



February 11, 2022

Bart Stepp, City Engineer
City of Silverton
306 S. Water Street
Silverton, OR 97381

Re: Silver Creek Dam (S- 66) – Inspection Summary

This dam was inspected on August 26, 2021. The inspection was performed by Civil Engineering Specialist Arden Babb and District 16 Watermaster Greg Wacker. The Water Resources Department conducts routine inspections of the dams' exterior surfaces to identify conditions that might affect the safety of the dam. Dams are assigned a hazard rating based on downstream hazard to people and property, not on the condition of the dam. Silver Creek Dam is classified as a high hazard dam. High hazard dams are typically inspected every year.

Summary: Results of the inspection are summarized in the table below. Detail regarding the inspection can be found in the following photos and text. Where work is needed, additional information can also be found in the section below. Any aspects of the dam that did not present a dam safety concern are not discussed in this letter.

Category	Inspected	Result
Access	<input checked="" type="checkbox"/>	Adequate
Reservoir	<input checked="" type="checkbox"/>	Adequate
Spillway	<input checked="" type="checkbox"/>	Adequate
Seepage/Leakage	<input checked="" type="checkbox"/>	Adequate
Conduit	<input checked="" type="checkbox"/>	Adequate
Embankment	<input checked="" type="checkbox"/>	Maintenance
Instrumentation/Monitoring	<input checked="" type="checkbox"/>	Adequate
Emergency Action Plan	<input checked="" type="checkbox"/>	Adequate

Details & Recommendations:

This inspection did not include a review of the design drawings and specifications for this dam. This inspection also did not include a review of data collected by instrumentation on the dam.

The reservoir level was 423.8 feet at the time of the inspection. The minimum freeboard was 10 feet, which is excellent.

Spillway:

There were some large logs on the edge of the spillway discharge channel. Based on reports from staff onsite, these should wash downstream during the next heavy flow. Please monitor this area to ensure it does not become blocked.



Logs on edge of discharge channel

Seepage:

The normal seepage for this dam was observed during the inspection. There have been no significant changes in this area during the past few years. Please continue to monitor this area for any changes in flow, coloration, or sediment discharge. Because of this additional seepage, it is important to keep the weirs and toe drains clean and functioning properly. They looked great during the inspection.



Typical seepage observed at reinforced area





All the weirs were clean and functioning properly at the time of the inspection

Embankment

Minor maintenance is needed on the upstream side of the embankment. Some brush has grown up that should be managed to prevent habitat for burrowing animals and to enable proper inspection of the dam face. Please keep the embankment to a cover of low grass



Vegetation growing on upstream embankment and near waterline

Instrumentation and Monitoring:

All instruments were clean and well maintained. They were all locked and secured with updates coming to the monitoring software soon.



Monitoring station, clean and secured

Summary of Recommendations:

Please manage the vegetation on the dam that has begun to grow near the waterline and on the upstream embankment. Vegetation should be maintained to a low ground cover.

Please note that if any work is to be completed on the dam or surrounding areas which either directly or indirectly impacts the reservoir, downstream waterway quality, or fish passage, other state and federal agencies may have permit requirements or regulations for this work.

This dam is well maintained and operated and is in Fair condition. Please continue the good operation and maintenance of this dam. Also note that the condition rating does not reflect the seismic stability of this dam as an analysis has not been completed. As a result, an analysis will be needed in the near future.

We use a standard inspection form, and a copy of the field inspection sheet for this dam is attached. Thanks again for meeting with Arden and Greg. Please let me know if you have any questions about this inspection. We look forward to future inspections of this dam.

Sincerely,

A handwritten signature in black ink, appearing to read "Tony Janicek". The signature is written in a cursive style with a horizontal line above the first few letters.

Tony Janicek Ph.D., P.E.
Dam Safety Program Coordinator
(971)718-7921

C: Keith Mills, P.E., State Engineer
Greg Wacker, Watermaster District 16
Dam Safety File S -66



Oregon Dam Safety Inspection Form

Name of Dam: SILVER CREEK			File #: S-66
Height: 65 ft.	Storage: 1,300 ac. ft.	Permit:	NID #: OR00622
High Hazard Dam	Condition Assessment: Fair		District: 16
Date: August 26, 2021	Weather: <input checked="" type="checkbox"/> Dry <input type="checkbox"/> Rain <input type="checkbox"/> Snow <input checked="" type="checkbox"/> Now <input type="checkbox"/> Recently	Prior Inspection: September 17, 2020	
Inspector(s): Tony Janicek		Others on Site: Greg Wacker, Jensen, rob,	
Issues from Prior Inspection:			

Rating Criteria: 5: Exemplary; 4: Adequate; 4-: Minor Maintenance; 3: Maintenance Action Needed; 2: Maintenance Action Neglected; 1: Unsafe Condition

General		Rating
Vehicle Access	<input checked="" type="checkbox"/> All Weather Road <input type="checkbox"/> Dirt Road <input type="checkbox"/> None	4
Access Control	<input checked="" type="checkbox"/> Gate <input type="checkbox"/> Locked and Secured <input checked="" type="checkbox"/> Fencing <input checked="" type="checkbox"/> Signage <input type="checkbox"/> None <input type="checkbox"/> Other	4
Detail:	Access agreement made, check condition of private road 2022	

Reservoir		Rating
Pool Level: <u>423.8</u> ft.	<input type="checkbox"/> Approximated <input checked="" type="checkbox"/> Measured <input type="checkbox"/> Other <input type="checkbox"/> Crest <input checked="" type="checkbox"/> Gage <input type="checkbox"/> Other	
Minimum Freeboard	Vertical distance from debris line to lowest place on crest: <u>10</u> ft.	4
Condition	<input checked="" type="checkbox"/> No Issue <input type="checkbox"/> Floating Debris/Trash <input type="checkbox"/> Log Boom <input type="checkbox"/> Unusual Condition <input type="checkbox"/> Other	4
Detail:		

Spillway		Rating
Structure	<input type="checkbox"/> Earth <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Culvert <input type="checkbox"/> Rock <input type="checkbox"/> Trickle tube <input type="checkbox"/> Other	
Approach Channel	<input checked="" type="checkbox"/> Clear <input checked="" type="checkbox"/> Trees/brush <input type="checkbox"/> Debris <input type="checkbox"/> Erosion <input type="checkbox"/> Other	4
Control Section	<input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Rock <input type="checkbox"/> Soil <input type="checkbox"/> Culvert <input type="checkbox"/> Other <input type="checkbox"/> Unstable	4
Spillway dimensions	Width: ft. Depth: ft. <input type="checkbox"/> Survey Attached	
Flashboards/Gate	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> In place <input type="checkbox"/> Operational <input type="checkbox"/> Deteriorated	N/A
Discharge Channel	<input checked="" type="checkbox"/> Clear <input checked="" type="checkbox"/> Trees/brush <input type="checkbox"/> Leakage <input type="checkbox"/> Headcutting feet from spillway control section, depth: feet.) <input type="checkbox"/> None	4
Stilling basin	<input type="checkbox"/> None <input checked="" type="checkbox"/> Functional <input type="checkbox"/> Minor Erosion <input type="checkbox"/> Severe Erosion <input type="checkbox"/> Undercutting <input checked="" type="checkbox"/> No Issue	4
Aux. Spillway	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (use "Detail" box below)	
Detail:	Concrete looks good in areas of patches. No changes since last year. Trees in spillway should wash out with next spillway flow. Monitor in case of blockage	

Seepage/Leakage		Rating
Serious Conditions	<input checked="" type="checkbox"/> None <input type="checkbox"/> New Seepage <input type="checkbox"/> Leakage <input type="checkbox"/> Piping <input type="checkbox"/> Discolored Water <input type="checkbox"/> Boils <input type="checkbox"/> Other	N/A
Seepage Locations	<input type="checkbox"/> Center <input type="checkbox"/> Left <input type="checkbox"/> Right <input type="checkbox"/> Around Pipe	
Flow	<input type="checkbox"/> Wet Vegetation <input type="checkbox"/> Spongy <input type="checkbox"/> Standing Water <input checked="" type="checkbox"/> Flowing Water	4
Toe Drains	<input type="checkbox"/> None <input checked="" type="checkbox"/> Working <input type="checkbox"/> Damaged <input type="checkbox"/> Buried <input type="checkbox"/> Other Flow same as last years inspection, thoroughly monitored	4

Flow (gpm)/Detail:	gpm	
Conduit		Rating
Control	<input checked="" type="checkbox"/> Manual <input checked="" type="checkbox"/> Power Hydraulic <input type="checkbox"/> None	4
Inlet	<input checked="" type="checkbox"/> Submerged <input type="checkbox"/> Debris on trash rack <input type="checkbox"/> Deterioration	N/A
Control/Stem	<input type="checkbox"/> Missing <input checked="" type="checkbox"/> Operable <input type="checkbox"/> Damaged <input type="checkbox"/> Inoperable <input type="checkbox"/> Unknown	4
Valve(s) Cycling	<input type="checkbox"/> Frozen <input type="checkbox"/> Unknown <input type="checkbox"/> Past Year <input checked="" type="checkbox"/> Frequent <input type="checkbox"/> During Inspection	4
Principal Conduit	Diameter/Size: <u>18&42in.</u> Material: <u>Steel</u> Condition: <u>Fair</u>	4
Primary Outlet	<input type="checkbox"/> Overgrown <input type="checkbox"/> Clean <input type="checkbox"/> Buried/Obstructed <input type="checkbox"/> Pressurized <input type="checkbox"/> Leaking: gpm	4
Other Outlet(s)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	N/A
Detail:	18 and 42 inch conduits	
Structure of Dam	<input checked="" type="checkbox"/> Earth <input type="checkbox"/> Rock <input type="checkbox"/> Concrete <input type="checkbox"/> Other	Rating
Detail:		
Deformation	<input checked="" type="checkbox"/> None <input type="checkbox"/> Cracks <input type="checkbox"/> Landslide(s) <input type="checkbox"/> Sinkhole(s) <input type="checkbox"/> Movement	4
Crest	<input checked="" type="checkbox"/> No Issues <input type="checkbox"/> Settlement/Low Spots <input type="checkbox"/> Narrow <input type="checkbox"/> Wave Erosion	4
Erosion	<input checked="" type="checkbox"/> None <input type="checkbox"/> Trampling <input type="checkbox"/> Surface Erosion	4
Aux. Dam (s)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Number:	N/A
Detail:		
Animals		Rating
Evidence	<input checked="" type="checkbox"/> No Evidence <input type="checkbox"/> Trails <input type="checkbox"/> Burrows <input type="checkbox"/> Deep Burrows Max Depth: ft.	4
Locations	Extensive: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Detail:		
Vegetation		Rating
Cover	<input type="checkbox"/> None <input checked="" type="checkbox"/> Low Grass <input checked="" type="checkbox"/> High Grass <input type="checkbox"/> Brush <input type="checkbox"/> Small Trees <input type="checkbox"/> Large Trees	4-
Locations	Impairs Inspection <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4
Detail:		
Monitoring		Rating
Instrumentation	<input type="checkbox"/> None <input checked="" type="checkbox"/> Weir <input type="checkbox"/> Piezometer <input type="checkbox"/> Camera <input checked="" type="checkbox"/> Reservoir level <input checked="" type="checkbox"/> Other	5
Monitoring	<input type="checkbox"/> None <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> Frequent <input type="checkbox"/> Past year <input type="checkbox"/> Unknown	5

Expedited Re-inspection Needed: No Next Inspection Date: 2022

Emergency Action Plan: Exists: Yes Onsite: Yes Current: Yes

- Maintenance action - First Notice
- Maintenance action - Subsequent Inspection with Deficiency
- Corrective action - Unsafe Condition

Other Issues or Additional Detail Needed: