acknowledgments

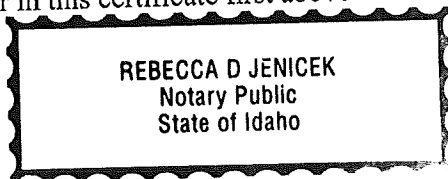
W. Ron Enyeart
Property Owner/Grantor/Holder

By: W. Ron Enyeart, Managing Member
Enyeart Cedar Products, LLC

STATE OF Idaho)
~~OREGON~~) ss.
COUNTY OF Shoshone)

On this 7 day of November, 2016, before me, a Notary Public in and for said State, personally appeared, W. Ron Enyeart, known or identified to me to be a Managing Member of Enyeart Cedar Products, LLC and acknowledged to me that he executed the same on behalf of Enyeart Cedar Products, LLC as Grantor.

In witness whereof, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.



Rebecca D Jenicek
Notary Public for the State of Idaho
Residing at: Kellough, OR ID
My Commission Expires: Oct. 20 2021

Dated, November 7, 2016.

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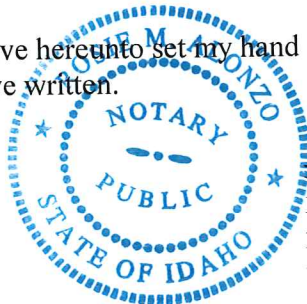

IDEQ

By: John H. Tippet, Director

STATE OF IDAHO)
)ss.
COUNTY OF Ada)

On this 6 day of July, 2016, before me, a Notary Public in and for said State, personally appeared, John H. Tippet, known or identified to me to be the Director of the Idaho Department of Environmental Quality and whose name is subscribed to the within instrument, and acknowledged to me that she executed the same.

In witness whereof, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.



Rosie M. Alonzo
Notary Public for the State of Idaho
Residing at: Nampa, ID
My Commission Expires: 11/21/2020

Dated, July 6, 2016.

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6/28/16

Cami Grandinetti

EPA

By: Cami Grandinetti, Manager Remedial Cleanup Program

STATE OF WASHINGTON)
) ss.
COUNTY OF King)

On this 25th day of July, 2016, before me, a Notary Public in and for said State, personally appeared, Cami Grandinetti, known or identified to me to be the Manager Remedial Cleanup Program, Environmental Protection Agency Region 10 and whose name is subscribed to the within instrument, and acknowledged to me that he executed the same.

In witness whereof, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

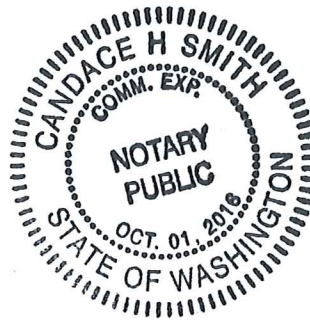
Candace H. Smith

Notary Public for the State of
Washington Residing at:

Seattle, Washington

My Commission Expires: 10-1-2016

Dated, 25th July 2016.



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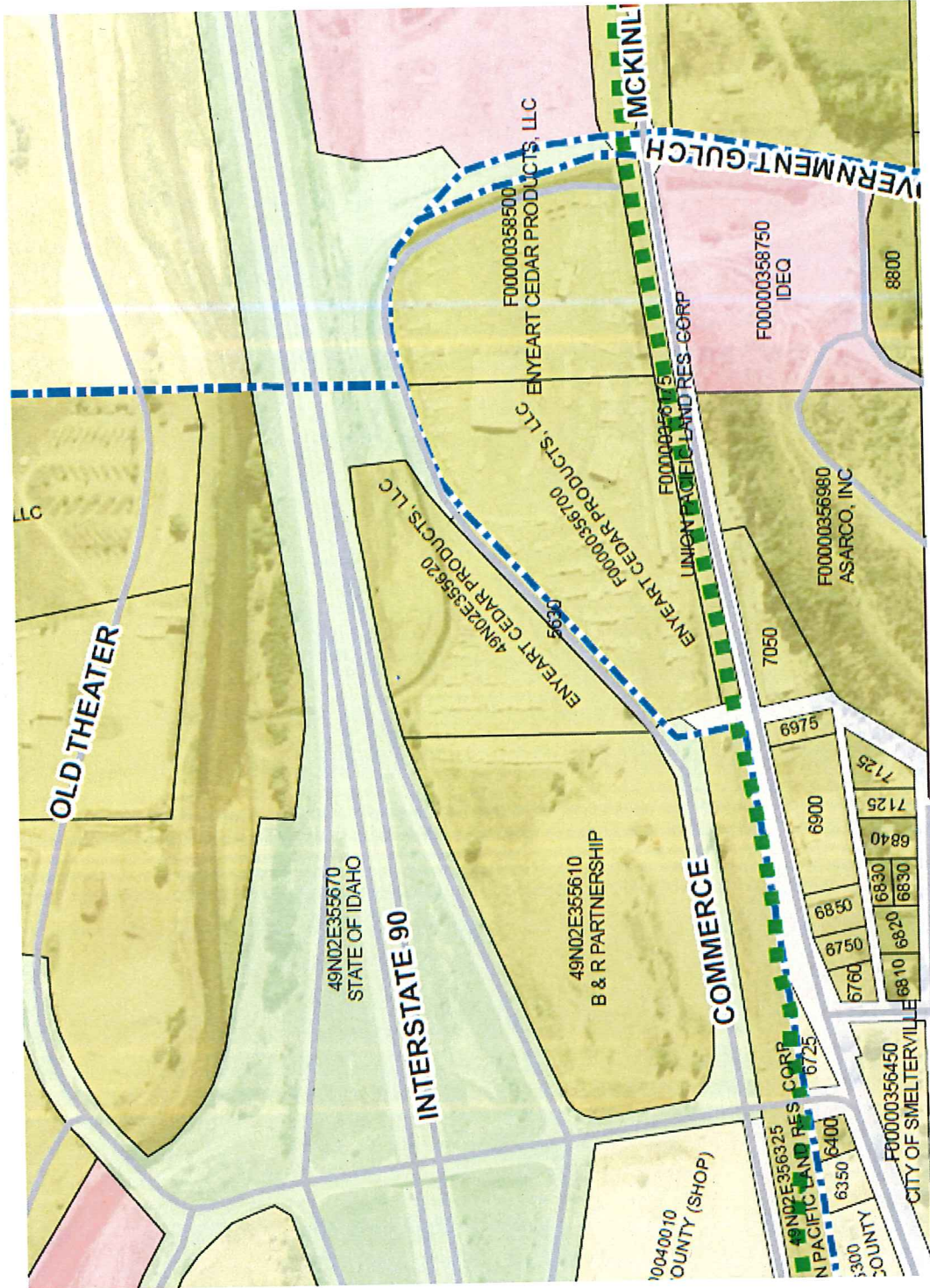


EXHIBIT A

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Exhibit C

Government Gulch Operations and Maintenance Manual

487532

Government Gulch

Operation and Maintenance Manual

Prepared for

Idaho Department of Environmental Quality
Kellogg, Idaho 83837



Prepared by

TerraGraphics Environmental Engineering, Inc.
108 W. Idaho
Kellogg, Idaho 83837

Last Updated : June 2, 2014

487532

Operation and Maintenance Manual Revision Log

Date	Revision Description
6/2/2014	Figure 2.2 - changed label for soil barrier from "12-inch vegetated soil barrier" to "6-inch vegetated soil barrier"

Table of Contents

INTRODUCTION	1
REMEDY DESCRIPTION	1
GUIDANCE STATEMENTS AND DESIGN FEATURES	3
SCHEDULED OPERATION AND MAINTENANCE REQUIREMENTS	8
UNSCHEDULED OPERATION AND MAINTENANCE REQUIREMENTS	8
REPAIR STANDARDS AND AUTHORIZATION	9
EQUIPMENT AND PERSONNEL REQUIREMENTS	9
REFINEMENTS AND MODIFICATIONS	9
OTHER CONSIDERATIONS	11
REFERENCES	12

List of Tables

Table 1.0. Objectives, remedial actions, and design features implemented during Government Gulch stream improvements.	5
Table 2.0. Performance Standards for Government Gulch.....	7

List of Figures

Figure 1.0- Government Gulch General Location Map.....	14
Figure 2.1- Government Gulch O&M Inspection Map 1 of 2	15
Figure 2.2- Government Gulch O&M Inspection Map 2 of 2	16

Appendices

APPENDIX A: Inspection Criteria and Repair Guideline Chart.....	17
APPENDIX B. Inspection Checklist	18

487532

OPERATION AND MAINTENANCE MANUAL
GOVERNMENT GULCH
BUNKER HILL SUPERFUND SITE
September 17, 2010 – revised June 2, 2014

INTRODUCTION

This Manual provides requirements for scheduled and unscheduled long-term operation and maintenance (O&M) of the remedial actions completed in Government Gulch. The objective of the Manual is to preserve the integrity of the completed remedial actions and provide a record of maintenance and repair activities and the cost of those activities. The Manual includes the following sections:

- Remedy Description
- Guidance Statements and Design Features
- Scheduled Operation and Maintenance Requirements
- Unscheduled Operation and Maintenance Requirements
- Repair Standards and Authorization
- Equipment and Personnel Requirements
- Refinements and Modifications
- Other Considerations

REMEDY DESCRIPTION

As illustrated in Figure 1.0, Government Gulch is located east of Smelterville. This Manual focuses on remedial actions and features in Government Gulch excluding the hillsides. Remedial actions implemented on the hillsides in Government Gulch are addressed in the Hillsides Operations and Maintenance Manual. The Government Creek channel is over 8000 feet in length and drops approximately 440 feet in elevation from 2670 feet to 2230 feet. Flow is northerly and discharge is to South Fork of the Coeur d'Alene River. Details of the remedial actions requiring inspection and O&M are illustrated in Figures 2.1 and 2.2. Remedial actions requiring specific action under the State O&M program include:

- Stream channel
Reconstruction of Government Creek involved installation of a meandering rock-lined, low-flow channel within a vegetated high-flow channel to contain the 100-year flow.

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- **6-inch Soil Barrier**
A minimum 6-inch layer of growth media was placed on the floor of the gulch and vegetated.
- **Culverts**
There are a total of 16 culverts in Government Gulch that require inspection under the State O&M Program. Eleven of these culverts were installed under CERCLA action:

- Culverts 2-6 were installed in Government Creek under the access road to the Zinc Plant
- Culvert 8 was installed to direct runoff from the west hillsides of Government Gulch into the concrete channel during construction.
- Culvert 9 was installed under Government Gulch road at the start of the concrete channel.
- Culverts 13-16 were installed to convey Government Creek under McKinley Avenue.

Five other culverts have been installed by other parties. These are not included in the State O&M responsibilities but are included in the inspections for Government Gulch as a precaution to ensure they continue to perform as designed. If potential issues are identified during inspections, the responsible entity will be contacted.

- Culvert 1 was installed by Galena Ridge and is located under Government Gulch Road in the upper part of the gulch.
- Culvert 7 is a box culvert that was part of a pre-existing storm drain system at the south end of the Zinc Plant. Portions of the storm drain system were removed or plugged during remediation. Culvert 7 remains in place to convey water from the remnants of the storm drain system into Government Creek.
- Culvert 10 and Culvert 11 are also pre-existing features and convey runoff from the concrete channel into Government Creek.
- Culvert 12 is a pipe-arch culvert under Government Gulch Road near SVL Analytical that was installed as part of the Greater Silver Valley Business Revitalization Project.

- **Gravel road**
The road was reconstructed where it crosses Government Creek to the two remaining mining buildings. A gravel access road was installed from the existing paved road to the south end of the capping area.

- **Sediment basins**
Two sediment basins were installed in lower Government Gulch. The uppermost basin is located east of Government Gulch Road and south of the bus barn. The other is located just north of Eichel Street on the west side of Government Gulch Road.
- **Gabion Dam**
One dam was installed in upper Government Gulch.
- **Grade control structures**
Concrete and rock grade control structures were placed in Government Creek at locations of grade changes.
- **Fencing**
A chain link fence with three strands of barbed wire on top was installed to isolate the Zinc Plant slabs from the general public. Two access gates were installed.
- **Old Concrete Channel**
A pre-existing concrete lined channel was left in place to convey hillside runoff along the west shoulder of Government Gulch Road. The channel will be inspected as a precaution to ensure it continues to convey water and does not pose a threat to the road or other features of the remedy. However, repair activities are not considered part of regular O&M.
- **Building Foundations/Basements**
The Zinc Plant slabs and two buildings were cleaned and left in place in the upper gulch and act as the barrier for that area. The two remaining mining buildings near the slab are currently being used by Shoshone County and Galena Ridge as storage for machinery. Maintenance of these buildings is the responsibility of the County and Galena Ridge.

GUIDANCE STATEMENTS AND DESIGN FEATURES

Guidance statements – defined as goals, objectives, and performance standards – are critical to objectively evaluating project design and measuring the success of a project. Guidance statements define why a project was implemented and describe the specific actions taken to meet this end. Finally, they state specifically what will be measured to determine whether the project was successful. Guidance statements provide a framework for specific remedial actions, which leads to a better understanding of the project purpose within the larger context of the surrounding landscape.

This section provides the goals and objectives of the Government Gulch remedial action, the design features implemented to meet those goals and objectives, and the performance standards needed to implement and maintain proper remedial design. While guidance statements are

important to design and construction, they are also important for implementing an effective O&M program. It is important to understand project guidance statements as conditions and land uses change. In the case of Government Gulch, design features were based on key assumptions made during remedial design (ca. 1996), including relatively limited upstream development and basin runoff based on 1996 vegetation and slopes. If future land use changes these assumptions, then performance standards and O&M activities must be re-evaluated to ensure that the integrity of the remedial action is not compromised and that human health and environmental integrity is not jeopardized.

The overall goal of the Government Gulch remedial action is to protect human health and the natural environment from exposure to heavy metals and other contaminants that resulted from operations associated with the former Bunker Hill Mining and Metallurgical Complex. In order to achieve this goal, Remedial Action Objectives (RAOs) were established to include:

- minimizing risk of direct contact with contaminants,
- minimizing soil erosion, and
- reducing suspended sediment and/or contaminant loading in surface runoff to the South Fork of the Coeur d'Alene River.
- Reduce contamination of surface water and groundwater

These RAOs are shown in Table 1.0. In addition, Table 1.0 shows Record of Decision (ROD) or Explanation of Significant Difference (ESD) remedial actions needed to achieve each of these objectives. The objectives and their corresponding remedial actions have been documented in the ROD or modifications of the ROD and have been documented in the two published Five-Year reviews. In addition, Table 1.0 lists specific design features needed to meet each stated RAO. Table 2.0 shows the performance standards required for each individual RAO within Government Gulch.

The U.S. Environmental Protection Agency (EPA) remains committed to long-term oversight at the Bunker Hill Site during O&M. This includes routine evaluations of the protectiveness of constructed remedies via assessment of State O&M activities and Five-Year remedy review processes, as well as special evaluations following events that may occur (e.g., a natural disaster that damages a constructed remedy such that remedial action and O&M performance standards may no longer be achievable). In general, O&M performance standards are based on remedial (design) performance standards and generally these standards will be the same. If an event occurs that damages a constructed remedy such that remedial action and O&M performance standards may no longer be met, the EPA and the State of Idaho will evaluate the impacts of the event, and will determine the most appropriate response, if required, to ensure the continued protection of human health and the environment.

Table 1.0. Objectives, remedial actions, and design features implemented during Government Gulch stream improvements.

Remedial Action Objective	ROD or ESD Remedial Action to Address Objective	Design Features Constructed to Meet Objective
1. Minimize risk of direct contact	<p>A. Remove contaminated soils and cap them in the Smelter Closure Area (1992 OU2 ROD, Sec 9.2.1)</p> <p>B. Cap or cover contaminated material (1992 OU2 ROD Section 9.2.5)</p> <p>C. Maintain existing fencing and enforce existing controls on access (1992 OU2 ROD Section 9.2.1)</p>	<p>1. Contaminant-specific exposure goals for both the streambed and areas away from the creek (as amended by the 1998 OU2 ESD) are listed in Note 1 at the end of this table. However, after several rounds of verification sampling followed by additional excavation, it was determined that excavation was becoming excessive without improvement in contaminant levels and excavation was halted. These decisions were made in the field by Removal Verification Team (RVT) members. Following excavation, the gulch floor was regraded and capped. In areas where excavation goals were met, a 6-inch ICP barrier was placed. In areas where excavation goals were not met, an 18-inch ICP barrier was placed. The placement of a thicker cap over these areas was determined to provide an acceptable level of protectiveness from direct exposure to contaminated soils.</p> <p>2. The stream channel and floodplain were capped with rock that would resist erosion (see below). The areas outside the floodplain were covered with a 6-inch thick clean soil (ICP barrier) cap and hydroseeded, except where the excavation goals were not met and the RVT determined that an 18-inch ICP barrier was appropriate.</p>
2. Minimize erosion	Re-establish riparian habitat and stream corridor vegetation 100 feet wide ⁽²⁾ (1992 OU2 ROD Section 9.2.5)	<p>1. Channel and floodplain relocated to historic location where possible, generally with meandering low-flow channel.</p> <p>2. Low flow channel, where relocated, is generally rock-lined and designed to convey the 2-year event.</p> <p>3. High flow channel, including culverts, splash pads, grade control structures, and riprap in selected locations designed to withstand 100-year event (flow approximately 600 cfs).</p> <p>4. Verify that old shotcrete-lined channel on the western margin of the gulch is not blocked and not eroding at a rate that could lead to catastrophic failure or erosion of the remedy ⁽³⁾.</p> <p>5. Floodplain seeded with native grass mix.</p>
3. Reduce suspended sediment/contaminant loading in surface runoff to the South Fork Coeur d'Alene River (SFCDR)	Construct erosion control structures and sediment basins (1992 OU2 ROD Section 9.2.1)	<p>1. Grade control structures established as required by topography and hydraulic modeling (typically 200 to 500 feet apart)</p> <p>2. A sedimentation basin and energy dissipater were established.</p> <p>3. Erosion controlled (see above)</p>
4. Reduce	A. Place cutoff wall and	Cutoff walls and surface water diversions have been deferred.

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Table 1.0. Objectives, remedial actions, and design features implemented during Government Gulch stream improvements.

Remedial Action Objective	ROD or ESD Remedial Action to Address Objective	Design Features Constructed to Meet Objective
contamination of surface water and groundwater	surface water diversion above Zinc Plant (1992 OU2 ROD Section 9.2.1) B. Place cutoff wall and surface water diversion near the mouth of Government Gulch. Collect and treat contaminated groundwater and surface water (1992 OU2 ROD Section 9.2.1)	<p>If the remedial actions taken to date are shown by the ongoing evaluation of the Phase I remedial action to be effective in minimizing infiltration through remaining contaminated material (as allowed by the 1996 OU2 ESD), then the cutoff and diversions may be eliminated.</p> <p>The upgraded Central Treatment Plant is available for treatment of contaminated surface water and groundwater if determined to be necessary by ongoing site-wide monitoring which is being conducted outside of O&M efforts. (2001 OU2 ROD Amendment).</p>
<p>(1) Contaminant cleanup goals for areas away from Government Creek: lead 10,000mg/kg, arsenic 850 mg/kg, zinc 9,000 mg/kg, antimony 850 mg/kg, mercury 850 mg/kg, cadmium 850 mg/kg. Contaminant cleanup goals for Government Creek streambed: lead 1,000 mg/kg, arsenic 850 mg/kg, zinc 1,000 mg/kg, antimony 850 mg/kg, mercury 850 mg/kg, cadmium 850 mg/kg.</p> <p>(2) Protection of ecological receptors was not a goal of the OU2 ROD; however habitat is a desired outcome of the remedy (2005 Five-year Review). Biological monitoring, which is not part of the Government Gulch O&M, is being conducted to evaluate the impacts of the remedial actions on the resident populations of wildlife (i.e., small mammals and songbirds); this includes vegetation surveys.</p> <p>(3) The concrete-lined channel was cracked and broken, but still able to convey water from adjacent property at the time the remedial action was designed. Replacement of or maintenance of the concrete-lined channel was specifically excluded from the remedy, even though the channel has a limited life, because of the high likelihood that this area would be redeveloped, with a corresponding need to revise the drainage, in the near future.</p>		

Proposed performance standards associated with each remedial action objective are presented in Table 2.0.

Table 2.0. Proposed Performance Standards for Government Gulch

Remedial Action Objective	Performance Standard
1. Minimize risk of direct contact	1. Capped material is not eroding (i.e., tailings or visibly stained material are not exposed).
2. Minimize erosion	2a. Culverts, energy dissipaters, and channels or ponds immediately upstream are clear of debris. 2b. Culverts are free from sediment depth greater than 4 inches in any location. 2c. Filter layer of geotextile or riprap bedding is completely covered. 2d. Non-eroding vegetation in floodplain. 2e. No debris in old concrete channel and no actively-eroding areas around it. ⁽¹⁾ 2f. No active channel downcutting. 2g. Channel can be allowed to meander, but cannot be allowed to undermine adjacent slopes, especially near former Zinc Plant area.
3. Reduce suspended sediment/contaminant loading in surface runoff to the SFCDR	3a. Gabion dam provides at least 5 feet of freeboard above sediment level or the equivalent of 5 seasons of sediment buildup as determined by annual monitoring. 3b. Maintain at least 2 feet of freeboard in sediment basins.
4. Reduce contamination of surface water and groundwater	Surface water and groundwater monitoring to determine the effectiveness of the remedy is ongoing and not part of the Government Gulch O&M. Construction of additional features, such as cutoff walls and groundwater collection and conveyance to the CTP for treatment, could be recommended as an outcome of the monitoring, but would be part of the Phase II remedial activities for the site.
⁽¹⁾ Repair active erosion where the road appears to be in danger of being eroded. Remove loose debris and cut out large trees and brush.	

SCHEDULED OPERATION AND MAINTENANCE REQUIREMENTS

This section develops scheduled O&M requirements for Government Gulch. Scheduled O&M requirements are those activities completed at predetermined time frames throughout the year. Scheduled inspections will occur semi-annually; in early May and September. The Inspection Criteria and Repair Guideline Chart in Appendix A summarize specific criteria and necessary repairs for the design elements of Government Gulch.

The criteria listed in Appendix A are to be utilized during the inspection. The purpose of the inspections is to identify potential problems and trigger potential actions. The inspection criteria are not intended to be hard standards, but serve as a general guide for the inspector to identify items of concern. As discussed below, refinements and modifications to the criteria are anticipated.

After inspection, unacceptable items will be identified for repair. Based on the types of remedial actions completed, repairs may include: riprap replacement, sediment removal, ROD cap reconstruction, grading, revegetation, gabion basket repair/replacement, and culvert repair. The repair column of the table in Appendix A lists basic repair actions anticipated for Government Gulch. The Site Wide (OU2) Operation and Maintenance Plan (Site Wide O&M Plan) describes the administrative requirements for the repair process in more detail.

UNSCHEDULED OPERATION AND MAINTENANCE REQUIREMENTS

Unscheduled operations and maintenance of Government Gulch will include inspections driven by special events and repair activities. Examples of special events include:

- High precipitation or runoff events
- Seismic activity
- Fire
- Vandalism.

High precipitation events are defined in the Site Wide O&M Plan as 3.0 inches of rain in 24 hours. This is intended to serve only as a measurable trigger, as shorter duration events, i.e. 1 inch in 1 hour, may also cause significant damage. The Site Manager should use professional judgment in observing site conditions and determining necessity of unscheduled inspections.

Inspection and repair activities for unscheduled events are similar to those listed in Appendix A and Appendix B, but may vary slightly depending on the event triggering the unscheduled inspection. In some cases an unscheduled inspection may only be necessary for a single item (vandalism), while other events might require a full inspection of all elements (large flood). The inspection checklist in Appendix B can also be used for unscheduled inspections. The inspector should write "Not Inspected" under the notes column for any items not included in the inspection based on the nature of the triggering event.

If an event necessitates an unscheduled O&M activity, the Site Manager/Inspector may implement temporary or emergency actions to prevent further degradation. After the damaged area becomes stable, the entire area should be inspected and repaired as needed. The repair column of the table in Appendix A lists basic repair actions anticipated for Government Gulch. The Site Wide O&M Plan describes the administrative requirements for the repair process in more detail.

REPAIR STANDARDS AND AUTHORIZATION

All repairs shall, at a minimum, conform and meet the specifications found in the "Bunker Hill Remedial Action Project Closure Report" and as-built drawings (Morrison Knudsen Corporation, February, 1999). The necessity and timing of all repairs will be coordinated by the Repair Supervisor and authorized by the Idaho Department of Environmental Quality (IDEQ) or its representative. Clarifications or interpretations of plans and specifications shall be referred to a State of Idaho licensed engineer familiar with the intent, function, and details of the remedial action.

EQUIPMENT AND PERSONNEL REQUIREMENTS

No specific qualifications are necessary for inspectors. The only equipment needed to effectively complete inspection is measuring tape. Should no action be required, inspection and O&M activities will consist of the inspection only (i.e., no additional equipment or personnel shall be required). Repairs will be necessary when unacceptable items are found during the scheduled or unscheduled inspections. Repair scheduling and coordination will be directed by an authorized representative of the State. Repairs may require a trackhoe, pick-up truck, dumptruck, and/or grader. Repair personnel may include operators, samplers, engineers, and/or a number of laborers. Repair scheduling and sequencing shall be directed by the Site Manager/Inspector, implemented as soon as practicable, and completed in a fashion that minimizes costs.

REFINEMENTS AND MODIFICATIONS

Refinements and modifications to this manual are expected to occur over time. The Site Wide O&M Plan details the process by which any refinements and modifications may be made. Broad categories are anticipated to include:

Change in Use of the Surrounding Areas

Anything that changes the flow of water from upstream areas should trigger re-evaluation of the manual. The surface water conveyance systems were based on the topography, vegetation, and limited access of the late 1990s. Clearing, grazing, irrigation, vegetation disturbance from extensive foot or vehicle access, runoff channelization from trail construction or off-road vehicle use, timber harvest, road construction, extensive development, or regrading could change the surface water runoff volume and speed.

Changes in land use of downstream areas of the gulch should also signal manual re-evaluation. If residences or other facilities that are sensitive to flooding or sedimentation from damage to Government Gulch are constructed downgradient, it may be prudent to conduct inspections more frequently and repair damage at lower trigger criteria.

Changes in Use or Design of Government Gulch

Though the goals and objectives used in the design of Government Gulch should not change over time and with land use, the performance standards and design features may change as the area is developed. The performance standards and design features were originally based on restricted public access to Government Gulch and neighboring areas.

As the area is developed, regrading, paving, and addition of new structures will change the characteristics of runoff and infiltration. If people, pets, or livestock are allowed unlimited access, the risk of damage to the soil barriers is increased. Such changes will generally be controlled by the guidelines of the Institutional Controls Program (ICP), but development plans should also be reviewed by the State and evaluated by a qualified State of Idaho licensed engineer in order to:

1. Verify that the changes preserve the goals and objectives of the original remedial action.
2. Verify that the changes are at least as protective as the original remedial actions listed in Table 1.0.
3. Specify requirements for follow-up inspection and maintenance (identify specific design elements and attributes, assign new action triggers, and suggested actions to maintain the changes).

Remedial Action Completion

Effectiveness of OU2 Phase I remedial action activities is currently being evaluated by IDEQ and EPA via groundwater and surface water monitoring. Upon completion of the Phase I effectiveness monitoring program, IDEQ and EPA will determine if additional remedial actions are warranted to further protect human health or the environment. Further actions may include incorporating groundwater and/or surface water monitoring in the Government Gulch O&M effort in which case this O&M manual will be updated to reflect the additional task(s).

Inspection Criteria

Refinements and modifications to the criteria utilized during inspections may be warranted based on long-term trends or patterns. Refinements and modifications to the criteria shall be reviewed in consultation with applicable remedial goals and performance standards and will be made only with the approval of IDEQ and EPA.

Equipment and Personnel

Changes may occur in the type and amount of repairs needed. The most efficient and cost effective substitutions for equipment and personnel shall be selected.

Repairs

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If, during the course of completing repairs, the original specifications are found to be ineffective or unworkable, alternative repair standards shall be explored and assessed. Approval by EPA and IDEQ will be required before implementation.

OTHER CONSIDERATIONS

Compliance with all applicable federal, state, and local (e.g., ICP) regulations is required during O&M activities.

487532

REFERENCES

- CH2M HILL, 2000. *Smelterville Flats and Gulches Riparian Planting 100% Design Submittal*. Bunker Hill Superfund Site USEPA Region 10. May. CH2M HILL Project No. 152210.ET
- CH2M HILL, 1997a. *Memorandum – Government Gulch Stream – Design Revision No. 1, Sta 27+00 to 50+00*. From Shelley Sundgren, Joan Stoupa. September 23.
- CH2M HILL, 1997b. *Memorandum – Conceptual Alternatives for Lower Government Gulch Stream*. February 12. From Shelley Sundgren, Joan Stoupa.
- CH2M HILL, 1996a. *Memorandum – Alternative Location for Government Gulch North Sediment Pond*. September 16. From Shelley Sundgren, Don Heyer.
- CH2M HILL, 1996b. *Memorandum – Addendum to Government Gulch Stream – Design*. From Shelley Sundgren. August 19.
- CH2M HILL, 1996c. *Memorandum – Government Gulch Stream – Design*. From Steve Wasson, Shelley Sundgren, Don Heyer. July 31.
- Davis Surveying Inc., 2003. *Government Gulch Channel and Bank Restoration, Kellogg, Idaho*. April.
- Hart Crowser, 2002. *Lower Government Gulch, Bunker Hill Superfund Site, Shoshone County, Idaho. As-Built Drawings*. May.
- Meckel Engineering and Surveying, Inc., 1999. *Bunker Hill Remedial Action Project, Government Gulch As-Built*. January.
- Meckel Engineering and Surveying, Inc., 2002. *Government Gulch Re-Channelization & Lumberyard Paving As-Built Drawings, Shoshone County, Idaho*. January.
- Morrison Knudsen Corporation. 1999. *Bunker Hill Remedial Action Project Closure Report*
- Parametrix, 2004. *Greater Silver Valley Business Revitalization Project – Kellogg, Idaho, McKinley Avenue, Government Gulch and Smelterville Flats*. EPA Project #07-01-05321. May.
- U. S. Environmental Protection Agency (USEPA), 1992. *Record of Decision (ROD), Bunker Hill Mining and Metallurgical Complex, Shoshone County, Idaho*. September.
- U. S. Environmental Protection Agency (USEPA). 1996. *Amendment to the Record of Decision for the Bunker Hill Mining and Metallurgical Complex (Non-Populated Areas) Superfund Site*. September.
- U. S. Environmental Protection Agency (USEPA). 1998. *Explanation of Significant Differences for Revised Remedial Actions at the Bunker Hill Superfund Site OU 2, Shoshone County, Idaho*. April.
- U. S. Environmental Protection Agency (USEPA), 2000. *First 5-Year Review of the Non-Populated Area Operable Unit Bunker Hill Mining and Metallurgical Complex Shoshone County, Idaho*. Prepared by USEPA Region 10. September.

487532

U. S. Environmental Protection Agency (USEPA), 2005. *Five Year Review Report, Second 5-Year Review for the Bunker Hill Mining and Metallurgical Complex Superfund Site Operable Units 1, 2, and 3 Idaho and Washington*. Prepared by USEPA Region 10, Seattle, Washington. EPA 910-R-05-006. EPA ID: IDD048340921. October 24.

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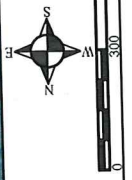
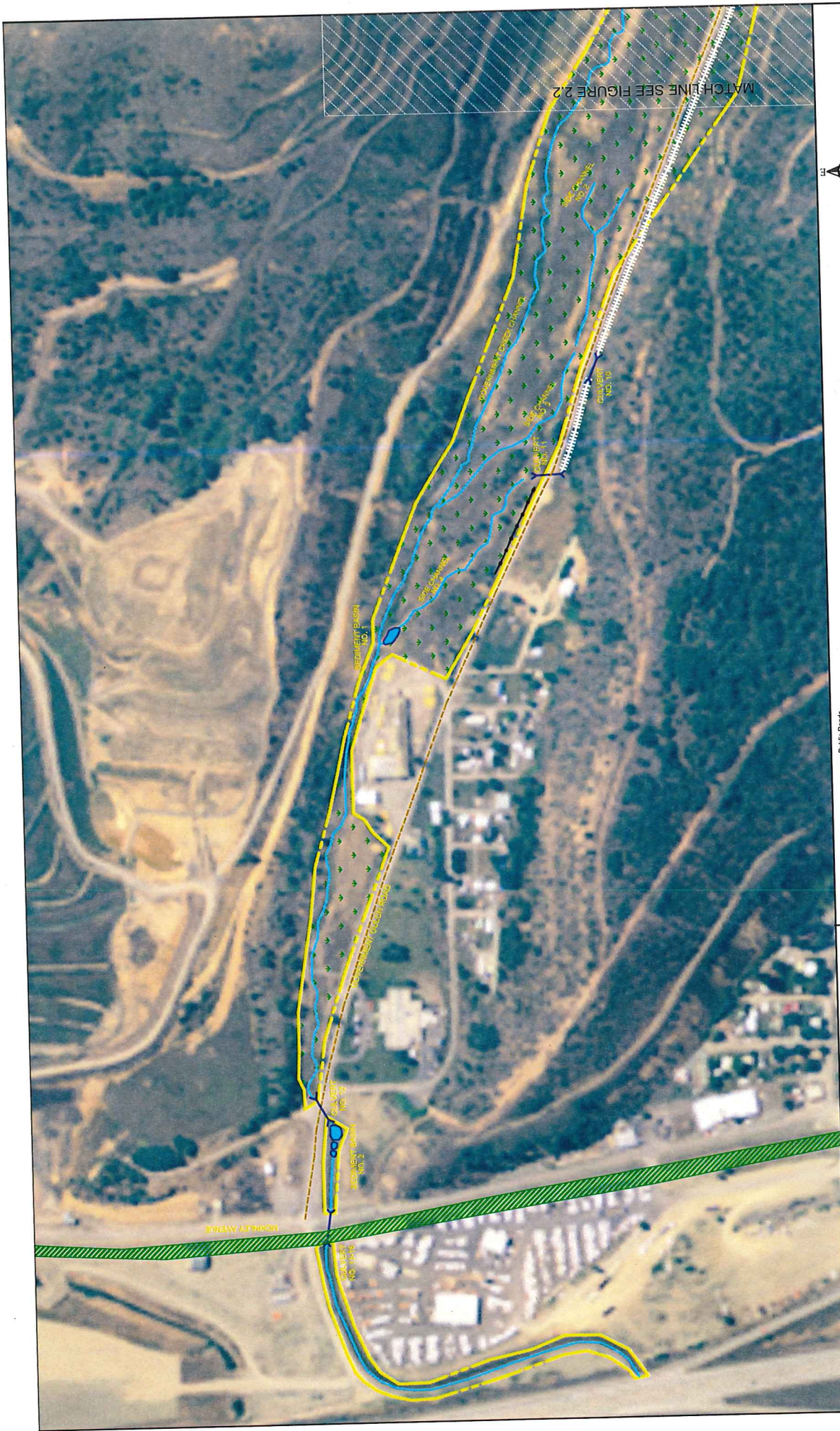


Figure 2.1 Government Gulch Operation and Maintenance Inspection Map 1 of 2

- Area Boundary
- Stream Channel
- Culverts
- Fences
- Public Roads
- Sediment Basin
- Concrete Channel
- Soil Barrier
- Rails to Trails

This map is not a legal document. This map was produced using information from several different sources that have not been independently verified. Information does not represent survey data and should be used for conceptual planning purposes only.



File: G & M Aerial Overview Map.dwg
Date: 6/18/08
Drawn By: K. Kinnala
Approved: DM

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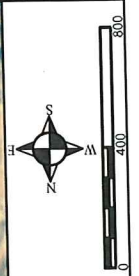
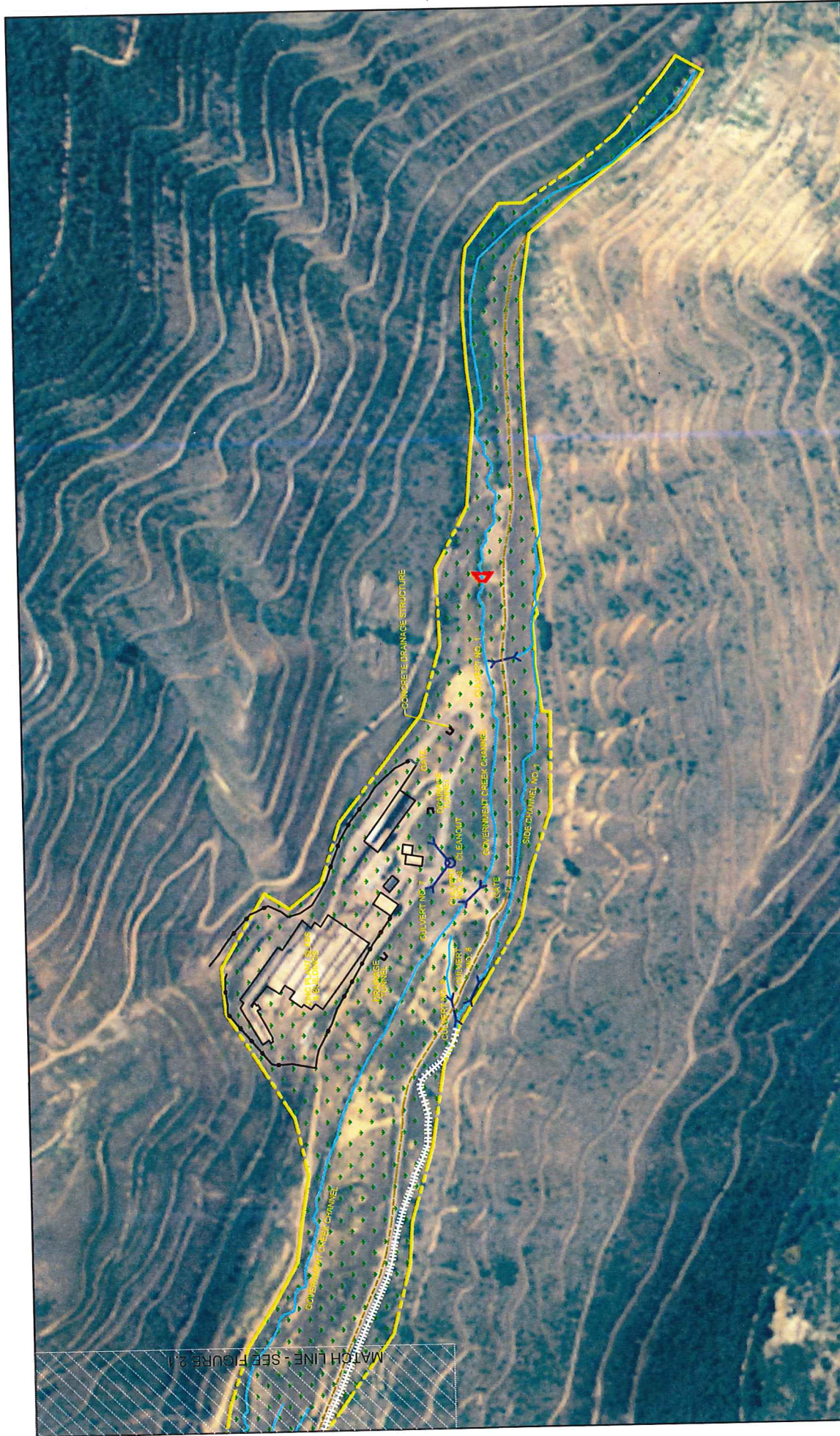
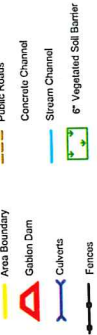


Figure 2.2 Government Gulch Operation and Maintenance Inspection Map 2 of 2



This map is not a legal document. This map was produced using information from several different sources that have not been independently verified. Information does not represent survey data and should be used for conceptual planning purposes only.



TerraGraphics
Environmental Engineering Inc.

FILE: 0304_Aerial_Overview_Map.dwg/Upper_Gov_Gulch

DATE: 8-18-10

DRAWN BY: K. KINCILLA

APPROVED: DM

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APPENDIX A: Inspection Criteria and Repair Guideline Chart

Appendix A. Inspection Criteria and Repair Guideline Chart for Government Gulch

Design Element	Attribute	Inspection Trigger	Suggested Repair if Trigger Exceeded
Culvert	Deposition	<ul style="list-style-type: none"> • Presence of debris, sediment, etc. 	Remove debris and sediment. Determine source if possible. If source is a single point, rather than cumulative minor erosion from a large area, consider additional reinforcement (e.g. rock covering, permanent erosion control blanket) of the point source.
	Structural Condition	<ul style="list-style-type: none"> • Damage to culvert such that its cross-sectional area is reduced by 5%. • Evidence of deteriorating pipe integrity such as the presence of rust, exposure of reinforcing bars, areas of abrasion, or thinning of culvert walls. 	Consult engineer as necessary to determine if culvert flow capacity still meets design specifications. Continue to observe evidence of pipe wall deterioration to determine if condition is worsening. Repair or replace culvert as necessary.
	Headwall Condition	<ul style="list-style-type: none"> • Missing or out of place rock. • Scoured area 10 square feet or larger • Presence of cracks or other defects conducive to accelerated weathering. 	Remove and/or replace deteriorating or missing riprap
	Erosion	<ul style="list-style-type: none"> • Any indication of cavities along pipe alignment. • Presence of a spring on the side of the channel. 	Determine why damage occurred if possible (obstruction in the pipe, runoff from other areas entering the flow channel, etc.). Replace pipe bedding and surrounding material as necessary to repair damage from piping or springs. Take appropriate measures to prevent reoccurrences.
Government Creek Channel	Deposition	<ul style="list-style-type: none"> • Presence of large scale debris, sediment, etc. such that flow is obstructed 	Remove debris and sediment if blocking flow or causing erosion. Determine source if possible. If source is a single point, rather than cumulative minor erosion from a large area, consider additional reinforcement (e.g. rock covering, permanent erosion control blanket) of the point source.
	Erosion	<ul style="list-style-type: none"> • Erosion or scoured area greater than 10 square feet or depth greater than 6 inches. 	Replace material in eroded area. Consider additional reinforcement if erosion becomes a recurring problem. As Government Creek continues to establish a natural channel, it may be necessary to consult a fluvial geomorphologist to determine the necessity of repair actions to the channel.
Old Concrete Channel	Deposition	<ul style="list-style-type: none"> • Presence of large scale debris, sediment, etc. such that flow is severely obstructed 	Repair activities for this feature are not considered part of regular O&M. However, removal or erosion repair may be necessary to prevent damage to Government Gulch road or other remedy features.
	Erosion	<ul style="list-style-type: none"> • Active erosion with potential to cut into roadway 	
Gabion Dam	Structural Condition	<ul style="list-style-type: none"> • Displaced gabions affecting stability of the structure. • Breaks or tears in wire basket. 	<ul style="list-style-type: none"> • Repair/replace damaged gabion baskets. • Reconstruct eroded or scoured area to design specification.
	Downstream Scour	<ul style="list-style-type: none"> • Evidence of holes, gaps, or scars immediately downstream of the dam. 	<ul style="list-style-type: none"> • Reconstruct structure in accordance with design specification (i.e. to horizontal and vertical alignments). <p>Upstream dam height should be monitored over time to determine a normal trend for sediment accumulation. Rapid buildup of sediment should trigger an evaluation of upstream conditions and sources for active erosion. Sediment may need to be removed if buildup compromises the function of the dam.</p>
	Lateral Erosion	<ul style="list-style-type: none"> • Evidence of holes, gaps, or scars immediately adjacent to the dam. 	
	Headcutting	<ul style="list-style-type: none"> • Evidence of holes, gaps, scars, or erosion indicating flow around the dam. 	
	Sediment Buildup	<ul style="list-style-type: none"> • Measure height of dam above sediment at center line of upstream side of the dam. 	
Soil Barrier	Thickness	<ul style="list-style-type: none"> • Presence or indication of standing water greater than 100 square feet. 	Assess the need to regrade area to achieve slope towards remediated stream channel in order to minimize infiltration through contaminated material.
		<ul style="list-style-type: none"> • Presence of exposed tailings or visibly stained material indicating that clean cap has been compromised. 	Replace material in eroded area. Consider additional reinforcement (rock cover, permanent erosion control mat, etc.) if erosion becomes a recurring problem.
		<ul style="list-style-type: none"> • Indication of movement of material. 	Determine cause of material movement if possible. Evaluate necessity of additional reinforcement of area or modification of institutional controls. Repair soil barrier as necessary.
Sediment Basin	Deposition	<ul style="list-style-type: none"> • Deposition of sediment or debris such that freeboard is reduced to less than 2 feet. 	Remove debris, sediment, etc. Determine source of material if possible. Consider additional erosion control measures for source area.

487532

Appendix A. Inspection Criteria and Repair Guideline Chart for Government Gulch

Design Element	Attribute	Inspection Trigger	Suggested Repair if Trigger Exceeded
Grade Control Structures	Riprap Condition	• Missing or out of place riprap	Replace any missing or out of place riprap
		• Presence of crack or other defects conducive to accelerated weathering	
	Downstream Scour	• Evidence of holes, gaps, or scars immediately downstream of the dam.	Replace material in eroded or scoured area. Consider additional reinforcement of the area if erosion problems are recurring. As Government Creek continues to establish a natural channel, it may be necessary to consult a fluvial geomorphologist to determine the necessity of repair actions to the channel and grade control structures.
	Lateral Erosion	• Evidence of holes, gaps, or scars immediately adjacent to the dam.	
	Headcutting	• Evidence of flow or erosion adjacent to the grade control structure indicating preferential flow around the structure	
Gravel Road	Condition	• Erosion rills, ruts or similar types of disturbance that have a depth that is greater than the depth of the gravel.	Replace material in eroded area. Consider other methods of erosion and/or runoff control on and around the road (water bars) to prevent recurring erosion of the road surface.
Fencing	Structural Condition	• Maintain integrity of fences	Repair or replace fencing as necessary to maintain appropriate access restrictions
Zinc Plant Slabs	Structural Condition	• Inspector will take photos for observational purposes to document cracks or breaks in the foundation and tilting slabs or walls	The necessity of repairs will be determined by IDEQ or its representative
		• IDEQ or its representative will review surfaces for water/hillside sloughing	

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APPENDIX B. Inspection Checklist

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Appendix B. Inspection Checklist for Design Elements of Government Gulch

Date of Inspection:

Inspected By:

Design Element	Attribute	Inspection Triggers	Trigger Exceeded		Description of Items Exceeding Inspection Trigger, or other notes.	Recommendation		
			YES	NO		No Action	Additional Observation	Repair
Culvert No. 1	Debris and Sediment Deposition	Presence of debris, sediment, etc. greater than 4" in depth.	<input type="checkbox"/>	<input type="checkbox"/>	Installed by Galena Ridge - Repairs not part of State O&M. Notify as appropriate if trigger exceeded	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Structural Condition	5% reduction in cross section area, pipe wall deterioration in the form of rust, abrasion, etc.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Headwall Condition	Missing or out of place riprap, scoured area larger than 10 square feet, cracks or other accelerated weathering.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Erosion	Cavities along pipe, or spring on side of channel.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Culverts No. 2-6	Debris and Sediment Deposition	Presence of debris, sediment, etc. greater than 4" in depth.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Structural Condition	5% reduction in cross section area, pipe wall deterioration in the form of rust, abrasion, etc.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Headwall Condition	Missing or out of place riprap, scoured area larger than 10 square feet, cracks or other accelerated weathering.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Erosion	Cavities along pipe, or spring on side of channel.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Culvert No. 7	Debris and Sediment Deposition	Presence of debris, sediment, etc. greater than 4" in depth.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Structural Condition	5% reduction in cross section area, pipe wall deterioration in the form of rust, abrasion, etc.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Headwall Condition	Missing or out of place riprap, scoured area larger than 10 square feet, cracks or other accelerated weathering.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Erosion	Cavities along pipe, or spring on side of channel.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Culvert No. 8	Debris and Sediment Deposition	Presence of debris, sediment, etc. greater than 4" in depth.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Structural Condition	5% reduction in cross section area, pipe wall deterioration in the form of rust, abrasion, etc.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Headwall Condition	Missing or out of place riprap, scoured area larger than 10 square feet, cracks or other accelerated weathering.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Erosion	Cavities along pipe, or spring on side of channel.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Culvert No. 9	Debris and Sediment Deposition	Presence of debris, sediment, etc. greater than 4" in depth.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Structural Condition	5% reduction in cross section area, pipe wall deterioration in the form of rust, abrasion, etc.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Headwall Condition	Missing or out of place riprap, scoured area larger than 10 square feet, cracks or other accelerated weathering.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Erosion	Cavities along pipe, or spring on side of channel.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

487532

Design Element	Attribute	Inspection Triggers	Trigger Exceeded		Description of Items Exceeding Inspection Trigger, or other notes.	Recommendation		
			YES	NO		No Action	Additional Observation	Repair
Culvert No. 10	Debris and Sediment Deposition	Presence of debris, sediment, etc. greater than 4" in depth.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Structural Condition	5% reduction in cross section area, pipe wall deterioration in the form of rust, abrasion, etc.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Headwall Condition	Missing or out of place riprap, scoured area larger than 10 square feet, cracks or other accelerated weathering.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Erosion	Cavities along pipe, or spring on side of channel.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Culvert No. 11	Debris and Sediment Deposition	Presence of debris, sediment, etc. greater than 4" in depth.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Structural Condition	5% reduction in cross section area, pipe wall deterioration in the form of rust, abrasion, etc.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Headwall Condition	Missing or out of place riprap, scoured area larger than 10 square feet, cracks or other accelerated weathering.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Erosion	Cavities along pipe, or spring on side of channel.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Culvert No. 12	Cobble Substrate	Washed out substrate such that the culvert floor is exposed.	<input type="checkbox"/>	<input type="checkbox"/>	Installed by Greater Silver Valley Business Revitalization Project - Repairs not part of State O&M. Notify as appropriate if trigger exceeded.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Structural Condition	Debris, trash, etc. caught inside culvert.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Headwall Condition	5% reduction in cross section area, pipe wall deterioration in the form of rust, abrasion, etc.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Erosion	Missing or out of place riprap, scoured area larger than 10 square feet, cracks or other accelerated weathering.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Culverts No. 13-16	Debris and Sediment Deposition	Presence of debris, sediment, etc. greater than 4" in depth.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Structural Condition	5% reduction in cross section area, pipe wall deterioration in the form of rust, abrasion, etc.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Headwall Condition	Missing or out of place riprap, scoured area larger than 10 square feet, cracks or other accelerated weathering.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Erosion	Cavities along pipe, or spring on side of channel.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gov. Creek Channel	Debris and Sediment Deposition	Presence of debris, sediment, etc. obstructing flow	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Erosion	Eroded area larger than 10 square feet or deeper than 6".	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Side Channel No. 1	Debris and Sediment Deposition	Presence of debris, sediment, etc.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Riprap Condition	Missing or out of place riprap.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Erosion	Eroded area larger than 10 square feet or deeper than 6".	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Design Element	Attribute	Inspection Triggers	Trigger Exceeded		Description of Items Exceeding Inspection Trigger, or other notes.	Recommendation		
			YES	NO		No Action	Additional Observation	Repair
Side Channel No. 2	Debris and Sediment Deposition	Presence of debris, sediment, etc.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Riprap Condition	Missing or out of place riprap.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Erosion	Eroded area larger than 10 square feet or deeper than 6".	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Side Channel No. 3	Debris and Sediment Deposition	Presence of debris, sediment, etc.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Riprap Condition	Missing or out of place riprap.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Erosion	Eroded area larger than 10 square feet or deeper than 6".	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Side Channel No. 4	Debris and Sediment Deposition	Presence of debris, sediment, etc.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Riprap Condition	Missing or out of place riprap.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Erosion	Eroded area larger than 10 square feet or deeper than 6".	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soil Barrier	Thickness	Exposed tailings or visibly stained material, erosion, rills, ruts, or other disturbances of depth greater than 2", any indication of moved material, or standing water covering over 100 square feet.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sediment Basin No. 1	Debris and Sediment Deposition	Presence of debris, sediment, etc. such that the freeboard is reduced to less than 2 feet.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sediment Basin No. 2	Debris and Sediment Deposition	Presence of debris, sediment, etc. such that the freeboard is reduced to less than 2 feet.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grade Control Structures	Riprap Condition	Missing or displaced riprap, cracks or other defects indicating accelerated weathering.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Downstream Scour	Holes, gaps, scars, or signs of erosion downstream.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Lateral Erosion	Holes, gaps, scars, or signs of erosion along sides.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Headcutting	Holes, gaps, scars, or erosion upstream.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Design Element	Attribute	Inspection Triggers	Trigger Exceeded		Description of Items Exceeding Inspection Trigger, or other notes.	Recommendation		
			YES	NO		No Action	Additional Observation	Repair
Gabion Dam	Structural Condition	Displaced gabions affecting stability of structure, breaks or tears in wire basket.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Downstream Scour	Holes, gaps, scars, etc. downstream from dam.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Lateral Erosion	Holes, gaps, scars, etc. along sides of dam.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Headcutting	Holes, gaps, scars, etc. upstream from dam.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Sediment Buildup	Measure distance at center of the upstream side of the top from the dam crest down to the sediment level, compare measurement to previous inspections to determine how quickly sediment is accumulating over time - Maintain 3 seasons worth of freeboard at upstream side of dam.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gravel Road	Condition of ground cover	Erosion, rills, ruts, or other disturbances of depth greater than the depth of the gravel.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Zinc Plant Buildings	Structural Condition	Inspector should take photos of the slabs and buildings. Make note of any observations made during the inspection that may be of concern. Necessity of repairs will be determined by IDEQ or its representative.	n/a	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Old Concrete Channel	Deposition or Erosion	Inspector should observe conditions of the old concrete channel and note any flow obstructions or major erosion posing a threat to Government Gulch Road. The channel was excluded from the original remedy. Repairs will therefore not be considered part of regular O&M.	n/a	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fencing	Structural Condition	Holes in fence, fallen fence posts, other damage to fencing.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Date:

Inspector Signature:

487532 '16 NOV 30 AM 10:36

Instrument # 487532
WALLACE, SHOSHONE COUNTY, IDAHO
11-30-2016 10:36:00 AM No. of Pages: 36
Recorded for : IDEQ
PEGGY DELANGE-WHITE
Ex-Officio Recorder Deputy
Index to: ENVIRONMENTAL COVENANT

Inspection Checklist for Government Gulch
Sheet 4 of 4