

NPDES Permit #IDS0275611

Permit Appendix B - Annual Report Form

This Annual Report is due no later than January 30 of each year, beginning in Calendar Year 2023, and reflects the relevant reporting period, starting October 1, 2021. See Permit Part 6.4.2



Annual Reports and any attachments must be sent to IDEQ by U.S. Postal Mail to the following address:

*Regional Administrator
Idaho Department of Environmental
Quality Attn: Water Quality Program
Boise Regional Office
1445 N. Orchard St.
Boise, ID 83706*

Complete Sections 1 through IV. Do not leave any questions blank.

MS4 Permittee Name/Organization:

City of Boise

Permit Number: IDS027561

Reporting Period:

- ☐ **Year 1 Reporting Period:** Oct. 1, 2021 – Sept. 30, 2022 – **Annual Report due date:** January 30, 2023
- ☐ **Year 2 Reporting Period:** Oct. 1, 2022 – Sept. 30, 2023 – **Annual Report due date:** January 30, 2024
- ☒ **Year 3 Reporting Period** Oct. 1, 2023 – Sept. 30, 2024 – **Annual Report due date:** January 30, 2025
- ☐ **Year 4 Reporting Period** Oct. 1, 2024 – Sept. 30, 2025 – **Annual Report due date:** January 30, 2026
- ☐ **Year 5 Reporting Period** Oct. 1, 2025 – Sept. 30, 2026 – **Annual Report due date:** September 30, 2026
- ☐ Other

Certification: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature:

Printed Name:

Austin Walkins

Title:

Source Control Manager

Date:

01/28/2025

Section I. General Information

MS4 Facility Site Name:

MS4 Facility Organization Formal Name:

MS4 Facility Contact Name:

Title:

MS4 Contact Telephone:

MS4 Contact Email Address:

MS4 Facility Contact Type (all that apply): ☐ Owner ☐ Operator ☒ Main Contact

MS4 Facility Site Address:

MS4 Facility Site City, State, Zip Code:

MS4 Facility Site Mailing Address: *if different from above*

Is the MS4 Facility Site Located On Tribal Land? ☐ Yes ☒ No

MS4 Facility Jurisdiction Type (check all that apply):

☐ Federal	☐ County
☐ State	☒ City or Town
☐ College or University	☐ Highway District
☐ State Highway Department	☐ Tribal
☐ Municipal:	☐ Other

List All Receiving Water(s) For the MS4 Discharges:

Boise River

Cottonwood Creek

Fivemile Creek

Hulls Gulch

Loggers Creek

Section II. Permittee Responsibility:

Please answer all questions. If the answer is “No,” or “Not Applicable” and no other direction is provided, use the Comments field at the end of this section to explain the reason and the expected date(s) that the requirement will be met, and/or to explain why the requirement does not apply.

1. **This Permittee organization shares implementation responsibility for Permit compliance with one or more Permittees.**

☒ Yes ☐ No ☐ Not Applicable

Is the agreement between the Permittees described/cited in the Stormwater Management Program (SWMP) Document?

☒ Yes ☐ No ☐ Not Applicable

2. **This Permittee organization shares implementation responsibility for Permit compliance with one or more outside (non-Permittee) entities.**

Is the agreement with these other entity(ies) described/cited in the SWMP Document?

☐ Yes ☒ No ☐ Not Applicable

3. **This Permittee organization maintains relevant ordinances or other regulatory mechanisms to control pollutant discharges into and from the MS4 to meet the requirements of the Permit.**

☒ Yes ☐ No ☐ Not Applicable

(If “No,” use the Comment field to specify on overall progress to adopt adequate ordinances or utilizing available regulatory mechanisms.)

4. **This Permittee organization’s SWMP Document is posted on a publicly accessible website.**

☒ Yes

Identify the URL for the webpage where the SWMP Document can be accessed:

http://

☐ No

☐ Not Applicable

5. **The Permittee organization provided a summary of total costs associated with SWMP implementation over the reporting period.**

☒ Yes

Note: Permit Part 6.4.2.2.5 requires Permittees to provide annual expenditures for the reporting period, and estimated budget for the reporting period following each Annual Report.

☐ No

☐ Not Applicable

6. This Permittee organization regularly tracks certain activities to set priorities and assess compliance with the Permit requirements.

- ☒ Yes
- ☐ No
- ☐ Not Applicable

7. During the reporting period, responsibility for SMWP implementation has changed due to a Transfer of Ownership or Operational Authority over a geographic portion of the MS4.

This Permittee’s SWMP Document has been updated to reflect these changes in responsibility for any new or transferred areas served by the MS4.

- ☐ Yes
- If yes, use the Comments field to provide a brief statement summarizing the change in ownership or operational authority.*
- ☐ No
- ☒ Not Applicable

Section II Comments:

A summary of total costs associated with SWMP implementation can be found in Attachment 1.

Section III. Status of SWMP Control Measures

Please answer all questions for each SWMP control measure and associated component activity. In the Comments field, cite any relevant information and/or statistics that helps illustrate the Permittee's implementation of the required action/activity.

If the answer is "No," use the Comments field to explain the reason, and outline the expected dates that the requirement will be met.

If the requirement does not apply to the Permittee's organization, mark "NA" and explain why it does not apply in the Comments field.

Public Education, Outreach and Involvement Program (Permit Part 3.1)

8.

This Permittee organization conducts an education, outreach, and public involvement program based on stormwater issues of significance in the Permittee's jurisdiction.

☒ Yes, this organization conducts the education, outreach, and involvement activities required by the Permit

☐ Yes, this organization works through contract with other entities to conduct the education, outreach, and involvement activities required by the Permit

☐ No

☐ Not Applicable
9.

Target Audience: During the reporting period, this Permittee organization focused its education, outreach, and public involvement messages to the following audience(s):

☒ **General Public** (including homeowners, homeowner's associations, landscapers, and property managers)

☒ **Business/Industrial/Commercial/Institutions** (including home based and mobile businesses)

☒ **Construction/Development** (e.g., Engineers, Contractors, Developers, Landscape Architects, Site Design Professionals)

☒ **Elected Officials, Land Use Policy and Planning Staff**

☐ Other (describe in Comments section below)
10.

Topics: During the reporting period, this Permittee organization focused its education, outreach, and public involvement messages on the following topics (select all that apply):

☒ General impacts of stormwater flows into surface water, and appropriate actions to prevent adverse impacts;

☒ Impacts from impervious surfaces, techniques to avoid adverse impacts;

☒ Yard care techniques protective of water quality, such as composting;

☒ Proper use, application & storage of pesticides, herbicides, and fertilizers;

- ☒ Litter & trash control and recycling programs;
- ☒ BMPs for power washing, carpet cleaning, auto repair & maintenance;
- ☒ Low Impact Development/green infrastructure techniques, including site design, pervious paving, retention of mature trees/vegetation, landscaping and vegetative buffers;
- ☒ Maintenance of landscape features providing water quality benefits;
- ☒ Stormwater treatment and volume control practices;
- ☒ Technical standards for stormwater site plans; including appropriate selection, installation, and use of required construction site control measures
- ☒ Source control BMPs and environmental stewardship;
- ☒ Impacts of illicit discharges and how to report them;
- ☒ Actions and opportunities for pet waste control/disposal,
- ☒ Water wise landscaping, water conservation, water efficiency
- ☒ BMPs for use and storage of automotive chemicals, hazardous cleaning supplies, vehicle wash soaps and other hazardous materials;

11. During the reporting period, this Permittee organization began and/or continued distribution of the selected messages/activities to the intended target audience.

☒ Yes

Please summarize the message/activity conducted during the reporting period in the Comments section below.

☐ No

*Note: Permit Part 3.1.3 requires Permittees to conduct at least eight (8) educational messages or activities no later than **September 30, 2026**.*

☐ Not Applicable

12. During this reporting period, this Permittee organization assessed, or participated in efforts to assess, the understanding and adoption of intended behaviors by the target audience.

☒ Yes; *In the Comments section below, please summarize efforts to assess the selected education, outreach and public involvement activities conducted during the reporting period. If information is available, describe how this information is used to improve the education/outreach efforts.*

☐ No

☐ Not Applicable

13. During this reporting period, this Permittee organization offered (or worked with others to offer) training/education regarding construction site runoff control measures to site operators working in the Permittee's jurisdiction.

- ☒ Yes
☐ No

*Note: Permit Part 3.1.7.1 requires Permittees to offer outreach/training on construction site control measures at least once per year during the permit term, no later than **September 30, 2026**.*

☐ Not Applicable

14. During this reporting period, this Permittee organization offered (or worked with others to offer) training/education regarding permanent stormwater controls to audiences working in the Permittee's jurisdiction.

- ☒ Yes
☐ No

*Note: Permit Part 3.1.7.2 requires Permittees to offer outreach/training on permanent stormwater controls at least once per year during the permit term, no later than **September 30, 2026**.*

☐ Not Applicable

15. This Permittee organization maintains and promotes a publicly-accessible website that provides current SWMP-related information cited in Permit Part 3.1.8. This website was recently updated prior to submitting this Report.

- ☒ Yes

URL for the Permittee's webpage:

http://

- ☐ No
☐ Not Applicable

Comments on Public Education, Outreach, and Involvement Program:

Use this Comments field to explain or discuss unique implementation schedules, summarize nature of the education, outreach, and public involvement activities conducted during the reporting period

All information regarding the City of Boise's public education and outreach program, target audiences, activities, stormwater pollution prevention messaging, assessment and tracking, etc. can be found in Attachment 2.

Illicit Discharge Detection and Elimination Program (Permit Part 3.2)

16. To the extent allowable pursuant to authority granted under Idaho law, this Permittee organization conducts and enforces a program to detect and eliminate illicit discharges into the MS4.

- ☒ Yes
- ☐ No

*Note: Permit Part 3.2 requires Permittees to revise and update their existing programs as necessary to comply with Permit Parts 3.2.2 through 3.2.9 no later than **April 3, 2026**.*

- ☐ Not Applicable

17. This Permittee organization maintains a current MS4 Map and Outfall Inventory as described in Permit Part 3.2.2.

- ☒ Yes
- ☐ No

*Note: Permit Part 3.2 requires Permittees to update their Map(s) and Inventory no later than **April 3, 2026**.*

- ☐ Not Applicable

18. To the extent allowable pursuant to authority granted under Idaho law, this Permittee organization prohibits non-storm water discharges into the MS4 (except those identified in Permit Part 2.4) through an ordinance or other regulatory mechanism.

- ☒ Yes – if yes, please provide citation/web address to the ordinance/regulatory mechanism:

https://codelibrary.amlegal.com/codes/boiseid/latest/boise_id/0-0-0-13449

- ☐ No

*Note: Permit Part 3.2 requires Permittees to revise and update their existing programs as necessary no later than **April 3, 2026**.*

- ☐ Not Applicable

19. This Permittee organization maintains a dedicated telephone number, email address, and/or other means for the public to report illicit discharges,

- ☒ Yes – if yes, please provide phone number/web address:

https://www.partnersforcleanwater.org/report-an-issue/
Stormwater Pollution Prevention Hotline: 208-395-8888

- ☐ No

*Note: Permit Part 3.2 requires Permittees to revise and update their existing programs as necessary no later than **April 3, 2026**.*

- ☐ Not Applicable

20. This Permittee organization responds and investigates illicit discharge complaints or reports within two working days.

- ☒ Yes
- ☐ No

*Note: Permit Part 3.2 requires Permittees to revise and update their existing programs as necessary no later than **April 3, 2026**.*

- ☐ Not Applicable

21. Number of Public Complaints/Reports Received During this Reporting Period:
19

22. Number of Illicit Discharge Complaints/Reports Investigated through field visits, sampling or other follow-up action 34

23. Number of Illicit Discharge Complaints/Reports Resolved 34

24. This Permittee organization conducts a dry weather analytical and field screening monitoring program to identify non-stormwater flows from MS4 outfalls.

- ☒ Yes
- ☐ No
- ☐ Not Applicable

25. During the reporting period, this Permittee organization used its written protocols to prioritize and identify MS4 outfalls for dry weather discharge investigation.

- ☒ Yes
- ☐ No
- ☐ Not Applicable

26. Total Number of MS4 Outfalls in the Permittee’s jurisdiction of the Permit Area:
28

27. During the reporting period, this Permittee organization completed visual dry weather screening on at least 20% of MS4 outfalls.

- ☒ Yes
- ☐ No – Total # outfalls < 7, so only one outfall screened this reporting period
- ☐ Not Applicable

28. Of the 20% of MS4 outfalls screened during the reporting period:

How many outfalls were discharging during dry weather? 0

How many of these identified dry weather discharges were sampled or otherwise investigated to determine the discharge source? -

How many of the identified dry weather discharges resulted in the Permittee action to address and eliminate the discharge source? -

29. During this reporting period, how many of the Permittee's MS4 outfalls have been identified as having dry weather flows caused by irrigation return flow or ground water seepage?

Number of outfalls identified this reporting period

Total number of MS4 outfalls identified to date, as having dry weather flows from irrigation or groundwater seepage

*Note: Permit Part 3.2.6 requires Permittees to provide a complete list of MS4 outfalls locations identified as having dry weather flows caused by irrigation return flow or ground water seepage as part of the Permit Renewal Application no later than **April 3, 2026**.*

30. This Permittee organization maintains written spill response procedures and coordinates appropriate spill prevention, containment and response activities with other organizations in the Permit Area to ensure maximum water quality protection at all times.

☒ Yes

☐ No

☐ Not Applicable

31. This Permittee organization coordinates with appropriate local entities to educate employees and the public of the proper management and disposal or recycling of used oil, vehicle fluids, toxic materials, and other household hazardous wastes.

☒ Yes

☐ No

☐ Not Applicable

32. This Permittee organization's staff responsible for investigating, identifying and eliminating illicit discharges, spills, and illicit connections into the MS4 are trained to conduct such activities

☒ Yes

☐ No

☐ Not Applicable

Comments on Illicit Discharge Detection and Elimination Program:

Use this Comments field to explain any unique implementation schedules, highlight investigation results or follow-up actions, discuss subsequent enforcement actions, etc. that were conducted during the relevant reporting period.

A summary of activities associated with the Illicit Discharge Detection and Elimination Program for Permit Year 3 can be found in Attachment 3.

Construction Site Runoff Control Program (Permit Part 3.3)

33. This Permittee organization uses an ordinance or other regulatory mechanism to require erosion, sediment, and waste material management controls at construction project site activity that results in land disturbance of one (1) or more acres and discharges to the MS4.

☒ Yes

☐ No

*Note: Permit Part 3.3 requires Permittees to update their construction site runoff control requirements no later than **April 3, 2026**.*

☐ Not Applicable

34. This Permittee organization requires construction site operators to submit construction site plans for Permittee review.

☒ Yes

☐ No

*Note: Permit Part 3.3 requires Permittees to update their construction site runoff control requirements no later than **April 3, 2026**.*

☐ Not Applicable

35. This Permittee organization inspects construction sites to ensure compliance with applicable requirements for erosion, sediment and waste material management controls.

☒ Yes

☐ No

*Note: Permit Part 3.3 requires Permittees to update their construction site runoff control requirements no later than **April 3, 2026**.*

☐ Not Applicable

36. This Permittee organization inspects construction sites using an inspection prioritization system.

☒ Yes

☐ No

*Note: Permit Part 3.3 requires Permittees to update their construction site runoff control requirements no later than **April 3, 2026**.*

☐ Not Applicable

37. This Permittee organization implements a written escalating enforcement response policy or plan (ERP) for construction site runoff control.

☒ Yes

☐ No

*Note: Permit Part 3.3 requires Permittees to update their construction site runoff control requirements no later than **April 3, 2026**.*

☐ Not Applicable

38. This Permittee organization ensures that all persons responsible for preconstruction site plan review, site inspections, and enforcement of construction site runoff control requirements are appropriately trained to conduct such activities – specifically, this organization provides orientation and training for new staff working on construction runoff control issues within the first six (6) months of employment.

☒ Yes

☐ No

*Note: Permit Part 3.3 requires Permittees to update their construction site runoff control requirements no later than **April 3, 2026**.*

☐ Not Applicable

Comments on Construction Site Runoff Control:

Use this Comments field to explain unique implementation schedules, summarize the number of site inspections, follow-up actions, and/or any subsequent enforcement actions, etc that were conducted during the relevant reporting period.

A summary of activities associated with the Construction Site Runoff Control Program for Permit Year 3 can be found in Attachment 4.

Post Construction Stormwater Management in New Development & Redevelopment
(Permit Part 3.4)

39. Through ordinance or other regulatory mechanism, this Permittee organization requires the installation and long-term maintenance of permanent stormwater controls at new development and redevelopment project sites that result from land disturbance of 5,000 square feet or more, excluding individual one- or two-family dwelling development or redevelopment and the infill or redevelopment of public pedestrian infrastructure projects. Required controls are sufficient to retain onsite the runoff volume produced from the first 0.6 inches of rainfall from a 24-hour event preceded by 48 hours of no measurable precipitation, and/or require runoff treatment providing equal or greater level of water quality benefit as this onsite retention standard.

☒ Yes

Please cite to the ordinance containing the permanent stormwater control requirements:

☐ No

Boise City Code 10-6-3

*Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than **April 3, 2026**.*

☐ Not Applicable

40. This Permittee organization requires permanent storm water controls through written specifications.

☒ Yes

Please cite to the document containing the permanent stormwater control requirements:

☐ No

<https://www.partnersforcleanwater.org/media/1122/stormwaterdesignmanual12-2019.pdf>

*Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than **April 3, 2026**.*

☐ Not Applicable

41. This Permittee organization requires preconstruction site plan review and approval for permanent storm water controls at new development and redevelopment sites.

☒ Yes

☐ No

*Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than **April 3, 2026**.*

☐ Not Applicable

41.b This Permittee organization cooperates in the implementation of the Green Infrastructure Strategy to employ innovative approaches to control stormwater quality and quantity in the Lower Boise River watershed.

Use this field below to describe any relevant Permittee actions during the reporting period, as applicable. .

The city has implemented a procedure to evaluate the feasibility of incorporating Green Stormwater Infrastructure (GSI) techniques into the repair of city-owned and operated roads, parking lots, and property for new and re-development with the use of a feasibility evaluation form. GSI is incorporated into development when feasible. The city works closely with the Capital City Development Corporation (CCDC) to encourage the installation of GSI into the downtown corridor. The City maintains permeable pavers in the Broad St District downtown.

42. This Permittee organization has identified high priority locations in the jurisdiction where the Permittee regularly inspects the installation, and long-term operation, of permanent stormwater controls.

☒ Yes

☐ No

*Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than **April 3, 2026**.*

☐ Not Applicable

43. This Permittee organization has an enforcement strategy to ensure and maintain the functional integrity of permanent stormwater controls within this jurisdiction.

☒ Yes

☐ No

*Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than **April 3, 2026**.*

☐ Not Applicable

44. This Permittee organization uses a database inventory to track and manage the operational condition of permanent stormwater controls within this jurisdiction.

☒ Yes

☐ No

*Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than **April 3, 2026**.*

☐ Not Applicable

45. This Permittee organization requires enforceable and transferable O&M Agreements, where parties other than this Permittee organization are responsible for operation and maintenance of permanent storm water controls?

☒ Yes

☐ No - *Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than **April 3, 2026**.*

☐ Not Applicable

46. This Permittee organization ensures that all persons responsible for reviewing site plans for permanent stormwater controls and/or for inspecting the installation and operation of permanent controls are trained to conduct such activities

☒ Yes

☐ No - *Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than **April 3, 2026**.*

☐ Not Applicable

Comments on Post Construction Stormwater Management in New Development and Redevelopment

Use this Comments field as necessary to explain any unique implementation schedules, summarize inspections, actions, etc. that were conducted during the relevant reporting period.

A summary of activities associated with Post Construction Stormwater Management in New Development & Redevelopment for Permit Year 3 can be found in Attachment 5.

Stormwater Infrastructure and Street Management (Permit Part 3.5)

47. This Permittee organization inspects all MS4 catch basins and inlets in the jurisdiction at least once every two years and takes appropriate maintenance or cleaning action based on those inspections.

☒ Yes

☐ No – Permittee uses an alternate inspection & maintenance schedule as outlined in the SWMP Document.

☐ No

*Note: Permit Part 3.5 requires Permittees to update their pollution prevention and good housekeeping as needed to properly operate and maintain their MS4s no later than **April 3, 2026**.*

☐ Not Applicable

Total Number of catch basins and inlets inspected this reporting period

563.0

48. This Permittee organization operates and maintains Streets, Roads, Highways and/or Parking Lots in its jurisdiction in a manner that protects water quality and reduces the discharge of pollutants through the MS4.

☒ Yes

☐ No

*Note: Permit Part 3.5 requires Permittees to update their pollution prevention and good housekeeping as needed to properly operate and maintain their MS4s no later than **April 3, 2026**.*

☐ Not Applicable

49. This Permittee organization operates all street/road maintenance material storage locations in a manner that prevents pollutants in stormwater runoff from discharging to the MS4 or into any receiving waterbody. A description of each Material Storage Location is included in the SWMP Document, as required by Permit Part 3.5.4

☒ Yes

☐ No

*Note: Permit Part 3.5 requires Permittees to update their pollution prevention and good housekeeping as needed to properly operate and maintain their MS4s no later than **April 3, 2026**.*

☐ Not Applicable

50. This Permittee organization sweeps all streets, roads, highways, and parking lots according to a sweeping management plan and the sweeping schedule outlined in Permit Part 3.5.5.

☒ Yes

☐ No

*Note: Permit Part 3.5 requires Permittees to update their requirements pollution prevention/good housekeeping for MS4 Operations no later than **April 3, 2026***

☐ Not Applicable

51. This Permittee organization has reviewed its operation and maintenance activities for the types of activities listed below and confirms that all such activities are conducted in a manner that protects water quality and reduces the discharge of pollutants through the MS4. Municipal Activities to be addressed include: grounds/park and open space maintenance operations; fleet maintenance and vehicle washing operations; building maintenance; snow disposal site operation and maintenance; solid waste transfer activities; municipal golf course maintenance; materials storage; hazardous materials storage; used oil recycling; and spill control and prevention measures for municipal refueling facilities.

☒ Yes

☐ No

*Note: Permit Part 3.5 requires Permittees to update their requirements pollution prevention/good housekeeping for MS4 Operations no later than **April 3, 2026***

☐ Not Applicable

52. This Permittee organization ensures appropriate practices to reduce the discharge of pollutants to the MS4 associated with the application, storage and disposal of pesticides, herbicides and fertilizers. All employees or contractors applying pesticides, etc. are instructed to follow all label requirements, including those regarding application methods, rates, number of applications allowed, and disposal of the pesticide/herbicide/fertilizer and rinsate.

☒ Yes

☐ No

*Note: Permit Part 3.5 requires Permittees to update their requirements pollution prevention/good housekeeping for MS4 Operations no later than **April 3, 2026**.*

☐ Not Applicable

53. This Permittee organization uses site specific Storm Water Pollution Prevention Plans for all Permittee-owned material storage facilities, heavy equipment storage areas, and maintenance yards located in the Permit Area.

☒ Yes

☐ No

*Note: Permit Part 3.5 requires Permittees to update their requirements pollution prevention/good housekeeping for MS4 Operations no later than **April 3, 2026**.*

☐ Not Applicable

54. This Permittee organization ensures that all persons responsible for municipal operations and maintenance activities are trained to conduct such activities

☒ Yes

☐ No

*Note: Permit Part 3.5 requires Permittees to update their requirements pollution prevention/good housekeeping for MS4 Operations no later than **April 3, 2026**.*

☐ Not Applicable

Comments on Stormwater Infrastructure and Street Management

Use this Comments field as necessary to explain any unique implementation schedules, summarize inspections, actions, etc. that were conducted during the relevant reporting period

A summary of activities associated with Stormwater Infrastructure and Street Management for Permit Year 3 can be found in Attachment 6.

Industrial and Commercial Stormwater Discharge Management (Permit Part 3.6)

55. *This Permittee organization maintains an inventory of industrial & commercial facilities within the Permit Area, and inspects such facilities on a prioritized basis as required by Permit Part 3.6.*

Use this comment box to summarize Permittee activities related to Permit Part 3.6.

A summary of activities associated with Industrial and Commercial Stormwater Discharge Management for Permit Year 3 can be found in Attachment 7.

Section V. Response To Excursions Above Idaho Water Quality Standards

56.

During this or any prior reporting period, did the Permittee submit written notification to EPA and IDEQ regarding MS4 discharge that are causing or contributing to an excursion above the WQS as directed by Permit Part 5.1?

☐ Yes – if yes, proceed to Q.57

☒ No

☐ Not Applicable
57.

During this or any prior reporting period, did the Permittee submit an Adaptive Management Report to EPA and IDEQ, as directed by Permit Part 5.2?

☐ Yes – if yes, proceed to Q.58

☒ No

☐ Not Applicable
58.

Provide a summary of the Permittee’s efforts to date that address the MS4 discharges contributing to the original water quality excursion, including the results of any monitoring, assessment, or evaluation efforts conducted during the reporting period.

Not applicable.
See Attachments 8, 9, and 10 for monitoring data.

59. List any attachments submitted as part of this Annual Report:

Note: Part 6.2.1 requires an updated *Stormwater Outfall Monitoring Plan* to be submitted as part of the Year 1 Annual Report, due January 30, 2023.

Attachment 1: Permit Year 3 Budget Summary and Year 4 Estimated Budget
Attachment 2: Public Education and Outreach: Year 3 Summary
Attachment 3: Illicit Discharge Detection and Elimination: Year 3 Summary
Attachment 4: Construction Site Runoff Control: Year 3 Summary
Attachment 5: Post Construction Stormwater Management in New Development & Redevelopment: Year 3 Summary
Attachment 6: Stormwater Infrastructure and Street Management: Year 3 Summary
Attachment 7: Industrial and Commercial Stormwater Discharge Management: Year 3 Summary
Attachment 8: Stormwater Outfall Monitoring: Year 3 Summary
Attachment 9: Americana Subwatershed: Year 3 Summary
Attachment 10: Temperature Monitoring Summary: Year 3 Summary

Attachment 1

Permit Year 3 Budget Summary and Permit Year 4 Estimated Budget



Table 1 provides the estimated cost for the City of Boise to implement the requirements of the MS4 program components. Table 2 provides the anticipated total cost of the program for FY 2024.

TABLE 1: ESTIMATED CITY OF BOISE COSTS TO IMPLEMENT THE MS4 PERMIT – FY2024

MS4 Program Component	FY24 Cost
PW MS4 Program Management, Public Education and Outreach*, Illicit Discharge Complaint Response, High-Priority Private SW inspections	\$ 199,895
PDS Erosion and Sediment Control	\$ 202,330
PW Stormwater Management/Drainage Permit Review Program (Development Plan Review)**	\$ 103,280
Department O&M Plan Implementation	\$ 247,558
Department O&M Plan Implementation-Boise Airport***	\$ 35,000
TOTAL ESTIMATED COST	\$ 788,063

** Public Education and Outreach costs offset with revenue from co-permittees in accordance with inter-agency MOU*

***Includes Foothills System inspection and maintenance*

****Due to reporting methods, airport operational costs associated with implementing their MSGP permit requirements are included with MS4 reporting costs*

TABLE 2: ESTIMATED CITY OF BOISE COSTS TO IMPLEMENT THE MS4 PERMIT – FY2025

MS4 Program	Estimated Cost
TOTAL ESTIMATED COST	\$ 1,200,000

Attachment 2

Public Education and Outreach: Year 3 Summary

1. Overview

The City of Boise, Ada County Highway District (ACHD), Garden City, Ada County Drainage District #3, Idaho Transportation Department District #3 (ITD #3), and Boise State University (BSU) formed Partners for Clean Water (Partners) to develop a cooperative approach to educating the public on stormwater and water quality issues and ensure compliance with the Permit. The City of Boise is the lead agency for the public education and outreach control measure of the Permit with support from the other Partners. The overarching goal of the program is to educate the public on stormwater issues to change specific behaviors that contribute to nutrient, bacteria, temperature, and sediment pollution to the MS4 and local receiving waters.

The City's Stormwater Public Education and Outreach Program is guided by the following step-by-step process when developing educational opportunities.

1. Define goals and desired outcomes
2. Identify and analyze target audiences
3. Create messaging for selected audiences
4. Distribute message through chosen methods of outreach
5. Assess the results in order to direct future efforts

The Partners conduct multiple outreach activities and messaging campaigns each year, designed to reach the various target audiences identified in the Permit and focus on stormwater issues of significance in the Permit area. The permittees collaborate each year on which topics and relevant messages the program will focus their efforts on. These activities and messages are further developed and built upon based on feedback and public participation.

Target audiences in Permit Year 3 included the general public, businesses, homeowners, neighborhood associations, pet owners, landscapers, property managers, engineers, contractors, developers, plan review staff, and students. Specific details that meet Permit Part 3.1 requirements can be found below.

2. Ongoing Efforts (Throughout Permit Term)

The following section provides updates on the City's ongoing efforts that are anticipated to continue throughout the permit term.

Annual Media Campaign

The Partners continue to participate in an annual media campaign which utilizes messaging opportunities with radio advertisements, public service announcements, and online ads. The media campaign reaches all target audiences with general messages on water quality. In 2024 the Partners focused on proper pet waste disposal, fertilizer reduction, and illicit discharge reporting.

Manuals and Reference Materials

Manuals, fact sheets and other education and outreach reference materials are available on the Partners for Clean Water [website](http://partnersforcleanwater.org). These materials are targeted, based on content, to all our targeted audiences. Examples of these documents include 'Stormwater Facility Maintenance Best Management Practices', 'Stormwater Pollution Prevention: Commercial Landscaping', 'Operation and Maintenance of Stormwater Systems', 'Drainage Plan Checklist' and 'Stormwater Management Resource Guide', among others.

Website

The website (partnersforcleanwater.org) reaches all target audiences with specific messaging based on audience. More information can be found in section 7 below.

Boise WaterShed Environmental Education Center

The Boise WaterShed Environmental Education Center opened in May, 2008, and is designed to promote water stewardship by teaching people of all ages how to protect and conserve our precious resources for future generations.

The staff at the Boise WaterShed incorporates stormwater pollution prevention and stormwater management information into the programs, water renewal facility tours, and lessons offered to visitors. Education of personal impacts to water quality via stormwater, wastewater and pollution prevention tips are integrated throughout most exhibits, lessons, tours, and the center's library resources. Partners staff participate in events at the WaterShed, including WaterShed Weekends, Earth Day events, and summer programs.

The facility also provides an outdoor River Campus which presents a new dimension to water education with exterior exhibits that show the big picture of the Treasure Valley's water resources. Presented to simulate the workings of the Lower Boise Watershed, the interactive, walk-able, park-like setting takes visitors on a journey from Lucky Peak Reservoir and Dam, through Boise's urban streets, and the Water Renewal Facility. From here they watch cleaned water returned to the Boise River and see it flow downstream to the agricultural zone that sustains our food industry. Ultimately, visitors realize that what we do upstream not only affects downstream users, but also ultimately the overall health of the Snake River.

The Boise WaterShed is transforming into the nation's first climate and water science center. The all-ages, hands-on exhibits will explore themes of our changing watershed and how the community can take action to help make

our community more resilient to the effects of climate change. The Boise Watershed is undergoing renovations and was closed during Permit Year 3. Limited programming was available through on-site K-12 lessons, homeschool days, models and kits available for checking out, and other events. Stormwater education is included in this programming.

Social Media

The City of Boise and other Partners regularly post messaging on Twitter, Facebook, and Instagram regarding stormwater, water quality, household hazardous waste collection, leaf litter pick up information, etc., to help distribute these messages to the community through a variety of avenues.

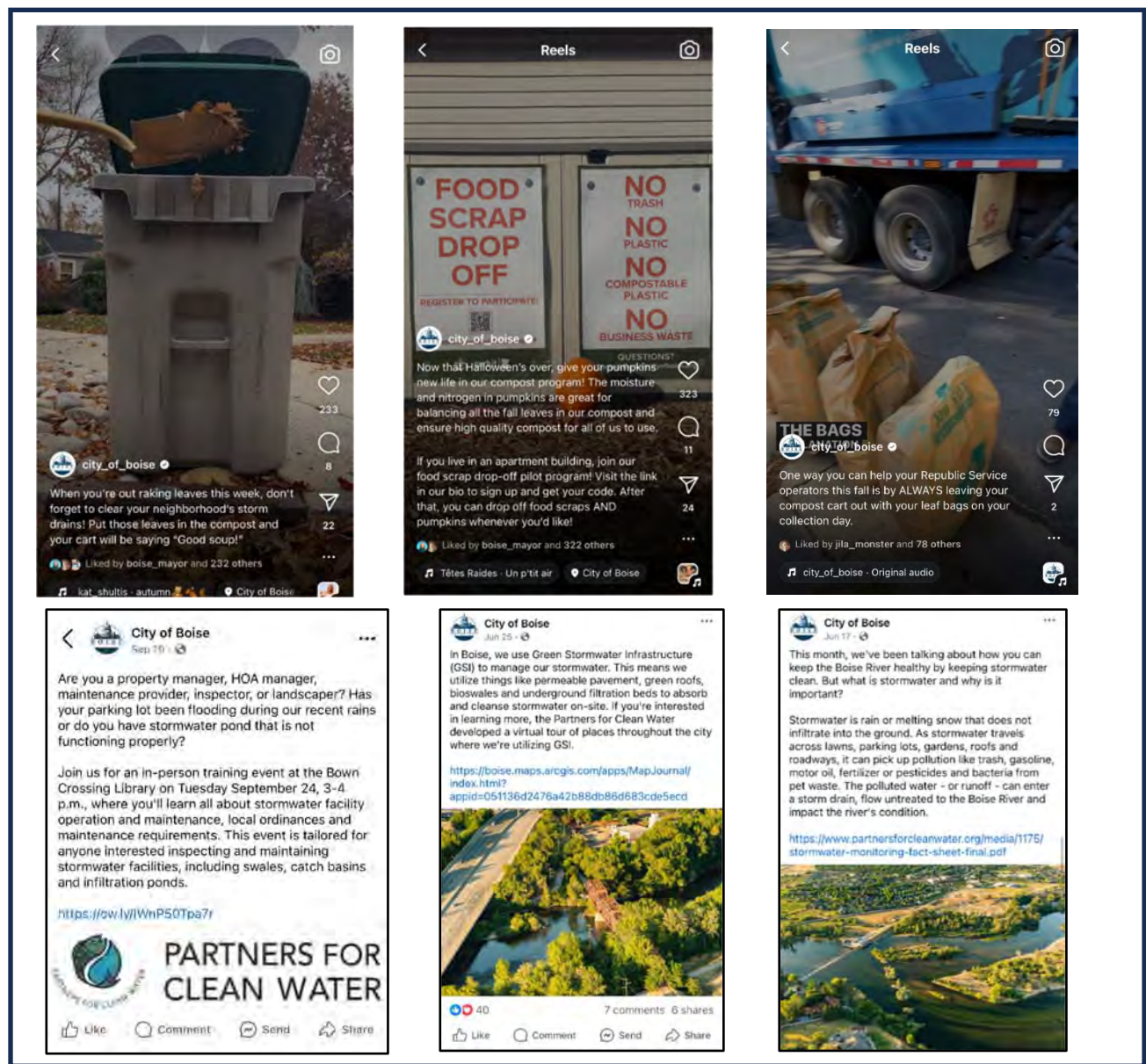


Figure 1. Examples of 2024 educational social media posts

Inspections

City Source Control staff use regular inspections as an opportunity to provide educational information and materials to facility owners and operators. Handouts and brochures are continuously distributed during high-priority permanent stormwater controls inspections, as well as industrial and commercial inspections to remind facilities of stormwater best management practices.

Complaint Response

City Source Control staff are responsible for responding to complaints in which the responsible party is known to be a private resident or business, since the City has enforcement authority. During the investigation and response, the City ensures the appropriate educational messages are being delivered in order to prevent future illicit discharges from reoccurring. Depending on the severity of the situation, the City's first line of defense is usually education. The City has found that this approach is most well-received and the individual(s) responsible for the illicit discharges are more likely to change their behavior based on a positive interaction and newly gained knowledge.

3. 2024 Outreach Events and Activities:

The City conducted several outreach events and activities during permit year 3. Details on each of the events or activities are included in the sections below.

Media Campaign

The media campaign for 2024 included radio ads, social media posts, and online ads on websites such as BoiseDev and KTVB.

Themes highlighted in 2024 include picking up pet waste, illicit discharge reporting, and proper fertilizer use, seen in Figure 2 below.



Figure 2. 2024 Stormwater Educational Graphics

Around 450 radio ads were aired on radio stations including KJOT, KRVB, KXLT, KKOO, KIZN, KKGL, LA GRAND, and LA PONDEROSA. Radio ads were broadcast in English and Spanish.

Bus Wrap

Partners coordinated with Valley Regional Transit to create a stormwater educational bus wrap to display on a regional bus from May through August. This was a general stormwater message to help people understand that

stormwater flows directly to our waterways. The stormwater hotline number was also listed on the bus to report illegal dumping into storm drains. Posters were also present on the interior of the bus.



Figure 3. 2024 Bus Wrap

2024 Events

Several events were held during Permit Year 3 for stormwater education and outreach purposes. Each event targeted the general public and focused on general stormwater awareness, illicit discharge reporting, stormwater pollution prevention tips for homes and businesses, and water quality. Below are photos from the each event.

1. City of Boise Earth Day:



2. Neighborhood Concert Series:



3. National Night Out



4. Assessment

The Partners are consistently assessing the public's understanding of our public outreach messages and the adoption of behaviors that reduce stormwater pollution by our target audiences.

Assessment includes surveys at events that measure general stormwater knowledge to evaluate which topics are being conveyed already, and which topics need additional messaging and awareness. These surveys also resolve which media avenues are most useful to the respondents to guide our outreach in the future.

Data from website usage, radio ads, and billboard viewership is also used to assess which programs and messages are reaching the most people. The Partners' website is updated based on which pages are most viewed and clicked on, in order to make popular topics more accessible (Appendix 2-A).

The results of these continual assessments constantly shape the future of our public outreach and education programming. Focus will be given to programs that are successful in changing the public's behaviors and practices to reduce stormwater pollution.

A more targeted pilot program was started in Permit Year 2 in the Central Rim Neighborhood. The primary goal of this pilot project is to increase stormwater awareness, engage the target audience, and effectively promote proper leaf disposal. By isolating public education and outreach in this neighborhood, we are aiming to achieve higher participation in proper leaf disposal in the Central Rim Neighborhood. In October 2023, postcards were sent out that outlined the benefits of raking your leaves such as flooding prevention and improved water quality. It also gave instructions for leaf pickup and provided a link to sign up for a free yard sign to encourage neighbors to rake leaves. Signs were displayed in the yards of Central Rim Neighborhood residents.

Outreach continued in 2024 at the Central Rim's National Night Out. More signs were given to residents and stormwater educational messaging and post cards were provided at a Partners for Clean Water table. Many residents exhibited enthusiasm and interest in the program.



Figure 4. Outreach postcard sent to Central Rim Neighborhood residents

In 2025, we will send out another post-outreach survey to the Central Rim Neighborhood to evaluate the behaviors surrounding leaf collection for the pilot neighborhood. We will compare post-outreach survey results from the Central Rim neighborhood to other neighborhoods that did not receive targeted outreach; this will allow us to assess the effectiveness of the outreach conducted. We will also compare Central Rim leaf collection data from 2021-2024 to measure if more leaves were collected from this neighborhood after outreach was conducted. This will provide estimates of self-reported behavior changes as well as leaf volume data from Republic Services to show behavior changes.

More information regarding the pilot program, follow-up outreach, and conclusions will be available in the Permit Year 4 Annual Report.

5. Tracking

A tracking spreadsheet is used by the City of Boise to track and maintain all records of our stormwater education and outreach activities, events, and trainings. This spreadsheet is shared with other permittees during regularly scheduled permittee meetings and is open to feedback and discussion. The tracking spreadsheet is used to compile the annual report.

6. Education on Stormwater Management Program Control (SWMP) Measures

The City provides trainings on construction site runoff control and permanent stormwater controls for the local community. Details on the trainings are included in the sections below.

Construction Site Runoff Control Training

To provide the regional construction community with erosion and sediment control and stormwater pollution prevention education, the City and our Partners have developed the Erosion and Sediment Control (ESC) Responsible Person (RP) training and certification program. The class promotes awareness of the impact of polluted construction site runoff and soil erosion on the MS4 and the Boise River. The class curriculum covers local and state stormwater regulations, principles of ESC Best Management Practices (BMPs), installation and maintenance of common erosion and sediment controls, fugitive dust control, stormwater pollution prevention practices, dewatering, how to conduct the required construction site inspections and updating the ESC plan or SWPPP for the site.

The instructors for the City Responsible Person classes must be qualified and approved by the City. Instructors are required to submit a resume to the City detailing their educational history and experience in erosion control. They must also be able to demonstrate knowledge of the principles of erosion; sediment transport; erosion and sediment control technology, implementation, and maintenance; and local and federal ordinances regulating erosion and sediment control.

Courses are offered through third party entities: Engineering with a Mission LLC, Eagle One LLC, Jones Erosion Control, the College of Western Idaho, and Syman Company throughout the year in various locations in the Treasure Valley as well as online offerings. Boise State University's Construction Management Program also presents the class material to their students, who may receive certification if desired. Additionally, the Nampa school district has a vocational construction site program that utilizes the ESC training presentation. The ESC Inspectors also present the RP course quarterly to train local agency personnel involved in construction projects so that they may implement BMPs on public projects and notify ESC Inspectors if they see runoff pollution and other violations at construction sites. As part of the training participants receive education materials including an illustrated ESC Field Guide to Best Management Practices specific to Idaho.

Construction site operators and contractors must renew their RP certification every 3 years by attending the training and passing an examination. The class

is updated regularly to present new ideas and methods in ESC and SWPPP. The Planning and Development permitting system maintains a database of certified RPs. The database is utilized by the City of Boise, ACHD, Garden City, the City of Nampa, and City of Caldwell to verify that construction sites have an individual with ESC training onsite. The RP name and contact information is required to be listed prior to permit issuance, and the RP must have operational control to make corrective actions and knowledge to implement BMPs and work with ESC Inspectors to keep sites in compliance.

In 2024, 853 Responsible Person licenses were issued or renewed.

City staff provide ongoing awareness, education and outreach through the website, annual events, and also can provide site specific training as needed to interested parties and industry groups.

Permanent Stormwater Controls Training

The Partners conducted a permanent stormwater controls training in September 2024. The goal of this training is to provide guidance to local audiences on the operation and maintenance activities required to be performed on various stormwater facilities. The training emphasized the importance of maintaining stormwater facilities to prevent stormwater pollution. It covered local ordinances, O&M requirements, and context for property O&M agreements.



The poster features a header with a blue wavy background and a logo for 'PARTNERS FOR CLEAN WATER' which includes a stylized fish icon. The main title 'STORMWATER FACILITY OPERATION AND MAINTENANCE TRAINING' is in large, bold, red letters. Below the title, a text box explains that the training is free and open to property managers, HOA managers, maintenance providers, inspectors, landscapers, and anyone with a role in operating and/or maintaining residential, commercial, or industrial stormwater facilities. Another text box encourages joining to learn about maintenance, local ordinances, and guidance for property O&M agreements. The event details specify 'When: September 24th, 2024 3–4pm' and 'Where: Library! at Bown Crossing, 2153 E Riverwalk Dr, Boise, ID 83706'. A note states 'Light refreshments will be provided'. A red button at the bottom right contains the contact information: 'Questions? Call 208-608-7565' and 'TTY: 800-377-3529'.

PARTNERS FOR CLEAN WATER

STORMWATER FACILITY OPERATION AND MAINTENANCE TRAINING

This training is free and open to property managers, HOA managers, maintenance providers, inspectors, landscapers, and anyone who has a role in operating and/or maintaining residential, commercial, or industrial stormwater facilities.

Please join us to learn more about maintenance of stormwater facilities, local ordinances, guidance for property O&M agreements, and how to help prevent stormwater pollution.

When: September 24th, 2024 3–4pm
Where: Library! at Bown Crossing, 2153 E Riverwalk Dr, Boise, ID 83706

Light refreshments will be provided

Questions? Call 208-608-7565
TTY: 800-377-3529

Figure 5. 2024 Permanent SW Control Ad

7. Publicly Accessible Website

The City of Boise, on behalf of the Partners for Clean Water, maintains a website that educates the public on stormwater issues for multiple audiences. The website is a key source for stormwater information in Boise and the Treasure Valley.

The website contains relevant contacts for each permittee, as well as each permittee's annual reports, SWMPs, and other relevant compliance and regulation materials. The Intergovernmental Agreement (IGA) that outlines permittee responsibilities is posted, as well as the IPDES permit and the MS4 map. Regularly scheduled permittee meeting agendas and meeting notes are also posted.

The website has topics for varying target audiences, such as homeowners, pet owners, engineers, surveyors, developers, mobile businesses, landscapers, and property maintenance companies. Manuals, checklists, fact sheets and guidance documents are organized into the target audience's respective pages. Individual permittee sites are also linked for more information. Information regarding training, events, and other topics pertinent to educating the community on how to reduce stormwater pollution is easily accessible.

The website continues to be an important way to educate our target audiences and provide a central location for public education and permit compliance information. The Partners continuously develop new outreach materials to post on the website and hand out at events. QR codes that link to the Partners website are often printed on outreach materials.

For information specific to the City of Boise, the [Planning and Development Services page](#) includes more detailed information about Boise building permits, licensing, construction inspections, construction reports, erosion and sediment control ordinances, etc. The [Stormwater and Drainage Control page](#) references the City's SWMP, the Stormwater Design Manual for permanent stormwater controls, stormwater ordinances, illicit discharge reporting, stormwater trainings, among other relevant information.

Appendix 2-A

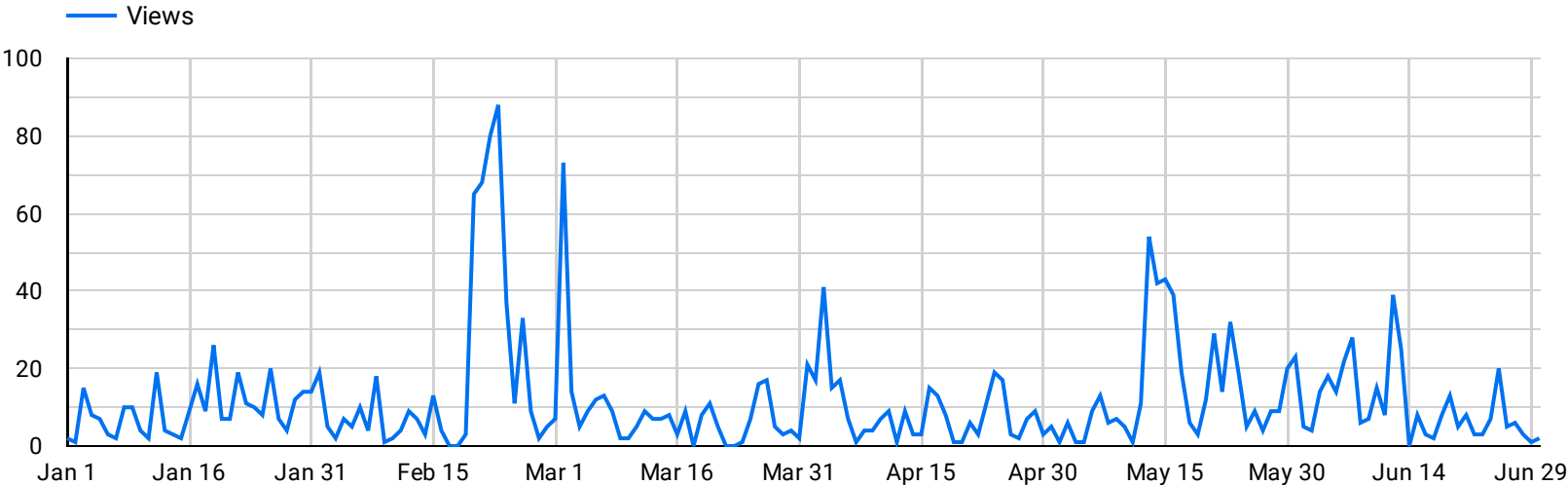
Website Data

Partners for Clean Water - 2024 Report

January - June (Google Analytics 4)

Total users 2,146	Views 22,449	Average session duration 00:01:08	Bounce rate 73.77%	Views per session 12.45
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Session source / medium	Views ▾	Average session duration	Bounce rate
1. (direct) / (none)			
2. BoiseDev / Display			
3. google / organic			
4. news.grets.store / re...			
5. cityofboise.org / refe...			
6. rida.tokyo / referral			
7. bing / organic			
8. static.seders.websit...			
9. kar.razas.site / referr...			
10. info.seders.website / ...			
11. duckduckgo / organic			
12. In the Know Newslet...			
13. cityofcaldwell.org / r...			
14. trast.mantero.online...			
15. ofer.bartikus.site / re...			
16. game.fertuk.site / re...			
17. baidu / organic			
18. garold.dertus.site / r...			
19. app.asana.com / ref...			
20. Others			
Grand total	2,123	00:01:09	73.53%



Partners for Clean Water - 2024 Report

January - June (Google Analytics 4)

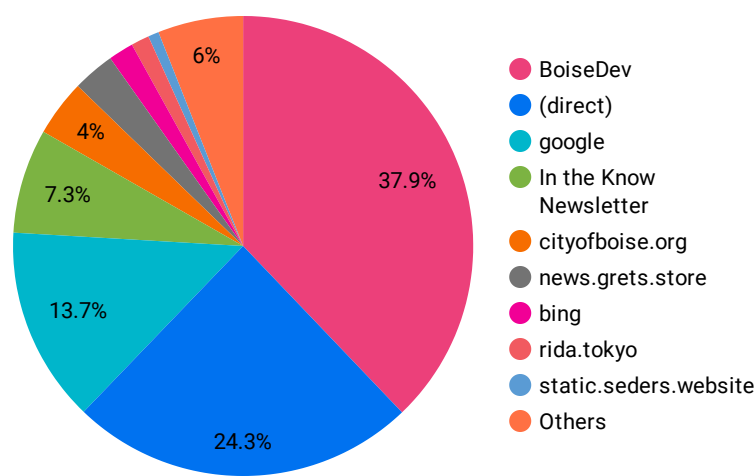
Views Per Page

	Page title	Views ▾
1.	Partners for Clean Water	895
2.	Partners for Clean Water	416
3.	Gophers Partners for Clean Water	155
4.	General Information Partners for Clean Wa...	97
5.	Report an Issue Partners for Clean Water	85
6.	City of Boise Partners for Clean Water	66
7.	Landscaping, Gardening and Home Mainten...	49
8.	Drainage District #3 Partners for Clean Wa...	48
9.	Annual Report Partners for Clean Water	41
1...	Partners for Clean Water Meetings Partner...	33
1...	Boise State Partners for Clean Water	29
1...	ACHD Partners for Clean Water	28
1...	Contact Partners Partners for Clean Water	23
1...	Pets Partners for Clean Water	23
1...	Permit Info Partners for Clean Water	22
1...	ITD DIST #3 Partners for Clean Water	20
1...	City of Caldwell Partners for Clean Water	20
1...	Garden City Partners for Clean Water	16
1...	Roses Partners for Clean Water	10
2...	Construction Partners for Clean Water	9

Total Users Per Landing Page

	Landing page	Total users ▾
1.	/	1.1K
2.	/residents/pest-control/gophers	143
3.	(not set)	63
4.	/report-an-issue	60
5.	/aboutpartners/city-of-boise	33
6.	/aboutpartners/drainage-district-3	28
7.	/residents/landscaping-gardening-and-ho...	24
8.	/aboutpartners/annual-report	18
9.	/aboutpartners/boise-state	15
10.	/residents/general-information	15
11.	/aboutpartners/city-of-caldwell	12
12.	/businesses/general-information	12
13.	/report-an-issue/contact-partners	12
14.	/aboutpartners/achd	11
15.	/meetings/partners-for-clean-water-meeti...	11
16.	/aboutpartners/garden-city	10
17.	/aboutpartners/permit-info	10
18.	/aboutpartners/itd-dist-3	9
19.	/residents/pets	9
20.	/residents/pest-control/roses	7
21.	/businesses/construction	6
22.	/2018-stormwater-conference-growing-ou...	3
23.	/aboutpartners/annual-report/2017-annu...	3
24.	/aboutpartners/annual-report/2020-annu...	3
25.	/aboutpartners/annual-report/2018-annu...	2
26.	/businesses/engineers-surveyors	2
27.	/residents/pest-control/aphids	2
28.	/residents/pest-control/ants	1
29.	/residents/pest-control/fleas	1
30.	/searchresults	1

Session Source



Partners for Clean Water - 2024 Report

July - December (Google Analytics 4)

Total users 2,900	Views 10,326	Average session duration 00:00:54	Bounce rate 72.84%	Views per session 3.5
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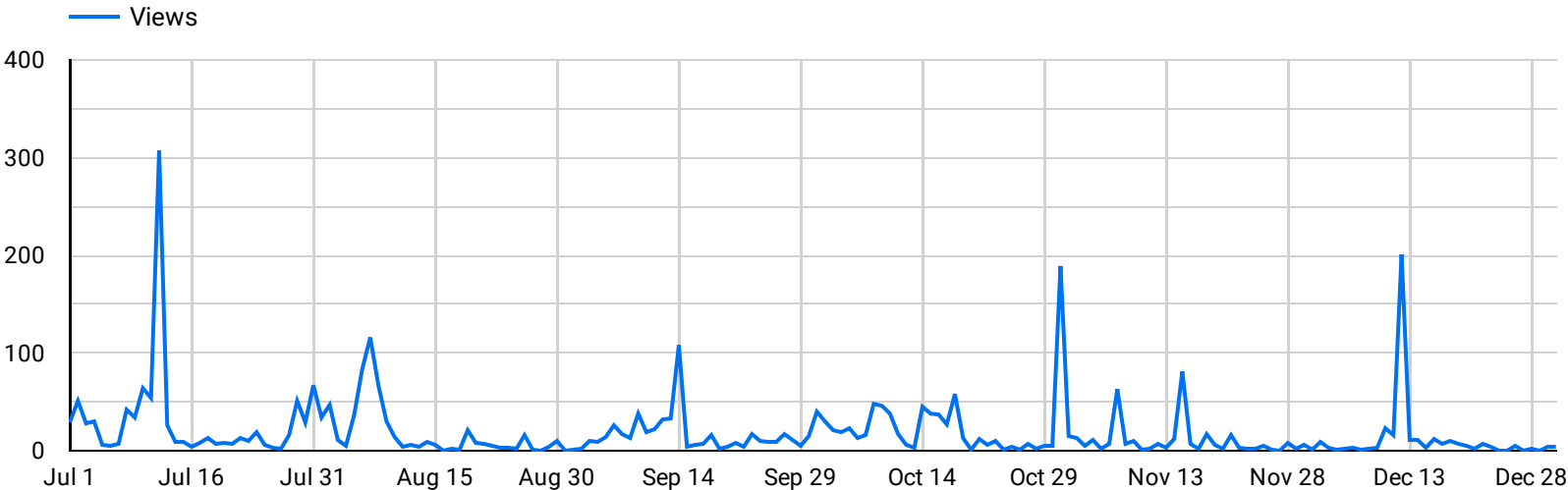
Session source / medium		Views ▾	Average session duration	Bounce rate
1.	BoiseDev / Display			
2.	(direct) / (none)			
3.	In the Know Newsletter / email			
4.	google / organic			
5.	cityofboise.org / referral			
6.	CbvffEfi / Evfcybl			
7.	bing / organic			
8.	Va guf Xabj Afjfyggfe / email			
9.	statics.teams.cdn.office.net / refe...			
10.	yahoo / organic			
11.	cityofcaldwell.org / referral			
12.	appsecadmin.cityofboise.org / re...			
13.	gbc-excel.officeapps.live.com / re...			
14.	facebook.com / referral			
15.	aimbnra.shop / referral			
16.	arcarticle.online / referral			
17.	feiacmr.shop / referral			
18.	mix106radio.com / referral			
19.	sestarblog.shop / referral			

Grand total

3,484

00:00:54

72.72%



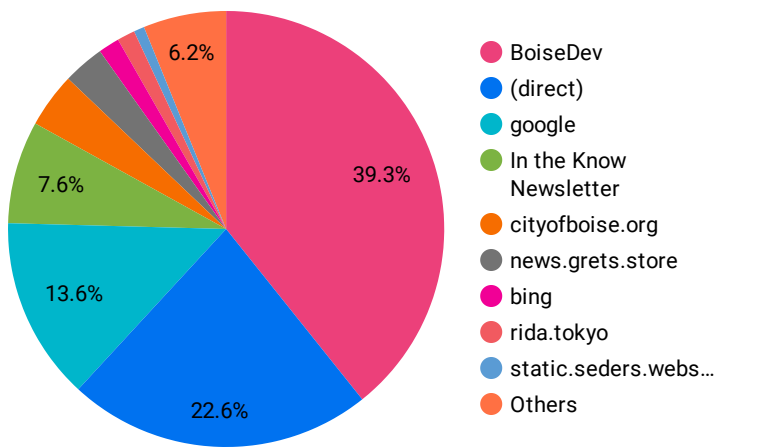
Partners for Clean Water - 2024 Report

July - December (Google Analytics 4)

Views Per Page

Page title		Views ▾
1.	Partners for Clean Water	2,095
2.	General Information Partners for Clea...	309
3.	Landscaping, Gardening and Home Mai...	268
4.	Gophers Partners for Clean Water	236
5.	Report an Issue Partners for Clean Wa...	99
6.	City of Boise Partners for Clean Water	56
7.	ACHD Partners for Clean Water	38
8.	Boise State Partners for Clean Water	38
9.	Drainage District #3 Partners for Clean...	37
1...	Pets Partners for Clean Water	35
1...	Pest Control Partners for Clean Water	34
1...	Contact Partners Partners for Clean W...	30
1...	Partners for Clean Water Meetings Par...	27
1...	Annual Report Partners for Clean Water	26
1...	Permit Info Partners for Clean Water	25
1...	ITD DIST #3 Partners for Clean Water	17
1...	City of Caldwell Partners for Clean Wa...	17
1...	Automobile Maintenance Partners for ...	17
1...	Engineers Surveyors Partners for Clea...	16
2...	Garden City Partners for Clean Water	16

Session Source



Total Users Per Landing Page

Landing page		Total users ▾
1.	/	1.9K
2.	/residents/pest-control/gophers	194
3.	/residents/general-information	166
4.	/residents/landscaping-gardening-and...	157
5.	(not set)	61
6.	/report-an-issue	57
7.	/aboutpartners/city-of-boise	40
8.	/aboutpartners/achd	25
9.	/aboutpartners/drainage-district-3	24
10.	/aboutpartners/boise-state	15
11.	/aboutpartners/city-of-caldwell	14
12.	/meetings/partners-for-clean-water-me...	14
13.	/aboutpartners/itd-dist-3	13
14.	/report-an-issue/contact-partners	13
15.	/businesses/general-information	12
16.	/aboutpartners/garden-city	11
17.	/aboutpartners/annual-report	10
18.	/aboutpartners/permit-info	10
19.	/residents/pets	10
20.	/residents/automobile-maintenance	5
21.	/residents/pest-control/aphids	4
22.	/businesses/construction	3
23.	/businesses/engineers-surveyors	3
24.	/residents/pest-control	3
25.	/residents/pest-control/fleas	3
26.	/2018-stormwater-conference-growing-...	1
27.	/aboutpartners/annual-report/2017-an...	1
28.	/aboutpartners/annual-report/2018-an...	1
29.	/residents/pest-control/ants	1
30.	/residents/pest-control/cockroaches	1
31.	/residents/pest-control/roses	1
32.	/residents/pest-control/weed-control	1

Attachment 3

Illicit Discharge Detection and Elimination: Year 3 Summary

Illicit Discharge Detection and Elimination Program

The City of Boise conducts and enforces an Illicit Discharge Detection and Elimination (IDDE) program that aims to detect and eliminate illicit discharges to the MS4. The City works cooperatively with ACHD to handle illicit discharges in the right of way and on public and private property. More information regarding the IDDE program can be found in the City's SWMP.

Ordinance or Other Regulatory Mechanisms

[Boise City Code 10-6](#) (Stormwater Management and Discharge Control) provides legal authority for civil and criminal misdemeanor enforcement for Boise City Code (BCC) within the City's jurisdictions. Ordinance authorities have been extended to interested permittees under an enforcement agreement. The city's Source Control team provides complaint response and investigations for illicit discharges and improper disposal.

Illicit Discharge Complaint Reporting and Response Program

The City addresses illicit discharges using multiple mechanisms including telephone calls, emails, online response forms, inspections, and field-based observations. ACHD operates a stormwater hotline number for citizen reports of stormwater pollution problems. Both ACHD and Boise City Source Control staff respond to hotline complaints. The appropriate agency will complete the investigation and follow-up and/or enforcement.

Boise staff also respond to direct reports of stormwater violations from citizens, employees, and other agencies. Complaints are tracked to ensure appropriate action is taken to eliminate the illicit discharge.

In Permit Year 3, a total of 12 stormwater calls were reported through the stormwater hotline that were directed to the City. Of these 12, 1 required enforcement action and/or actions to be taken by a responsible party, along with investigation follow-up. Others required education or outreach for businesses, or no action at all. 22 other complaints came from direct calls to the City, the online reporting form, or from City staff referrals. Of these 22, 4 required enforcement action and/or actions to be taken by a responsible party, along with investigation follow-up.

Calls that are routed to Planning and Development Services and investigated by Erosion and Sediment Control staff are not included here. More information about fines given by ESC staff can be found in Attachment 4.

Table 1 summarizes the illicit discharges that required enforcement, action, and/or follow-up.

TABLE 1. ILLICIT DISCHARGES THAT REQUIRED ENFORCEMENT: PERMIT YEAR 3

Date	Location	Responsible Party	Pollutant Type	Summary of Action Taken
2/22/2024	10 N Hartman St.	Resident	Sewage	Removal of Property
2/29/2024	2339 N Carissa Pl	Resident	Paint	Notice to Clean
5/30/2024	10243 W Fairview Ave	El Rey & El Jefe's	Wash Water	Verbal Warning
6/27/2024	9066 W Cannel Island St	Resident	Oil/Grease	Notice to Clean
9/18/2024	10th and Bannock	City of Boise	Sediment	Cleaned all affected areas and inlets; Internal Training

Throughout Permit Year 3, the City received multiple calls after large rain events regarding flooding and clogged drains. Most of these calls are forwarded to ACHD unless they are on City property. We continue to work with ACHD and enforce on illicit discharges and ordinance violations.

Dry Weather Outfall Screening Program

ACHD completes dry weather discharge screening on a contract basis for the City for a limited number of City outfalls to comply with MS4 permit requirements. Six outfalls were inspected in Permit Year 3; inspection reports are provided in Appendix 3-A. No notable or unusual dry weather discharges were found this reporting period.

Household Hazardous Waste and other Toxic Materials

The City coordinates with Ada County to facilitate the collection of Household Hazardous Waste (HHW) to ensure proper disposal. The program consists of a permanent collection facility located at the Ada County Landfill and City-sponsored mobile collection sites. Ada County residents may take HHW to any mobile collection site or the HHW Facility free of charge.

Materials accepted at HHW collection sites include household chemicals, cleaning products, paint, automotive products, lawn and garden chemicals, pool supplies, electronics, empty propane cylinders, and mercury-containing items such as fluorescent light tubes, compact-fluorescent bulbs, thermometers, and thermostats. These materials are recycled when possible. Liquids including oil, paint, solvents, and antifreeze are also collected.

Medications are accepted from residents through local law enforcement offices and are not accepted through the HHW program.

In FY 2024, approximately 632,640 lbs of material were collected from Boise-area mobile HHW collection sites. Please note, the HHW program is available to all Ada County residents, and so materials from residents outside of Boise may have been collected at the Boise-area mobile HHW collection sites.

Products turned in to the HHW program that meet certain criteria are made available to the public free of charge in the “Reuse Area” located at the HHW Facility at the Ada County Landfill. Items available for reuse include paints, stains, pool/spa materials, garden/yard chemicals, and automotive fluids.

In addition to residents, businesses located within Ada County can take advantage of the Very Small Quantity Generator (VSQG) program that provides an affordable disposal option for businesses that generate small quantities of hazardous wastes. City departments that generate small quantities of used oil, fluorescent lightbulbs, and other hazardous materials manage those materials through the VSQG program. The VSQG program is operated out of the HHW Facility at the Ada County Landfill.

Training

Illicit discharge detection and elimination training for City employees has been incorporated into the City’s online training management system (I-Learn) to enhance the effective delivery of this training. New and existing employees in positions where this training is applicable will require initial and follow up training. Where applicable, online training can be supplemented with customized in-person training to meet the needs of specific Departments or work groups.

Appendix 3-A

Dry Weather Inspections

Outfall Inspection Summary

Outfall Name: 3n2e09_011

Receiving Waters: Drain E	Pipe Type: PVC Pipe Size: 6"			Lat: 43.6110 Long: -116.2221	
Date: 9/4/2024 Personnel: KC	Comments: The outfall pipe was surcharged (below water level) by Drain E. The inspection was completed at the drop inlet (DI) just up pipe from the outfall. Sediment and plants were observed in the DI, but the outfall pipe was visible. A hydrocarbon filter sock was observed in the DI tied to the grate.				
Structural Condition	Good				
Sedimentation	Yes, sediment observed in the DI but not enough to block the outfall pipe.				
Staining	None				
Odor	None				
Vegetation	Plants were found growing in the DI.				
Floatables (Not Trash)	None				
Trash Observed	Yes	Trash Rank	Household	Trash Source	Transient
Flow	None	Amount	--	Flow Rate(cfs)	--

Results:

Temp (C)	DO (mg/L)	pH (S.U.)	Cond (uS/cm)	Chlorine	Copper	Phenols	Turbidity (NTU)
--	--	--	--	--	--	--	--

E.Coli (MPN)	TSS (mg/L)	ORP (mg/L)	Total P (mg/L)	Detergents (mg/L)
--	--	--	--	--

Illicit Discharge?	Unlikely
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Outfall Inspection Summary

Outfall Name: 3n2e09_019

Receiving Waters: Drain E	Pipe Type: CMP Pipe Size: 6"			Lat: 43.6125 Long: -116.2229	
Date: 8/14/2024 Personnel: KC, EL	Comments: Outfall is surcharged by Drain E, so the inspection was completed at the drop inlet (DI). DI is full of sediment, blocking the outfall pipe. Some standing water in the DI, but no flow. Cleaning is recommended.				
Structural Condition	Fair. Pipe is blocked with sediment.				
Sedimentation	Yes, significant sediment in the drop inlet.				
Staining	None				
Odor	None				
Vegetation	None				
Floatables (Not Trash)	None				
Trash Observed	None	Trash Rank	--	Trash Source	--
Flow	None	Amount	--	Flow Rate(cfs)	--

Results:

Temp (C)	DO (mg/L)	pH (S.U.)	Cond (uS/cm)	Chlorine	Copper	Phenols	Turbidity (NTU)
-	-	-	-	-	-	-	-

E.Coli (MPN)	TSS (mg/L)	ORP (mg/L)	Total P (mg/L)	Detergents (mg/L)
-	-	-	-	-

Illicit Discharge?	Unlikely
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Photo 1: Drop inlet where the inspection was completed because of the outfall pipe being under water. Some standing water was observed, but no flow. Deep sediment in DI is blocking entire outfall pipe.

Outfall Inspection Summary

Outfall Name: 3n2e09_034

Receiving Waters: Boise River	Pipe Type: CMP Pipe Size: 24"			Lat: 43.6176 Long: -116.2256	
Date: 8/14/2024 Personnel: KC, EL	Comments: Inspection was completed at the outfall pipe to the Boise river.				
Structural Condition	Good				
Sedimentation	Yes, sedimentation was observed in the pipe. More than half of the pipe is being blocked by plant debris.				
Staining	None				
Odor	None				
Vegetation	Excessive				
Floatables (Not Trash)	None				
Trash Observed	None	Trash Rank	--	Trash Source	--
Flow	None	Amount	--	Flow Rate(cfs)	--

Results:

Temp (C)	DO (mg/L)	pH (S.U.)	Cond (uS/cm)	Chlorine	Copper	Phenols	Turbidity (NTU)
-	-	-	-	-	-	-	-

E.Coli (MPN)	TSS (mg/L)	ORP (mg/L)	Total P (mg/L)	Detergents (mg/L)
-	-	-	-	-

Illicit Discharge?	Unlikely
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Outfall Inspection Summary

Outfall Name: 3n2e10_041

Receiving Waters: Julia Davis Pond	Pipe Type: CMP Pipe Size: 6"			Lat: 43.6069 Long: -116.1984	
Date: 8/14/2024 Personnel: KC, EL	Comments: The outfall was not visible due to being below the water level of Julia Davis Pond. The Inspection was completed at the connected drop inlet (DI).				
Structural Condition	Good				
Sedimentation	Yes, 1" of sediment in the pipe.				
Staining	None				
Odor	None				
Vegetation	None				
Floatables (Not Trash)	None				
Trash Observed	None	Trash Rank	--	Trash Source	--
Flow	None	Amount	--	Flow Rate(cfs)	--

Results:

Temp (C)	DO (mg/L)	pH (S.U.)	Cond (uS/cm)	Chlorine	Copper	Phenols	Turbidity (NTU)
-	-	-	-	-	-	-	-

E.Coli (MPN)	TSS (mg/L)	ORP (mg/L)	Total P (mg/L)	Detergents (mg/L)
-	-	-	-	-

Illicit Discharge?	Unlikely
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Outfall Inspection Summary

Outfall Name: 3n2e10_044

Receiving Waters: Julia Davis Pond	Pipe Type: PVC Pipe Size: 6"			Lat: 43.6081 Long: -116.1993	
Date: 8/14/2024 Personnel: KC, EL	Comments: Outfall pipe was surcharged (below water level). The inspection was completed at the drop inlet (DI). A hydrocarbon filter sock was observed in the DI tied to the grate.				
Structural Condition	Good				
Sedimentation	None				
Staining	Flow line				
Odor	None				
Vegetation	Typical				
Floatables (Not Trash)	None				
Trash Observed	None	Trash Rank	--	Trash Source	--
Flow	None	Amount	--	Flow Rate(cfs)	--

Results:

Temp (C)	DO (mg/L)	pH (S.U.)	Cond (uS/cm)	Chlorine	Copper	Phenols	Turbidity (NTU)
-	-	-	-	-	-	-	-

E.Coli (MPN)	TSS (mg/L)	ORP (mg/L)	Total P (mg/L)	Detergents (mg/L)
-	-	-	-	-

Illicit Discharge?	Unlikely
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Outfall Inspection Summary

Outfall Name: ORCHARD-01

Receiving Waters: Five Mile Creek	Pipe Type: CMP Pipe Size: 36"			Lat: 43.56085 Long: -116.24397	
Date: 8/14/2024 Personnel: KC, EL	Comments:				
Structural Condition	Good				
Sedimentation	None				
Staining	None				
Odor	None				
Vegetation	None				
Floatables (Not Trash)	None				
Trash Observed	None	Trash Rank	--	Trash Source	--
Flow	None	Amount	--	Flow Rate(cfs)	--

Results:

Temp (C)	DO (mg/L)	pH (S.U.)	Cond (uS/cm)	Chlorine	Copper	Phenols	Turbidity (NTU)
-	-	-	-	-	-	-	-

E.Coli (MPN)	TSS (mg/L)	ORP (mg/L)	Total P (mg/L)	Detergents (mg/L)
-	-	-	-	-

Illicit Discharge?	Unlikely
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Attachment 4

Construction Site Runoff Control: Year 3 Summary

Construction Site Stormwater Runoff Control Program

The City of Boise has established a Construction Site Erosion and Sediment Control (ESC) program and implements the program in accordance with the approved city ordinance for construction site runoff and erosion and sediment. The program regulates applicable public and private construction activities to reduce discharge of pollutants. The program is primarily implemented by the City's Department of Planning and Development Services Building Division with two full time staff who are supported by other city staff when necessary.

The following sections describe the ESC program pertaining to Permit Year 3. More detailed information regarding the program can be found in the SWMP Plan.

Ordinance or Regulatory Mechanism

The City of Boise's construction site runoff control program is established in accordance with the requirements of [Boise City Code 9-14 \(Construction Site Erosion Control Ordinance\)](#). The ordinance identifies general requirements and prohibitions on construction site runoff, permitting and fee authorities, plan review and approval process, erosion and sediment control best management practices and standards, training and certification program details, administration, inspection, and enforcement. The ordinance is consistent with the IPDES Construction General Permit and the requirements of the Boise area MS4 permit.

Preconstruction Site Plan Review and Approval

All non-emergency construction activities occurring on City of Boise parcel(s) that involve significant earth disturbance or potential exposure of pollutants to stormwater runoff must obtain an ESC permit concurrently with other applicable building and development permits prior to construction. There are two types of ESC permits, General Permits and Site-Specific Permits. Details about permit types and requirements is provided in Table 1.

TABLE 1. ESC PERMIT TYPES AND REQUIREMENTS

ESC Permit Type	Type of construction, location, and disturbance	Requirements & Site Priority Ranking
General Permit	Projects less than 1 acre area of disturbance including: New residential home or dwelling unit not located in hillside or environmentally sensitive areas; Residential additions > 500 sq ft; Commercial additions/tenant improvements with limited exterior excavation/earth disturbance	Reduce pollutants in stormwater discharges; Operator must list onsite certified ESC Responsible Person prior to issuance Site priority: Low with escalation as needed based on site compliance

Site-Specific Permit	New Residential homes located in Hillside or Environmentally Sensitive location; New residential and commercial subdivision site development greater than 1-acre disturbance; All new commercial building and multifamily apartment complex Commercial additions and tenant improvements with significant excavation/earth disturbance	Reduce pollutants in stormwater discharges; Operator must list onsite certified ESC Responsible Person prior to issuance Submit site specific ESC plan/SWPPP for review during preconstruction application process Site priority: Medium - High
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In Permit Year 3, 831 total ESC permits were issued. The permits consisted of 652 ESC general permits and 179 site-specific permits that required preconstruction site ESC plan review. Table 2 provides the number of permits issued by project rank, acreage disturbed, and average number of inspections on each type of permit.

TABLE 2. ESC PERMIT INFO BY PROJECT RANK

Project Rank	Total Permits	Acres Disturbed	Total Fees Paid
High	8	17.8	\$1,365
Medium	142	272.3	\$22,155
Low	681	122.8	\$55,095
Total	831	412.9	\$78,615

Construction Site Inspection and Enforcement

During Permit Year 3, a total of 9,330 construction site inspections were conducted with 88.85% pass rate (no corrective actions required). Table 3 provides statistics on inspection types completed categorized by the inspection result.

There were 151 targeted enforcement inspections completed to ensure sites are brought back into compliance after being notified there is a corrective action required or violation occurring. Permit Year 3 included \$4,255 in fines spread amongst 25 different ESC permits for violations such as uncontained concrete washout, observed polluted stormwater discharges due to negligence, and special investigation fees for project's issued a Notice of Violation. One site had two civil penalties assessed due to repeat violations. Table 4 summarizes enforcement inspections and fines from 2022 to 2024.

TABLE 3: EROSION AND SEDIMENT CONTROL INSPECTIONS– PERMIT YEAR 3

Inspection Type	Pass/ Completed	Corrections Required	Significant Violation	Not Ready/Partial	Total	Pass Rate
General Inspections	7,082	746	60	1	7,889	89.77%
Site Preparation	116	19	3	12	150	77.33%
Site Final	1,045	4	0	23	1,072	97.48%
Complaint Inspection/ Investigation	8	37	7	0	52	15.38%
BMP Violation	30	30	23	1	84	35.71%
Tracking Control	5	10	0	0	15	33.33%
Conference	49	0	0	0	49	100%
Random	0	0	1	0	1	0%
All Inspections	8,335	846	94	37	9,312	89.51%

TABLE 4: ENFORCEMENT INSPECTIONS AND FINES 2022-2024

Fiscal Year	Number of Targeted Inspections	Number of Sites Fined/Cited	Total Fine Amount
2022	175	24	\$2,126.25
2023	146	32	\$3,153
2024	151	25	\$4,255

TABLE 5: ESC PROGRAM DATA 2022-2024

	2022	2023	2024
# ESC Permits Issued	1,209	947	831
# of inspections completed	10,990	10,623	9,330
Inspection Pass rate	88.63%	89.50%	88.85%
# of ESC plans reviewed	483	164	179
# of RP Certifications issued	938	718	853
Permit Revenue	\$133,313	\$98,254	\$92,794
Enforcement Revenue	\$4,255	\$3,153	\$4,255
RP Revenue	\$49,690	\$31,335	\$48,405
Total Revenue	\$183,083	\$132,742	\$145,454

Enforcement Response Policy

The written escalation enforcement response policy (ERP) for Construction Site Runoff Control outlines response guidelines that are followed by City staff when enforcement is required. Violation identification, response procedures, escalation measures, and penalties are all included in this document, which can be found at the City's [Stormwater and Drainage Control webpage](#).

Construction Runoff Control Training for Staff

The Erosion and Sediment Control Program Coordinator and Inspector are primarily responsible for all preconstruction site plan review, site inspections, and enforcement. To be qualified for these duties, the ESC division personnel are required to complete municipal, state, and national training and certifications in stormwater management and be active in obtaining continued education annually. Both positions must complete and pass the City of Boise ESC Responsible Person training (more information in Attachment 2), Certified Inspector of Sediment and Erosion Control (CISEC) training and exam, Certified Erosion Sediment and Stormwater Inspector (CESSWI) and maintain their annual license as a Certified Professional in Erosion and Sediment Control (CPESC), which requires passing an initial exam and completing PDH requirements. To obtain continuing education and be up to date in the ESC/SWPPP regulation and industry, the inspectors are professional members of the International Erosion Control Association (IECA) and able to participate in special topic and comprehensive online courses and attend the annual and regional conferences when possible. Additionally ESC Inspectors are required to read and review the Idaho CGP as well as complete the training and exam for the EPA's NPDES Construction Inspection Training Course.

To support the ESC Division's mission to reduce the discharge of pollutants in stormwater runoff from construction sites, the ESC division conducts a Responsible Person training class quarterly for all City employees who are involved in construction activities or stormwater management. By completing the class every 3 years, staff is able to utilize ESC knowledge in relation to their duties as well as being able to identify construction site stormwater runoff violations so they may notify the ESC division for enforcement. Staff that receive the training include all members of the Building Division team, including inspectors (structural, plumbing, mechanical, electrical, and fire), plan reviewers and permit technicians, Public Works construction site managers, Public Works engineering and environmental division staff, and Parks and Recreation staff associated with construction projects also complete the Responsible Person training. In Permit Year 3, 37 City of Boise employees completed the Responsible Person training.

In addition to completing certification courses, the staff may receive one-on-one training in the field with a certified ESC inspector.

Attachment 5

Post Construction Stormwater Management in New
Development & Redevelopment: Year 3 Summary

Post Construction Stormwater Management in New Development & Redevelopment

The City implements and enforces a program to control stormwater runoff from new development and redevelopment projects that result in land disturbance of 1,000 square feet or more, excluding individual one- or two-family dwelling development or redevelopment. This program applies to private and public sector development. This program is implemented mostly by the Engineering and Environmental Divisions in Public Works.

Plan Review and Approval

The City reviews and approves pre-construction design plans to ensure compliance with the Stormwater Management Ordinance and Design Manual for new industrial, commercial, institutional, multi-family residential, private street development and redevelopment projects within city limits. Additionally, Boise City Code 11-02-07-G (City Hillside and Foothills Development Overlay) establishes additional land development regulations for construction in these areas and plans are reviewed for compliance with applicable Ordinances, the Stormwater Management Design Manual, and the Hillside Technical Manual. Site inspections occur during and after construction to determine that the facility's stormwater structures have been constructed according to the approved plans and permits. Table 1 summarizes plan approvals from Permit Year 3.

TABLE 1: NEW DEVELOPMENT AND REDEVELOPMENT APPROVALS – PERMIT YEAR 3

Development Type	Number of Reviews
Commercial/Industrial	173
Hillside Residential	124
TOTAL	297

Operation and Maintenance of Permanent Stormwater Management Controls

The City has developed a comprehensive database to inventory known public and private permanent stormwater facilities. The database is used to support inspections of City-owned stormwater facilities and private stormwater facilities.

The City's Stormwater Management Design Manual requires an Operation and Maintenance Agreement for private facilities (Appendix J of Stormwater Management Design Manual). The responsibility for operation and maintenance of private facilities resides with the property owner. Applicants submit an executed Permanent O&M agreement as part of the final stormwater management plan. The agreement is legally enforceable and transferable. The agreement assigns permanent responsibility for maintenance of structural and treatment controls.

Inspection and Enforcement of Permanent Stormwater Management Controls

City-owned stormwater management facilities are inspected and maintained by various departments. Reporting information is provided in Attachment 6.

The City has developed an inspection program for high-priority private stormwater management facilities in accordance with the requirements of the permit, which are inspected annually. These properties are given high-priority given they discharge directly to surface waters. The program also relies partially on existing industrial and commercial site inspections, please see Attachment 7. Several complaint-driven or isolated incident-driven inspections are conducted each year as well, some of which require enforcement and/or follow-up to ensure the necessary maintenance has been completed. During Permit Year 3, 13 of these inspections were conducted.

Table 2 summarizes the high-priority inspections conducted in Permit Year 3. Property addresses are listed in lieu of business names due to the potential transfer of property ownership.

TABLE 2: HIGH PRIORITY STORMWATER FACILITY INSPECTIONS – PERMIT YEAR 3

Property Address	Inspection Date	Maintenance Needed?
1315 N Milwaukee Street	4/15/24	No
8571 W Franklin Road	4/23/24	No
1450 N Mitchell Street	5/7/24	No
1600 S Loggers Pond Place	7/9/24	Yes
200 N Cloverdale Road	5/7/24	No
5401 W Castle Drive	4/15/24	Yes
1649 W Shoreline Drive	6/4/24	No
111 N Cloverdale Road	5/7/24	Yes
2474 N Bogus Basin Road	5/10/24	Yes
10215 W Emerald Street	4/23/24	No
1250 E Brightwater Lane	4/15/24	No
Swallowtail, Gossamer and Skipperling Lanes	4/18/24	No
10740 W Fairview Avenue	6/4/24	Yes
10790 W Franklin Road	4/23/24	No
2653 S Victory View Way	6/6/24	No
1526 S Lizaso Avenue	4/23/24	Yes
5122 W Stoker Lane	7/12/24	No
510 N Orchard Street	5/10/24	Yes
Apple Street and Parkcenter Blvd	4/18/24	No
500 S Marden Street	7/11/24	No
3304 N Lakeharbor Lane	5/10/24	Yes
3210 S Gekeler Lane	4/18/24	No
365 N Whitewater Park Boulevard	6/4/24	Yes

In Permit Year 3, new and redevelopment sites were inspected as described in Attachment 4. A final as-built inspection is conducted at each site to ensure proper installation of stormwater controls. In Permit Year 4, the City will continue to develop and implement an inspection prioritization system to incorporate new and redevelopment sites into the high-priority inspection list. These inspections ensure long-term operation and maintenance of permanent stormwater controls.

Education and Training on Permanent Stormwater Management Controls

City staff participates in on-going training each year related to the design, construction, operation and maintenance of stormwater facilities. In Permit Year 3, staff responsible for inspections attended the American Society of Civil Engineers Annual Conference: Operation and Maintenance of Stormwater Systems.

Attachment 6

Stormwater Infrastructure and Street Management: Year 3 Summary

Stormwater Infrastructure and Street Management

The City of Boise owns and operates all roadways, stormwater infrastructure, and parking lots at several City-owned facilities. These include, but are not limited to, parks, libraries, the Boise Airport, City Hall, police stations, and fire stations. These facilities are maintained by Parks and Recreation, Facilities Services & Operations, Housing and Community Development, and Airport Facilities Maintenance. All departments utilize an asset management software, VueWorks, to track all inspections and maintenance activities for City-owned infrastructure. Inspection, maintenance, and other good housekeeping information from Permit Year 3 are provided in the Department Reports in Appendix 6-A.

Inspection and Cleaning of Catch Basins and Inlets

Inspections and maintenance (if applicable) of catch basins and inlets on City-owned properties are completed by the appropriate City department staff. While the permit requires inspections every two years, generally the City has completed these inspections annually. As a result of the more frequent inspections, facility maintenance needs are being reduced. At facilities owned by another entity (Collister Library), facilities are maintained by property owners.

TABLE 1: CITY OWNED STORMWATER STRUCTURES AND INSPECTION/MAINTENANCE ACTIVITIES – FY2024

CITY DEPARTMENT	TOTAL # OF STORMWATER STRUCTURES*	TOTAL # OF STRUCTURES INSPECTED	TOTAL # OF STRUCTURES REQUIRING MAINTENANCE
Airport **	451	184	184
Parks and Recreation	496	403	248
Housing and Community Development	8	8	8
Facilities Services & Operations	254	123	123
TOTAL	1,209	718	563

**Some Department inventories include storm sewer pipes as individual structures in their total # of structures and facilities. However, these structures are not individually inspected and do not appear in the count of facilities inspected/maintained. Their condition, if applicable, is assessed while completing inspections of connected catch basins or other adjacent stormwater facilities.*

***Airport data also includes structures associated with the MSGP.*

Maintenance Facilities

The City operates two maintenance/material storage facilities, located at Ann Morrison Park and Julia Davis Park. Both facilities have developed Stormwater Pollution Prevention Plans (SWPPP) to identify on-site pollutants and activities that may affect stormwater runoff, as well as inspection frequency and inspection

logs. The SWPPPs also describe the appropriate control measures taken to reduce contamination to receiving waters, and response actions if contamination occurs. Both SWPPPs can be found in the City's SWMP.

Both of these facilities were inspected in August 2024 for a more comprehensive annual inspection, as well as quarterly inspections.

[Pesticide, Herbicide, and Fertilizer Application](#)

The Boise Parks and Recreation Department manages more than 1,600 acres of park land, and more than 5,000 acres of open space across the City of Boise. Integrated Pest Management (IPM) practices reduce the spread of undesirable plants, insects, bacteria or other organisms that have a negative impact on our landscape or human health. An IPM program utilizes different tools to control pests in ways that are least impactful to the environment and most effective for getting rid of specific pests. These tools may include the application of a targeted pesticide or shifting management practices to help reduce the likelihood of pest establishment on City property.

The City of Boise Parks and Recreation Department first started using Integrated Pest Management (IPM) practices in 1995. The department most recently updated its guidelines to improve these efforts in 2016. To promote sustainable practices and stay on the cutting edge of public land management, the department embarked on a three-year pilot program in 2020 to study alternative land management techniques to reduce the use of pesticides on City-owned property.

2022 was the final year of the Pesticide Use Reduction Pilot Program. In this final year the program was expanded to include nearly all sites maintained by Boise Parks and Recreation. The targets of this expansion were glyphosate-based herbicides and broadleaf selective turf treatments. These were the two most highly used chemicals by department applicators. As a result, there was a large reduction in chemical use.

The program has now expanded to most City parks and is now in its final phase. The department will use the data to guide any potential changes to IPM practices.

Reducing the use of pesticides throughout the City's park system is part of our larger sustainability goal, and we continue to move forward with innovative ways to improve park maintenance strategies.

Information on all three years of the pilot program is published in the annual [Pesticide Application Reports](#).

[Training](#)

Pollution prevention training for City employees has been incorporated into the City's online training management system (I-Learn) to enhance the effective

delivery of this training. New and existing employees in positions where this training is applicable will require initial and follow up training. Where applicable, online training can be supplemented with customized in-person training to meet the needs of specific Departments or work groups.

Appendix 6-A

Department Reports

CITY OF BOISE MS4 PERMIT	
DEPARTMENT ANNUAL REPORTING INFORMATION	
FISCAL YEAR	2024
DEPARTMENT	Airport MS4
STAFF CONTACT	Adam Oliver, Bryan Hill, Daryl Herbert
FACILITY INVENTORY	The Boise Airport of is responsible for the operation and maintenance of: - Airfield Facilities Maintenance (AFM) - 4465 Industrial Street, BOI Airfield, Airport Owned Properties - Facilities Maintenance Group (FMG) - 3201 Airport Way, 4465 Industrial Street, BOI Airfield, Airport Owned Properties

TRASH/RECYCLING/HAZARDOUS MATERIALS/LITTER CONTROL		
	AFM	FMG
TRASH COLLECTION AND RECYCLING PROCEDURES	Trash is collected and bagged and placed in dumpster for commercial pick up. Small recyclables are placed into the terminal recycle compactor with larger items are hauled to a recycle center.	Loading dock compactor 7,280 CY
LITTER CONTROL PROCEDURES	Any litter is considered foreign object debris (FOD) on the airfield and is hand picked and disposed of when found.	Picked up and disposed of in 55 gallon drums
HAZARDOUS MATERIALS COLLECTION	Any hazardous materials such as parts cleaner, oils, antifreeze etc. are handled by Fleet Services.	Used lamps and batteries EPA #IDD009102641
AMOUNT OF MATERIALS COLLECTED	Fleet Services has taken care of this for FY24	Fluorescent lightbulbs 27lbs; aerosols 50lbs; Paint 1,166lbs; Paint related material 364lbs; 1,607 totals lbs, 1,820 YD recycled material from compactor

STREET AND PARKING LOT SWEEPING		
	AFM	FMG
RESPONSIBLE PARTY FOR SWEEPING	Pavement Specialties of Idaho	Pavement Specialties of Idaho
STREET AND PARKING LOT SWEEPING LOCATIONS	W. Rickenbacker St., S. Luke St., W. Wright St., W. Airport Way, S. Ryan St., W. Apollo St., W. Aeronca St., W. Boeing St., S. Lindbergh St., S. Kennedy St., S. Ed Stimpson St., W. Harvard St., terminal ramp, FBO ramps, GA ramps, Vehicle Service Road, Old T Hangars, Life Flight Apron, ITD Hangar.	B Concourse, C Gates, Upper and Lower Elevated Roadways, E1 parking lot (weekly), Baggage area (weekly), All Airport owned Public Parking
LOCATIONS WHERE SWEEPING IS INFEASIBLE	None	None
FREQUENCY OF SWEEPING	A minimum of every week for 774 hours annually	Weekly (weather permitting)
AMOUNT OF SWEEPING (SQ. FOOTAGE OR CURB MILES)	Approximately 7 curb miles, combined - 2,242,560 SF	Unknown
AMOUNT OF MATERIALS COLLECTED	76 CY	FMG & Parking = 29 CY

LANDSCAPING ACTIVITIES		
	AFM	FMG
DESCRIBE USE OF FERTILIZERS	None used	Sunshine Landscape (contractor) applies fertilizers to landscaped areas
DESCRIBE ANY PRACTICES IMPLEMENTED TO REDUCE FERTILIZER USE	Bare Ground and Xeriscape areas	Bare Ground and Xeriscape areas
DESCRIBE USE OF HERBICIDES AND PESTICIDES	Broad leaf weed control, cheet grass control, noxious weed control	Broad leaf weed control, cheet grass control, noxious weed control
DESCRIBE ANY PRACTICES IMPLEMENTED TO REDUCE PESTICIDE OR HERBICIDE USE	Continued expansion of Bare Ground and Zeroscape areas	Continued expansion of Bare Ground and Zeroscape areas
LIST STAFF WITH CERTIFICATIONS FOR PESTICIDE/HERBICIDE APPLICATION OR OTHER LANDSCAPING CERTIFICATIONS	Casey Walker, Herbicide applicators license	Casey Walker, Herbicide applicators license

SNOW/ICE REMOVAL		
	AFM	FMG
DESCRIBE USE OF SNOW/ICE MELTING MATERIALS AT YOUR FACILITIES INCLUDE TYPE OF PRODUCTS USED	Solid and Liquid FAA Spec Runway Deicer, Solid is Sodium Formate, Liquid is Potassium Acetate; FAA Approved Sand	Solid and Liquid FAA Spec Runway Deicer, Solid is Sodium Formate, Liquid is Potassium Acetate; FAA Approved Sand
HOW MUCH OF THE PRODUCTS DID YOU USE	Sodium Formate 76,000lbs., Potassium Acetate 64,075 gallons; FAA Approved Sand, 0.	Sodium Formate - 154,950 LB, Potassium Acetate -550 GAL, FAA Approved Sand none.
WHERE ARE THESE PRODUCTS STORED WHEN NOT IN USE ?	Solid and Liquid are stored at 4661 W. Amity Rd., Solid is stored inside heated building, Liquid is stored in tanks at our storage tank farm	Solid and Liquid are stored at 4661 W. Amity Rd., Solid is stored inside heated building, Liquid is stored in tanks at our storage tank farm

TRAINING		
	AFM	FMG
IDENTIFY ANY SPECIALIZED TRAINING ON STORMWATER, POLLUTION PREVENTION, ETC.	I-Learn, the City's online training portal	I-Learn, the City's online training portal

ANNUAL EXPENSES		
	AFM	FMG
COST OF STORMWATER COMPLIANCE ACTIVITIES	Estimated \$35,000	0
STAFF HOURS FOR STORMWATER COMPLIANCE ACTIVITIES	AFM - Two AFM specialists FTE equivalent 775hrs	40

Annual Stormwater Structure Inventory

For Permit Type(s):
MSGP-FMG

Name	Catch Basin	Channel	Curb Cut	Drywell	EVAP Deten Pond	Infiltration Swale Basin	Manhole	Oil Water Separator	Other	Outfall	Pipe Inlet Outlet	Pipes	Total
Airport FMG	61	2	4	3	2	3	24	2	54		15	168	338
None										1			1
Total	61	2	4	3	2	3	24	2	54	1	15	168	339

Annual Stormwater Structure Inventory

For Permit Type(s):
MS4-PW-EV

Name	Catch Basin	Curb Cut	Drywell	Infiltration Swale Basin	Manhole	Oil Water Separator	Other	Pipe Inlet Outlet	Pipes	Total
<Null>	1									1
Airport Business	43	14	2	10	1	8	4	1	27	110
None				1						1
Total	44	14	2	11	1	8	4	1	27	112

CITY OF BOISE MS4 PERMIT
DEPARTMENT ANNUAL REPORTING INFORMATION

FISCAL YEAR	2024
DEPARTMENT	Parks and Recreation
STAFF CONTACT	Jeff Gearhart
FACILITY INVENTORY	The City of Boise Department of Parks and Recreation is responsible for the operation and maintenance of the properties and/or buildings identified in the attached inventory.

TRASH/RECYCLING/HAZARDOUS MATERIALS/LITTER CONTROL

TRASH COLLECTION AND RECYCLING PROCEDURES	Currently there are only recycling containers at a few specific sites, we will be expanding our recycling program over the next year or two. Cans are emptied 2 times weekly.
LITTER CONTROL PROCEDURES	Trash cans and recycle containers are equipped with lids which helps protect from material becoming scattered.
HAZARDOUS MATERIALS COLLECTION	Materials are collected and then delivered to the Haz mat collection site.
AMOUNT OF MATERIALS COLLECTED	N/A- Contracted

STREET AND PARKING LOT SWEEPING

RESPONSIBLE PARTY FOR SWEEPING	Contracted by Parks and Rec
STREET AND PARKING LOT SWEEPING LOCATIONS	See Boise Park Sweeping list and IIW/Federal Way Lists
LOCATIONS WHERE SWEEPING IS INFEASIBLE	None
FREQUENCY OF SWEEPING	Twice a year at Park sites, once a month on Federal Way pathway
AMOUNT OF SWEEPING (SQ. FOOTAGE OR CURB MILES)	6,830,453 sq. ft.
AMOUNT OF MATERIALS COLLECTED	35,225 pounds

LANDSCAPING ACTIVITIES

DESCRIBE USE OF FERTILIZERS	Primarily use 30-0-15 3 month slow release fertilizer, clay encapsulate
DESCRIBE ANY PRACTICES IMPLEMENTED TO REDUCE FERTILIZER USE	BPR utilizes specialized equipment to mulch leaves and grass clippings on site. This practice keeps organic material in place and minimizes the need for chemical augmentation of nutrients
DESCRIBE USE OF HERBICIDES AND PESTICIDES	https://www.cityofboise.org/departments/parks-and-recreation/pesticide-reduction-program/
DESCRIBE ANY PRACTICES IMPLEMENTED TO REDUCE PESTICIDE OR HERBICIDE USE	https://www.cityofboise.org/departments/parks-and-recreation/pesticide-reduction-program/
LIST STAFF WITH CERTIFICATIONS FOR PESTICIDE/HERBICIDE APPLICATION OR OTHER LANDSCAPING CERTIFICATIONS	43 Parks employees have application licenses.

SNOW/ICE REMOVAL

DESCRIBE USE OF SNOW/ICE MELTING MATERIALS AT YOUR FACILITIES INCLUDE	
TYPE OF PRODUCTS USED	Magnesium Chloride applied via hand spreader or sprayer
HOW MUCH OF THE PRODUCTS DID YOU USE	608 gallons Liquid Ice melt, 161.4 pounds granular ice melt
WHERE ARE THESE PRODUCTS STORED WHEN NOT IN USE ?	Chemicals are stored primarily in one of two climate controlled sheds located at facility yards in Julia Davis and Ann Morrison Parks. These sheds are equipped with fire sprinkler systems. Throughout the year small amounts of chemicals are also stored in a number of satellite locations located at Fort Boise Park, the Jim Hall Foothills Learning Center, Boise Community Forestry, Morris Hill Cemetery, Simplot Sports Complex, Quail Hollow Golf Course, and Warm Springs Golf Course

TRAINING

IDENTIFY ANY SPECIALIZED TRAINING ON STORMWATER, POLLUTION PREVENTION, ETC.	42 Licensed Pesticide Applicators, other stormwater compliance training tracked via iLearn, Design Team participates in monthly Stormwater Committee Meeting
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ANNUAL EXPENSES

COST OF STORMWATER COMPLIANCE ACTIVITIES	\$230,057
STAFF HOURS FOR STORMWATER COMPLIANCE ACTIVITIES	332

Annual Stormwater Structure Inventory

For Permit Type(s):
MS4-PK

Name	Catch Basin	Channel	Curb Cut	EVAP Deten Pond	Infiltration Swale Basin	Manhole	Oil Water Separator	Other	Outfall	Pipe Inlet Outlet	Pipes	Porous Pavement	Seepage Bed	Total
										8	3			11
Ann Morrison Memorial Park	68		5						1	1				75
Baggley Park	1													1
Barber Observation Point					1									1
Boise Hills Park					1									1
Borah Park	3													3
C.W. Moore Park	1													1
Camel's Back Park	2													2
Cassia Park	4													4
Castle Hills Park	1													1
Catalpa Park	1						1							2
Charles F. McDevitt Youth Sports Complex	6				1		2							9
Comba Park	2				1			2			4		1	10
Community Forestry Office	2													2
Cottonwood Park	1						1							2
Cypress Park	2				3		1							6
DeMeyer Park			1											1
Discovery Center	3										1	1	1	6
Florence Park			1		1									2
Fort Boise Park	13		1		2		1					1		18
Helen B. Lowder Park							1							1
Hillside Park	2													2
Hobble Creek Park							1				1		1	3
Hulls Gulch Reserve					4					3	2			9
Hyatt Hidden Lakes Reserve	2					1						6		9
I-184 Connector ROW	1				1			1						3

Name	Catch Basin	Channel	Curb Cut	EVAP Deten Pond	Infiltration Swale Basin	Manhole	Oil Water Separator	Other	Outfall	Pipe Inlet Outlet	Pipes	Porous Pavement	Seepage Bed	Total
Rhodes Park	2					1		8					5	16
Riverside Park					1									1
Shoreline/13th Parking Lot	1													1
Shoshone Park	2													2
Simplot Sports Complex	1	5		1	5						5			17
Spaulding Ranch					3									3
Stewart Gulch Park			1		1									2
Sunset Park	1										2			3
Terry Day Park					1									1
Veterans Memorial Park	8				1									9
Warm Springs Golf Course	1						1							2
Warm Springs Park	4				1								1	6
Williams Park	2													2
Willow Lane Athletic Complex	8						1						1	10
Winstead Park	5						1							6
Zoo Boise	4				8		1	1						14
Total	236	5	57	2	68	5	21	12	9	4	43	20	14	496

Parks Trained Applicators

Anderson, Lisa --License# 62825
Andrus, Ben --License# 51446
Beck, Dave --License# 42566
Brabec, Martha --License# 57690
Branning, Casey --License# 62155
Camacho, Abel --License# 51005
Cooper, Scott --License# 49126
Falconer, Dan --License# 49164
Felch, Conner --License# 56798
Flores, Santiago --License# 74873
Gallas, Joshua --License# 96303
Gallas, Paul --License# 43281
Garner, Bill --License# 46767
Giles, Daniel --License# 58299
Guschausky, Andrew --License# 74810
Harder, Matt--License# 96140
Holley, Seth --License# 62890
Jolley, Jeff --License# 62361
Kracaw, Katie --License# 45873
Lambrecht, Fred --License# 51379
Lang, Joseph --License# 54870
Lindsay, Olive --License#
McClenehan, Trevor --License# 54487
Non-licensed Applicator
Olson, Colleen --License# 56769
Olvera, Roy (Rogelio) --License# 52825
Oversby, Nick --License# 54501
Porter, Donny --License# 55648
Ramos, Manuel --License# 49046
Rebholz, Payton --License# 74840
Reeves, Ken --License# 47517
Retamal, Robert --License# 54616
Rodgers, Ryan --License# 56715
Roop, Daniel --License# 55307
Rossiter, Seth --License# 96302
Sells, Terry --License# 51842
Smith, Kevin --License# 51896
Stevens, Clint --License# 55391
Stroup, William --License# 55494
Todd, Gary --License# 97311
Venable, Paul --License# 52154
Wurtz, Andrea --License# 49388
Zeis, Dustin --License# 62199

**Boise City Stormwater
Operation and Maintenance Annual Activity Report
FY2024**

Fiscal Year: 2024

Department/Division: Parks and Recreation

Staff Contact: Jeff Gearhart, GIS and Asset Management Specialist

Location of Supporting Documentation: 1104 Royal Blvd., Boise ID 83706

Storm Water Operation & Maintenance Plan Updated? Yes

Storm Water Drainage Inventory Updated? Yes

Drainage Structures

Total Stormwater Structures Inventoried: 496

Total Drainage Structures Inspected (with other than just a visual inspection): 248

Date(s) of Inspections: April 2024- October 2024

Total Drainage Structures Maintained: 403

Date(s) of Cleaning and Maintenance: April 2024- October 2024

Staff Hours Spent Inspecting & Maintaining Drainage Structures: 266

Property Cleaning and Litter Control

Recycling Collection: Currently there are only recycling containers at a few specific sites, we will be expanding our recycling program over the next year or two. Cans are emptied 2 times weekly.

Sweeping and Litter Collection Effort/Frequency: Sweeping of roads and parking lots occur at least once a year through a contract vendor, litter collection varies site to site depending on usage and type of litter container. Scattered litter is collected weekly at a minimum and 3 times a day for high usage areas.

Staff Hours Spent Sweeping, Recycling and Collecting Litter: 5,671 hours were spent collecting litter and recycling. Sweeping of roads and parking lots is contracted out and hours not tracked.

Surface Area Cleaned: 6,830,453 area/curb miles

Hazardous Wastes and Materials Control - Provided off site by Fleet Services

Hazardous Material Sources: n/a

Hazardous Material & Waste Storage: n/a

Hazardous Materials or Waste Training (dates, attendance): n/a

Hazardous Waste Collection & Disposal: n/a

Landscape Management

Compost Collection: BPR utilizes specialized equipment to mulch leaves and grass clippings on site. This practice keeps organic material in place and minimizes the need for chemical augmentation of nutrients

Fertilizer & Pesticide Storage: Chemical pesticides are kept in a secure and safe location, locked, climate controlled, well ventilated storage unit or area. They are properly labeled and have a secondary containment, spill kit, fire suppression equipment and emergency response information.

Fertilizer & Pesticide Handling: All staff handling or applying pesticides are required to obtain and maintain a Professional Applicators License.

Fertilizer & Pesticide Trainings (#staff certified, etc.):

- 42 Trained Pesticide Applicators – See Trained Applicator List
- All other Stormwater Compliance trainings tracked on iLearn

Snow and Ice Removal Methods and De-Icing

Material/Method used: Magnesium Chloride (Liquid) – Hand Spreader/Sprayer

Amount of Material Applied: 608 Gallons

Application Surface Area: 29,929 linear feet / 47,800 square feet

Material/Method used: Magnesium Chloride (Granular) – Hand Spreader/Sprayer

Amount of Material Applied: 161.4 Pounds

Application Surface Area: 4,350 square feet

Receiving Water Distribution (i.e., % to surface, % to ground water):

Surface water to receive less than 10%

Annual Expenditures for Storm Water Compliance: \$220,442.05 – See Cost Estimating Spreadsheet

Projected Changes to Storm Water Management Program or Expenditures

- Build out the inventory piece of VueWorks to include items used for stormwater structures.
- Continue to identify structures that need repairs for better functionality.
- Add new sites to our inventory as they are completed.

Other Accomplishments

Continued partnership with Public Works to vacuum/pump out the needed structures, saving the costs of a rental unit, and significantly reducing the overall cost of the program.

Stormwater Structure Operation & Maintenance Plan

FY23

City of Boise – Department of Parks and
Recreation

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Stormwater Types and Definitions

Stormwater Curb Cut

Curb opening which allows stormwater to flow into another stormwater device; this differs from wide open curbs areas which do not concentrate stormwater flows

Stormwater Oil Water Separator

An underground structure designed to collect and settle sediment and uses a baffle system to trap oil and grease

Stormwater Catch Basin

Structure, usually concrete with a metal grate, intended to collect stormwater typically into a pipe

Stormwater Drywell

Catch basin or manhole with no outlet pipes, no bottom, usually rock-filled, aka: French Drain

Stormwater Seepage Bed

Underground gallery which facilitates infiltration and storage of stormwater (only under pavement, not part of any swale or pond)

Stormwater Pipe Inlet-Outlet

Inlet or outlet of pipe

Stormwater Other

Other stormwater non-GIS infrastructure

Stormwater GSI

Other green stormwater infrastructure

Stormwater Porous Pavement

Pavement system which allows infiltration of stormwater

Stormwater Manhole

Underground structure which connects stormwater pipes

Stormwater Interconnection

The location or point where a stormwater facility operated by one MS4 permittee directly connects to a stormwater facility operated by a different MS4 permittee or other stormwater facility operator. Typically, this occurs when a storm drain or pipe on one permittee's property (i.e. City of Boise) connects to another storm drain or

pipe located on another permittee's property or right-of-way (i.e. ACHD).

Stormwater Outfall/Discharge Point

End pipe discharging stormwater to another system (ie: ACHD system) or to a water body

Stormwater Illicit Discharge

Any discharge to a municipal separate storm sewer that is not entirely composed of stormwater, except discharges authorized under a National Pollutant Discharge Elimination System (NPDES) permit and discharges resulting from firefighting activities

Stormwater Pipes

Pipe or culvert which conveys stormwater

Stormwater Channel

Open channel or ditch which conveys stormwater, differs from an infiltration swale in that the primary intent is to convey stormwater, not for infiltration

Stormwater Infiltration Swale/Basin

Basin or swale open to the atmosphere intended to store and infiltrate stormwater; normally dry between precipitation events (long and narrow – swale, round or rectangular – basin)

Stormwater Wet Pond

A pond normally holding water which receives stormwater; intent is to temporarily detain stormwater to remove sediment and/or decrease peak flows (always has water in it)

Stormwater Evaporation/Detention Pond

Pond intended to facilitate detention or evaporation of stormwater; may hold water for long periods; evaporation ponds may have an overflow pipe which is only used in high precipitation situations (very rare, would need to have information that it is evaporation – would not be able to tell from surface); detention ponds temporarily hold stormwater to decrease peak flows

Stormwater Stormshed

All the land area that is drained by a network of municipal separate storm sewer system conveyances to a single point of discharge into a water of the United States.

Stormwater Structure Inventory

Boise Parks & Facilities

Name	Catch Basin	Channel	Curb Cut	EVAP Deten Pond	Infiltration Swale Basin	Manhole	Oil Water Separator	Other	Outfall	Pipe Inlet Outlet	Pipes	Porous Pavement	Seepage Bed	Total
Ann Morrison Memorial Park	68		5						1		1			75
Baggley Park	1													1
Barber Observation Point					1									1
Boise Hills Park					1									1
Borah Park	2													2
C.W. Moore Park	1													1
Camel's Back Park	2													2
Cassia Park	4													4
Castle Hills Park	1													1
Catalpa Park	1						1							2
Charles F. McDevitt Youth Sports Complex	6				1		2							9
Comba Park					1									1
Community Forestry Office	2													2
Cottonwood Park	1						1							2
Cypress Park	2				3		1							6
DeMeyer Park			1											1
Discovery Center	3										1	1	1	6
Florence Park			1		1									2
Fort Boise Park	13		1		2		1					1		18
Helen B. Lowder Park							1							1
Hillside Park	2													2
Hobble Creek Park							1				1			2
Hulls Gulch Reserve					4					3	2			9
Hyatt Hidden Lakes Reserve	2					1						6		9
I-184 Connector ROW	1				1			1						3
Idaho Anne Frank Human Rights Memorial	4					1					4	5		14

Name	Catch Basin	Channel	Curb Cut	EVAP Deten Pond	Infiltration Swale Basin	Manhole	Oil Water Separator	Other	Outfall	Pipe Inlet Outlet	Pipes	Porous Pavement	Seepage Bed	Total
Idaho IceWorld	3				3	2	2							10
Ivywild Park	4		19		2		2				6			33
Julia Davis Park	46		9		9		2		8	1	5	1	3	84
Jullion Park	3			1			1							5
Kathryn Albertson Park			2											2
Kristins Park					1									1
Magnolia Park					3									3
Manitou Park	2				1									3
Marianne Williams Park					2									2
Military Reserve					3									3
Milwaukee Park					1									1
Molenaar Diamond Park Site												1		1
Morris Hill Park							1							1
Mountain View Park	3				1									4
Municipal Park	4				1									5
Natatorium Pool and Hydrotube	3													3
Optimist Youth Sports Complex	4		8		3						4		1	20
Oregon Trail Reserve			9											9
Parkcenter Park	1													1
Phillippi Park			1		1		1							3
Pine Grove Park												2		2
Platt Gardens	1													1
Quail Hollow Golf Course	2													2
Quarry View Park	2													2
Redwood Park					1									1
Rhodes Park	2													2

Name	Catch Basin	Channel	Curb Cut	EVAP Deten Pond	Infiltration Swale Basin	Manhole	Oil Water Separator	Other	Outfall	Pipe Inlet Outlet	Pipes	Porous Pavement	Seepage Bed	Total
Riverside Park					1									1
Shoreline/13th Parking Lot	1													1
Shoshone Park	2													2
Simplot Sports Complex	1	5		1	5						5			17
Stewart Gulch Park			1		1									2
Sunset Park	1										2			3
Terry Day Park					1									1
Veterans Memorial Park	8				1									9
Warm Springs Golf Course	1						1							2
Warm Springs Park	4				1								1	6
Williams Park	2													2
Willow Lane Athletic Complex	8						1						1	10
Winstead Park	5						1							6
Zoo Boise	4				8		1	1						14
Total	233	5	57	2	65	4	21	2	9	4	31	17	7	457

Reserves/Open Space:

1. Antelope Bitterbrush Reserve- N Seaman Gulch Ln
2. Boise River Greenbelt
3. Bonneville Monument Park – E Blacks Creek Rd.
4. Camel's Back Reserve - 1200 W. Heron St.
5. Chief Eagle Eye Reserve - 451 N. Quarry View Pl.
6. Foothills East Reserve - 1220 E. Shenandoah Dr.
7. Hawkins Reserve- 11199 N Bogus Basin Rd.
8. Horizon Hills Reserve – 7493 N Pierce Park Ln
9. Hyatt Hidden Lakes – 5301 N Maple Grove
10. Hulls Gulch Reserve - 2486 N. Sunset Peak Rd.
11. Johnston Parcel – East of E Rocky Bluff Ln. off E Shaw Mountain Rd.
12. Mesa Reserve – 3501 E Table Rock Rd.
13. Military Reserve – 750 Mountain Cove Rd.
14. Noble Reserve – E Shaw Mountain Rd.

15. Peace Valley Overlook Reserve – 6148 E Grand Prairie Dr.
16. Pierce Gulch Farms- 9298 N Pierce Park Ln
17. Polecat Gulch Reserve – N Cartwright Rd.
18. Stack Rock Reserve – Northwest side of N Bogus Basin Rd./south of ski resort

Undeveloped Properties:

1. Bowler Property – 4401 S. Surprise Way
2. Coughlin Property – S Cole Rd.
3. Fox Ridge Property – 7750 S. Five Mile Rd.
4. Primrose Park – 6020 N Gary Ln.
5. Pearl Jensen Property – 9920 Lake Hazel Rd.
6. Spaulding Ranch – 3805 N Cole Rd.
7. Wrigley Property – 11300 W. Arabian Wy.
8. Goddard Park Pathway – 8350 W Goddard Rd.
9. Pierce Park Site – 7018 N Pierce Park Ln
10. Murgoitio Site - 3801 S Cole Rd

Developed properties with no specific stormwater structures:

1. Aldape Park – 629 N. San Jose Wy.
2. Art Center – included within Fort Boise Park
3. Boise Parks & Recreation Administration Office - 1104 Royal Blvd. - Included within Ann Morrison Park
4. Dick Eardley Senior Center – 690 Robbins Rd. - Included within Fort Boise Park
5. Borah Pool – 801 S. Aurora Dr. – Included within Borah Park
6. Bowden Park - 3249 S. Edson St.
7. Cecil B Andrus Park – 601 W. Jefferson St.
8. City Recreation Office – 110 Scout Lane – Included within Fort Boise Park
9. Dewey Park – N 15th St.
10. Elm Grove Park – 2200 W Irene St.
11. Fairmont Pool – 7925 W. Northview St.
12. Fairview Park – 2300 W. Idaho St.
13. Foothills East Park – 1465 E. Shenandoah Dr.
14. Fort Boise Community Center – 700 N. Robbins Rd. – Included within Fort Boise Park
15. Franklin Park – 310 S Hilton St.
16. Gordon S. Bowen Park – 1013 W. O'Farrell St.
17. Hewett Park – 11300 W. McMillian Rd.
18. Ivywild Pool – 2250 S. Leadville Ave. Included within Ivywild Park
19. Kristins Park – S 13th St.
20. Kroeger Park – 2929 S. Leadville Ave.
21. Laura Moore Cunningham Arboretum – 1149 E. Lewis St.
22. Liberty Park – 520 N. Liberty St.
23. Log Cabin Literary Center – S Capital Blvd.
24. Lowell Pool – 1601 N. 28th St.
25. Mariposa Park – 9851 W Irving St.
26. McAuley Park – 1601 W. Resseguie St.
27. Memorial Park – 900 N. 6th St.
28. Morris Hill Cemetery – 317 N. Latah St.
29. Nottingham Park – 5243 N Decatur Dr.
30. O'Farrell Cabin – 450 W Fort St.
31. Owens Park – 3496 N. 39th St.
32. Owyhee Park – 3400 W Elder St.
33. Peppermint Park - 11855 W. Peppermint Dr.
34. Pioneer Cemetery – 460 E. Warm Springs Ave.
35. Pioneer Tot Lot – 604 S. Pioneer St.
36. Pioneer Walk – Included within Greenbelt Pathway
37. Robert Noble Park – 200 E. Main St.
38. Skyline Park – 9936 W. Skycliffe Ave.
39. Sycamore Park – 12275 W Braddock Dr.
40. South Pool – 921 S. Shoshone St.
41. West Moreland Park – N Cabarton Ln.
42. Willow Lane Park – 4623 N Willow Ln.

Other Properties: Maintenance Responsibility as Identified

1. Boise City Aquatics Center - 5959 N. Discovery Pl. - West YMCA
2. Grace Jordan Community Center – 6411 W Fairfield Ave. – Boise School District
3. Morley Nelson Community Center – 7701 W Northview St. – Boise School District
4. Whitney Community Center – 1609 S Owyhee St – Boise School District
5. Garfield Kid City – 1914 S Broadway Ave – Boise School District
6. Hawthorne Kid City – 2401 W Targee St – Boise School District
7. Jefferson Kid City – 200 S Latah St – Boise School District
8. McMillan Kid City – 10901 W McMillan Rd – Boise School District
9. South Junior High Teen City – 3101 Cassia St – Boise School District
10. Taft Kid City – 3722 N Anderson St – Boise School District
11. Whittier Kid City – 255 N 29th St – Boise School District

Zoo Boise

Prior to 2019, zoo personnel had been inspecting and maintaining the storm water structures and systems within the zoo grounds with occasional assistance from BPR staff. In 2018, an inventory was created, and a visual inspection was made of all storm water structures in the zoo by BPR staff. Zoo personnel reported that there had not been any issues with these structures in the past that they were not able to repair or replace. In 2019, These systems were added to the City's computerized maintenance management system, VueWorks. BPR staff have included these systems in their inspection and maintenance process following City standards and procedures.

Safety Information

Inspections

The inspector should have the proper safety equipment (heavy duty gloves, boots, first aid kits, PPE, confined space monitoring equipment, etc.) and training before conducting any inspections. If the stormwater system inspection reveals a safety problem, then site activities may have to be modified or reduced to eliminate or control safety risks. The following is a list of safety precautions an inspector should be aware of when conducting stormwater system inspections.

- Never enter a confined space unless you have completed the City's instructor-led Confined Space Entry training. All employees who enter a confined space to perform work shall be trained in the required duties and procedures for safe entry and operations. They shall also be trained on the hazards of the confined space(s) they must enter. Do not enter any confined space until the atmosphere has been tested and proper safety equipment is worn and/or erected (i.e. non-entry retrieval equipment, mechanical ventilation).

- Avoid entering pipes or conduits without another individual present as some conduit and/or pipe could be classified as a hazardous confined space. If the structural strength of a pipe or conduits is questionable, then the pipe or conduit should not be entered.
- Using a properly calibrated 4-Gas Meter, test the atmosphere in or near a stormwater system for an explosive atmosphere before using any type of flammable materials (i.e. lighters, matches, cigarettes) and prior to using any tools and/or equipment that may serve as an ignition source. Some stormwater systems may be sealed and have poor ventilation posing a safety risk to the inspector if the vapor encounters an open flame or other form of ignition. Natural ventilation alone may not be sufficient to maintain safe oxygen levels. Appropriate atmospheric testing and procedures must be performed before entering any confined space. The City's Confined Space Permit must be completed and followed if a confined space is determined to be hazardous and the identified hazards cannot be eliminated or controlled.
- Gloves must be worn if any mechanical parts or structural components will be handled. Wearing gloves not only reduces the risk of getting cuts and abrasions but also reduces the exposure of pollutants to the skin. Safety glasses must be worn if there is a potential for splashing of liquid or flying debris. Hard hats must be worn if there is a potential for contact with a low overhead obstruction. High visibility reflective vests must be worn when working in or around vehicle traffic or heavy equipment.
- Care and caution must be used when lifting or moving manhole covers or other structural covers (access covers, etc.). These items can be very heavy and can be slippery when wet. Correct lifting techniques or utilizing material handling equipment should be used to avoid back injury. Manhole covers removed in high traffic areas of pedestrians should be barricaded or have a spotter stationed at the manhole opening in order to prevent employees and/or the public from nearing the open hole.
- When water is present in a structure or system, the depth should be determined before entering. The water may be deeper than it appears or there may be steep slopes below the water line. Confined areas with water may also contain an oxygen-deficient atmosphere. Proper atmospheric testing and confined space entry procedures shall be created, documented, and followed utilizing the City's Confined Space Evaluation Form.
- Sites should be checked for poison ivy, poison oak, or other poisonous plants when inspecting ponds or large stormwater systems. Any such findings should be reported to the individual who will perform the maintenance on the system that these plants are present.
- Care and awareness regarding surroundings of inspection and maintenance sites should always be taken to avoid taking a misstep and being injured. Rodent holes may be present around pools or constructed wetlands. Some holes may be partially covered and not easily seen at first glance.

Maintenance

All maintenance work will be performed in accordance with City Safety regulations and other applicable State and Federal safety regulations. Maintenance personnel will have the proper safety equipment (i.e. heavy-duty gloves, first aid kits) and training before performing any maintenance on a stormwater system. The following is a list of safety precautions maintenance personnel should be aware of when they perform maintenance on stormwater systems.

- Equipment should be operated safely and in accordance with manufacturers specifications. Equipment operators should always be aware of site personnel to avoid causing injury to others.
- An excavation Responsible Person shall be on site for all trenching and excavating that will be four (4) feet or greater in depth. Employees shall not enter any excavation or trench five (5) feet deep or greater until it is appropriately protected from cave-in. Idaho Dig Line (a one-call system that assists in finding the location of buried utilities) and utility companies should be contacted before excavating a site. Underground facilities may be present. Excavated areas that cannot be filled in at the end of the day should be covered or clearly marked to alert and prevent accidental and unauthorized entry by employees and/or the public.
- Areas where removed sediment or wastes will be disposed should be identified prior to cleaning the stormwater system. Use shovels, trowels or high-suction vacuum to remove wastes.
- Sediment or waste should not be cleaned out with bare hands. The sediment or waste may be hazardous. Place the sediment or waste in an area where it cannot be washed into the storm drain or water body.
- Gloves should be worn if any mechanical parts or structural components are going to be handled. Wearing gloves not only reduces the risk of getting cuts and abrasions but also reduces the exposure of contaminants to the skin.
- Caution should be taken when mowing any areas which by design have steep slopes.

This is not an all-inclusive list. Employees performing assigned task(s) will comply with the City of Boise Safety Regulations, Idaho State Code, or Title 29 Code of Federal Regulations 1910 and 1926.

Best Management Practices

The following Best Management Practices (BMPs) will keep pollutants out of the stormwater runoff at all park sites and facilities. These BMPs are also known as source controls and were selected from the Boise Stormwater BMP Guidebook. Ensuring these source controls are followed is the responsibility of Boise Parks & Recreation (BPR). These BMPs include the following:

- A vacuum street sweeper will sweep the parking lot areas and street areas two times a year, June and September, with Idaho IceWorld and Federal Way being serviced once a month. We contract out this service and vendor may vary.
- Storm drains will be marked "DO NOT DUMP WASTE – DRAINS TO RIVER" with plastic markers provided by Public Works.
- Based on staffs visual inspections; leaves and other debris will be kept out of the hard surface areas to avoid clogging storm drains.
- If a wetter than usual season occurs, an additional inspection will be performed.
- Wetland areas and retention ponds will be inspected when a dry time occurs (i.e., when no water is present).
- A spill response plan is developed in case of an accidental spill should occur. Spill prevention materials are located near each park site or facility.
- Turf chemicals, such as fertilizers and pesticides, will be used in accordance with our policy and procedures written by BPRs Integrated Pest Management Team (IPM), and will be used only when less toxic ways to control insects or weeds are not effective.

Scope of Work

BPR is responsible for the operation and maintenance of all stormwater systems on properties managed by BPR. Full time staff of BPR will supervise inspections, maintenance, documentation, and landscaping, or private companies contracted through BPR as budgeted.

BPR is also responsible for the analysis and proper disposal of sediments from all maintenance operations. BPR will keep records of all operation and maintenance activities on file. BPR will update the O&M Plan as necessary.

Inspection Frequency

Parks & Facilities with Stormwater Structures

A complete and thorough inspection of all owned and operated BPR stormwater systems using the City's computerized maintenance management system, VueWorks, (inspection/maintenance form available upon request) will be performed in spring of each year plus after a significant rainfall or snow melt event. This inspection frequency has been determined to be sufficient upon review of past inspection results which shows none to very limited accumulation of sediment or oil in fall inspections.

Parks & Facilities without Stormwater Structures

All other park properties such as Reserves, Open Space, undeveloped and other developed properties containing no specific stormwater structures will be inspected and maintained as follows:

- Restrict illegal dumping
- Conduct annual visual inspection for erosion, and excessive trash or debris
- Manually comply with fire codes, non-chemical approach

Property Cleaning and Litter Control

Material/Method Used

BPR litter pick-up service description is that of collecting scattered debris, emptying of trash receptacle and lining with recyclable plastic can liners and directing the placement of trash bins provided by Boise City contractor. Our goal is to maintain a clean, safe and visually acceptable park for our users.

Surface Area Cleaned

Basic park maintenance covers a number of items related to stormwater systems. Cleaning of hard surfaces and turf areas is completed approximately once a week during the growing season. This program keeps the parks suitable for public use. These services also reduce the amount of organic and inorganic materials that enter the stormwater systems. Additionally during the weekly surface maintenance, staff also makes sure the stormwater systems are functioning properly. Trash pickup is coordinated at each park site and varies from twice a day in some heavily used facilities to once or twice a week at sites with less intense use. This park maintenance schedule is tracked using the department's time and labor tracking system and the annual work plan. Both supporting documents are available upon request.

In addition to general hard surface cleaning, an annual bid for parking lot and roadway sweeping is completed. Documents available upon request.

Hazardous Waste Collection

An annual contract is completed by the Equipment Services Unit for collection of all used oil, stored on site in an OSHA approved container until proper disposal occurs. The remainder of the department's Hazardous Waste is collected on a routine basis and delivered to the Hazardous Waste Facility located at the Hidden Hollow Landfill. Additional documentation is available upon request.

Compost Collection

BPR has partnered with the Idaho Botanical Gardens and approximately 45% of leaves collected are delivered for use in their program. Approximately 50% of the fall leaves are mulched where they fall within our parks. The remaining 5% are delivered to our Laura Moore Cunningham Nursery for in-house compost use.

Recycling Collection

BPR recycles paper products, aluminum cans and scrap metal. Recycling containers for aluminum cans are located adjacent to the Boise River in Ann Morrison Park.

Integrated Pest Management Program

The BPR IPM program is directed by our “Chemical Pesticide Management Guidelines” adopted by the department in 1995 and revised in 2016. These guidelines dictate how applications are made, the tracking of applications, and personal safety. The guidelines direct our program to focus on cultural practices rather than chemical with a goal of reducing our use of chemicals while seeking the most environmentally and employee friendly chemicals. These guidelines apply to all BPR owned lands. Staff handling or applying pesticides (with the minimal exception of “Glyphosate”) are required to obtain and maintain a “Professional Applicators” license through the Idaho State Department of Agriculture. Staff certified listing available upon request.

The Horticulture Unit is the responsible Department/Division for Landscape Management. Currently 42 FTE’s are certified for Chemical Application (i.e., IPM).

BPR utilizes non Phosphorus for the majority of its applications with the exception of newly seeded areas. Less than 5% of fertilizer applications contain Phosphorus.

Snow/Ice Removal Methods & Materials

Material/Method Used

Liquid magnesium chloride applied with spray truck and granular ice melt spread with a walk behind broadcast spreader (used for fertilizing) or a hand shaker in small areas. Granular product is stored in covered, plastic buckets inside facilities. Liquid product is stored in poly liquid storage tanks. Applications are made to driveway entrances, Greenbelt tunnel approaches, bridge decks and walkways.

Snow Removal Program

BPR provides removal of snow from sidewalks, pathways, and parking lots per city code when accumulations reach one inch (1") or greater. Due to the icy conditions

associated with the Boise Valley, applications of magnesium chloride are made to reduce icy conditions at driveway entrances, Greenbelt tunnel approaches, and bridge decks. In addition, Ice Melt is generally purchased in 50 lbs. boxes, bags or buckets all are packaged in waterproof containers. Ice met is stored bulk in the Infrastructure and Veteran's Park maintenance storage facilities and distributed to departments as needed in small amounts of 100 to 200 lb. quantities. Granular ice melt is spread with a walk behind broadcast spreader (used for fertilizing) or a hand shaker in small areas. Annual training meetings are conducted to ensure staff compliance with procedures for application.

Volunteer Services

[Adopt the River and Greenbelt Pathway Program](#)

The Adopt the Greenbelt Program engages community organizations in the on-going clean-up of the Boise River and Greenbelt Pathway. BPR has broken up the Greenbelt into 2/3 mile sections and ensures each is adopted by an organization. BPR maintains an up to date list of participants, and contacts participants on an annual basis to determine whether they wish to renew their adoption or pass it on to another interested organization. Plastic bags for picking up litter and disposing of the collected litter are the responsibility of the "adopting" organization.

[Other Trash Pick-up Efforts](#)

In Fiscal Year 2023, organizations from the Boise Community spent 1,043 hours keeping their adopted sections clean.

Storm Drain Marking

Storm drains within BPR facilities are identified by applying "Dump no Waste – Drains to River" vandal proof markers. This programs alerts park users about the stormwater systems in the parks and reinforces existing park rules that preclude any dumping or automobile maintenance in city parks. Volunteers are utilized where appropriate with the remainder of locations completed by staff.

Design Program

The BPR project design process adheres to the City's adopted Stormwater Management ordinance. All design projects involving grading or development of new paved parking surfaces are prepared and stamped by an appropriate licensed professional. BPR seeks to implement the Ordinance by adhering to guidelines and provisions outlined in the Stormwater Management Design Manual. BPR's project design standards and specifications for construction include but are not limited to: stormwater site management controls, conveyance, sand filters, infiltration, catch basins and bio-filtration facilities. The Department secures appropriate City Building permits (including grading and drainage) for park developments when required by City Code. When required, project managers work with contractors to implement either a Low Erosivity Waiver (LEW) or a Stormwater Pollution Prevention Plan (SWPPP) including Notice of Intent (NOI) and Notice of Termination (NOT) through the EPA general construction permit.

Erosion Control Program

All BPR Project Managers have attended the City's Erosion & Sedimentation control training and have received Responsible Person and Plan Preparer Certifications, key field staff are Responsible Person certified. All contractors for BPR capital projects that are subject to the Erosion and Sedimentation Control Ordinance are required to comply with the regulations and implement appropriate BMP's for the project site. List of certified staff available upon request.

Inspection/Maintenance Form

Inspection and Maintenance information is completed within the City's computerized maintenance management system, VueWorks, by staff through a work order process. A Stormwater Inspection/Maintenance Work Order is issued for each stormwater structure and completed in the field using mobile devices. See below for example:

Form View Table View Filter Reports Assets

ID 041422-399 Logged By Karla Baker 04/14/2022 01:01 AM

Type General

Status Closed Priority 1

Begin Date: 04/15/2022 8:00 AM End Date: 04/15/2022 9:00 AM

Due Date: Time:

Closed By Dan Falconer 08/17/2022 08:35 AM

Send Email to Notification List on Save

Form: PK General Condition

Details Costs Tasks Labor Equipment Inventory Assets Documents Work Orders Comments

	Order	Completed	Task	Notes	Date
1	1	☐	Remove sediment/trash/debris		
2	2	☐	Remove over grown vegetation		
3	3	☐	Clean grate		
4	4	☐	Needs pumped		
5	5	☐	Exercise or service grate or valve		
6	6	☐	Replace marker		
7	7	☐	Repair or reseed bank		
8	8	☐	Vacuum and replace chips (Porous Paver)		
9	9	☐	Repair fencing		
10	10	☐	Replace insert and or absorbent material		
11	* 11	☒	Visual inspection		08/02/2022 04:40 PM

Work Order Task Status

Fiscal Year - 2024

Permit Type(s): MS4-PK

Facility: Ann Morrison Memorial Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
AM02	041424-005	Clean grate		Completed	07/10/2024
		Needs pumped		Completed	07/10/2024
		Visual inspection		Completed	07/10/2024
AM03	041424-006	Remove sediment/trash/debri		Completed	07/10/2024
		Clean grate		Completed	07/10/2024
		Visual inspection		Completed	07/10/2024
AM04	041424-009	Clean grate		Completed	07/10/2024
		Visual inspection		Completed	07/10/2024
		Needs pumped		Completed	07/10/2024
AM05	041424-007	Clean grate		Completed	07/10/2024
		Remove over grown vegetation		Completed	07/10/2024
		Remove sediment/trash/debri		Completed	07/10/2024
		Visual inspection		Completed	07/10/2024
AM06	041424-008	Visual inspection		Completed	07/10/2024
		Clean grate		Completed	07/10/2024
		Remove over grown vegetation		Completed	07/10/2024
		Remove sediment/trash/debri		Completed	07/10/2024
AM07	041424-066	Clean grate		Completed	07/10/2024
		Visual inspection		Completed	07/10/2024
AM08	041424-010	Visual inspection		Completed	07/10/2024
		Clean grate		Completed	07/10/2024
		Remove sediment/trash/debri		Completed	07/10/2024
AM09	041424-011	Remove sediment/trash/debri		Completed	07/10/2024
		Visual inspection		Completed	07/10/2024
		Clean grate		Completed	07/10/2024
AM10	041424-012	Visual inspection		Completed	07/10/2024
		Clean grate		Completed	07/10/2024
		Needs pumped		Completed	07/10/2024
AM11	041424-013	Remove sediment/trash/debri		Completed	07/10/2024
		Clean grate		Completed	07/10/2024

AM11	041424-013	Visual inspection		Completed	07/10/2024
AM12	041424-014	Remove sediment/trash/debri		Completed	07/10/2024
		Clean grate		Completed	07/10/2024
		Visual inspection		Completed	07/10/2024
		Remove over grown vegetation		Completed	07/10/2024
AM13	041424-015	Remove sediment/trash/debri		Completed	07/10/2024
		Remove over grown vegetation		Completed	07/10/2024
		Clean grate		Completed	07/10/2024
		Visual inspection		Completed	07/10/2024
AM14	041424-016	Remove over grown vegetation		Completed	07/10/2024
		Remove sediment/trash/debri		Completed	07/10/2024
		Visual inspection		Completed	07/10/2024
		Clean grate		Completed	07/10/2024
AM15	041424-017	Replace insert and or absorbent material		Completed	07/10/2024
		Clean grate		Completed	07/10/2024
		Remove over grown vegetation		Completed	07/10/2024
		Remove sediment/trash/debri		Completed	07/10/2024
		Visual inspection		Completed	07/10/2024
AM16	041424-018	Visual inspection		Completed	07/10/2024
		Clean grate		Completed	07/10/2024
		Remove sediment/trash/debri		Completed	07/10/2024
AM17	041424-019	Clean grate		Completed	07/10/2024
		Remove sediment/trash/debri		Completed	07/10/2024
		Visual inspection		Completed	07/10/2024
AM18	041424-020	Remove sediment/trash/debri		Completed	07/10/2024
		Visual inspection		Completed	07/10/2024
		Replace insert and or absorbent material		Completed	07/10/2024
		Clean grate		Completed	07/10/2024
AM19	041424-021	Needs pumped		Completed	07/10/2024
		Clean grate		Completed	07/10/2024
		Visual inspection		Completed	07/10/2024
AM20	041424-022	Remove sediment/trash/debri		Completed	07/11/2024
		Clean grate		Completed	07/11/2024
		Visual inspection		Completed	07/11/2024
AM21	041424-023	Remove sediment/trash/debri		Completed	07/11/2024
		Clean grate		Completed	07/11/2024
		Visual inspection		Completed	07/11/2024
AM22	041424-024	Visual inspection		Completed	07/11/2024

AM22	041424-024	Clean grate		Completed	07/11/2024
		Remove sediment/trash/debri		Completed	07/11/2024
AM23	041424-025	Visual inspection		Completed	07/11/2024
		Clean grate		Completed	07/11/2024
		Remove sediment/trash/debri		Completed	07/11/2024
AM24	041424-026	Remove sediment/trash/debri		Completed	07/11/2024
		Clean grate		Completed	07/11/2024
		Visual inspection		Completed	07/11/2024
AM25	041424-027	Remove sediment/trash/debri		Completed	07/11/2024
		Clean grate		Completed	07/11/2024
		Visual inspection		Completed	07/11/2024
AM26	041424-028	Clean grate		Completed	07/11/2024
		Remove sediment/trash/debri		Completed	07/11/2024
		Remove over grown vegetation		Completed	07/11/2024
		Visual inspection		Completed	07/11/2024
AM27	041424-029	Visual inspection		Completed	07/11/2024
		Remove over grown vegetation		Completed	07/11/2024
		Remove sediment/trash/debri		Completed	07/11/2024
		Clean grate		Completed	07/11/2024
AM28	041424-030	Remove sediment/trash/debri		Completed	07/11/2024
		Remove over grown vegetation		Completed	07/11/2024
		Clean grate		Completed	07/11/2024
		Visual inspection		Completed	07/11/2024
AM29	041424-071	Visual inspection		Completed	08/01/2024
		Clean grate		Completed	08/01/2024
		Remove sediment/trash/debri		Completed	08/01/2024
AM30	041424-031	Remove sediment/trash/debri		Completed	07/24/2024
		Needs pumped		Completed	07/24/2024
		Replace insert and or absorbent material		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
		Clean grate		Completed	07/24/2024
AM31	041424-032	Clean grate		Completed	07/24/2024
		Remove sediment/trash/debri		Completed	07/24/2024
		Needs pumped		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
AM32	041424-034	Clean grate		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
AM33	041424-033	Remove sediment/trash/debri		Completed	07/11/2024

AM33	041424-033	Clean grate		Completed	07/11/2024
		Visual inspection		Completed	07/11/2024
AM34	041424-035	Remove sediment/trash/debri		Completed	07/11/2024
		Visual inspection		Completed	07/11/2024
		Clean grate		Completed	07/11/2024
AM35	041424-036	Remove sediment/trash/debri		Completed	07/11/2024
		Clean grate		Completed	07/11/2024
		Visual inspection		Completed	07/11/2024
AM36	041424-037	Remove sediment/trash/debri		Completed	07/11/2024
		Clean grate		Completed	07/11/2024
		Visual inspection		Completed	07/11/2024
AM37	041424-038	Remove sediment/trash/debri		Completed	08/01/2024
		Visual inspection		Completed	08/01/2024
		Clean grate		Completed	08/01/2024
AM38	041424-039	Visual inspection		Completed	08/01/2024
		Clean grate		Completed	08/01/2024
		Remove sediment/trash/debri		Completed	08/01/2024
AM39	041424-040	Clean grate		Completed	07/11/2024
		Remove sediment/trash/debri		Completed	07/11/2024
		Visual inspection		Completed	07/11/2024
AM40	041424-041	Visual inspection		Completed	07/24/2024
		Remove over grown vegetation		Completed	07/24/2024
		Remove sediment/trash/debri		Completed	07/24/2024
		Clean grate		Completed	07/24/2024
AM41	041424-042	Remove sediment/trash/debri		Completed	07/24/2024
		Clean grate		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
AM42	041424-043	Visual inspection		Completed	07/24/2024
		Clean grate		Completed	07/24/2024
		Remove sediment/trash/debri		Completed	07/24/2024
AM43	041424-044	Remove sediment/trash/debri		Completed	07/24/2024
		Clean grate		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
AM44	041424-045	Visual inspection		Completed	07/24/2024
		Clean grate		Completed	07/24/2024
		Remove sediment/trash/debri		Completed	07/24/2024
AM45	041424-046	Visual inspection		Completed	07/24/2024
		Remove sediment/trash/debri		Completed	07/24/2024

AM45	041424-046	Clean grate		Completed	07/24/2024
AM47	041424-047	Visual inspection		Completed	07/24/2024
		Remove sediment/trash/debri		Completed	07/24/2024
AM48	041424-048	Clean grate		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
		Remove sediment/trash/debri		Completed	07/24/2024
AM49	041424-049	Remove sediment/trash/debri		Completed	07/24/2024
		Clean grate		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
AM50	041424-050	Clean grate		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
		Remove sediment/trash/debri		Completed	07/24/2024
AM51	041424-051	Remove sediment/trash/debri		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
		Clean grate		Completed	07/24/2024
AM52	041424-052	Visual inspection		Completed	07/24/2024
		Clean grate		Completed	07/24/2024
		Remove sediment/trash/debri		Completed	07/24/2024
AM53	041424-053	Remove sediment/trash/debri		Completed	07/24/2024
		Clean grate		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
AM54	041424-054	Remove sediment/trash/debri		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
		Clean grate		Completed	07/24/2024
AM55	041424-058	Visual inspection		Completed	07/24/2024
		Clean grate		Completed	07/24/2024
		Remove sediment/trash/debri		Completed	07/24/2024
AM56	041424-055	Clean grate		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
		Remove sediment/trash/debri		Completed	07/24/2024
AM59	041424-056	Remove sediment/trash/debri		Completed	07/10/2024
		Clean grate		Completed	07/10/2024
		Visual inspection		Completed	07/10/2024
AM60	041424-057	Clean grate		Completed	07/10/2024
		Visual inspection		Completed	07/10/2024
		Remove sediment/trash/debri		Completed	07/10/2024
		Remove over grown vegetation		Completed	07/10/2024
AM62	041424-059	Remove sediment/trash/debri		Completed	07/24/2024

AM62	041424-059	Clean grate		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
AM63	041424-060	Remove sediment/trash/debri		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
		Clean grate		Completed	07/24/2024
AM64	041424-061	Remove sediment/trash/debri		Completed	07/24/2024
		Remove over grown vegetation		Completed	07/24/2024
		Clean grate		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
AM67	041424-067	Clean grate		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
		Remove sediment/trash/debri		Completed	07/24/2024
AM68	041424-062	Clean grate		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
AM69	041424-063	Clean grate		Completed	07/24/2024
		Remove sediment/trash/debri		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
AM70	041424-064	Remove over grown vegetation		Completed	07/24/2024
		Remove sediment/trash/debri		Completed	07/24/2024
		Clean grate		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
AM71	041424-065	Remove sediment/trash/debri		Completed	07/10/2024
		Visual inspection		Completed	07/10/2024
		Clean grate		Completed	07/10/2024
AM72	041424-068	Clean grate		Completed	07/11/2024
		Visual inspection		Completed	07/11/2024
		Remove sediment/trash/debri		Completed	07/11/2024
AM73	041424-069	Visual inspection		Completed	07/11/2024
		Clean grate		Completed	07/11/2024
AM74	041424-070	Visual inspection		Completed	08/01/2024
		Remove sediment/trash/debri		Completed	08/01/2024
AM75	041424-226	Visual inspection		Completed	07/10/2024
AM76	041424-227	Visual inspection		Completed	07/10/2024
AM77	041424-228	Visual inspection		Completed	07/10/2024
AM78	041424-229	Visual inspection		Completed	07/10/2024
AM79	041424-230	Visual inspection		Completed	07/10/2024

Facility: Baggley Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
BAG01	041424-171	Visual inspection		Completed	05/30/2024
		Clean grate		Completed	05/30/2024
		Needs pumped		Completed	05/30/2024

Work Order Count: 1

Facility: Barber Observation Point

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
BOP01	041424-317	Visual inspection		Completed	06/06/2024

Work Order Count: 1

Facility: Boise Hills Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
BH01	041424-308	Visual inspection		Completed	06/05/2024

Work Order Count: 1

Facility: Borah Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
BOR01	041424-072	Clean grate		Completed	06/06/2024
		Needs pumped		Completed	06/06/2024
		Visual inspection		Completed	06/06/2024
BOR02	041424-073	Clean grate		Completed	06/06/2024
		Visual inspection		Completed	06/06/2024
		Replace marker		Completed	06/06/2024

Work Order Count: 2

Facility: C.W. Moore Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
CWM01	041424-091	Visual inspection		Completed	08/01/2024
		Clean grate		Completed	08/01/2024
		Remove sediment/trash/debri		Completed	08/01/2024

Work Order Count: 1

Facility: Camel's Back Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
CB01	041424-074	Remove sediment/trash/debri		Completed	08/01/2024
		Clean grate		Completed	08/01/2024
		Visual inspection		Completed	08/01/2024
CB02	041424-075	Remove over grown vegetation		Completed	08/01/2024
		Visual inspection		Completed	08/01/2024
		Clean grate		Completed	08/01/2024
		Remove sediment/trash/debri		Completed	08/01/2024

Work Order Count: 2

Facility: Cassia Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
CAS01	041424-076	Visual inspection		Completed	09/27/2024
CAS02	041424-077	Visual inspection		Completed	09/27/2024
CAS03	041424-078	Visual inspection		Completed	09/27/2024
CAS04	041424-079	Visual inspection		Completed	09/27/2024

Work Order Count: 4

Facility: Castle Hills Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
CH01	041424-080	Clean grate		Completed	05/21/2024

CH01	041424-080	Visual inspection		Completed	05/21/2024
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Work Order Count: 1

Facility: Catalpa Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
CAT14	041424-081	Clean grate		Completed	05/21/2024
		Needs pumped		Completed	05/21/2024
		Visual inspection		Completed	05/21/2024
CAT15	041424-325	Clean grate		Completed	05/21/2024
		Visual inspection		Completed	05/21/2024

Work Order Count: 2

Facility: Charles F. McDevitt Youth Sports Complex

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
CFMYSC01	041424-082	Clean grate		Completed	05/20/2024
		Visual inspection		Completed	05/20/2024
		Replace marker		Completed	05/20/2024
		Needs pumped		Completed	05/20/2024
CFMYSC02	041424-083	Clean grate		Completed	05/20/2024
		Needs pumped		Completed	05/20/2024
		Replace marker		Completed	05/20/2024
		Visual inspection		Completed	05/20/2024
CFMYSC03	041424-084	Clean grate		Completed	05/20/2024
		Replace marker		Completed	05/20/2024
		Visual inspection		Completed	05/20/2024
CFMYSC04	041424-085	Visual inspection		Completed	05/20/2024
		Clean grate		Completed	05/20/2024
		Needs pumped		Completed	05/20/2024
CFMYSC05	041424-086	Clean grate		Completed	05/20/2024
		Visual inspection		Completed	05/20/2024
CFMYSC06	041424-326	Visual inspection		Completed	05/20/2024
		Replace marker		Completed	05/20/2024
		Needs pumped		Completed	05/20/2024
		Clean grate		Completed	05/20/2024

CFMYSC07	041424-327	Clean grate		Completed	05/20/2024
		Needs pumped		Completed	05/20/2024
		Visual inspection		Completed	05/20/2024
CFMYSC08	041424-087	Clean grate		Completed	05/20/2024
		Visual inspection		Completed	05/20/2024
CFMYSC09	041424-313	Visual inspection		Completed	05/20/2024

Work Order Count: 9

Facility: Comba Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
COM01	041424-307	Visual inspection		Completed	05/20/2024
COMB01	032524-084	Clean grate		Completed	08/01/2024
		Visual inspection		Completed	08/01/2024
	041424-456	Visual inspection		Completed	08/01/2024
		Clean grate		Completed	08/01/2024
		Remove sediment/trash/debri		Completed	08/01/2024
COMB02	041424-457	Clean grate		Completed	08/01/2024
		Remove sediment/trash/debri		Completed	08/01/2024
		Visual inspection		Completed	08/01/2024
COMB03	041424-459	Visual inspection		Completed	08/01/2024
COMB04	041424-460	Visual inspection		Completed	08/01/2024
COMB-SPBD-01	041424-458	Visual inspection		Completed	08/01/2024

Work Order Count: 7

Facility: Community Forestry Office

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
CFO1	041424-088	Visual inspection		Completed	08/01/2024
		Remove sediment/trash/debri		Completed	08/01/2024
		Clean grate		Completed	08/01/2024
		Replace marker		Completed	08/01/2024
CFO2	041424-089	Visual inspection		Completed	08/01/2024
		Clean grate		Completed	08/01/2024
		Needs pumped		Completed	08/01/2024

Work Order Count: 2

Facility: Cottonwood Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
COT01	041424-090	Clean grate		Completed	05/20/2024
		Replace insert and or absorbent material		Completed	05/20/2024
		Visual inspection		Completed	05/20/2024
COT02	041424-328	Visual inspection		Completed	05/20/2024
		Clean grate		Completed	05/20/2024

Work Order Count: 2

Facility: Cypress Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
CYP01	041424-092	Visual inspection		Completed	06/05/2024
		Clean grate		Completed	06/05/2024
		Remove sediment/trash/debri		Completed	06/05/2024
CYP02	041424-291	Visual inspection		Completed	06/05/2024
CYP03	041424-093	Visual inspection		Completed	06/05/2024
		Clean grate		Completed	06/05/2024
CYP05	041424-292	Visual inspection		Completed	06/05/2024
		Clean grate		Completed	06/05/2024
CYP06	041424-293	Clean grate		Completed	06/05/2024
		Visual inspection		Completed	06/05/2024
CYP08	041424-329	Needs pumped		Completed	06/05/2024
		Visual inspection		Completed	06/05/2024

Work Order Count: 6

Facility: DeMeyer Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
DEM07	041424-269	Visual inspection		Completed	05/20/2024

Work Order Count: 1

Facility: Discovery Center

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
DC01	041424-094	Remove sediment/trash/debri		Completed	07/09/2024
		Clean grate		Completed	07/09/2024
		Visual inspection		Completed	07/09/2024
DC02	041424-095	Clean grate		Completed	07/09/2024
		Visual inspection		Completed	07/09/2024
		Remove sediment/trash/debri		Completed	07/09/2024
DC03	041424-096	Visual inspection		Completed	07/09/2024
		Remove sediment/trash/debri		Completed	07/09/2024
		Clean grate		Completed	07/09/2024
DISC-PP-01	041424-367	Visual inspection		Completed	07/09/2024
DISC-SPBD-05	041424-366	Visual inspection		Completed	07/09/2024

Work Order Count: 5

Facility: Florence Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
FLO01	041424-290	Visual inspection		Completed	08/01/2024
FLO02	041424-268	Visual inspection		Completed	08/01/2024

Work Order Count: 2

Facility: Fort Boise Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
FB01	041424-137	Clean grate		Completed	06/11/2024
		Visual inspection		Completed	06/11/2024
FB02	041424-138	Visual inspection		Completed	06/11/2024
		Clean grate		Completed	06/11/2024
FB03	041424-139	Visual inspection		Completed	06/11/2024
		Clean grate		Completed	06/11/2024
FB04	041424-140	Visual inspection		Completed	06/11/2024
		Clean grate		Completed	06/11/2024
FB05	041424-141	Visual inspection		Completed	06/11/2024

FB05	041424-141	Clean grate		Completed	06/11/2024
FB06	041421-120	Visual inspection		Completed	06/28/2021
	041424-142	Visual inspection		Completed	06/11/2024
		Clean grate		Completed	06/11/2024
FB07	041424-143	Clean grate		Completed	06/11/2024
		Visual inspection		Completed	06/11/2024
FB09	041424-144	Clean grate		Completed	06/11/2024
		Visual inspection		Completed	06/11/2024
		Replace marker		Completed	06/11/2024
FB13	041424-145	Clean grate		Completed	06/11/2024
		Needs pumped		Completed	06/11/2024
		Visual inspection		Completed	06/11/2024
FB14	041424-146	Clean grate		Completed	06/11/2024
		Visual inspection		Completed	06/11/2024
		Needs pumped		Completed	06/11/2024
FB15	041424-147	Visual inspection		Completed	06/11/2024
		Clean grate		Completed	06/11/2024
		Needs pumped		Completed	06/11/2024
FB16	041424-148	Visual inspection		Completed	06/11/2024
		Clean grate		Completed	06/11/2024
FB21	041424-350	Visual inspection		Completed	06/11/2024
		Clean grate		Completed	06/11/2024
FB22	041424-149	Clean grate		Completed	06/11/2024
		Needs pumped		Completed	06/11/2024
		Visual inspection		Completed	06/11/2024
FB23	041424-311	Visual inspection		Completed	06/11/2024
FOBO-PP-01	041424-351	Visual inspection		Completed	06/11/2024

Work Order Count: 17

Facility: Helen B. Lowder Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
HBL01	041424-330	Clean grate		Completed	05/30/2024
		Needs pumped		Completed	05/30/2024
		Visual inspection		Completed	05/30/2024

Work Order Count: 1

Facility: Hillside Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
HIL01	041424-150	Visual inspection		Completed	05/21/2024
		Clean grate		Completed	05/21/2024
HIL02	041424-151	Visual inspection		Completed	05/21/2024
		Clean grate		Completed	05/21/2024

Work Order Count: 2

Facility: Hobble Creek Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
HC01	041424-340	Visual inspection		Completed	05/20/2024
		Clean grate		Completed	05/20/2024
		Replace marker		Completed	05/20/2024
		Needs pumped		Completed	05/20/2024

Work Order Count: 1

Facility: Hulls Gulch Reserve

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
JHFL-IS-02	041424-363	Visual inspection		Completed	06/10/2024
JHFL-IS-03	041424-364	Visual inspection		Completed	06/10/2024
JHFL-IS-04	041424-362	Visual inspection		Completed	06/10/2024
	041424-365	Visual inspection		Completed	06/10/2024
JHFL-PO-01	041424-359	Visual inspection		Completed	06/10/2024
JHFL-PO-02	041424-360	Visual inspection		Completed	06/10/2024
JHFL-PO-03	041424-361	Visual inspection		Completed	06/10/2024

Work Order Count: 7

Facility: Hyatt Hidden Lakes Reserve

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
HHLR01	041424-341	Visual inspection		Completed	05/21/2024

HHLR02	041424-152	Visual inspection		Completed	05/21/2024
		Needs pumped		Completed	05/21/2024
		Clean grate		Completed	05/21/2024
HHLR03	041424-153	Visual inspection		Completed	05/21/2024
		Clean grate		Completed	05/21/2024
		Needs pumped		Completed	05/21/2024
HHLR04	041424-342	Visual inspection		Completed	05/21/2024
HHLR05	041424-343	Visual inspection		Completed	05/21/2024
HHLR06	041424-344	Visual inspection		Completed	05/21/2024

Work Order Count: 6

Facility: I-184 Connector ROW

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
ROW-I184-CB-01	041424-391	Visual inspection		Completed	07/30/2024
		Remove sediment/trash/debri		Completed	07/30/2024
ROW-I184-IS-01	041424-392	Visual inspection		Completed	07/30/2024
ROW-I184-OT-01	041424-393	Visual inspection		Completed	07/30/2024

Work Order Count: 3

Facility: Idaho Anne Frank Human Rights Memorial

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
AMFR-CB-01	041424-395	Visual inspection		Completed	07/24/2024
		Clean grate		Completed	07/24/2024
ANFR-PP-01	041424-354	Visual inspection		Completed	07/24/2024
ANFR-PP-02	041424-355	Visual inspection		Completed	07/24/2024
ANFR-PP-03	041424-356	Visual inspection		Completed	08/08/2024
ANFR-PP-04	041424-357	Visual inspection		Completed	07/24/2024
ANFR-PP-05	041424-358	Visual inspection		Completed	07/24/2024
IAFHRM01	041424-154	Clean grate		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
		Remove sediment/trash/debri		Completed	07/24/2024
	041424-324	Clean grate		Completed	07/24/2024
		Remove sediment/trash/debri		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024

IAFHRM02	041424-156	Visual inspection		Completed	07/24/2024
		Clean grate		Completed	07/24/2024
IAFHRM03	041424-155	Clean grate		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024

Work Order Count: 10

Facility: Idaho IceWorld

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
IDIW-CB-01	041424-157	Remove sediment/trash/debri		Completed	07/02/2024
		Visual inspection		Completed	07/02/2024
		Clean grate		Completed	07/02/2024
IDIW-CB-02	041424-370	Visual inspection		Completed	07/02/2024
		Clean grate		Completed	07/02/2024
IDIW-CB-03	041424-371	Remove over grown vegetation		Completed	07/02/2024
		Visual inspection		Completed	07/02/2024
IDIW-IS-01	041424-301	Visual inspection		Completed	07/02/2024
IDIW-IS-02	041424-300	Visual inspection		Completed	07/02/2024
IDIW-IS-03	041424-396	Visual inspection		Completed	07/02/2024
IDIW-MH-01	041424-373	Visual inspection		Completed	07/02/2024
		Clean grate		Completed	07/02/2024
		Needs pumped		Completed	07/02/2024
IDIW-MH-02	041424-372	Visual inspection		Completed	07/02/2024
IDIW-OW-01	041424-368	Visual inspection		Completed	07/02/2024
		Clean grate		Completed	07/02/2024
		Needs pumped		Completed	07/02/2024
IDIW-OW-02	041424-369	Needs pumped		Completed	07/02/2024
		Clean grate		Completed	07/02/2024
		Visual inspection		Completed	07/02/2024

Work Order Count: 10

Facility: Ivywild Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
IVY01	041424-306	Visual inspection		Completed	06/06/2024
IVY02	041424-331	Visual inspection		Completed	06/06/2024

IVY02	041424-331	Clean grate		Completed	06/06/2024
		Needs pumped		Completed	06/06/2024
IVY03	041424-332	Needs pumped		Completed	06/06/2024
		Clean grate		Completed	06/06/2024
		Visual inspection		Completed	06/06/2024
IVY04	041424-305	Visual inspection		Completed	06/06/2024
IVY05	041424-158	Visual inspection		Completed	06/06/2024
		Clean grate		Completed	06/06/2024
		Needs pumped		Completed	06/06/2024
IVY07	041424-159	Visual inspection		Completed	06/06/2024
		Replace insert and or absorbent material		Completed	06/06/2024
		Clean grate		Completed	06/06/2024
		Remove over grown vegetation		Completed	06/06/2024
		Replace marker		Completed	06/06/2024
IVY08	041424-160	Remove over grown vegetation		Completed	06/06/2024
		Clean grate		Completed	06/06/2024
		Visual inspection		Completed	06/06/2024
IVY09	041424-161	Visual inspection		Completed	06/06/2024
		Clean grate		Completed	06/06/2024
		Remove sediment/trash/debri		Completed	06/06/2024
IVY10	041424-248	Visual inspection		Completed	06/06/2024
IVY11	041424-249	Visual inspection		Completed	06/06/2024
IVY12	041424-250	Visual inspection		Completed	06/06/2024
IVY13	041424-251	Visual inspection		Completed	06/06/2024
IVY14	041424-252	Visual inspection		Completed	06/06/2024
IVY15	041424-253	Visual inspection		Completed	06/06/2024
IVY16	041424-254	Visual inspection		Completed	06/06/2024
IVY17	041424-255	Visual inspection		Completed	06/06/2024
IVY18	041424-256	Visual inspection		Completed	06/06/2024
IVY19	041424-257	Visual inspection		Completed	06/06/2024
IVY20	041424-258	Visual inspection		Completed	06/06/2024
IVY21	041424-240	Visual inspection		Completed	06/06/2024
IVY22	041424-241	Visual inspection		Completed	06/06/2024
IVY23	041424-242	Visual inspection		Completed	06/06/2024
IVY24	041424-243	Visual inspection		Completed	06/06/2024
IVY25	041424-244	Visual inspection		Completed	06/06/2024
IVY26	041424-245	Visual inspection		Completed	06/06/2024
IVY27	041424-246	Visual inspection		Completed	06/06/2024

IVY28	041424-247	Visual inspection		Completed	06/06/2024
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Work Order Count: 27

Facility: Julia Davis Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
ANMO-PO-01	041424-389	Visual inspection		Completed	07/24/2024
JD01	041424-097	Visual inspection		Completed	07/08/2024
		Clean grate		Completed	07/08/2024
JD02	041424-098	Visual inspection		Completed	07/08/2024
		Clean grate		Completed	07/08/2024
JD03	041424-099	Clean grate		Completed	07/08/2024
		Visual inspection		Completed	07/08/2024
JD04	041424-100	Visual inspection		Completed	07/08/2024
		Needs pumped		Completed	07/08/2024
		Clean grate		Completed	07/08/2024
JD05	041424-101	Needs pumped		Completed	07/08/2024
		Visual inspection		Completed	07/08/2024
		Clean grate		Completed	07/08/2024
JD06	041424-102	Remove over grown vegetation		Completed	07/08/2024
		Remove sediment/trash/debri		Completed	07/08/2024
		Clean grate		Completed	07/08/2024
		Visual inspection		Completed	07/08/2024
JD07	041424-103	Needs pumped		Completed	07/08/2024
		Clean grate		Completed	07/08/2024
		Visual inspection		Completed	07/08/2024
JD10	041424-104	Visual inspection		Completed	07/09/2024
JD11	041424-105	Visual inspection		Completed	07/08/2024
		Needs pumped		Completed	07/08/2024
		Clean grate		Completed	07/08/2024
JD12	041424-106	Needs pumped		Completed	07/08/2024
		Visual inspection		Completed	07/08/2024
		Clean grate		Completed	07/08/2024
JD14	041424-107	Clean grate		Completed	07/08/2024
		Visual inspection		Completed	07/08/2024
JD16	041424-279	Visual inspection		Completed	07/08/2024
JD17	041424-278	Visual inspection		Completed	07/08/2024

JD19	041424-108	Clean grate		Completed	07/08/2024
		Needs pumped		Completed	07/08/2024
		Visual inspection		Completed	07/08/2024
JD20	041424-109	Visual inspection		Completed	09/27/2024
JD21	041424-110	Visual inspection		Completed	07/08/2024
JD22	041424-111	Visual inspection		Completed	07/08/2024
JD23	041424-112	Visual inspection		Completed	07/08/2024
JD26	041424-113	Clean grate		Completed	07/09/2024
		Needs pumped		Completed	07/09/2024
		Visual inspection		Completed	07/09/2024
JD27	041424-114	Visual inspection		Completed	07/09/2024
		Needs pumped		Completed	07/09/2024
		Clean grate		Completed	07/09/2024
JD28	041424-115	Remove sediment/trash/debri		Completed	07/09/2024
		Clean grate		Completed	07/09/2024
		Visual inspection		Completed	07/09/2024
JD29	041424-116	Visual inspection		Completed	07/09/2024
		Clean grate		Completed	07/09/2024
		Remove sediment/trash/debri		Completed	07/09/2024
JD33	041424-224	Remove sediment/trash/debri		Completed	07/09/2024
		Visual inspection		Completed	07/09/2024
		Clean grate		Completed	07/09/2024
JD34	041424-117	Clean grate		Completed	07/09/2024
		Visual inspection		Completed	07/09/2024
JD35	041424-118	Remove sediment/trash/debri		Completed	07/09/2024
		Clean grate		Completed	07/09/2024
		Visual inspection		Completed	07/09/2024
JD41	041424-225	Visual inspection		Completed	07/09/2024
		Clean grate		Completed	07/09/2024
		Remove sediment/trash/debri		Completed	07/09/2024
JD42	041424-119	Remove sediment/trash/debri		Completed	07/25/2024
		Clean grate		Completed	07/25/2024
		Visual inspection		Completed	07/25/2024
JD43	041424-120	Visual inspection		Completed	07/09/2024
		Clean grate		Completed	07/09/2024
		Remove sediment/trash/debri		Completed	07/09/2024
JD46	041424-222	Visual inspection		Completed	07/09/2024
JD47	041424-121	Visual inspection		Completed	07/09/2024

JD48	041424-223	Visual inspection		Completed	07/09/2024
JD50	041424-122	Clean grate		Completed	07/09/2024
		Visual inspection		Completed	07/09/2024
		Remove sediment/trash/debri		Completed	07/09/2024
JD51	041424-123	Remove sediment/trash/debri		Completed	07/09/2024
		Clean grate		Completed	07/09/2024
		Visual inspection		Completed	07/09/2024
JD52	041424-124	Visual inspection		Completed	07/09/2024
		Remove sediment/trash/debri		Completed	07/09/2024
		Clean grate		Completed	07/09/2024
JD53	041424-125	Remove sediment/trash/debri		Completed	07/09/2024
		Clean grate		Completed	07/09/2024
		Visual inspection		Completed	07/09/2024
JD54	041424-126	Remove sediment/trash/debri		Completed	07/09/2024
		Clean grate		Completed	07/09/2024
		Visual inspection		Completed	07/09/2024
JD55	041424-127	Visual inspection		Completed	07/09/2024
		Clean grate		Completed	07/09/2024
		Remove sediment/trash/debri		Completed	07/09/2024
JD56	041424-128	Remove sediment/trash/debri		Completed	07/09/2024
		Visual inspection		Completed	07/09/2024
		Clean grate		Completed	07/09/2024
JD57	041424-129	Clean grate		Completed	07/09/2024
		Remove sediment/trash/debri		Completed	07/09/2024
		Visual inspection		Completed	07/09/2024
JD58	041424-349	Visual inspection		Completed	07/09/2024
		Remove sediment/trash/debri		Completed	07/09/2024
		Clean grate		Completed	07/09/2024
JD59	041424-130	Needs pumped		Completed	07/08/2024
		Visual inspection		Completed	07/08/2024
		Clean grate		Completed	07/08/2024
JD60	041424-131	Visual inspection		Completed	07/08/2024
		Clean grate		Completed	07/08/2024
JD61	041424-339	Visual inspection		Completed	07/08/2024
		Needs pumped		Completed	07/08/2024
		Clean grate		Completed	07/08/2024
JD62	041424-132	Visual inspection		Completed	07/09/2024
		Clean grate		Completed	07/09/2024

JD62	041424-132	Remove sediment/trash/debri		Completed	07/09/2024
JD63	041424-295	Visual inspection		Completed	07/09/2024
JD64	041424-231	Visual inspection		Completed	07/09/2024
		Remove sediment/trash/debri		Completed	07/09/2024
		Clean grate		Completed	07/09/2024
JD65	041424-294	Visual inspection		Completed	07/09/2024
JD66	041424-232	Visual inspection		Completed	07/09/2024
JD67	041424-233	Visual inspection		Completed	07/09/2024
JD68	041424-296	Visual inspection		Completed	07/09/2024
JD69	041424-133	Remove sediment/trash/debri		Completed	07/09/2024
		Clean grate		Completed	07/09/2024
		Visual inspection		Completed	07/09/2024
JD70	041424-134	Remove sediment/trash/debri		Completed	07/09/2024
		Clean grate		Completed	07/09/2024
		Visual inspection		Completed	07/09/2024
JD71	041424-135	Remove sediment/trash/debri		Completed	07/09/2024
		Visual inspection		Completed	07/09/2024
		Clean grate		Completed	07/09/2024
JD72	041424-234	Visual inspection		Completed	07/09/2024
JD73	041424-297	Visual inspection		Completed	07/09/2024
JD74	041424-235	Visual inspection		Completed	07/25/2024
JD75	041424-298	Visual inspection		Completed	07/25/2024
JD76	041424-236	Visual inspection		Completed	07/09/2024
JD77	041424-315	Visual inspection		Completed	07/09/2024
JD78	041424-237	Visual inspection		Completed	07/09/2024
JD79	041424-316	Visual inspection		Completed	07/09/2024
JD80	041424-136	Remove sediment/trash/debri		Completed	07/09/2024
		Visual inspection		Completed	07/09/2024
		Clean grate		Completed	07/09/2024
JD81	041424-322	Visual inspection		Completed	07/08/2024
JD82	041424-345	Clean grate		Completed	07/09/2024
		Visual inspection		Completed	07/09/2024
JD83	041424-346	Visual inspection		Completed	07/09/2024
JD84	041424-323	Visual inspection		Completed	07/08/2024
JUDA-OW-01	041424-394	Visual inspection		Completed	07/09/2024

Facility: Jullion Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
JUL01	041424-162	Clean grate		Completed	06/11/2024
		Visual inspection		Completed	06/11/2024
		Remove over grown vegetation		Completed	06/11/2024
JUL02	041424-198	Clean grate		Completed	06/11/2024
		Visual inspection		Completed	06/11/2024
JUL03	041424-199	Clean grate		Completed	06/11/2024
		Visual inspection		Completed	06/11/2024
JUL04	041424-282	Visual inspection		Completed	06/11/2024
JUL05	041424-333	Clean grate		Completed	06/11/2024
		Visual inspection		Completed	06/11/2024

Work Order Count: 5

Facility: Kathryn Albertson Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
KA03	041424-238	Visual inspection		Completed	06/06/2024
KA04	041424-239	Visual inspection		Completed	06/06/2024

Work Order Count: 2

Facility: Manitou Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
MAN01	041424-172	Clean grate		Completed	06/06/2024
		Visual inspection		Completed	06/06/2024
MAN02	041424-288	Visual inspection		Completed	06/06/2024
MAN03	041424-173	Visual inspection		Completed	06/06/2024

Work Order Count: 3

Facility: Marianne Williams Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
MW01	041424-319	Visual inspection		Completed	05/30/2024
MW02	041424-318	Visual inspection		Completed	05/30/2024

Work Order Count: 2

Facility: Milwaukee Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
MIL01	041424-314	Visual inspection		Completed	08/01/2024

Work Order Count: 1

Facility: Molenaar Diamond Park Site

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
MOLE-PP-01	041424-352	Visual inspection		Completed	05/29/2024

Work Order Count: 1

Facility: Morris Hill Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
MH01	041424-334	Visual inspection		Completed	06/06/2024
		Clean grate		Completed	06/06/2024

Work Order Count: 1

Facility: Mountain View Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
MV01	041424-175	Needs pumped		Completed	05/30/2024
		Visual inspection		Completed	05/30/2024
		Clean grate		Completed	05/30/2024
MV02	041424-176	Visual inspection		Completed	05/30/2024

MV02	041424-176	Needs pumped		Completed	05/30/2024
		Clean grate		Completed	05/30/2024
MV03	041424-177	Visual inspection		Completed	05/30/2024
		Needs pumped		Completed	05/30/2024
		Clean grate		Completed	05/30/2024
MV06	041424-304	Visual inspection		Completed	05/30/2024

Work Order Count: 4

Facility: Municipal Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
MUN01	041424-200	Visual inspection		Completed	06/11/2024
		Clean grate		Completed	06/11/2024
		Remove over grown vegetation		Completed	06/11/2024
		Remove sediment/trash/debri		Completed	06/11/2024
MUN02	041424-201	Visual inspection		Completed	06/11/2024
		Replace insert and or absorbent material		Completed	06/11/2024
		Clean grate		Completed	06/11/2024
		Remove over grown vegetation		Completed	06/11/2024
		Remove sediment/trash/debri		Completed	06/11/2024
MUN03	041424-202	Visual inspection		Completed	06/11/2024
		Clean grate		Completed	06/11/2024
		Remove over grown vegetation		Completed	06/11/2024
		Remove sediment/trash/debri		Completed	06/11/2024
MUN04	041424-203	Replace insert and or absorbent material		Completed	06/11/2024
		Remove sediment/trash/debri		Completed	06/11/2024
		Clean grate		Completed	06/11/2024
		Visual inspection		Completed	06/11/2024
		Remove over grown vegetation		Completed	06/11/2024
MUN05	041424-310	Visual inspection		Completed	06/11/2024

Work Order Count: 5

Facility: Natatorium Pool and Hydrotube

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
NAT01	041424-214	Clean grate		Completed	08/01/2024

NAT01	041424-214	Visual inspection		Completed	08/01/2024
		Needs pumped		Completed	08/01/2024
NAT02	041424-215	Visual inspection		Completed	08/01/2024
		Clean grate		Completed	08/01/2024
		Remove sediment/trash/debri		Completed	08/01/2024
NAT03	041424-353	Needs pumped		Completed	08/01/2024
		Visual inspection		Completed	08/01/2024
		Remove over grown vegetation		Completed	08/01/2024

Work Order Count: 3

Facility: Optimist Youth Sports Complex

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
OYSC01	041424-348	Remove sediment/trash/debri		Completed	07/30/2024
		Clean grate		Completed	07/30/2024
		Visual inspection		Completed	07/30/2024
OYSC02	041424-185	Visual inspection		Completed	05/21/2024
		Clean grate		Completed	05/21/2024
		Remove sediment/trash/debri		Completed	05/21/2024
OYSC03	041424-186	Clean grate		Completed	05/21/2024
		Visual inspection		Completed	05/21/2024
		Remove sediment/trash/debri		Completed	05/21/2024
OYSC04	041424-187	Remove sediment/trash/debri		Completed	05/21/2024
		Visual inspection		Completed	05/21/2024
		Clean grate		Completed	05/21/2024
OYSC05	041424-188	Clean grate		Completed	05/21/2024
		Visual inspection		Completed	05/21/2024
		Remove sediment/trash/debri		Completed	05/21/2024
OYSC07	041424-302	Visual inspection		Completed	05/21/2024
OYSC08	041424-303	Visual inspection		Completed	05/21/2024
OYSC09	041424-321	Clean grate		Completed	05/21/2024
		Visual inspection		Completed	05/21/2024
		Remove sediment/trash/debri		Completed	05/21/2024
OYSC10	041424-270	Visual inspection		Completed	05/21/2024
OYSC11	041424-271	Visual inspection		Completed	05/21/2024
OYSC12	041424-272	Visual inspection		Completed	05/21/2024
OYSC13	041424-273	Visual inspection		Completed	05/21/2024

OYSC14	041424-274	Visual inspection		Completed	05/21/2024
OYSC15	041424-275	Visual inspection		Completed	05/21/2024
OYSC16	041424-276	Visual inspection		Completed	05/21/2024
OYSC17	041424-277	Remove over grown vegetation		Completed	05/21/2024
		Visual inspection		Completed	05/21/2024

Work Order Count: 16

Facility: Oregon Trail Reserve

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
OTR02	041424-259	Visual inspection		Completed	06/05/2024
OTR03	041424-260	Visual inspection		Completed	06/05/2024
OTR04	041424-261	Visual inspection		Completed	06/05/2024
OTR05	041424-262	Visual inspection		Completed	06/05/2024
OTR06	041424-263	Visual inspection		Completed	06/05/2024
OTR07	041424-264	Visual inspection		Completed	06/05/2024
OTR08	041424-265	Visual inspection		Completed	06/05/2024
OTR09	041424-266	Visual inspection		Completed	06/05/2024
OTR10	041424-267	Visual inspection		Completed	06/05/2024

Work Order Count: 9

Facility: Parkcenter Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
PAR01	041424-189	Clean grate		Completed	07/30/2024
		Visual inspection		Completed	07/30/2024

Work Order Count: 1

Facility: Phillippi Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
PHI04	041424-335	Clean grate		Completed	06/06/2024
		Visual inspection		Completed	06/06/2024
		Needs pumped		Completed	06/06/2024
PHI05	041424-312	Visual inspection		Completed	06/06/2024

PHI05	041424-312	Clean grate		Completed	06/06/2024
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Work Order Count: 2

Facility: Pine Grove Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
PIGR-PP-02	041424-388	Visual inspection		Completed	06/06/2024

Work Order Count: 1

Facility: Platt Gardens

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
PG01	041424-183	Clean grate		Completed	07/30/2024
		Visual inspection		Completed	07/30/2024

Work Order Count: 1

Facility: Quail Hollow Golf Course

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
QHGC01	041424-218	Clean grate		Completed	06/11/2024
		Visual inspection		Completed	06/11/2024
QHGC02	041424-219	Clean grate		Completed	06/11/2024
		Needs pumped		Completed	06/11/2024
		Visual inspection		Completed	06/11/2024

Work Order Count: 2

Facility: Quarry View Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
QV01	041424-220	Clean grate		Completed	07/30/2024
		Visual inspection		Completed	07/30/2024
		Remove sediment/trash/debri		Completed	07/30/2024
QV02	041424-221	Visual inspection		Completed	07/30/2024
		Clean grate		Completed	07/30/2024

QV02	041424-221	Remove sediment/trash/debri		Completed	07/30/2024
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Work Order Count: 2

Facility: Redwood Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
RED08	041424-299	Visual inspection		Completed	05/20/2024

Work Order Count: 1

Facility: Rhodes Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
RHO01	041424-167	Remove sediment/trash/debri		Completed	07/30/2024
		Visual inspection		Completed	07/30/2024
		Clean grate		Completed	07/30/2024
RHO02	041424-168	Visual inspection		Completed	07/30/2024
		Remove sediment/trash/debri		Completed	07/30/2024
		Clean grate		Completed	07/30/2024

Work Order Count: 2

Facility: Riverside Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
RIV01	041424-289	Visual inspection		Completed	06/05/2024

Work Order Count: 1

Facility: Shoreline/13th Parking Lot

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
SHOR01	041424-174	Clean grate		Completed	06/06/2024
		Visual inspection		Completed	06/06/2024

Work Order Count: 1

Facility: Shoshone Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
SHOS01	041424-170	Clean grate		Completed	06/10/2024
		Needs pumped		Completed	06/10/2024
		Visual inspection		Completed	06/10/2024
SHOS02	041424-169	Clean grate		Completed	06/10/2024
		Visual inspection		Completed	06/10/2024
		Remove sediment/trash/debri		Completed	06/10/2024
		Remove over grown vegetation		Completed	06/10/2024

Work Order Count: 2

Facility: Simplot Sports Complex

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
SSC01	041424-213	Clean grate		Completed	06/05/2024
		Visual inspection		Completed	06/05/2024
SSC03	041424-287	Visual inspection		Completed	06/05/2024
SSC10	041424-281	Visual inspection		Completed	06/05/2024
SSC12	041424-283	Visual inspection		Completed	06/05/2024
SSC13	041424-286	Visual inspection		Completed	06/05/2024
SSC26	041424-285	Visual inspection		Completed	06/05/2024
SSC27	041424-284	Visual inspection		Completed	06/05/2024

Work Order Count: 7

Facility: Stewart Gulch Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
SG01	041424-280	Visual inspection		Completed	05/21/2024
	041424-320	Visual inspection		Completed	05/21/2024

Work Order Count: 2

Facility: Sunset Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
SUN01	041424-184	Clean grate		Completed	05/21/2024
		Visual inspection		Completed	05/21/2024

Work Order Count: 1

Facility: Veterans Memorial Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
VM01	041424-190	Visual inspection		Completed	05/21/2024
		Clean grate		Completed	05/21/2024
VM02	041424-191	Clean grate		Completed	05/21/2024
		Visual inspection		Completed	05/21/2024
VM03	041424-192	Clean grate		Completed	05/21/2024
		Visual inspection		Completed	05/21/2024
		Needs pumped		Completed	07/25/2024
VM04	041424-193	Clean grate		Completed	05/21/2024
		Visual inspection		Completed	05/21/2024
VM05	041424-194	Visual inspection		Completed	05/21/2024
		Clean grate		Completed	05/21/2024
VM06	041424-195	Clean grate		Completed	05/21/2024
		Visual inspection		Completed	05/21/2024
VM07	041424-196	Clean grate		Completed	05/21/2024
		Visual inspection		Completed	05/21/2024
VM08	041424-197	Visual inspection		Completed	05/21/2024
		Clean grate		Completed	05/21/2024
VM09	041424-309	Visual inspection		Completed	05/21/2024

Work Order Count: 9

Facility: Warm Springs Golf Course

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
WSGC01	041424-336	Visual inspection		Completed	06/11/2024

WSGC02	041424-216	Visual inspection		Completed	06/11/2024
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Work Order Count: 2

Facility: Warm Springs Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
ML01	041424-347	Visual inspection		Completed	08/01/2024
ML02	041424-166	Visual inspection		Completed	08/01/2024
		Clean grate		Completed	08/01/2024
		Remove sediment/trash/debri		Completed	08/01/2024
ML03	041424-165	Remove sediment/trash/debri		Completed	08/01/2024
		Clean grate		Completed	08/01/2024
		Visual inspection		Completed	08/01/2024
ML05	041424-163	Remove sediment/trash/debri		Completed	08/01/2024
		Clean grate		Completed	08/01/2024
		Visual inspection		Completed	08/01/2024
ML06	041424-164	Remove sediment/trash/debri		Completed	08/01/2024
		Clean grate		Completed	08/01/2024
		Visual inspection		Completed	08/01/2024

Work Order Count: 5

Facility: Williams Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
WIL01	041424-204	Clean grate		Completed	06/06/2024
		Replace marker		Completed	06/06/2024
		Remove over grown vegetation		Completed	06/06/2024
		Remove sediment/trash/debri		Completed	06/06/2024
		Replace insert and or absorbent material		Completed	06/06/2024
		Visual inspection		Completed	06/06/2024

Work Order Count: 1

Facility: Willow Lane Athletic Complex

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
WLAC01	041424-211	Visual inspection		Completed	05/21/2024
		Clean grate		Completed	05/21/2024
WLAC02	041424-212	Clean grate		Completed	05/21/2024
		Visual inspection		Completed	05/21/2024
		Replace marker		Completed	05/21/2024
WLAC03	041424-205	Needs pumped		Completed	05/21/2024
		Visual inspection		Completed	05/21/2024
		Clean grate		Completed	05/21/2024
		Replace marker		Completed	05/21/2024
WLAC04	041424-206	Visual inspection		Completed	05/21/2024
		Replace marker		Completed	05/21/2024
		Needs pumped		Completed	05/21/2024
		Clean grate		Completed	05/21/2024
WLAC05	041424-207	Clean grate		Completed	05/21/2024
		Visual inspection		Completed	05/21/2024
		Replace marker		Completed	05/21/2024
		Needs pumped		Completed	05/21/2024
WLAC06	041424-208	Visual inspection		Completed	05/21/2024
		Replace marker		Completed	05/21/2024
		Clean grate		Completed	05/21/2024
WLAC07	041424-209	Clean grate		Completed	05/21/2024
		Replace marker		Completed	05/21/2024
		Visual inspection		Completed	05/21/2024
WLAC08	041424-210	Visual inspection		Completed	05/21/2024
		Replace marker		Completed	05/21/2024
		Clean grate		Completed	05/21/2024
WLAC09	041424-337	Needs pumped		Completed	05/21/2024
		Clean grate		Completed	05/21/2024
		Visual inspection		Completed	05/21/2024
		Replace marker		Completed	05/21/2024
WLAC-SPBD-01	041424-390	Visual inspection		Completed	05/21/2024

Work Order Count: 10

Facility: Winstead Park

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
WIN01	041424-178	Remove sediment/trash/debri		Completed	07/24/2024
		Clean grate		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
WIN02	041424-179	Visual inspection		Completed	07/24/2024
		Remove sediment/trash/debri		Completed	07/24/2024
		Replace insert and or absorbent material		Completed	07/24/2024
		Clean grate		Completed	07/24/2024
WIN03	041424-180	Remove sediment/trash/debri		Completed	07/24/2024
		Remove over grown vegetation		Completed	07/24/2024
		Replace insert and or absorbent material		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
WIN04	041424-181	Clean grate		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
		Replace insert and or absorbent material		Completed	07/24/2024
		Remove over grown vegetation		Completed	07/24/2024
		Remove sediment/trash/debri		Completed	07/24/2024
WIN05	041424-182	Clean grate		Completed	07/24/2024
		Replace insert and or absorbent material		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
		Remove sediment/trash/debri		Completed	07/24/2024
		Remove over grown vegetation		Completed	07/24/2024
WIN06	041424-338	Needs pumped		Completed	07/24/2024
		Visual inspection		Completed	07/24/2024
		Clean grate		Completed	07/24/2024

Work Order Count: 6

Facility: Zoo Boise

MS4-PK

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
ZB01	041424-217	Visual inspection		Completed	07/25/2024
		Clean grate		Completed	07/25/2024
ZOO-CB-01	041424-384	Visual inspection		Completed	07/25/2024
		Clean grate		Completed	07/25/2024

ZOO-CB-02	041424-385	Visual inspection		Completed	07/25/2024
		Clean grate		Completed	07/25/2024
ZOO-CB-03	041424-386	Visual inspection		Completed	08/08/2024
		Needs pumped		Completed	07/25/2024
		Clean grate		Completed	07/25/2024
ZOO-IS-01	041424-375	Visual inspection		Completed	07/25/2024
ZOO-IS-02	041424-376	Remove sediment/trash/debri		Completed	07/25/2024
		Clean grate		Completed	07/25/2024
		Visual inspection		Completed	07/25/2024
ZOO-IS-03	041424-377	Visual inspection		Completed	07/25/2024
ZOO-IS-04	041423-381	Visual inspection		Completed	08/03/2023
ZOO-IS-05	041424-379	Visual inspection		Completed	07/25/2024
ZOO-IS-06	041424-380	Visual inspection		Completed	07/25/2024
ZOO-IS-07	041424-381	Visual inspection		Completed	07/25/2024
		Clean grate		Completed	07/25/2024
ZOO-IS-08	041424-382	Visual inspection		Completed	07/25/2024
ZOO-OTH-01	041424-374	Visual inspection		Completed	07/25/2024
ZOO-OW-01	041424-383	Clean grate		Completed	07/25/2024
		Needs pumped		Completed	07/25/2024
		Visual inspection		Completed	07/25/2024

Work Order Count: 14

Report Work Order Count: 398

CITY OF BOISE MS4 PERMIT
DEPARTMENT ANNUAL REPORTING INFORMATION

FISCAL YEAR	2024
DEPARTMENT	Planning and Development Services - Housing and Community Development
STAFF CONTACT	Anthony Cabrera
FACILITY INVENTORY	The Housing and Community Development Division of the City of Boise Department of Planning and Development Services is responsible for the operation and maintenance of the properties and/or buildings identified below. (or attached).
LIST OF FACILITIES	List Facilities or provide attachment

STORMWATER FACILITY OPERATION AND MAINTENANCE

NUMBER AND TYPE OF FACILITIES	See Attached Report
NUMBER OF FACILITIES INSPECTED	See Attached Report
NUMBER OF FACILITIES MAINTAINED	See Attached Report

TRASH/RECYCLING/HAZARDOUS MATERIALS/LITTER CONTROL

TRASH COLLECTION AND RECYCLING PROCEDURES	Trash collection daily at each site. No recycling at this time.
LITTER CONTROL PROCEDURES	Trash receptacles are located at each site to help control litter and emptied daily.
HAZARDOUS MATERIALS COLLECTION	PW Materials Management Environmental collects and disposes of our hazardous
AMOUNT OF MATERIALS COLLECTED	None

STREET AND PARKING LOT SWEEPING

STREET AND PARKING LOT SWEEPING LOCATIONS	See attachment
LOCATIONS WHERE SWEEPING IS INFEASIBLE	None
FREQUENCY OF SWEEPING	Daily/ Weekly at various locations
AMOUNT OF SWEEPING (SQ. FOOTAGE OR CURB MILES)	3.5 acresX 43,560= 154,643 sqft
AMOUNT OF MATERIALS COLLECTED	Approx. 1500#

LANDSCAPING ACTIVITIES

DESCRIBE USE OF FERTILIZERS	Fertilized landscape areas surrounding properties by landscape contractor Iron Creek Landscape Co. used seasonally 8 months a year.
DESCRIBE ANY PRACTICES IMPLEMENTED TO REDUCE FERTILIZER USE	None. Landscape contractor oversees fertilizer application
DESCRIBE USE OF HERBICIDES AND PESTICIDES	Landscape contractor applied herbicides to shrub beds and turf areas for broadleaf control
DESCRIBE ANY PRACTICES IMPLEMENTED TO REDUCE PESTICIDE OR HERBICIDE USE	None.
LIST STAFF WITH CERTIFICATIONS FOR PESTICIDE/HERBICIDE APPLICATION OR OTHER LANDSCAPING CERTIFICATIONS	None

SNOW/ICE REMOVAL

DESCRIBE USE OF SNOW/ICE MELTING MATERIALS AT YOUR FACILITIES INCLUDE TYPE OF PRODUCTS USED	Ice melt is used in pedestrian walkways, stairs & landings, hadicap loading/parking areas Pro-link Ice melt-granular-sodium chloride/magnesium chloride. .CONTAINS NO HAZARDOUS INGREDIENTS AS DEFINED IN OSHA 2 TABLES
HOW MUCH OF THE PRODUCTS DID YOU USE	83-50# bags used by staff. Contractor used 249-50# bags
WHERE ARE THESE PRODUCTS STORED WHEN NOT IN USE ?	In a dry secure shed at our Vista shed.

TRAINING

IDENTIFY ANY SPECIALIZED TRAINING ON STORMWATER, POLLUTION PREVENTION, ETC.	None
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ANNUAL EXPENSES

COST OF STORMWATER COMPLIANCE ACTIVITIES	PW Utilities assisted with Pump out storm drain basin & Jet /clean out storm drain system No cost associated. Parking lot clean up from landscape contractors =\$0 Cost for staff hour @ \$28per hr = \$17,920.00 S/M cost for Storm basin Preventative Maint. (8 oil absorbant socks @ \$10 ea. changed 2X per year) = \$160.00 Total cost = \$ 14,880.00
STAFF HOURS FOR STORMWATER COMPLIANCE ACTIVITIES	Daily clean up by janitor 2 hrs/10 hrs per week x 52 weeks =520 hrs Weekly clean up by maintenance 2 hrs per week x 52 weeks = 104 hrs Assist storm drain pumping 8 hrs/2X per year = 16 hrs Total staff hours = 640 hours

NAME	Anthony Cabrera	DATE COMPLETED	11/5/2024
		SIGNATURE	

NAME	OM TYPE	DESCRIPTION	LOCATION OF STORM DRAIN	INSPECTION NOTES	REPAIRED / PUMPED
1020 S. Lusk St.	OM1 OM9 OM12	(2) CATCH BASINS ATTACHED TO STORM DRAIN. GUTTERS AND DOWNSPOUTS EMPTING INTO LANDSCAPING AND PARKING LOT.	1020 S LUSK PARKING AREA.	#1 CATCH BASIN water - sludge - damage 24" 2" None	Pumping is scheduled for 11/24. Absorbent socks will be changed out.
			1020 S LUSK PARKING AREA.	#2 CATCH BASIN water - sludge - damage 24" 2" None	Pumping is scheduled for 11/24. Absorbent socks will be changed out.
1025 S. Capitol Blvd. (Apartments)	OM12	GUTTERS AND DOWNSPOUTS EMPTING INTO PARKING LOT.	N/A		
1025 S. Capitol Blvd. (Offices)	OM1 OM2 OM12	CATCH BASIN ATTACHED TO LEACH FIELD. GUTTERS AND DOWNSPOUTS EMPTING INTO LANDSCAPING AND PARKING LOT.	SOUTH PARKING LOT NEXT TO OFFICE COMPLEX.	CATCH BASIN water - sludge - damage 0 0 None	Pumping is scheduled for 11/24. Absorbent socks will be changed out.
1028 S. Lusk St.	OM1 OM12	GUTTERS AND DOWNSPOUTS EMPTING INTO LANDSCAPING AND PARKING LOT.	N/A		
1121 S. Capitol Blvd.	OM1 OM7	(2) CATCH BASINS WITH VAULT. GUTTERS AND DOWNSPOUTS EMPTING INTO LANDSCAPING.	PARKING LOT.	CATCH BASIN water - sludge - damage 36" 6" None	Pumping is scheduled for 11/24. Absorbent socks will be changed out.
			PARKING LOT.	#2 CATCH BASIN water - sludge - damage 11" 2" None	Pumping is scheduled for 11/24. Absorbent socks will be changed out.
1121 W. Miller St. / 500 S. Ash St.	OM1 OM9 OM12	CATCH BASIN ATTACHED TO STORM DRAIN. GUTTERS AND DOWNSPOUTS EMPTING INTO LANDSCAPING AND PARKING LOT.	WEST END OF PARKING LOT.	CATCH BASIN water - sludge - damage 24" 2" None	Pumping is scheduled for 11/24. Absorbent socks will be changed out.

1191 W. Grand Ave.	OM1 OM12	GUTTERS AND DOWNSPOUTS EMPTING INTO LANDSCAPING AND PLAYGROUND AREA.	N/A		
2717 S. Vista Ave.	OM1 OM4 OM12	GUTTERS AND DOWNSPOUTS EMPTING INTO LANDSCAPING, PARKING LOT AND SWALE.	N/A		
425 W. Jefferson St.	OM1 OM9 OM12	CATCH BASIN ATTACHED TO STORM DRAIN. GUTTERS AND DOWNSPOUTS EMPTING INTO LANDSCAPING AND PARKING LOT.	WEST CORNER OF COMPLEX PARKING LOT.	CATCH BASIN water - sludge - damage 20" 1" None	Pumping is scheduled for 11/24. Absorbent socks will be changed out.
916 & 918 S. Orchard St.	OM1 OM7	CATCH BASIN WITH VAULT. ROOFS EMPTING INTO LANDSCAPING.	CENTER OF PARKING LOT.	CATCH BASIN water - sludge - damage 38" 4" None	Pumping is scheduled for 11/24. Absorbent socks will be changed out.

CITY OF BOISE MS4 PERMIT

DEPARTMENT ANNUAL REPORTING INFORMATION

FISCAL YEAR	2024
DEPARTMENT	Public Works - Facilities Services & Operations
STAFF CONTACT	Dan Bora
FACILITY INVENTORY	The Facilities Services and Operations Division of the City of Boise Department of Public Works is responsible for the operation and maintenance of the properties and/or buildings identified in the attached inventory.

TRASH/RECYCLING/HAZARDOUS MATERIALS/LITTER CONTROL

TRASH COLLECTION AND RECYCLING PROCEDURES	FSO contracts out janitorial services for 23% of its facilities. A porter through that service is responsible for collecting trash and recycling and disposing of them in the allocated City dumpsters.
LITTER CONTROL PROCEDURES	FSO's three largest facilities, City Hall and City Hall West and the Main Library, have monthly work orders for cleaning up grounds.
HAZARDOUS MATERIALS COLLECTION	FSO coordinates with a member of the City Environmental team to properly dispose of hazardous waste.
AMOUNT OF MATERIALS COLLECTED	N/A

STREET AND PARKING LOT SWEEPING

RESPONSIBLE PARTY FOR SWEEPING	Pavement Specialties of Idaho
STREET AND PARKING LOT SWEEPING LOCATIONS	715 S. Capitol Blvd., 2153 E Riverwalk Dr., 7557 W Ustick Rd., 333 Mark Stall Pl.
LOCATIONS WHERE SWEEPING IS INFEASIBLE	Fire Stations 1-20
FREQUENCY OF SWEEPING	Monthly at Capitol Blvd. location, Semi-annually at Riverwalk & Ustick locations, Annually at Mark Stall Pl. location
AMOUNT OF SWEEPING (SQ. FOOTAGE OR CURB MILES)	165,350 sq ft
AMOUNT OF MATERIALS COLLECTED	15,250 lbs., 30.5 yards

LANDSCAPING ACTIVITIES

DESCRIBE USE OF FERTILIZERS	Fertilizer applications are performed through an outside vendor (Stark Landscaping and Lawn Co.). Frequency of applications outlined in "Product Usage" report.
DESCRIBE ANY PRACTICES IMPLEMENTED TO REDUCE FERTILIZER USE	N/A
DESCRIBE USE OF HERBICIDES AND PESTICIDES	Herbicides applications are performed through an outside vendor (Stark Landscaping and Lawn Co.), typically at the same time as fertilizer applications to mitigate weeds.
DESCRIBE ANY PRACTICES IMPLEMENTED TO REDUCE PESTICIDE OR HERBICIDE USE	Pesticides are applied by an outside vendor (Boise Pest Control) on a quarterly basis to mitigate insect populations in and around the facility.
LIST STAFF WITH CERTIFICATIONS FOR PESTICIDE/HERBICIDE APPLICATION OR OTHER LANDSCAPING CERTIFICATIONS	Any work requiring pesticides or herbicides is contracted to an outside vendor.

SNOW/ICE REMOVAL

DESCRIBE USE OF SNOW/ICE MELTING MATERIALS AT YOUR FACILITIES INCLUDE TYPE OF PRODUCTS USED	See "Product Usage" report.
HOW MUCH OF THE PRODUCTS DID YOU USE	See "Product Usage" report.
WHERE ARE THESE PRODUCTS STORED WHEN NOT IN USE ?	Stored at FSO shop (825 S. 17th St.) on a pallet. Also stored at Boise Fire Training Facility, City Hall Downtown, City Hall West and Main Library.

TRAINING

IDENTIFY ANY SPECIALIZED TRAINING ON STORMWATER, POLLUTION PREVENTION, ETC.	I-Learn, the City's online training portal
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ANNUAL EXPENSES

COST OF STORMWATER COMPLIANCE ACTIVITIES	\$2,620.91
STAFF HOURS FOR STORMWATER COMPLIANCE ACTIVITIES	48.95

Annual Stormwater Structure Inventory

For Permit Type(s):
MS4-LB, MS4-PW-GB

Name	Catch Basin	Curb Cut	Infiltration Swale Basin	Manhole	Oil Water Separator	Other	Outfall	Pipe Inlet Outlet	Pipes	Porous Pavement	Seepage Bed	Total
			7		4				9	3	2	25
Boise City Hall	13								58			71
Boise City Hall West					10				24		5	39
City Shop			4		3							7
Downtown Shop	2				2							4
Fire Training Center	3						1					4
FS-01	2	1	3							1	2	9
FS-02	3										1	4
FS-03	3											3
FS-04		2	2			1				3		8
FS-05	5											5
FS-06	2				3						1	6
FS-07	2											2
FS-08			1	1	1					2		5
FS-09			1									1
FS-10	1				2				3		2	8
FS-11	1										1	2
FS-12			1						6			7
FS-14		5	5						5			15
FS-15										4		4
FS-17		4	3									7
FS-18	2				1							3
Library (Capital)										1		1
Library Ustick		3	3		1				1		1	9
Police Sub Station	1		2									3
Water Quailty								2				2

Name	Catch Basin		Curb Cut	Infiltration Swale Basin		Manhole	Oil Water Separator		Other	Outfall	Pipe Inlet Outlet	Pipes	Porous Pavement		Seepage Bed	Total
	40	15		32	1		27	1					14	15		
Total	40	15	32	1	27	1	1	2	106	14	15	254				

Work Order Task Status

Fiscal Year - 2024

Permit Type(s): MS4-PW-GB, MS4-LB

Facility: Boise City Hall

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
City Hall Annex CHA-L3-CB01	040124-111	Visual inspection		Completed	04/16/2024
		Remove sediment/trash/debri		Completed	04/16/2024
		Remove over grown vegetation		N/A	
		Clean grate		Completed	04/16/2024
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
City Hall Annex CHA-L3-CB02	040124-105	Visual inspection		Completed	04/16/2024
		Remove sediment/trash/debri		Completed	04/16/2024
		Remove over grown vegetation		N/A	
		Clean grate		Completed	04/16/2024
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
City Hall Annex CHA-L3-CB03	040124-112	Visual inspection		Completed	04/16/2024
		Replace marker		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		Completed	04/16/2024
		Remove over grown vegetation		N/A	

City Hall Annex CHA-L3-CB03	040124-112	Remove sediment/trash/debri		Completed	04/16/2024
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
City Hall Annex CHA-L3-CB04	040124-106	Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		Completed	04/16/2024
		Repair fencing		N/A	
		Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		Completed	04/16/2024
		Visual inspection		Completed	04/16/2024
		Replace insert and or absorbent material		N/A	
City Hall Annex CHA-L3-CB05	040124-113	Visual inspection		Completed	04/16/2024
		Repair fencing		N/A	
		Remove sediment/trash/debri		Completed	04/16/2024
		Remove over grown vegetation		N/A	
		Clean grate		Completed	04/16/2024
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Replace insert and or absorbent material		N/A	
City Hall Annex CHA-L3-CB06	040124-107	Clean grate		Completed	04/16/2024
		Remove sediment/trash/debri		Completed	04/16/2024
		Remove over grown vegetation		N/A	
		Needs pumped		N/A	
		Replace insert and or absorbent material		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Exercise or service grate or valve		N/A	
		Visual inspection		Completed	04/16/2024
City Hall Annex CHA-L3-CB07	040124-114	Visual inspection		Completed	04/16/2024
		Replace insert and or absorbent material		N/A	

City Hall Annex CHA-L3-CB07	040124-114	Repair fencing		N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Needs pumped		N/A	
		Clean grate		Completed	04/16/2024
		Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		Completed	04/16/2024
		Exercise or service grate or valve		N/A	
City Hall Annex CHA-L3-CB08	040124-108	Remove sediment/trash/debri		Completed	04/16/2024
		Visual inspection		Completed	04/16/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		Completed	04/16/2024
		Remove over grown vegetation		N/A	
City Hall Annex CHA-L3-CB09	040124-110	Clean grate		Completed	04/16/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Remove over grown vegetation		N/A	
		Visual inspection		Completed	04/16/2024
		Replace marker		N/A	
		Remove sediment/trash/debri		Completed	04/16/2024
City Hall Annex CHA-L3-CB10	040124-109	Replace insert and or absorbent material		N/A	
		Remove sediment/trash/debri		Completed	04/16/2024
		Remove over grown vegetation		N/A	
		Clean grate		Completed	04/16/2024
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	

City Hall Annex CHA-L3-CB10	040124-109	Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Visual inspection		Completed	04/16/2024
City Hall CH1-B-CB01	040124-082	Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Remove sediment/trash/debri		Completed	04/18/2024
		Visual inspection		Completed	04/18/2024
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Clean grate		Completed	04/18/2024
		Replace insert and or absorbent material		N/A	
		Remove over grown vegetation		N/A	
City Hall CH1-B-CB02	040124-083	Replace marker		N/A	
		Remove over grown vegetation		N/A	
		Clean grate		Completed	04/18/2024
		Needs pumped		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Remove sediment/trash/debri		Completed	04/18/2024
		Exercise or service grate or valve		N/A	
		Visual inspection		Completed	04/18/2024
		Replace insert and or absorbent material		N/A	
City Hall CH-2FD1	040124-084	Remove over grown vegetation		N/A	
		Visual inspection		Completed	04/16/2024
		Clean grate		Completed	04/16/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Remove sediment/trash/debri		Completed	04/16/2024
		Vacuum and replace chips	Porous Pavement Only	N/A	

Facility: Boise City Hall West

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
City Hall West CHW-OS1	040124-148	Visual inspection		Completed	04/26/2024
		Replace insert and or absorbent material		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		N/A	
		Repair fencing		N/A	
City Hall West CHW-OS10	040124-156	Remove sediment/trash/debri		N/A	
		Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Replace insert and or absorbent material		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Visual inspection		Completed	04/26/2024
City Hall West CHW-OS2	040124-149	Exercise or service grate or valve		N/A	
		Remove sediment/trash/debri		N/A	
		Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	04/26/2024
City Hall West CHW-OS3	040124-157	Exercise or service grate or valve		N/A	

City Hall West CHW-OS3	040124-157	Needs pumped		N/A	
		Clean grate		N/A	
		Replace marker		N/A	
		Replace insert and or absorbent material		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Remove over grown vegetation		N/A	
		Repair or reseed bank		N/A	
		Remove sediment/trash/debri		N/A	
		Visual inspection		Completed	04/26/2024
City Hall West CHW-OS4	040124-150	Visual inspection		Completed	04/26/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		N/A	
City Hall West CHW-OS5	040124-151	Remove sediment/trash/debri		N/A	
		Visual inspection		Completed	04/26/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Clean grate		N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
City Hall West CHW-OS6	040124-152	Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		N/A	
		Replace marker		N/A	
		Needs pumped		N/A	
City Hall West CHW-OS6	040124-152	Repair or reseed bank		N/A	

City Hall West CHW-OS6	040124-152	Vacuum and replace chips	Porous Pavement Only	N/A	
		Visual inspection		Completed	04/26/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Exercise or service grate or valve		N/A	
City Hall West CHW-OS7	040124-153	Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	04/26/2024
		Exercise or service grate or valve		N/A	
		Remove sediment/trash/debri		N/A	
City Hall West CHW-OS8	040124-154	Visual inspection		Completed	04/26/2024
		Replace marker		N/A	
		Repair fencing		N/A	
		Repair or reseed bank		N/A	
		Remove sediment/trash/debri		N/A	
		Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Exercise or service grate or valve		N/A	
		Replace insert and or absorbent material		N/A	
		Needs pumped		N/A	
City Hall West CHW-OS9	040124-155	Needs pumped		N/A	
		Remove sediment/trash/debri		N/A	
		Visual inspection		Completed	04/26/2024
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace insert and or absorbent material		N/A	
		Exercise or service grate or valve		N/A	
		Clean grate		N/A	
		Remove over grown vegetation		N/A	
		Replace marker		N/A	

City Hall West CHW-SB1	040124-171	Remove sediment/trash/debri		N/A	
		Repair fencing		N/A	
		Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Visual inspection		Completed	04/26/2024
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Replace insert and or absorbent material		N/A	
		Needs pumped		N/A	
City Hall West CHW-SB2	040124-172	Repair or reseed bank		N/A	
		Visual inspection		Completed	04/26/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Remove sediment/trash/debri		N/A	
		Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
City Hall West CHW-SB3	040124-173	Visual inspection		Completed	04/26/2024
		Clean grate		N/A	
		Needs pumped		N/A	
		Remove over grown vegetation		N/A	
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Remove sediment/trash/debri		N/A	
City Hall West CHW-SB4	040124-174	Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Exercise or service grate or valve		N/A	
		Remove sediment/trash/debri		N/A	

City Hall West CHW-SB4	040124-174	Clean grate		N/A	
		Remove over grown vegetation		N/A	
		Visual inspection		Completed	04/26/2024
		Needs pumped		N/A	
		Replace insert and or absorbent material		N/A	
		Replace marker		N/A	
City Hall West CHW-SB5	040124-175	Replace marker		N/A	
		Remove sediment/trash/debri		N/A	
		Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	04/26/2024
		Exercise or service grate or valve		N/A	

Work Order Count: 15

Facility: City Shop

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
City Shop - Fleet FLT-CS-IS1	040124-127	Visual inspection		Completed	06/26/2024
		Clean grate		N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Remove sediment/trash/debri		N/A	
		Remove over grown vegetation		N/A	
City Shop - Fleet FLT-CS-IS2	040124-128	Remove sediment/trash/debri		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	

City Shop - Fleet FLT-CS-IS2	040124-128	Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	06/26/2024
		Needs pumped		N/A	
		Remove over grown vegetation		N/A	
		Clean grate		N/A	
City Shop - Fleet FLT-CS-IS3	040124-141	Repair or reseed bank		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Remove over grown vegetation		N/A	
		Visual inspection		Completed	06/28/2024
		Remove sediment/trash/debri		N/A	
City Shop - Fleet FLT-CS-IS4	040124-142	Visual inspection		Completed	06/26/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		N/A	
City Shop - Fleet FLT-CS-OS	040124-146	Replace marker		N/A	
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	06/26/2024
		Repair fencing		N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Remove over grown vegetation		N/A	

City Shop - Fleet FLT-CS-OS	040124-146	Remove sediment/trash/debri		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
City Shop - Fleet FLT-CS-OS2	040124-145	Repair fencing		N/A	
		Remove sediment/trash/debri		N/A	
		Replace insert and or absorbent material		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Remove over grown vegetation		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Visual inspection		Completed	06/28/2024
City Shop - Fleet FLT-CS-OS3	040124-147	Visual inspection		Completed	06/28/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		N/A	

Work Order Count: 7

Facility: Downtown Shop

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
17th Street 17TH-DSOS2	040124-144	Visual inspection		Completed	06/26/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	

17th Street 17TH-DSOS2	040124-144	Clean grate		N/A	
		Remove sediment/trash/debri		Completed	06/26/2024
		Remove over grown vegetation		Completed	06/26/2024
FSO & Mobile Fleet 17TH-DSLGT	040124-085	Replace insert and or absorbent material		N/A	
		Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Visual inspection		Completed	06/26/2024
		Exercise or service grate or valve		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Remove sediment/trash/debri		N/A	
		Replace marker		N/A	
FSO & Mobile Fleet 17TH-DSOS	040124-143	Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	06/26/2024
		Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Remove sediment/trash/debri		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace marker		N/A	

Work Order Count: 3

Facility: Fire Training Center

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
Fire Maintenance-GR1	040124-104	Visual inspection		Completed	06/14/2024
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	

Fire Maintenance-GR1	040124-104	Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Remove sediment/trash/debri		N/A	

Work Order Count: 1

Facility: FS-01

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
Fire Station 01	040124-181	Replace insert and or absorbent material		N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		Completed	04/08/2024
		Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		Completed	04/08/2024
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Visual inspection		Completed	04/08/2024
		Repair fencing		N/A	
Fire Station 01-Curb Cut	040124-126	Remove over grown vegetation		N/A	
		Exercise or service grate or valve		N/A	
		Visual inspection		Completed	04/08/2024
		Replace insert and or absorbent material		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Needs pumped		N/A	
		Remove sediment/trash/debri		Completed	04/08/2024
		Clean grate		N/A	
Fire Station 01-IS1	040124-129	Clean grate		N/A	
		Remove sediment/trash/debri		Completed	04/08/2024
		Visual inspection		Completed	04/08/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	

Fire Station 01-IS1	040124-129	Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Remove over grown vegetation		N/A	
Fire Station 01-IS2	040124-130	Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Remove sediment/trash/debri		Completed	04/08/2024
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Replace marker		N/A	
		Remove over grown vegetation		N/A	
		Visual inspection		Completed	04/08/2024
		Replace insert and or absorbent material		N/A	
Fire Station 01-IS3	040124-140	Replace insert and or absorbent material		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Visual inspection		Completed	04/08/2024
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Repair fencing		N/A	
		Clean grate		N/A	
		Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		Completed	04/08/2024
		Needs pumped		N/A	
Fire Station 01-OSB1	040124-087	Visual inspection		Completed	04/08/2024
		Remove sediment/trash/debri		Completed	04/08/2024
		Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Replace marker		N/A	

Fire Station 01-OSB2	040124-086	Replace insert and or absorbent material		N/A	
		Remove sediment/trash/debri		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Remove over grown vegetation		N/A	
		Visual inspection		Completed	04/08/2024
Fire Station 01-PP1	040124-170	Visual inspection		Completed	04/08/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		Completed	04/08/2024
Fire Station 01-SP1	040124-182	Clean grate		N/A	
		Needs pumped		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Visual inspection		Completed	04/08/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		N/A	

Work Order Count: 9

Facility: FS-02

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
Fire Station 02-CB1	040124-090	Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Remove sediment/trash/debri		Completed	04/10/2024
		Remove over grown vegetation		N/A	
		Clean grate		Completed	04/10/2024
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	04/10/2024
Fire Station 02-OS1	040124-089	Repair or reseed bank		N/A	
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Remove over grown vegetation		N/A	
		Visual inspection		Completed	04/10/2024
		Remove sediment/trash/debri		Completed	04/10/2024
Fire Station 02-OS2	040124-088	Remove sediment/trash/debri		Completed	04/10/2024
		Remove over grown vegetation		N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	04/10/2024
		Clean grate		N/A	
Fire Station 02-SB1	040124-176	Replace insert and or absorbent material		N/A	

Fire Station 02-SB1	040124-176	Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Visual inspection		Completed	04/10/2024
		Needs pumped		N/A	
		Clean grate		N/A	
		Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		Completed	04/10/2024
		Exercise or service grate or valve		N/A	

Work Order Count: 4

Facility: FS-03

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
Fire Station 03-LG1	040124-093	Visual inspection		Completed	04/19/2024
		Replace insert and or absorbent material		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Repair fencing		N/A	
		Needs pumped		N/A	
		Clean grate		Completed	04/19/2024
		Remove over grown vegetation		Completed	04/19/2024
		Remove sediment/trash/debri		Completed	04/19/2024
Fire Station 03-OS1	040124-092	Exercise or service grate or valve		Completed	04/19/2024
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	04/19/2024
		Clean grate		Completed	04/19/2024
		Remove sediment/trash/debri		Completed	04/19/2024
		Repair fencing		N/A	
		Remove over grown vegetation		N/A	

Fire Station 03-OS2	040124-091	Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	04/19/2024
		Clean grate		Completed	04/19/2024
		Remove sediment/trash/debri		N/A	
		Remove over grown vegetation		N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	

Work Order Count: 3

Facility: FS-04

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
Fire Station 04 FS4-CC-01	040124-242	Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Visual inspection		Completed	06/28/2024
		Remove sediment/trash/debri		N/A	
		Remove over grown vegetation		N/A	
		Clean grate		N/A	
Fire Station 04 FS4-CC-02	040124-244	Remove over grown vegetation		N/A	
		Visual inspection		Completed	06/28/2024
		Remove sediment/trash/debri		N/A	
		Replace insert and or absorbent material		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Clean grate		N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Repair fencing		N/A	

Fire Station 04 FS4-CC-02	040124-244	Needs pumped		N/A	
Fire Station 04 FS4-IS-01	040124-245	Visual inspection		Completed	05/01/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		Completed	05/01/2024
		Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		N/A	
		Replace marker		N/A	
Fire Station 04 FS4-IS-02	040124-243	Visual inspection		Completed	06/28/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Remove over grown vegetation		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Remove sediment/trash/debri		N/A	
		Replace marker		N/A	
Fire Station 04 FS4-OT-1	040124-288	Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	06/28/2024
		Remove sediment/trash/debri		N/A	
Fire Station 04 FS4-PP-01	040124-246	Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	06/28/2024
		Exercise or service grate or valve		N/A	
		Clean grate		N/A	

Fire Station 04 FS4-PP-01	040124-246	Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Needs pumped		N/A	
Fire Station 04 FS4-PP-02	040124-247	Visual inspection		Completed	06/28/2024
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Replace insert and or absorbent material		N/A	
		Remove sediment/trash/debri		N/A	
		Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
Fire Station 04 FS4-PP-03	040124-248	Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	06/28/2024
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Remove sediment/trash/debri		N/A	
		Remove over grown vegetation		N/A	

Work Order Count: 8

Facility: FS-05

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
Fire Station 05-OS	040124-094	Remove sediment/trash/debri		N/A	
		Remove over grown vegetation		N/A	
		Replace marker		N/A	

Fire Station 05-OS	040124-094	Visual inspection		Completed	04/04/2024
		Replace insert and or absorbent material		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Repair fencing		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
	040124-095	Remove sediment/trash/debri		N/A	
		Visual inspection		Completed	04/04/2024
		Replace insert and or absorbent material		N/A	
		Clean grate		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Remove over grown vegetation		N/A	
		Replace marker		N/A	
	040124-096	Remove over grown vegetation		N/A	
		Visual inspection		Completed	04/04/2024
		Clean grate		N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Remove sediment/trash/debri		N/A	
	040124-097	Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Remove sediment/trash/debri		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Repair or reseed bank		N/A	

Fire Station 05-OS	040124-097	Visual inspection		Completed	04/04/2024
		Clean grate		N/A	
		Remove over grown vegetation		N/A	
	040124-098	Remove over grown vegetation		N/A	
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Visual inspection		Completed	04/04/2024
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Remove sediment/trash/debri		N/A	

Work Order Count: 5

Facility: FS-06

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
Fire Station 06-CB1	080124-073	Clean grate		Completed	09/06/2024
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace insert and or absorbent material		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace marker		N/A	
		Visual inspection		Completed	09/06/2024
		Remove sediment/trash/debri		Completed	09/06/2024
		Remove over grown vegetation		Completed	09/06/2024
Fire Station 06-CB2	040124-099	Remove sediment/trash/debri		Completed	06/14/2024
		Remove over grown vegetation		Completed	06/14/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Visual inspection		Completed	06/14/2024
		Replace marker		N/A	

Fire Station 06-CB2	040124-099	Exercise or service grate or valve		Completed	06/14/2024
		Needs pumped		N/A	
		Clean grate		Completed	06/14/2024
		Repair or reseed bank		N/A	
Fire Station 06-OS1	040124-158	Visual inspection		Completed	06/14/2024
		Remove sediment/trash/debri		Completed	06/14/2024
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		Completed	06/14/2024
		Needs pumped		Completed	06/14/2024
		Clean grate		Completed	06/14/2024
		Remove over grown vegetation		Completed	06/14/2024
		Replace insert and or absorbent material		N/A	
Fire Station 06-OS2	040124-159	Replace marker		N/A	
		Visual inspection		Completed	06/14/2024
		Remove sediment/trash/debri		Completed	06/14/2024
		Remove over grown vegetation		Completed	06/14/2024
		Clean grate		Completed	06/14/2024
		Needs pumped		Completed	06/14/2024
		Exercise or service grate or valve		Completed	06/14/2024
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
Fire Station 06-OS3	040124-160	Clean grate		Completed	06/14/2024
		Needs pumped		Completed	06/14/2024
		Exercise or service grate or valve		Completed	06/14/2024
		Replace marker		N/A	
		Visual inspection		Completed	06/14/2024
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Remove over grown vegetation		Completed	06/14/2024
		Repair or reseed bank		N/A	
		Remove sediment/trash/debri		Completed	06/14/2024
Fire Station 06-SB1	040124-177	Remove over grown vegetation		Completed	06/14/2024

Fire Station 06-SB1	040124-177	Visual inspection		Completed	06/14/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		Completed	06/14/2024
		Needs pumped		N/A	
		Clean grate		Completed	06/14/2024
		Remove sediment/trash/debri		Completed	06/14/2024

Work Order Count: 6

Facility: FS-07

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
Fire Station 07-OS1	040124-100	Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Remove over grown vegetation		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		Completed	04/10/2024
		Remove sediment/trash/debri		Completed	04/10/2024
		Replace marker		N/A	
Fire Station 07-OS2	040124-101	Visual inspection		Completed	04/10/2024
		Replace marker		N/A	
		Remove sediment/trash/debri		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	04/10/2024

Fire Station 07-OS2	040124-101	Remove over grown vegetation		N/A	
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Work Order Count: 2

Facility: FS-08

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
Fire Station 08 FS8-IS-01	040124-239	Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Repair fencing		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Exercise or service grate or valve		N/A	
		Remove sediment/trash/debri		N/A	
		Visual inspection		Completed	04/23/2024
		Replace insert and or absorbent material		N/A	
Fire Station 08 FS8-PP-01	040124-240	Remove over grown vegetation		N/A	
		Needs pumped		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	04/23/2024
		Remove sediment/trash/debri		Completed	04/23/2024
		Exercise or service grate or valve		N/A	
		Clean grate		N/A	
Fire Station 08 FS8-PP-02	040124-241	Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	04/23/2024
		Clean grate		N/A	

Fire Station 08 FS8-PP-02	040124-241	Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		N/A	

Work Order Count: 3

Facility: FS-10

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
Fire Station 10-CB1	040124-102	Visual inspection		Completed	05/09/2024
		Replace insert and or absorbent material		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Remove over grown vegetation		N/A	
		Repair or reseed bank		N/A	
		Remove sediment/trash/debri		N/A	
Fire Station 10-OS1	040124-161	Remove over grown vegetation		N/A	
		Visual inspection		Completed	05/09/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Remove sediment/trash/debri		N/A	
Fire Station 10-OSPlans2	040124-162	Remove sediment/trash/debri		N/A	
		Replace insert and or absorbent material		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Repair fencing		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	

Fire Station 10-OSPlans2	040124-162	Remove over grown vegetation		N/A	
		Replace marker		N/A	
		Visual inspection		Completed	05/09/2024
Fire Station 10-SB1	040124-178	Visual inspection		Completed	05/09/2024
		Exercise or service grate or valve		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Replace marker		N/A	
		Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		N/A	
Fire Station 10-SBPlans1	040124-180	Repair or reseed bank		N/A	
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	05/09/2024
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Remove over grown vegetation		N/A	
		Repair or reseed bank		N/A	
		Remove sediment/trash/debri		N/A	

Work Order Count: 5

Facility: FS-11

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
Fire Station 11-GR1	040124-103	Clean grate		Completed	05/31/2024
		Needs pumped		Completed	05/31/2024
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Replace insert and or absorbent material		N/A	

Fire Station 11-GR1	040124-103	Visual inspection		Completed	05/31/2024
		Remove over grown vegetation		Completed	05/31/2024
		Repair or reseed bank		N/A	
		Remove sediment/trash/debri		Completed	05/31/2024
Fire Station 11-SB1	040124-179	Visual inspection		Completed	05/31/2024
		Remove sediment/trash/debri		Completed	05/31/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		Completed	05/31/2024
		Remove over grown vegetation		Completed	05/31/2024

Work Order Count: 2

Facility: FS-12

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
Fire Station 12-IS1	040124-131	Visual inspection		Completed	04/10/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		Completed	04/10/2024
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		Completed	04/10/2024
		Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		Completed	04/10/2024

Work Order Count: 1

Facility: FS-14

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
Fire Station 14-CC1	040124-117	Visual inspection		Completed	06/13/2024
		Replace insert and or absorbent material		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		N/A	
		Repair fencing		N/A	
Fire Station 14-CC2	040124-118	Remove sediment/trash/debri		N/A	
		Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Replace insert and or absorbent material		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Visual inspection		Completed	06/25/2024
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
Fire Station 14-CC3	040124-119	Vacuum and replace chips	Porous Pavement Only	N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	06/13/2024
		Clean grate		N/A	
		Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		N/A	
Fire Station 14-CC4	040124-120	Visual inspection		Completed	06/13/2024

Fire Station 14-CC4	040124-120	Clean grate		N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		N/A	
Fire Station 14-CC5	040124-121	Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Remove sediment/trash/debri		N/A	
		Replace marker		N/A	
		Visual inspection		Completed	06/13/2024
Fire Station 14-IS1	040124-132	Repair fencing		N/A	
		Remove sediment/trash/debri		N/A	
		Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Visual inspection		Completed	06/13/2024
		Replace insert and or absorbent material		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
Fire Station 14-IS2	040124-133	Vacuum and replace chips	Porous Pavement Only	N/A	
		Visual inspection		Completed	06/13/2024
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	

Fire Station 14-IS2	040124-133	Clean grate		N/A	
		Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
Fire Station 14-IS3	040124-134	Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Visual inspection		Completed	06/13/2024
		Remove sediment/trash/debri		N/A	
		Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
Fire Station 14-IS4	040124-135	Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Remove over grown vegetation		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Replace insert and or absorbent material		N/A	
		Exercise or service grate or valve		N/A	
		Visual inspection		Completed	06/13/2024
		Remove sediment/trash/debri		N/A	
Fire Station 14-IS5	040124-136	Repair fencing		N/A	
		Remove sediment/trash/debri		N/A	
		Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Visual inspection		Completed	06/13/2024

Fire Station 14-IS5	040124-136	Replace insert and or absorbent material		N/A	
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Work Order Count: 10

Facility: FS-15

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
Fire Station 15-PV1	040124-166	Visual inspection		Completed	04/24/2024
		Remove sediment/trash/debri		N/A	
		Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Exercise or service grate or valve		N/A	
Fire Station 15-PV2	040124-167	Remove over grown vegetation		N/A	
		Remove sediment/trash/debri		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	04/24/2024
Fire Station 15-PV3	040124-168	Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Clean grate		N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	04/24/2024
		Remove sediment/trash/debri		N/A	
		Remove over grown vegetation		N/A	

Fire Station 15-PV3	040124-168	Vacuum and replace chips	Porous Pavement Only	N/A	
		Needs pumped		N/A	
Fire Station 15-PV4	040124-169	Visual inspection		Completed	04/24/2024
		Remove over grown vegetation		N/A	
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Remove sediment/trash/debri		N/A	

Work Order Count: 4

Facility: FS-17

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
Fire Station 17	040124-122	Remove over grown vegetation		N/A	
		Visual inspection		Completed	04/22/2024
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Remove sediment/trash/debri		Completed	04/22/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
	040124-123	Visual inspection		Completed	04/22/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Remove over grown vegetation		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	

Fire Station 17	040124-123	Needs pumped		N/A	
		Remove sediment/trash/debri		N/A	
		Clean grate		N/A	
	040124-124	Remove sediment/trash/debri		N/A	
		Replace insert and or absorbent material		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Repair fencing		N/A	
		Visual inspection		Completed	04/22/2024
		Remove over grown vegetation		N/A	
	040124-125	Remove sediment/trash/debri		N/A	
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Visual inspection		Completed	04/22/2024
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Clean grate		N/A	
		Remove over grown vegetation		N/A	
Fire Station 17-IS1	040124-139	Visual inspection		Completed	04/22/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Remove sediment/trash/debri		N/A	
		Remove over grown vegetation		N/A	
Fire Station 17-IS2	040124-138	Remove sediment/trash/debri		N/A	
		Visual inspection		Completed	04/22/2024

Fire Station 17-IS2	040124-138	Replace insert and or absorbent material		N/A	
		Remove over grown vegetation		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Repair or reseed bank		N/A	
Fire Station 17-IS3	040124-137	Replace marker		N/A	
		Remove over grown vegetation		N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Repair or reseed bank		N/A	
		Clean grate		N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	04/22/2024
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Remove sediment/trash/debri		N/A	

Work Order Count: 7

Facility: FS-18

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
Fire Station 18-CB1	040124-116	Visual inspection		Completed	06/20/2024
		Replace insert and or absorbent material		N/A	
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Replace marker		N/A	
		Clean grate		Completed	06/20/2024
		Exercise or service grate or valve		Completed	06/20/2024
		Needs pumped		Completed	06/20/2024
		Remove over grown vegetation		Completed	06/20/2024
		Remove sediment/trash/debri		Completed	06/20/2024
		Repair or reseed bank		N/A	
Fire Station 18-CB2	040124-115	Visual inspection		Completed	06/20/2024

Fire Station 18-CB2	040124-115	Replace insert and or absorbent material		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Repair fencing		N/A	
		Needs pumped		Completed	06/20/2024
		Clean grate		Completed	06/20/2024
		Remove over grown vegetation		Completed	06/20/2024
		Remove sediment/trash/debri		Completed	06/20/2024
		Exercise or service grate or valve		Completed	06/20/2024
Fire Station 18-OW1	040124-163	Repair fencing		N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		Completed	06/20/2024
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Clean grate		Completed	06/20/2024
		Needs pumped		Completed	06/20/2024
		Replace insert and or absorbent material		N/A	
		Remove over grown vegetation		Completed	06/20/2024
		Remove sediment/trash/debri		Completed	06/20/2024
		Visual inspection		Completed	06/20/2024

Work Order Count: 3

Facility: Library (Capital)

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
Library - Main-PP	060624-020	Remove over grown vegetation		N/A	
		Clean grate		N/A	
		Needs pumped		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	09/11/2024
		Remove sediment/trash/debri		N/A	

Library - Main-PP	060624-020	Exercise or service grate or valve		N/A	
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Work Order Count: 1

Facility: Library Ustick

MS4-LB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
Library - Cole & Ustick-CC	060624-011	Visual inspection		Completed	07/02/2024
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Replace insert and or absorbent material		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		Completed	07/02/2024
		Remove over grown vegetation		Completed	07/02/2024
		Remove sediment/trash/debri		Completed	07/02/2024
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
	060624-012	Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Needs pumped		N/A	
		Clean grate		N/A	
		Remove over grown vegetation		Completed	07/02/2024
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	07/02/2024
		Exercise or service grate or valve		N/A	
		Remove sediment/trash/debri		Completed	07/02/2024
	060624-013	Clean grate		Completed	07/02/2024
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Remove over grown vegetation		Completed	07/02/2024
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	

Library - Cole & Ustick-CC	060624-013	Visual inspection		Completed	07/02/2024
		Remove sediment/trash/debri		Completed	07/02/2024
Library - Cole & Ustick-IS	060624-014	Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	07/02/2024
		Remove sediment/trash/debri		Completed	07/02/2024
		Remove over grown vegetation		Completed	07/02/2024
		Clean grate		N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
	060624-015	Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Remove sediment/trash/debri		Completed	07/02/2024
		Needs pumped		N/A	
		Clean grate		Completed	07/02/2024
		Remove over grown vegetation		Completed	07/02/2024
		Replace insert and or absorbent material		N/A	
		Exercise or service grate or valve		N/A	
		Visual inspection		Completed	07/02/2024
	060624-016	Replace insert and or absorbent material		N/A	
		Remove over grown vegetation		Completed	07/02/2024
		Repair fencing		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Replace marker		N/A	
		Exercise or service grate or valve		N/A	
		Needs pumped		N/A	
		Clean grate		Completed	07/02/2024
		Visual inspection		Completed	07/02/2024
Library - Cole & Ustick-OW	060624-017	Remove sediment/trash/debri		Completed	07/02/2024
		Repair fencing		N/A	
		Remove over grown vegetation		Completed	07/02/2024
		Clean grate		Completed	07/02/2024

Library - Cole & Ustick-OW	060624-017	Remove sediment/trash/debri		Completed	07/02/2024
		Exercise or service grate or valve		Completed	07/02/2024
		Replace marker		N/A	
		Needs pumped		Completed	07/02/2024
		Replace insert and or absorbent material		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair or reseed bank		N/A	
		Visual inspection		Completed	07/02/2024
Library - Cole & Ustick-PIPE	060624-019	Remove over grown vegetation		Completed	07/02/2024
		Clean grate		Completed	07/02/2024
		Needs pumped		Completed	07/02/2024
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Exercise or service grate or valve		Completed	07/02/2024
		Remove sediment/trash/debri		Completed	07/02/2024
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	07/02/2024
Library - Cole & Ustick-SPBD	060624-018	Remove over grown vegetation		Completed	07/02/2024
		Clean grate		N/A	
		Remove sediment/trash/debri		Completed	07/02/2024
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	07/02/2024

Work Order Count: 9

Facility: Water Quality

MS4-PW-GB

Structure ID	Work Order	Task	Notes	Task Status	Date Completed
Greenhouse GRNHS-WQOD1	040124-164	Remove sediment/trash/debri		N/A	
		Remove over grown vegetation		N/A	

Greenhouse GRNHS-WQOD1	040124-164	Clean grate		N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Repair or reseed bank		N/A	
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Visual inspection		Completed	04/11/2024
Greenhouse GRNHS-WQOD2	040124-165	Clean grate		N/A	
		Needs pumped		N/A	
		Exercise or service grate or valve		N/A	
		Replace marker		N/A	
		Visual inspection		Completed	04/11/2024
		Vacuum and replace chips	Porous Pavement Only	N/A	
		Repair fencing		N/A	
		Replace insert and or absorbent material		N/A	
		Remove sediment/trash/debri		N/A	
		Repair or reseed bank		N/A	
		Remove over grown vegetation		N/A	

Work Order Count: 2

Report Work Order Count: 123

Location	Snow and Ice Removal			Landscaping		Pest Control
	Peladow Ice Melt (50 lbs)	Total HiCo Thaw (gal)	Total CalMelt (50 lbs)	Annual Fertilizer Applications	Annual Herbicide Applications	Phantom Pesticide Applications
12th & Bannock (temporary FS 05)	0	0	4	0	0	0
8th and River Property	0	0	0	0	0	0
Black History Museum	0	0	0	0	0	0
Boise Police Downtown Station	1	0	0	0	0	0
Boise Police Whitewater Substation	0	0	0	3	3	0
Boise Train Depot	0	0	0	0	0	0
Boise Urban Garden School (BUGS)	0	0	4	0	0	0
Braniff	0	0	0	0	0	0
CHD	0	0	44	0	0	0
CHW	0	0	3	0	0	0
City Recreation Office (CRO)	0	0	2	0	0	0
City Shop - Fleet	0	0	0	3	3	0
Dick Eardley Senior Center	0	0	3	0	0	0
Eldorado/McKinney Properties	0	0	0	0	6	0
Erma Hayman House	1	0	0	3	3	0
Fire Maintenance	0	0	0	0	0	0
Fire Training Facility	0	0	40	3	3	0
Firing Range	0	0	3	3	3	0
FS01	0	0	6	3	3	0
FS02	0	0	2	3	3	0
FS03	0	0	3	3	3	0
FS04	0	0	7	3	3	0
FS05	0	0	0	3	3	0
FS06	0	0	7	3	3	0
FS07	0	0	4	3	3	0
FS08	0	0	4	3	3	0
FS09	0	0	4	3	3	0
FS10	0	0	7	3	3	0
FS11	0	0	4	3	3	0
FS12	0	0	8	3	3	0
FS14	0	0	8	3	3	0
FS15	0	0	2	3	3	0
FS16	0	0	4	3	3	0
FS17	0	0	8	3	3	0
FS18	0	0	0	3	3	0
Forestry	0	0	2	0	0	0
Fort Boise Community Center	0	0	3	0	0	0
FSO and Mobile Fleet	0	0	0	0	0	0
Gary Lane	0	0	0	0	0	0
Greenhouse (520 Idaho St.)	1	0	0	0	0	0
James Castle House	0	0	2	3	3	0
Jim Hall Foothills Learning Center	0	0	0	0	0	0
Library - Bown Crossing	0	0	3	3	3	0
Library - Cole & Ustick	0	0	0	3	3	0
Library - Collister	0	0	0	0	0	0
Library - Hillcrest	0	0	1	0	0	0
Library - Main	0	0	14	3	3	0
MRP Transmit Station	0	0	0	3	3	0
Parks Administration	0	0	0	0	0	0
Willow Lane	0	0	0	0	0	0

Attachment 7

Industrial and Commercial Stormwater Discharge Management: Year 3 Summary

Industrial and Commercial Stormwater Discharge Management

The city implements the industrial and commercial stormwater discharge management control measures by maintaining and up to date inventory and conducting high priority inspections of the industrial and commercial properties. Specifics on the programs are included in the sections below.

Inventory

The City of Boise has a large inventory of Industrial and Commercial (I/C) facilities. I/C parcel inventory is tracked using GIS software and updated as parcels are permitted, and as parcels change ownership. Along with the City's inventory maintained with GIS, the Source Control team maintains an I/C database and inspection program that focuses on high-priority locations, facilities with pretreatment inspection requirements, and complaint response. This database is continuously being updated with the information required by Permit part 3.6.2 to have a complete inventory no later than April 3, 2026.

The 2024 commercial and industrial facility inventory consists of 2,001 businesses that discharge or have the potential to discharge to the ACHD MS4 or waterways, or the discharge status is currently unknown. Of the 2001 businesses within Boise City jurisdiction, 23 facilities discharge stormwater runoff directly to waterways, 111 discharge to ACHD's MS4, and the drainage status of 1,867 facilities is currently unknown.

Industrial and Commercial Inspection Program

Industrial and commercial properties that directly discharge to receiving waters are given high priority for inspections and are inspected annually. These are also inspected in accordance with Permit part 3.4.5. The list of high priority sites can be found in Attachment 5, Table 2. There are currently 23 properties inspected annually to verify inspection and maintenance of stormwater infrastructure, good housekeeping procedures, installation of proper BMPs, and prevention of stormwater pollution from entering the connected surface water. These properties may change as new and redevelopment sites are integrated into the high priority list and the City develops the inspection prioritization system for new and redevelopment.

The City's Industrial Pretreatment and Stormwater staff also are trained to complete I/C stormwater inspections at facilities, concurrently with required pretreatment inspections as well as stormwater-specific inspections. These inspections, as well as the annual high-priority inspections, include a review of the on-site stormwater management facilities, including system inspection and maintenance, evaluation of conveyance and treatment structures, and outside material storage or "wet" processes. During Permit Year 3, Pretreatment/Stormwater staff conducted 414 general inspections.

The City and ACHD maintain an Industrial/Commercial Inspection program agreement that allows City staff to inspect high priority facilities that discharge to ACHD's MS4 infrastructure. These inspections conducted by the city, on behalf of ACHD, allow the

City to use enforcement authority for non-compliance. In Permit Year 3, 15 facilities were inspected in accordance with this agreement.

For more details regarding I/C inspections, see Boise's SWMP.

Attachment 8

Permit Year 3 Stormwater Outfall Monitoring Summary



Stormwater Outfall Monitoring Summary

Water Year 2024

Prepared by
Brown and Caldwell

Prepared for
Ada County Highway District
December 19, 2024



This document was prepared solely for ACHD in accordance with professional standards at the time the services were performed and in accordance with the contract between ACHD and Brown and Caldwell dated September 12, 2024. This document is governed by the specific scope of work authorized by ACHD; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by ACHD and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

Stormwater Outfall Monitoring Summary WY 2024

Ada County Highway District

12/19/2024

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1 Introduction

Ada County Highway District (ACHD), Boise State University, City of Boise, City of Garden City, Drainage District #3, and the Idaho Transportation Department District #3 (Permittees) were issued a third-cycle National Pollutant Discharge Elimination System (NPDES) Phase Permit #IDS027561 (Permit) on October 1, 2021. The Permit authorizes the Permittees to discharge from municipal separate storm sewer system outfalls to the Boise River and its tributaries. According to Permit Part 6.2.1, Wet Weather Stormwater Outfall Monitoring, Permittees are required to monitor wet weather stormwater discharges according to the [NPDES Phase I Stormwater Outfall Monitoring Plan](#) (ACHD, 2022). The following summary covers wet weather outfall monitoring activities during water year (WY) 2024 (October 1, 2023–September 30, 2024). WY 2024 represents the third year of monitoring under the new Permit cycle.

The Stormwater Outfall Monitoring Plan (SWOMP) was developed in line with the Quality Assurance Project Plan for NPDES Stormwater Permit Monitoring (QAPP) (ACHD, 2023) and describes the overall approach to stormwater outfall monitoring. Details about specific site characteristics, equipment, data collection and sample handling procedures, analytical methods, and quality assurance/quality control methodology are found in the SWOMP.

In WY 2024, data collection for the Stormwater Outfall Monitoring Program included precipitation, flow, and water quality samples. Four outfall monitoring sites within the Permit area (Lucky, Whitewater, Main, and Americana) were monitored for flow and water quality. The water quality samples were collected from wet weather discharges and included grab samples with corresponding field parameters and composite samples, which were collected throughout the duration of a storm. Additionally, four rain gauge sites (East, Front, Cynthia Mann, and Whitewater) were maintained to provide localized precipitation data. Each rain gauge location represents at least one of the monitored subwatersheds and was used to verify that storm criteria were met.

2 Monitoring Sites, Equipment, and Sample Type

The Stormwater Outfall Monitoring Program consists of four monitored subwatersheds: Lucky, Whitewater, Main, and Americana. Monitoring stations for each subwatershed are located near the outfalls with dedicated equipment installed at each location. Table 2-1 depicts the equipment types and referenced rain gauge site for each subwatershed. A vicinity map illustrating the location of each subwatershed, monitoring station, and rain gauge site is found in Figure 1 (Appendix A).

Table 2-1. Monitoring Station Equipment

Monitoring Site	Lucky	Whitewater	Main	Americana
Sampler type	Hach AS950	ISCO 6712	Hach AS950	ISCO 6712
Flowmeter type	Hach AV9000	ISCO Signature	Hach AV9000	ISCO Signature
Referenced rain gauge	Cynthia Mann	Whitewater	Front	Front and East
Rain gauge equipment types	Global Water tipping bucket/HOBO event logger	Hach tipping bucket/ISCO Signature	Global Water tipping bucket/HOBO event logger	Global Water tipping bucket/HOBO event logger

2.1 Sample Types

The sample types collected during WY 2024 included grab samples and composite samples. Grab samples represent a discrete measurement from the overall storm discharge while composite samples represent the entire discharge.

Grab samples were manually collected using a swing sampler. The grab samples were submitted to the Boise City Public Works Water Quality Laboratory (WQL) and analyzed for *E. coli*. At the time that the grab samples were collected, field parameters (temperature, pH, dissolved oxygen [DO], and conductivity) were measured using In-Situ smarTROLL or In-Situ AquaTROLL handheld instruments.

Composite samples were collected using automatic samplers, which worked in conjunction with flowmeters. After a predetermined volume of flow was discharged, the flowmeters triggered the samplers to collect a subsample. Each subsample was deposited into a 15-liter carboy, resulting in a flow-proportional composite sample. The composite samples were submitted to the WQL, where they were split for analysis. The following constituents were analyzed during WY 2024: biological oxygen demand, 5-day (BOD₅); chemical oxygen demand (COD); hardness as calcium carbonate (CaCO₃); turbidity; total suspended solids (TSS); total dissolved solids (TDS); total phosphorus as P(TP); orthophosphate, as P (ortho-P); ammonia, as N; nitrate + nitrite, as N; total Kjeldahl nitrogen (TKN); total arsenic; dissolved and total cadmium; dissolved copper; dissolved and total lead; total mercury; and dissolved zinc.

3 Stormwater Outfall Monitoring Results

Wet weather stormwater samples were collected according to the procedures listed in the SWOMP. One of the goals in the SWOMP is to collect three accepted (unqualified) grab and composite samples from each monitoring station during each water year. In WY 2024, samples were attempted during five storms to meet this goal. A summary of the storm dates and sample types collected is shown in Table 3-1. Storm setup and sampling information are included in Table 1 (Appendix B). Storm Event Reports were created after each stormwater sampling event to monitor the status of the SWOMP and discuss the hydrological and analytical data from the grab and composite samples. These Storm Event Reports include details about the storm and weather monitoring, hydrographs, sample collection times, and water quality results. Individual Storm Event Reports for the five sampling events during WY 2024 are included in Appendix C.

Table 3-1. Storm Events and Sample Types

Date	Lucky	Whitewater	Main	Americana
October 10, 2023	G, C ^{1, 2}	G	–	G, C ³
November 19, 2023	G, C	G, C	G, C	G ⁴ , FD, FB, C
February 1, 2024	G ⁵ , FD, FB, C	G ⁵ , C ⁶ , CD	G ⁵ , C	G ⁵ , C
February 26, 2024	G, C	G, C	G, FD, FB, C ⁷	G, C
March 28, 2024	–	C	G, FD, FB, C	G, CB

Sample types: G = grab, C = composite

QC Sample types: FD = field duplicate, FB = field blank, CD = lab duplicate/composite split, CB = field blank composite

¹ Composite sample qualified due to lack of representativeness (50%–75%).

² Incomplete water quality analysis due to low composite sample volume.

³ Composite sample qualified due to lack of representativeness (50%–75%) of the calculated flow volume.

⁴ Incomplete field parameter collection on the grab sample data form due to field error.

⁵ *E. coli* sample qualified due to exceeded hold time.

⁶ Composite sample rejected due to automatic sampler triggering prior to storm event runoff. The subsamples taken prior to the event represented more than 10% of the composite volume.

⁷ Composite sample qualified due to automatic sampler triggering prior to storm event runoff. The subsamples taken prior to the event represented less than 10% of the composite volume.

3.1 Wet Weather Analytical Results

Field parameter results are presented in Table 2 and analytical results are presented in Table 3 (Appendix B). Graphical representation of the analytical results is provided in Figures 2–5 (Appendix A). The following assessment provides minimum and maximum measured values for WY 2024. Qualified data are included in the range of measured/reported values as well as the data analysis. Rejected data are not included in the analysis or data discussion below; however, they are presented in the tables. All measurements were recorded in accordance with QAPP and SWOMP procedures.

DO and oxygen demand

- DO ranged from 4.920 to 10.88 milligrams per liter (mg/L).
- Biological oxygen demand, 5-day (BOD₅) concentrations ranged from 5.03 to 61.9 mg/L.
- Chemical oxygen demand (COD) concentrations ranged from 39.0 to 167 mg/L.

pH, temperature, conductivity, and hardness

- pH values ranged from 5.66 to 8.27 standard units.
- Temperature ranged from 4.75 to 17.17 degrees Celsius.
- Conductivity ranged from 81.35 to 749.2 micro-siemens per centimeter.
- Hardness ranged from below the method detection limit (MDL) (< 0.100) to 102 mg/L as calcium carbonate.

Bacteria

- *E. coli* ranged from below the MDL (< 1.0) to 2,720 most probable number per 100 milliliters.

Sediment

- Turbidity ranged from 8.60 to 103 nephelometric turbidity units.
- TSS ranged from 8.63 to 131 mg/L.
- TDS ranged from 44.2 to 236 mg/L.

Nutrients

- Ammonia, as N ranged from 0.173 to 0.829 mg/L.
- Chloride ranged from 5.19 to 64.1 mg/L
- Nitrate + nitrite, as N ranged from 0.145 to 0.969 mg/L.
- TKN ranged from 0.894 to 2.43 mg/L.

Phosphorus

- TP ranged from 0.143 to 0.958 mg/L.
- Ortho-P ranged from 0.0494 to 0.768 mg/L as P.

Metals

- Total arsenic ranged from 0.66 to 5.5 micrograms per liter (µg/L).
- Dissolved cadmium ranged from below the MDL (< 0.0100) to 0.032 µg/L.
- Total cadmium ranged from 0.024 to 0.13 µg/L.
- Dissolved copper ranged from 1.9 to 8.2 µg/L.

- Dissolved lead ranged from 0.028 to 0.21 µg/L.
- Total lead ranged from 0.33 to 6.1 µg/L.
- Total mercury ranged from below the MDL (< 0.0100) to 0.0191 µg/L.
- Dissolved zinc ranged from 9.80 to 51.7 µg/L.

3.2 Monitored Event Pollutant Loading Results

Pollutant loading estimates in pounds per acre (lbs/ac) were calculated for the following constituents of concern: TSS; TP; ammonia, as N; nitrate + nitrite, as N; and TKN. The reported concentrations were combined with runoff volumes measured during the storm event at each monitoring station. Formulas that were used, including conversion factors to estimate the loading in lbs/ac, are described in the SWOMP. Table 4 (Appendix B) presents the estimated pollutant loading of the constituents for each monitored storm. The pollutant loading contributions for each site are shown graphically in Figure 6 (Appendix A). Table 5 (Appendix B) is a summary of event loading estimates in pounds per acre for comparison between monitored drainage areas. Rejected data are not included in the analysis or data discussion below; however, they are presented in the tables. A summary of the estimated ranges of pollutant loading for the storm events monitored during WY 2024 is presented below.

- TSS loading estimates ranged from 0.0400 to 3.52 lbs/ac.
- TP loading estimates ranged from 0.000617 to 0.0114 lbs/ac.
- Ammonia, as N loading estimates ranged from 0.000771 to 0.0170 lbs/ac.
- Nitrate + nitrite, as N loading estimates ranged from 0.00162 to 0.0168 lbs/ac.
- TKN loading estimates ranged from 0.00367 to 0.0453 lbs/ac.

3.3 Precipitation Results

Precipitation data from the Front, East, Cynthia Mann, and Whitewater rain gauges were used to validate all targeted storms during WY 2024. Each monitoring station is associated with a rain gauge. Precipitation data recorded for each of the targeted storms can be found in Table 1 (Appendix B). Monthly totals for WY 2024 are shown in Figure 7 (Appendix A).

4 Quality Assurance/Quality Control

Quality assurance (QA) and quality control (QC) measures for the Stormwater Outfall Monitoring Program are presented in detail in the QAPP and SWOMP. No deviations from the QAPP and SWOMP occurred during WY 2024. QA and QC measures conducted during the water year are discussed below.

4.1 Data Quality Discussion

A data validation review process was used to evaluate the analytical and field parameter results. These checklists were used to compare monitoring methods and monitoring data collected against performance criteria established to meet the data quality objectives described in the QAPP. Field parameter results and analytical results that were qualified are identified in Tables 2 and 3 (Appendix B), respectively. Further information regarding qualified samples is included in the Storm Event Reports located in Appendix C.

The following program criteria are used to identify storm events and representative composite samples.

- Storm criteria are met when the precipitation amount is greater than 0.10 inch, and the storm was preceded by a minimum 72 hours of dry weather from the previous measurable storm event (rainfall greater than 0.10 inch).

- Composite samples are considered representative of stormwater runoff when aliquots represent greater than 75 percent of total runoff volume from the storm or greater than 6 hours of the storm, including the first hour of runoff.

For WY 2024, samples collected during the following storm events were qualified for reasons discussed below:

October 10, 2023

- The composite sample collected from the Lucky monitoring station on October 10, 2023, was qualified due to lack of representativeness (50%–75%) during the storm event, as well as an incomplete water quality analysis due to low composite sample volume.
- The composite samples collected from Americana monitoring station were qualified due to lack of representativeness (50%–75%) of the calculated flow.

November 19, 2023

- The grab sample collected from the Americana monitoring station on November 19, 2023, was qualified due to incomplete field parameters, resulting from a field error.

February 1, 2024

- The grab samples collected for each monitoring station on February 1, 2024, were qualified due to *E. coli* samples exceeding hold time.

February 26, 2024

- The composite sample collected from the Main monitoring station on February 26, 2024, was qualified due to automatic sampler triggering prior to storm event runoff. The subsamples taken prior to the event represented less than 10% of the composite volume.

4.2 QC Sample Results

QC sampling during WY 2024 consisted of a combination of field QC samples, laboratory QC samples, and equipment QC samples. Field QC sampling intervals followed a predetermined schedule, included in the SWOMP. Equipment QC samples were collected during fall maintenance. Sample results for all field QC samples are included in Table 6 (Appendix B).

4.2.1 Field QC Samples

Field QC samples include field duplicates, field blanks, and composite blanks.

Field duplicates are field grab samples that were taken alongside a parent grab sample to compare the accuracy of the data. For *E. coli*, allowable logarithmic relative percent difference (RPD) between the duplicate sample and the parent sample is 40 percent, for values where the parent and duplicates are greater than 10 MPN/100mL. Due to the variability associated with extremely low numbers indicating little to no association between MPN results with a concentration of less than 10 MPN/100 mL, all sample pairs that are both less than 10 MPN/100mL will be automatically included in the database without qualifier flags. All field duplicate samples collected during WY 2024 met the RPD standard or had values below 10 MPN/100mLs.

Analytical results from field blanks and composite blanks are expected to be less than the MDL. If a water quality parameter is detected in a field blank or composite blank, all analytical results associated with the blank that exhibit a concentration of less than five times the concentration detected in the blank, are qualified. All field blank and composite blank samples collected had results less than the MDLs for the analyzed constituents.

4.2.2 Laboratory QC Samples

Laboratory QC samples are composite duplicate samples that are split at WQL. This type of sample serves as a check on the laboratory's ability to representatively split a composite sample and is a test of analytical precision. The allowable RPD for all parameters is 20 percent. All parameters from the composite duplicate sample collected during WY 2024 met the RPD standard.

4.2.3 Equipment QC Samples

Equipment QC samples include an equipment blank and a rinsate blank, both serving as a check on equipment decontamination procedures.

The equipment blank is collected before sampling for the water year begins and when new equipment is installed. For WY 2024, the equipment blanks were collected on October 2, 4, and 5, 2023, at the Main, Whitewater, Americana, and Lucky monitoring stations. Dissolved copper and dissolved zinc were detected in all blank samples. Dissolved copper results throughout the WY that are less than five times the value detected in the blank, have been qualified and are considered estimates. Dissolved zinc samples throughout the WY are unqualified for all sites. Ammonia and COD were detected in the Main blank sample. Total lead was detected in the blank at Lucky while total and dissolved lead was detected in the blank at Whitewater. However, no ammonia, COD, or total and dissolved lead samples collected throughout the WY were less than five times the value detected in the blank and are therefore unqualified. All other results were greater than five times the detected value in the equipment blank and are unqualified.

The rinsate blank is collected after sampling for the water year has been completed. The rinsate blanks for WY 2024 were collected on September 10 and 17, 2024, at the Main, Whitewater, and Americana monitoring stations. Dissolved copper was detected in all blank samples. Dissolved copper results that were collected throughout WY 2024 are less than five times the value detected in the blank have been qualified and considered estimates. Orthophosphate, as P and TSS were detected in the Whitewater and Americana blank samples, respectively, and total lead was detected in both samples. Dissolved zinc was detected in the Main and Americana blank samples. However, no orthophosphate, as P; TSS; total lead; or dissolved zinc results collected during WY 2024 were less than five times the concentration detected in the respective rinsate blanks and are therefore unqualified. All other results were greater than five times the detected value in the rinsate blank and are unqualified.

Appendix A: Figures

Figure 1. Vicinity Map

Figure 2. WY 2024 *E. coli* Results

Figure 3. WY 2024 TSS, TDS, and Turbidity Results

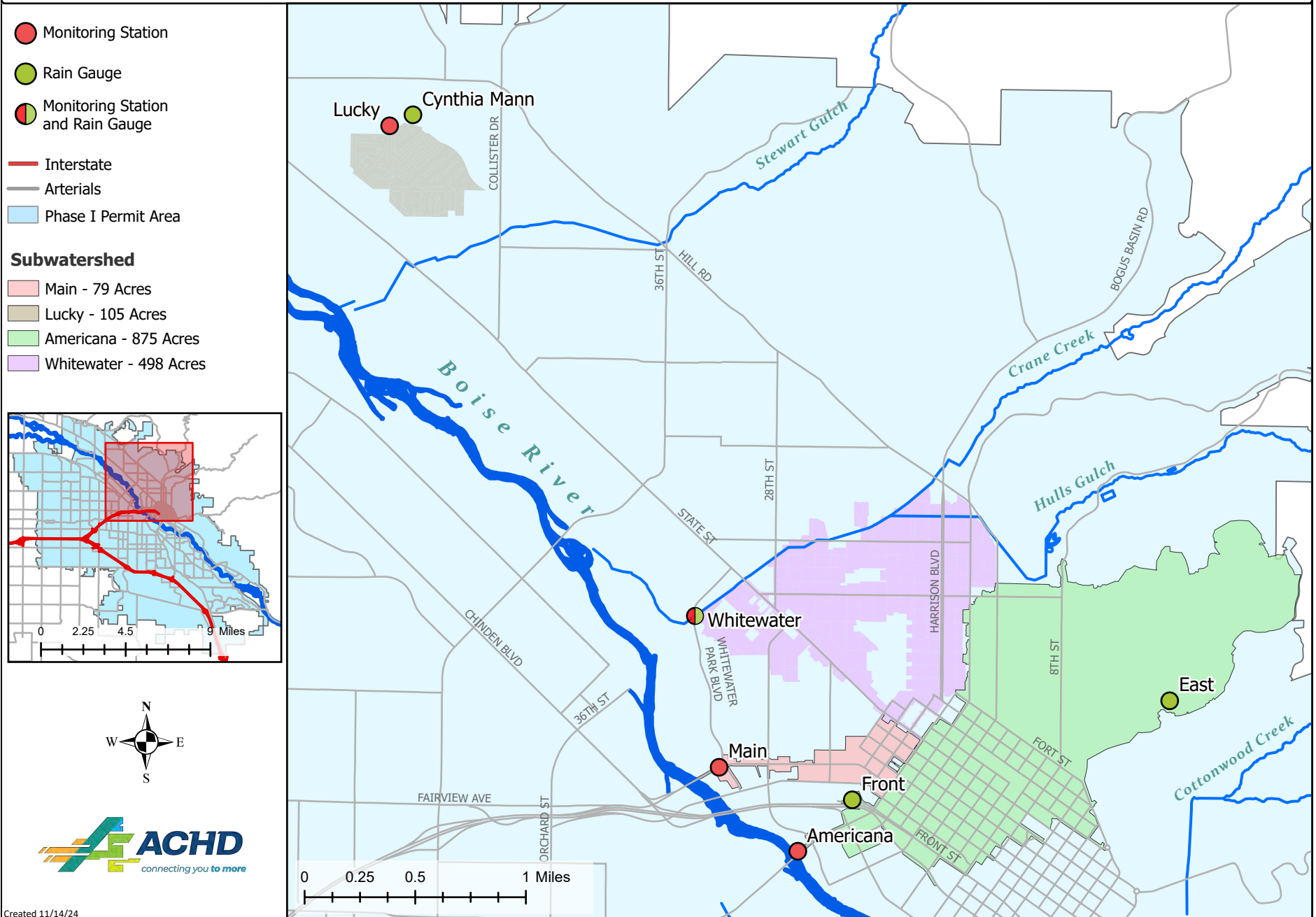
Figure 4. WY 2024 Ammonia, Nitrate + Nitrite, and TKN Results

Figure 5. WY 2024 Total Phosphorus and Orthophosphate Results

Figure 6. WY 2024 Pollutant Loadings

Figure 7. WY 2024 Monthly Precipitation

Figure 1: Vicinity Map
Phase I NPDES Outfall Sampling Stations



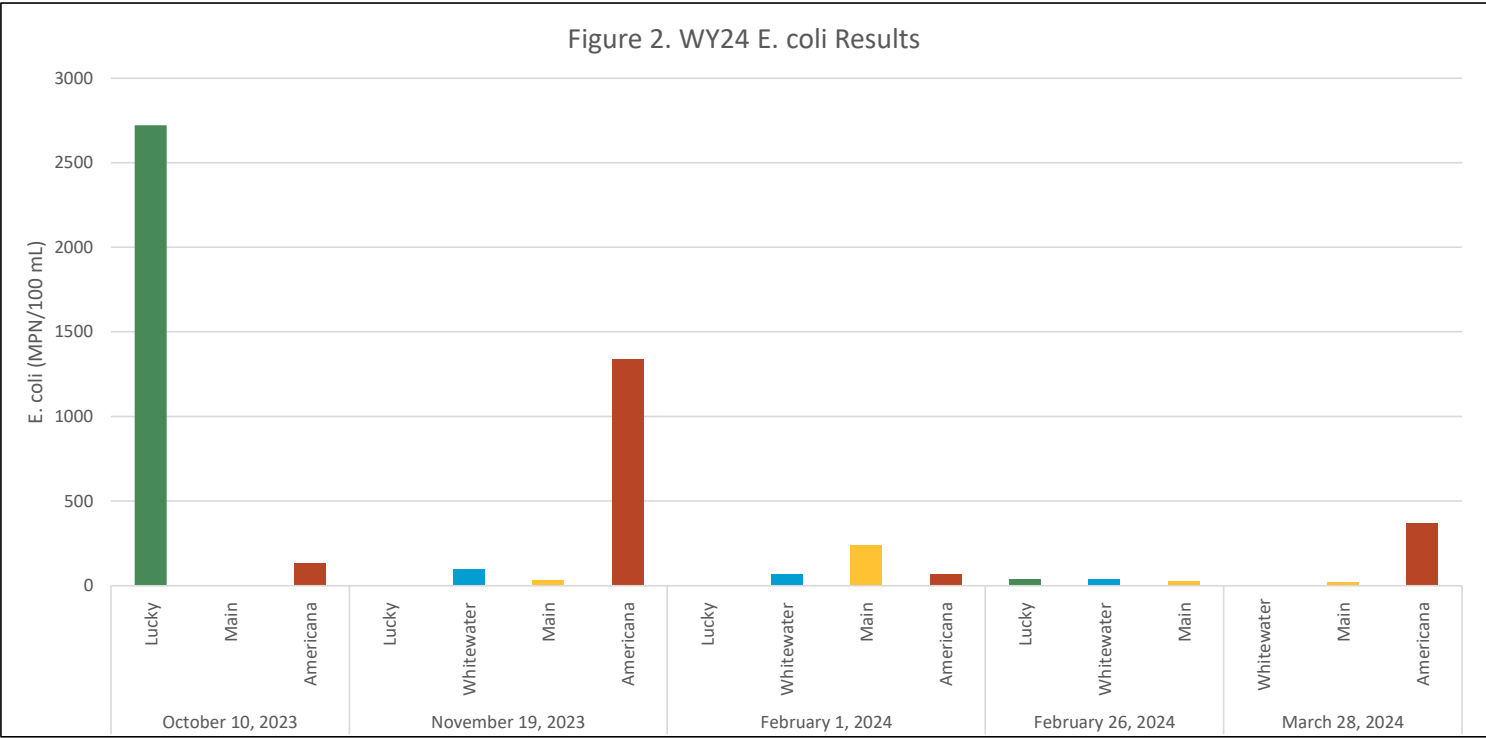


Figure 3. WY24 TSS, TDS, and Turbidity Results

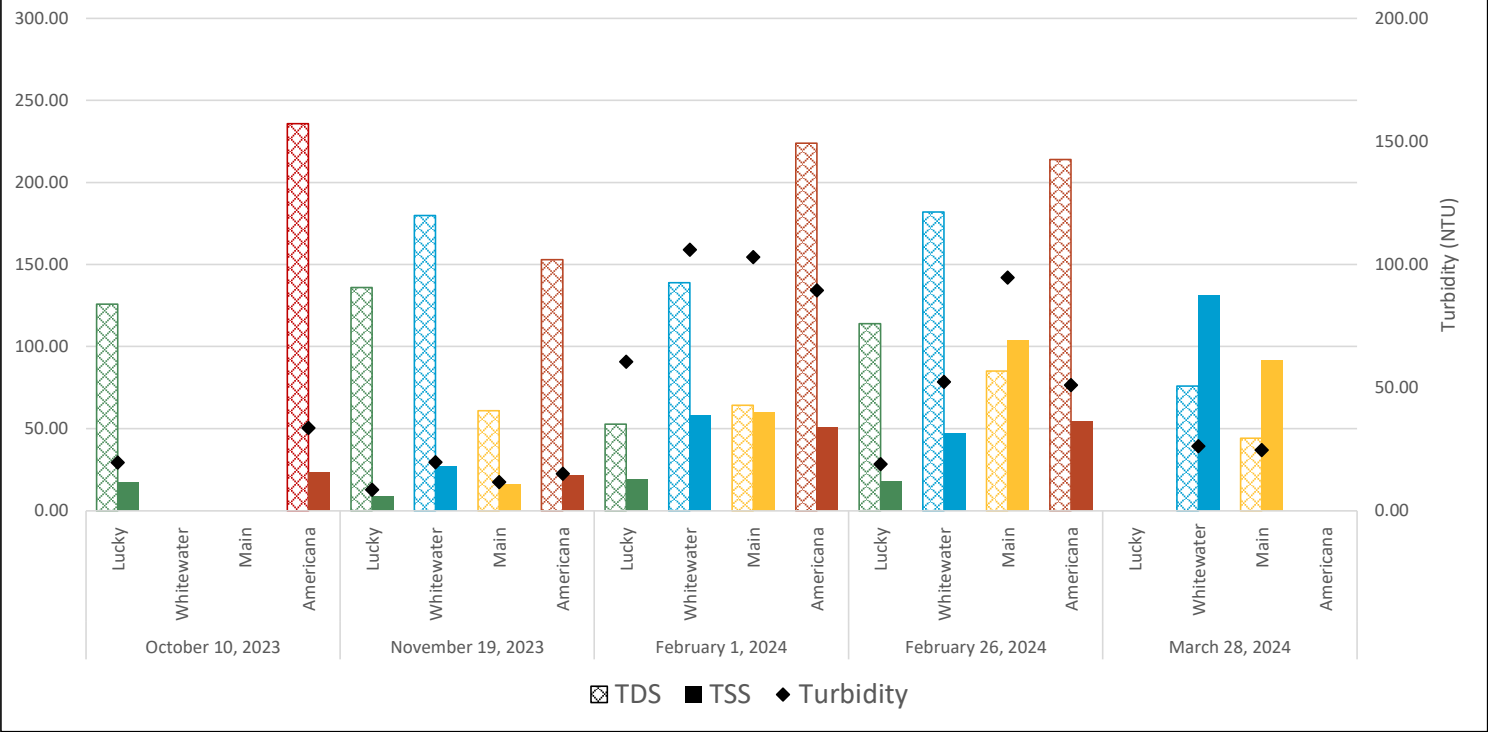


Figure 4. WY24 Nitrate + Nitrite as N, Ammonia as N, and TKN Results

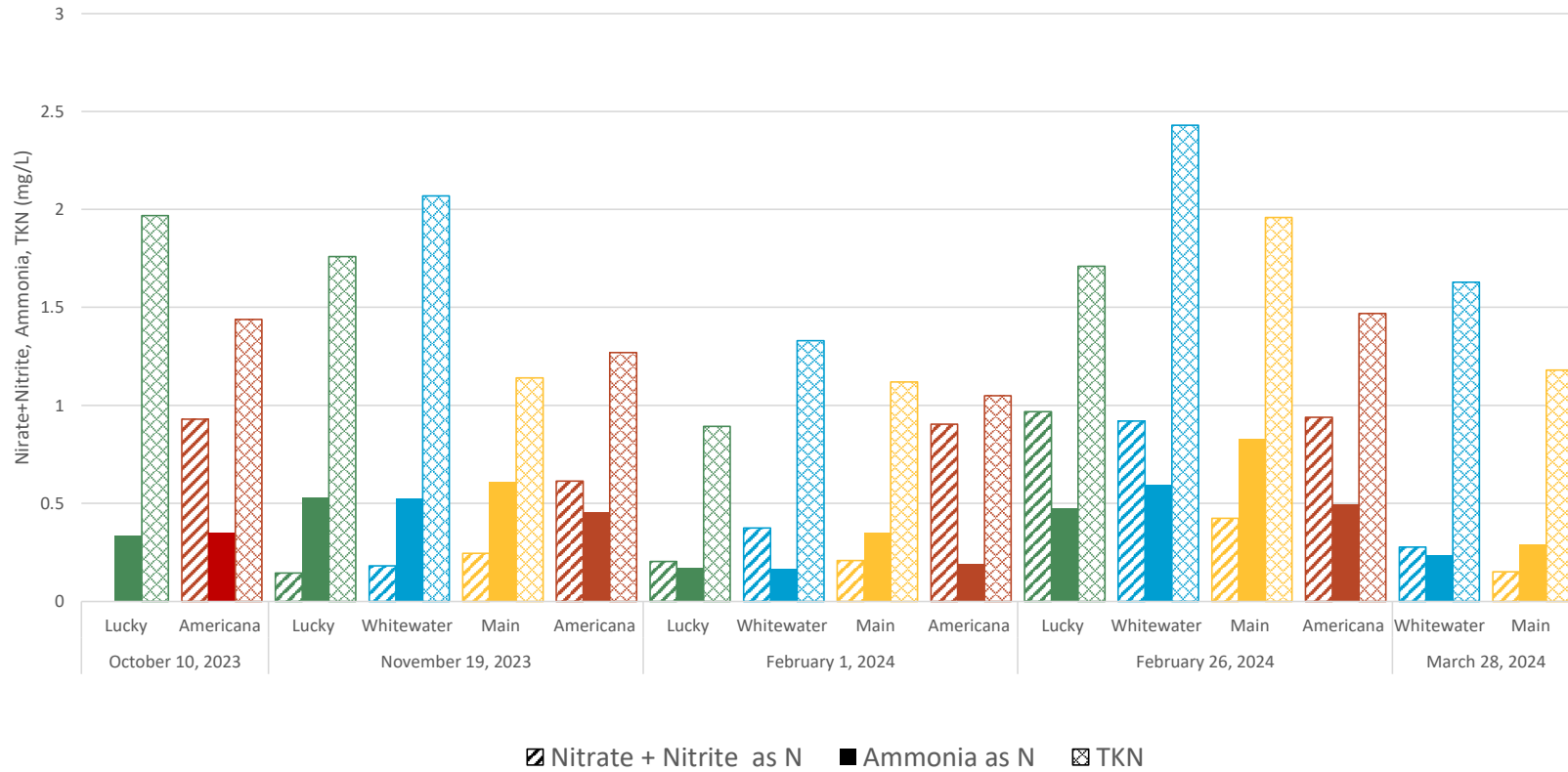


Figure 5. WY24 Total Phosphorus and Orthophosphate as P

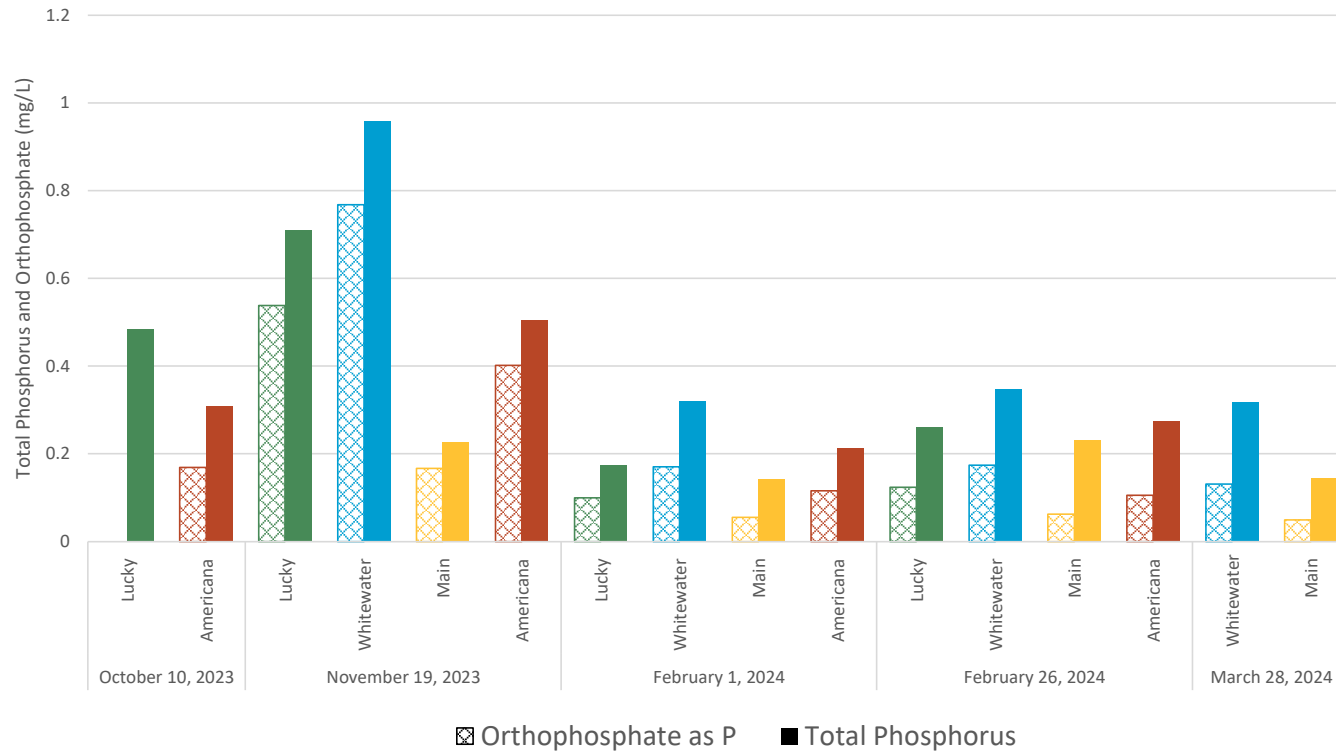


Figure 6. WY24 Pollutant Loadings

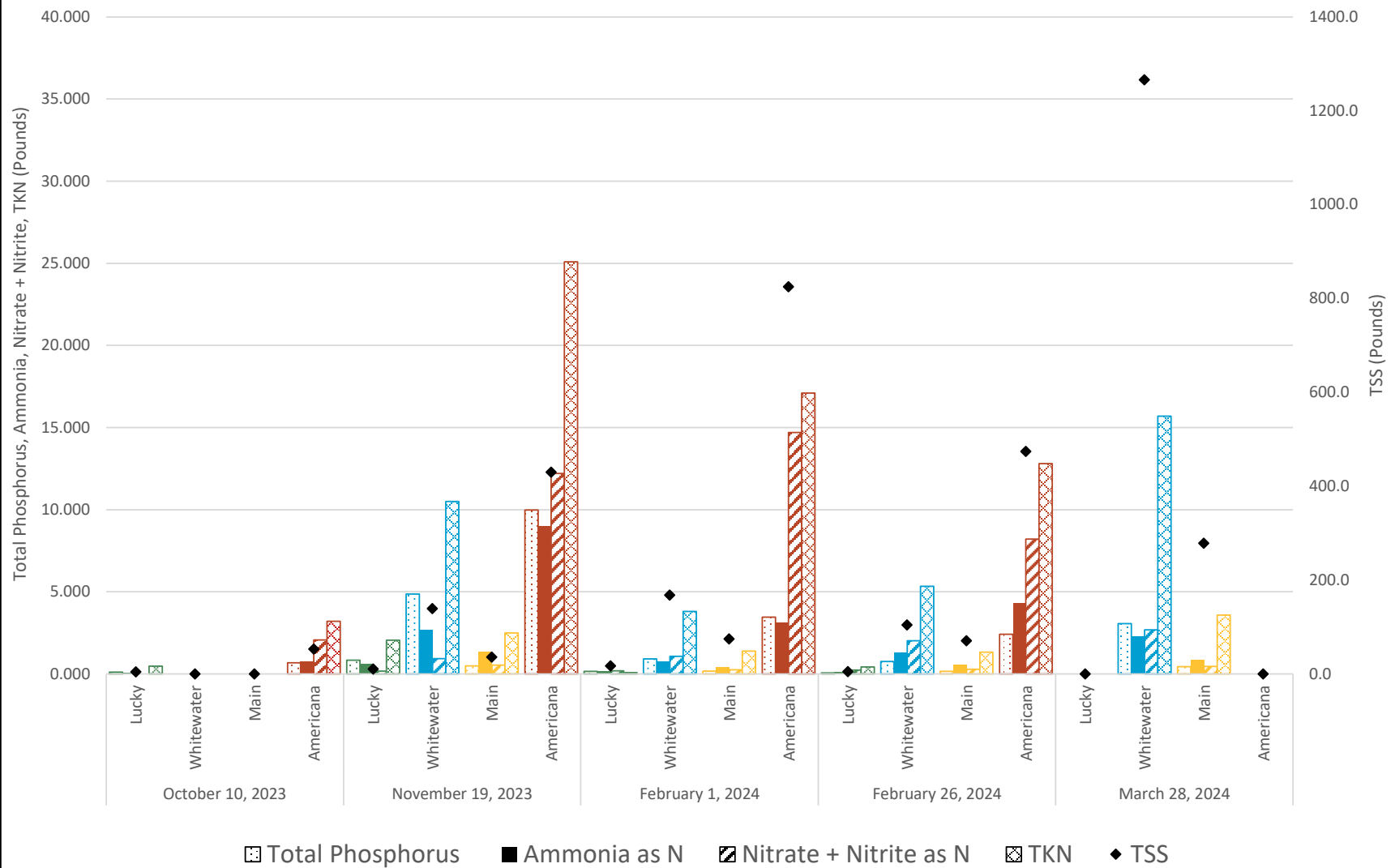
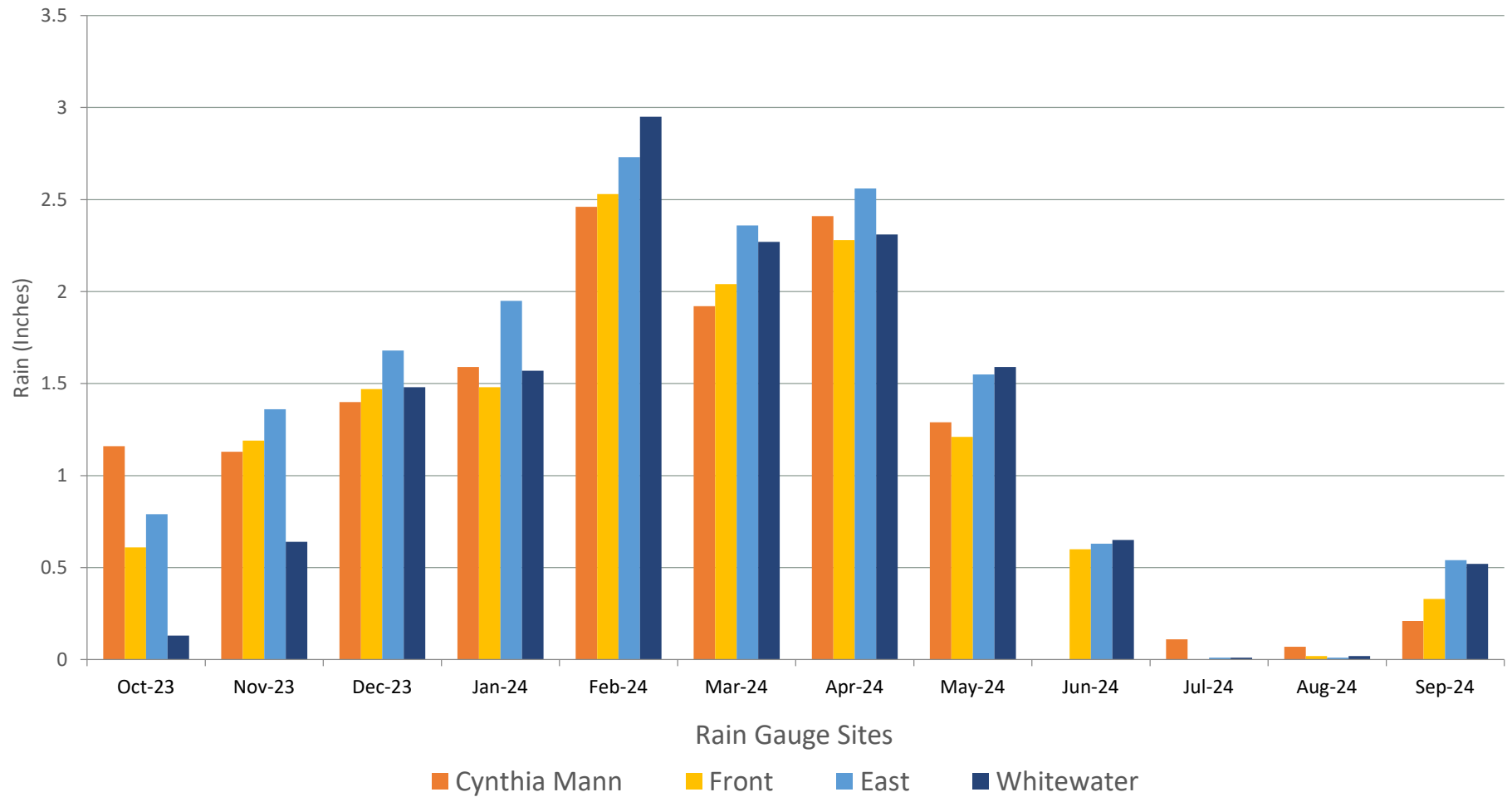


Figure 7. WY24 Monthly Precipitation



Appendix B: Tables

Table 1. Monitored Storms and Samples Collected

Table 2. Field Parameter Summary

Table 3. Analytical Results Summary

Table 4. Event Loading for Monitored Drainages in Pounds

Table 5. Event Loading in Pounds per Acre

Table 6. QC Sample Summary

Table 1. Monitored Storms and Samples Collected					
Event Date	Sampling Information	Lucky	Whitewater	Main	Americana
October 10, 2023	Grab samples collected and submitted?	YES	YES	NO	YES
	Composite samples collected and submitted?	YES	NO	NO	YES
	Trigger volume	2,895 gal	800 ft ³	-	2,960 ft ³
	Sampler enable condition (in)	Level > 3.02	Level > 2.60	-	Level > 5.1
	Percent of storm flow sampled	63%	-	-	71% ^a
	Composite sample duration (hrs.)	2	-	-	5
	Storm precipitation (in)	0.18	0.13	0.10	0.10/0.18
November 19, 2023	Grab samples collected and submitted?	YES	YES	YES	YES
	Composite samples collected and submitted?	YES	YES	YES	YES
	Trigger volume	2,895 gal	800 ft ³	3,411 gal	2,960 ft ³
	Sampler enable condition (in)	-	Level > 1.9	-	Level > 6.96
	Percent of storm flow sampled	94%	91%	80%	79%
	Composite sample duration (hrs.)	11	13	13.5	12.5
	Storm precipitation (in)	0.42	0.61	0.50	0.50/0.58
February 1, 2024	Grab samples collected and submitted?	YES	YES	YES	YES
	Composite samples collected and submitted?	YES	YES	YES	YES
	Trigger volume	7,899 gal	2,185 ft ³	9,313 gal	8,071 ft ³
	Sampler enable condition (in)	Level > 2.68	Level > 2.55 ^b	Level > 2.06	Level > 6.46
	Percent of storm flow sampled	90%	104% ^c	89%	83%
	Composite sample duration (hrs.)	14.5	40 ^b	13	13.5
	Storm precipitation (in)	0.31	0.33	0.31	0.31/0.37
February 26, 2024	Grab samples collected and submitted?	YES	YES	YES	YES
	Composite samples collected and submitted?	YES	YES	YES	YES
	Trigger volume	2,895 gal	800 ft ³	3,411 gal	2,960 ft ³
	Sampler enable condition (in)	Level > 2.72	Level > 3.05	Level > 1.87	Level > 7.59
	Percent of storm flow sampled	90%	87%	103% ^c	83%
	Composite sample duration (hrs.)	6.5	9.5	17 ^b	7
	Storm precipitation (in)	0.13	0.21	0.18	0.18/0.18
March 28, 2024	Grab samples collected and submitted?	NO	NO	YES	YES
	Composite samples collected and submitted?	NO	YES	YES	NO
	Trigger volume	-	800 ft ³	3,411 gal	-
	Sampler enable condition (in)	-	Level > 3.3	Level > 1.84	-
	Percent of storm flow sampled	-	82%	77%	-
	Composite sample duration (hrs.)	-	13	11	-
	Storm precipitation (in)	0.53	0.59	0.53	0.53/0.56

Notes:

-- = No data.

^a Flow data rejected due to area-velocity sensor errors. The EPA runoff calculation was used to estimate the total and sampled event runoff.

^b Programming error occurred at setup.

^c Non-stormwater samples were collected prior to the start of storm precipitation or runoff.

Table 2. Field Parameter Results					
Event Date	Monitoring Station	Field Parameters			
		Dissolved Oxygen	pH	Conductivity	Temperature
		mg/L	S.U.	µS/cm	C
October 10, 2023	Lucky	7.38	5.66	81.35	16.47
	Whitewater	7.65	6.28	95.09	17.17
	Main	-	-	-	-
	Americana	8.4	6.53	247.08	16.78
November 19, 2023	Lucky	5.09	7.27	506.44	15.70
	Whitewater	5.82	7.34	460.32	12.96
	Main	9.48	7.64	174.43	10.54
	Americana	- ^{3J}	- ^{3J}	- ^{3J}	14.16
February 1, 2024	Lucky	4.92	7.15	593.29	14.62
	Whitewater	8.42	7.60	287.02	11.10
	Main	10.11	8.03	353.6	6.30
	Americana	10.05	7.73	552.2	8.34
February 26, 2024	Lucky	9.89	8.27	125.9	4.75
	Whitewater	10.88	7.74	749.2	5.97
	Main	9.79	7.94	165.88	9.53
	Americana	10.54	7.53	470.55	8.74
March 28, 2024	Lucky	-	-	-	-
	Whitewater	-	-	-	-
	Main	10.02	7.82	116.08	10.91
	Americana	10.57	7.28	255.40	9.79

Notes:

-- = No data.

^{3J} Incomplete field parameter collection on the grab sample data form due to field error.

Table 3. Analytical Results Summary																							
Event Date	Monitoring Station	Sample ID	Analytical Parameters																				
			E. coli	BOD ₅	COD	Chloride	Hardness as CaCO3	Turbidity	TSS	TDS	Total Phosphorus	Orthophosphate as P	Ammonia as N	Nitrate + Nitrite as N	TKN	Arsenic, total	Cadmium, dissolved	Cadmium, total	Copper, dissolved	Lead, dissolved	Lead, total	Mercury, total	Zinc, dissolved
			MPN/100 mL	mg/L	mg/L	mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
October 10, 2023	Lucky	231010-03-WG/WC	2720.0	17.5 ^{1J}	83.0 ^{1J}	-	47.2 ^{1J}	19.6 ^{1J}	17.4 ^{1J}	126 ^{1J}	0.485 ^{1J}	-	0.336 ^{1J}	-	1.97 ^{1J}	2.6 ^{1J}	-	0.035 ^{1J}	-	-	0.65 ^{1J}	0.0118 ^{1J}	-
	Whitewater	231010-11-WG	1990.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Main	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Americana	231010-14-WG/WC	129.6	19.7 ^{2J}	77.0 ^{2J}	-	< 0.100 ^{2J}	33.6 ^{2J}	23.6 ^{2J}	236 ^{2J}	0.308 ^{2J}	0.169 ^{2J}	0.353 ^{2J}	0.930 ^{2J}	1.44 ^{2J}	5.5 ^{2J}	0.021 ^{2J}	0.072 ^{2J}	8.2 ^{2J}	0.095 ^{2J}	2.4 ^{2J}	< 0.0100 ^{2J}	22.0 ^{2J}
November 19, 2023	Lucky	231119-03-WG/WC	2.0	59.5	137	-	35.8	8.6	8.63	136	0.710	0.538	0.530	0.145	1.76	0.93	0.012	0.030	3.5	0.085	0.33	< 0.0100	32.7
	Whitewater	231119-11-WG/WC	99.0	61.9	167	-	45.0	19.7	27.3	180	0.958	0.768	0.527	0.182	2.07	1.7	< 0.0100	0.041	5 ²	0.21	2.2	< 0.0100	32.3
	Main	231119-12-WG/WC	30.9	19.9	61.0	-	19.3	11.7	16.2	61.0	0.226	0.167	0.610	0.246	1.14	0.66	0.015	0.045	2.7	0.12	1.7	< 0.0100	25.9
	Americana	231119-14-WG/WC	1340.0	36.5	94.0	-	57.8	15.0	21.7	153	0.504	0.402	0.454	0.614	1.27	2.1	0.022	0.061	4.0 ¹	0.11	1.9	< 0.0100	27.2
February 1, 2024	Lucky	240201-03-WG/WC	< 1.0 ^{4J}	7.27	39.0	6.25	16.0	60.5	18.8	52.8	0.174	0.100	0.173	0.204	0.894	0.85	< 0.0100	0.024	2 ²	0.056	0.82	< 0.0100	17.5
	Whitewater	240201-11-WG/WC	68.9 ^{4J}	9.34 ^{1R}	82.0 ^{1R}	14.5 ^{1R}	43.0 ^{1R}	106 ^{1R}	58.4 ^{1R}	139 ^{1R}	0.321 ^{1R}	0.171 ^{1R}	0.169 ^{1R}	0.375 ^{1R}	1.33 ^{1R}	2.4 ^{1R}	< 0.0100 ^{1R}	0.058 ^{1R}	3.9 ^{2, 1R}	0.18 ^{1R}	4.8 ^{1R}	0.0148 ^{1R}	25.7 ^{1R}
	Main	240201-12-WG/WC	238.2 ^{4J}	5.74	77.0	12.7	18.3	103	59.8	64.2	0.143	0.0557	0.351	0.209	1.12	1.4	0.012	0.066	3.6	0.084	4.1	0.0112	18.4
	Americana	240201-14-WG/WC	65.0 ^{4J}	6.98	55.0	64.1	93.3	89.6	50.7	224	0.213	0.116	0.193	0.905	1.05	3.4	0.016	0.063	3.4 ¹	0.090	4.2	< 0.0100	17.3
February 26, 2024	Lucky	240226-03-WG/WC	37.9	13.5	60.0	8.92	53.2	18.9	18.1	114	0.262	0.124	0.476	0.969	1.71	2.6	0.011	0.031	4.5	0.028	0.72	0.0150	13.5
	Whitewater	240226-11-WG/WC	38.3	12.6	84.0	44.4	77.8	52.3	47.3	182	0.347	0.174	0.596	0.921	2.43	2.6	0.014	0.062	4.4 ²	0.093	3.8	0.0151	24.5
	Main	240226-12-WG/WC	24.3	13.9 ^{5J}	119 ^{5J}	17.0 ^{5J}	29.8 ^{5J}	94.7 ^{5J}	104 ^{5J}	85.2 ^{5J}	0.231 ^{5J}	0.0631 ^{5J}	0.829 ^{5J}	0.424 ^{5J}	1.96 ^{5J}	1.5 ^{5J}	0.032 ^{5J}	0.13 ^{5J}	5.6 ^{5J}	0.12 ^{5J}	6.1 ^{5J}	0.0191 ^{5J}	51.7 ^{5J}
	Americana	240226-14-WG/WC	125.9	12.6	85.0	56.1	102	51.1	54.3	214	0.276	0.106	0.496	0.940	1.47	3.3	0.021	0.097	4.0 ¹	0.063	3.9	0.0148	24.3
March 28, 2024	Lucky	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Whitewater	240328-11-WC	-	8.20	84.0	14.9	31.9	26.2	131	76.0	0.318	0.131	0.236	0.277	1.63	2.0	< 0.0100	0.074	1.9 ²	0.097	5.8	0.0151	9.8
	Main	240328-12-WG/WC	21.6	5.03	104	5.19	12.6	24.6	91.7	44.2	0.145	0.0494	0.293	0.151	1.18	1.1	< 0.0100	0.071	2.3	0.068	5.9	0.0171	14.7
	Americana	240328-14-WG	365.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

- = No data.

¹ Analytical parameter is qualified due to being less than five times the value detected in the rinsate blank. See Table 6 for rinsate blank results.

² Analytical parameter is qualified due to being less than five times the value detected in the equipment blank. See Table 6 for equipment blank results.

^{1J} Data qualified due to lack of representativeness (50%–75%).

^{2J} Data qualified due to lack of representativeness (50%–75%) of the calculated flow volume.

^{4J} *E. coli* sample qualified due to exceeded hold time.

^{5J} Composite sample qualified due to non-stormwater sample volume comprising less than 10% of the total composite sample volume.

^{1R} Composite sample rejected due to non-stormwater sample volume comprising 10% or more of the total composite sample volume.

WG = Wet grab sample.

WC = Wet composite sample.

Table 4. Event Loading for Monitored Drainages in Pounds						
Event Date	Monitoring Station	TSS	Total Phosphorus	Ammonia as N	Nitrate + Nitrite as N	TKN
October 10, 2023	Lucky	4.20 ^{1J}	0.118 ^{1J}	0.0810 ^{1J}	-	0.477 ^{1J}
	Whitewater	-	-	-	-	-
	Main	-	-	-	-	-
	Americana	52.6 ^{2J}	0.686 ^{2J}	0.786 ^{2J}	2.07 ^{2J}	3.21 ^{2J}
November 19, 2023	Lucky	10.1	0.832	0.621	0.170	2.06
	Whitewater	139	4.87	2.68	0.926	10.5
	Main	35.5	0.496	1.34	0.540	2.50
	Americana	430	9.98	8.99	12.2	25.1
February 1, 2024	Lucky	16.9	0.157	0.156	0.184	0.805
	Whitewater	168 ^{1R}	0.92 ^{1R}	0.750 ^{1R}	1.08 ^{1R}	3.81 ^{1R}
	Main	74.4	0.178	0.437	0.260	1.39
	Americana	825	3.46	3.140	14.7	17.1
February 26, 2024	Lucky	4.48	0.0648	0.118	0.240	0.423
	Whitewater	104	0.762	1.31	2.02	5.34
	Main	70.6 ^{5J}	0.157 ^{5J}	0.563 ^{5J}	0.288 ^{5J}	1.33 ^{5J}
	Americana	474	2.41	4.33	8.21	12.8
March 28, 2024	Lucky	-	-	-	-	-
	Whitewater	1266	3.07	2.28	2.68	15.7
	Main	278.2	0.440	0.889	0.458	3.58
	Americana	-	-	-	-	-

Notes:

-- = No data

^{1J} Data qualified due to lack of representativeness (50%–75%).

^{2J} Data qualified due to lack of representativeness (50%–75%) of the calculated flow volume.

^{5J} Composite sample qualified due to non stormwater sample volume comprising less than 10% of the total composite sample volume.

^{1R} Composite sample rejected due to non stormwater sample volume comprising 10% or more of the total composite sample volume.

Table 5. Event Loading in Pounds/Acre						
Event Date	Monitoring Station	TSS	Total Phosphorus	Ammonia as N	Nitrate + Nitrite as N	TKN
October 10, 2023	Lucky	0.0400 ^{1J}	0.00112 ^{1J}	0.000771 ^{1J}	-	0.00454 ^{1J}
	Whitewater	-	-	-	-	-
	Main	-	-	-	-	-
	Americana	0.0601 ^{2J}	0.000784 ^{2J}	0.000898 ^{2J}	0.00237 ^{2J}	0.00367 ^{2J}
November 19, 2023	Lucky	0.0962	0.00792	0.00591	0.00162	0.0196
	Whitewater	0.279	0.00978	0.00538	0.00186	0.0211
	Main	0.449	0.00628	0.0170	0.00684	0.0316
	Americana	0.491	0.0114	0.0103	0.0139	0.0287
February 1, 2024	Lucky	0.161	0.00150	0.00149	0.00175	0.00767
	Whitewater	0.337 ^{1R}	0.00185 ^{1R}	0.00151 ^{1R}	0.00217 ^{1R}	0.00765 ^{1R}
	Main	0.942	0.00225	0.00553	0.00329	0.0176
	Americana	0.943	0.00395	0.00359	0.0168	0.0195
February 26, 2024	Lucky	0.043	0.000617	0.00112	0.00229	0.00403
	Whitewater	0.209	0.00153	0.00263	0.00406	0.0107
	Main	0.894 ^{5J}	0.00199 ^{5J}	0.00713 ^{5J}	0.00365 ^{5J}	0.0168 ^{5J}
	Americana	0.542	0.00275	0.00495	0.00938	0.0146
March 28, 2024	Lucky	-	-	-	-	-
	Whitewater	2.54	0.00616	0.00458	0.00538	0.0315
	Main	3.52	0.00557	0.0113	0.00580	0.0453
	Americana	-	-	-	-	-

Notes:

-- = No data.

^{1J} Data qualified due to lack of representativeness (50%–75%).

^{2J} Data qualified due to lack of representativeness (50%–75%) of the calculated flow volume.

^{5J} Composite sample qualified due to non stormwater sample volume comprising less than 10% of the total composite sample volume.

^{1R} Composite sample rejected due to non stormwater sample volume comprising 10% or more of the total composite sample volume.

Table 6. QC Sample Summary																							
Event Date	Parent Sample	Sample ID	QC Sample Type	Analytical Parameters																			
				E. coli	BOD ₅	COD	Hardness as CaCO ₃	Turbidity	TSS	TDS	Total Phosphorus	Orthophosphate (Ortho-P)	Ammonia	Nitrate + Nitrite	TKN	Arsenic, total	Cadmium, dissolved	Cadmium, total	Copper, dissolved	Lead, dissolved	Lead, total	Mercury, total	Zinc, dissolved
				MPN/100 mL	mg/L	mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
October 2, 2023	-	231002-12-003	Equipment blank	-	<2.00	7.00	<0.100	<0.3	<0.900	<20.0	<0.0120	<0.003	0.0560	<0.0250	<0.200	<0.0700	<0.0100	<0.100	0.18	<0.009	<0.0100	<0.0100	0.80
October 4, 2023	-	231004-11-003	Equipment blank	-	<2.00	<7.00	<0.100	<0.3	<0.900	<20.0	<0.0120	<0.003	<0.0350	<0.0250	<0.200	<0.0700	<0.0100	<0.0100	2.2	0.018	0.0250	<0.0100	1.4
October 5, 2023	-	231005-03-003	Equipment blank	-	<2.00	<7.00	<0.100	<0.3	<0.900	<20.0	<0.0120	<0.003	<0.0350	<0.0250	<0.200	<0.0700	<0.0100	<0.0100	0.41	<0.009	0.0210	<0.0100	1.4
	-	231005-14-003	Equipment blank	-	<2.00	<7.00	<0.100	<0.3	<0.900	<20.0	<0.0120	<0.003	<0.0350	<0.0250	<0.200	<0.0700	<0.0100	<0.0100	0.50	<0.009	0.0140	<0.0100	0.55
November 19, 2023	Americana grab	231119-14-001	Field blank	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Americana grab	231119-14-101	Field duplicate	866.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Calculated parent/duplicate RPD			4%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
February 1, 2024	Lucky grab	240201-03-001	Field blank	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Lucky grab	240201-03-101	Field duplicate	2 ^{4J}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Calculated parent/duplicate RPD			100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Whitewater Composite	240201-11-103	Lab duplicate/composite split	—	8.9	83.0	42.4	113	53.8	140	0.312	0.172	0.170	0.378	1.35	2.4	0.011	0.052	3.7	0.19	4.9	0.0127	26.6
February 26, 2024	Main grab	240226-12-001	Field blank	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Main grab	240226-12-101	Field duplicate	26.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Calculated parent/duplicate RPD			2%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
March 28, 2024	Main grab	240328-12-001	Field blank	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Main grab	240328-12-101	Field duplicate	17.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Calculated parent/duplicate RPD			5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	240328-14-002	Field blank composite	-	< 2.00	< 7.00	< 0.100	< 0.3	< 0.900	< 20.0	< 0.0120	< 0.003	< 0.0450	< 0.0250	< 0.100	< 0.0700	< 0.0100	< 0.0100	< 0.150	<0.009	< 0.0100	< 0.0100	< 0.500
September 10, 2024	-	240910-11-004	Rinsate blank	-	< 2.00	< 7.00	< 0.100	< 0.3	< 0.900	< 25.0	< 0.0120	0.00795	< 0.0450	< 0.0250	< 0.100	< 0.0500	< 0.0100	< 0.0200	0.38	< 0.0100	0.017	< 0.0100	< 0.500
	-	240910-14-004	Rinsate blank	-	< 2.00	< 7.00	< 0.100	< 0.3	1.00	< 25.0	< 0.0120	< 0.003	< 0.0450	< 0.0250	< 0.100	< 0.0500	< 0.0100	< 0.0200	0.91	< 0.0100	0.026	< 0.0100	1.3
September 17, 2024	-	240917-12-004	Rinsate blank	-	< 2.00	< 7.00	< 0.100	< 0.3	< 0.900	< 25.0	< 0.0120	< 0.003	< 0.0450	< 0.0250	< 0.100	< 0.0500	< 0.0100	< 0.0200	0.20	< 0.0100	< 0.0100	< 0.0100	1.1
Allowable RPD				40%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%

- = No data.

^{4J} *E. coli* sample qualified due to exceeded hold time.

Cells highlighted in gray are flagged for discussion.

Appendix C: Storm Event Reports

Storm Event Report No. 1: October 10, 2023

Storm Event Report No. 2: November 19, 2023

Storm Event Report No. 3: February 1, 2024

Storm Event Report No. 4: February 26, 2024

Storm Event Report No. 5: March 28, 2024



Technical Memorandum

1290 W. Myrtle St. Suite 340
Boise, ID 83702

Phone: 801.316.9859

Prepared for: Ada County Highway District

Project Title: NPDES Phase I Stormwater Support WY 2024

Project No.: 159103

Technical Memorandum

Subject: ACHD Phase I Storm Event Report for October 10, 2023

Date: February 14, 2024

To: Monica Lowe

Cc: Steven Turner

Kristen Chisholm

From: Zuly Lapa, Project Engineer

Prepared by: Zuly Lapa, EIT, Project Engineer

Reviewed by: Melissa Jannusch, PE, Project Manager

Limitations:

This document was prepared solely for ACHD in accordance with professional standards at the time the services were performed and in accordance with the contract between ACHD and Brown and Caldwell dated October 10, 2023. This document is governed by the specific scope of work authorized by ACHD; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by ACHD and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

Section 1: Introduction

The Environmental Protection Agency Region 10 reissued a Municipal Separate Storm Sewer System Phase I National Pollutant Discharge Elimination System Permit (NPDES Permit), effective October 1, 2021, to Ada County Highway District (ACHD), Boise City, Ada County Drainage District No. 3, Idaho Transportation Department District 3, Boise State University, and Garden City. Under the NPDES Permit, Permittees are required to continue to conduct wet weather stormwater outfall monitoring and subwatershed monitoring. Four outfall monitoring sites (Lucky, Whitewater, Main, and Americana) and one subwatershed monitoring site (AS_6) have been established. The AS_6 site represents a subwatershed located within the Americana watershed. At each site, a minimum of three composite and three grab samples will be collected during Water Year (WY) 2024 (October 1, 2023, through September 30, 2024). The following storm event report summarizes stormwater sampling results from the October 10, 2023, storm event.

Section 2: Project Status

Table 2-1 is a summary of the sample types collected to date for WY 2024 Phase I Stormwater Outfall Monitoring. When samples are qualified, additional samples will be attempted from subsequent storms to collect unqualified samples.

Table 2-1. WY 2024 Samples Collected					
Date	Lucky	Whitewater	Main	Americana	AS_6
October 10, 2023	G, C ^{1,2}	G	--	G, C ³	--
Unqualified Samples:	1G	1G	--	1G	--
Samples Remaining:	2G, 3C	2G, 3C	3G, 3C	2G, 3C	3G, 3C

Notes:

-- = no samples taken

C = composite sample

G = grab sample

¹ Composite samples qualified due to lack of representativeness (50% – 75%).

² Incomplete water quality analysis due to low composite sample volume.

³ Composite samples qualified due to lack of representativeness (50% – 75%) of the calculated flow volume.

Section 3: Storm Event Summary

The October 10, 2023, storm event and the subsequent preparation and sampling efforts are detailed in the following sections.

3.1 Storm Detail

A summary of the forecast on which monitoring decisions were based is detailed below. The sampling event communication form that describes the forecast and summarizes the decision-making process from October 10, 2023, is included in Attachment A for reference.

Tuesday, October 10, 2023 – Wednesday, October 11, 2023

- On the morning of October 10, the National Weather Service issued a forecast for widespread rain in the Boise area, starting October 10 at 1800 and ending on October 11 at 0600. The chance of precipitation was 80%, with 0.10 to 0.20 inches of precipitation forecasted.
- Setup was accomplished early morning of October 10. An expected precipitation depth of 0.11 inches was used to set trigger volumes at monitoring stations. A runoff calculations worksheet showing how the trigger volumes were calculated is included in Attachment A.
- The runoff started approximately on October 10 at 1216 and ended on October 11 at 2300. There was a runoff break in between October 10 at 0936 and October 11 at 0738.
- Precipitation totals ranged between 0.10 and 0.18 inches at local rain gauges.

Flow measurements and precipitation data are listed in Table 1 along with a sampling summary. Hydrograph for the Lucky, Whitewater, and Americana site showing flow, rain, and sample collection data are included in Attachment B.

3.2 Sampling Summary

Lucky, Whitewater, Americana and AS_6 monitoring stations were set up on October 10, 2023, to collect flow-proportional composite samples during the storm. Sampler enable conditions were programmed into the Lucky, Whitewater, and Americana flowmeters. A site-specific velocity cutoff value was programmed into the AS_6 flowmeter. Setup and sampling information are included in Table 1. The field forms completed during setup/shutdown and sampling are included in Attachment C.

Grab Samples

Two, two-member team mobilized to collect stormwater runoff grab samples and verify operation of the automatic sampling equipment on October 10 at 1823. Grab samples for Lucky, Whitewater and Americana were submitted to the West Boise Water Quality Lab (WQL) at 2003 on October 10. Results for grab samples, including field parameter and analytical data, are included in Table 2. Laboratory analytical reports are included in Attachment D.

Composite Samples

Composite samples were collected at the Lucky and Americana monitoring station and submitted to the West Boise WQL at 1242 on October 11. Whitewater collected two composite samples and was not submitted to the WQL. A partial water quality analysis was conducted on the Lucky composite samples due to low composite sample volume. The volume of the Americana composite sample was sufficient for analysis of all parameters. Analytical results are shown in Table 2 and pollutant loading estimates for the event are detailed in Table 3. Laboratory analytical reports are included in Attachment D.

Section 4: Quality Assurance/Quality Control

No quality control samples were collected during the October 10, 2023, storm event.

Data quality objectives for this storm were evaluated and tracked using the data validation review checklist included in Attachment A. An accepted composite sample represents at least 75 percent of the total discharge or at least 6 hours of the storm duration. The composite sample collected at Lucky was qualified because it represented 63% of the storm runoff and lasted approximately 2 hours. The composite sample collected at Americana was calculated using the EPA runoff calculation. After thorough flow and precipitation data review, it was determined that the area-velocity sensor showed inaccurate flow level readings and did not align with the precipitation data. The EPA runoff calculation estimates the total event runoff and sampled

runoff values based on impervious surface of the drainage basin (see Figure 4-1 for EPA's runoff calculation equation). Based on the estimated values, approximately 71% of the total storm runoff was sampled therefore the Americana composite samples were qualified. See Table 4-1 for total and sampled runoff calculations and Attachment B.

Runoff Calculation

$$R = P * P_j * R_v$$

Where:

R = Event Runoff (inches)

P = Event Rainfall (inches)

P_j = Fraction of annual rainfall events that produce runoff (0.9)

R_v = Runoff Coefficient

Figure 4-1: EPA Runoff Calculation

Table 4-1. Total and Sample Runoff Calculations

From Table 2-1 of the Stormwater Outfall Monitoring Plan:

Americana Subwatershed Area = 875 acres

Percent Impervious Groundcover = 39 %

Impervious Groundcover = 481 acres

Total Runoff from the Americana Watershed:

P = 0.14 inches

P_j = 0.9

R_v = 0.39

R = 0.049 inches

Sampled Runoff from the Americana Site:

P = 0.1 inches

P_j = 0.9

R_v = 0.39

R = 0.035 inches

Calculated Sampled Runoff Precipitation

Sampled/ Total Sampled Runoff x 100 = 71%

The acceptance and performance criteria for analytical and non-analytical criteria, except for Lucky and Americana composite samples, were met for this storm event.

Section 5: Notes and Recommendations

Americana

During set-up, a "Replace pump tubing" warning message was encountered when the sampler program was started. The ISCO Operating Manual was used to reset the program settings and reset the pump count. The message did not appear again when the sampler program was restarted.

Main

During set-up, the Main flow meter was providing positive flow readings, but no flow was observed in the storm drain pipe. The flow module was replaced, but this did not resolve the issue. Therefore, the Main site was not targeted at this event.

Data Tables



TAB-1

Table 1. Sampling and Flow Summary					
	Lucky	Whitewater	Main	Americana	AS_6
Grab samples collected and submitted?	YES	YES	NO	YES	NO
Composite samples collected and submitted?	YES	NO	NO	YES	NO
Trigger volume (gal or ft ³)	2,895 gal	800 ft ³	--	2960 ft ³	221 ft ³
Velocity cutoff (fps)	--	--	--	--	0.02
Sampler enable condition (in)	Level > 3.02 "	Level > 2.60 "	--	Level > 5.1 "	--
Runoff start time	1216 ¹	1407 ¹	--	1602 ²	--
Grab sample collection time	1829	1904	--	1823	--
Composite sample stop time	0906	--	--	1150	--
Runoff stop time	1110 ²	2300 ²	--	1630 ²	--
Volume of Discharge Sampled (ft ³)	2,439	--	--	111,486 ^{2,3}	--
Total runoff volume (ft ³)	3,882	5,838	--	156,081 ^{2,3}	--
Percent of storm flow sampled (%)	63%	--	--	71% ³	--
Composite sample duration (hrs)	2	--	--	5	--
Storm Precipitation (in)	0.18	0.13	0.10	0.10/0.18	0.10/0.18
Referenced Rain Gauge	Cynthia Mann	Whitewater	Front	Front/East	Front/ East
Sampler messages (counts): Success	8	2	--	11	--
Number of composite bottles filled	1	--	--	1	--
Composite sample volume (Approx.; ml)	5,000	--	--	5,750	--

Notes:

¹ Runoff started on 10/10/23.

² Runoff ended on 10/11/23.

³ Flow data rejected due to area-velocity sensor errors . The EPA runoff calculation was used to estimate the total and sampled event runoff.

Table 2. Field and Analytical Data Summary																											
Monitoring Station	Sample Date	Sample ID Grab	Field Parameters				E. coli	Sample ID Composite	Analytical Parameters																		
			Dissolved Oxygen	pH	Conductivity	Temperature			BOD ₅	COD	Hardness as CaCO ₃	Turbidity	TSS	TDS	Total Phosphorus	Orthophosphate as P	Ammonia as N	Nitrate + Nitrite as N	TKN	Arsenic, total	Cadmium, dissolved	Cadmium, total	Copper, dissolved	Lead, dissolved	Lead, total	Mercury, total	Zinc, dissolved
			mg/L	S.U.	uS/cm	C			mg/L	mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Lucky	10/10/2023	231010-03-WG	7.38	5.66	81.35	16.47	2720.0	231010-03-WC	17.5 ^{1J}	83 ^{1J}	47.2 ^{1J}	19.6 ^{1J}	17.4 ^{1J}	126 ^{1J}	0.485 ^{1J}	--	0.336 ^{1J}	--	1.97 ^{1J}	2.6 ^{1J}	--	0.035 ^{1J}	--	--	0.65 ^{1J}	0.0118 ^{1J}	--
Whitewater	10/10/2023	231010-11-WG	7.65	6.28	95.09	17.17	1990.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Main	10/10/2023	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Americana	10/10/2023	231010-14-WG	8.4	6.53	247.08	16.78	129.6	231010-14-WC	19.7 ^{2J}	77 ^{2J}	<0.100 ^{2J}	33.6 ^{2J}	23.6 ^{2J}	236 ^{2J}	0.308 ^{2J}	0.169 ^{2J}	0.353 ^{2J}	0.930 ^{2J}	1.44 ^{2J}	5.5 ^{2J}	0.021 ^{2J}	0.072 ^{2J}	8.2 ^{2J}	0.095 ^{2J}	2.4 ^{2J}	<0.0100 ^{2J}	22.0 ^{2J}
AS_6	10/10/2023	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
 -- = No data.
^{1J} Data qualified due to lack of representativeness (50% - 75%).
^{2J} Data qualified due to lack of representativeness (50% - 75%) of the calculated flow volume.

Table 3. Event Pollutant Loading Estimates in Pounds						
Monitoring Station	Event Date	TSS	Total Phosphorus	Ammonia as N	Nitrate + Nitrite as N	TKN
Lucky	10/10/2023	4.20 ^{1J}	0.118 ^{1J}	0.0810 ^{1J}	--	0.477 ^{1J}
Whitewater	10/10/2023	--	--	--	--	--
Main	10/10/2023	--	--	--	--	--
Americana	10/10/2023	52.6 ^{2J}	0.686 ^{2J}	0.786 ^{2J}	2.07 ^{2J}	3.21 ^{2J}
AS_6	10/10/2023	--	--	--	--	--

Notes:

-- = No data.

^{1J} Data qualified due to lack of representativeness (50% - 75%).

^{2J} Data qualified due to lack of representativeness (50% - 75%) of the calculated flow volume.

Attachment A: Supplemental Documents

Sampling Event Communication Form

Data Validation Checklist

Runoff Calculation Worksheet

SAMPLING EVENT COMMUNICATION FORM

Date: 10/10/2023	Time: 4:10 PM	Initials: ML
Is there a targeted sampling event during the next 36 hours? (Or, if it is Friday, is a targeted event expected before 5:00 PM Monday?)		Yes

Past 72 hr Precip	0.02"
Date and time of expected event	10/10/2023 6 PM – 10/11/2023 6 AM
Expected amount of precipitation	0.10" – 0.20"
Percent chance of precipitation	80%
Percent chance of >0.10" over 12 hours	71%

NWS Update

<u>Targeted Station & Samples</u>					
Lucky	Whitewater	Main	Americana	AS_6	State (Phase II)
☒ Grab	☒ Grab	☐ Grab	☒ Grab	☒ Grab	☐ Grab
☒ Composite	☒ Composite	☐ Composite	☒ Composite	☒ Composite	☐ Composite

Type of Forecasted Precipitation

☐ Light Rain	☒ Rain	☐ Rain on Snow
☐ Scattered Showers	☒ Thunder Showers	☐ Snowmelt
☐ Other:		

Reasons for Not Targeting a Forecasted Storm and/or Stations
☐ Holiday
☐ Waiting on Antecedent Dry Period – Expires:
☒ Equipment Concerns: Problems with Main measuring flow when none present. Suspect AV sensor.
☐ Other:

Text Forecast
 NWS Forecast for: Garden City ID
 Issued by: National Weather Service Boise, ID
 Last Update: 2:53 pm MDT Oct 10, 2023

This Afternoon: Showers likely and possibly a thunderstorm. Mostly cloudy, with a high near 68. West southwest wind around 6 mph. Chance of precipitation is 60%.

Tonight: Showers and possibly a thunderstorm. Low around 47. West southwest wind around 6 mph becoming calm. Chance of precipitation is 90%. New rainfall amounts between a tenth and quarter of an inch, except higher amounts possible in thunderstorms.

Wednesday: Showers and possibly a thunderstorm before 1pm, then a chance of showers. High near 58. West northwest wind 5 to 14 mph, with gusts as high as 23 mph. Chance of precipitation is 90%.

Wednesday Night: A 30 percent chance of showers before 1am. Patchy fog after 4am. Otherwise, cloudy, then gradually becoming partly cloudy, with a low around 42. Northwest wind 5 to 14 mph, with gusts as high as 23 mph.

Thursday: Patchy fog before 1pm. Otherwise, sunny, with a high near 63. Northwest wind 5 to 10 mph.

Thursday Night: Mostly clear, with a low around 42.

Friday: Sunny, with a high near 68.

Friday Night: Partly cloudy, with a low around 48.

Saturday: Mostly cloudy, with a high near 67.
Saturday Night: A 20 percent chance of showers after 1am. Mostly cloudy, with a low around 49.
Sunday: A 20 percent chance of showers. Partly sunny, with a high near 70.
Sunday Night: Mostly cloudy, with a low around 50.
Monday: Partly sunny, with a high near 74.
Monday Night: A 30 percent chance of showers. Mostly cloudy, with a low around 52.
Tuesday: A chance of showers. Mostly cloudy, with a high near 66.

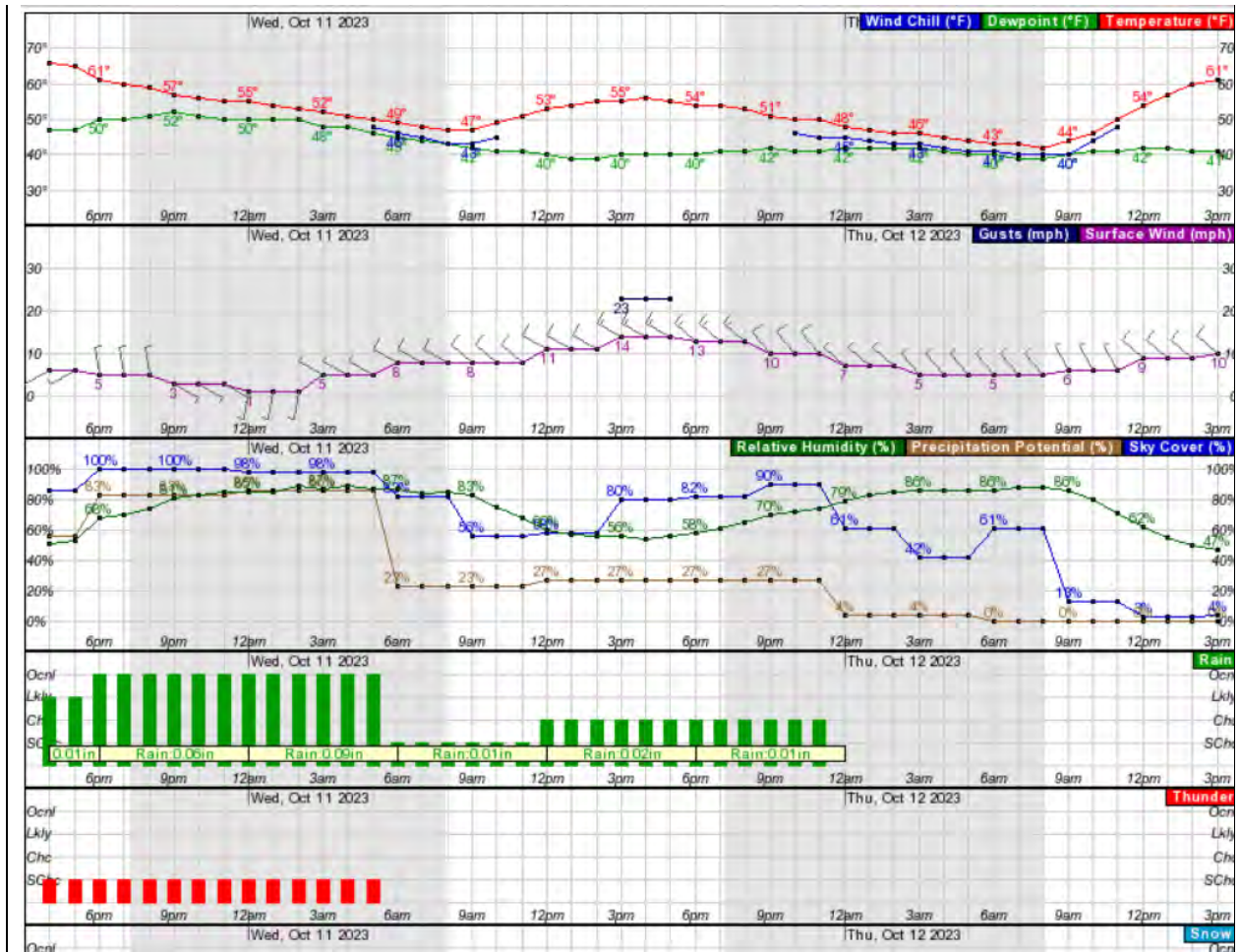
Forecast Discussion

Area Forecast Discussion
National Weather Service Boise ID
233 PM MDT Tue Oct 10 2023

.SHORT TERM...Tonight through Thursday night...Showers have steadily increased through the day in eastern Oregon, and as of 2 PM MDT showers were also getting into the Treasure Valley and Weiser River Valley. No [lightning](#) has been observed yet, but the incoming upper [trough](#) is expected to provide enough [instability](#) later this afternoon and evening for [isolated](#) thunderstorms within about 50 miles either side of the OR/ID border. Showers will become widespread tonight in western Idaho, then decrease Wednesday morning except along the ID/NV border and the Boise Mountains and eastern Valley County. Total precipitation tonight through Wednesday should be .10 to .20 inch in the valleys and .25 to .50 inch in the mountains, including 1-2 inches of snow above 6500 feet [MSL](#). Later Wednesday the main upper low off the northwest coast will move rapidly inland and bring another chance of showers to eastern Oregon, then into western Idaho early Wednesday evening. Late Wednesday night the low will be in eastern Wyoming and clouds will decrease in our [CWA](#). Clearing skies will allow [radiational cooling](#) resulting in patchy [fog](#) in the valleys Thursday morning. Thursday afternoon and night look [mostly clear](#). Winds will be light to moderate westerly tonight and Wednesday morning, then increase almost to advisory speeds Wednesday afternoon in south-central Idaho. Winds will die down rapidly Wednesday night.

.LONG TERM...Friday through Tuesday...A warming and drying trend is forecast Friday through Monday, possibly Tuesday, as another upper [ridge](#) builds inland from the Pacific. High temps will reach at least the mid 70s in the valleys by Monday, with a 10 percent chance of 80 degrees again. Low temps will moderate more slowly. Unfortunately, latest models bring a lot of [high clouds](#) in from the Pacific on Saturday which may spoil the view of the annular solar eclipse Saturday morning.

Hourly Forecast



Storm Event QA/QC Checklist – Phase I

STORM DATE <u>231010</u>										
A. Event and Data Completeness		Yes	No	N/A	Notes					
1. Field data sheets filled out completely and clearly		X								
2. Field parameters reviewed, and any problems/issues addressed		X			WW field parameters difficult to read: verified					
3. All samples collected as specified		X			DO is 7.65 mg/L + sp cond. is 95.09 w/ Chad Shuwend					
4. All samples delivered to lab promptly (review chain of custody rpts)		X								
5. Inconsistencies/clarifications discussed with sampling team member		X								
6. All analytical reports from lab received		X								
B. Validation and Verification Methods		Yes	No	N/A	Notes					
1. Outliers and unexpected values discussed with lab				X						
2. Appropriate analytical methods used		X								
3. All lab QA samples were within method acceptance criteria		X								
4. All samples reviewed and data qualifiers assigned if needed		X								
5. Data quality objective achieved		X								
C. Specific Storm and Sample QA/QC Criteria		Lucky	Whitewater	Main	Americana	AS_6	Program Criteria	Met	Qualify	Reject
1. Antecedent dry period (inches in previous 72-hours)		0.03	0.00	—	0.01	0.01	< 0.11" in 72 hrs	X		
2. Precipitation (inches)		0.18	0.13	—	0.10/0.18	0.10/0.18	> 0.10"	X		
3. Sampled amount (% of total run-off)		63%	—	—	71%	—	>= 75% or >= 6 hrs: no qualifier >= 50% and <75%: qualify		X	
4. Composite sample duration (hours)		2.0	—	—	5.0	—	< 50%: reject			
4. Ecoli sample holding time (hours)		2.0	1.5	2.0	2	—	<= 8 hrs: no qualifier >8 and <=16 hrs.: qualify >16 hrs.: reject	X		
5. Filtering of samples for dissolved parameter analysis (hours)		—	—	—	1.5	—	<= 24 hrs: no qualifier > 24 hrs.: reject	X		
D. Notes										
<u>Lucky</u> – No diss. parameters due to low volume and qualified due to lack of representativeness <u>WW</u> – Composite discarded due to low sample volume (2 subsamples) <u>Main</u> – Not setup for storm due to flow sensor error. Flow readings when no flow present <u>Americana</u> – Composites qualified for representativeness lack of representativeness and *Americana flow rejected. Runoff coefficients used to calculate total event runoff + sampled runoff values. <u>AS-6</u> – No grabs or composites collected due to low flow.										

Reviewed by Steven Turner Date 2/12/24

Approved by Monica Lowe Date 2/12/24

Storm Runoff Estimates and Trigger Volumes

Step 1. Enter runoff coefficients in yellow cells.

Step 2. Enter expected precipitation depth (in) in blue cell.

Step 3. Read trigger volumes (**bold**) in green cells.

Expected Precipitation Depth = 0.11

Aliquots per Sample = 17

Site	Area (ac)	Using RC calculated from flow data		
		RC	Expected Vol (ft ³)	Trigger Vol (ft ³)
Lucky	105	0.157	6582.5	387
Whitewater	498	0.069	13621.3	801
Main	79	0.246	7760.0	456
Main Alt	60	0.200	4791.6	282
Americana	875	0.144	50311.8	2960
AS_6	204	0.046	3747.0	220
State	34	0.160	2172.2	128

Notes:

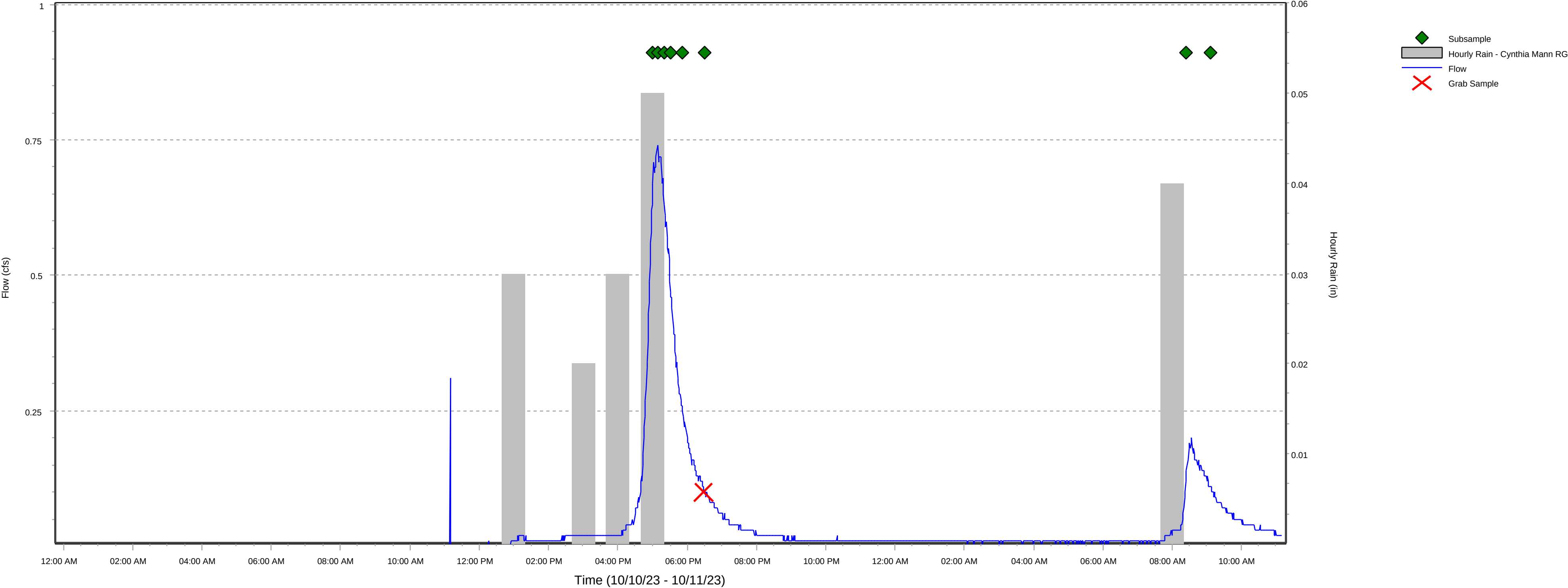
Calculated RC = Average (precip (ft) / [volume (ft³) x area (ft²)])

Where precip (ft) is the measured amount from local rain guage, and volume (ft³) is the measured discharge, and area (ft²) is the watershed area

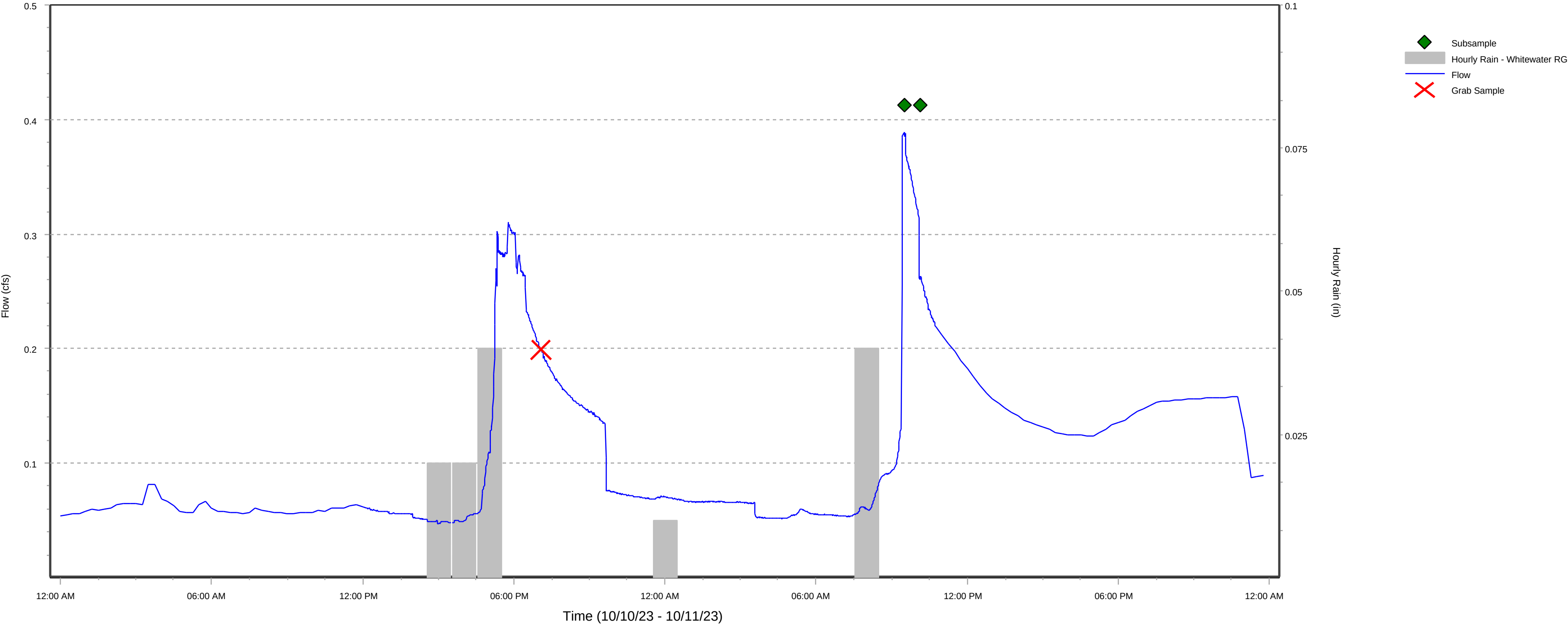
Expected volume (ft³) = RC x expected precip (ft) x area (ft²)

Attachment B: Storm Event Hydrographs

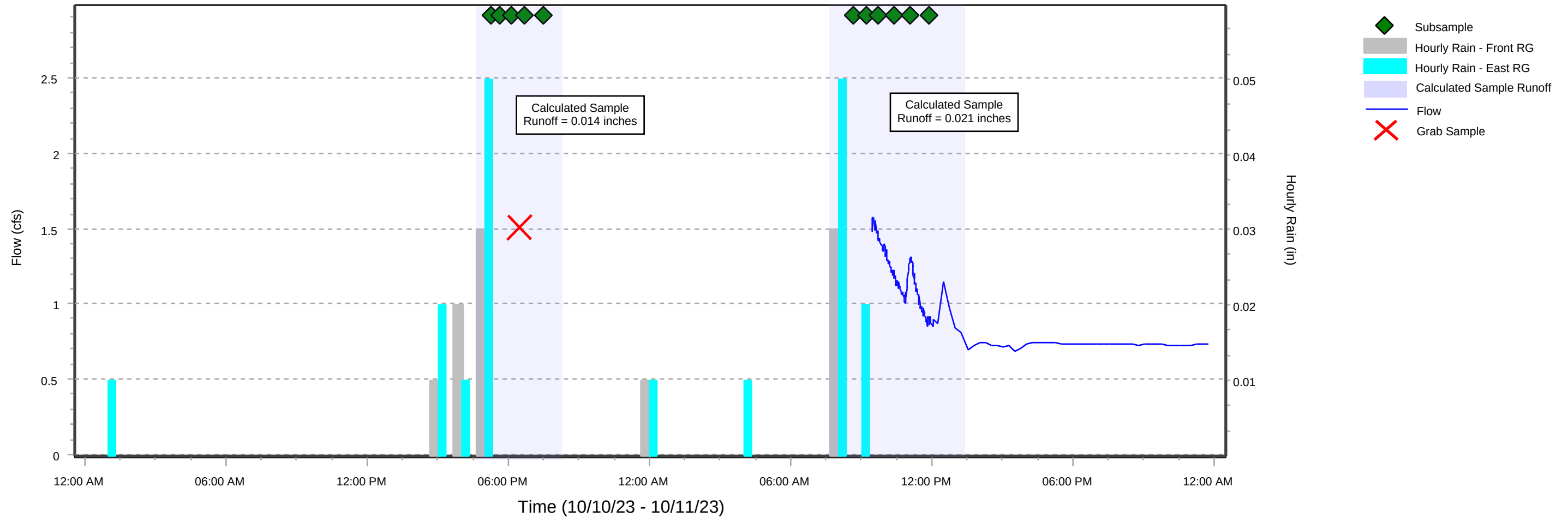
Lucky Hydrograph



Whitewater Hydrograph



Americana Hydrograph



Attachment C: Field Forms

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

STATION: Lucky

SET UP

Personnel: KC, ST

Date/Time: 10/10/23 1042

On-Site: 10/10/23 1042

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
10:51	2.02	0.0	0.0	13.41 V
Enable Condition or Velocity Cutoff:			3.02	
Deadband:			1.0	
Trigger Volume:			2895 gal	

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments:

SHUT DOWN

Personnel: KC, ST

Date/Time: 10/10/23 0902 KC

On-Site: 10/10/23 0902 KC

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1108	2.15	10.72	0.15		
0917	2.34	0.11	0.37		12.7
Downloaded to: <u>Uploaded to KC</u>					

If flow monitoring is complete:

- ☒ Halt program on flowmeter
- ☒ Download flowmeter data
- ☒ Remove flowmeter battery

If continuing to monitor flow:

- ☐ Replace flowmeter battery
- ☐ Reset logging interval to 15 minutes
- ☐ Change velocity cutoff to 0.02 fps
- ☐ Start program
- ☐ Verify running

Comments:

Composite Sample Collection

STATION: Lucky
 Personnel: KC, ST

Bottle 1 of 1
 Date/Time On-Site: 10/11/23 0830

☒ Halt sampler program
☒ Put lid on sample bottle; label sample bottle
Sample ID: <u>231010 - #1 #03</u> -WC
Approx Sample Volume (mL): <u>5000 ml</u>
Clarity (ex. Clear, Cloudy, Silty): <u>clear</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>brown</u>
QA/QC Sample ID: <u>-103</u> (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	10/10/23 1700	Successful ↓	13		
2	10/10/23 1710		14		
3	10/10/23 1720		15		
4	10/10/23 1732		16		
5	10/10/23 1751		17		
6	10/10/23 1831		18		
7	10/11/23 0823		19		
8	10/11/23 0906		20		
9			21		
10			22		
11			23		
12			24		

Comments:

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☐ Keep flowmeter running ☐ Install new 15L bottle, add ice ☐ Restart program from beginning Date/Time Restarted: _____ ☐ Verify running
--	--

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Grab Sample Data Form

STATION: Lucy

Personnel: 2L CS

Date/Time On-Site: 10/10/23 1815pm

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1819	2.23	7.35	0.09	12.9	10/10/23 17:00	

Grab Information				
	Sample ID	Date	Time	Labeled?
Site E.Coli	231010-03 -WG	10/10/23	1829	☒
Field Duplicate E.Coli	231010-03 -101	10/10/23		☐
Field Blank E.Coli	231010-03 -001	10/10/23		☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP09	1830	16.47	7.38	5.66	81.35

Sampler Current Status	
First Subsample Date/Time	10/10/23 1700
Last Subsample Date/Time	10/10/23 1832
# of Subsamples taken	6

Comments:

Set Up/ Shut Down Form – ISCO (Whitewater, Americana, State)

STATION: Whitewater

SET UP

Personnel: KC, ST

Date/Time: 10/10/2023 1146

On-Site: 10/10/2023 1146

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1146	1.47	0.04	0.41	—
Enable Condition: <u>2.6</u>				
Hysteresis: <u>10"</u>				
Flow Pulse Interval: <u>800 cf</u>				

On-Site

- ☒ Replace flowmeter battery, install sampler battery
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Set sampler program parameters
- ☒ Check date/time on sampler
- ☒ Verify all cable and tubing connections
- ☒ Verify sampler program is running

Flowlink (Refer to PG 411 or PG 412, if needed)

- ☒ Direct or Remote; Date/time 10/10/23 1150
- ☒ Retrieve data and review recent flow history
- ☒ Change Wireless Power Control to Storm Event
- ☒ Change Data Storage Rates to 1 minute for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: On Trigger, and set Sampler Enable equation
- ☒ Set Sampler Pacing to Flow Paced, and set trigger volume

Comments:

SHUT DOWN

Personnel: KC, ST

Date/Time: 10/10/23 0902

On-Site: 10/10/23 1040

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
0917	2.34	0.11	0.37	—
Downloaded to: <u>Rugged 6 / USB</u>				
1040	2.06	0.22	0.90	—

On-Site

- ☐ Replace flowmeter battery ball
- ☒ Remove battery from sampler Always connect to power. Not on battery.

Flowlink (Refer to Flowlink Instructions, if needed)

- ☒ Direct or Remote; Date/time 0905
- ☒ Retrieve data
- ☒ Change Wireless Power Control to Dry Weather
- ☒ Change Data Storage Rates to 15 minutes for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: Never

Comments:

Composite Sample Collection

STATION: Whitewater
 Personnel: K.C. ST

Bottle 1 of
 Date/Time On-Site: 10/11/23 1040

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	-WC
Approx Sample Volume (mL):	
Clarity (ex. Clear, Cloudy, Silty):	
Color (ex. Clear, Gray, Tan, Brown, Black):	
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	10/11/23 0910	Successful	13		
2	↓ 0958		14		
3			15		
4			16		
5			17		
6			18		
7			19		
8			20		
9			21		
10			22		
11			23		
12			24		

Comments:

Sample discarded not

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☐ Keep flowmeter running ☐ Install new 15L bottle; add ice ☐ Restart program from beginning - Date/Time Restarted: _____ ☐ Verify running
--	---

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Grab Sample Data Form

STATION: whitewater

Personnel: ZL, CS Date/Time On-Site: 10/10/23 1851

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1851	2.09	0.81 0.90	0.81	-	10/10/23 1600	0.08 in

Grab Information				
	Sample ID	Date	Time	Labeled?
Site E. Coli	231010-11 -WG	10/10/23	1904	☒
Field Duplicate E. Coli	-101			☐
Field Blank E. Coli	-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
M809	1904	17.17	7.55	6.28	195.09

Sampler Current Status	
First Subsample Date/Time	
Last Subsample Date/Time	
# of Subsamples taken	

Comments:

@1900 no composite samples taken yet. only grabs.

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

STATION: Main

SET UP

Personnel: KC, ST

Date/Time
On-Site: 10/10/23 1228

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1230				13.5
Enable Condition or Velocity Cutoff:				
Deadband:				
Trigger Volume:				

- ☒ Install batteries on flowmeter and sampler
- ☐ Perform decon. cycle
- ☐ Install 15L sample bottle, with ice
- ☐ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☐ Verify all cable and tubing connections
- ☐ Check date and time on flowmeter and sampler
- ☐ Set flowmeter program and sampler program parameters
- ☐ Set logging interval to 1 minute
- ☐ Start flowmeter program and sampler program
- ☐ Verify running

Comments:

flow meter giving readings even though no flow in pipe. Tried swapping flow meter out for a new one. Same readings given. Not targetting Main for this event. Sensor appears to be reading incorrectly.

SHUT DOWN

Personnel: _____

Date/Time
On-Site: _____

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
Downloaded to:					

If flow monitoring is complete:

- ☐ Halt program on flowmeter
- ☐ Download flowmeter data
- ☐ Remove flowmeter battery

If continuing to monitor flow:

- ☐ Replace flowmeter battery
- ☐ Reset logging interval to 15 minutes
- ☐ Change velocity cutoff to 0.02 fps
- ☐ Start program
- ☐ Verify running

Comments:

Composite Sample Collection

STATION: _____
 Personnel: _____

Bottle _____ of _____

Date/Time On-Site: _____

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	-WC
Approx Sample Volume (mL):	
Clarity (ex. Clear, Cloudy, Silty):	
Color (ex. Clear, Gray, Tan, Brown, Black):	
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1			13		
2			14		
3			15		
4			16		
5			17		
6			18		
7			19		
8			20		
9			21		
10			22		
11			23		
12			24		

Comments:

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☐ Keep flowmeter running ☐ Install new 15L bottle, add ice ☐ Restart program from beginning Date/Time Restarted: _____ ☐ Verify running
--	--

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Set Up/ Shut Down Form – ISCO (Whitewater, Americana, State)

TATION: Americana

SET UP

Personnel: KC ST

Date/Time
On-Site: 10/10/23 1247

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
<u>0916</u>	<u>3.81</u>	<u>0.72</u>	<u>1.544</u>	<u>11.59</u>
Enable Condition:		<u>5.1"</u>		
Hysteresis:		<u>1.0"</u>		
Flow Pulse Interval:		<u>29100 cf</u>		

On-Site

- ☒ Replace flowmeter battery, install sampler battery
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Set sampler program parameters
- ☒ Check date/time on sampler
- ☒ Verify all cable and tubing connections
- ☒ Verify sampler program is running

Flowlink (Refer to PG 411 or PG 412, if needed)

- ☒ Direct or Remote; Date/time 10/10/23 0920
- ☒ Retrieve data and review recent flow history
- ☒ Change Wireless Power Control to Storm Event
- ☒ Change Data Storage Rates to 1 minute for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: On Trigger, and set Sampler Enable equation
- ☒ Set Sampler Pacing to Flow Paced, and set trigger volume

Comments:

"Replace pump tubing" warning when program started. Followed manual directions to select pump alarm & reset pump count. Error message went away. tube

SHUT DOWN

Personnel: KC ST

Date/Time
On-Site: 10/11/23 1151

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
<u>1151</u>	<u>4.34</u>	<u>0.9</u>	<u>1.593</u>	<u>12.13</u>
Downloaded to:		<u>USB</u>		

On-Site

- ☐ Replace flowmeter battery
- ☐ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☐ Direct or Remote; Date/time 10/11/23 1205
- ☒ Retrieve data
- ☒ Change Wireless Power Control to Dry Weather
- ☒ Change Data Storage Rates to 15 minutes for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: Never

Comments:

STATION: Americana
 Personnel: KC, ST

Composite Sample Collection

Bottle 1 of 1
 Date/Time On-Site: 10/10/23 1815

☐ Halt sampler program		
☐ Put lid on sample bottle; label sample bottle		
Sample ID:	<u>231011-14</u>	-WC
Approx Sample Volume (mL):	<u>5750 mL</u>	
Clarity (ex. Clear, Cloudy, Silty):	<u>Silty</u>	
Color (ex. Clear, Gray, Tan, Brown, Black):	<u>Brown</u>	
QA/QC Sample ID:	-103	(Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	<u>10/10/23 17:13</u>	<u>Success</u> ↓	13		
2	<u>1736</u>		14		
3	<u>1804</u>		15		
4	<u>1839</u>		16		
5	<u>1926</u>		17		
6	<u>10/11 839</u>		18		
7	<u>908</u>		19		
8	<u>942</u>		20		
9	<u>1020</u>		21		
10	<u>1103</u>		22		
11	<u>1150</u>		23		
12			24		

Comments:

If sampling is complete: ☒ Power off sampler, if separate from flowmeter ☒ Keep flowmeter running ☒ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☐ Keep flowmeter running ☐ Install new 15L bottle; add ice ☐ Restart program from beginning Date/Time Restarted: _____ ☐ Verify running
--	---

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Grab Sample Data Form

STATION: Americana

Personnel: KC ST Date/Time On-Site: 10/10/23 18:15

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1817	55	1.41	1.768	12.04		

Grab Information					
	Sample ID		Date	Time	Labeled?
Site E.Coli	23/010-14	-WG	10/10/23	1823	☒
Field Duplicate E.Coli		-101			☐
Field Blank E.Coli		-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP11	1826	16.78	8.40	6.53	247.08

Sampler Current Status	
First Subsample Date/Time	10/10/23 1713
Last Subsample Date/Time	10/10/23 1804
# of Subsamples taken	3

Comments:

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

STATION: AS-6

SET UP

Personnel: KC, ST

Date/Time
On-Site: 10/10/23 1352

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1352	0.0	0.0	0.0	12.5
Enable Condition or Velocity Cutoff:			0.02	
Deadband:				
Trigger Volume:			221 CF	

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments:

Using ⁴⁹⁰~~480~~ mL for sample volume

SHUT DOWN

Personnel: KC, ST

Date/Time
On-Site: 10/10/23 0956

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1008	0.922	0.01	0.37	198	12.3
Downloaded to:			Rugged 6		

If flow monitoring is complete:

- ☒ Halt program on flowmeter
- ☐ Download flowmeter data
- ☐ Remove flowmeter battery

If continuing to monitor flow:

- ☐ Replace flowmeter battery
- ☐ Reset logging interval to 15 minutes
- ☐ Change velocity cutoff to 0.02 fps
- ☐ Start program
- ☐ Verify running

Comments: No composite or grab samples submitted due to low flow levels.

Composite Sample Collection

STATION: _____

Bottle _____ of _____

Personnel: _____

Date/Time On-Site: _____

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	-WC
Approx Sample Volume (mL):	
Clarity (ex. Clear, Cloudy, Silty):	
Color (ex. Clear, Gray, Tan, Brown, Black):	
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1			13		
2			14		
3			15		
4			16		
5			17		
6			18		
7			19		
8			20		
9			21		
10			22		
11			23		
12			24		

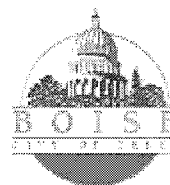
Comments:

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☐ Keep flowmeter running ☐ Install new 15L bottle, add ice ☐ Restart program from beginning Date/Time Restarted: _____ ☐ Verify running
--	--

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Attachment D: Storm Event Analytical Reports

Report Date: 10/25/2023 11:20



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00321-01	ACST1B	231010-03-WG	Water		10/10/2023	10/10/2023
AC00321-02	ACST1B	231010-11-WG	Water		10/10/2023	10/10/2023
AC00321-03	ACST1B	231010-14-WG	Water		10/10/2023	10/10/2023

Report Date: 10/25/2023 11:20



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location: ACST1B
Date/Time Collected: 10/10/2023 18:29
Lab Number: AC00321-01
Sample Type: Grab

Location Description: 231010-03-WG
Sample Collector: C.S
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B234049	2720.0 MPN/100 mL		100.0	1.0	IDEXX - Colilert	10/10/23 20:25	10/11/23 20:25	LRF	D
Wet Chemistry										
Chlorine Screen	B234050	Absent				SM 4500-CL G-2000 mod	10/10/23	10/10/23 20:11	JAL	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 10/25/2023 11:20



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location: ACST1B
Date/Time Collected: 10/10/2023 19:04
Lab Number: AC00321-02
Sample Type: Grab

Location Description: 231010-11-WG
Sample Collector: C.S
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method Reference	Prepared	Analyzed	Analyst		
				MDL *	MDL				Initials	Qualifier	
Microbiology											
E. Coli	B234049	1990.0 MPN/100 mL		100.0	1.0	IDEXX - Colilert	10/10/23 20:25	10/11/23 20:25	LRF	D	
Wet Chemistry											
Chlorine Screen	B234050	Absent				SM 4500-CL G-2000 mod	10/10/23	10/10/23 20:11	JAL		

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 10/25/2023 11:20



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

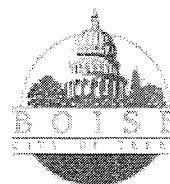
Location: ACST1B
Date/Time Collected: 10/10/2023 18:23
Lab Number: AC00321-03
Sample Type: Grab

Location Description: 231010-14-WG
Sample Collector: K.C
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method	Prepared	Analyzed	Analyst		
				MDL *	MDL				Reference	Initials	Qualifier
Microbiology											
E. Coli	B234049	129.6 MPN/100 mL		1.0	1.0	IDEXX - Colilert	10/10/23 20:25	10/11/23 20:25	LRF		
Wet Chemistry											
Chlorine Screen	B234050	Absent				SM 4500-CL G-2000 mod	10/10/23	10/10/23 20:11	JAL		

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 10/25/2023 11:20



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Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Microbiology									
Batch: B234049									
Blank (B234049-BLK1)									
E. Coli	Absent						10/11/2023	LRF	
LCS (B234049-BS1)									
E. Coli				Present			10/11/2023	LRF	
Duplicate (B234049-DUP2) Source ID: AC00321-01RE1									
E. Coli					Pass	128	10/11/2023	LRF	



Notes and Definitions

Item	Definition
D	Data reported from a dilution

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846


Janet Finegan-Kelly
Water Quality Laboratory Manager


Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Ada County Highway District

Attn: Steven Turner
 3775 Adams Street
 Garden City, Idaho 83714-6418
 Tel. (208) 387-6269
 Fax (208) 387-6391
 Purchase Order:
 Project:
 Sampler(s):

63065628

Stormwater-PI

Kristen Chisholm

Steven Turner

Chad Schwend

Elizabeth Lapa

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix		Type		BOD ₅ - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Colilert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO ₃ +NO ₂ - EPA 353.2	NH ₃ - SM 4500 NH ₃ -D	Total Containers
							Water		Grab	Composite																
AC00321																										
-01	10/10/23		1829		231010-03-WG	CS	X		X												X					1
-02	↓		1904		231010-11-WG	CS	X		X												X					1
-03	↓		1823		231010-14-WG	KC	X		X												X					1

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristen Chisholm	10/10/23 2003	Jat 10.10.23	2003

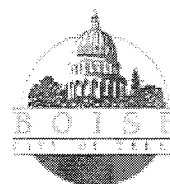
Report Date: 12/04/2023 12:04



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
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Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00322-01	ACST1C	231010-03-WC	Water		10/11/2023	10/11/2023
Comments:						
Low volume. No dissolved parameters were collected.						
AC00322-02	ACST1C	231010-14-WC	Water		10/11/2023	10/11/2023



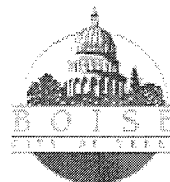
Analysis Report

Location: ACST1C
 Date/Time Collected: 10/10/2023 17:00 - 10/11/2023 09:06
 Lab Number: AC00322-01
 Sample Type: Composite

Location Description: 231010-03-WC
 Sample Collector: K.C
 Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B234335	0.336	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	10/28/23	10/28/23 12:02	MEC	
BOD5	B234067	17.5	mg/L	2.00	2.00	SM 5210 B-2016	10/12/23	10/17/23 9:13	RKT	
COD	B234066	83.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	10/12/23	10/12/23 9:31	JAL	
TKN	B234085	1.97	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	10/13/23	10/13/23 18:35	EDM	
Total Dissolved Solids	B234048	126	mg/L	20.0	20.0	SM 2540 C-2015	10/12/23	10/13/23 11:02	RKT	
Total Suspended Solids	B234076	17.4	mg/L	0.900	0.900	SM 2540 D-2015	10/12/23	10/12/23 9:41	RKT	
Turbidity	B234051	19.6	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	10/11/23	10/11/23 13:52	KMR	
Total Metals										
Mercury	B234059	0.0118	ug/L	0.0100	0.0100	EPA 245.1	10/12/23	10/13/23 8:03	SAS	
Arsenic	B234105	2.6	ug/L	0.070	0.070	EPA 200.8	10/18/23	10/19/23 15:37	DMW	
Cadmium	B234105	0.035	ug/L	0.010	0.010	EPA 200.8	10/18/23	10/19/23 15:37	DMW	
Calcium	B234177	15.8	mg/L	0.0400	0.0400	EPA 200.7	10/19/23	10/20/23 10:04	AMO	
Lead	B234105	0.65	ug/L	0.010	0.010	EPA 200.8	10/18/23	10/19/23 15:37	DMW	
Magnesium	B234177	1850	ug/L	80.0	80.0	EPA 200.7	10/19/23	10/20/23 10:04	AMO	
Phosphorus as P	B234177	0.485	mg/L	0.0120	0.0120	EPA 200.7	10/19/23	10/20/23 10:04	AMO	
Hardness	B234177	47.2	mg/L	0.100	0.100	SM 2340 B-2011	10/19/23	10/20/23 10:04	AMO	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.



Analysis Report

Location: ACST1C
Date/Time Collected: 10/10/2023 17:13 - 10/11/2023 11:50
Lab Number: AC00322-02
Sample Type: Composite

Location Description: 231010-14-WC
Sample Collector: K.C
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
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Wet Chemistry

Ammonia, as N	B234335	0.353	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	10/28/23	10/28/23 11:59	MEC	
BOD5	B234067	19.7	mg/L	2.00	2.00	SM 5210 B-2016	10/12/23	10/17/23 9:06	RKT	
COD	B234066	77.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	10/12/23	10/12/23 9:31	JAL	
Nitrate-Nitrite, as N	B234143	0.930	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	10/17/23	10/17/23 15:14	BAK	
TKN	B234085	1.44	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	10/13/23	10/13/23 18:36	EDM	
Total Dissolved Solids	B234048	236	mg/L	20.0	20.0	SM 2540 C-2015	10/12/23	10/13/23 11:03	RKT	
Total Suspended Solids	B234076	23.6	mg/L	0.900	0.900	SM 2540 D-2015	10/12/23	10/12/23 9:42	RKT	
Turbidity	B234051	33.6	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	10/11/23	10/11/23 14:00	KMR	

Dissolved Wet Chemistry

Orthophosphate, as P	B234046	0.169	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	10/11/23	10/11/23 14:01	JAL	
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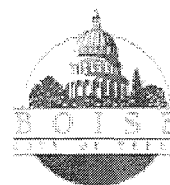
Total Metals

Mercury	B234059	<0.0100	ug/L	0.0100	0.0100	EPA 245.1	10/12/23	10/13/23 7:14	SAS	U
Arsenic	B234105	5.5	ug/L	0.070	0.070	EPA 200.8	10/18/23	10/19/23 15:46	DMW	
Cadmium	B234105	0.072	ug/L	0.010	0.010	EPA 200.8	10/18/23	10/19/23 15:46	DMW	
Calcium	B234177	<0.0400	mg/L	0.0400	0.0400	EPA 200.7	10/19/23	10/20/23 10:09	AMO	U
Lead	B234105	2.4	ug/L	0.010	0.010	EPA 200.8	10/18/23	10/19/23 15:46	DMW	
Magnesium	B234177	<80.0	ug/L	80.0	80.0	EPA 200.7	10/19/23	10/20/23 10:09	AMO	U
Phosphorus as P	B234799	0.308	mg/L	0.0120	0.0120	EPA 200.7	11/30/23	12/1/23 10:09	AMO	
Hardness	B234177	<0.100	mg/L	0.100	0.100	SM 2340 B-2011	10/19/23	10/20/23 10:09	AMO	U

Dissolved Metals

Cadmium	B233966	0.021	ug/L	0.010	0.010	EPA 200.8	10/13/23	10/13/23 17:50	DMW	
Copper	B233966	8.2	ug/L	0.15	0.15	EPA 200.8	10/13/23	10/13/23 17:50	DMW	
Lead	B233966	0.095	ug/L	9.00E-3	9.00E-3	EPA 200.8	10/13/23	10/13/23 17:50	DMW	
Zinc	B233966	22.0	ug/L	0.50	0.50	EPA 200.8	10/13/23	10/13/23 17:50	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.



Quality Control Report

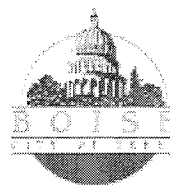
Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry									
Batch: B234048									
Blank (B234048-BLK1)									
Total Dissolved Solids	<20	mg/L					10/13/2023	RKT	U
LCS (B234048-BS1)									
Total Dissolved Solids			95.4	90-110			10/13/2023	RKT	
Duplicate (B234048-DUP1) Source ID: RW00036-02									
Total Dissolved Solids					0.322	10	10/13/2023	RKT	
Batch: B234051									
Blank (B234051-BLK1)									
Turbidity	<0.3	NTU					10/11/2023	KMR	U
LCS (B234051-BS1)									
Turbidity			102	90-110			10/11/2023	KMR	
Duplicate (B234051-DUP1) Source ID: AC00322-01									
Turbidity					0.340	25	10/11/2023	KMR	
Batch: B234066									
Blank (B234066-BLK1)									
COD	<7	mg/L					10/12/2023	JAL	U
LCS (B234066-BS1)									
COD			99.3	90-110			10/12/2023	JAL	
Duplicate (B234066-DUP1) Source ID: RW00036-05									
COD					2.44	10	10/12/2023	JAL	
Duplicate (B234066-DUP2) Source ID: AC00322-01									
COD					1.20	10	10/12/2023	JAL	
Batch: B234067									
Blank (B234067-BLK1)									
BOD5	<2	mg/L					10/17/2023	RKT	U
LCS (B234067-BS1)									
BOD5			102	84.6-115.4			10/17/2023	RKT	
LCS (B234067-BS2)									
BOD5			107	84.6-115.4			10/17/2023	RKT	
Duplicate (B234067-DUP1) Source ID: BB03290-02									
BOD5					1.56	30	10/17/2023	RKT	D



Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B234076									
Blank (B234076-BLK1)									
Total Suspended Solids	<0.9	mg/L					10/12/2023	RKT	U
LCS (B234076-BS1)									
Total Suspended Solids			97.2	90-110			10/12/2023	RKT	
Duplicate (B234076-DUP1) Source ID: BB03292-01									
Total Suspended Solids					1.65	20	10/12/2023	RKT	
Duplicate (B234076-DUP2) Source ID: ST00053-02									
Total Suspended Solids					1.26	20	10/12/2023	RKT	
Batch: B234085									
Blank (B234085-BLK1)									
TKN	<0.2	mg/L					10/13/2023	EDM	U
LCS (B234085-BS1)									
TKN			97.9	80-120			10/13/2023	EDM	
Duplicate (B234085-DUP1) Source ID: WB02755-06									
TKN					1.60	20	10/13/2023	EDM	D
Matrix Spike (B234085-MS1) Source ID: WB02755-06									
TKN			89.1	80-120			10/13/2023	EDM	D
Matrix Spike Dup (B234085-MSD1) Source ID: WB02755-06									
TKN			89.8	80-120	0.285	20	10/13/2023	EDM	D
Batch: B234143									
Blank (B234143-BLK1)									
Nitrate-Nitrite, as N	<0.025	mg/L					10/17/2023	BAK	U
Blank (B234143-BLK2)									
Nitrate-Nitrite, as N	<0.025	mg/L					10/17/2023	BAK	U
LCS (B234143-BS1)									
Nitrate-Nitrite, as N			97.8	90-110			10/17/2023	BAK	
LCS (B234143-BS2)									
Nitrate-Nitrite, as N			96.0	90-110			10/17/2023	BAK	
Duplicate (B234143-DUP1) Source ID: BB03281-02									
Nitrate-Nitrite, as N					0.457	10	10/17/2023	BAK	
Duplicate (B234143-DUP2) Source ID: RW00037-01									
Nitrate-Nitrite, as N					0.344	10	10/17/2023	BAK	
Duplicate (B234143-DUP3) Source ID: WB02749-07									
Nitrate-Nitrite, as N					0.195	10	10/17/2023	BAK	D
Matrix Spike (B234143-MS1) Source ID: BB03281-02									
Nitrate-Nitrite, as N			97.7	90-110			10/17/2023	BAK	
Matrix Spike (B234143-MS2) Source ID: RW00037-01									
Nitrate-Nitrite, as N			91.7	90-110			10/17/2023	BAK	
Matrix Spike (B234143-MS3) Source ID: WB02749-07									
Nitrate-Nitrite, as N			92.9	90-110			10/17/2023	BAK	D



Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
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Wet Chemistry (Continued)

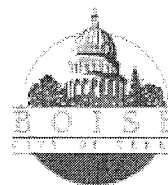
Batch: B234143 (Continued)

Matrix Spike Dup (B234143-MSD1)	Source ID: BB03281-02								
Nitrate-Nitrite, as N			95.1	90-110	1.49	10	10/17/2023	BAK	
Matrix Spike Dup (B234143-MSD2)	Source ID: RW00037-01								
Nitrate-Nitrite, as N			91.9	90-110	0.117	10	10/17/2023	BAK	
Matrix Spike Dup (B234143-MSD3)	Source ID: WB02749-07								
Nitrate-Nitrite, as N			91.6	90-110	0.567	10	10/17/2023	BAK	D

Batch: B234335

Blank (B234335-BLK1)									
Ammonia, as N	<0.035	mg/L					10/28/2023	MEC	U
LCS (B234335-BS1)									
Ammonia, as N			104	90-110			10/28/2023	MEC	
Duplicate (B234335-DUP1)	Source ID: BB03292-01								
Ammonia, as N					0.0151	10	10/28/2023	MEC	
Duplicate (B234335-DUP2)	Source ID: WB02765-06								
Ammonia, as N					1.26	10	10/28/2023	MEC	
Matrix Spike (B234335-MS1)	Source ID: BB03292-01								
Ammonia, as N			103	80-120			10/28/2023	MEC	
Matrix Spike (B234335-MS2)	Source ID: WB02765-06								
Ammonia, as N			108	80-120			10/28/2023	MEC	
Matrix Spike Dup (B234335-MSD1)	Source ID: BB03292-01								
Ammonia, as N			102	80-120	0.611	10	10/28/2023	MEC	
Matrix Spike Dup (B234335-MSD2)	Source ID: WB02765-06								
Ammonia, as N			109	80-120	0.658	10	10/28/2023	MEC	

Report Date: 12/04/2023 12:04



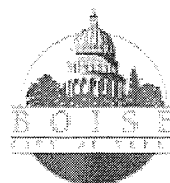
Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
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Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Dissolved Wet Chemistry									
Batch: B234046									
Blank (B234046-BLK1)									
Orthophosphate, as P	<0.003	mg/L					10/11/2023	JAL	U
LCS (B234046-BS1)									
Orthophosphate, as P			98.8	90-110			10/11/2023	JAL	
Duplicate (B234046-DUP1) Source ID: LS01715-02									
Orthophosphate, as P					2.17	10	10/11/2023	JAL	D
Duplicate (B234046-DUP2) Source ID: WB02755-08									
Orthophosphate, as P					0.279	10	10/11/2023	JAL	D
Matrix Spike (B234046-MS1) Source ID: LS01715-02									
Orthophosphate, as P			98.4	90-110			10/11/2023	JAL	D
Matrix Spike (B234046-MS2) Source ID: WB02755-08									
Orthophosphate, as P			100	90-110			10/11/2023	JAL	D
Matrix Spike Dup (B234046-MSD1) Source ID: LS01715-02									
Orthophosphate, as P			97.1	90-110	0.659	10	10/11/2023	JAL	D
Matrix Spike Dup (B234046-MSD2) Source ID: WB02755-08									
Orthophosphate, as P			100	90-110	0.0201	10	10/11/2023	JAL	D

Report Date: 12/04/2023 12:04

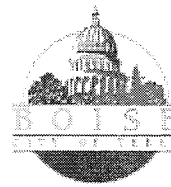


Boise City Public Works
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Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals									
Batch: B234059									
Blank (B234059-BLK1)									
Mercury	<0.01	ug/L					10/13/2023	SAS	U
LCS (B234059-BS1)									
Mercury			99.0	85-115			10/13/2023	SAS	
Duplicate (B234059-DUP1) Source ID: AC00322-02									
Mercury					NR	20	10/13/2023	SAS	U
Duplicate (B234059-DUP2) Source ID: RW00036-06									
Mercury					NR	20	10/13/2023	SAS	U
Matrix Spike (B234059-MS1) Source ID: AC00322-02									
Mercury			108	70-130			10/13/2023	SAS	
Matrix Spike (B234059-MS2) Source ID: RW00036-06									
Mercury			111	70-130			10/13/2023	SAS	
Matrix Spike Dup (B234059-MSD1) Source ID: AC00322-02									
Mercury			107	70-130	0.688	20	10/13/2023	SAS	
Matrix Spike Dup (B234059-MSD2) Source ID: RW00036-06									
Mercury			110	70-130	0.399	20	10/13/2023	SAS	
Batch: B234105									
Blank (B234105-BLK1)									
Arsenic	<0.070	ug/L					10/19/2023	DMW	U
Cadmium	<0.010	ug/L					10/19/2023	DMW	U
Lead	<0.010	ug/L					10/19/2023	DMW	U
LCS (B234105-BS1)									
Arsenic			96.6	85-115			10/19/2023	DMW	
Cadmium			98.7	85-115			10/19/2023	DMW	
Lead			101	85-115			10/19/2023	DMW	
Duplicate (B234105-DUP1) Source ID: AC00322-01									
Arsenic					0.428	20	10/19/2023	DMW	
Cadmium					5.71	20	10/19/2023	DMW	
Lead					1.07	20	10/19/2023	DMW	
Matrix Spike (B234105-MS1) Source ID: AC00322-01									
Arsenic			96.8	70-130			10/19/2023	DMW	
Cadmium			99.6	70-130			10/19/2023	DMW	
Lead			99.3	70-130			10/19/2023	DMW	
Matrix Spike Dup (B234105-MSD1) Source ID: AC00322-01									
Arsenic			94.6	70-130	1.86	20	10/19/2023	DMW	
Cadmium			98.6	70-130	0.985	20	10/19/2023	DMW	
Lead			98.6	70-130	0.635	20	10/19/2023	DMW	



Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals (Continued)									
Batch: B234177									
Blank (B234177-BLK1)									
Calcium	<0.04	mg/L					10/20/2023	AMO	U
Magnesium	<80	ug/L					10/20/2023	AMO	U
Phosphorus as P	<0.012	mg/L					10/20/2023	AMO	U
LCS (B234177-BS1)									
Calcium			98.9	85-115			10/20/2023	AMO	
Magnesium			102	85-115			10/20/2023	AMO	
Phosphorus as P			105	85-115			10/20/2023	AMO	
Duplicate (B234177-DUP1) Source ID: LS01721-06									
Calcium					0.292	20	10/20/2023	AMO	
Magnesium					2.76	20	10/20/2023	AMO	
Phosphorus as P					5.61	20	10/20/2023	AMO	
Matrix Spike (B234177-MS1) Source ID: LS01721-06									
Calcium			77.5	70-130			10/20/2023	AMO	
Magnesium			91.3	70-130			10/20/2023	AMO	
Phosphorus as P			97.6	70-130			10/20/2023	AMO	
Matrix Spike Dup (B234177-MSD1) Source ID: LS01721-06									
Calcium			98.3	70-130	9.81	20	10/20/2023	AMO	
Magnesium			103	70-130	10.2	20	10/20/2023	AMO	
Phosphorus as P			112	70-130	11.9	20	10/20/2023	AMO	
Batch: B234661									
Blank (B234661-BLK1)									
Phosphorus as P	<0.012	mg/L					11/22/2023	AMO	U
LCS (B234661-BS1)									
Phosphorus as P			100	85-115			11/22/2023	AMO	
Duplicate (B234661-DUP1) Source ID: BB03382-01									
Phosphorus as P					2.18	20	11/22/2023	AMO	
Matrix Spike (B234661-MS1) Source ID: BB03382-01									
Phosphorus as P			94.0	70-130			11/22/2023	AMO	
Matrix Spike Dup (B234661-MSD1) Source ID: BB03382-01									
Phosphorus as P			93.7	70-130	0.164	20	11/22/2023	AMO	



Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
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Total Metals (Continued)

Batch: B234799

Blank (B234799-BLK1)

Phosphorus as P	<0.012	mg/L					12/01/2023	AMO	U
-----------------	--------	------	--	--	--	--	------------	-----	---

LCS (B234799-BS1)

Phosphorus as P			104	85-115			12/01/2023	AMO	
-----------------	--	--	-----	--------	--	--	------------	-----	--

Duplicate (B234799-DUP1) Source ID: EP00294-01

Phosphorus as P					0.399	20	12/01/2023	AMO	
-----------------	--	--	--	--	-------	----	------------	-----	--

Matrix Spike (B234799-MS1) Source ID: EP00294-01

Phosphorus as P			101	70-130			12/01/2023	AMO	
-----------------	--	--	-----	--------	--	--	------------	-----	--

Matrix Spike Dup (B234799-MSD1) Source ID: EP00294-01

Phosphorus as P			101	70-130	0.280	20	12/01/2023	AMO	
-----------------	--	--	-----	--------	-------	----	------------	-----	--

Dissolved Metals

Batch: B233966

Blank (B233966-BLK1)

Cadmium	<0.010	ug/L					10/13/2023	DMW	U
Copper	<0.15	ug/L					10/13/2023	DMW	U
Lead	<0.0090	ug/L					10/13/2023	DMW	U
Zinc	<0.50	ug/L					10/13/2023	DMW	U

LCS (B233966-BS1)

Cadmium			91.2	85-115			10/13/2023	DMW	
Copper			92.8	85-115			10/13/2023	DMW	
Lead			93.2	85-115			10/13/2023	DMW	
Zinc			95.4	85-115			10/13/2023	DMW	

Duplicate (B233966-DUP1) Source ID: NP00059-05

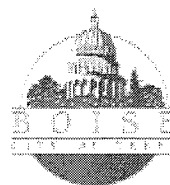
Cadmium					NR	10	10/13/2023	DMW	U
Copper					0.902	10	10/13/2023	DMW	
Lead					9.73	10	10/13/2023	DMW	
Zinc					1.54	10	10/13/2023	DMW	

Matrix Spike (B233966-MS1) Source ID: NP00059-05

Cadmium			94.2	70-130			10/13/2023	DMW	
Copper			87.9	70-130			10/13/2023	DMW	
Lead			90.5	70-130			10/13/2023	DMW	
Zinc			91.6	70-130			10/13/2023	DMW	

Matrix Spike Dup (B233966-MSD1) Source ID: NP00059-05

Cadmium			93.3	70-130	0.903	10	10/13/2023	DMW	
Copper			88.5	70-130	0.546	10	10/13/2023	DMW	
Lead			90.2	70-130	0.360	10	10/13/2023	DMW	
Zinc			92.5	70-130	0.902	10	10/13/2023	DMW	



Notes and Definitions

Item	Definition
D	Data reported from a dilution
U	Analyte included in the analysis, but not detected

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846



Janet Finegan-Kelly
Water Quality Laboratory Manager



Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714-6418
Tel. (208) 387-6269
Fax (208) 387-6391
Purchase Order:
Project:
Sampler(s):

63065628

Stormwater-PI

Kristen Cluisholm
Steven Turner

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix		Type		BOD ₅ - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Colilert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO ₃ +NO ₂ - EPA 353.2	NH ₃ - SM 4500 NH ₃ -D	Total Containers
							Water		Grab	Composite																
AC00322																										
-01	10/10/23	10/10/23	1700	0900	231010-03-WC	KE	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1
-02	10/10/23	10/10/23	1713	1150	231010-14-WC	KE	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristen Cluisholm	10/11/23 1242	Sandra We	Low volume samples. Please try to split for optimum number of analysis listed above.
			AC00322-01: no dissolved parameters collected.
			Sample AC00322-02 correct name is 231010-14-WC.

See attached email - All on back
AC00322
WY24

April Griffith

From: Kristen Chisholm <Kchisholm@achdidaho.org>
Sent: Wednesday, October 11, 2023 1:33 PM
To: April Griffith
Cc: Steven Turner; Monica Lowe
Subject: [External] Re: Site ID

Hi April,

Sorry, the correct ID is 14.

Thank you!

On Oct 11, 2023, at 1:30 PM, April Griffith <agriffith@cityofboise.org> wrote:

Caution: This is an external email and has a suspicious subject or content. Please take care when clicking links or opening attachments. When in doubt, contact your IT Department

Hi Steven,

Sorry, I forgot to include you in this email.

Thanks,
April

From: April Griffith
Sent: Wednesday, October 11, 2023 1:30 PM
To: Kristen Chisholm <Kchisholm@achdidaho.org>
Cc: Monica Lowe <mlowe@achdidaho.org>
Subject: Site ID

Hi Kristen,

One of the sites on the COC says -12, but the container says -14. Which is correct?

Thanks,
April

ACHD SAMPLE FILTRATION, SPLITTING, AND COMPOSITING FOR METALS

PAGE 1 OF 2

Sample	Split/Filter Info	Filter Used	Bottle/Lid Lots	Bottles Split	Comments
#1 Lims#: <u>AC00322-01</u> Location: <u>ACSTIC</u> Sample Date: <u>10-11-23</u> Sample ID: <u>-03</u>	Split Date: <u>10-11-23</u> Start Split: <u>1300</u> Start Filter: <u>N/A</u> Comp Time: <u>N/A</u> Analyst: <u>EDM/DKT</u>	Filter: ☒ Voss ☒ 0.45µm ☐ 1.0µm ☒ 5.0µm ☒ Other: <u>10.0µm</u>	Coll Jug: <u>CC00047-20</u> Comp Jug: <u>N/A</u> SS Tubing: <u>CC00047-39</u> SS Helper: <u>SSA2</u> Stir Bar: <u>SSX047-22</u> Connector: <u>CC00046-06</u> (x2)	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☐ TDS ☐ ☒ COD ☐	High capacity 0.45µm No DISS. Parameters
#2 Lims#: <u>AC00322-02</u> Location: <u>ACSTIC</u> Sample Date: <u>10-11-23</u> Sample ID: <u>-14</u>	Split Date: <u>10-11-23</u> Start Split: <u>1311</u> Start Filter: <u>1315</u> Comp Time: <u>N/A</u> Analyst: <u>EDM/DKT/SAS</u>	Filter: ☒ Voss ☒ 0.45µm ☐ 1.0µm ☒ 5.0µm ☒ Other: <u>10.0µm</u>	Coll Jug: _____ Comp Jug: <u>N/A</u> SS Tubing: <u>CC00047-26</u> SS Helper: <u>SSA4</u> Stir Bar: <u>CC00047-22</u> Connector: <u>CC00041-31</u> (x2)	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☐ TDS ☐ ☒ COD ☐	High capacity 0.45µm
#3 Lims#: _____ Location: <u>NO other samples</u> Sample Date: _____ Sample ID: _____	Split Date: _____ Start Split: _____ Start Filter: _____ Comp Time: _____ Analyst: _____	Filter: ☒ Voss ☐ 0.45µm ☐ 1.0µm ☐ 5.0µm ☒ Other: <u>10.0µm</u>	Coll Jug: _____ Comp Jug: _____ SS Tubing: <u>CC00044-92</u> SS Helper: <u>SSA5</u> ↓ Stir Bar: <u>CC00047-25</u> Connector: <u>CC00039-71</u> (x2)	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☐ TDS ☐ ☒ COD ☐	High capacity 0.45µm
#4 Lims#: _____ Location: _____ Sample Date: _____ Sample ID: _____	Split Date: _____ Start Split: _____ Start Filter: _____ Comp Time: _____ Analyst: _____	Filter: ☒ Voss ☐ 0.45µm ☐ 1.0µm ☐ 5.0µm ☒ Other: <u>10.0µm</u>	Coll Jug: _____ Comp Jug: _____ SS Tubing: <u>CC00047-18</u> SS Helper: <u>SSA7</u> ↓ Stir Bar: <u>CC00041-AC</u> Connector: <u>CC00040-06</u> (x2)	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☐ TDS ☐ ☒ COD ☐	High capacity 0.45µm
#5 Lims#: _____ Location: _____ Sample Date: _____ Sample ID: _____	Split Date: _____ Start Split: _____ Start Filter: _____ Comp Time: _____ Analyst: _____	Filter: ☒ Voss ☐ 0.45µm ☐ 1.0µm ☐ 5.0µm ☒ Other: <u>10.0µm</u>	Coll Jug: _____ Comp Jug: _____ SS Tubing: <u>CC00047-39</u> SS Helper: <u>SS9</u> ↓ Stir Bar: <u>CC00044-AD</u> Connector: <u>CC00039-71</u>	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☐ TDS ☐ ☒ COD ☐	High capacity 0.45µm

CC00040-06

ACHD SAMPLE FILTRATION, SPLITTING, AND COMPOSITING FOR METALS

PAGE 2 OF 2

Sample	Split/Filter Info	Filter Used	Bottle/Lid Lots	Bottles Split	Comments
Lims#: _____ Location: <u>NO</u> Sample Date: <u>other</u> Sample ID: <u>samples</u>	Split Date: _____ Start Split: _____ Start Filter: _____ Comp Time: _____ Analyst: _____	Filter: ☒ Voss ☒ 0.45µm ☐ 1.0µm ☒ 5.0µm ☒ Other: <u>10.0µm</u>	Coll Jug: _____ Comp Jug: _____ SS Tubing: <u>CC00039-99</u> SS Helper: <u>SS17</u> ↓ Stir Bar: <u>CC00044-AD</u> Connector: <u>CC00041-26</u> (x2)	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ _____ ☒ COD ☐ _____	<u>High capacity 0.45µm</u>
Lims#: _____ Location: _____ Sample Date: _____ Sample ID: _____	Split Date: _____ Start Split: _____ Start Filter: _____ Comp Time: _____ Analyst: _____	Filter: ☒ Voss ☒ 0.45µm ☐ 1.0µm ☒ 5.0µm ☐ Other: _____	Coll Jug: _____ Comp Jug: _____ SS Tubing: _____ SS Helper: _____ Stir Bar: _____ Connector: _____	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ _____ ☒ COD ☐ _____	
Lims#: _____ Location: _____ Sample Date: _____ Sample ID: _____	Split Date: _____ Start Split: _____ Start Filter: _____ Comp Time: _____ Analyst: _____	Filter: ☒ Voss ☒ 0.45µm ☐ 1.0µm ☒ 5.0µm ☐ Other: _____	Coll Jug: _____ Comp Jug: _____ SS Tubing: _____ SS Helper: _____ Stir Bar: _____ Connector: _____	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ _____ ☒ COD ☐ _____	
Lims#: _____ Location: _____ Sample Date: _____ Sample ID: _____	Split Date: _____ Start Split: _____ Start Filter: _____ Comp Time: _____ Analyst: _____	Filter: ☒ Voss ☒ 0.45µm ☐ 1.0µm ☒ 5.0µm ☐ Other: _____	Coll Jug: _____ Comp Jug: _____ SS Tubing: _____ SS Helper: _____ Stir Bar: _____ Connector: _____	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ _____ ☒ COD ☐ _____	
Lims#: _____ Location: _____ Sample Date: _____ Sample ID: _____	Split Date: _____ Start Split: _____ Start Filter: _____ Comp Time: _____ Analyst: _____	Filter: ☒ Voss ☒ 0.45µm ☐ 1.0µm ☒ 5.0µm ☐ Other: _____	Coll Jug: _____ Comp Jug: _____ SS Tubing: _____ SS Helper: _____ Stir Bar: _____ Connector: _____	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ _____ ☒ COD ☐ _____	



Technical Memorandum

1290 W. Myrtle St. Suite 340
Boise, ID 83702

Phone: 801.316.9859

Prepared for: Ada County Highway District

Project Title: NPDES Phase I Stormwater Support WY 2024

Project No.: 159103

Technical Memorandum

Subject: ACHD Phase I Storm Event Report for November 19, 2023

Date: February 14, 2023

To: Monica Lowe

Cc: Steven Turner

Kristen Chisholm

From: Zuly Lapa, Project Engineer

Prepared by: Zuly Lapa, EIT, Project Engineer

Reviewed by: Melissa Jannusch, PE, Project Manager

Limitations:

This document was prepared solely for ACHD in accordance with professional standards at the time the services were performed and in accordance with the contract between ACHD and Brown and Caldwell dated October 10, 2023. This document is governed by the specific scope of work authorized by ACHD; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by ACHD and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

Section 1: Introduction

The Environmental Protection Agency Region 10 reissued a Municipal Separate Storm Sewer System Phase I National Pollutant Discharge Elimination System Permit (NPDES Permit), effective October 1, 2021, to Ada County Highway District (ACHD), Boise City, Ada County Drainage District No. 3, Idaho Transportation Department District 3, Boise State University, and Garden City. Under the NPDES Permit, Permittees are required to continue to conduct wet weather stormwater outfall monitoring and subwatershed monitoring. Four outfall monitoring sites (Lucky, Whitewater, Main, and Americana) and one subwatershed monitoring site (AS_6) have been established. The AS_6 site represents a subwatershed located within the Americana watershed. At each site, a minimum of three composite and three grab samples will be collected during Water Year (WY) 2024 (October 1, 2023, through September 30, 2024). The following storm event report summarizes stormwater sampling results from the November 19, 2023, storm event.

Section 2: Project Status

Table 2-1 is a summary of the sample types collected to date for WY 2024 Phase I Stormwater Outfall Monitoring. When samples are qualified, additional samples will be attempted from subsequent storms to collect unqualified samples.

Table 2-1. WY 2024 Samples Collected					
Date	Lucky	Whitewater	Main	Americana	AS_6
October 10, 2023	G, C ^{1,2}	G	--	G, C ³	--
November 19, 2023	G, C	G, C	G, C	G ⁴ , C	G, C
Unqualified Samples:	2G, 1C	2G, 1C	1G, 1C	2G, 1C	1G, 1C
Samples Remaining:	1G, 2C	1G, 2C	2G, 2C	1G, 2C	2G, 2C

Notes:

-- = no samples taken

C = composite sample

G = grab sample

¹ Composite samples qualified due to lack of representativeness (50% – 75%).

² Incomplete water quality analysis due to low composite sample volume.

³ Composite samples qualified due to lack of representativeness (50% – 75%) of the calculated flow volume.

⁴ Grab sample qualified due to incomplete field parameter collection.

Section 3: Storm Event Summary

The November 19, 2023, storm event and the subsequent preparation and sampling efforts are detailed in the following sections.

3.1 Storm Detail

A summary of the forecast on which monitoring decisions were based is detailed below. The sampling event communication form that describes the forecast and summarizes the decision-making process from November 19, 2023, is included in Attachment A for reference.

Saturday, November 18, 2023 (Sampling Event Communication and Set Up)

- On the afternoon of November 18, the National Weather Service issued a forecast for widespread rain in the Boise area, starting November 18 at 2100 and ending on November 19 at 0000. The chance of precipitation was greater than 80%, with 0.20 to 0.30 inches of precipitation forecasted.
- Setup was accomplished in the afternoon of November 18. An expected precipitation depth of 0.11 inches was used to set trigger volumes at monitoring stations. A runoff calculations worksheet showing how the trigger volumes were calculated is included in Attachment A.

Sunday, November 19, 2023 (Storm Event)

- Moderate rain first started at approximately November 19 at 0000 and ended at 1642.
- Precipitation totals ranged between 0.42 and 0.61 inches at local rain gauges.

Flow measurements and precipitation data are listed in Table 1 along with a sampling summary. Hydrograph for the Lucky, Whitewater, Main, Americana and AS_6 site showing flow, rain, and sample collection data are included in Attachment B.

3.2 Sampling Summary

Lucky, Whitewater, Main, Americana and AS_6 monitoring stations were set up on November 18, to collect flow-proportional composite samples during the storm. Sampler enable conditions were programmed into the Whitewater and Americana flowmeters. A site-specific velocity cutoff value was programmed into Lucky, Main, and AS_6 flowmeter. Setup and sampling information are included in Table 1. The field forms completed during setup/shutdown and sampling are included in Attachment C.

Grab Samples

Two, two-member team mobilized to collect stormwater runoff grab samples and verify operation of the automatic sampling equipment on November 19 at 0110. Grab samples for Lucky, Whitewater, Main, and Americana were submitted to the West Boise Water Quality Lab (WQL) at 0758 on November 19. The AS_6 grab sample was submitted at 1342 on November 19 to the WQL.

Results for grab samples, including field parameter and analytical data, are included in Table 2. Laboratory analytical reports are included in Attachment D.

Composite Samples

Composite samples were collected at the Whitewater, Main, and Americana monitoring station and submitted to the WQL at 1716 on November 19. The composite samples at the AS_6 monitoring station was submitted at 1342 and the Lucky monitoring station at 1603 on November 19 to the WQL.

Analytical results are shown in Table 2 and pollutant loading estimates for the event are detailed in Table 3. Laboratory analytical reports are included in Attachment D.

Section 4: Quality Assurance/Quality Control

A summary of quality control samples collected during the November 19, 2023, storm event is presented below in Table 4-1. A field blank and a field duplicate were collected from the Americana monitoring station. The analytical results for these samples are included in Table 4.

Table 4-1. Quality Control Samples			
Sample ID	Sample Type	Parent Sample	Conclusions
231119-14-001	Field blank	Americana grab	No <i>E. coli</i> detection was reported in the field blank.
231119-14-101	Field duplicate	Americana grab	Relative percent difference was within the acceptable range.

Data quality objectives for this storm were evaluated and tracked using the data validation review checklist included in Attachment A.

An acceptable composite sample represents at least 75 percent of the total discharge or at least 6 hours of the storm duration. All composite samples met the criteria.

The acceptance and performance criteria for analytical and non-analytical criteria were met for this storm event.

Section 5: Notes and Recommendations

Whitewater

The small sampler battery died at approximately 0537 on Bottle No. 2. The battery was replaced, and the sampler program was then restarted at 0800 and continued until the end of the storm event. The battery issue resulted due to setting up the sampler program earlier in the week. It is advised to check on the small battery prior to the storm event if set-up is completed a day earlier.

AS_6

The AS_6 composite samples had two distribution errors at 0650 and 0740 on Bottle No. 2. The AS_6 sampler battery later died after taking the last composite sample but was then replaced. The sample program was restarted at 0826. There was also a No-Liquid-Error at 0953, but no succeeding errors occurred until the end of the event. It is advised to check on the small battery prior to the storm event if set-up is complete a day earlier.

Data Tables



TAB-1

Table 1. Sampling and Flow Summary					
	Lucky	Whitewater	Main	Americana	AS_6
Grab samples collected and submitted?	YES	YES	YES	YES	YES
Composite samples collected and submitted?	YES	YES	YES	YES	YES
Trigger volume (gal or ft ³)	2895 gal	800 ft ³	3411 gal	2960 ft ³	221 ft ³
Velocity cutoff (fps)	0.02	--	0.02	--	0.02
Sampler enable condition (in)	--	Level > 1.9 "	--	Level > 6.96 "	--
Runoff start time	0038	0102	0029	0000	0251
Grab sample collection time	0156	0247	0122	0151	0620
Composite sample stop time	1328	1528	1442	1407	1221
Runoff stop time	1500	1552	1446	1642	1615
Volume of Discharge Sampled (ft ³)	17,699	73,819	28,140	251,136	19,247
Total runoff volume (ft ³)	18,782	81,522	35,160	317,217	21,217
Percent of storm flow sampled (%)	94%	91%	80%	79%	91%
Composite sample duration (hrs)	11	13	13.5	12.5	9
Storm Precipitation (in)	0.42	0.61	0.50	0.50/0.58	0.50/0.58
Referenced Rain Gauge	Cynthia Mann	Whitewater	Front	Front/East	Front/East
Sampler messages (counts): Success	46	82	60	88	81
Number of composite bottles filled	2	3	3	4	4
Composite sample volume (Approx.; ml)	27,250	36,750	36,000	50,000	54,500

Notes:

-- = No data.

Table 2. Field and Analytical Data Summary																											
Monitoring Station	Sample Date	Sample ID Grab	Field Parameters					E. coli	Sample ID Composite	Analytical Parameters																	
			Dissolved Oxygen	pH	Conductivity	Temperature				BOD ₅	COD	Hardness as CaCO ₃	Turbidity	TSS	TDS	Total Phosphorus	Orthophosphate as P	Ammonia as N	Nitrate + Nitrite as N	TKN	Arsenic, total	Cadmium, dissolved	Cadmium, total	Copper, dissolved	Lead, dissolved	Lead, total	Mercury, total
			mg/L	S.U.	uS/cm	C	mpn/100 mL		mg/L	mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	
Lucky	11/19/2023	231119-03-WG	5.09	7.27	506.44	15.7	2.0	231119-03-WC	59.5	137	35.8	8.6	8.63	136	0.710	0.538	0.530	0.145	1.76	0.93	0.012	0.030	3.5	0.085	0.33	<0.0100	32.7
Whitewater	11/19/2023	231119-11-WG	5.82	7.34	460.32	12.96	99.0	231119-11-WC	61.9	167	45.0	19.7	27.3	180	0.958	0.768	0.527	0.182	2.07	1.7	<0.0100	0.041	5.0	0.21	2.2	<0.0100	32.3
Main	11/19/2023	231119-12-WG	9.48	7.64	174.43	10.54	30.9	231119-12-WC	19.9	61.0	19.3	11.7	16.2	61.0	0.226	0.167	0.610	0.246	1.14	0.66	0.015	0.045	2.7	0.12	1.7	<0.0100	25.9
Americana	11/19/2023	231119-14-WG	-- ^{3f}	-- ^{3f}	-- ^{3f}	14.16	1340.0	231119-14-WC	36.5	94.0	57.8	15.0	21.7	153	0.504	0.402	0.454	0.614	1.27	2.1	0.022	0.061	4.0	0.11	1.9	<0.0100	27.2
AS_6	11/19/2023	231119-206-WG	9.44	7.18	184.28	9.04	1732.9	231119-206-WC	162	329	43.3	21.1	28.7	263	2.06	1.71	0.563	0.136	3.17	1.7	0.029	0.059	8.5	0.93	3.3	<0.0100	61.8

Notes:
-- = No data.
^{3f} Grab sample qualified due to incomplete field parameter collection.

Table 3. Event Pollutant Loading Estimates in Pounds						
Monitoring Station	Event Date	TSS	Total Phosphorus	Ammonia as N	Nitrate + Nitrite as N	TKN
Lucky	11/19/2023	10.1	0.832	0.621	0.170	2.06
Whitewater	11/19/2023	139	4.87	2.68	0.926	10.5
Main	11/19/2023	35.5	0.496	1.34	0.540	2.50
Americana	11/19/2023	430	9.98	8.99	12.2	25.1
AS_6	11/19/2023	38.0	2.73	0.746	0.180	4.20

Table 4. QC Sample Summary				
Date	Parent Sample	Sample ID	Type	E. coli
				mpn/100 mL
11/19/2023	231119-14-WG	231119-14-001	Field Blank	<1.0
11/19/2023	231119-14-WG	231119-14-101	Field Duplicate	866.4
Calculated parent/duplicate RPD				4%
Allowable RPD				40%

Attachment A: Supplemental Documents

Sampling Event Communication Form

Data Validation Checklist

Runoff Calculation Worksheet

SAMPLING EVENT COMMUNICATION FORM

Date: 11/18/2023	Time: 2:30 PM	Initials: ST
Is there a targeted sampling event during the next 36 hours? (Or, if it is Friday, is a targeted event expected before 5:00 PM Monday?)		Yes

Past 72 hr Precip	0.00"
Date and time of expected event	11/18/2023
Expected amount of precipitation	0.2 – 0.3"
Percent chance of precipitation	90%
Percent chance of >0.10" over 12 hours	Upper 80%

<u>NWS Update</u> Steven from the NWS said that the rain will be moving in between 9:00 PM and midnight. It will taper off around 6:00 – 7:00 AM on Sunday morning. Between those times, their models are predicting .16 - .42". I asked if he could narrow the amount down and he said 0.26" is the average. The heavier rain will start later around 11:00 PM to 1:00 AM.

<u>Targeted Station & Samples</u>					
Lucky	Whitewater	Main	Americana	AS_6	State (Phase II)
☒ Grab	☒ Grab	☒ Grab	☒ Grab	☒ Grab	☒ Grab
☒ Composite	☒ Composite	☒ Composite	☒ Composite	☒ Composite	☒ Composite

<u>Type of Forecasted Precipitation</u>		
☐ Light Rain	☒ Rain	☐ Rain on Snow
☐ Scattered Showers	☐ Thunder Showers	☐ Snowmelt
☐ Other:		

<u>Reasons for Not Targeting a Forecasted Storm and/or Stations</u>
☐ Holiday
☐ Waiting on Antecedent Dry Period – Expires:
☐ Equipment Concerns:
☐ Other:

<u>Text Forecast</u>

<u>Forecast Discussion</u>

<u>Hourly Forecast</u>

Storm Event QA/QC Checklist – Phase I

STORM DATE 11/19/23

A. Event and Data Completeness

	Yes	No	N/A	Notes
1. Field data sheets filled out completely and clearly	X			
2. Field parameters reviewed, and any problems/issues addressed	X			Noted missed parameters in sample status
3. All samples collected as specified	X			
4. All samples delivered to lab promptly (review chain of custody rpts)	X			
5. Inconsistencies/clarifications discussed with sampling team member	X			Americana field parameters were incomplete
6. All analytical reports from lab received	X			

B. Validation and Verification Methods

	Yes	No	N/A	Notes
1. Outliers and unexpected values discussed with lab			X	
2. Appropriate analytical methods used	X			
3. All lab QA samples were within method acceptance criteria	X			
4. All samples reviewed and data qualifiers assigned if needed	X			
5. Data quality objective achieved	X			

C. Specific Storm and Sample QA/QC Criteria

	Lucky	Whitewater	Main	Americana	AS_6	Program Criteria	Met	Qualify	Reject
1. Antecedent dry period (inches in previous 72-hours)	0.00"	0.00"	0.00"	0.00"	0.00"	< 0.11" in 72 hrs	X		
2. Precipitation (inches)	0.42	0.61	0.50	0.50 0.58	0.50 0.58	> 0.10"	X		
3. Sampled amount (% of total run-off)	94%	91%	80%	79%	91%	>= 75% or >= 6 hrs: no qualifier >= 50% and <75%: qualify < 50%: reject	X		
4. Composite sample duration (hours)	11	13	13.5	12.5	9				
4. Ecoli sample holding time (hours)	7.5	6.5	7.5	7.0	7.5	<=8 hrs: no qualifier >8 and <=16 hrs.: qualify >16 hrs.: reject	X		
5. Filtering of samples for dissolved parameter analysis (hours)	3.0	2.5	3.5	3.5	1.5	<= 24 hrs: no qualifier > 24 hrs.: reject	X		

D. Notes

Americana - Field parameters (DO, pH, cond) not recorded during grab sample collection.

Reviewed by

Steven Turner

Date

2/12/24

Approved by

Monica Lowe

Date

2/12/24

Storm Runoff Estimates and Trigger Volumes

Step 1. Enter runoff coefficients in yellow cells.

Step 2. Enter expected precipitation depth (in) in blue cell.

Step 3. Read trigger volumes (**bold**) in green cells.

Expected Precipitation Depth = 0.11

Aliquots per Sample = 17

Site	Area (ac)	Using RC calculated from flow data		
		RC	Expected Vol (ft ³)	Trigger Vol (ft ³)
Lucky	105	0.157	6582.5	387
Whitewater	498	0.069	13621.3	801
Main	79	0.246	7760.0	456
Main Alt	60	0.200	4791.6	282
Americana	875	0.144	50311.8	2960
AS_6	204	0.046	3747.0	220
State	34	0.160	2172.2	128

Notes:

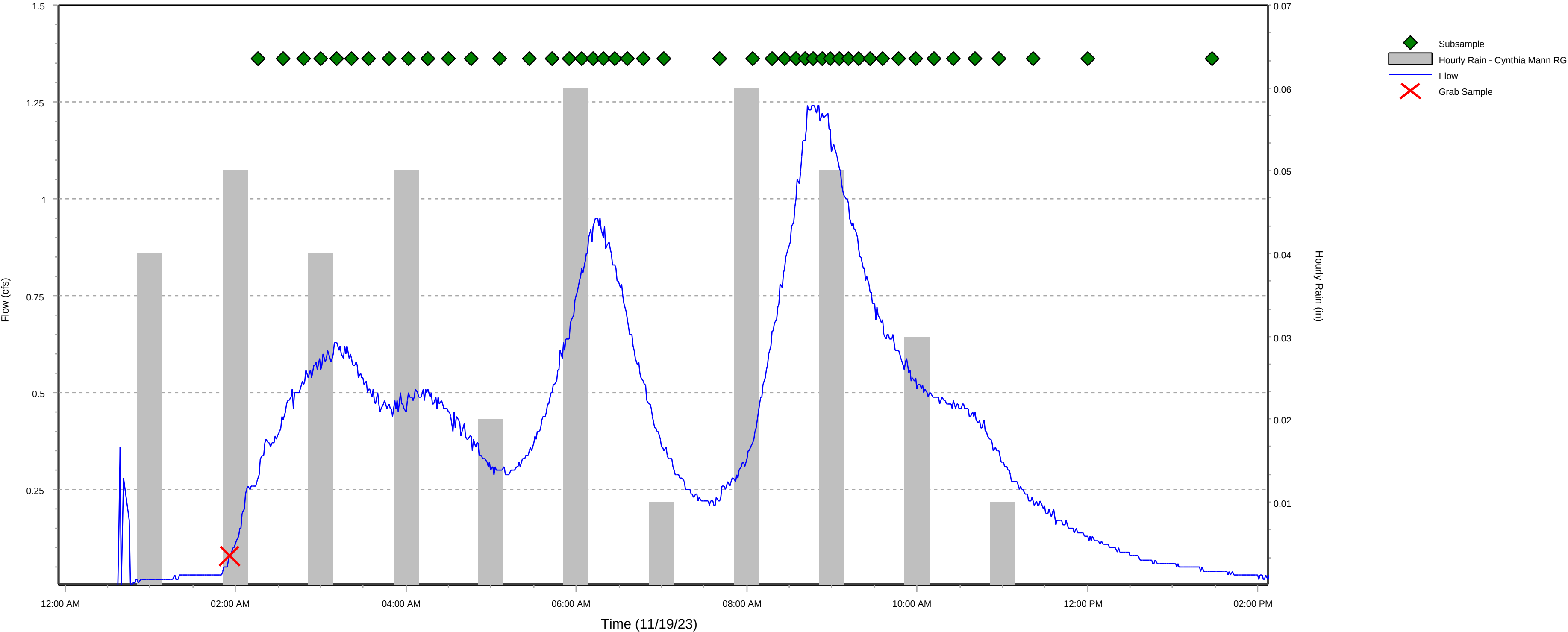
Calculated RC = Average ($\text{precip (ft)} / [\text{volume (ft}^3\text{)} \times \text{area (ft}^2\text{)}]$)

Where precip (ft) is the measured amount from local rain guage, and $\text{volume (ft}^3\text{)}$ is the measured discharge, and $\text{area (ft}^2\text{)}$ is the watershed area

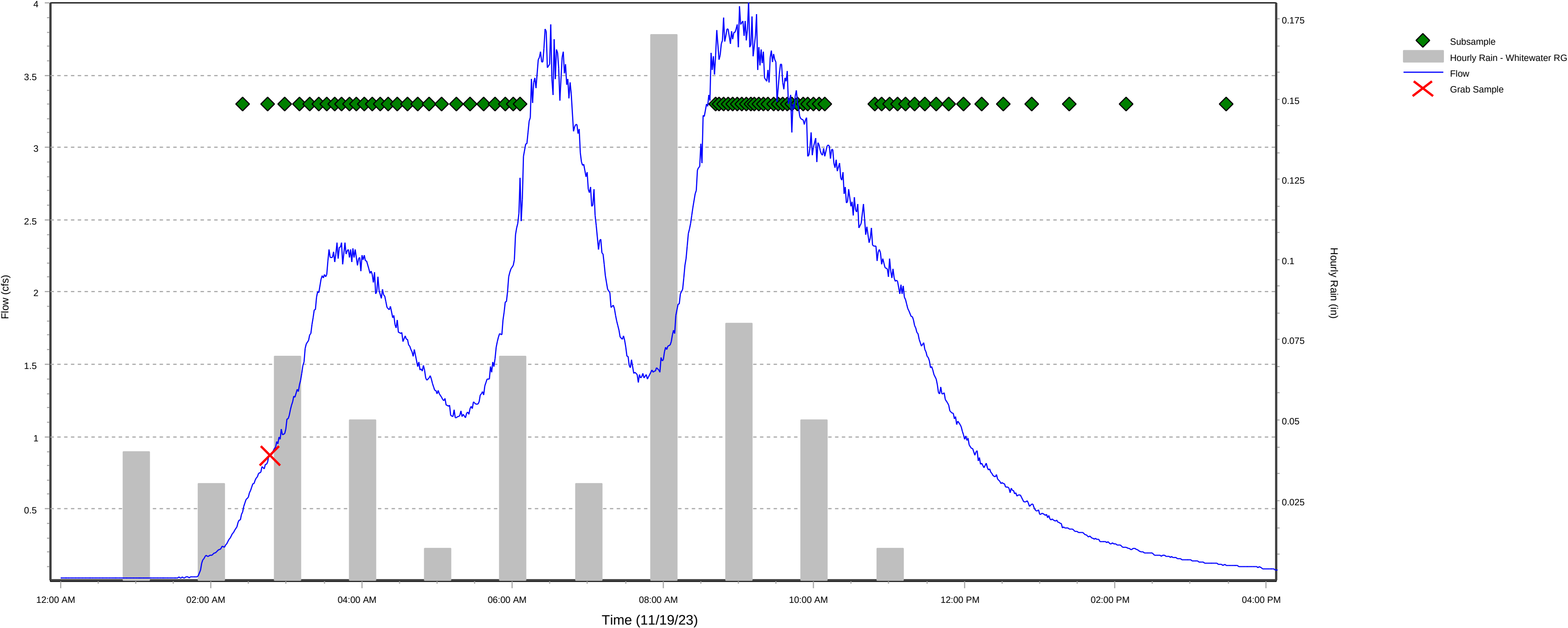
Expected volume (ft³) = RC x expected precip (ft) x area (ft²)

Attachment B: Storm Event Hydrographs

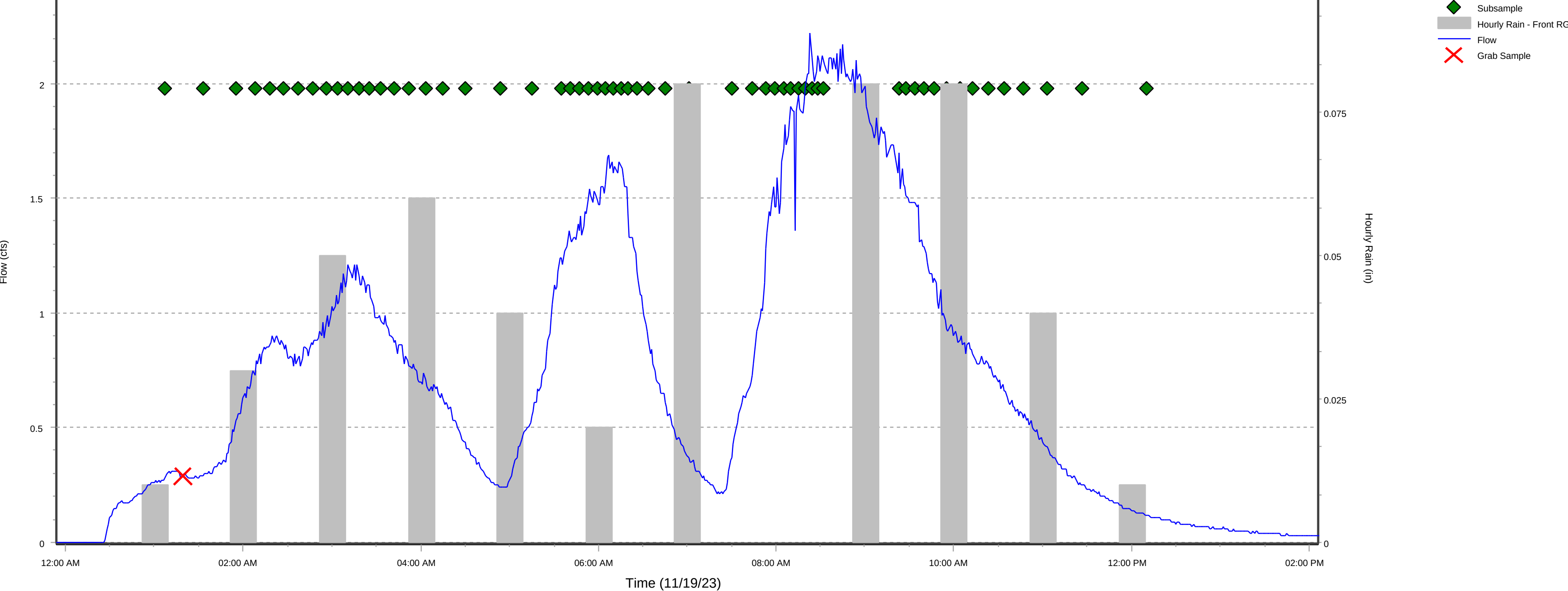
Lucky Hydrograph



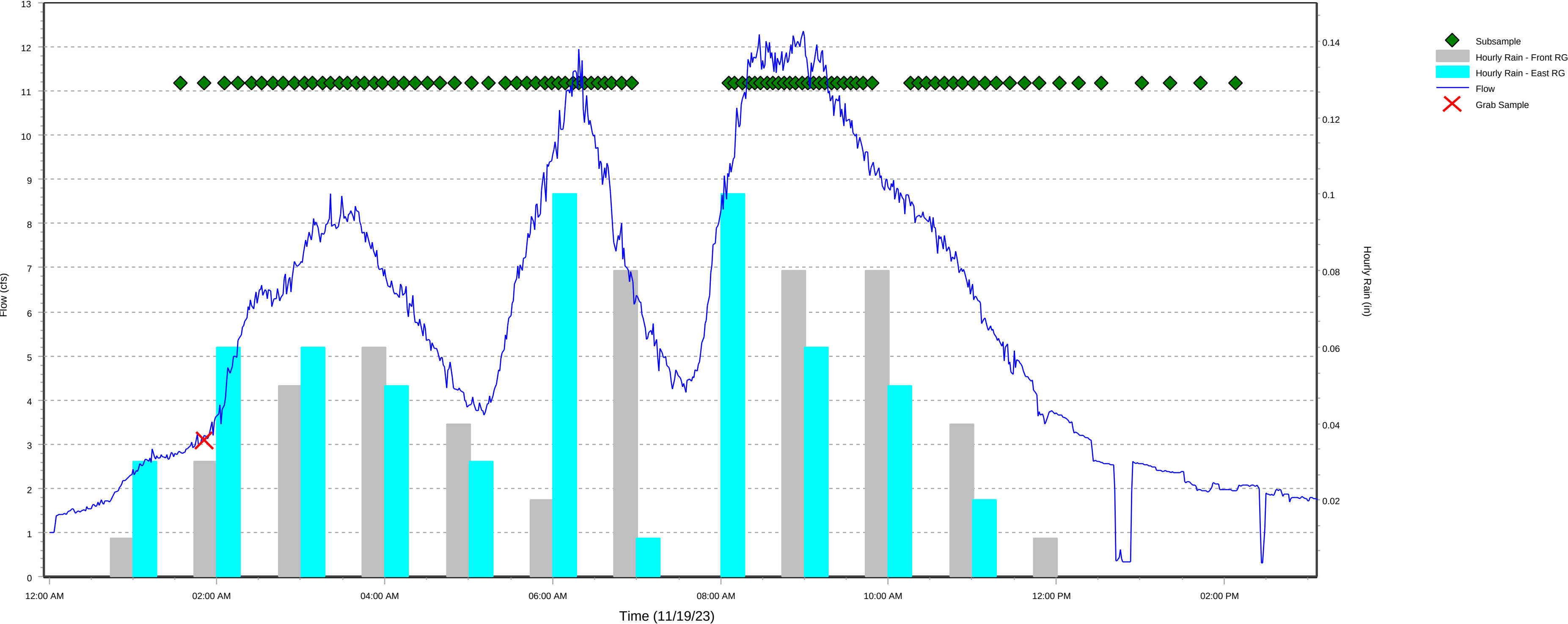
Whitewater Hydrograph



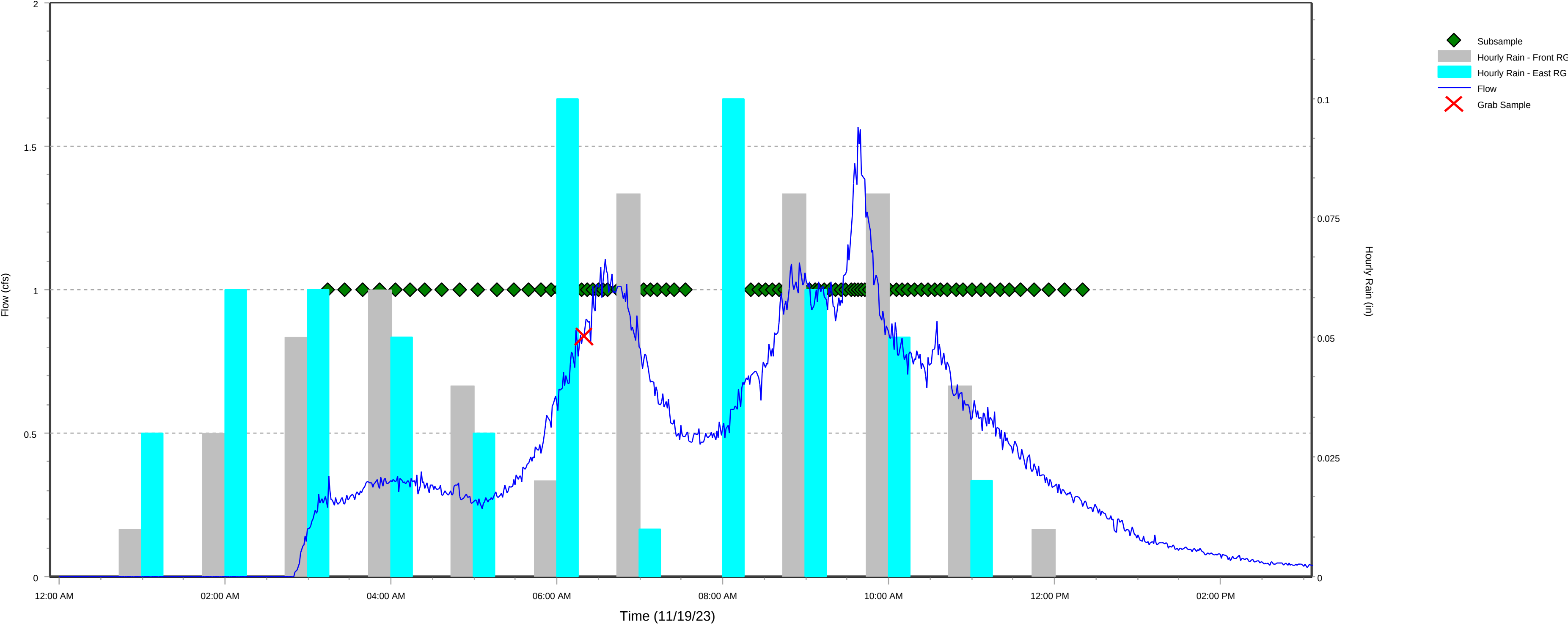
Main Hydrograph



Americana Hydrograph



AS_6 Hydrograph



Attachment C: Field Forms

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

LOCATION: Lucky

SET UP

Personnel: ST. KC

Date/Time

On-Site: 11/17/23 13:34

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
13:47	1.8	73.34	1.36	13.1
13:52	1.7	0.00	0	
Enable Condition or Velocity Cutoff:			vc 2895 gal 0.02	
Deadband:			1.0	
Trigger Volume:			2895 gal	

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☐ Start flowmeter program and sampler program
- ☐ Verify running

Comments: Readings when first turned on, now reading 0's after updating
No flow in pipe.

SHUT DOWN

Personnel: ST. KC

Date/Time

On-Site: 11/19/23 15:18

Time	Level (in)	Flow (cfs) GPM	Velocity (fps)	Total (cf)	Battery (V)
15:22	1.91	5.76	0.1		12.8
Downloaded to:		USB-3 @ 5:22			

If flow monitoring is complete:

- ☒ Halt program on flowmeter
- ☒ Download flowmeter data
- ☒ Remove flowmeter battery

If continuing to monitor flow:

- ☐ Replace flowmeter battery
- ☐ Reset logging interval to 15 minutes
- ☐ Change velocity cutoff to 0.02 fps
- ☐ Start program
- ☐ Verify running

Comments:

Composite Sample Collection

STATION: Ludwig
 Personnel: ST, KC

Bottle 1 of 2
 Date/Time On-Site: 11/19/23 710

☒ Halt sampler program
☒ Put lid on sample bottle; label sample bottle
Sample ID: <u>231119-63</u> -WC
Approx Sample Volume (mL): <u>14000mL</u>
Clarity (ex. Clear, Cloudy, Silty): <u>Cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>Brown</u>
QA/QC Sample ID: _____ -103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	<u>11/19/23 216</u>	<u>Success</u>	13	<u>506</u>	
2	<u>234</u>		14	<u>527</u>	
3	<u>248</u>		15	<u>543</u>	
4	<u>300</u>		16	<u>555</u>	
5	<u>311</u>		17	<u>604</u>	
6	<u>322</u>		18	<u>612</u>	
7	<u>334</u>		19	<u>619</u>	
8	<u>348</u>		20	<u>627</u>	
9	<u>402</u>		21	<u>6336</u>	
10	<u>416</u>		22	<u>647</u>	
11	<u>430</u>		23	<u>702</u>	
12	<u>446</u>		24		

Comments:

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☒ Keep flowmeter running ☒ Install new 15L bottle, add ice ☒ Restart program from beginning - Date/Time Restarted: <u>11/19/23 7:12</u> ☐ Verify running
--	---

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: Lucy
 Channel: ST. KC

Bottle 2 of 2

Date/Time On-Site: _____

☒ Halt Sampler program

☒ Put lid on sample bottle; label sample bottle

Sample ID:	23119-03	-WC
Approx Sample Volume (mL):	13250	
Clarity (ex. Clear, Cloudy, Silty):	Cloudy	
Color (ex. Clear, Gray, Tan, Brown, Black):	Tan	
QA/QC Sample ID:	-103	(Time: 1200)

Subsample Information

Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	7/19/23 741	Success	13	987	
2	804		14	936	
3	815		15	947	
4	827		16	959	
5	839		17	1012	
6	841		18	1026	
7	847		19	1041	
8	853		20	1058	
9	859		21	1122	
10	905		22	1200	
11	912		23	1328	✓
12	919		24		

Comments:

If sampling is complete:

- ☒ Power off sampler
- ☒ Verify flowmeter is running
- ☒ Add ice to sample transport cooler
- ☐ Complete COC form; arrange transport to lab

If continuing sampling (sample bottle change-out):

- ☐ Keep flowmeter running
- ☐ Install new 15L bottle; add ice
- ☐ Restart program from beginning

Date/Time Restarted: _____

- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Grab Sample Data Form

STATION: Lucky

Personnel: Hannah Johnson + Gabi Karoa

Date/Time On-Site: 11/19/2023 1:30 AM

Flow Meter Current Status

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
2:06 ^{am}	2.11	9.46 ^{am}	0.15	12.8		

Grab Information

	Sample ID	Date	Time	Labeled?
Site <i>E. Coli</i>	231119-03 -WG	11/19/23	01:38 am	☒
Field Duplicate <i>E. Coli</i>	-101			☐
Field Blank <i>E. Coli</i>	-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters

Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP09	0156 am	15.70	5.09	7.27	506.74

Sampler Current Status

First Subsample Date/Time	N/A @ 206 am
Last Subsample Date/Time	
# of Subsamples taken	

Comments:

Set Up/ Shut Down Form – ISCO (Whitewater, Americana, State)

TATION: Whitewater

SET UP

Personnel: KC ST

Date/Time
On-Site: 11/17/23 1418

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1418	0.88	0.02	0.28	12.8
Enable Condition:		1.9		
Hysteresis:		1		
Flow Pulse Interval:		800 cfs		

On-Site

- ☒ Replace flowmeter battery, install sampler battery
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☐ Set sampler program parameters
- ☒ Check date/time on sampler
- ☒ Verify all cable and tubing connections
- ☐ Verify sampler program is running

Flowlink (Refer to PG 411 or PG 412, if needed)

- ☒ Direct or Remote; Date/time Set w/ keypad
- ☐ Retrieve data and review recent flow history
- ☒ Change Wireless Power Control to Storm Event
- ☒ Change Data Storage Rates to 1 minute for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: On Trigger, and set Sampler Enable equation
- ☒ Set Sampler Pacing to Flow Paced, and set trigger volume

Comments:

SHUT DOWN

Personnel: ST

Date/Time
On-Site: 11/20 1248

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1259	3.08	0.495	1.083	12.6
Downloaded to:		Steven's USB		

On-Site

- ☐ Replace flowmeter battery
- ☒ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☒ Direct or Remote; Date/time 1248
- ☒ Retrieve data
- ☒ Change Wireless Power Control to Dry Weather
- ☒ Change Data Storage Rates to 15 minutes for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: Never

Comments:

Composite Sample Collection

STATION: Whitewater
 Personnel: ST, KC

Bottle 1 of 3
 Date/Time On-Site: 11/14/2023 505Z

☒ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	<u>231119 - 11</u> -WC
Approx Sample Volume (mL):	<u>11750 mL</u>
Clarity (ex. Clear, Cloudy, Silty):	
Color (ex. Clear, Gray, Tan, Brown, Black):	
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	<u>11/14/23 224</u>	<u>Success</u>	13	<u>408</u>	
2	<u>244</u>		14	<u>414</u>	
3	<u>258</u>		15	<u>421</u>	
4	<u>309</u>		16	<u>428</u>	
5	<u>318</u>		17	<u>436</u>	
6	<u>325</u>		18	<u>444</u>	
7	<u>332</u>		19	<u>453</u>	
8	<u>338</u>		20	<u>503</u>	
9	<u>344</u>		21		
10	<u>350</u>		22		
11	<u>355</u>		23		
12	<u>401</u>		24		

Comments:

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☒ Keep flowmeter running ☒ Install new 15L bottle; add ice ☒ Restart program from beginning - Date/Time Restarted: <u>11/14/23 505</u> ☒ Verify running
--	---

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: Whitewater
 Personnel: KC, ST

Bottle 2 of 3
 Date/Time On-Site: 11/19/23 ~800

☐ Halt Sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	<u>23119-11</u> -WC
Approx Sample Volume (mL):	<u>15500 ml</u>
Clarity (ex. Clear, Cloudy, Silty):	<u>Cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black):	<u>Brown</u>
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	<u>11/19/23 514</u>	<u>Success</u>	13		
2	<u>526</u>	<u>↓</u>	14		
3	<u>537</u>	<u>Power Failed</u>	15		
4	<u>546</u>	<u>↓</u>	16		
5	<u>554</u>	<u>↓</u>	17		
6	<u>600</u>	<u>↓</u>	18		
7	<u>606</u>	<u>↓</u>	19		
8			20		
9			21		
10			22		
11			23		
12			24		

Comments: Used same bottle with 24 samples on next Page.

If sampling is complete:

- ☐ Power off sampler
- ☐ Verify Flowmeter is running
- ☐ Add ice to sample transport cooler
- ☐ Complete COC form; arrange transport to lab

If continuing sampling (sample bottle change-out):

- ☒ Keep flowmeter running
- ☒ KC ~~Install new 15L bottle; add ice~~ Used same bottle w/ two samples.
- ☒ Restart program from beginning Date/Time Restarted: 11/19/23 ~800
- ☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: Whitewater

Personnel: KC, ST

Bottle 2 of 3

Date/Time On-Site: 11/19/23 1045

☒ Halt Sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	<u>231119-11</u> -WC
Approx Sample Volume (mL):	
Clarity (ex. Clear, Cloudy, Silty):	
Color (ex. Clear, Gray, Tan, Brown, Black):	
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	<u>11/19/23 821 KC 821</u>	<u>Success</u>	13	<u>923</u>	
2	<u>844</u>		14	<u>927</u>	
3	<u>848</u>		15	<u>931</u>	
4	<u>851</u>		16	<u>935</u>	
5	<u>855</u>		17	<u>938</u>	
6	<u>858</u>		18	<u>942</u>	
7	<u>902</u>		19	<u>946</u>	
8	<u>905</u>		20	<u>951</u>	
9	<u>909</u>		21	<u>955</u>	
10	<u>912</u>		22	<u>959</u>	
11	<u>916</u>		23	<u>1004</u>	
12	<u>920</u>		24	<u>1008</u>	

Comments: Used same bottle with 2 samples on previous page.

If sampling is complete: ☐ Power off sampler ☐ Verify flowmeter is running ☐ Add ice to sample transport cooler ☐ Complete COC form; arrange transport to lab	If continuing sampling (sample bottle change-out): ☒ Keep flowmeter running ☒ Install new 15L bottle; add ice ☒ Restart program from beginning - Date/Time Restarted: <u>11/19/23 1047</u> ☒ Verify running
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Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: Whitewater
 Personnel: KC, ST

Bottle 3 of 3

Date/Time On-Site: 11/19/23 1425

☒ Halt Sampler program
☒ Put lid on sample bottle; label sample bottle
Sample ID: <u>231119-11</u> -WC
Approx Sample Volume (mL): <u>9500</u>
Clarity (ex. Clear, Cloudy, Silty): <u>Murky / cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>Brown</u>
QA/QC Sample ID: _____ -103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	<u>11/19/23 1048</u>	<u>Success</u> 1048 <u>KC</u>	13	<u>1253</u>	<u>Success</u>
2	<u>1054</u>	<u>↓</u> <u>1052</u>	14	<u>1323</u>	<u>↓</u>
3	<u>1100</u>	<u>↓</u>	15	<u>1408</u>	<u>↓</u>
4	<u>1106</u>	<u>↓</u>	16	<u>1528</u>	<u>↓</u>
5	<u>1113</u>	<u>↓</u>	17		
6	<u>1120</u>	<u>↓</u>	18		
7	<u>1128</u>	<u>↓</u>	19		
8	<u>1137</u>	<u>↓</u>	20		
9	<u>1147</u>	<u>↓</u>	21		
10	<u>1159</u>	<u>↓</u>	22		
11	<u>1213</u>	<u>↓</u>	23		
12	<u>1231</u>	<u>↓</u>	24		

Comments:

If sampling is complete:

- ☒ Power off sampler
- ☒ Verify flowmeter is running
- ☒ Add ice to sample transport cooler
- ☒ Complete COC form; arrange transport to lab

If continuing sampling (sample bottle change-out):

- ☐ Keep flowmeter running
- ☐ Install new 15L bottle; add ice
- ☐ Restart program from beginning

Date/Time Restarted: _____

- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Grab Sample Data Form

STATION: White Water

Personnel: HRJ GTK

Date/Time On-Site: 11/19/23 2:35 am

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
02:51 am	3.91	0.94	1.44			

Grab Information					
	Sample ID		Date	Time	Labeled?
Site <i>E. Coli</i>	231119-11	-WG	11/19/23	02:39 am	☒
Field Duplicate <i>E. Coli</i>		-101			☐
Field Blank <i>E. Coli</i>		-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP09	02:47 am	12.96	5.82	7.34	460.32

Sampler Current Status	
First Subsample Date/Time	2:24 am 11/19/23
Last Subsample Date/Time	2:44 11/19
# of Subsamples taken	32

Comments:

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

ATION: Main

SET UP

Personnel: KC, ST

Date/Time

On-Site: 11/17/23 1507

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1511	0.85	0.00	0.00	12.8
Enable Condition or Velocity Cutoff:			0.02	
Deadband:			1	
Trigger Volume:			3411	

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments:

SHUT DOWN

Personnel: ST

Date/Time

On-Site: 11/20 12:13

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1232	1.37	0	0		12.4
Downloaded to:		Frontier USB			

If flow monitoring is complete:

- ☒ Halt program on flowmeter
- ☒ Download flowmeter data
- ☒ Remove flowmeter battery

If continuing to monitor flow:

- ☐ Replace flowmeter battery
- ☐ Reset logging interval to 15 minutes
- ☐ Change velocity cutoff to 0.02 fps
- ☐ Start program
- ☐ Verify running

Comments:

Composite Sample Collection

STATION: Main
 Personnel: ST. KC

Bottle 1 of 3
 Date/Time On-Site: 11/19/23 0524

☒ Halt sampler program
☒ Put lid on sample bottle; label sample bottle
Sample ID: <u>231119-12</u> -WC
Approx Sample Volume (mL): <u>12500 ml</u>
Clarity (ex. Clear, Cloudy, Silty): <u>clear/silty</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>Brown</u>
QA/QC Sample ID: _____ -103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	<u>11/19/2023 107</u>	<u>Success</u>	13	<u>325</u>	
2	<u>133</u>		14	<u>333</u>	
3	<u>155</u>		15	<u>342</u>	
4	<u>208</u>		16	<u>352</u>	
5	<u>218</u>		17	<u>403</u>	
6	<u>227</u>		18	<u>415</u>	
7	<u>237</u>		19	<u>430</u>	
8	<u>247</u>		20	<u>454</u>	
9	<u>256</u>		21	<u>515</u>	
10	<u>304</u>		22		
11	<u>311</u>		23		
12	<u>318</u>		24		

Comments:

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☒ Keep flowmeter running ☒ Install new 15L bottle, add ice ☒ Restart program from beginning - Date/Time Restarted: <u>11/19/23 0525</u> ☒ Verify running
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Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: Main
 Personnel: KC, ST

Bottle 2 of 3
 Date/Time On-Site: 11/14/23 751

☐ Halt Sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	<u>23119-12</u> -WC
Approx Sample Volume (mL):	<u>14750</u>
Clarity (ex. Clear, Cloudy, Silty):	<u>Cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black):	<u>Brown</u>
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	<u>11/19/23 535</u>	<u>Success</u>	13	<u>701</u>	
2	<u>541</u>		14	<u>730</u>	
3	<u>547</u>		15	<u>744</u>	
4	<u>553</u>		16	<u>753</u>	
5	<u>559</u>		17	<u>759</u>	
6	<u>605</u>		18	<u>805</u>	
7	<u>610</u>		19	<u>810</u>	
8	<u>615</u>		20	<u>815</u>	
9	<u>620</u>		21	<u>820</u>	
10	<u>626</u>		22	<u>824</u>	
11	<u>634</u>		23	<u>828</u>	
12	<u>645</u>		24	<u>832</u>	

Comments:

If sampling is complete:

- ☐ Power off sampler
- ☐ Verify Flowmeter is running
- ☐ Add ice to sample transport cooler
- ☐ Complete COC form; arrange transport to lab

If continuing sampling (sample bottle change-out):

- ☐ Keep flowmeter running
- ☐ Install new 15L bottle; add ice
- ☐ Restart program from beginning
- Date/Time Restarted: _____
- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: Main
 Personnel: KCIST

Bottle 3 of 3
 Date/Time On-Site: 11/19/23 1020

☒ Halt Sampler program			
☒ Put lid on sample bottle; label sample bottle			
Sample ID:	<u>231119-12</u>	-WC	
Approx Sample Volume (mL):	<u>8750 mL</u>		
Clarity (ex. Clear, Cloudy, Silty):	<u>Cloudy</u>		
Color (ex. Clear, Gray, Tan, Brown, Black):	<u>Tan</u>		
QA/QC Sample ID:		-103	(Time: 1200)

Subsample Information					
Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	<u>11/19/23 923</u>	<u>Success</u>	13	<u>1127</u>	<u>Success</u>
2	<u>928</u>		14	<u>1210</u>	
3	<u>934</u>		15	<u>1442</u>	
4	<u>940</u>		16		
5	<u>947</u>		17		
6	<u>955</u>		18		
7	<u>1004</u>		19		
8	<u>1013</u>		20		
9	<u>1023</u>		21		
10	<u>1034</u>		22		
11	<u>1047</u>		23		
12	<u>1103</u>		24		

Comments:

If sampling is complete: ☒ Power off sampler ☒ Verify flowmeter is running ☒ Add ice to sample transport cooler ☒ Complete COC form; arrange transport to lab	If continuing sampling (sample bottle change-out): ☐ Keep flowmeter running ☐ Install new 15L bottle; add ice ☐ Restart program from beginning Date/Time Restarted: _____ ☐ Verify running
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Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Grab Sample Data Form

STATION: Main

Personnel: ST, KC Date/Time On-Site: 11/19/2023 01:11

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1:11	3.67	140.41	0.91	12.6		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site <i>E. Coli</i>	231119-12-WG	11/19 11/19/23	1:19	☒
Field Duplicate <i>E. Coli</i>	-101			☐
Field Blank <i>E. Coli</i>	-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP11	1:22	10.54	9.48	7.64	174.43

Sampler Current Status	
First Subsample Date/Time	11/19/2023 1:07
Last Subsample Date/Time	11/19/2023 1:07
# of Subsamples taken	1

Comments:

Set Up/ Shut Down Form – ISCO

STATION: Americana

SET UP

Personnel: KC, ST

Date/Time

On-Site: 11/17/23 1537

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1541	5.43	-0.23	-0.291	11.78
Enable Condition:		6.96		
Hysteresis:		1		
Flow Pulse Interval:		KC 2910 c.f		

On-Site

- ☒ Replace flowmeter battery, install sampler battery.
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Set sampler program parameters
- ☒ Check date/time on sampler
- ☒ Verify all cable and tubing connections
- ☒ Verify sampler program is running

Flowlink (Refer to PG 411 or PG 412, if needed)

- ☒ Direct or Remote; Date/time directly on keypad 1541
- ☐ Retrieve data and review recent flow history
- ☒ Change Wireless Power Control to Storm Event
- ☒ Change Data Storage Rates to 1 minute for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: On Trigger, and set Sampler Enable equation
- ☒ Set Sampler Pacing to Flow Paced, and set trigger volume

Comments:

SHUT DOWN

Personnel: ST

Date/Time

On-Site: 11/20 11:47

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
11:54	5.2	1.272	1.716	12.12
Downloaded to:		Stevens USB		

On-Site

- ☐ Replace flowmeter battery
- ☒ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☒ Direct or Remote; Date/time 11/27 3:58PM
- ☒ Retrieve data
- ☒ Change Wireless Power Control to Dry Weather
- ☒ Change Data Storage Rates to 15 minutes for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: Never

Comments:

Didn't change settings back to dry weather till 11/27. Battery was dead and the last time that was read was 11/27 @ 00:02. -ST

Composite Sample Collection

STATION: Americana
 Personnel: _____

Bottle 1 of 4

Date/Time On-Site: _____

☒ Halt sampler program		
☒ Put lid on sample bottle; label sample bottle		
Sample ID:	<u>231119-14</u>	-WC
Approx Sample Volume (mL):	<u>11750 ml</u>	
Clarity (ex. Clear, Cloudy, Silty):	<u>cloudy</u>	
Color (ex. Clear, Gray, Tan, Brown, Black):	<u>Tan/yellow</u>	
QA/QC Sample ID:		-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	<u>11/17/23 132</u>	<u>Success</u>	13	<u>320</u>	
2	<u>149</u>		14	<u>326</u>	
3	<u>204</u>		15	<u>332</u>	
4	<u>214</u>		16	<u>338</u>	
5	<u>223</u>		17	<u>344</u>	
6	<u>231</u>		18	<u>351</u>	
7	<u>239</u>		19	<u>357</u>	
8	<u>246</u>		20	<u>405</u>	
9	<u>254</u>		21		
10	<u>301</u>		22		
11	<u>307</u>		23		
12	<u>314</u>		24		

Comments:

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☒ Keep flowmeter running ☒ Install new 15L bottle; add ice ☒ Restart program from beginning - Date/Time Restarted: <u>11/19/23 0411</u> ☒ Verify running
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Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: Americana

Bottle 2 of 4

Personnel: _____

Date/Time On-Site: _____

☐ Halt Sampler program

☐ Put lid on sample bottle; label sample bottle

Sample ID:	23119-14-	-WC
Approx Sample Volume (mL):	13250	
Clarity (ex. Clear, Cloudy, Silty):	Silty	
Color (ex. Clear, Gray, Tan, Brown, Black):	Tan	
QA/QC Sample ID:	-103	(Time: 1200)

Subsample Information

Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	11/19/23 4:12	Success	13	6:08	
2	4:20		14	6:03	
3	4:25		15	6:08	
4	4:38		16	6:13	
5	4:49		17	6:17	
6	5:01		18	6:21	
7	5:13		19	6:26	
8	5:25		20	6:31	
9	5:33		21	6:36	
10	5:40		22	6:41	
11	5:41		23	6:48	
12	5:53		24	6:55	

Comments:

If sampling is complete:

- ☐ Power off sampler
- ☐ Verify flowmeter is running
- ☐ Add ice to sample transport cooler
- ☐ Complete COC form; arrange transport to lab

If continuing sampling (sample bottle change-out):

- ☐ Keep flowmeter running
- ☐ Install new 15L bottle; add ice
- ☐ Restart program from beginning

Date/Time Restarted: 08:05

- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: Amesbury
 Personnel: EC, ST

Bottle 3 of 4
 Date/Time On-Site: 11/19/23 1005

☒ Halt Sampler program
☐ Put lid on sample bottle; label sample bottle
Sample ID: <u>231119-14</u> -WC
Approx Sample Volume (mL): <u>13250 mL</u>
Clarity (ex. Clear, Cloudy, Silty): <u>Cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>Tan</u>
QA/QC Sample ID: _____ -103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	<u>11/19/23 804</u>	<u>Success</u>	13	<u>857</u>	<u>Success</u>
2	<u>809</u>		14	<u>901</u>	
3	<u>814</u>		15	<u>905</u>	
4	<u>819</u>		16	<u>909</u>	
5	<u>823</u>		17	<u>913</u>	
6	<u>827</u>		18	<u>918</u>	
7	<u>832</u>		19	<u>922</u>	
8	<u>836</u>		20	<u>927</u>	
9	<u>840</u>		21	<u>932</u>	
10	<u>844</u>		22	<u>936</u>	
11	<u>848</u>		23	<u>941</u>	
12	<u>852</u>		24	<u>947</u>	

Comments:

If sampling is complete: ☐ Power off sampler ☐ Verify Flowmeter is running ☐ Add ice to sample transport cooler ☐ Complete COC form; arrange transport to lab	If continuing sampling (sample bottle change-out): ☒ Keep flowmeter running ☒ Install new 15L bottle; add ice ☒ Restart program from beginning - Date/Time Restarted: <u>11/19/23 1010</u> ☒ Verify running
---	--

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	<u>9.5"</u>	<u>13250 mL</u>	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

STATION: Americana
 Personnel: K.C. ST

Composite Sample Collection

Bottle 4 of 4
 Date/Time On-Site: 11/19/23 1141

☒ Halt sampler program
☒ Put lid on sample bottle; label sample bottle
Sample ID: <u>23119-14</u> -WC
Approx Sample Volume (mL): <u>11750 mL</u>
Clarity (ex. Clear, Cloudy, Silty): <u>Cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>Tan</u>
QA/QC Sample ID: <u>-103</u> (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	11/19/23 1014	Success	13	11/19/23 1147	Success
2	1020		14	1201	
3	1026		15	1215	
4	1032		16	1231	
5	1039		17	1300	
6	1045		18	1320	
7	1052		19	1342	
8	1100		20	1407	
9	1108		21		
10	1116		22		
11	1126		23		
12	1136		24		

Comments:

If sampling is complete:

- ☒ Power off sampler, if separate from flowmeter
- ☒ Keep flowmeter running
- ☒ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):

- ☐ Keep flowmeter running
- ☐ Install new 15L bottle; add ice
- ☐ Restart program from beginning

Date/Time Restarted: _____

- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Grab Sample Data Form

STATION: Amurina

Personnel: KC, ST Date/Time On-Site: 11/19/23 140

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
0145	7.28	2.99	2.462	12.00		

Grab Information					
	Sample ID		Date	Time	Labeled?
Site E.Coli	23119-14	-WG	11/19/23	153	☒
Field Duplicate E.Coli	23119-14	-101	11/19/23	156	☒
Field Blank E.Coli	23119-14	-001	11/19/23	159	☒

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP11	0151	14.16			

Sampler Current Status	
First Subsample Date/Time	11/19/23 0132
Last Subsample Date/Time	11/19/23 0132
# of Subsamples taken	1

Comments:

Field parameters (DO, pH, + cond) accidentally not recorded in field. *not*

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

STATION: AS_6

SET UP

Personnel: KL, ST

Date/Time 11/17/23 11:19
On-Site: 11/17/23 10:19

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1731	0.0	0.0	0.0	12.2
Enable Condition or Velocity Cutoff:			0.02	
Deadband:				
Trigger Volume:			221 cf	

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☐ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments:

Sample volume set to 490ml due to calibration issues.

SHUT DOWN

Personnel: ST

Date/Time 11/20 11:03
On-Site: 11/20 11:03

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
11:11	0.0	0.0	0.0		12.8
Downloaded to:			Rugged 6		

If flow monitoring is complete:

- ☒ Halt program on flowmeter
- ☒ Download flowmeter data
- ☒ Remove flowmeter battery

If continuing to monitor flow:

- ☐ Replace flowmeter battery
- ☐ Reset logging interval to 15 minutes
- ☐ Change velocity cutoff to 0.02 fps
- ☐ Start program
- ☐ Verify running

Comments:

Composite Sample Collection

STATION: AS-6
 Personnel: KC, ST

Bottle 1 of 4
 Date/Time On-Site: 11/19/23 6:13

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	<u>231119-206</u> -WC
Approx Sample Volume (mL):	<u>13250 mL</u>
Clarity (ex. Clear, Cloudy, Silty):	<u>Cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black):	<u>Dark Brown</u>
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	<u>11/19/23 3:14</u>		13	<u>540</u>	
2	<u>327</u>		14	<u>549</u>	
3	<u>340</u>		15	<u>556</u>	
4	<u>352</u>		16	<u>602</u>	
5	<u>403</u>		17	<u>608</u>	
6	<u>414</u>		18	<u>613</u>	
7	<u>425</u>		19	<u>618</u>	
8	<u>437</u>		20	<u>622</u>	
9	<u>450</u>		21	<u>626</u>	
10	<u>503</u>		22	<u>630</u>	
11	<u>517</u>		23	<u>634</u>	
12	<u>529</u>		24	<u>637</u>	

Comments:

Here at 2:20 but not enough flow for Grab Sample.

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☒ Keep flowmeter running ☒ Install new 15L bottle, add ice ☒ Restart program from beginning - Date/Time Restarted: <u>11/19/23 6:42</u> ☒ Verify running
--	--

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: AS-6
 Personnel: ST. ICC

Bottle 2 of 4
 Date/Time On-Site: 11/19/23 8:10

☐ Halt Sampler program
☐ Put lid on sample bottle; label sample bottle
Sample ID: <u>2311A-206</u> -WC
Approx Sample Volume (mL): <u>17750</u>
Clarity (ex. Clear, Cloudy, Silty): <u>Silty</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>Brown</u>
QA/QC Sample ID: _____ -103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	11/19/23 6:44	Success	13		
2	6:50	Dist. error	14		
3	6:58	Success	15		
4	7:03	Success	16		
5	7:08		17		
6	7:13		18		
7	7:19		19		
8	7:25		20		
9	7:33		21		
10	7:40	Dist. error	22		
11			23		
12			24		

Comments:

Bottle completely full + water in tubing.
 Battery was dead. Replaced battery + restarted

If sampling is complete: ☐ Power off sampler ☐ Verify flowmeter is running ☐ Add ice to sample transport cooler ☐ Complete COC form; arrange transport to lab	If continuing sampling (sample bottle change-out): ☒ Keep flowmeter running ☒ Install new 15L bottle; add ice ☒ Restart program from beginning - Date/Time Restarted: <u>11/19/23 8:26</u> ☒ Verify running
---	--

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

STATION: AS-6
 Personnel: VC, ST

Composite Sample Collection

Bottle 3 of 4

Date/Time On-Site: _____

☒ Halt Sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	<u>231119-206</u> -WC
Approx Sample Volume (mL):	<u>12500</u>
Clarity (ex. Clear, Cloudy, Silty):	<u>Cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black):	<u>Brown</u>
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	<u>11/19/23 821</u>		13	<u>910</u>	
2	<u>826</u>		14	<u>914</u>	
3	<u>831</u>		15	<u>918</u>	
4	<u>836</u>		16	<u>922</u>	
5	<u>841</u>		17	<u>926</u>	
6	<u>845</u>		18	<u>929</u>	
7	<u>849</u>		19	<u>933</u>	
8	<u>852</u>		20	<u>936</u>	
9	<u>856</u>		21	<u>938</u>	
10	<u>859</u>		22	<u>941</u>	
11	<u>903</u>		23	<u>943</u>	
12	<u>907</u>		24	<u>946</u>	

Comments:

If sampling is complete:

- ☐ Power off sampler
- ☐ Verify Flowmeter is running
- ☐ Add ice to sample transport cooler
- ☐ Complete COC form; arrange transport to lab

If continuing sampling (sample bottle change-out):

- ☐ Keep flowmeter running
- ☐ Install new 15L bottle; add ice
- ☐ Restart program from beginning

Date/Time Restarted: _____

- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: AS-6
 Personnel: KC, ST

Bottle 9 of 4
 Date/Time On-Site: 11/19/23 1150

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	-WC
Approx Sample Volume (mL):	11,000
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Brown
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	11/19/23 953	No liquid err	13	1049	Success
2	957	Success	14	1054	
3	1001		15	1101	
4	1006		16	1107	
5	1010		17	1114	
6	1014		18	1121	
7	1019		19	1128	
8	1024		20	1136	
9	1029		21	1146	
10	1034		22	1156	
11	1038		23	1208	
12	1043		24	1221	

Comments:

If sampling is complete:

- ☒ Power off sampler, if separate from flowmeter
- ☒ Keep flowmeter running
- ☒ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):

- ☐ Keep flowmeter running
- ☐ Install new 15L bottle; add ice
- ☐ Restart program from beginning

Date/Time Restarted: _____

- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Grab Sample Data Form

STATION: AS-6

Personnel: KC, ST Date/Time On-Site: 11/19/23 0613

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
622	5.794	0.90	1.62	11.7		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site <i>E. Coli</i>	231119-206 -WG	11/19/23	622	☐
Field Duplicate <i>E. Coli</i>	-101			☐
Field Blank <i>E. Coli</i>	-001			☐

*Note: time on bottle for QC samples is 1200

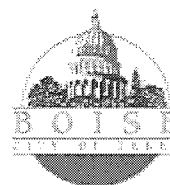
Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP11	620	9.04	9.44	7.18	184.28

Sampler Current Status	
First Subsample Date/Time	11/19/2023 314
Last Subsample Date/Time	11/19/2023 622
# of Subsamples taken	20

Comments:

Attachment D: Storm Event Analytical Reports

Report Date: 12/08/2023 12:41



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00323-01	ACST1B	231119-03-WG	Water		11/19/2023	11/19/2023
AC00323-02	ACST1B	231119-11-WG	Water		11/19/2023	11/19/2023
AC00323-03	ACST1B	231119-12-WG	Water		11/19/2023	11/19/2023
AC00323-04	ACST1B	231119-14-WG	Water		11/19/2023	11/19/2023
AC00323-05	ACST1B	231119-14-101	Water		11/19/2023	11/19/2023
AC00323-06	ACST1B	231119-14-001	Water		11/19/2023	11/19/2023

Report Date: 12/08/2023 12:41



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Analysis Report

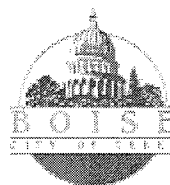
Location: ACST1B
Date/Time Collected: 11/19/2023 01:38
Lab Number: AC00323-01
Sample Type: Grab

Location Description: 231119-03-WG
Sample Collector: GK
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B234656	2.0 MPN/100 mL		1.0	1.0	IDEXX - Colilert	11/19/23 08:58	11/20/23 9:22	SMC	
Wet Chemistry										
Chlorine Screen	B234655	Absent				SM 4500-CL G-2000 mod	11/19/23	11/19/23 8:36	ASE	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 12/08/2023 12:41



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Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location: ACST1B
Date/Time Collected: 11/19/2023 02:39
Lab Number: AC00323-02
Sample Type: Grab

Location Description: 231119-11-WG
Sample Collector: GK
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method Reference	Prepared	Analyzed	Analyst		
				MDL *	MDL				Initials	Qualifier	
Microbiology											
E. Coli	B234656	99.0 MPN/100 mL		1.0	1.0	IDEXX - Colilert	11/19/23 08:58	11/20/23 9:22	SMC		
Wet Chemistry											
Chlorine Screen	B234655	Absent				SM 4500-CL G-2000 mod	11/19/23	11/19/23 8:36	ASE		

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 12/08/2023 12:41



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Fax (208) 608-7319

Analysis Report

Location: ACST1B
Date/Time Collected: 11/19/2023 01:19
Lab Number: AC00323-03
Sample Type: Grab

Location Description: 231119-12-WG
Sample Collector: S.T
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method	Prepared	Analyzed	Analyst	
				MDL *	MDL				Reference	Initials
Microbiology										
E. Coli	B234656	30.9MPN/100 mL		1.0	1.0	IDEXX - Colilert	11/19/23 08:58	11/20/23 9:22	SMC	
Wet Chemistry										
Chlorine Screen	B234655	Absent				SM 4500-CL G-2000 mod	11/19/23	11/19/23 8:36	ASE	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 12/08/2023 12:41



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Analysis Report

Location: ACST1B
Date/Time Collected: 11/19/2023 01:53
Lab Number: AC00323-04
Sample Type: Grab

Location Description: 231119-14-WG
Sample Collector: S.T
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method	Prepared	Analyzed	Analyst		
				MDL *	MDL				Reference	Initials	Qualifier
Microbiology											
E. Coli	B234656	1340.0 MPN/100 mL		100.0	1.0	IDEXX - Colilert	11/19/23 08:58	11/20/23 9:22	SMC	D	
Wet Chemistry											
Chlorine Screen	B234655	Absent				SM 4500-CL G-2000 mod	11/19/23	11/19/23 8:36	ASE		

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 12/08/2023 12:41



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location: ACST1B
Date/Time Collected: 11/19/2023 12:00
Lab Number: AC00323-05
Sample Type: Grab

Location Description: 231119-14-101
Sample Collector: S.T
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B234656	866.4 MPN/100 mL		1.0	1.0	IDEXX - Colilert	11/19/23 08:58	11/20/23 9:22	SMC	
Wet Chemistry										
Chlorine Screen	B234655	Absent				SM 4500-CL G-2000 mod	11/19/23	11/19/23 8:36	ASE	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 12/08/2023 12:41



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
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Fax (208) 608-7319

Analysis Report

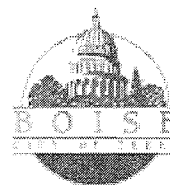
Location: ACST1B
Date/Time Collected: 11/19/2023 12:00
Lab Number: AC00323-06
Sample Type: Grab

Location Description: 231119-14-001
Sample Collector: S.T
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method	Prepared	Analyzed	Analyst		
				MDL *	MDL				Reference	Initials	Qualifier
Microbiology											
E. Coli	B234656	<1.0 MPN/100 mL		1.0	1.0	IDEXX - Colilert	11/19/23 08:58	11/20/23 9:22	SMC	U	
Wet Chemistry											
Chlorine Screen	B234655	Absent				SM 4500-CL G-2000 mod	11/19/23	11/19/23 8:36	ASE		

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 12/08/2023 12:41



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
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Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
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Microbiology

Batch: B234656

Blank (B234656-BLK1)

E. Coli	Absent						11/20/2023	SMC	
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LCS (B234656-BS1)

E. Coli				Present			11/20/2023	SMC	
---------	--	--	--	---------	--	--	------------	-----	--

Duplicate (B234656-DUP2) Source ID: AC00323-04RE1

E. Coli					Pass	128	11/20/2023	SMC	
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Notes and Definitions

Item	Definition
D	Data reported from a dilution
U	Analyte included in the analysis, but not detected

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846


Janet Finegan-Kelly
Water Quality Laboratory Manager


Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714-6418

Tel. (208) 387-6269

Fax (208) 387-6391

Purchase Order:

63065628

Project:

Stormwater-PI

Sampler(s):

Steven Turner

Kristen Chisholm

Hannah Johnson

Gabriella Kanoa

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix		Type	BOD ₅ - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 361.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Colilert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO ₃ +NO ₂ - EPA 353.2	NH ₃ - SM 4500 NH ₃ - D	Total Containers
							Water	Grab																	
AC00323	11/19/23		0138		231119-03-WG	GR	X	X											X						1
-01			0239		231119-11-WG	GR	X	X											X						1
-02			0119		231119-12-WG	ST	X	X											X						1
-03			0153		231119-14-WG	ST	X	X											X						1
-04			1200		231119-14- W 101	ST	X	X											X						1
-05			1200		231119-14-001	ST	X	X											X						1
-06																									

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Hannah Johnson	4:04 11/19/23	ASE	Received samples 11-19-23 0758

Report Date: 12/20/2023 13:21



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Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
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Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00324-01	ACST1B	231119-206-WG	Water		11/19/2023	11/19/2023
AC00324-02	ACST1C	231119-206-WC	Water		11/19/2023	11/19/2023
AC00324-03	ACST1C	231119-03-WC	Water		11/19/2023	11/19/2023
AC00324-04	ACST1C	231119-11-WC	Water		11/19/2023	11/19/2023
AC00324-05	ACST1C	231119-12-WC	Water		11/19/2023	11/19/2023
AC00324-06	ACST1C	231119-14-WC	Water		11/19/2023	11/19/2023

Report Date: 12/20/2023 13:21



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Analysis Report

Location: ACST1B

Date/Time Collected: 11/19/2023 06:22

Lab Number: AC00324-01

Sample Type: Grab

Location Description: 231119-206-WG

Sample Collector: S.T

Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method	Reference	Prepared	Analyzed	Analyst	
				MDL *	MDL					Initials	Qualifier
Microbiology											
E. Coli	B234656	1732.9MPN/100 mL		1.0	1.0	IDEXX - Colilert		11/19/23 13:58	11/20/23 13:59	SMC	
Net Chemistry											
Chlorine Screen	B234655	Absent				SM 4500-CL G-2000 mod		11/19/23	11/20/23 13:52	ASE	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 12/20/2023 13:21



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Analysis Report

Location: ACST1C
Date/Time Collected: 11/19/2023 03:14 - 11/19/2023 12:21
Lab Number: AC00324-02
Sample Type: Composite

Location Description: 231119-206-WC
Sample Collector: S.T
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B234817	0.563	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	12/01/23	12/1/23 13:36	JAL	
BOD5	B234673	162	mg/L	2.00	2.00	SM 5210 B-2016	11/20/23	11/25/23 13:42	MEC	
COD	B234668	329	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	11/20/23	11/20/23 12:29	BAK	
Nitrate-Nitrite, as N	B234773	0.136	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	11/29/23	11/29/23 13:43	JAL	
TKN	B234964	3.17	mg/L	0.800	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	12/15/23	12/15/23 10:46	JAL	D
Total Dissolved Solids	B234678	263	mg/L	20.0	20.0	SM 2540 C-2015	11/20/23	11/22/23 9:26	RKT	
Total Suspended Solids	B234665	28.7	mg/L	0.900	0.900	SM 2540 D-2015	11/20/23	11/20/23 12:06	NTS	
Turbidity	B234675	21.1	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	11/20/23	11/20/23 13:00	JAL	
Dissolved Wet Chemistry										
Orthophosphate, as P	B234672	1.71	mg/L	0.0300	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	11/20/23	11/20/23 11:43	JAL	D
Total Metals										
Mercury	B234760	<0.0100	ug/L	0.0100	0.0100	EPA 245.1	11/29/23	11/30/23 9:22	SAS	U
Arsenic	B234724	1.7	ug/L	0.070	0.070	EPA 200.8	11/25/23	11/26/23 14:05	DMW	
Cadmium	B234724	0.059	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/26/23 14:05	DMW	
Calcium	B234692	11.8	mg/L	0.0400	0.0400	EPA 200.7	11/21/23	11/22/23 17:43	EDM	
Lead	B234724	3.3	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/26/23 14:05	DMW	
Magnesium	B234692	3370	ug/L	80.0	80.0	EPA 200.7	11/21/23	11/22/23 17:43	EDM	
Phosphorus as P	B234692	2.06	mg/L	0.0120	0.0120	EPA 200.7	11/21/23	11/22/23 17:43	EDM	
Hardness	B234692	43.3	mg/L	0.100	0.100	SM 2340 B-2011	11/21/23	11/22/23 17:43	EDM	
Dissolved Metals										
Cadmium	B234723	0.029	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/25/23 16:25	DMW	
Copper	B234723	8.5	ug/L	0.15	0.15	EPA 200.8	11/25/23	11/25/23 16:25	DMW	
Lead	B234723	0.93	ug/L	9.00E-3	9.00E-3	EPA 200.8	11/25/23	11/25/23 16:25	DMW	
Zinc	B234723	61.8	ug/L	0.50	0.50	EPA 200.8	11/25/23	11/25/23 16:25	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 12/20/2023 13:21



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
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Analysis Report

Location:	ACST1C	Location Description:	231119-03-WC
Date/Time Collected:	11/19/2023 02:16 - 11/19/2023 13:28		
Lab Number:	AC00324-03	Sample Collector:	S.T
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted Method MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B234817	0.530	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	12/01/23	12/1/23 13:41	JAL	
BOD5	B234673	59.5	mg/L	2.00	2.00	SM 5210 B-2016	11/20/23	11/25/23 13:24	MEC	
COD	B234668	137	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	11/20/23	11/20/23 12:29	BAK	
Nitrate-Nitrite, as N	B234773	0.145	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	11/29/23	11/29/23 13:44	JAL	
TKN	B234779	1.76	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	11/30/23	12/1/23 10:11	ALN	
Total Dissolved Solids	B234678	136	mg/L	20.0	20.0	SM 2540 C-2015	11/20/23	11/22/23 9:28	RKT	
Total Suspended Solids	B234665	8.63	mg/L	0.900	0.900	SM 2540 D-2015	11/20/23	11/20/23 10:04	NTS	
Turbidity	B234675	8.6	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	11/20/23	11/20/23 13:04	JAL	
Dissolved Wet Chemistry										
Orthophosphate, as P	B234672	0.538	mg/L	0.0150	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	11/20/23	11/20/23 11:45	JAL	D
Total Metals										
Mercury	B234760	<0.0100	ug/L	0.0100	0.0100	EPA 245.1	11/29/23	11/30/23 9:08	SAS	U
Arsenic	B234724	0.93	ug/L	0.070	0.070	EPA 200.8	11/25/23	11/26/23 14:15	DMW	
Cadmium	B234724	0.030	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/26/23 14:15	DMW	
Calcium	B234692	8.66	mg/L	0.0400	0.0400	EPA 200.7	11/21/23	11/22/23 17:38	EDM	
Lead	B234724	0.33	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/26/23 14:15	DMW	
Magnesium	B234692	3430	ug/L	80.0	80.0	EPA 200.7	11/21/23	11/22/23 17:38	EDM	
Phosphorus as P	B234692	0.710	mg/L	0.0120	0.0120	EPA 200.7	11/21/23	11/22/23 17:38	EDM	
Hardness	B234692	35.8	mg/L	0.100	0.100	SM 2340 B-2011	11/21/23	11/22/23 17:38	EDM	
Dissolved Metals										
Cadmium	B234723	0.012	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/25/23 16:35	DMW	
Copper	B234723	3.5	ug/L	0.15	0.15	EPA 200.8	11/25/23	11/25/23 16:35	DMW	
Lead	B234723	0.085	ug/L	9.00E-3	9.00E-3	EPA 200.8	11/25/23	11/25/23 16:35	DMW	
Zinc	B234723	32.7	ug/L	0.50	0.50	EPA 200.8	11/25/23	11/25/23 16:35	DMW	

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Report Date: 12/20/2023 13:21



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Water Quality Laboratory
11818 Joplin Road
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Analysis Report

Location: ACST1C
Date/Time Collected: 11/19/2023 02:24 - 11/19/2023 15:28
Lab Number: AC00324-04
Sample Type: Composite

Location Description: 231119-11-WC
Sample Collector: S.T
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B234817	0.527	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	12/01/23	12/1/23 13:53	JAL	
BOD5	B234673	61.9	mg/L	2.00	2.00	SM 5210 B-2016	11/20/23	11/25/23 13:17	MEC	
COD	B234668	167	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	11/20/23	11/20/23 12:29	BAK	
Nitrate-Nitrite, as N	B234773	0.182	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	11/29/23	11/29/23 13:45	JAL	
TKN	B234779	2.07	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	11/30/23	12/1/23 10:12	ALN	
Total Dissolved Solids	B234678	180	mg/L	20.0	20.0	SM 2540 C-2015	11/20/23	11/22/23 9:29	RKT	
Total Suspended Solids	B234665	27.3	mg/L	0.900	0.900	SM 2540 D-2015	11/20/23	11/20/23 11:05	NTS	
Turbidity	B234675	19.7	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	11/20/23	11/20/23 13:15	JAL	
Dissolved Wet Chemistry										
Orthophosphate, as P	B234672	0.768	mg/L	0.0150	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	11/20/23	11/20/23 11:46	JAL	D
Total Metals										
Mercury	B234760	<0.0100	ug/L	0.0100	0.0100	EPA 245.1	11/29/23	11/30/23 9:25	SAS	U
Arsenic	B234724	1.7	ug/L	0.070	0.070	EPA 200.8	11/25/23	11/26/23 14:17	DMW	
Cadmium	B234724	0.041	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/26/23 14:17	DMW	
Calcium	B234692	13.3	mg/L	0.0400	0.0400	EPA 200.7	11/21/23	11/22/23 17:40	EDM	
Lead	B234724	2.2	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/26/23 14:17	DMW	
Magnesium	B234692	2850	ug/L	80.0	80.0	EPA 200.7	11/21/23	11/22/23 17:40	EDM	
Phosphorus as P	B234692	0.958	mg/L	0.0120	0.0120	EPA 200.7	11/21/23	11/22/23 17:40	EDM	
Hardness	B234692	45.0	mg/L	0.100	0.100	SM 2340 B-2011	11/21/23	11/22/23 17:40	EDM	
Dissolved Metals										
Cadmium	B234723	<0.0100	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/25/23 16:37	DMW	U
Copper	B234723	5.0	ug/L	0.15	0.15	EPA 200.8	11/25/23	11/25/23 16:37	DMW	
Lead	B234723	0.21	ug/L	9.00E-3	9.00E-3	EPA 200.8	11/25/23	11/25/23 16:37	DMW	
Zinc	B234723	32.3	ug/L	0.50	0.50	EPA 200.8	11/25/23	11/25/23 16:37	DMW	

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Report Date: 12/20/2023 13:21



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Analysis Report

Location:	ACST1C	Location Description:	231119-12-WC
Date/Time Collected:	11/19/2023 01:07 - 11/19/2023 14:42		
Lab Number:	AC00324-05	Sample Collector:	S.T
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted Method MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B234817	0.610	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	12/01/23	12/1/23 13:49	JAL	
BOD5	B234673	19.9	mg/L	2.00	2.00	SM 5210 B-2016	11/20/23	11/25/23 13:10	MEC	
COD	B234668	61.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	11/20/23	11/20/23 12:29	BAK	
Nitrate-Nitrite, as N	B234773	0.246	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	11/29/23	11/29/23 13:46	JAL	
TKN	B234779	1.14	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	11/30/23	12/1/23 10:14	ALN	
Total Dissolved Solids	B234678	61.0	mg/L	20.0	20.0	SM 2540 C-2015	11/20/23	11/22/23 9:30	RKT	
Total Suspended Solids	B234665	16.2	mg/L	0.900	0.900	SM 2540 D-2015	11/20/23	11/20/23 11:04	NTS	
Turbidity	B234675	11.7	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	11/20/23	11/20/23 13:12	JAL	

Dissolved Wet Chemistry										
Orthophosphate, as P	B234672	0.167	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	11/20/23	11/20/23 11:33	JAL	

Total Metals										
Mercury	B234760	<0.0100	ug/L	0.0100	0.0100	EPA 245.1	11/29/23	11/30/23 9:36	SAS	U
Arsenic	B234724	0.66	ug/L	0.070	0.070	EPA 200.8	11/25/23	11/26/23 14:20	DMW	
Cadmium	B234724	0.045	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/26/23 14:20	DMW	
Calcium	B234692	5.87	mg/L	0.0400	0.0400	EPA 200.7	11/21/23	11/22/23 17:22	EDM	
Lead	B234724	1.7	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/26/23 14:20	DMW	
Magnesium	B234692	1120	ug/L	80.0	80.0	EPA 200.7	11/21/23	11/22/23 17:22	EDM	
Phosphorus as P	B234692	0.226	mg/L	0.0120	0.0120	EPA 200.7	11/21/23	11/22/23 17:22	EDM	
Hardness	B234692	19.3	mg/L	0.100	0.100	SM 2340 B-2011	11/21/23	11/22/23 17:22	EDM	

Dissolved Metals										
Cadmium	B234723	0.015	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/25/23 16:39	DMW	
Copper	B234723	2.7	ug/L	0.15	0.15	EPA 200.8	11/25/23	11/25/23 16:39	DMW	
Lead	B234723	0.12	ug/L	9.00E-3	9.00E-3	EPA 200.8	11/25/23	11/25/23 16:39	DMW	
Zinc	B234723	25.9	ug/L	0.50	0.50	EPA 200.8	11/25/23	11/25/23 16:39	DMW	

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Report Date: 12/20/2023 13:21



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Analysis Report

Location: ACST1C
Date/Time Collected: 11/19/2023 01:32 - 11/19/2023 14:07
Lab Number: AC00324-06
Sample Type: Composite

Location Description: 231119-14-WC
Sample Collector: S.T
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B234817	0.454	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	12/01/23	12/1/23 13:45	JAL	
BOD5	B234673	36.5	mg/L	2.00	2.00	SM 5210 B-2016	11/20/23	11/25/23 13:06	MEC	
COD	B234668	94.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	11/20/23	11/20/23 12:29	BAK	
Nitrate-Nitrite, as N	B234773	0.614	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	11/29/23	11/29/23 13:47	JAL	
TKN	B234779	1.27	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	11/30/23	12/1/23 10:15	ALN	
Total Dissolved Solids	B234678	153	mg/L	20.0	20.0	SM 2540 C-2015	11/21/23	11/22/23 9:31	RKT	
Total Suspended Solids	B234665	21.7	mg/L	0.900	0.900	SM 2540 D-2015	11/20/23	11/20/23 10:03	NTS	
Turbidity	B234675	15.0	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	11/20/23	11/20/23 13:07	JAL	
Dissolved Wet Chemistry										
Orthophosphate, as P	B234672	0.402	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	11/20/23	11/20/23 11:37	JAL	
Total Metals										
Mercury	B234760	<0.0100	ug/L	0.0100	0.0100	EPA 245.1	11/29/23	11/30/23 9:39	SAS	U
Arsenic	B234724	2.1	ug/L	0.070	0.070	EPA 200.8	11/25/23	11/26/23 14:22	DMW	
Cadmium	B234724	0.061	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/26/23 14:22	DMW	
Calcium	B234692	17.4	mg/L	0.0400	0.0400	EPA 200.7	11/21/23	11/22/23 17:24	EDM	
Lead	B234724	1.9	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/26/23 14:22	DMW	
Magnesium	B234692	3490	ug/L	80.0	80.0	EPA 200.7	11/21/23	11/22/23 17:24	EDM	
Phosphorus as P	B234692	0.504	mg/L	0.0120	0.0120	EPA 200.7	11/21/23	11/22/23 17:24	EDM	
Hardness	B234692	57.8	mg/L	0.100	0.100	SM 2340 B-2011	11/21/23	11/22/23 17:24	EDM	
Dissolved Metals										
Cadmium	B234723	0.022	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/25/23 16:42	DMW	
Copper	B234723	4.0	ug/L	0.15	0.15	EPA 200.8	11/25/23	11/25/23 16:42	DMW	
Lead	B234723	0.11	ug/L	9.00E-3	9.00E-3	EPA 200.8	11/25/23	11/25/23 16:42	DMW	
Zinc	B234723	27.2	ug/L	0.50	0.50	EPA 200.8	11/25/23	11/25/23 16:42	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

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Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Microbiology									
Batch: B234656									
Blank (B234656-BLK1)									
E. Coli	Absent						11/20/2023	SMC	
LCS (B234656-BS1)									
E. Coli				Present			11/20/2023	SMC	
Duplicate (B234656-DUP2) Source ID: AC00323-04RE1									
E. Coli					Pass	128	11/20/2023	SMC	
Met Chemistry									
Batch: B234665									
Blank (B234665-BLK1)									
Total Suspended Solids	<0.9	mg/L					11/20/2023	NTS	U
LCS (B234665-BS1)									
Total Suspended Solids			97.5	90-110			11/20/2023	NTS	
Duplicate (B234665-DUP1) Source ID: WB02817-07									
Total Suspended Solids					3.88	20	11/20/2023	NTS	
Duplicate (B234665-DUP2) Source ID: LS01764-02									
Total Suspended Solids					3.33	20	11/20/2023	NTS	
Batch: B234668									
Blank (B234668-BLK1)									
COD	<7	mg/L					11/20/2023	BAK	U
LCS (B234668-BS1)									
COD			101	90-110			11/20/2023	BAK	
Duplicate (B234668-DUP1) Source ID: AC00324-02									
COD					0.304	10	11/20/2023	BAK	
Batch: B234673									
Blank (B234673-BLK1)									
BOD5	<2	mg/L					11/25/2023	MEC	U
LCS (B234673-BS2)									
BOD5			110	84.6-115.4			11/25/2023	MEC	
Duplicate (B234673-DUP1) Source ID: ST00061-02									
BOD5					1.13	30	11/25/2023	MEC	D
Duplicate (B234673-DUP2) Source ID: AC00324-03									
BOD5					3.79	30	11/25/2023	MEC	

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Quality Control Report

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Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B234675									
Blank (B234675-BLK1)									
Turbidity	<0.3	NTU					11/20/2023	JAL	U
LCS (B234675-BS1)									
Turbidity			97.9	90-110			11/20/2023	JAL	
Duplicate (B234675-DUP1) Source ID: AC00324-06									
Turbidity					5.41	25	11/20/2023	JAL	
Batch: B234678									
Blank (B234678-BLK1)									
Total Dissolved Solids	<20	mg/L					11/22/2023	RKT	U
LCS (B234678-BS1)									
Total Dissolved Solids			95.5	90-110			11/22/2023	RKT	
Duplicate (B234678-DUP1) Source ID: AC00324-02									
Total Dissolved Solids					0.286	10	11/22/2023	RKT	
Batch: B234773									
Blank (B234773-BLK1)									
Nitrate-Nitrite, as N	<0.025	mg/L					11/29/2023	JAL	U
Blank (B234773-BLK2)									
Nitrate-Nitrite, as N	<0.025	mg/L					11/29/2023	JAL	U
LCS (B234773-BS1)									
Nitrate-Nitrite, as N			98.7	90-110			11/29/2023	JAL	
LCS (B234773-BS2)									
Nitrate-Nitrite, as N			98.8	90-110			11/29/2023	JAL	
Duplicate (B234773-DUP1) Source ID: BB03404-02									
Nitrate-Nitrite, as N					8.87	10	11/29/2023	JAL	
Duplicate (B234773-DUP2) Source ID: RW00047-01									
Nitrate-Nitrite, as N					0.228	10	11/29/2023	JAL	
Duplicate (B234773-DUP3) Source ID: WB02832-06									
Nitrate-Nitrite, as N					0.449	10	11/29/2023	JAL	
Matrix Spike (B234773-MS1) Source ID: BB03404-02									
Nitrate-Nitrite, as N			100	90-110			11/29/2023	JAL	
Matrix Spike (B234773-MS2) Source ID: RW00047-01									
Nitrate-Nitrite, as N			97.9	90-110			11/29/2023	JAL	
Matrix Spike (B234773-MS3) Source ID: WB02832-06									
Nitrate-Nitrite, as N			103	90-110			11/29/2023	JAL	
Matrix Spike Dup (B234773-MSD1) Source ID: BB03404-02									
Nitrate-Nitrite, as N			101	90-110	0.293	10	11/29/2023	JAL	
Matrix Spike Dup (B234773-MSD2) Source ID: RW00047-01									
Nitrate-Nitrite, as N			97.8	90-110	0.0212	10	11/29/2023	JAL	
Matrix Spike Dup (B234773-MSD3) Source ID: WB02832-06									
Nitrate-Nitrite, as N			104	90-110	0.135	10	11/29/2023	JAL	

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Quality Control Report
Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier		
Met Chemistry (Continued)											
Batch: B234779											
Blank (B234779-BLK1) TKN	<0.2	mg/L					12/01/2023	ALN	U		
Blank (B234779-BLK2) TKN	<0.2	mg/L					12/01/2023	ALN	U		
LCS (B234779-BS1) TKN			100	80-120			12/01/2023	ALN			
LCS (B234779-BS2) TKN			99.5	80-120			12/01/2023	ALN			
Duplicate (B234779-DUP2) TKN	Source ID: BB03404-01				2.65	20	12/01/2023	ALN	D		
Duplicate (B234779-DUP3) TKN	Source ID: LS01768-02				3.57	20	12/01/2023	ALN	D		
Duplicate (B234779-DUP4) TKN	Source ID: RW00047-02				2.40	20	12/01/2023	ALN	D		
Matrix Spike (B234779-MS2) TKN	Source ID: BB03404-01				95.4	80-120	12/01/2023	ALN	D		
Matrix Spike (B234779-MS3) TKN	Source ID: LS01768-02				102	80-120	12/01/2023	ALN	D		
Matrix Spike (B234779-MS4) TKN	Source ID: RW00047-02				105	80-120	12/01/2023	ALN	D		
Matrix Spike (B234779-MS5) TKN	Source ID: EP00286-01				81.5	80-120	12/01/2023	ALN	D		
Matrix Spike (B234779-MS6) TKN	Source ID: EP00287-01				101	80-120	12/01/2023	ALN	D		
Matrix Spike (B234779-MS7) TKN	Source ID: EP00288-01				97.9	80-120	12/01/2023	ALN	D		
Matrix Spike (B234779-MS8) TKN	Source ID: EP00289-01				105	80-120	12/01/2023	ALN	D		
Matrix Spike (B234779-MS9) TKN	Source ID: EP00290-01				99.1	80-120	12/01/2023	ALN	D		
Matrix Spike (B234779-MSA) TKN	Source ID: EP00291-01				102	80-120	12/01/2023	ALN	D		
Matrix Spike (B234779-MSC) TKN	Source ID: EP00294-01				104	80-120	12/01/2023	ALN	D		
Matrix Spike Dup (B234779-MSD2) TKN	Source ID: BB03404-01				98.0	80-120	1.43	20	12/01/2023	ALN	D
Matrix Spike Dup (B234779-MSD3) TKN	Source ID: LS01768-02				102	80-120	0.104	20	12/01/2023	ALN	D
Matrix Spike Dup (B234779-MSD4) TKN	Source ID: RW00047-02				108	80-120	1.54	20	12/01/2023	ALN	D

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Quality Control Report

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Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B234817									
Blank (B234817-BLK1)									
Ammonia, as N	<0.035	mg/L					12/01/2023	JAL	U
LCS (B234817-BS1)									
Ammonia, as N			110	90-110			12/01/2023	JAL	
Duplicate (B234817-DUP1) Source ID: BB03379-02									
Ammonia, as N					0.316	10	12/01/2023	JAL	
Duplicate (B234817-DUP2) Source ID: BB03389-01									
Ammonia, as N					0.892	10	12/01/2023	JAL	
Matrix Spike (B234817-MS1) Source ID: BB03379-02									
Ammonia, as N			105	80-120			12/01/2023	JAL	
Matrix Spike (B234817-MS2) Source ID: BB03389-01									
Ammonia, as N			102	80-120			12/01/2023	JAL	
Matrix Spike Dup (B234817-MSD1) Source ID: BB03379-02									
Ammonia, as N			105	80-120	0.156	10	12/01/2023	JAL	
Matrix Spike Dup (B234817-MSD2) Source ID: BB03389-01									
Ammonia, as N			104	80-120	1.30	10	12/01/2023	JAL	
Batch: B234948									
Blank (B234948-BLK1)									
TKN	<0.2	mg/L					12/13/2023	EDM	U
LCS (B234948-BS1)									
TKN			100	80-120			12/13/2023	EDM	
Duplicate (B234948-DUP1) Source ID: BB03406-01									
TKN					1.18	20	12/13/2023	EDM	D
Duplicate (B234948-DUP2) Source ID: BB03408-01									
TKN					0.505	20	12/13/2023	EDM	D
Matrix Spike (B234948-MS1) Source ID: BB03406-01									
TKN			96.3	80-120			12/13/2023	EDM	D
Matrix Spike (B234948-MS2) Source ID: BB03408-01									
TKN			105	80-120			12/13/2023	EDM	D
Matrix Spike (B234948-MS4) Source ID: EP00293-01RE1									
TKN			99.4	80-120			12/13/2023	EDM	D
Matrix Spike (B234948-MS5) Source ID: EP00295-01									
TKN			103	80-120			12/13/2023	EDM	D
Matrix Spike Dup (B234948-MSD1) Source ID: BB03406-01									
TKN			92.3	80-120	1.14	20	12/13/2023	EDM	D
Matrix Spike Dup (B234948-MSD2) Source ID: BB03408-01									
TKN			104	80-120	0.586	20	12/13/2023	EDM	D

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Quality Control Report
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Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Vet Chemistry (Continued)									
Batch: B234964									
Blank (B234964-BLK1)									
TKN	<0.2	mg/L					12/15/2023	JAL	U
LCS (B234964-BS1)									
TKN			93.6	80-120			12/15/2023	JAL	
Duplicate (B234964-DUP2) Source ID: BB03420-03									
TKN					4.44	20	12/15/2023	JAL	D
Duplicate (B234964-DUP3) Source ID: AC00324-02RE2									
TKN					15.8	20	12/15/2023	JAL	D
Matrix Spike (B234964-MS2) Source ID: BB03420-03									
TKN			98.0	80-120			12/15/2023	JAL	D
Matrix Spike (B234964-MS3) Source ID: AC00324-02RE2									
TKN			95.8	80-120			12/15/2023	JAL	D
Matrix Spike Dup (B234964-MSD2) Source ID: BB03420-03									
TKN			106	80-120	3.42	20	12/15/2023	JAL	D
Matrix Spike Dup (B234964-MSD3) Source ID: AC00324-02RE2									
TKN			110	80-120	11.9	20	12/15/2023	JAL	D
Dissolved Wet Chemistry									
Batch: B234672									
Blank (B234672-BLK1)									
Orthophosphate, as P	<0.003	mg/L					11/20/2023	JAL	U
LCS (B234672-BS1)									
Orthophosphate, as P			95.7	90-110			11/20/2023	JAL	
Duplicate (B234672-DUP1) Source ID: AC00324-05									
Orthophosphate, as P					0.720	10	11/20/2023	JAL	
Matrix Spike (B234672-MS1) Source ID: AC00324-05									
Orthophosphate, as P			99.0	90-110			11/20/2023	JAL	
Matrix Spike Dup (B234672-MSD1) Source ID: AC00324-05									
Orthophosphate, as P			99.7	90-110	0.267	10	11/20/2023	JAL	

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Quality Control Report

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Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals									
Batch: B234692									
Blank (B234692-BLK1)									
Calcium	<0.04	mg/L					11/22/2023	EDM	U
Magnesium	<80	ug/L					11/22/2023	EDM	U
Phosphorus as P	<0.012	mg/L					11/22/2023	EDM	U
LCS (B234692-BS1)									
Calcium			100	85-115			11/22/2023	EDM	
Magnesium			99.6	85-115			11/22/2023	EDM	
Phosphorus as P			98.6	85-115			11/22/2023	EDM	
Duplicate (B234692-DUP1) Source ID: AC00324-06									
Calcium					0.0422	20	11/22/2023	EDM	
Magnesium					0.465	20	11/22/2023	EDM	
Phosphorus as P					0.357	20	11/22/2023	EDM	
Matrix Spike (B234692-MS1) Source ID: AC00324-06									
Calcium			100	70-130			11/22/2023	EDM	
Magnesium			101	70-130			11/22/2023	EDM	
Phosphorus as P			99.0	70-130			11/22/2023	EDM	
Matrix Spike Dup (B234692-MSD1) Source ID: AC00324-06									
Calcium			99.9	70-130	0.151	20	11/22/2023	EDM	
Magnesium			100	70-130	0.422	20	11/22/2023	EDM	
Phosphorus as P			99.3	70-130	0.191	20	11/22/2023	EDM	
Batch: B234724									
Blank (B234724-BLK1)									
Arsenic	<0.070	ug/L					11/26/2023	DMW	U
Cadmium	<0.010	ug/L					11/26/2023	DMW	U
Lead	<0.010	ug/L					11/26/2023	DMW	U
LCS (B234724-BS1)									
Arsenic			96.0	85-115			11/26/2023	DMW	
Cadmium			99.8	85-115			11/26/2023	DMW	
Lead			99.9	85-115			11/26/2023	DMW	
Duplicate (B234724-DUP1) Source ID: AC00324-02									
Arsenic					3.50	20	11/26/2023	DMW	
Cadmium					13.9	20	11/26/2023	DMW	
Lead					1.94	20	11/26/2023	DMW	
Matrix Spike (B234724-MS1) Source ID: AC00324-02									
Arsenic			96.2	70-130			11/26/2023	DMW	
Cadmium			99.4	70-130			11/26/2023	DMW	
Lead			95.5	70-130			11/26/2023	DMW	
Matrix Spike Dup (B234724-MSD1) Source ID: AC00324-02									
Arsenic			99.6	70-130	2.94	20	11/26/2023	DMW	
Cadmium			102	70-130	2.75	20	11/26/2023	DMW	
Lead			97.1	70-130	1.27	20	11/26/2023	DMW	

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Quality Control Report
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Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals (Continued)									
Batch: B234760									
Blank (B234760-BLK1)									
Mercury	<0.01	ug/L					11/30/2023	SAS	U
LCS (B234760-BS1)									
Mercury			98.9	85-115			11/30/2023	SAS	
Duplicate (B234760-DUP1) Source ID: AC00324-03									
Mercury					NR	20	11/30/2023	SAS	U
Duplicate (B234760-DUP2) Source ID: EP00285-01									
Mercury					NR	20	11/30/2023	SAS	U
Matrix Spike (B234760-MS1) Source ID: AC00324-03									
Mercury			103	70-130			11/30/2023	SAS	
Matrix Spike (B234760-MS2) Source ID: EP00285-01									
Mercury			101	70-130			11/30/2023	SAS	
Matrix Spike Dup (B234760-MSD1) Source ID: AC00324-03									
Mercury			103	70-130	0.0974	20	11/30/2023	SAS	
Matrix Spike Dup (B234760-MSD2) Source ID: EP00285-01									
Mercury			104	70-130	2.73	20	11/30/2023	SAS	
Dissolved Metals									
Batch: B234723									
Blank (B234723-BLK1)									
Cadmium	<0.010	ug/L					11/25/2023	DMW	U
Copper	<0.15	ug/L					11/25/2023	DMW	U
Lead	<0.0090	ug/L					11/25/2023	DMW	U
Zinc	<0.50	ug/L					11/25/2023	DMW	U
LCS (B234723-BS1)									
Cadmium			94.9	85-115			11/25/2023	DMW	
Copper			94.3	85-115			11/25/2023	DMW	
Lead			96.9	85-115			11/25/2023	DMW	
Zinc			93.8	85-115			11/25/2023	DMW	
Duplicate (B234723-DUP1) Source ID: AC00324-02									
Cadmium					5.41	10	11/25/2023	DMW	
Copper					0.546	10	11/25/2023	DMW	
Lead					1.75	10	11/25/2023	DMW	
Zinc					0.526	10	11/25/2023	DMW	
Matrix Spike (B234723-MS1) Source ID: AC00324-02									
Cadmium			96.5	70-130			11/25/2023	DMW	
Copper			104	70-130			11/25/2023	DMW	
Lead			93.1	70-130			11/25/2023	DMW	
Zinc			103	70-130			11/25/2023	DMW	
Matrix Spike Dup (B234723-MSD1) Source ID: AC00324-02									
Cadmium			97.9	70-130	1.50	10	11/25/2023	DMW	
Copper			103	70-130	0.713	10	11/25/2023	DMW	
Lead			94.5	70-130	1.37	10	11/25/2023	DMW	
Zinc			99.7	70-130	0.915	10	11/25/2023	DMW	

The contents of this report apply to the sample(s) analyzed in accordance with the Chain of Custody document.
No duplication of this report is allowed, except in its entirety

Report Date: 12/20/2023 13:21



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Notes and Definitions

Item	Definition
D	Data reported from a dilution
U	Analyte included in the analysis, but not detected

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846

Janet Finegan-Kelly
Water Quality Laboratory Manager

Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714-6418
Tel. (208) 387-6269
Fax (208) 387-6391
Purchase Order: 6

63065628

Stormwater-PI

Steven Turner

Kristen Chisholm

AC00320	11/19/23	622	622	231119-206-WG
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Shane Turner	11/19/2023 1:42 PM	Best Case	11/19/23
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WY24

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714-6418
Tel. (208) 387-6269
Fax (208) 387-6391
Purchase Order:
Project:
Sampler(s):

63065628
Stormwater-PI
Steven Turner
Kristen Chisholm

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix		Type	BOD ₅ - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Colilert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO ₃ +NO ₂ - EPA 353.2	NH ₄ - SM 4500 NH ₄ -D	Total Containers
							Water	Grab																	
AC00324-01	11/19/23		314	1221	231119-206-WC	ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	4

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Steven Turner	11/19/2023 1:42pm	Brian Kelly	1342 11/19/23

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714-6418
Tel. (208) 387-6269
Fax (208) 387-6391
Purchase Order: 6
Project: S
Sampler(s): Y

Stormwater-PI

Zinsler, Chastotin
Steven Turner

[illegible]

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
<i>[Signature]</i>	11/19/23 11003	<i>[Signature]</i> 1603	11/19/23

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714-6418
Tel. (208) 387-6269
Fax (208) 387-6391
Purchase Order:
Project:
Sampler(s):

63065628

Stormwater-PI

Steven Turner
Kristen Christensen

Lab#

Begin
Date

End
Date

Begin
Time

End
Time

Sample Identification

Sampler Initials

Matrix

Type

Water

Grab

Composite

BOD₅ - SM 5210 B

COD - Hach 8000

TSS - SM 2540 D

TDS - SM 2540 C

TKN - EPA 351.2

TP - EPA 200.7

Orthophosphate - EPA 365.1

Total As, Cd, Pb - EPA 200.8

Diss. Cd Cu, Pb, Zn - EPA 200.8

Total Hg - EPA 245.2

E. Coli - IDEXX Colilert

Turbidity - EPA 180.1

Hardness - EPA 200.7

NO₃+NO₂ - EPA 353.2

NH₃ - SM 4500 NH₃-D

Total Containers

AC00324-04 11/19/23. 0224 1528 231119-11-WC
-05 1
-06 1
G107 1442 231119-12-WC
U132 1407 231119-14-WC

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Relinquished by (sign)

Date & Time
Transferred

Received by (sign)

Comments/Special Instructions:

Kristen Christensen

11/19/23 1716

Brett Hupf 1716

11/19/23

ACHD SAMPLE FILTRATION, SPLITTING, AND COMPOSITING FOR METALS

PAGE 1 OF 2

Sample	Split/Filter Info	Filter Used	Bottle/Lid Lots 47-32, 47-73, 47-20	Bottles Split	Comments
#1 Lims#: <u>AC00324-02</u> Location: <u>ACSTIC</u> Sample Date: <u>11-19-23</u> Sample ID: <u>23119- -206-WC</u>	Split Date: <u>11-19-23</u> Start Split: <u>1402</u> Start Filter: <u>1402</u> Comp Time: <u>1356</u> Analyst: <u>DMW/WR</u>	Filter: ☒ Voss ☒ 0.45µm ☐ 1.0µm ☒ 5.0µm ☒ Other: <u>10.0µm</u>	Coll Jug: <u>47-73</u> Comp Jug: <u>CC00023-78</u> SS Tubing: <u>CC00044-92</u> SS Helper: <u>SSAS</u> ↓ Stir Bar: <u>CC00047-50</u> Connector: <u>CC00044-99</u> (x2)	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ ☒ COD ☐	0.45µm High Capacity ^{color prof} Very black-looking; leaves minimal debris 4 jugs
#2 Lims#: <u>AC00324-03</u> Location: <u>ACSTIC</u> Sample Date: <u>11-19-23</u> Sample ID: <u>23119-03</u> -WC	Split Date: <u>11-19-23</u> Start Split: <u>1620</u> Start Filter: <u>1620</u> Comp Time: <u>1617</u> Analyst: <u>DMW/WR</u>	Filter: ☒ Voss ☒ 0.45µm ☐ 1.0µm ☒ 5.0µm ☒ Other: <u>10.0µm</u>	Coll Jug: <u>47-32, 47-88</u> Comp Jug: <u>CC00030-62</u> (x2) SS Tubing: <u>CC00047-43</u> SS Helper: <u>SSAB</u> ↓ Stir Bar: <u>CC00047-50</u> Connector: <u>CC00047-89</u> (x2)	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ ☒ COD ☐	0.45µm High Capacity Dark minimal debris 2 jugs
#3 Lims#: <u>AC00324-06</u> Location: <u>ACSTIC</u> Sample Date: <u>11-19-23</u> Sample ID: <u>23119-14</u> -WC	Split Date: <u>11-19-23</u> Start Split: <u>1728</u> Start Filter: <u>1728</u> Comp Time: <u>1723</u> Analyst: <u>DMW/WR</u>	Filter: ☒ Voss ☒ 0.45µm ☐ 1.0µm ☒ 5.0µm ☒ Other: <u>10.0µm</u>	Coll Jug: <u>47-32, 47-88, 47-32</u> Comp Jug: <u>CC00040-72</u> SS Tubing: <u>CC00047-43</u> SS Helper: <u>SSI2</u> ↓ Stir Bar: <u>CC00047-50</u> Connector: <u>CC00040-06</u> (x2)	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ ☒ COD ☐	0.45µm High Capacity Minimal debris (1) of the 16L jugs didn't have cert label 4 jugs
#4 Lims#: <u>AC00324-04</u> Location: <u>ACSTIC</u> Sample Date: <u>11-19-23</u> Sample ID: <u>23119-11</u> -WC	Split Date: <u>11-19-23</u> Start Split: <u>1752</u> Start Filter: <u>1752</u> Comp Time: <u>1748</u> Analyst: <u>DMW/WR</u>	Filter: ☒ Voss ☒ 0.45µm ☐ 1.0µm ☒ 5.0µm ☒ Other: <u>10.0µm</u>	Coll Jug: <u>47-73, 47-32</u> Comp Jug: <u>CC00023-78</u> SS Tubing: <u>CC00039-99</u> SS Helper: <u>SSI7</u> ↓ Stir Bar: <u>CC00047-67</u> (x2) Connector: <u>CC00040-06</u>	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ ☒ COD ☐	0.45µm High Capacity (1) of the 16L jugs missing cert. label. Minimal debris 3 jugs
#5 Lims#: <u>AC00324-05</u> Location: <u>ACSTIC</u> Sample Date: <u>11-19-23</u> Sample ID: <u>23119-12</u> -WC	Split Date: <u>11-19-23</u> Start Split: <u>1814</u> Start Filter: <u>1814</u> Comp Time: <u>1811</u> Analyst: <u>DMW/WR</u>	Filter: ☒ Voss ☒ 0.45µm ☐ 1.0µm ☒ 5.0µm ☒ Other: <u>10.0µm</u>	Coll Jug: <u>47-73, 47-88</u> Comp Jug: <u>CC00041-67</u> SS Tubing: <u>CC00047-85</u> SS Helper: <u>SSA2</u> ↓ Stir Bar: <u>CC00047-67</u> Connector: <u>CC00040-06</u> (x2)	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ ☒ COD ☐	0.45µm High Capacity (1) of the 16L missing cert. label. minimal debris 3 jugs

39-76 (x2)

ACHD SAMPLE FILTRATION, SPLITTING, AND COMPOSITING FOR METALS

PAGE 2 OF 2

Sample	Split/Filter Info	Filter Used	Bottle/Lid Lots	Bottles Split	Comments
#6 Lims#: _____ Location: _____ Sample Date: <u>11-19-23</u> Sample ID: _____	Split Date: <u>11-19-23</u> Start Split: _____ Start Filter: _____ Comp Time: _____ Analyst: <u>DMW/JPR</u>	Filter: ☒ Voss ☒ 0.45µm ☐ 1.0µm ☒ 5.0µm ☒ Other: <u>10.0µm</u>	Coll Jug: _____ Comp Jug: _____ SS Tubing: <u>C00047-39</u> SS Helper: <u>SS9</u> Stir Bar: <u>C00047-90</u> Connector: <u>C00041-46</u>	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ ☒ COD ☐	<u>0.45µm High Capacity</u> <u>Not Needed</u>
Lims#: _____ Location: _____ Sample Date: _____ Sample ID: _____	Split Date: _____ Start Split: _____ Start Filter: _____ Comp Time: _____ Analyst: _____	Filter: ☒ Voss ☒ 0.45µm ☐ 1.0µm ☒ 5.0µm ☐ Other: _____	Coll Jug: _____ Comp Jug: _____ SS Tubing: _____ SS Helper: _____ Stir Bar: _____ Connector: _____	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ ☒ COD ☐	
Lims#: _____ Location: _____ Sample Date: _____ Sample ID: _____	Split Date: _____ Start Split: _____ Start Filter: _____ Comp Time: _____ Analyst: _____	Filter: ☒ Voss ☒ 0.45µm ☐ 1.0µm ☒ 5.0µm ☐ Other: _____	Coll Jug: _____ Comp Jug: _____ SS Tubing: _____ SS Helper: _____ Stir Bar: _____ Connector: _____	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ ☒ COD ☐	
Lims#: _____ Location: _____ Sample Date: _____ Sample ID: _____	Split Date: _____ Start Split: _____ Start Filter: _____ Comp Time: _____ Analyst: _____	Filter: ☒ Voss ☒ 0.45µm ☐ 1.0µm ☒ 5.0µm ☐ Other: _____	Coll Jug: _____ Comp Jug: _____ SS Tubing: _____ SS Helper: _____ Stir Bar: _____ Connector: _____	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ ☒ COD ☐	
Lims#: _____ Location: _____ Sample Date: _____ Sample ID: _____	Split Date: _____ Start Split: _____ Start Filter: _____ Comp Time: _____ Analyst: _____	Filter: ☒ Voss ☒ 0.45µm ☐ 1.0µm ☒ 5.0µm ☐ Other: _____	Coll Jug: _____ Comp Jug: _____ SS Tubing: _____ SS Helper: _____ Stir Bar: _____ Connector: _____	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ ☒ COD ☐	



Technical Memorandum

1290 W. Myrtle St. Suite 340
Boise, ID 83702

Phone: 801.316.9859

Prepared for: Ada County Highway District

Project Title: NPDES Phase I Stormwater Support WY 2024

Project No.: 159103

Technical Memorandum

Subject: ACHD Phase I Storm Event Report for February 1, 2024

Date: April 23, 2024

To: Monica Lowe

Cc: Steven Turner

Kristen Chisholm

From: Zuly Lapa, Project Engineer

Prepared by: Zuly Lapa, EIT, Project Engineer

Reviewed by: Melissa Jannusch, PE, Project Manager

Limitations:

This document was prepared solely for ACHD in accordance with professional standards at the time the services were performed and in accordance with the contract between ACHD and Brown and Caldwell dated October 10, 2023. This document is governed by the specific scope of work authorized by ACHD; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by ACHD and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

Section 1: Introduction

The Environmental Protection Agency Region 10 reissued a Municipal Separate Storm Sewer System Phase I National Pollutant Discharge Elimination System Permit (NPDES Permit), effective October 1, 2021, to Ada County Highway District (ACHD), Boise City, Ada County Drainage District No. 3, Idaho Transportation Department District 3, Boise State University, and Garden City. Under the NPDES Permit, Permittees are required to continue to conduct wet weather stormwater outfall monitoring and subwatershed monitoring. Four outfall monitoring sites (Lucky, Whitewater, Main, and Americana) and one subwatershed monitoring site (AS_6) have been established. The AS_6 site represents a subwatershed located within the Americana watershed. At each site, a minimum of three composite and three grab samples will be collected during Water Year (WY) 2024 (October 1, 2023, through September 30, 2024). The following storm event report summarizes stormwater sampling results from the February 1, 2024, storm event.

Section 2: Project Status

Table 2-1 is a summary of the sample types collected to date for WY 2024 Phase I Stormwater Outfall Monitoring. When samples are qualified, additional samples will be attempted from subsequent storms to collect unqualified samples.

Table 2-1. WY 2024 Samples Collected					
Date	Lucky	Whitewater	Main	Americana	AS_6
October 10, 2023	G, C ^{1,2}	G	--	G, C ³	--
November 19, 2023	G, C	G, C	G, C	G ⁴ , C	G, C
February 1, 2024	G ⁵ , C	G ⁵ , C ⁶	G ⁵ , C	G ⁵ , C	G ⁵ , C
Unqualified Samples:	2G, 2C	2G, 1C	1G, 2C	1G, 2C	1G, 2C
Samples Remaining:	1G, 1C	1G, 2C	2G, 1C	2G, 1C	2G, 1C

Notes:

-- = no samples taken

C = composite sample

G = grab sample

¹ Composite samples qualified due to lack of representativeness (50%–75%).

² Incomplete water quality analysis due to low composite sample volume.

³ Composite samples qualified due to lack of representativeness (50%–75%) of the calculated flow volume.

⁴ Grab sample qualified due to incomplete field parameter collection.

⁵ E. coli sample qualified due to exceeded hold time.

⁶ Composite sample rejected due to automatic sampler triggering prior to storm event runoff. The subsamples taken prior to the event represented more than 10% of the composite volume.

Section 3: Storm Event Summary

The February 1, 2024, storm event and the subsequent preparation and sampling efforts are detailed in the following sections.

3.1 Storm Detail

A summary of the forecast on which monitoring decisions were based is detailed below. The sampling event communication form that describes the forecast and summarizes the decision-making process from February 1, 2024, is included in Attachment A for reference.

Wednesday, January 31, 2024 (Sampling Event Communication and Set Up)

- On the morning of January 31, the National Weather Service issued a forecast for widespread rain in the Boise area, starting February 1 at 0500 and ending on February 2 at 1100. The chance of precipitation was greater than 90%, with 0.50 inches of precipitation forecasted.
- Setup was accomplished in the afternoon of January 31. An expected precipitation depth of 0.3 inches was used to set trigger volumes at monitoring stations. A runoff calculations worksheet showing how the trigger volumes were calculated is included in Attachment A.

Thursday, February 1, 2024 to Friday, February 2, 2024 (Storm Event)

- Moderate rain first started at approximately February 1 at 1607 and ended on February 2 at 1305.
- Precipitation totals ranged between 0.31 and 0.37 inches at local rain gauges.

Flow measurements and precipitation data are listed in Table 1 along with a sampling summary. Hydrograph for the Lucky, Whitewater, Main, Americana and AS_6 site showing flow, rain, and sample collection data are included in Attachment B.

3.2 Sampling Summary

Lucky, Whitewater, Main, Americana and AS_6 monitoring stations were set up on January 31, to collect flow-proportional composite samples during the storm. Sampler enable conditions were programed into the Lucky, Whitewater, Main and Americana flowmeters. A site-specific velocity cutoff value was programmed into AS_6 flowmeter. Setup and sampling information are included in Table 1. The field forms completed during setup/shutdown and sampling are included in Attachment C.

Grab Samples

Two, two-member teams mobilized to collect stormwater runoff grab samples and verify operation of the automatic sampling equipment on February 1 at 1800. Grab samples for Lucky, Whitewater, Main, Americana, and AS_6 were submitted to the West Boise Water Quality Lab (WQL) at 2032 on February 1.

Results for grab samples, including field parameter and analytical data, are included in Table 2. Laboratory analytical reports are included in Attachment D.

Composite Samples

Composite samples were collected at the Main, Americana and AS_6 monitoring station and submitted to the WQL at 1101 and 1102 on February 2. The composite samples at Lucky and Whitewater monitoring stations were submitted to the WQL at 1154 on February 2.

Analytical results are shown in Table 2 and pollutant loading estimates for the event are detailed in Table 3. Laboratory analytical reports are included in Attachment D.

Section 4: Quality Assurance/Quality Control

A summary of quality control samples collected during the February 1, 2024, storm event is presented below in Table 4-1. A field blank and field duplicate was collected from the Lucky monitoring station and a lab duplicate/composite split was collected from the Whitewater monitoring station. The analytical results for these samples are included in Table 4-1.

Table 4-1. Quality Control Samples			
Sample ID	Sample Type	Parent Sample	Conclusions
240201-03-001	Field blank	Lucky grab	No <i>E. coli</i> detection was reported in the field blank.
240201-03-101	Field duplicate	Lucky grab	Relative percent difference was not within the acceptable range. Field duplicate qualified due to exceeding <i>E. coli</i> hold time.
240201-11-103	Lab duplicate/composite split	Whitewater composite	The Whitewater composite parent sample was rejected due to non-stormwater subsamples, leading to an inaccurate relative percent difference.

Data quality objectives for this storm were evaluated and tracked using the data validation review checklist included in Attachment A.

An acceptable composite sample represents at least 75 percent of the total discharge or at least 6 hours of the storm duration. All composite samples, except for Whitewater, met the criteria. However, all the grab samples, including the QC field duplicate were qualified due to *E. coli* exceeding hold time. A grab sample is qualified if the sample is prepared 8 to 16 hours after sample collection. Samples are rejected if prepared 16 hours or later after sample collection. All samples were prepared within approximately 12 hours of sample collection and are therefore qualified.

Prior to the start of the storm precipitation or runoff, five subsamples were successfully collected by the automatic sampler at the Whitewater monitoring site. These subsamples are considered non-stormwater, as there was no evidence of flow or precipitation during the morning of January 31st through the afternoon of February 1st. Following the SWOMP guidelines, calculations were conducted to determine if the non-stormwater subsample volume accounted for 10% of the total composite sample volume. The non-stormwater composite subsamples accounted for 12% of the total composite sample volume (see Table 4-2), rejecting the Whitewater composite sample.

Table 4-2. Non-Stormwater Subsample Evaluation		
Composite Sample Volume (ft ³)	Non-Stormwater Subsample Volume (ft ³)	Non-stormwater Subsample Ratio
74,325	8,744	12 %

Section 5: Notes and Recommendations

Whitewater

The sampling team identified the automatic sampler's clock was not synchronized with the flowmeter, resulting in incorrect subsample times displayed on the sampler. The sampling team recorded actual composite subsample times from the flow meter prior to submitting the chain of custody form to the WQL. Additionally, the five subsamples collected before the start of storm flow were due to a flowmeter programming error. It was determined the STORM EVENT and SAMPLER ENABLE equations were assigned the wrong threshold conditions. Specifically, STORM EVENT had the threshold condition assigned rather than the timetable condition. SAMPLER ENABLE had the timetable equation set. Therefore, the flowmeter was incorrectly programmed to enable the sampler 24 hours a day and pull a sample every 2185 cubic feet

without a minimum level condition. The early subsamples appear to be equally spaced apart because of the poor velocity signal, which resulted in the velocity reading a constant value before the start of storm flow. In the case of poor velocity signal readings, the flowmeter will continue to record the last velocity reading until it is able to get another valid reading. For this reason, the sampler was collecting subsamples before increased levels as expected during storm flows.

AS_6

After collecting the grab sample at AS_6, the sampling team noticed a build-up of leaves on the sensor. The sampling team immediately cleared the sensor, and flow started moving rapidly. The removal of leaves seemed to normalize the flow.

Data Tables



TAB-1

Table 1. Sampling and Flow Summary					
	Lucky	Whitewater	Main	Americana	AS_6
Grab samples collected and submitted?	YES	YES	YES	YES	YES
Composite samples collected and submitted?	YES	YES	YES	YES	YES
Trigger volume (gal or ft ³)	7899 gal	2185 ft ³	9313 gal	8071 ft ³	601 ft ³
Velocity cutoff (fps)	--	--	--	--	0.02
Sampler enable condition (in)	Level > 2.68"	Level > 2.55" ⁴	Level > 2.06"	Level > 6.46"	--
Runoff start time	1747 ¹	1647 ¹	1657 ¹	1607 ¹	1823 ¹
Grab sample collection time	1825	1859	1815	1841	1906
Composite sample stop time	0926	1016	0757	0936	0936
Runoff stop time	1135 ²	1305 ²	1132 ²	1220 ²	1108 ²
Volume of discharge sampled (ft ³)	12,963	74,325 ³	17,733	216,570	13,220
Volume of non-stormwater subsamples (ft ³)	--	8,744	--	--	--
Total runoff volume (ft ³)	14,425	71,141	19,927	260,647	15,912
Percent of storm flow sampled (%)	90%	104% ³	89%	83%	83%
Percent of non-stormwater volume to total discharge sampled volume (%)	--	12%	--	--	--
Composite sample duration (hrs)	14.5	40 ³	13	13.5	10.5
Storm Precipitation (in)	0.31	0.33	0.31	0.31/0.37	0.31/0.37
Referenced Rain Gauge	Cynthia Mann	Whitewater	Front	Front/East	Front/East
Sampler messages (counts): Success	13	36	15	29	24
Number of composite bottles filled	1	2	1	2	2
Composite sample volume (Approx.; ml)	7,250 ml	19000 ml	10250 ml	14500 ml	24400 ml

Notes:

-- = No data.

¹ Storm runoff started on 2/1/24

² Storm runoff ended on 2/2/24

³ Non stormwater samples were collected prior to the start of storm precipitation or runoff

⁴ Programming error occurred at setup

Table 2. Field and Analytical Data Summary																											
Monitoring Station	Sample Date	Sample ID Grab	Field Parameters						Sample ID Composite	Analytical Parameters																	
			Dissolved Oxygen	pH	Conductivity	Temperature	E. coli	80D ₅		COD	Hardness as CaCO ₃	Turbidity	TSS	TDS	Total Phosphorus	Orthophosphate as P	Ammonia as N	Nitrate + Nitrite as N	TKN	Arsenic, total	Cadmium, dissolved	Cadmium, total	Copper, dissolved	Lead, dissolved	Lead, total	Mercury, total	Zinc, dissolved
			mg/L	S.U.	uS/cm	C	mpn/100 mL	mg/L		mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Lucky	2/1/2024	240201-03-WG	4.92	7.15	593.29	14.62	<1.0 ^{4J}	240201-03-WC	7.27	39.0	16.0	60.5	18.8	52.8	0.174	0.100	0.173	0.204	0.894	0.85	<0.0100	0.024	2.0	0.056	0.82	<0.0100	17.5
Whitewater	2/1/2024	240201-11-WG	8.42	7.60	287.02	11.10	68.9 ^{4J}	240201-11-WC	9.34 ^{3R}	82 ^{3R}	43 ^{3R}	106 ^{3R}	58.4 ^{3R}	139 ^{3R}	0.321 ^{3R}	0.171 ^{3R}	0.169 ^{3R}	0.375 ^{3R}	1.33 ^{3R}	2.4 ^{3R}	<0.0100 ^{3R}	0.058 ^{3R}	3.9 ^{3R}	0.18 ^{3R}	4.8 ^{3R}	0.0148 ^{3R}	25.7 ^{3R}
Main	2/1/2024	240201-12-WG	10.11	8.03	353.6	6.30	238.2 ^{4J}	240201-12-WC	5.74	77.0	18.3	103	59.8	64.2	0.143	0.0557	0.351	0.209	1.12	1.4	0.012	0.066	3.6	0.084	4.1	0.0112	18.4
Americana	2/1/2024	240201-14-WG	10.05	7.73	552.2	8.34	65.0 ^{4J}	240201-14-WC	6.98	55.0	93.3	89.6	50.7	224	0.213	0.116	0.193	0.905	1.05	3.4	0.016	0.063	3.4	0.090	4.2	<0.0100	17.3
AS_6	2/1/2024	240201-206-WG	9.33	8.03	542.9	5.55	290.9 ^{4J}	240201-206-WC	11.6	108	16.8	143	70.3	116	0.464	0.285	0.159	0.191	1.83	3.0	0.013	0.077	4.5	0.29	6.7	0.0168	10.5

Notes:
 -- 3R No data.
 3R Composite sample rejected due to non stormwater sample volume comprising 10% or more of the the total composite sample volume
 4J E. coli sample qualified due to exceeded hold time

Table 3. Event Pollutant Loading Estimates in Pounds						
Monitoring Station	Event Date	TSS	Total Phosphorus	Ammonia as N	Nitrate + Nitrite as N	TKN
Lucky	2/1/2024	16.9	0.157	0.156	0.184	0.805
Whitewater	2/1/2024	168 ^{1R}	0.92 ^{1R}	0.750 ^{1R}	1.08 ^{1R}	3.81 ^{1R}
Main	2/1/2024	74.4	0.178	0.437	0.260	1.39
Americana	2/1/2024	825	3.46	3.140	14.7	17.1
AS_6	2/1/2024	69.8	0.46	0.158	0.190	1.82

Notes:

^{1R} Composite sample rejected due to non stormwater sample volume comprising 10% or more of the the total composite sample volume

Table 4. QC Sample Summary																							
Date	Parent Sample	Sample ID	Type	E. coli	BOD ₅	COD	Hardness as CaCO3	Turbidity	TSS	TDS	Total Phosphorus	Orthophosphate as P	Ammonia as N	Nitrate + Nitrite as N	TKN	Arsenic, total	Cadmium, dissolved	Cadmium, total	Copper, dissolved	Lead, dissolved	Lead, total	Mercury, total	Zinc, dissolve
				mpn/100 mL	mg/L	mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
2/1/2024	240201-03-WG	240201-03-001	Field Blank	<1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/1/2024	240201-03-WG	240201-03-101	Field Duplicate	2 ⁴¹	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Calculated parent/duplicate RPD ¹				100%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Allowable RPD				40%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
2/1/2024	240201-11-WC	240201-11-103	Lab Duplicate/Composite Split	--	8.9	83.0	42.4	113	53.8	140	0.312	0.172	0.170	0.378	1.35	2.4	0.011	0.052	3.7	0.19	4.9	0.0127	26.6
Calculated parent/duplicate RPD ²				--	5%	1%	1%	6%	8%	1%	3%	1%	1%	1%	1%	0%	10%	11%	5%	5%	2%	15%	3%
Allowable RPD				40%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%

Notes:

¹ Relative percent difference was not within the acceptable range. Field duplicate qualified due to exceeding E. Coli hold time

² The Whitewater composite parent sample was rejected due to non-stormwater subsamples, leading to an innacurate relative percent difference

⁴¹ E.coli sample qualified due to exceeded hold time

Attachment A: Supplemental Documents

Sampling Event Communication Form

Data Validation Checklist

Runoff Calculation Worksheet

SAMPLING EVENT COMMUNICATION FORM

Date: 01/31/2024	Time: 9:39 AM	Initials: ML
Is there a targeted sampling event during the next 36 hours? (Or, if it is Friday, is a targeted event expected before 5:00 PM Monday?)		Yes

Past 72 hr Precip	0.06"
Date and time of expected event	2/1/2024 5am – 2/2/2024 5am-11am?
Expected amount of precipitation	Up to 0.5"
Percent chance of precipitation	90%
Percent chance of >0.10" over 12 hours	30-40% during Thursday 5am-5Pm

NWS Update

I spoke with Bill from the NWS. They said precip could start as early as 5-8am Thursday morning but are only expecting maybe a tenth throughout the day. Precip expected to pick up in the afternoon and into the evening especially after 5PM. The storm is predicted to be continuous and widespread once it starts with breaks and rain shadowing unlikely. Storm should be over ~5am but could be as late as 11am depending pace of storm.

<u>Targeted Station & Samples</u>					
Lucky	Whitewater	Main	Americana	AS_6	State (Phase II)
☒ Grab	☒ Grab	☒ Grab	☒ Grab	☒ Grab	☒ Grab
☒ Composite	☒ Composite	☒ Composite	☒ Composite	☒ Composite	☒ Composite

Type of Forecasted Precipitation

☐ Light Rain	☒ Rain	☐ Rain on Snow
☐ Scattered Showers	☐ Thunder Showers	☐ Snowmelt
☐ Other:		

Reasons for Not Targeting a Forecasted Storm and/or Stations

☐ Holiday

☐ Waiting on Antecedent Dry Period – Expires:

☐ Equipment Concerns:

☐ Other:

Text Forecast

NWS Forecast for: 2 Miles NNW Garden City ID
 Issued by: National Weather Service Boise, ID
 Last Update: 3:29 am MST Jan 31, 2024

Today: Mostly sunny, with a high near 63. Southeast wind 7 to 17 mph, with gusts as high as 26 mph.
 Tonight: A 20 percent chance of rain after 11pm. Mostly cloudy, with a low around 44. East southeast wind 13 to 15 mph, with gusts as high as 24 mph.

Thursday: Rain. High near 56. Southeast wind 14 to 16 mph, with gusts as high as 25 mph. Chance of precipitation is 90%. New precipitation amounts between a tenth and quarter of an inch possible.
Thursday Night: Rain. Low around 39. Southeast wind 5 to 9 mph becoming light and variable in the evening. Chance of precipitation is 80%. New precipitation amounts between a quarter and half of an inch possible.
 Friday: Rain likely, mainly before 11am. Mostly cloudy, with a high near 48. West northwest wind 3 to 8 mph. Chance of precipitation is 60%.
 Friday Night: A 40 percent chance of rain. Mostly cloudy, with a low around 35.
 Saturday: A 30 percent chance of rain, mainly before 11am. Mostly cloudy, with a high near 45.
 Saturday Night: Mostly cloudy, with a low around 31.

Sunday: Mostly sunny, with a high near 47.

Sunday Night: A 40 percent chance of rain, mainly after 11pm. Mostly cloudy, with a low around 35.

Monday: A chance of rain and snow. Mostly cloudy, with a high near 49. Chance of precipitation is 50%.

Monday Night: A 50 percent chance of rain. Mostly cloudy, with a low around 36.

Tuesday: A 50 percent chance of rain. Mostly cloudy, with a high near 49.

Forecast Discussion

National Weather Service Boise ID

243 AM MST Wed Jan 31 2024

.SHORT TERM...Today through Friday night...A pattern shift towards [normal](#) late winter conditions is expect on Thursday as the large [upper level](#) low reaches the Pacific Northwest. However, until then, unseasonably warm temperatures will continue today with record high temperatures forecast for several valley locations. The approaching Pacific system will enhance the pressure [gradient](#) for gusty southeast winds in the Snake Plain today. Gusts are expected to be in the 30-40 mph range.

Expect record temperatures in the Treasure Valley today aid by a much stronger southeasterly winds in response to the approaching [upper level](#) low. Model guidance has consistently under forecast temperatures the last 6 days and looks to be under forecasting today by another 3 to 5 degrees. Thus, used a bias corrected [analog](#) which has worked well the last couple of nights. This correction gives a 70% chance of Boise reaching 64 degrees or greater today. The forecast high of 64 would not only break the daily record of 61, but also tie the all-time record of 63 (set on Jan 9, 1953). Temperatures will start to cool down on Thursday with the arrival of widespread clouds and precipitation. A [Public Information Statement](#), BOIPNSBOI, includes the updated forecast highs and records.

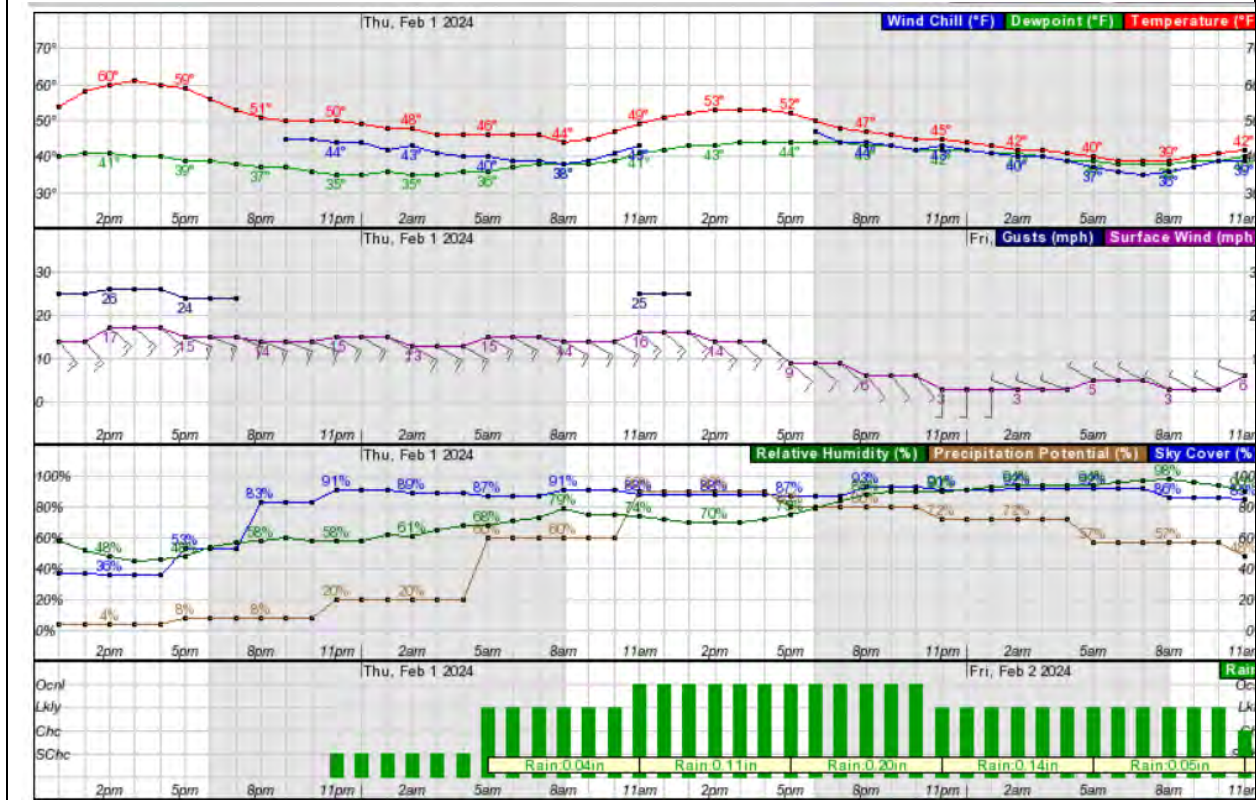
[Fog](#) and [stratus](#) has remained persistent across the valleys of Southeast Oregon the last couple of days. However, this should begin to dissipate today with better mixing and increased surface winds ahead of the next system.

A very moist plume of Pacific [moisture](#) off the west coast, known as an atmospheric river, associated with an [upper level low pressure system](#), will move inland this afternoon. This will spread the [moisture](#) across our area late tonight into Thursday. Snow levels near 7000 feet today will lower to around 6000 feet on Thursday. Accumulating snow will be limited to the mountains. Precipitation totals of up to a half inch in the valleys and an inch in the mountains are expected.

.LONG TERM...Saturday through Wednesday...A weak [upper level trough](#) remains over the region Saturday and Sunday continuing the threat for light snow showers in the mountains and a mix of rain and snow in the valleys. The [low pressure system](#) over the west coast will again interact with another plume of [moisture](#) from the Central Pacific (or Atmospheric River) on Sunday which looks to spread across our area from the southwest on Monday. Snow levels remain around 4000 feet for snow in the mountains and cold rain in the valleys. There is growing confidence in the system for Monday however, there is quite a large spread on the amount of [moisture](#) that makes it into the Intermountain West. Colder but drier conditions follow as the

the region remains on under a [large scale trough](#) as the low center continues south along the California coast.

Hourly Forecast



Storm Event QA/QC Checklist – Phase I

STORM DATE 2/1/24

A. Event and Data Completeness	Yes	No	N/A	Notes					
1. Field data sheets filled out completely and clearly	X								
2. Field parameters reviewed, and any problems/issues addressed	X			Whitewater FM and SA clocks werent synced during setup					
3. All samples collected as specified	X								
4. All samples delivered to lab promptly (review chain of custody rpts)	X								
5. Inconsistencies/clarifications discussed with sampling team member			X						
6. All analytical reports from lab received	X								
B. Validation and Verification Methods	Yes	No	N/A	Notes					
1. Outliers and unexpected values discussed with lab			X						
2. Appropriate analytical methods used	X								
3. All lab QA samples were within method acceptance criteria	X								
4. All samples reviewed and data qualifiers assigned if needed	X								
5. Data quality objective achieved	X								
C. Specific Storm and Sample QA/QC Criteria	Lucky	Whitewater	Main	Americana	AS_6	Program Criteria	Met	Qualify	Reject
1. Antecedent dry period (inches in previous 72-hours)	0.00	0.00	0.00	0.00	0.00	< 0.11" in 72 hrs	X		
2. Precipitation (inches)	0.31	0.33	0.31	0.31/0.37	0.31/0.37	> 0.10"	X		
3. Sampled amount (% of total run-off)	90%	104%*	89%	83%	83%	>= 75% or >= 6 hrs: no qualifier >= 50% and <75%: qualify < 50%: reject	X		X _{ww}
4. Composite sample duration (hours)	14.5	40	13	13.5	10.5	<=8 hrs: no qualifier >8 and <=16 hrs.: qualify >16 hrs.: reject		X	
4. Ecoli sample holding time (hours)	12	11.5	12	12	12	<= 24 hrs: no qualifier > 24 hrs.: reject	X		
5. Filtering of samples for dissolved parameter analysis (hours)	3.5	2.0	3.0	2.0	2.0				
D. Notes									
E. coli: samples were qualified due to exceeded holding times from all sites. * Whitewater composite rejected due to >10% total sample volume composed of non-stormwater.									

Reviewed by Steven Turner Date 2/4/24

Approved by Monica Lowe Date 4/9/24

Storm Runoff Estimates and Trigger Volumes

Step 1. Enter runoff coefficients in yellow cells.

Step 2. Enter expected precipitation depth (in) in blue cell.

Step 3. Read trigger volumes (**bold**) in green cells.

Expected Precipitation Depth = 0.3

Aliquots per Sample = 17

Site	Area (ac)	Using RC calculated from flow data		
		RC	Expected Vol (ft ³)	Trigger Vol (ft ³)
Lucky	105	0.157	17952.2	1056
Whitewater	498	0.069	37149.1	2185
Main	79	0.246	21163.6	1245
Main Alt	60	0.200	13068.0	769
Americana	875	0.144	137214.0	8071
AS_6	204	0.046	10219.2	601
State	34	0.160	5924.2	348

Notes:

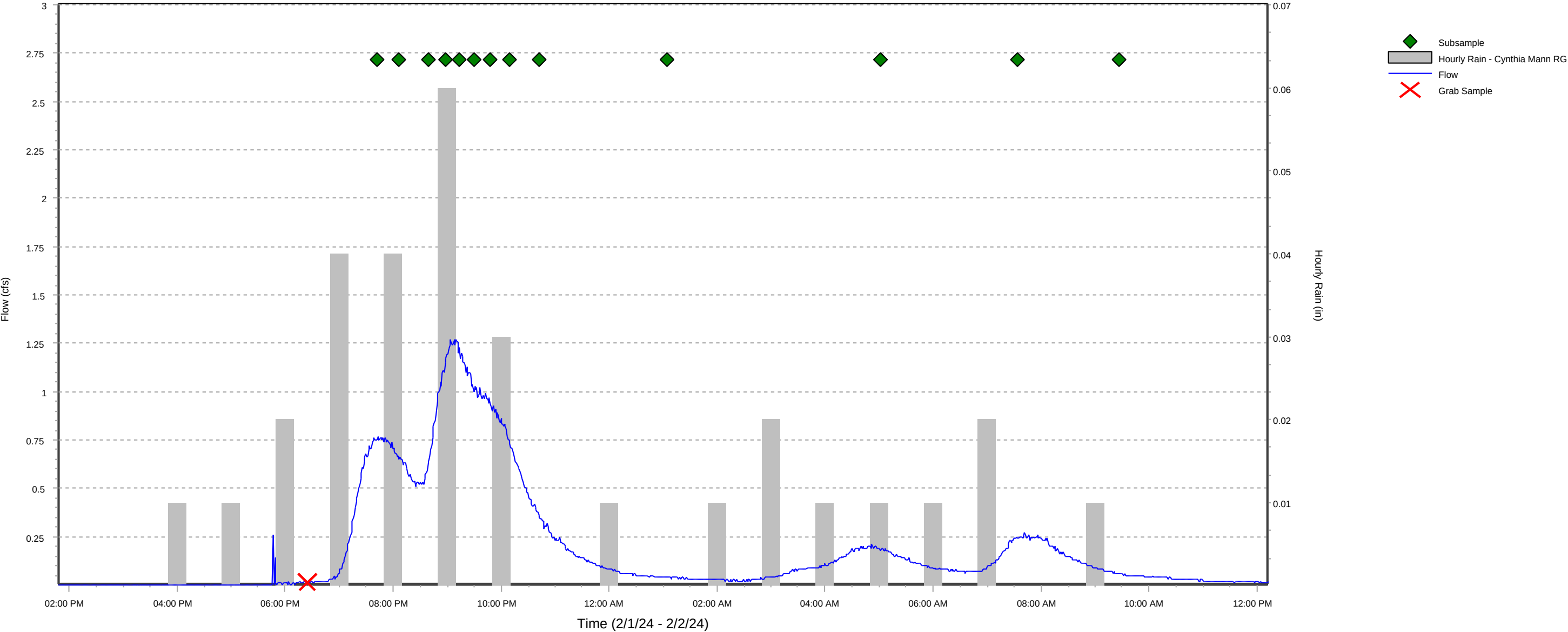
Calculated RC = Average (precip (ft) / [volume (ft³) x area (ft²)])

Where precip (ft) is the measured amount from local rain guage, and volume (ft³) is the measured discharge, and area (ft²) is the watershed area

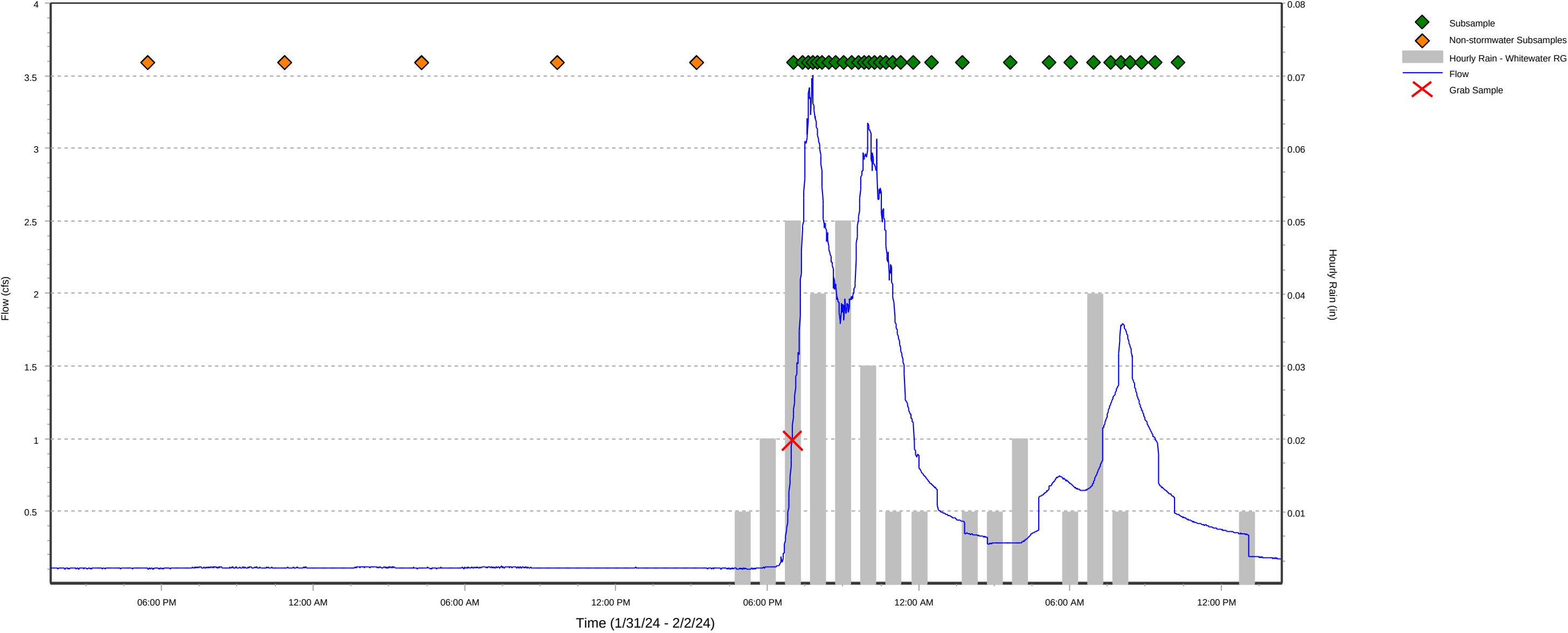
Expected volume (ft³) = RC x expected precip (ft) x area (ft²)

Attachment B: Storm Event Hydrographs

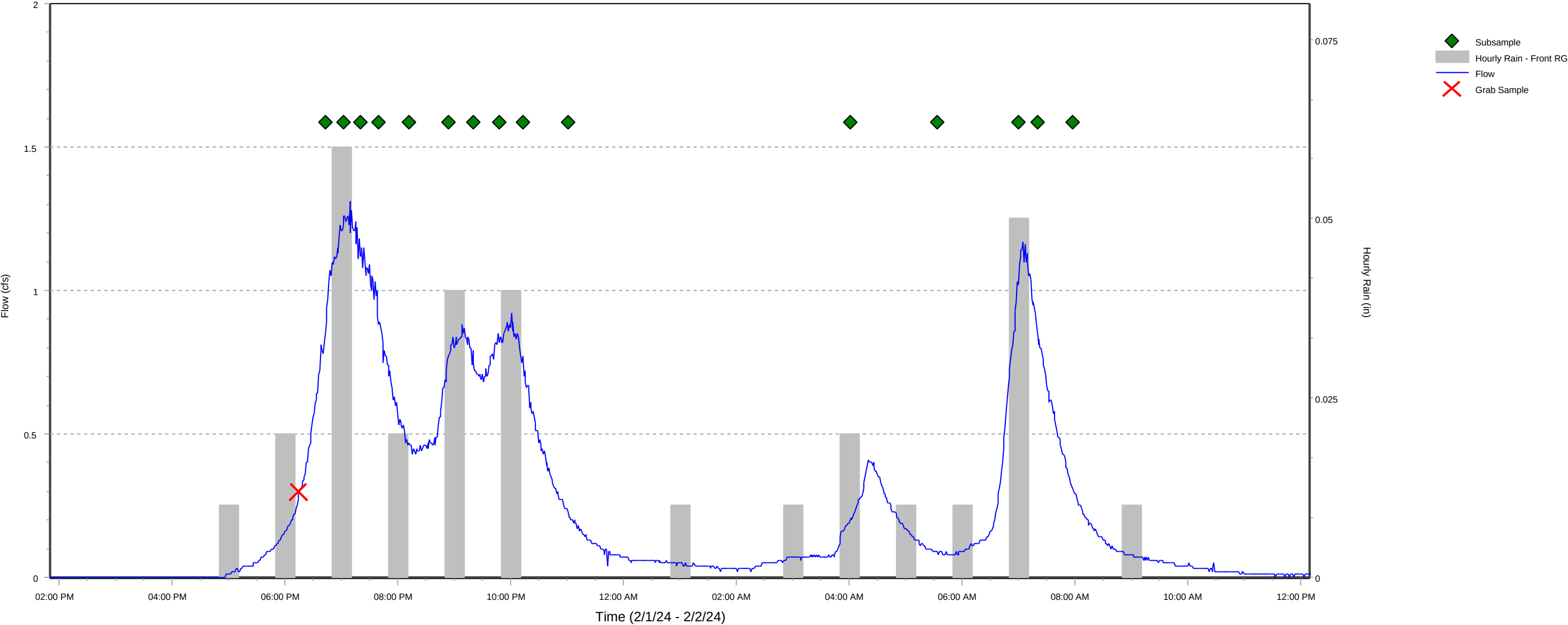
Lucky Hydrograph



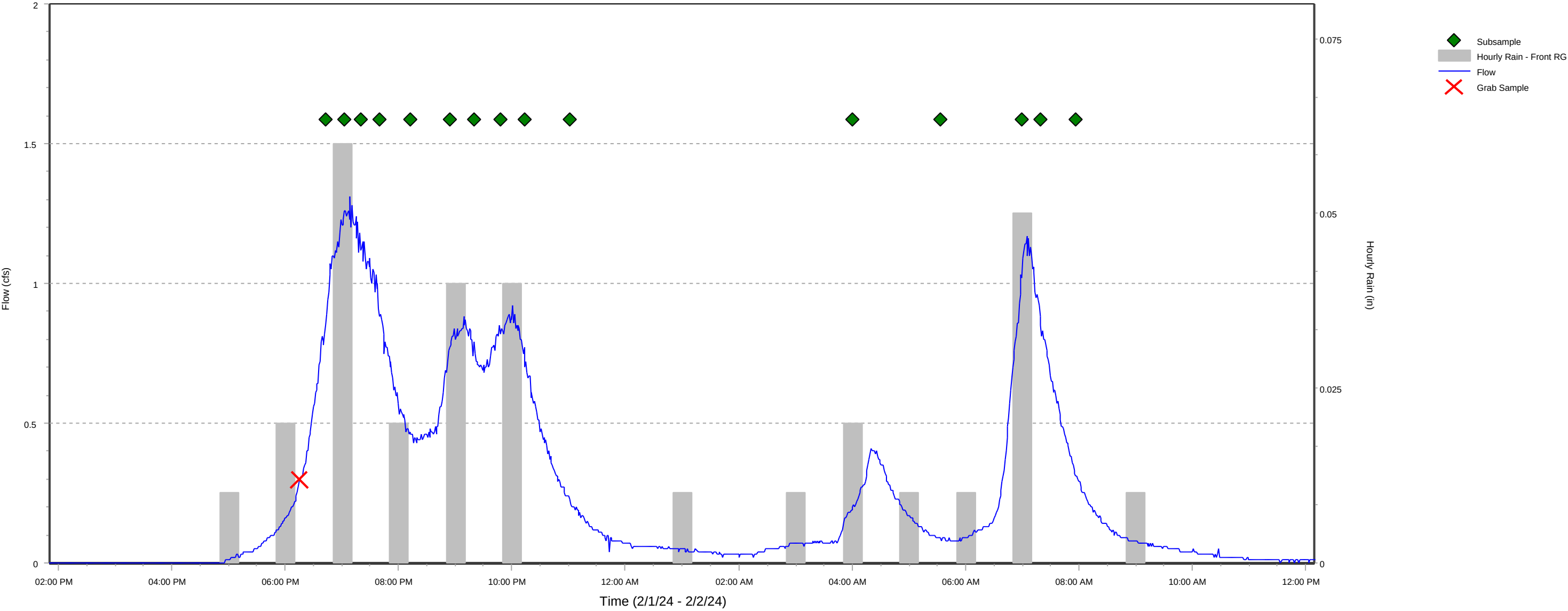
Whitewater Hydrograph



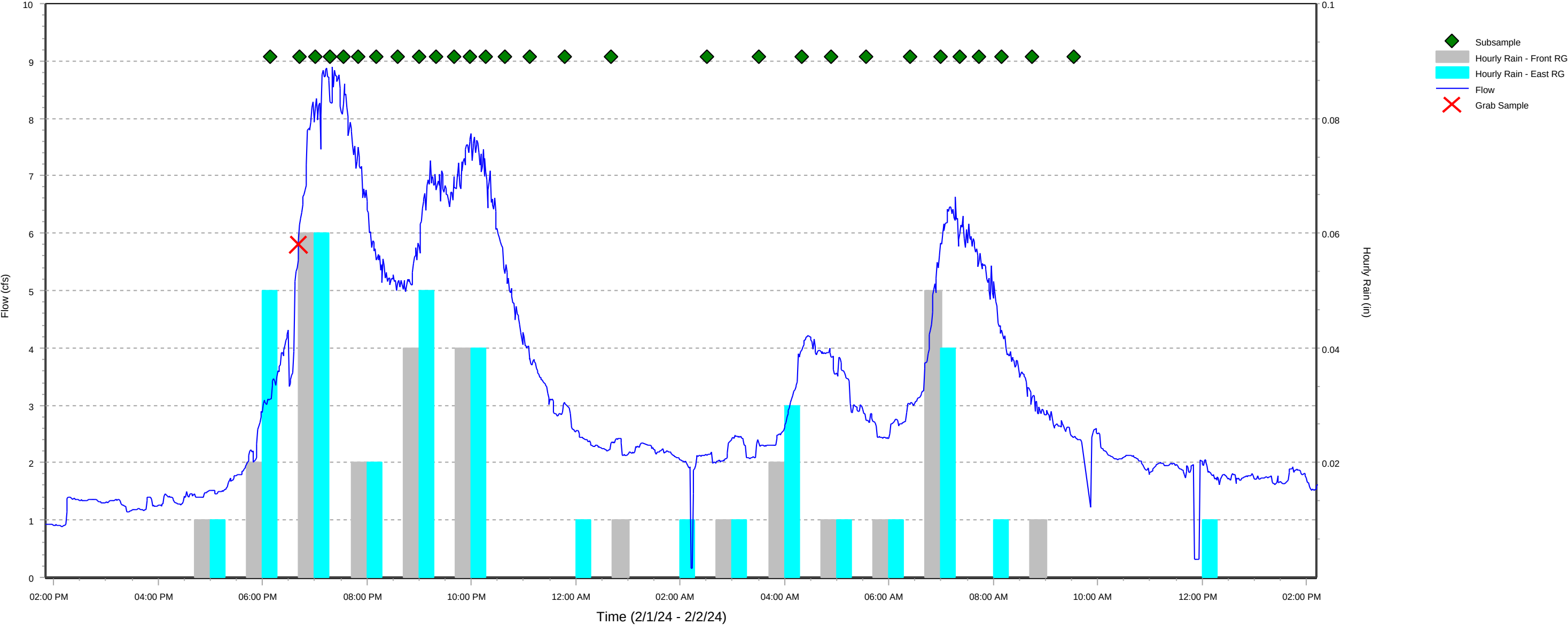
Main Hydrograph



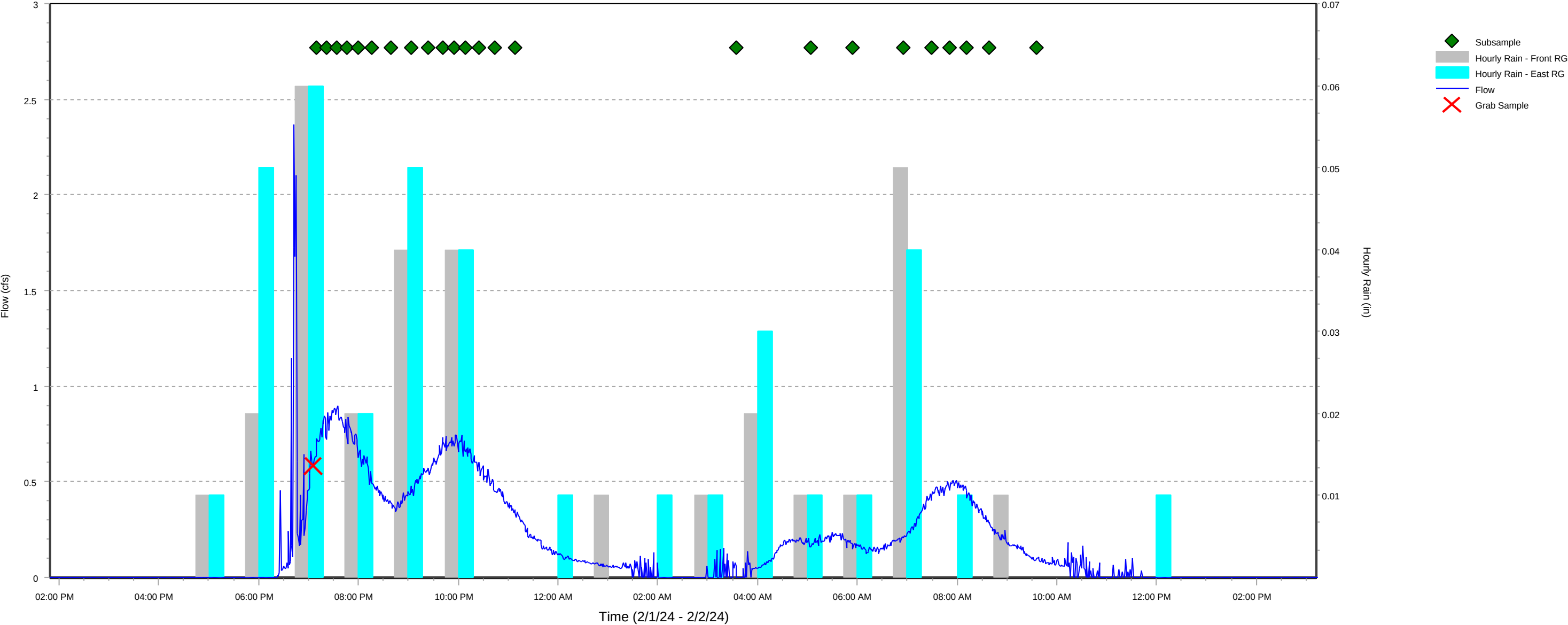
Main Hydrograph



Americana Hydrograph



AS_6 Hydrograph



Attachment C: Field Forms

Grab Sample Data Form

STATION: Lucky 1800
 Personnel: Tim / Chad Date/Time On-Site: 1800 2/1/24

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1807	1.96"	2.55	.06	12.8	2/1/24 1800	

Grab Information				
	Sample ID	Date	Time	Labeled?
Site E.Coli	240201-03 -WG	2/1/24	1825	☒
Field Duplicate E.Coli	240201-03 -101	2/1/24	1830	☒
Field Blank E.Coli	240201-03 -001	2/1/24	1830	☒

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
1019508	1819	14.62	4.92	7.15	593.29

MP11

Sampler Current Status	
First Subsample Date/Time	
Last Subsample Date/Time	
# of Subsamples taken	0/0

Comments:

Grab Sample Data Form

STATION: White Water

Personnel: Chad Tim Date/Time On-Site: 2/1/24 1846

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1846	2.79	.27	0.67	—		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site E.Coli	24020111 -WG	2/1/24	1859	☒
Field Duplicate E.Coli	-101			☐
Field Blank E.Coli	-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
1019508 MP11	1855	11.10	8.42	7.60	287.02

Sampler Current Status	
First Subsample Date/Time	05/28 2/1/24 1337
Last Subsample Date/Time	2/1/24 1904
# of Subsamples taken	6

Comments:

Grab Sample Data Form

STATION: Main

Personnel: MB, KC Date/Time On-Site: 1804 2/1/24

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1804	3.17"	79.57	0.64	12.7		

Grab Information					
	Sample ID		Date	Time	Labeled?
Site <i>E. Coli</i>	240201-12	-WG	2/1/24	1815	☒
Field Duplicate <i>E. Coli</i>	240201-12	-101	2/1/24	1818	☒
Field Blank <i>E. Coli</i>	240201-12	-001	2/1/24	1812	☒

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP07	1819	6.3	10.11	8.03	353.6

Sampler Current Status	
First Subsample Date/Time	NA
Last Subsample Date/Time	
# of Subsamples taken	NA

Comments:

main - alternate QC site. lucky grab QC successful, so main QC discarded and not submitted to lab. wh

Grab Sample Data Form

STATION: Americana

03/01/2024

Personnel: MB, VC

Date/Time On-Site: 1835

~~020724~~ 03/01/24

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1835	8.54	3.29	2.172	12.1		

Grab Information					
	Sample ID	Date	Time	Labeled?	
Site <i>E.Coli</i>	24020514 -WG	2/1/24	1841	☒	
Field Duplicate <i>E.Coli</i>	-101			☐	
Field Blank <i>E.Coli</i>	-001			☐	

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP07	1845	8.34	10.05	7.73	552.2

Sampler Current Status	
First Subsample Date/Time	1811 03/01/24
Last Subsample Date/Time	
# of Subsamples taken	1

Comments:

Offsite @ 1850

Grab Sample Data Form

STATION: AS-6

Personnel: MB-KC Date/Time On-Site: 02/01/2024 1855

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1911	4.67	0.71	1.76	12.5		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site <i>E. Coli</i>	240201-20 -WG	02/01/2024	1900	☒
Field Duplicate <i>E. Coli</i>	-101			☐
Field Blank <i>E. Coli</i>	-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MPO7	1910	5.55	9.33	8.03	540.9

Sampler Current Status	
First Subsample Date/Time	1846 02/01/24
Last Subsample Date/Time	1909 02/01/24
# of Subsamples taken	2 (1 missed)

Comments:

missed sample #
 first sub sample had rinse error
 cleaned leaves of rinse tubing
 offsite @ 1913

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

STATION: Lucky

SET UP

Personnel: MB, SJ, TA, JC, KC

Date/Time: Jan 31, 24 11:00

On-Site: Jan 31, 24 11:00

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
11:00	1.00	0.00	0.00	13.0
11:31	1.08	0.00/min	0.00	13.0
Enable Condition or Velocity Cutoff:			2.00	2.08" (ML)
Deadband:			1"	
Trigger Volume:			7899 gal	

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments:

liquid detection sensor knob keeps falling off

SHUT DOWN

Personnel: ST

Date/Time

On-Site: 2/5/24 12:28

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
12:30	1.74	0.00	0.00		12.3
Downloaded to:		Stevens USB			

If flow monitoring is complete:

- ☒ Halt program on flowmeter
- ☒ Download flowmeter data
- ☒ Remove flowmeter battery

If continuing to monitor flow:

- ☐ Replace flowmeter battery
- ☐ Reset logging interval to 15 minutes
- ☐ Change velocity cutoff to 0.02 fps
- ☐ Start program
- ☐ Verify running

Comments:

Composite Sample Collection

STATION: Lucky
 Personnel: KC, SP

Bottle 1 of 1
 Date/Time On-Site: 2/1/24 2032

☒ Halt sampler program
☒ Put lid on sample bottle; label sample bottle
Sample ID: <u>240201-03</u> , -WC
Approx Sample Volume (mL): <u>7250 ml</u>
Clarity (ex. Clear, Cloudy, Silty): <u>clear</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>Tan</u>
QA/QC Sample ID: _____ -103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	2/1/24 1942	Success	13	0926	1
2	2/1/24 2007		14		
3	2039		15		
4	2059		16		
5	2114		17		
6	2130		18		
7	2148		19		
8	2209		20		
9	2242		21		
10	2/2/24 2:0104		22		
11	0502		23		
12	0734		24		

Comments:

If sampling is complete: ☒ Power off sampler, if separate from flowmeter ☒ Keep flowmeter running ☒ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☐ Keep flowmeter running ☐ Install new 15L bottle, add ice ☐ Restart program from beginning Date/Time Restarted: _____ ☐ Verify running
--	---

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Set Up/ Shut Down Form – ISCO (Whitewater, Americana, State)

TATION: White water

SET UP

Personnel: ST, MB, TA, ST, KC

Date/Time

On-Site: 1/31/24 11:53

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
11:53	1.52	0.11	0.063	—
Enable Condition:		2.55		
Hysteresis:		1		
Flow Pulse Interval:		218.5		

On-Site

- ☒ Replace flowmeter battery, install sampler battery
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Set sampler program parameters
- ☒ Check date/time on sampler
- ☒ Verify all cable and tubing connections
- ☒ Verify sampler program is running

Flowlink (Refer to PG 411 or PG 412, if needed)

- ☒ Direct or Remote; Date/time 1/31/24 11:57
- ☒ Retrieve data and review recent flow history
- ☒ Change Wireless Power Control to Storm Event
- ☒ Change Data Storage Rates to 1 minute for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: On Trigger, and set Sampler Enable equation
- ☒ Set Sampler Pacing to Flow Paced, and set trigger volume

Comments:

Time off site 12:22

SHUT DOWN

Personnel: ST

Date/Time

On-Site: 2/5/24 13:13

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
13:13	1.84	0.03	0.14	—
Downloaded to:		Sitewens USB		

On-Site

- ☐ Replace flowmeter battery
- ☐ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☒ Direct or Remote; Date/time 2/5 13:14
- ☒ Retrieve data
- ☒ Change Wireless Power Control to Dry Weather
- ☒ Change Data Storage Rates to 15 minutes for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: Never

Comments:

Composite Sample Collection

STATION: upstream
Personnel: VC, ST

Bottle 1 of 2

Date/Time On-Site: _____

☒ Halt sampler program
☒ Put lid on sample bottle; label sample bottle
Sample ID: <u>240201-11-10-VC</u> -WC
Approx Sample Volume (mL): <u>12500</u>
Clarity (ex. Clear, Cloudy, Silty): <u>Cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>Brown</u>
QA/QC Sample ID: <u>240201-11</u> -103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	1/1/24 1337	Success	13	1654	
2	1 1904		14	1713	
3	1/2/24 0028		15	1731	
4	552		16	1749	
5	1122		17	1802	
6	1513		18	1814	
7	1536		19	1826	
8	1548		20	1839	
9	1551		21	1853	
10	1610		22	1909	
11	1622		23	1930	
12	1637		24	1958	

Comments: Samples taken successfully. Timing does not make sense
Collected subsample times from flowmeter to submit to lab,
Actual begin time: 2/1/24 4:16 - 2/1/24 2346

Post storm determined FM+SA not sync'd for time during setup. WV

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☒ Keep flowmeter running ☒ Install new 15L bottle; add ice ☒ Restart program from beginning - Date/Time Restarted: <u>2/2/24 0004</u> ☒ Verify running
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Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: Whitewater
 Personnel: VC, ST

Bottle 2 of 2
 Date/Time On-Site: 2/2/24 1040

☒ Halt Sampler program
☒ Put lid on sample bottle; label sample bottle
Sample ID: <u>240201-11-</u> -WC
Approx Sample Volume (mL): <u>4500</u>
Clarity (ex. Clear, Cloudy, Silty): <u>Tan cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>Tan</u>
QA/QC Sample ID: <u>-103</u> (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	<u>2/2/24 0032</u>	<u>Success</u>	13		
2	<u>0143</u>		14		
3	<u>0338</u>		15		
4	<u>0511</u>		16		
5	<u>0602</u>		17		
6	<u>0657</u>		18		
7	<u>0736</u>		19		
8	<u>0802</u>		20		
9	<u>0823</u>		21		
10	<u>0849</u>		22		
11	<u>0922</u>		23		
12	<u>1016</u>		24		

Comments: Date/time on sampler is incorrect. Real subsample times are on the flowmeter.

Debris caught on flowmeter 2/2/24 1049

Post-storm determined Fm+SA not sync'd for time during setup. un

If sampling is complete: ☒ Power off sampler ☒ Verify flowmeter is running ☒ Add ice to sample transport cooler ☒ Complete COC form; arrange transport to lab	If continuing sampling (sample bottle change-out): ☐ Keep flowmeter running ☐ Install new 15L bottle; add ice ☐ Restart program from beginning Date/Time Restarted: _____ ☐ Verify running
--	---

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

STATION: Main

SET UP

Personnel: SJ, TA, MB, ST, KC

Date/Time

On-Site: 1/31/24 13:18

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
13:41	1.05	10.46 gpm	0.27	12.9 SJ
13:45	1.06	0.00 gpm	0.00	12.9
Enable Condition or Velocity Cutoff:			0.02 SS	2.00
Deadband:			1	
Trigger Volume:			9313	

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments:

SHUT DOWN

Personnel: ST

Date/Time

On-Site: 2/5/24 1328

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1328	0.88	0.00 gpm	0.000		12.4
Downloaded to:		Stevens USB			

If flow monitoring is complete:

- ☒ Halt program on flowmeter
- ☒ Download flowmeter data
- ☒ Remove flowmeter battery

If continuing to monitor flow:

- ☐ Replace flowmeter battery
- ☐ Reset logging interval to 15 minutes
- ☐ Change velocity cutoff to 0.02 fps
- ☐ Start program
- ☐ Verify running

Comments:

Composite Sample Collection

STATION: Main
 Personnel: ST KC

Bottle 1 of 1
 Date/Time On-Site: 2/1/24 2110

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	<u>ST 231240201-12</u> -WC
Approx Sample Volume (mL):	<u>10250 mL</u>
Clarity (ex. Clear, Cloudy, Silty):	<u>Silty, Cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black):	<u>Brown</u>
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	2/1/24 1843	Success	13	0700	
2	1903		14	0720	
3	1920		15	0757	
4	1940		16		
5	2012		17		
6	2054		18		
7	2120		19		
8	2148		20		
9	2213		21		
10	2301		22		
11	2/2/24 0401		23		
12	1 0534		24		

Comments:

If sampling is complete:

- ☒ Power off sampler, if separate from flowmeter
- ☒ Keep flowmeter running
- ☒ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):

- ☐ Keep flowmeter running
- ☐ Install new 15L bottle, add ice
- ☐ Restart program from beginning

Date/Time Restarted: _____

- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Set Up/ Shut Down Form – ISCO (Whitewater, Americana, State)

TATION: Americana

SET UP

Personnel: ST, KC, TA, MB, SJ

Date/Time

On-Site: 1/31/24 1404

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1406	5.13	1.36	1.881	12.5
Enable Condition:		6.46		
Hysteresis:		1		
Flow Pulse Interval:		8071 c/s		

On-Site

- ☒ Replace flowmeter battery, install sampler battery
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Set sampler program parameters
- ☒ Check date/time on sampler
- ☒ Verify all cable and tubing connections
- ☒ Verify sampler program is running

Flowlink (Refer to PG 411 or PG 412, if needed)

- ☒ Direct or Remote; Date/time 1/31/24 1411
- ☒ Retrieve data and review recent flow history
- ☒ Change Wireless Power Control to Storm Event
- ☒ Change Data Storage Rates to 1 minute for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: On Trigger, and set Sampler Enable equation
- ☒ Set Sampler Pacing to Flow Paced, and set trigger volume

Comments:

SHUT DOWN

Personnel: ST

Date/Time

On-Site: 2/5/24 13:55

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1356	5.58	1.54	1.885	11.82
Downloaded to:		Stevens USB		

On-Site

- ☒ Replace flowmeter battery
- ☐ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☒ Direct or Remote; Date/time 2/5 1357
- ☒ Retrieve data
- ☒ Change Wireless Power Control to Dry Weather
- ☒ Change Data Storage Rates to 15 minutes for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: Never

Comments:

Composite Sample Collection

STATION: Americana
 Personnel: ST, KC

Bottle 1 of 2
 Date/Time On-Site: 2/1/24 2123

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	<u>240201-14</u> -WC
Approx Sample Volume (mL):	<u>9500 mL</u>
Clarity (ex. Clear, Cloudy, Silty):	<u>Cloudy Silty</u>
Color (ex. Clear, Gray, Tan, Brown, Black):	<u>Brown</u>
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	<u>2/1/24 1811</u>	<u>Success</u>	13	<u>2/1/24 2209</u>	
2	<u>1845</u>		14	<u>2249</u>	
3	<u>1904</u>		15	<u>2311</u>	
4	<u>1921</u>		16	<u>2351</u>	
5	<u>1937</u>		17	<u>2424</u>	
6	<u>1953</u>		18	<u>2452</u>	
7	<u>2013</u>		19	<u>2504</u>	
8	<u>2038</u>		20		
9	<u>2103</u>		21		
10	<u>2123</u>		22		
11	<u>2144</u>		23		
12	<u>2022</u>		24		

Comments: Accidentally turned off sampler + it restarted the program. Chose to put on new bottle since we had to start program from the beginning.

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☒ Keep flowmeter running ☒ Install new 15L bottle; add ice ☒ Restart program from beginning - Date/Time Restarted: <u>2/2/24 101</u> ☒ Verify running
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Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

STATION: Americana
 Personnel: ST. ICC

Composite Sample Collection

Bottle 2 of 2
 Date/Time On-Site: 2/2/24 0940

☒ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	<u>240201-14-WC</u> -WC
Approx Sample Volume (mL):	<u>5000mL</u>
Clarity (ex. Clear, Cloudy, Silty):	<u>Cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black):	<u>Tan</u>
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	<u>2/2/24 0233</u>	<u>Success</u>	13		
2	<u>0334</u>		14		
3	<u>0423</u>		15		
4	<u>0457</u>		16		
5	<u>0538</u>		17		
6	<u>0627</u>		18		
7	<u>0702</u>		19		
8	<u>0724</u>		20		
9	<u>0746</u>		21		
10	<u>0812</u>		22		
11	<u>0848</u>		23		
12	<u>0936</u>		24		

Comments:

If sampling is complete: ☒ Power off sampler, if separate from flowmeter ☒ Keep flowmeter running ☒ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☐ Keep flowmeter running ☐ Install new 15L bottle; add ice ☐ Restart program from beginning Date/Time Restarted: _____ ☐ Verify running
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Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

STATION: AS_6

SET UP

Personnel: SJ, TAM, ST, KL

Date/Time
On-Site: 1/31/24 1454

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1503	0.0	0.0	0.0	12.4
Enable Condition or Velocity Cutoff:			0.02	
Deadband:			1	
Trigger Volume:			6.02 601cf	

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments: Time off site: 1512

SHUT DOWN

Personnel: ST

Date/Time
On-Site: 2/6/24 0941

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
0943	0.000	0.00	0.00	88302	11.3
Downloaded to:		Rugged6			

If flow monitoring is complete:

- ☒ Halt program on flowmeter
- ☒ Download flowmeter data
- ☒ Remove flowmeter battery

If continuing to monitor flow:

- ☐ Replace flowmeter battery
- ☐ Reset logging interval to 15 minutes
- ☐ Change velocity cutoff to 0.02 fps
- ☐ Start program
- ☐ Verify running

Comments:

Composite Sample Collection

STATION: AS-6
Personnel: KC, ST

Bottle 1 of 2

Date/Time On-Site: _____

☒ Halt sampler program
☒ Put lid on sample bottle; label sample bottle
Sample ID: <u>240201-206</u> -WC
Approx Sample Volume (mL): <u>19400</u>
Clarity (ex. Clear, Cloudy, Silty): <u>Cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>Brown</u>
QA/QC Sample ID: _____ -103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	21/64 1846	Rinse error	13	21/64 2209	Success
2	1909	Success	14	2225	
3	1922		15	2244	
4	1934		16	2308	
5	1946		17	2353	diagnostic error
6	2000		18		
7	2016		19		
8	2039		20		
9	2104		21		
10	2124		22		
11	2141		23		
12	2155		24		

Comments: Bottle completely full to rim. New bottle installed & program restarted.

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☒ Keep flowmeter running ☒ Install new 15L bottle, add ice ☒ Restart program from beginning - Date/Time Restarted: <u>2/2/24 0635</u> ☒ Verify running
--	--

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

15"

Composite Sample Collection

STATION: AS-6
 Personnel: KC, ST

Bottle 2 of 2
 Date/Time On-Site: 2/2/24 1005

☒ Halt sampler program
☒ Put lid on sample bottle; label sample bottle
Sample ID: <u>240201-206</u> -WC
Approx Sample Volume (mL): <u>5000 ml</u>
Clarity (ex. Clear, Cloudy, Silty): <u>Cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>Tan</u>
QA/QC Sample ID: _____ -103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	<u>2/2/24 0835</u>	<u>Success</u>	13		
2	<u>0904</u>		14		
3	<u>0554</u>		15		
4	<u>0606</u>		16		
5	<u>0729</u>		17		
6	<u>0751</u>		18		
7	<u>0812</u>		19		
8	<u>0839</u>		20		
9	<u>0936</u>		21		
10			22		
11			23		
12			24		

Comments:

If sampling is complete: ☒ Power off sampler, if separate from flowmeter ☒ Keep flowmeter running ☒ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☐ Keep flowmeter running ☐ Install new 15L bottle; add ice ☐ Restart program from beginning Date/Time Restarted: _____ ☐ Verify running
--	---

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Attachment D: Storm Event Analytical Reports

Report Date: 02/12/2024 16:32



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00327-01	ACST1B	240201-03-WG	Water		02/01/2024	02/02/2024
AC00327-02	ACST1B	240201-03-101	Water		02/01/2024	02/02/2024
AC00327-03	ACST1B	240201-03-001	Water		02/01/2024	02/02/2024
AC00327-04	ACST1B	240201-11-WG	Water		02/01/2024	02/02/2024
AC00327-05	ACST1B	240201-12-WG	Water		02/01/2024	02/02/2024
AC00327-06	ACST1B	240201-14-WG	Water		02/01/2024	02/02/2024
AC00327-07	ACST1B	240201-206-WG	Water		02/01/2024	02/02/2024

Report Date: 02/12/2024 16:32



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location: ACST1B
Date/Time Collected: 02/01/2024 18:25
Lab Number: AC00327-01
Sample Type: Grab

Location Description: 240201-03-WG
Sample Collector: T.A
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method Reference	Prepared	Analyzed	Analyst		
				MDL *	MDL				Initials	Qualifier	
Microbiology											
E. Coli	B240390	<1.0MPN/100 mL		1.0	1.0	IDEXX - Colilert	02/02/24 06:23	2/3/24 8:23	MEC	H U	
Wet Chemistry											
Chlorine Screen	B240392	Absent				SM 4500-CL G-2000 mod	02/02/24	2/2/24 7:05	LRF		

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 02/12/2024 16:32



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Analysis Report

Location: ACST1B
Date/Time Collected: 02/01/2024 12:00
Lab Number: AC00327-02
Sample Type: Grab

Location Description: 240201-03-101
Sample Collector: T.A
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method Reference	Prepared	Analyzed	Analyst		
				MDL *	MDL				Initials	Qualifier	
Microbiology											
E. Coli	B240390	2.0MPN/100 mL		1.0	1.0	IDEXX - Colilert	02/02/24 07:23	2/3/24 8:23	MEC	H	
Wet Chemistry											
Chlorine Screen	B240392	Absent				SM 4500-CL G-2000 mod	02/02/24	2/2/24 7:18	LRF		

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Report Date: 02/12/2024 16:32



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Analysis Report

Location: ACST1B
Date/Time Collected: 02/01/2024 12:00
Lab Number: AC00327-03
Sample Type: Grab

Location Description: 240201-03-001
Sample Collector: T.A
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method		Prepared	Analyzed	Analyst	
				MDL *	MDL	Reference				Initials	Qualifier
Microbiology											
E. Coli	B240390	<1.0MPN/100 mL		1.0	1.0	IDEXX - Colilert		02/02/24 07:23	2/3/24 8:23	MEC	H U
Wet Chemistry											
Chlorine Screen	B240392	Absent				SM 4500-CL G-2000 mod		02/02/24	2/2/24 7:18	LRF	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 02/12/2024 16:32



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Analysis Report

Location: ACST1B
Date/Time Collected: 02/01/2024 18:59
Lab Number: AC00327-04
Sample Type: Grab

Location Description: 240201-11-WG
Sample Collector: C.S
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method Reference	Prepared	Analyzed	Analyst		
				MDL *	MDL				Initials	Qualifier	
Microbiology											
E. Coli	B240390	68.9MPN/100 mL		1.0	1.0	IDEXX - Colilert	02/02/24 06:34	2/3/24 8:23	MEC	H	
Wet Chemistry											
Chlorine Screen	B240392	Absent				SM 4500-CL G-2000 mod	02/02/24	2/2/24 7:09	LRF		

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Report Date: 02/12/2024 16:32



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Analysis Report

Location: ACST1B
Date/Time Collected: 02/01/2024 18:15
Lab Number: AC00327-05
Sample Type: Grab

Location Description: 240201-12-WG
Sample Collector: K.C
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method		Prepared	Analyzed	Analyst	
				MDL *	MDL	Reference				Initials	Qualifier
Microbiology											
E. Coli	B240390	238.2 MPN/100 mL		1.0	1.0	IDEXX - Colilert		02/02/24 06:10	2/3/24 8:23	MEC	H
Wet Chemistry											
Chlorine Screen	B240392	Absent				SM 4500-CL G-2000 mod		02/02/24	2/2/24 7:05	LRF	

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Report Date: 02/12/2024 16:32



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Analysis Report

Location: ACST1B
Date/Time Collected: 02/01/2024 18:41
Lab Number: AC00327-06
Sample Type: Grab

Location Description: 240201-14-WG
Sample Collector: M.B
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method	Prepared	Analyzed	Analyst		
				MDL *	MDL	Reference			Initials	Qualifier	
Microbiology											
E. Coli	B240390	65.0MPN/100 mL		1.0	1.0	IDEXX - Colilert	02/02/24 06:28	2/3/24 8:23	MEC	H	
Wet Chemistry											
Chlorine Screen	B240392	Absent				SM 4500-CL G-2000 mod	02/02/24	2/2/24 7:05	LRF		

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Report Date: 02/12/2024 16:32



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Analysis Report

Location: ACST1B
Date/Time Collected: 02/01/2024 19:06
Lab Number: AC00327-07
Sample Type: Grab

Location Description: 240201-206-WG
Sample Collector: K.C
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method Reference	Prepared	Analyzed	Analyst		
				MDL *	MDL				Initials	Qualifier	
Microbiology											
E. Coli	B240390	290.9 MPN/100 mL		1.0	1.0	IDEXX - Colilert	02/02/24 06:58	2/3/24 8:23	MEC	H	
Wet Chemistry											
Chlorine Screen	B240392	Absent				SM 4500-CL G-2000 mod	02/02/24	2/2/24 7:09	LRF		

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Report Date: 02/12/2024 16:32



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Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Microbiology									
Batch: B240390									
Blank (B240390-BLK1)									
E. Coli	Absent						02/03/2024	MEC	
LCS (B240390-BS1)									
E. Coli				Present			02/03/2024	MEC	
Duplicate (B240390-DUP1) Source ID: AC00327-07									
E. Coli					Pass	128	02/03/2024	MEC	



Notes and Definitions

Item	Definition
H	Hold time Exceeded.
U	Analyte included in the analysis, but not detected

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846


Janet Finegan-Kelly
Water Quality Laboratory Manager


Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714-6418
Tel. (208) 387-6269
Fax (208) 387-6391
Purchase Order:
Project:
Sampler(s):

63065628
Stormwater-PI
Kristen Chisholm
Chad Schwend
Tim Anderson
Michael Bule

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix	Type	BOD ₅ - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coll - IDEXX Colliert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO ₃ +NO ₂ - EPA 353.2	NH ₃ - SM 4500 NH ₃ -D	Total Containers
AC00327																								
-01	2/1/24		1825		240201-03-WG	TA	X	X										X						1
-02	2/1/24		1200		240201-03-101	TA	X	X										X						1
-03	2/1/24		1200		240201-03-001	TA	X	X										X						1
-04	2/1/24		1859		240201-11- 400 WG	CS	X	X										X						1
-05	2/1/24		1815		240201-12-WG	KC	X	X										X						1
-06	2/1/24		1841		240201-14-WG	MB	X	X										X						1
-07	2/1/24		1906		240201-206-WG	KC	X	X										X						1

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
<i>Kristen Chisholm</i>	2/1/2024 1957	<i>Chad Schwend</i> 2/1/24 1957	
<i>Chad Schwend</i>	2/1/2024 2032	<i>Tim Anderson</i> 2-2-24 0601	

Revised Report



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
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Telephone (208) 608-7240
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Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00329-01	ACST1C	240201-12-WC	Water		02/02/2024	02/02/2024
AC00329-02	ACST1C	240201-14-WC	Water		02/02/2024	02/02/2024
AC00329-03	ACST1C	240201-206-WC	Water		02/02/2024	02/02/2024
AC00329-04	ACST1C	240201-03-WC	Water		02/02/2024	02/02/2024
AC00329-05	ACST1C	240201-11-WC	Water		02/02/2024	02/02/2024
AC00329-06	ACST1C	240201-11-103	Water		02/02/2024	02/02/2024

Revised Report



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
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Analysis Report

Location: ACST1C

Location Description: 240201-12-WC

Date/Time Collected: 02/01/2024 18:43 - 02/02/2024 07:57

Lab Number: AC00329-01

Sample Collector: S.T

Sample Type: Composite

Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240477	351		35.0	35.0	SM 4500-NH3 D-2011	02/09/24	2/9/24 9:02	ALN	
BOD5	B240404	5.74	mg/L	2.00	2.00	SM 5210 B-2016	02/03/24	2/8/24 9:58	ASE	
Chloride	B240518	12.7	mg/L	0.0800	0.0800	EPA 300.0, Rev. 2.1 (1993)	02/12/24	2/12/24 17:58	BAK	
COD	B240401	77.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/03/24	2/3/24 10:18	RKT	
Nitrate-Nitrite, as N	B240479	0.209	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/09/24	2/9/24 11:13	RKT	
TKN	B240548	1.12	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	02/15/24	2/16/24 9:56	JAL	
Total Dissolved Solids	B240407	64.2	mg/L	20.0	20.0	SM 2540 C-2015	02/02/24	2/6/24 11:51	ASE	
Total Suspended Solids	B240408	59.8	mg/L	0.900	0.900	SM 2540 D-2015	02/04/24	2/4/24 12:48	CLH	
Turbidity	B240400	103	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	02/02/24	2/2/24 13:26	LRF	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B240398	0.0557	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/02/24	2/2/24 14:25	RKT	
Total Metals										
Mercury	B240440	0.0112	ug/L	0.0100	0.0100	EPA 245.1	02/07/24	2/8/24 8:20	SAS	
Arsenic	B240405	1.4	ug/L	0.070	0.070	EPA 200.8	02/04/24	2/8/24 13:37	DMW	
Cadmium	B240405	0.066	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:37	DMW	
Calcium	B240429	4.17	mg/L	0.0400	0.0400	EPA 200.7	02/06/24	2/8/24 11:51	AMO	
Lead	B240405	4.1	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:37	DMW	
Magnesium	B240429	1930	ug/L	80.0	80.0	EPA 200.7	02/06/24	2/8/24 11:51	AMO	
Phosphorus as P	B240429	0.143	mg/L	0.0120	0.0120	EPA 200.7	02/06/24	2/8/24 11:51	AMO	
Hardness	B240429	18.3	mg/L	0.100	0.100	SM 2340 B-2011	02/06/24	2/8/24 11:51	AMO	
Dissolved Metals										
Cadmium	B240406	0.012	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/4/24 14:36	DMW	
Copper	B240406	3.6	ug/L	0.15	0.15	EPA 200.8	02/04/24	2/4/24 14:36	DMW	
Lead	B240406	0.084	ug/L	9.00E-3	9.00E-3	EPA 200.8	02/04/24	2/4/24 14:36	DMW	
Zinc	B240406	18.4	ug/L	0.50	0.50	EPA 200.8	02/04/24	2/4/24 14:36	DMW	

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Revised Report



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
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Analysis Report

Location: ACST1C

Location Description: 240201-14-WC

Date/Time Collected: 02/01/2024 18:11 - 02/02/2024 09:36

Lab Number: AC00329-02

Sample Collector: S.T

Sample Type: Composite

Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240477	193		35.0	35.0	SM 4500-NH3 D-2011	02/09/24	2/9/24 9:10	ALN	
BOD5	B240404	6.98	mg/L	2.00	2.00	SM 5210 B-2016	02/03/24	2/8/24 9:52	ASE	
Chloride	B240518	64.1	mg/L	0.0800	0.0800	EPA 300.0, Rev. 2.1 (1993)	02/12/24	2/12/24 18:24	BAK	
COD	B240401	55.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/03/24	2/3/24 10:18	RKT	
Nitrate-Nitrite, as N	B240479	0.905	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/09/24	2/9/24 11:14	RKT	
TKN	B240548	1.05	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	02/15/24	2/16/24 10:01	JAL	
Total Dissolved Solids	B240407	224	mg/L	20.0	20.0	SM 2540 C-2015	02/02/24	2/6/24 11:52	ASE	
Total Suspended Solids	B240408	50.7	mg/L	0.900	0.900	SM 2540 D-2015	02/04/24	2/4/24 12:04	CLH	
Turbidity	B240400	89.6	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	02/02/24	2/2/24 13:47	LRF	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B240398	0.116	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/02/24	2/2/24 14:26	RKT	
Total Metals										
Mercury	B240440	<0.0100	ug/L	0.0100	0.0100	EPA 245.1	02/07/24	2/8/24 8:23	SAS	U
Arsenic	B240405	3.4	ug/L	0.070	0.070	EPA 200.8	02/04/24	2/8/24 13:47	DMW	
Cadmium	B240405	0.063	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:47	DMW	
Calcium	B240429	27.3	mg/L	0.0400	0.0400	EPA 200.7	02/06/24	2/8/24 11:54	AMO	
Lead	B240405	4.2	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:47	DMW	
Magnesium	B240429	6070	ug/L	80.0	80.0	EPA 200.7	02/06/24	2/8/24 11:54	AMO	
Phosphorus as P	B240429	0.213	mg/L	0.0120	0.0120	EPA 200.7	02/06/24	2/8/24 11:54	AMO	
Hardness	B240429	93.3	mg/L	0.100	0.100	SM 2340 B-2011	02/06/24	2/8/24 11:54	AMO	
Dissolved Metals										
Cadmium	B240406	0.016	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/4/24 14:39	DMW	
Copper	B240406	3.4	ug/L	0.15	0.15	EPA 200.8	02/04/24	2/4/24 14:39	DMW	
Lead	B240406	0.090	ug/L	9.00E-3	9.00E-3	EPA 200.8	02/04/24	2/4/24 14:39	DMW	
Zinc	B240406	17.3	ug/L	0.50	0.50	EPA 200.8	02/04/24	2/4/24 14:39	DMW	

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Revised Report



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
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Analysis Report

Location: ACST1C
Date/Time Collected: 02/01/2024 19:09 - 02/02/2024 09:36
Lab Number: AC00329-03
Sample Type: Composite

Location Description: 240201-206-WC
Sample Collector: S.T
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240477	159		35.0	35.0	SM 4500-NH3 D-2011	02/09/24	2/9/24 9:08	ALN	
BOD5	B240404	11.6	mg/L	2.00	2.00	SM 5210 B-2016	02/03/24	2/8/24 9:47	ASE	
Chloride	B240518	14.5	mg/L	0.0800	0.0800	EPA 300.0, Rev. 2.1 (1993)	02/12/24	2/12/24 19:17	BAK	
COD	B240401	108	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/03/24	2/3/24 10:18	RKT	
Nitrate-Nitrite, as N	B240479	0.191	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/09/24	2/9/24 11:15	RKT	
TKN	B240548	1.83	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	02/15/24	2/16/24 10:02	JAL	
Total Dissolved Solids	B240407	116	mg/L	20.0	20.0	SM 2540 C-2015	02/02/24	2/6/24 11:53	ASE	
Total Suspended Solids	B240408	70.3	mg/L	0.900	0.900	SM 2540 D-2015	02/04/24	2/4/24 12:49	CLH	
Turbidity	B240400	143	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	02/02/24	2/2/24 14:01	LRF	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B240398	0.285	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/02/24	2/2/24 14:27	RKT	
Total Metals										
Mercury	B240440	0.0168	ug/L	0.0100	0.0100	EPA 245.1	02/07/24	2/8/24 8:27	SAS	
Arsenic	B240405	3.0	ug/L	0.070	0.070	EPA 200.8	02/04/24	2/8/24 13:50	DMW	
Cadmium	B240405	0.077	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:50	DMW	
Calcium	B240429	3.33	mg/L	0.0400	0.0400	EPA 200.7	02/06/24	2/8/24 11:57	AMO	
Lead	B240405	6.7	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:50	DMW	
Magnesium	B240429	2060	ug/L	80.0	80.0	EPA 200.7	02/06/24	2/8/24 11:57	AMO	
Phosphorus as P	B240429	0.464	mg/L	0.0120	0.0120	EPA 200.7	02/06/24	2/8/24 11:57	AMO	
Hardness	B240429	16.8	mg/L	0.100	0.100	SM 2340 B-2011	02/06/24	2/8/24 11:57	AMO	
Dissolved Metals										
Cadmium	B240406	0.013	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/4/24 14:48	DMW	
Copper	B240406	4.5	ug/L	0.15	0.15	EPA 200.8	02/04/24	2/4/24 14:48	DMW	
Lead	B240406	0.29	ug/L	9.00E-3	9.00E-3	EPA 200.8	02/04/24	2/4/24 14:48	DMW	
Zinc	B240406	10.5	ug/L	0.50	0.50	EPA 200.8	02/04/24	2/4/24 14:48	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Revised Report



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
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Analysis Report

Location: ACST1C

Location Description: 240201-03-WC

Date/Time Collected: 02/01/2024 19:42 - 02/02/2024 09:26

Lab Number: AC00329-04

Sample Collector: S.T

Sample Type: Composite

Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240477	173		35.0	35.0	SM 4500-NH3 D-2011	02/09/24	2/9/24 9:05	ALN	
BOD5	B240404	7.27	mg/L	2.00	2.00	SM 5210 B-2016	02/03/24	2/8/24 9:43	ASE	
Chloride	B240518	6.25	mg/L	0.0800	0.0800	EPA 300.0, Rev. 2.1 (1993)	02/12/24	2/12/24 19:43	BAK	
COD	B240401	39.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/03/24	2/3/24 10:18	RKT	
Nitrate-Nitrite, as N	B240479	0.204	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/09/24	2/9/24 11:16	RKT	
TKN	B240548	0.894	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	02/15/24	2/16/24 10:03	JAL	
Total Dissolved Solids	B240407	52.8	mg/L	20.0	20.0	SM 2540 C-2015	02/04/24	2/6/24 11:55	ASE	
Total Suspended Solids	B240408	18.8	mg/L	0.900	0.900	SM 2540 D-2015	02/04/24	2/4/24 13:41	CLH	
Turbidity	B240400	60.5	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	02/02/24	2/2/24 13:33	LRF	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B240398	0.100	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/02/24	2/2/24 14:28	RKT	
Total Metals										
Mercury	B240440	<0.0100	ug/L	0.0100	0.0100	EPA 245.1	02/07/24	2/8/24 7:41	SAS	U
Arsenic	B240405	0.85	ug/L	0.070	0.070	EPA 200.8	02/04/24	2/8/24 13:52	DMW	
Cadmium	B240405	0.024	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:52	DMW	
Calcium	B240429	4.01	mg/L	0.0400	0.0400	EPA 200.7	02/06/24	2/8/24 12:00	AMO	
Lead	B240405	0.82	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:52	DMW	
Magnesium	B240429	1460	ug/L	80.0	80.0	EPA 200.7	02/06/24	2/8/24 12:00	AMO	
Phosphorus as P	B240429	0.174	mg/L	0.0120	0.0120	EPA 200.7	02/06/24	2/8/24 12:00	AMO	
Hardness	B240429	16.0	mg/L	0.100	0.100	SM 2340 B-2011	02/06/24	2/8/24 12:00	AMO	
Dissolved Metals										
Cadmium	B240406	<0.0100	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/4/24 14:51	DMW	U
Copper	B240406	2.0	ug/L	0.15	0.15	EPA 200.8	02/04/24	2/4/24 14:51	DMW	
Lead	B240406	0.056	ug/L	9.00E-3	9.00E-3	EPA 200.8	02/04/24	2/4/24 14:51	DMW	
Zinc	B240406	17.5	ug/L	0.50	0.50	EPA 200.8	02/04/24	2/4/24 14:51	DMW	

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Revised Report



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
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Analysis Report

Location: ACST1C

Location Description: 240201-11-WC

Date/Time Collected: 02/01/2024 04:16 - 02/02/2024 10:16

Lab Number: AC00329-05

Sample Collector: S.T

Sample Type: Composite

Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240477	169		35.0	35.0	SM 4500-NH3 D-2011	02/09/24	2/9/24 9:39	ALN	
BOD5	B240404	9.34	mg/L	2.00	2.00	SM 5210 B-2016	02/03/24	2/8/24 9:37	ASE	
Chloride	B240518	35.6	mg/L	0.0800	0.0800	EPA 300.0, Rev. 2.1 (1993)	02/12/24	2/12/24 20:10	BAK	
COD	B240401	82.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/03/24	2/3/24 10:18	RKT	
Nitrate-Nitrite, as N	B240479	0.375	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/09/24	2/9/24 11:17	RKT	
TKN	B240548	1.33	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	02/15/24	2/16/24 10:04	JAL	
Total Dissolved Solids	B240407	139	mg/L	20.0	20.0	SM 2540 C-2015	02/02/24	2/6/24 11:56	ASE	
Total Suspended Solids	B240408	58.4	mg/L	0.900	0.900	SM 2540 D-2015	02/04/24	2/4/24 12:51	CLH	
Turbidity	B240400	106	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	02/02/24	2/2/24 14:08	LRF	D

Dissolved Wet Chemistry

Orthophosphate, as P	B240398	0.171	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/02/24	2/2/24 14:30	RKT	
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Total Metals

Mercury	B240440	0.0148	ug/L	0.0100	0.0100	EPA 245.1	02/07/24	2/8/24 8:30	SAS	
Arsenic	B240405	2.4	ug/L	0.070	0.070	EPA 200.8	02/04/24	2/8/24 13:54	DMW	
Cadmium	B240405	0.058	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:54	DMW	
Calcium	B240429	10.0	mg/L	0.0400	0.0400	EPA 200.7	02/06/24	2/8/24 12:03	AMO	
Lead	B240405	4.8	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:54	DMW	
Magnesium	B240429	4370	ug/L	80.0	80.0	EPA 200.7	02/06/24	2/8/24 12:03	AMO	
Phosphorus as P	B240429	0.321	mg/L	0.0120	0.0120	EPA 200.7	02/06/24	2/8/24 12:03	AMO	
Hardness	B240429	43.0	mg/L	0.100	0.100	SM 2340 B-2011	02/06/24	2/8/24 12:03	AMO	

Dissolved Metals

Cadmium	B240406	<0.0100	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/4/24 14:53	DMW	U
Copper	B240406	3.9	ug/L	0.15	0.15	EPA 200.8	02/04/24	2/4/24 14:53	DMW	
Lead	B240406	0.18	ug/L	9.00E-3	9.00E-3	EPA 200.8	02/04/24	2/4/24 14:53	DMW	
Zinc	B240406	25.7	ug/L	0.50	0.50	EPA 200.8	02/04/24	2/4/24 14:53	DMW	

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Revised Report



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
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Analysis Report

Location: ACST1C
Date/Time Collected: 02/02/2024 04:16 - 02/02/2024 10:16
Lab Number: AC00329-06
Sample Type: Composite

Location Description: 240201-11-103
Sample Collector: S.T
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240477	170		35.0	35.0	SM 4500-NH3 D-2011	02/09/24	2/9/24 9:36	ALN	
BOD5	B240404	8.90	mg/L	2.00	2.00	SM 5210 B-2016	02/03/24	2/8/24 9:34	ASE	
Chloride	B240518	35.6	mg/L	0.0800	0.0800	EPA 300.0, Rev. 2.1 (1993)	02/12/24	2/12/24 20:36	BAK	
COD	B240401	83.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/03/24	2/3/24 10:18	RKT	
Nitrate-Nitrite, as N	B240479	0.378	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/09/24	2/9/24 11:19	RKT	
TKN	B240548	1.35	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	02/15/24	2/16/24 10:06	JAL	
Total Dissolved Solids	B240407	140	mg/L	20.0	20.0	SM 2540 C-2015	02/02/24	2/6/24 11:57	ASE	
Total Suspended Solids	B240408	53.8	mg/L	0.900	0.900	SM 2540 D-2015	02/04/24	2/4/24 12:48	CLH	
Turbidity	B240400	113	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	02/02/24	2/2/24 14:16	LRF	D

Dissolved Wet Chemistry

Orthophosphate, as P	B240398	0.172	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/02/24	2/2/24 14:31	RKT	
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Total Metals

Mercury	B240440	0.0127	ug/L	0.0100	0.0100	EPA 245.1	02/07/24	2/8/24 8:34	SAS	
Arsenic	B240405	2.4	ug/L	0.070	0.070	EPA 200.8	02/04/24	2/8/24 13:57	DMW	
Cadmium	B240405	0.052	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:57	DMW	
Calcium	B240429	9.88	mg/L	0.0400	0.0400	EPA 200.7	02/06/24	2/8/24 12:06	AMO	
Lead	B240405	4.9	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:57	DMW	
Magnesium	B240429	4290	ug/L	80.0	80.0	EPA 200.7	02/06/24	2/8/24 12:06	AMO	
Phosphorus as P	B240429	0.312	mg/L	0.0120	0.0120	EPA 200.7	02/06/24	2/8/24 12:06	AMO	
Hardness	B240429	42.4	mg/L	0.100	0.100	SM 2340 B-2011	02/06/24	2/8/24 12:06	AMO	

Dissolved Metals

Cadmium	B240406	0.011	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/4/24 14:56	DMW	
Copper	B240406	3.7	ug/L	0.15	0.15	EPA 200.8	02/04/24	2/4/24 14:56	DMW	
Lead	B240406	0.19	ug/L	9.00E-3	9.00E-3	EPA 200.8	02/04/24	2/4/24 14:56	DMW	
Zinc	B240406	26.6	ug/L	0.50	0.50	EPA 200.8	02/04/24	2/4/24 14:56	DMW	

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Revised Report



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
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Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry									
Batch: B240400									
Blank (B240400-BLK1)									
Turbidity	<0.3	NTU					02/02/2024	LRF	U
LCS (B240400-BS1)									
Turbidity			99.5	90-110			02/02/2024	LRF	
Duplicate (B240400-DUP1)	Source ID: AC00329-02								
Turbidity					9.90	25	02/02/2024	LRF	D
Batch: B240401									
Blank (B240401-BLK1)									
COD	<7	mg/L					02/03/2024	RKT	U
LCS (B240401-BS1)									
COD			95.7	90-110			02/03/2024	RKT	
Duplicate (B240401-DUP1)	Source ID: AC00330-01								
COD					0.00	10	02/03/2024	RKT	
Batch: B240404									
Blank (B240404-BLK1)									
BOD5	<2	mg/L					02/08/2024	ASE	U
LCS (B240404-BS1)									
BOD5			107	84.6-115.4			02/08/2024	ASE	
LCS (B240404-BS2)									
BOD5			100	84.6-115.4			02/08/2024	ASE	
Duplicate (B240404-DUP1)	Source ID: BB03562-02								
BOD5					3.49	30	02/08/2024	ASE	D
Batch: B240407									
Blank (B240407-BLK1)									
Total Dissolved Solids	<20	mg/L					02/06/2024	ASE	U
LCS (B240407-BS1)									
Total Dissolved Solids			92.4	90-110			02/06/2024	ASE	
Duplicate (B240407-DUP1)	Source ID: AC00330-01								
Total Dissolved Solids					1.35	10	02/06/2024	ASE	

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Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240408									
Blank (B240408-BLK1)									
Total Suspended Solids	<0.9	mg/L					02/04/2024	CLH	U
LCS (B240408-BS1)									
Total Suspended Solids			97.1	90-110			02/04/2024	CLH	
Duplicate (B240408-DUP1) Source ID: AC00330-01									
Total Suspended Solids					5.76	20	02/04/2024	CLH	
Duplicate (B240408-DUP2) Source ID: BB03562-01									
Total Suspended Solids					3.48	20	02/04/2024	CLH	
Batch: B240477									
Blank (B240477-BLK1)									
Ammonia, as N	<35	ug/L					02/09/2024	ALN	U
Blank (B240477-BLK2)									
Ammonia, as N	<35	ug/L					02/09/2024	ALN	U
LCS (B240477-BS1)									
Ammonia, as N			101	90-110			02/09/2024	ALN	
LCS (B240477-BS2)									
Ammonia, as N			103	90-110			02/09/2024	ALN	
Duplicate (B240477-DUP1) Source ID: BB03559-02									
Ammonia, as N					1.51	10	02/09/2024	ALN	
Duplicate (B240477-DUP2) Source ID: LS01853-02									
Ammonia, as N					0.108	10	02/09/2024	ALN	
Duplicate (B240477-DUP3) Source ID: BB03578-01									
Ammonia, as N					0.524	10	02/09/2024	ALN	
Duplicate (B240477-DUP4) Source ID: BB03570-04									
Ammonia, as N					0.00	10	02/09/2024	ALN	
Matrix Spike (B240477-MS1) Source ID: BB03559-02									
Ammonia, as N			106	80-120			02/09/2024	ALN	
Matrix Spike (B240477-MS2) Source ID: LS01853-02									
Ammonia, as N			106	80-120			02/09/2024	ALN	
Matrix Spike (B240477-MS3) Source ID: BB03578-01									
Ammonia, as N			103	80-120			02/09/2024	ALN	
Matrix Spike (B240477-MS4) Source ID: BB03570-04									
Ammonia, as N			102	80-120			02/09/2024	ALN	
Matrix Spike Dup (B240477-MSD1) Source ID: BB03559-02									
Ammonia, as N			104	80-120	1.15	10	02/09/2024	ALN	
Matrix Spike Dup (B240477-MSD2) Source ID: LS01853-02									
Ammonia, as N			107	80-120	0.685	10	02/09/2024	ALN	
Matrix Spike Dup (B240477-MSD3) Source ID: BB03578-01									
Ammonia, as N			106	80-120	2.14	10	02/09/2024	ALN	

Revised Report



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Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240477 (Continued)									
Matrix Spike Dup (B240477-MSD4) Ammonia, as N	Source ID: BB03570-04		103	80-120	0.553	10	02/09/2024	ALN	
Batch: B240479									
Blank (B240479-BLK1) Nitrate-Nitrite, as N	<0.025	mg/L					02/09/2024	RKT	U
Blank (B240479-BLK2) Nitrate-Nitrite, as N	<0.025	mg/L					02/09/2024	RKT	U
Blank (B240479-BLK3) Nitrate-Nitrite, as N	<0.025	mg/L					02/09/2024	RKT	U
LCS (B240479-BS1) Nitrate-Nitrite, as N			99.7	90-110			02/09/2024	RKT	
LCS (B240479-BS2) Nitrate-Nitrite, as N			98.9	90-110			02/09/2024	RKT	
LCS (B240479-BS3) Nitrate-Nitrite, as N			97.7	90-110			02/09/2024	RKT	
Duplicate (B240479-DUP1) Nitrate-Nitrite, as N	Source ID: BB03548-02RE1				NR	10	02/09/2024	RKT	
Duplicate (B240479-DUP2) Nitrate-Nitrite, as N	Source ID: BB03578-04				2.93	10	02/09/2024	RKT	
Duplicate (B240479-DUP3) Nitrate-Nitrite, as N	Source ID: LS01856-02				0.191	10	02/09/2024	RKT	
Duplicate (B240479-DUP4) Nitrate-Nitrite, as N	Source ID: WB02951-06				0.252	10	02/09/2024	RKT	
Duplicate (B240479-DUP5) Nitrate-Nitrite, as N	Source ID: BB03584-01				0.814	10	02/09/2024	RKT	
Matrix Spike (B240479-MS1) Nitrate-Nitrite, as N	Source ID: BB03548-02RE1		99.2	90-110			02/09/2024	RKT	
Matrix Spike (B240479-MS2) Nitrate-Nitrite, as N	Source ID: BB03578-04		95.4	90-110			02/09/2024	RKT	
Matrix Spike (B240479-MS3) Nitrate-Nitrite, as N	Source ID: LS01856-02		96.4	90-110			02/09/2024	RKT	
Matrix Spike (B240479-MS4) Nitrate-Nitrite, as N	Source ID: WB02951-06		96.5	90-110			02/09/2024	RKT	
Matrix Spike (B240479-MS5) Nitrate-Nitrite, as N	Source ID: BB03584-01		98.3	90-110			02/09/2024	RKT	
Matrix Spike Dup (B240479-MSD1) Nitrate-Nitrite, as N	Source ID: BB03548-02RE1		97.8	90-110	1.46	10	02/09/2024	RKT	
Matrix Spike Dup (B240479-MSD2) Nitrate-Nitrite, as N	Source ID: BB03578-04		94.6	90-110	0.730	10	02/09/2024	RKT	

Revised Report



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Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240479 (Continued)									
Matrix Spike Dup (B240479-MSD3) Nitrate-Nitrite, as N	Source ID: LS01856-02		98.1	90-110	0.886	10	02/09/2024	RKT	
Matrix Spike Dup (B240479-MSD4) Nitrate-Nitrite, as N	Source ID: WB02951-06		96.3	90-110	0.0725	10	02/09/2024	RKT	
Matrix Spike Dup (B240479-MSD5) Nitrate-Nitrite, as N	Source ID: BB03584-01		98.4	90-110	0.0649	10	02/09/2024	RKT	
Batch: B240518									
Blank (B240518-BLK1) Chloride	<0.08	mg/L					02/12/2024	BAK	U
Blank (B240518-BLK2) Chloride	<0.08	mg/L					02/13/2024	BAK	U
LCS (B240518-BS1) Chloride			97.6	90-110			02/12/2024	BAK	
LCS (B240518-BS2) Chloride			98.1	90-110			02/13/2024	BAK	
LCS (B240518-BS3) Chloride			97.6	90-110			02/12/2024	BAK	
Duplicate (B240518-DUP1) Chloride	Source ID: LS01859-01				0.0260	10	02/12/2024	BAK	
Duplicate (B240518-DUP2) Chloride	Source ID: ES00298-02				0.0302	10	02/13/2024	BAK	
Duplicate (B240518-DUP3) Chloride	Source ID: LS01859-01RE1				0.0989	10	02/13/2024	BAK	D
Matrix Spike (B240518-MS1) Chloride	Source ID: LS01859-01		93.6	90-110			02/12/2024	BAK	
Matrix Spike (B240518-MS2) Chloride	Source ID: ES00298-02		96.1	90-110			02/13/2024	BAK	
Matrix Spike (B240518-MS3) Chloride	Source ID: LS01859-01RE1		97.1	90-110			02/13/2024	BAK	D
Matrix Spike (B240518-MS4) Chloride	Source ID: AC00329-02		94.4	90-110			02/12/2024	BAK	
Matrix Spike (B240518-MS5) Chloride	Source ID: AC00329-02		94.8	90-110			02/13/2024	BAK	
Matrix Spike (B240518-MS6) Chloride	Source ID: WQ00200-05		95.5	90-110			02/13/2024	BAK	
Matrix Spike Dup (B240518-MSD1) Chloride	Source ID: LS01859-01		94.0	90-110	0.127	10	02/12/2024	BAK	
Matrix Spike Dup (B240518-MSD2) Chloride	Source ID: ES00298-02		95.7	90-110	0.192	10	02/13/2024	BAK	

Revised Report



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240518 (Continued)									
Matrix Spike Dup (B240518-MSD3) Chloride	Source ID: LS01859-01RE1		98.0	90-110	0.388	10	02/13/2024	BAK	D
Batch: B240548									
Blank (B240548-BLK1) TKN	<0.1	mg/L					02/16/2024	JAL	U
Blank (B240548-BLK2) TKN	<0.1	mg/L					02/16/2024	JAL	U
Blank (B240548-BLK3) TKN	<0.1	mg/L					02/16/2024	JAL	U
LCS (B240548-BS1) TKN			100	80-120			02/16/2024	JAL	
LCS (B240548-BS2) TKN			106	80-120			02/16/2024	JAL	
LCS (B240548-BS3) TKN			94.4	80-120			02/16/2024	JAL	
Duplicate (B240548-DUP1) TKN	Source ID: AC00329-01				0.415	20	02/16/2024	JAL	
Duplicate (B240548-DUP2) TKN	Source ID: BB03570-01				2.83	20	02/16/2024	JAL	D
Duplicate (B240548-DUP3) TKN	Source ID: BB03578-03				1.87	20	02/16/2024	JAL	D
Duplicate (B240548-DUP4) TKN	Source ID: LS01856-05				5.74	20	02/16/2024	JAL	D
Matrix Spike (B240548-MS1) TKN	Source ID: AC00329-01		99.7	80-120			02/16/2024	JAL	
Matrix Spike (B240548-MS2) TKN	Source ID: BB03570-01		99.2	80-120			02/16/2024	JAL	D
Matrix Spike (B240548-MS3) TKN	Source ID: BB03578-03		102	80-120			02/16/2024	JAL	D
Matrix Spike (B240548-MS4) TKN	Source ID: LS01856-05		86.1	80-120			02/16/2024	JAL	D
Matrix Spike (B240548-MS5) TKN	Source ID: WQ00200-03		97.5	80-120			02/16/2024	JAL	
Matrix Spike (B240548-MS6) TKN	Source ID: WQ00200-04		94.9	80-120			02/16/2024	JAL	
Matrix Spike Dup (B240548-MSD1) TKN	Source ID: AC00329-01		101	80-120	1.39	20	02/16/2024	JAL	
Matrix Spike Dup (B240548-MSD2) TKN	Source ID: BB03570-01		99.6	80-120	0.237	20	02/16/2024	JAL	D

Revised Report



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Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
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Wet Chemistry (Continued)**Batch: B240548 (Continued)**

Matrix Spike Dup (B240548-MSD3) TKN	Source ID: BB03578-03		104	80-120	0.657	20	02/16/2024	JAL	D
Matrix Spike Dup (B240548-MSD4) TKN	Source ID: LS01856-05		92.5	80-120	2.57	20	02/16/2024	JAL	D

Dissolved Wet Chemistry**Batch: B240398**

Blank (B240398-BLK1) Orthophosphate, as P		<0.003	mg/L				02/02/2024	RKT	U
LCS (B240398-BS1) Orthophosphate, as P			98.7	90-110			02/02/2024	RKT	
Duplicate (B240398-DUP1) Orthophosphate, as P	Source ID: WB02944-06				0.461	10	02/02/2024	RKT	D
Duplicate (B240398-DUP2) Orthophosphate, as P	Source ID: LS01852-02				0.270	10	02/02/2024	RKT	D
Matrix Spike (B240398-MS1) Orthophosphate, as P	Source ID: WB02944-06		103	90-110			02/02/2024	RKT	D
Matrix Spike (B240398-MS2) Orthophosphate, as P	Source ID: LS01852-02		102	90-110			02/02/2024	RKT	D
Matrix Spike Dup (B240398-MSD1) Orthophosphate, as P	Source ID: WB02944-06		102	90-110	0.249	10	02/02/2024	RKT	D
Matrix Spike Dup (B240398-MSD2) Orthophosphate, as P	Source ID: LS01852-02		102	90-110	0.0492	10	02/02/2024	RKT	D

Revised Report



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
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Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals									
Batch: B240405									
Blank (B240405-BLK1)									
Arsenic	<0.070	ug/L					02/08/2024	DMW	U
Cadmium	<0.010	ug/L					02/08/2024	DMW	U
Lead	<0.010	ug/L					02/08/2024	DMW	U
LCS (B240405-BS1)									
Arsenic			101	85-115			02/08/2024	DMW	
Cadmium			101	85-115			02/08/2024	DMW	
Lead			102	85-115			02/08/2024	DMW	
Duplicate (B240405-DUP1) Source ID: AC00329-01									
Arsenic					2.22	20	02/08/2024	DMW	
Cadmium					2.34	20	02/08/2024	DMW	
Lead					2.48	20	02/08/2024	DMW	
Matrix Spike (B240405-MS1) Source ID: AC00329-01									
Arsenic			97.6	70-130			02/08/2024	DMW	
Cadmium			100	70-130			02/08/2024	DMW	
Lead			101	70-130			02/08/2024	DMW	
Matrix Spike Dup (B240405-MSD1) Source ID: AC00329-01									
Arsenic			98.3	70-130	0.625	20	02/08/2024	DMW	
Cadmium			101	70-130	0.665	20	02/08/2024	DMW	
Lead			101	70-130	0.234	20	02/08/2024	DMW	
Batch: B240429									
Blank (B240429-BLK1)									
Calcium	<0.04	mg/L					02/08/2024	AMO	U
Magnesium	<80	ug/L					02/08/2024	AMO	U
Phosphorus as P	<0.012	mg/L					02/08/2024	AMO	U
LCS (B240429-BS1)									
Calcium			102	85-115			02/08/2024	AMO	
Magnesium			103	85-115			02/08/2024	AMO	
Phosphorus as P			101	85-115			02/08/2024	AMO	
Duplicate (B240429-DUP1) Source ID: AC00330-01									
Calcium					1.74	20	02/08/2024	AMO	
Magnesium					1.98	20	02/08/2024	AMO	
Phosphorus as P					0.174	20	02/08/2024	AMO	
Matrix Spike (B240429-MS1) Source ID: AC00330-01									
Calcium			102	70-130			02/08/2024	AMO	
Magnesium			102	70-130			02/08/2024	AMO	
Phosphorus as P			101	70-130			02/08/2024	AMO	
Matrix Spike Dup (B240429-MSD1) Source ID: AC00330-01									
Calcium			102	70-130	0.0523	20	02/08/2024	AMO	
Magnesium			102	70-130	0.188	20	02/08/2024	AMO	
Phosphorus as P			102	70-130	0.474	20	02/08/2024	AMO	

Revised Report



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Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals (Continued)									
Batch: B240440									
Blank (B240440-BLK1)									
Mercury	<0.01	ug/L					02/08/2024	SAS	U
LCS (B240440-BS1)									
Mercury			103	85-115			02/08/2024	SAS	
Duplicate (B240440-DUP1) Source ID: AC00329-04									
Mercury					NR	20	02/08/2024	SAS	U
Matrix Spike (B240440-MS1) Source ID: AC00329-04									
Mercury			106	70-130			02/08/2024	SAS	
Matrix Spike Dup (B240440-MSD1) Source ID: AC00329-04									
Mercury			109	70-130	2.55	20	02/08/2024	SAS	
Dissolved Metals									
Batch: B240406									
Blank (B240406-BLK1)									
Cadmium	<0.010	ug/L					02/04/2024	DMW	U
Copper	<0.15	ug/L					02/04/2024	DMW	U
Lead	<0.0090	ug/L					02/04/2024	DMW	U
Zinc	<0.50	ug/L					02/04/2024	DMW	U
LCS (B240406-BS1)									
Cadmium			103	85-115			02/04/2024	DMW	
Copper			97.2	85-115			02/04/2024	DMW	
Lead			102	85-115			02/04/2024	DMW	
Zinc			98.7	85-115			02/04/2024	DMW	
Duplicate (B240406-DUP1) Source ID: AC00329-02									
Cadmium					14.8	10	02/04/2024	DMW	QC-02
Copper					0.197	10	02/04/2024	DMW	
Lead					1.65	10	02/04/2024	DMW	
Zinc					1.45	10	02/04/2024	DMW	
Matrix Spike (B240406-MS1) Source ID: AC00329-02									
Cadmium			100	70-130			02/04/2024	DMW	
Copper			92.7	70-130			02/04/2024	DMW	
Lead			97.8	70-130			02/04/2024	DMW	
Zinc			94.2	70-130			02/04/2024	DMW	
Matrix Spike Dup (B240406-MSD1) Source ID: AC00329-02									
Cadmium			99.4	70-130	0.723	10	02/04/2024	DMW	
Copper			93.3	70-130	0.456	10	02/04/2024	DMW	
Lead			99.7	70-130	1.89	10	02/04/2024	DMW	
Zinc			96.0	70-130	1.20	10	02/04/2024	DMW	

Revised Report



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
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Notes and Definitions

Item	Definition
D	Data reported from a dilution
QC-02	The RPD is greater than the method acceptance criteria. At least one of the values used to calculate the RPD, is less than or equal to the PQL.
U	Analyte included in the analysis, but not detected

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846


Janet Finegan-Kelly
Water Quality Laboratory Manager

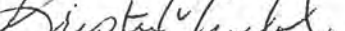

Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714-6418
Tel. (208) 387-6269
Fax (208) 387-6391
Purchase Order: 6
Project: S
Sampler(s): K

Stormwater-PI

Kristen Chisholm
Stacey Turner

[illegible]

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
	2/1/24 1019		
	2/2/24 1101	 2-2-24 1102	

coc_wql-pi

AC00329

ACD2379^{WY24}

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714-6418

Tel. (208) 387-6269

Fax (208) 387-6391

Purchase Order:

63065628

Project:

Stormwater-PI

Sampler(s):

Steven Turner
Kristin Chickah

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix	Type	BOD ₅ - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	F-Calc DEXX Gottfert Chlorides	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO ₃ +NO ₂ - EPA 353.2	NH ₃ - SM 4500 NH ₃ -D	Total Containers
AC00329																								
-03	2/2/24	2/2/24	0335	0936	240201-206-WC	ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
<i>Kristin Chickah</i>	2/2/24 1019	<i>OK [Signature]</i>	
<i>[Signature]</i>	2/2/24 1102	<i>[Signature]</i> 2-2-24 1102	

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714-6418
Tel. (208) 387-6269
Fax (208) 387-6391
Purchase Order:
Project:
Sampler(s):

63065628

Stormwater-PI

Kristin Chisholm
Steve Turner

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix	Type	BOD ₅ - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Colitag Chlorides	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO ₃ +NO ₂ - EPA 353.2	NH ₃ - SM 4500 NH ₃ -D	Total Contaminants
AC00329																								
-04	2/1/24	2/2/24	1342	0926	240201-03-WC	ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-05	2/2/24	2/2/24	0416	1016	240201-11-WC	ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-06					240201-11-103 (Dup)																			

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristin Chisholm	2/2/2024 1134	Steve Turner	If sufficient volume, please split 240201-11-WC for a duplicate analysis under the name 240201-11-103.
Steve Turner	2/2/2024 1159	April B. [Signature]	If low volume for 240201-03-WC, prioritize dissolved parameters, then any other parameters you can, please.

Modified

Ada County Highway District

Attn: Steven Turner
 3775 Adams Street
 Garden City, Idaho 83714-6418
 Tel. (208) 387-6269
 Fax (208) 387-6391
 Purchase Order:
 Project:
 Sampler(s):

63065628
 Stormwater-PI
 Steven Turner
 Kristin Chisholm

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initial	Water	Grab	Composite	BOD ₅ - SM 521	COD - Hach 800	TSS - SM 2540	TDS - SM 2540	TKN - EPA 351	TP - EPA 200.7	Orthophosphate	Total As, Cd, Pb	Diss. Cd Cu, Pb	Total Hg - EPA	EPA 200.1	Turbidity - EPA	Hardness - EPA	NO ₃ +NO ₂ - EPA	NH ₃ - SM 4500	Total Containers
AC00329																									
-03	2/1/24	2/2/24	0835	0936	240201-206-WC	ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2
	2/1/24		1909	0936																					
														</											

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
<i>Kristin Chisholm</i>	2/2/24 1019	<i>[Signature]</i>	
<i>[Signature]</i>	2/2/24 1102	<i>[Signature]</i> 2-2-24 1102	

M. L. L. L.

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714-6418
Tel. (208) 387-6269
Fax (208) 387-6391
Purchase Order:
Project:
Sampler(s):

63065628
Stormwater-PI
Kristina Chisholm
Steven Turner

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Water	Grab	Composite	BOD ₅ - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E-Coli - IDEXX Colitag	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO ₃ +NO ₂ - EPA 353.2	NH ₃ - SM 4500 NH ₃ -D	Total Contaminants
AC00329																									
-04	2/1/24	2/2/24	1342	0926	240201-03-WC	ST	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-05	2/1/24	2/2/24	0416	1016	240201-11-WC	ST	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-06					240201-11-103 (Dup)																				
		</																							

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristina Chisholm	2/2/2024 1134	Steven Turner	If sufficient volume, please split 240201-11-WC for a duplicate analysis under the name 240201-11-103.
Steven Turner	2/2/2024 1159	April 11/59	If low volume for 240201-03-WC, prioritize dissolved parameters, then any other parameters you can, please.

Azubike Emenari

To: Steven Turner; Stephen Quintero
Cc: Monica Lowe
Subject: RE: [External] RE: 2/2/24 Lab Report Issue

From: Steven Turner <sturner@achdidaho.org>
Sent: Wednesday, March 13, 2024 1:50 PM
To: Azubike Emenari <AEmenari@cityofboise.org>; Stephen Quintero <SQuintero@cityofboise.org>
Cc: Monica Lowe <mlowe@achdidaho.org>
Subject: [External] RE: 2/2/24 Lab Report Issue

Caution: This email came from outside the city. Use caution before clicking on links, opening attachments, or responding.

Hey lab folks,

Apologies asking for more changes to the 2/1/24 storm, but we noticed a few additional times that needed to be changed to the analysis report. Here is also a [rewritten chain of custody](#).

The following samples need their times adjusted:

- AC00329-03 begin time is 19:09 on 2/1/24 (previously written as 2/2/2024 3:35)
- AC00329-05 begin time is 4:16 on 2/1/24 (previously written as 2/2/2024 04:16)

It's not a big deal if these changes can't be made but let me know when we can expect this document to be sent over.

Again, sorry for the changes. We really appreciate all you do.

Best,
Steven Turner
Environmental Specialist | Environmental Department

Ada County Highway District (ACHD)
3775 Adams Street, Garden City, Idaho 83714
Phone: (208)407-4284
www.achdidaho.org
Connect with us on social! [@achdidaho](#)



From: Steven Turner
Sent: Tuesday, March 12, 2024 2:17 PM

ACHD SAMPLE FILTRATION, SPLITTING, AND COMPOSITING FOR METALS

PAGE 1 OF 2

Sample	Split/Filter Info	Filter Used	Bottle/Lid Lots	Bottles Split	Comments
Lims#: <u>AC00329-01</u> Location: <u>ACSTIC</u> Sample Date: 2-2-24 Sample ID: <u>240201-</u> <u>1</u> <u>12-WC</u>	Split Date: 2-2-24 Start Split: <u>1111</u> Start Filter: <u>1111</u> Comp Time: <u>N/A</u> Analyst: <u>AMO/DKT</u>	Filter: ☒ Voss ☒ 0.45µm high-capacity ☒ 5.0µm ☒ 10.0µm	Coll Jug: <u>Not Avail.</u> Comp Jug: <u>N/A</u> SS Tubing/Helper: CC00047-43 (SSA1) Stir Bar: CC00048-85 Connector: CC00035-68 and CC00041-31	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ ☒ COD ☐	<u>only 1 jug</u>
Lims#: <u>AC00329-02</u> Location: <u>ACSTIC</u> Sample Date: 2-2-24 Sample ID: <u>240201-</u> <u>2</u> <u>14-WC</u>	Split Date: 2-2-24 Start Split: <u>1125</u> Start Filter: <u>1125</u> Comp Time: <u>1121</u> Analyst: <u>AMO/DKT</u>	Filter: ☒ Voss ☒ 0.45 high-capacity ☒ 5.0µm ☒ 10.0µm	Coll Jug: <u>CC00048-77</u> Comp Jug: <u>CC00048-77</u> SS Tubing/Helper: CC00047-85 (SSA4) Stir Bar: CC00048-85 Connector: CC00040-06 and CC00039-71	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ ☒ COD ☐	<u>composited into (1) of the 16L</u>
Lims#: <u>AC00329-03</u> Location: <u>ACSTIC</u> Sample Date: 2-2-24 Sample ID: <u>240201-</u> <u>3</u> <u>206-WC</u>	Split Date: 2-2-24 Start Split: <u>1142</u> Start Filter: <u>1142</u> Comp Time: <u>1138</u> Analyst: <u>AMO/DKT</u>	Filter: ☒ Voss ☒ 0.45µm high-capacity (x3) ☒ 5.0µm (x2) ☒ 10.0µm (x2)	Coll Jug: <u>CC00047-32</u> Comp Jug: <u>CC00048-86</u> SS Tubing/Helper: CC00048-70 (SSA5) Stir Bar: CC00048-85 Connector: CC00041-46 (x2) <u>CC00048-69</u>	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ ☒ COD ☐	<u>initially used 3 Voss filters, but plugged after 500mL waste, used another (4) Voss filters; was able to get needed volume then.</u>
Lims#: <u>AC00329-05</u> Location: <u>ACSTIC</u> Sample Date: 2-2-24 Sample ID: <u>240201-</u> <u>4</u> <u>11-WC</u>	Split Date: 2-2-24 Start Split: <u>1220</u> Start Filter: <u>1220</u> Comp Time: <u>1215</u> Analyst: <u>AMO/DKT</u>	Filter: ☒ Voss ☒ 0.45µm high-capacity ☒ 5.0µm ☒ 10.0µm	Coll Jug: <u>CC00048-78 (x2)</u> Comp Jug: <u>2378</u> SS Tubing/Helper: CC00047-42 (SSA6) Stir Bar: CC00050-10 Connector: CC00041-46 (x2)	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ ☒ COD ☐	<u>composited into 40L Round</u>
Lims#: <u>AC00329-06</u> Location: <u>ACSTIC</u> Sample Date: 2-2-24 Sample ID: <u>240201-</u> <u>5 BLP</u> <u>11-WC</u> <u>103</u>	Split Date: 2-2-24 Start Split: <u>1135</u> Start Filter: <u>1135</u> Comp Time: <u>1215</u> Analyst: <u>AMO/DKT</u>	Filter: ☒ Voss ☒ 0.45µm high-capacity ☒ 5.0µm ☒ 10.0µm	Coll Jug: <u>CC00048-78 (x2)</u> Comp Jug: <u>CC0012378</u> SS Tubing/Helper: CC00047-18 (SSA7) Stir Bar: <u>CC00034-BB (Dr)</u> Connector: CC00044-99 (x2)	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ ☒ COD ☐	<u>Duplicate</u>

ACHD SAMPLE FILTRATION, SPLITTING, AND COMPOSITING FOR METALS

PAGE 2 OF 2

Sample	Split/Filter Info	Filter Used	Bottle/Lid Lots	Bottles Split	Comments
Lims#: <u>A000329-04</u> Location: <u>ACSTIC</u> Sample Date: <u>2-2-24</u> Sample ID: <u>Amp/DKT</u> <u>240201-03-WC</u> <u>6</u>	Split Date: <u>2-2-24</u> Start Split: <u>1252</u> Start Filter: <u>1252</u> Comp Time: <u>N/A</u> Analyst: <u>Amp/DKT</u>	Filter: ☒ Voss ☒ 0.45µm high-capacity ☒ 5.0µm ☒ 10.0µm	Coll Jug: <u>CC00048-77</u> Comp Jug: <u>N/A</u> SS Tubing/Helper: <u>CC00048-70 (SSAB)</u> Stir Bar: <u>CC00040-97</u> Connector: <u>CC00044-99 (x2)</u>	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ ☒ COD ☐	Only 1 jug
Lims#: <u>A000330-01</u> <u>A000329-05</u> Location: <u>ACSTIC</u> Sample Date: <u>2-2-24</u> Sample ID: <u>240201-</u> <u>18-WC</u> <u>7</u>	Split Date: <u>2-2-24</u> Start Split: <u>1315</u> Start Filter: <u>1315</u> Comp Time: <u>1312</u> Analyst: <u>Amp/DKT</u>	Filter: ☒ Voss ☒ 0.45µm ^{high-capacity} ☐ 1.0µm ☒ 5.0µm ☒ Other: <u>10.0µm</u>	Coll Jug: <u>CC00048-78 (x2)</u> Comp Jug: <u>CC00048-78</u> SS Tubing: <u>SS17</u> SS Helper: <u>CC00050-08</u> Stir Bar: <u>CC00034-B3</u> Connector: <u>CC00044-99</u> <u>CC00048-69</u>	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ ☒ COD ☐	2nd jug had low volume and was noticeably lighter in color
Lims#: _____ Location: _____ Sample Date: _____ Sample ID: _____	Split Date: _____ Start Split: _____ Start Filter: _____ Comp Time: _____ Analyst: _____	Filter: ☒ Voss ☒ 0.45µm ☐ 1.0µm ☒ 5.0µm ☐ Other: _____	Coll Jug: _____ Comp Jug: _____ SS Tubing: _____ SS Helper: _____ Stir Bar: _____ Connector: _____	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ ☐ COD ☐	
Lims#: _____ Location: _____ Sample Date: _____ Sample ID: _____	Split Date: _____ Start Split: _____ Start Filter: _____ Comp Time: _____ Analyst: _____	Filter: ☒ Voss ☒ 0.45µm ☐ 1.0µm ☒ 5.0µm ☐ Other: _____	Coll Jug: _____ Comp Jug: _____ SS Tubing: _____ SS Helper: _____ Stir Bar: _____ Connector: _____	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ ☒ COD ☐	
Lims#: _____ Location: _____ Sample Date: _____ Sample ID: _____	Split Date: _____ Start Split: _____ Start Filter: _____ Comp Time: _____ Analyst: _____	Filter: ☒ Voss ☒ 0.45µm ☐ 1.0µm ☒ 5.0µm ☐ Other: _____	Coll Jug: _____ Comp Jug: _____ SS Tubing: _____ SS Helper: _____ Stir Bar: _____ Connector: _____	☒ Teflon Total ☒ TKN ☒ Teflon Diss (F) ☒ NH ₃ ☒ Hg CVAA ☒ NO _x (F) ☒ BOD ☒ ortho-P (F) ☒ TSS ☒ Turb ☒ TDS ☐ ☒ COD ☐	



Technical Memorandum

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Boise, ID 83702

Phone: 801.316.9859

Prepared for: Ada County Highway District

Project Title: NPDES Phase I Stormwater Support WY 2024

Project No.: 159103

Technical Memorandum

Subject: ACHD Phase I Storm Event Report for February 26, 2024

Date: May 24, 2024

To: Monica Lowe

Cc: Steven Turner

Kristen Chisholm

From: Zuly Lapa, Project Engineer

Prepared by: Zuly Lapa, EIT, Project Engineer

Reviewed by: Melissa Jannusch, PE, Project Manager

Limitations:

This document was prepared solely for ACHD in accordance with professional standards at the time the services were performed and in accordance with the contract between ACHD and Brown and Caldwell dated October 10, 2023. This document is governed by the specific scope of work authorized by ACHD; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by ACHD and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

Section 1: Introduction

The Environmental Protection Agency Region 10 reissued a Municipal Separate Storm Sewer System Phase I National Pollutant Discharge Elimination System Permit (NPDES Permit), effective October 1, 2021, to Ada County Highway District (ACHD), Boise City, Ada County Drainage District No. 3, Idaho Transportation Department District 3, Boise State University, and Garden City. Under the NPDES Permit, Permittees are required to continue to conduct wet weather stormwater outfall monitoring and subwatershed monitoring. Four outfall monitoring sites (Lucky, Whitewater, Main, and Americana) and one subwatershed monitoring site (AS_6) have been established. The AS_6 site represents a subwatershed located within the Americana watershed. At each site, a minimum of three composite and three grab samples will be collected during Water Year (WY) 2024 (October 1, 2023, through September 30, 2024). The following storm event report summarizes stormwater sampling results from the February 26, 2024, storm event.

Section 2: Project Status

Table 2-1 is a summary of the sample types collected to date for WY 2024 Phase I Stormwater Outfall Monitoring. When samples are qualified, additional samples will be attempted from subsequent storms to collect unqualified samples.

Table 2-1. WY 2024 Samples Collected					
Date	Lucky	Whitewater	Main	Americana	AS_6
October 10, 2023	G, C ^{1,2}	G	--	G, C ³	--
November 19, 2023	G, C	G, C	G, C	G ⁴ , C	G, C
February 1, 2024	G ⁵ , C	G ⁵ , C ⁶	G ⁵ , C	G ⁵ , C	G ⁵ , C
February 26, 2024	G, C	G, C	G, C ⁷	G, C	G, C
Unqualified Samples:	3G, 3C	3G, 2C	2G, 2C	2G, 3C	2G, 3C
Samples Remaining:	0G, 0C	0G, 1C	1G, 1C	1G, 0C	1G, 0C

Notes:

-- = no samples taken

C = composite sample

G = grab sample

¹ Composite samples qualified due to lack of representativeness (50% – 75%).

² Incomplete water quality analysis due to low composite sample volume.

³ Composite samples qualified due to lack of representativeness (50% – 75%) of the calculated flow volume.

⁴ Incomplete field parameter collection on the grab sample data form due to field error.

⁵ E. coli sample qualified due to exceeded hold time.

⁶ Composite sample rejected due to automatic sampler triggering prior to storm event runoff. The subsamples taken prior to the event represented more than 10% of the composite volume.

⁷ Composite sample qualified due to automatic sampler triggering prior to storm event runoff. The subsamples taken prior to the event represented less than 10% of the composite volume.

Section 3: Storm Event Summary

The February 26, 2024, storm event and the subsequent preparation and sampling efforts are detailed in the following sections.

3.1 Storm Detail

A summary of the forecast on which monitoring decisions were based is detailed below. The sampling event communication form that describes the forecast and summarizes the decision-making process from February 26, 2024, is included in Attachment A for reference.

Saturday, February 24, 2024 (Sampling Event Communication)

- On the afternoon of February 24, the National Weather Service issued a forecast for widespread rain in the Boise area, starting February 26 at 0400 and ending at 1500, with the heaviest precipitation from 1000 to 1300. The chance of precipitation was 90%, with 0.30 inches of precipitation forecasted.

Sunday, February 25, 2024 (Set Up)

- Setup was accomplished in the morning of February 25. An expected precipitation depth of 0.11 inches was used to set trigger volumes at monitoring stations. A runoff calculations worksheet showing how the trigger volumes were calculated is included in Attachment A.

Monday, February 26, 2024 (Storm Event)

- Moderate rain first started at approximately February 26 at 0821 and ended at 1241. A stronger second wave of rain started soon after around 1230 and ended at 2032.
- Precipitation totals ranged between 0.13 and 0.21 inches at local rain gauges.

Flow measurements and precipitation data are listed in Table 1 along with a sampling summary. Hydrographs for the Lucky, Whitewater, Main, Americana and AS_6 site showing flow, rain, and sample collection data are included in Attachment B.

3.2 Sampling Summary

Lucky, Whitewater, Main, Americana and AS_6 monitoring stations were set up on February 25, to collect flow-proportional composite samples during the storm. Sampler enable conditions were programmed into the Whitewater and Americana flowmeters. A site-specific velocity cutoff value was programmed into Lucky, Main, and AS_6 flowmeter. Setup and sampling information are included in Table 1. The field forms completed during setup/shutdown and sampling are included in Attachment C.

Grab Samples

Two, two-member teams mobilized to collect stormwater runoff grab samples and verify operation of the automatic sampling equipment on February 26 around 0910. Grab samples for Lucky, Whitewater, Main, Americana, and AS_6 were submitted to the West Boise Water Quality Lab (WQL) at 1201 on February 26.

Results for grab samples, including field parameter and analytical data, are included in Table 2. Laboratory analytical reports are included in Attachment D.

Composite Samples

Composite samples were collected at the Lucky, Whitewater, Main, and Americana monitoring station and submitted to the WQL at 2057 on February 26. The composite sample at AS_6 monitoring station was submitted at 2058 on February 26 to the WQL.

Analytical results are shown in Table 2 and pollutant loading estimates for the event are detailed in Table 3. Laboratory analytical reports are included in Attachment D.



Section 4: Quality Assurance/Quality Control

A summary of quality control samples collected during the February 26, 2024, storm event is presented below in Table 4-1. A field blank and a field duplicate were collected from the Main monitoring station. The analytical results for these samples are included in Table 4.

Table 4-1. Quality Control Samples			
Sample ID	Sample Type	Parent Sample	Conclusions
240226-12-001	Field blank	Main grab	No <i>E. coli</i> detection was reported in the field blank.
240226-12-101	Field duplicate	Main grab	Relative percent difference was within the acceptable range.

Data quality objectives for this storm were evaluated and tracked using the data validation review checklist included in Attachment A.

An acceptable composite sample represents at least 75 percent of the total discharge or at least 6 hours of the storm duration. All composite samples, except for Main, met the criteria.

Prior to the start of the storm precipitation or runoff, three subsamples were successfully collected by the automatic sampler at the Main monitoring site. These subsamples are considered non-stormwater, as there was no evidence of flow or precipitation during the evening of February 25th through the morning of February 26th. Following the SWOMP guidelines, calculations were conducted to determine if the non-stormwater composite subsamples volume accounted for 10% of the total composite sample volume. The non-stormwater composite subsamples accounted for 8% of the total composite sample volume (see Table 4-2), qualifying the Main composite sample.

Table 4-2. Non-Stormwater Subsample Evaluation		
Composite Sample Volume (ft ³)	Non-Stormwater Subsample Volume (ft ³)	Non-stormwater Subsample Ratio
11,165	913	8 %

Section 5: Notes and Recommendations

Main

The Main site collected non-stormwater samples at three instances prior to the sampling event. The samples had levels greater than the enabling condition of 1.87-inches. The sampler was programmed correctly at the time of set-up. Additional investigation is required to determine the cause of collecting samples when there was no evidence of flow or precipitation. ACHD will reach out to HACH for support.

Americana

Two “Skipped” sample messages were recorded during the composite sample collection at Americana. These sample messages appear when the sampling team pause the sampler program, stopping it from collecting the next subsample. The “Skipped” sample messages do not affect the sampling data nor is shown on the hydrograph.

Data Tables



TAB-1

Table 1. Sampling and Flow Summary					
	Lucky	Whitewater	Main	Americana	AS_6
Grab samples collected and submitted?	YES	YES	YES	YES	YES
Composite samples collected and submitted?	YES	YES	YES	YES	YES
Trigger volume (gal or ft ³)	2895 gal	800 ft ³	3411 gal	2960 ft ³	137 ft ³
Velocity cutoff (fps)	--	--	--	--	0.02
Sampler enable condition (in)	Level > 2.72 "	Level > 3.05 "	Level > 1.87 "	Level > 7.59 "	--
Runoff start time	0839	0848	0834	0821	0915
Grab sample collection time	1017	0928	0919	0948	1012
Composite sample stop time	1534	1908	1601	1606	1620
Runoff stop time	1752	2032	1733	1752	1759
Volume of Discharge Sampled (ft ³)	3,573	30,558	11,165 ¹	115,368	4,873
Volume of non-stormwater subsamples (ft ³)	--	--	913	--	--
Total runoff volume (ft ³)	3,965	35,198	10,885	140,004	5,447
Percent of storm flow sampled (%)	90%	87%	103% ¹	83%	89%
Percent of non-stormwater volume to total discharge sampled volume (%)	--	--	8%	--	--
Composite sample duration (hrs)	6.5	9.5	17 ¹	7	6
Storm Precipitation (in)	0.13	0.21	0.18	0.18/0.18	0.18/0.18
Referenced Rain Gauge	Cynthia Mann	Whitewater	Front	Front/East	Front/East
Sampler messages (counts): Success	10	40	26	35	24
Number of composite bottles filled	1	2	2	2	2
Composite sample volume (Approx.; ml)	5,000 ml	23,500 ml	14,050 ml	20,500 ml	13,000 ml

Notes:

-- = No data.

¹ Non stormwater samples were collected prior to the start of the storm precipitation or runoff

Table 2. Field and Analytical Data Summary																											
Monitoring Station	Sample Date	Sample ID Grab	Field Parameters				E. coli mpn/100 mL	Sample ID Composite	Analytical Parameters																		
			Dissolved Oxygen	pH	Conductivity	Temperature			BOD ₅	COD	Hardness as CaCO ₃	Turbidity	TSS	TDS	Total Phosphorus	Orthophosphate as P	Ammonia as N	Nitrate + Nitrite as N	TKN	Arsenic, total	Cadmium, dissolved	Cadmium, total	Copper, dissolved	Lead, dissolved	Lead, total	Mercury, total	Zinc, dissolved
			mg/L	S.U.	uS/cm	C			mg/L	mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Lucky	2/26/2024	240226-03-WG	9.89	8.27	125.9	4.75	37.9	240226-03-WC	13.5	60.0	53.2	18.9	18.1	114	0.262	0.124	0.476	0.969	1.71	2.6	0.011	0.031	4.5	0.028	0.72	0.0150	13.5
Whitewater	2/26/2024	240226-11-WG	10.88	7.74	749.2	5.97	38.3	240226-11-WC	12.6	84.0	77.8	52.3	47.3	182	0.347	0.174	0.596	0.921	2.43	2.6	0.014	0.062	4.4	0.093	3.8	0.0151	24.5
Main	2/26/2024	240226-12-WG	9.79	7.94	165.88	9.53	24.3	240226-12-WC	13.9	119 ^{5/}	29.8 ^{5/}	94.7 ^{5/}	104 ^{5/}	85.2 ^{5/}	0.231 ^{5/}	0.0631 ^{5/}	0.829 ^{5/}	0.424 ^{5/}	1.96 ^{5/}	1.5 ^{5/}	0.032 ^{5/}	0.13 ^{5/}	5.6 ^{5/}	0.12 ^{5/}	6.1 ^{5/}	0.0191 ^{5/}	51.7 ^{5/}
Americana	2/26/2024	240226-14-WG	10.54	7.53	470.55	8.74	125.9	240226-14-WC	12.6	85.0	102	51.1	54.3	214	0.276	0.106	0.496	0.940	1.47	3.3	0.021	0.097	4.0	0.063	3.9	0.0148	24.3
AS_6	2/26/2024	240226-206-WG	9.39	7.44	124.28	6.49	53.7	240226-206-WC	17.7	122	22.2	75.5	75.8	85.8	0.570	0.289	0.522	0.278	2.43	2.2	0.016	0.087	5.0	0.26	6.3	0.0183	20.2

Notes:
- = No data.
^{5/} Composite sample qualified due to non stormwater sample volume comprising less than 10% of the total composite sample volume

Table 3. Event Pollutant Loading Estimates in Pounds						
Monitoring Station	Event Date	TSS	Total Phosphorus	Ammonia as N	Nitrate + Nitrite as N	TKN
Lucky	2/26/2024	4.48	0.0648	0.118	0.240	0.423
Whitewater	2/26/2024	104	0.762	1.31	2.02	5.34
Main	2/26/2024	70.6 ^{5J}	0.157 ^{5J}	0.563 ^{5J}	0.288 ^{5J}	1.33 ^{5J}
Americana	2/26/2024	474	2.41	4.33	8.21	12.8
AS_6	2/26/2024	25.8	0.194	0.177	0.0945	0.826

Notes:

^{5J} Composite sample qualified due to non stormwater sample volume comprising less than 10% of the total composite sample volume

Table 4. QC Sample Summary				
Date	Parent Sample	Sample ID	Type	E. coli
				mpn/ 100 mL
2/26/2024	240226-12-WG	240226-12-001	Field Blank	<1.0
2/26/2024	240226-12-WG	240226-12-101	Field Duplicate	26.9
Calculated parent/duplicate RPD				2%
Allowable RPD				40%

Attachment A: Supplemental Documents

Sampling Event Communication Form

Data Validation Checklist

Runoff Calculation Worksheet

SAMPLING EVENT COMMUNICATION FORM

Date: 02/24/2024	Time: 8:24 AM	Initials: ST
Is there a targeted sampling event during the next 36 hours? (Or, if it is Friday, is a targeted event expected before 5:00 PM Monday?)		Yes

Past 72 hr Precip	
Date and time of expected event	Monday, 2/26/24 @4:00 AM
Expected amount of precipitation	0.30"
Percent chance of precipitation	90%
Percent chance of >0.10" over 12 hours	75%

NWS Update

Spoke with Les from NWS and he thinks Boise will still get 0.3" of rain starting at 4:00 AM – 3:00 PM on Monday. It will be a heaviest around 10:00 AM – 1:00 PM.

<u>Targeted Station & Samples</u>					
Lucky	Whitewater	Main	Americana	AS_6	State (Phase II)
☒ Grab	☒ Grab	☒ Grab	☒ Grab	☒ Grab	☒ Grab
☒ Composite	☒ Composite	☒ Composite	☒ Composite	☒ Composite	☒ Composite

Type of Forecasted Precipitation

☐ Light Rain	☒ Rain	☐ Rain on Snow
☐ Scattered Showers	☐ Thunder Showers	☐ Snowmelt
☐ Other:		

Reasons for Not Targeting a Forecasted Storm and/or Stations

☐ Holiday

☐ Waiting on Antecedent Dry Period – Expires:

☐ Equipment Concerns:

☐ Other:

Text Forecast

NWS Forecast for: 2 Miles NNW Garden City ID
 Issued by: National Weather Service Boise, ID
 Last Update: 4:08 am MST Feb 24, 2024

Today: Sunny, with a high near 60. South southeast wind 5 to 7 mph.
 Tonight: Clear, with a low around 35. Southeast wind around 6 mph.
 Sunday: Sunny, with a high near 62. Southeast wind 6 to 10 mph.
 Sunday Night: A 20 percent chance of rain after 11pm. Increasing clouds, with a low around 41. South wind 6 to 10 mph.

Monday: Rain. High near 48. Breezy, with a south southwest wind 11 to 16 mph becoming west 18 to 23 mph in the morning. Winds could gust as high as 36 mph. Chance of precipitation is 90%. New precipitation amounts between a tenth and quarter of an inch possible.

Monday Night: A 20 percent chance of snow before 11pm. Mostly cloudy, with a low around 27. Blustery.
 Tuesday: Partly sunny, with a high near 43.
 Tuesday Night: A 20 percent chance of snow after 11pm. Mostly cloudy, with a low around 30.
 Wednesday: A slight chance of rain and snow before 11am, then a chance of rain. Mostly cloudy, with a high near 50. Chance of precipitation is 30%.
 Wednesday Night: A 30 percent chance of rain. Mostly cloudy, with a low around 40.

Thursday: A 40 percent chance of rain. Mostly cloudy, with a high near 57.

Thursday Night: Rain likely. Mostly cloudy, with a low around 38. Chance of precipitation is 60%.

Friday: Rain likely. Mostly cloudy, with a high near 54. Chance of precipitation is 70%.

Forecast Discussion

[Area Forecast Discussion](#)

National Weather Service Boise ID

354 AM MST [Sat](#) Feb 24 2024

.SHORT TERM...Today through Monday night...Sunny, mild and dry conditions today will give way to increasing clouds on Sunday. Most areas will see high temperatures around 10 degrees above [normal](#) both days, but below records. Snow covered mountain valleys won't quite achieve the anomalous warmth, but will still warm above [normal](#). Light precipitation will develop over the w-central Idaho mountains Sunday afternoon as a storm drops out of Canada. Given the mild [air mass](#) snow levels will start between 5-6kft, meaning rain in mountain valleys. The precipitation expands across the higher terrain in e-central Oregon and Boise mountains Sunday night. By sunrise Monday morning snow levels will range between 4500-5500 feet bringing a change from rain to snow in mountain valleys. It's during the day Monday that we'll see the heaviest snowfall rates in the mountains and rain fill in across the valleys as the upper [trough](#) and accompanying cold [front](#) drop through the region. At elevations above 5500-6000 feet, where it's all snow, accumulations of 6-12 inches are possible with locally higher amounts. Have less confidence on accumulation in mountain valleys as snow will have to overcome recent mild temperatures and daytime [insolation](#) along with temperatures above freezing. For now will keep the WS [Watch](#) headline.

Strong [flow](#) aloft, 25-40 mph at ~5kft [MSL](#) and 45-60 mph at ~10kft [MSL](#), and a tightening surface pressure [gradient](#) will translate to gusty winds across the region. Elevated and open terrain will see the strongest winds as [flow](#) aloft mixes to the surface. This includes Harney and Malheur counties in Oregon and areas outside of the lower Snake Plain in SW Idaho. A high Wind [Watch](#) remains in place across southern and western zones as forecast speeds are solid Advisory and possible [Warning](#) magnitude. This is especially the case for areas closer to the NV border. The lower Snake Plain will see winds ramp up with the frontal passage Monday afternoon and Advisory winds are still in play.

Precipitation will shut off quickly behind the [front](#) Monday afternoon/evening as snow levels drop to valley floors. Sites below 4000 feet will [likely](#) see precipitation end as rain. In the Snake Plain the best chance to see a change to snow will be east of Mountain Home, and more so in the western Magic Valley where minor accumulations are forecast. Snow showers will continue in the mountains Monday night with light additional accumulation.

.LONG TERM...Tuesday through Saturday...As quickly as the [trough](#) entered the region, it's on the way out on Tuesday. Lower elevations dry out while [instability](#) supports continuation of showers across the mountains. Any accumulation will be light. By Wednesday, westerly [flow](#) off the Pacific will begin to moderate the [air mass](#), raising snow levels to 4500-5500 feet. Mountains will continue to see precipitation through the end of the week as a [deepening trough](#) along the [Pac](#) NW coast maintains a steady

Hourly Forecast

Mon, Feb 26 2024

Wind Chill (°F) Dewpoint (°F) Temperature (°F)

Gusts (mph) Surface Wind (mph)

Relative Humidity (%) Precipitation Potential (%) Sky Cover (%)

Mon, Feb 26 2024 Tue, Feb 27 2024

Rain

Rain 0.14in Rain 0.10in

Storm Event QA/QC Checklist – Phase I

STORM DATE 2/26/24

A. Event and Data Completeness	Yes	No	N/A	Notes					
1. Field data sheets filled out completely and clearly	X								
2. Field parameters reviewed, and any problems/issues addressed	X								
3. All samples collected as specified	X								
4. All samples delivered to lab promptly (review chain of custody rpts)	X			See ^{3T} analytical reports for noted sample container temp.					
5. Inconsistencies/clarifications discussed with sampling team member			X						
6. All analytical reports from lab received	X			Reissued to report ammonia in mg/L					
B. Validation and Verification Methods	Yes	No	N/A	Notes					
1. Outliers and unexpected values discussed with lab			X						
2. Appropriate analytical methods used	X			Verified correct ammonia method + units					
3. All lab QA samples were within method acceptance criteria	X								
4. All samples reviewed and data qualifiers assigned if needed	X								
5. Data quality objective achieved	X								
C. Specific Storm and Sample QA/QC Criteria	Lucky	Whitewater	Main	Americana	AS_6	Program Criteria	Met	Qualify	Reject
1. Antecedent dry period (inches in previous 72-hours)	0.00	0.00	0.00	0.00	0.00	< 0.11" in 72 hrs	X		
2. Precipitation (inches)	0.13	0.21	0.18	0.18/0.19	0.18/0.18	> 0.10"	X		
3. Sampled amount (% of total run-off)	90%	87%	95%	83%	89%	>= 75% or >= 6 hrs: no qualifier >= 50% and <75%: qualify < 50%: reject	X		
4. Composite sample duration (hours)	6.5	9.5	17.0	7.0	6.0	<= 8 hrs: no qualifier >8 and <=16 hrs.: qualify >16 hrs.: reject	X		
4. Ecoli sample holding time (hours)	3.0	4.0	4.0	3.5	3.0	<= 24 hrs: no qualifier > 24 hrs.: reject	X		
5. Filtering of samples for dissolved parameter analysis (hours)	16.0	12.5	16.5	16.0	16.0				
D. Notes									

Reviewed by Heum Turner Date 4/11/24

Approved by Monica Lowe Date 4/11/24

Storm Runoff Estimates and Trigger Volumes

Step 1. Enter runoff coefficients in yellow cells.

Step 2. Enter expected precipitation depth (in) in blue cell.

Step 3. Read trigger volumes (**bold**) in green cells.

Expected Precipitation Depth = 0.11
Aliquots per Sample = 17

Site	Area (ac)	Using RC calculated from flow data		
		RC	Expected Vol (ft ³)	Trigger Vol (ft ³)
Lucky	105	0.157	6582.5	387
Whitewater	498	0.069	13621.3	801
Main	79	0.246	7760.0	456
Main Alt	60	0.200	4791.6	282
Americana	875	0.144	50311.8	2960
AS_6	204	0.046	3747.0	220
State	34	0.160	2172.2	128

Notes:

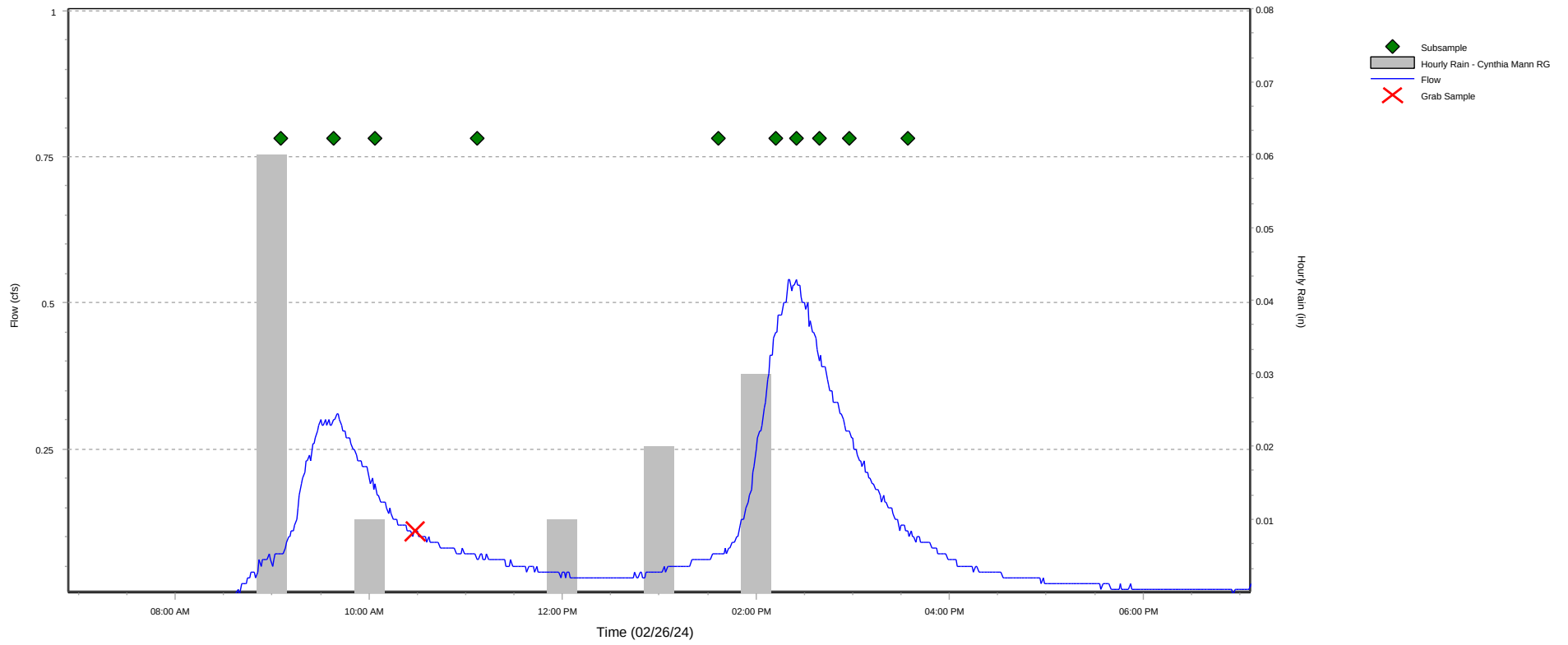
Calculated RC = Average (precip (ft) / [volume (ft³) x area (ft²)])

Where precip (ft) is the measured amount from local rain guage, and volume (ft³) is the measured discharge, and area (ft²) is the watershed area

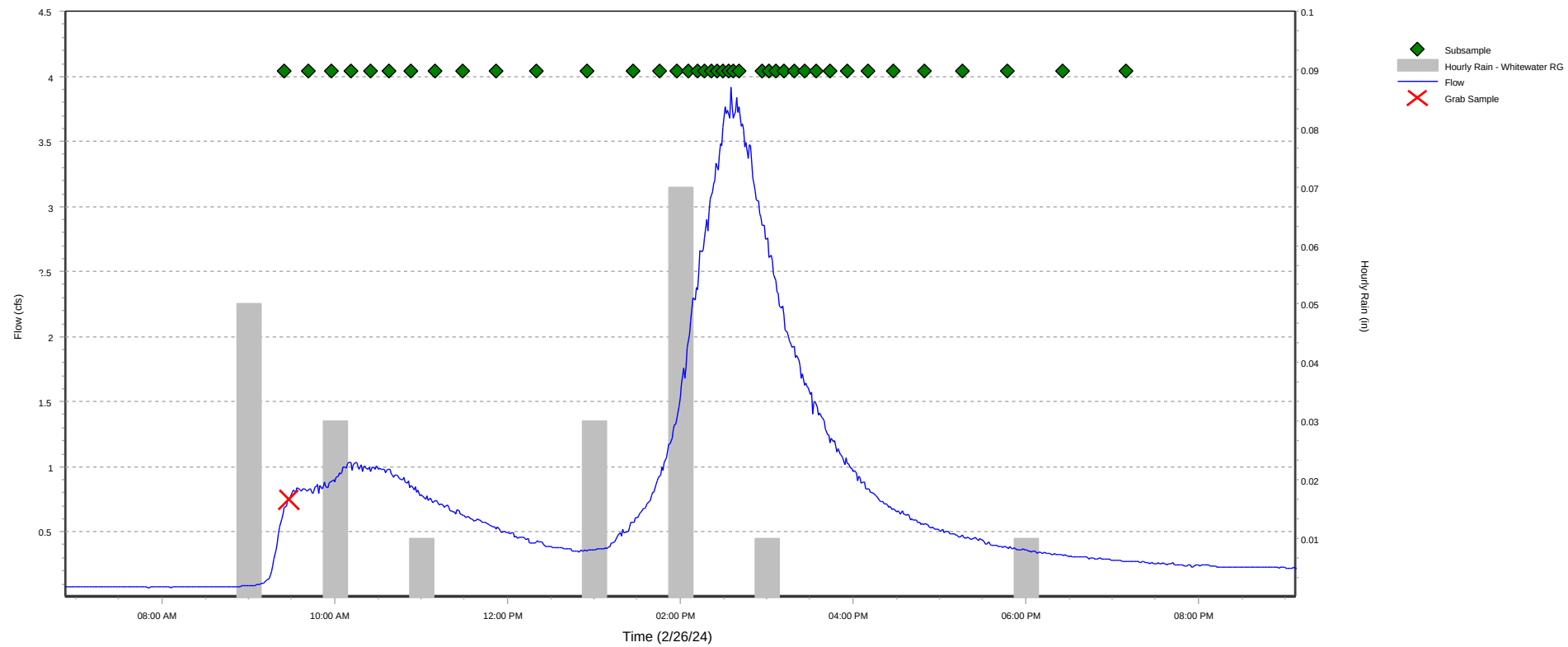
Expected volume (ft³) = RC x expected precip (ft) x area (ft²)

Attachment B: Storm Event Hydrographs

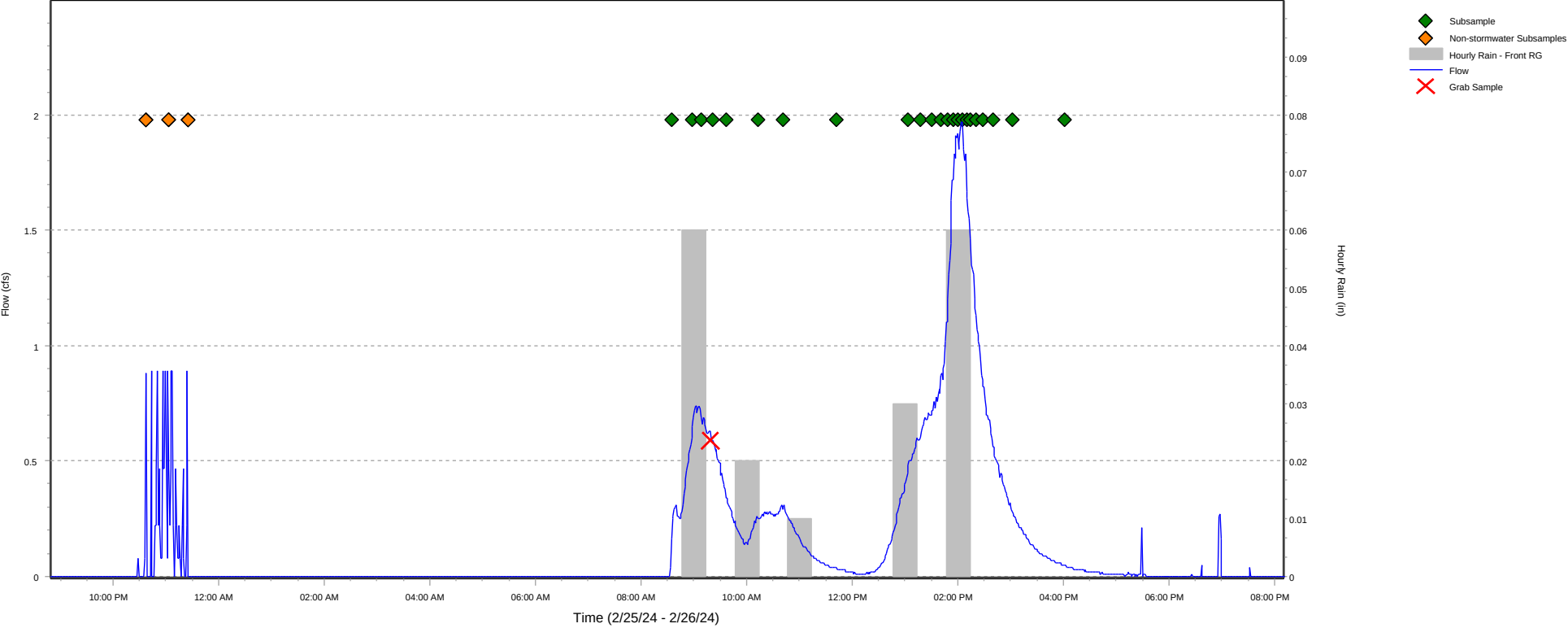
Lucky Hydrograph



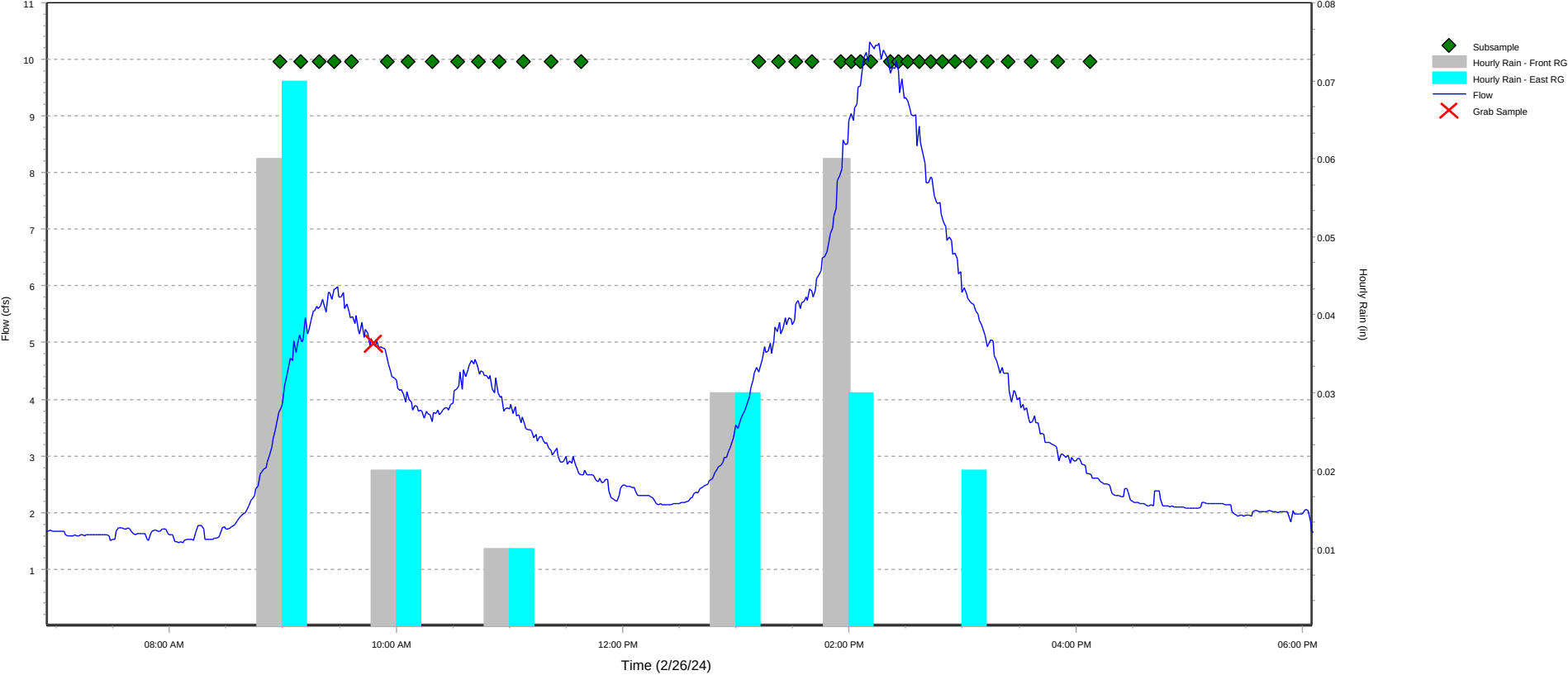
Whitewater Hydrograph



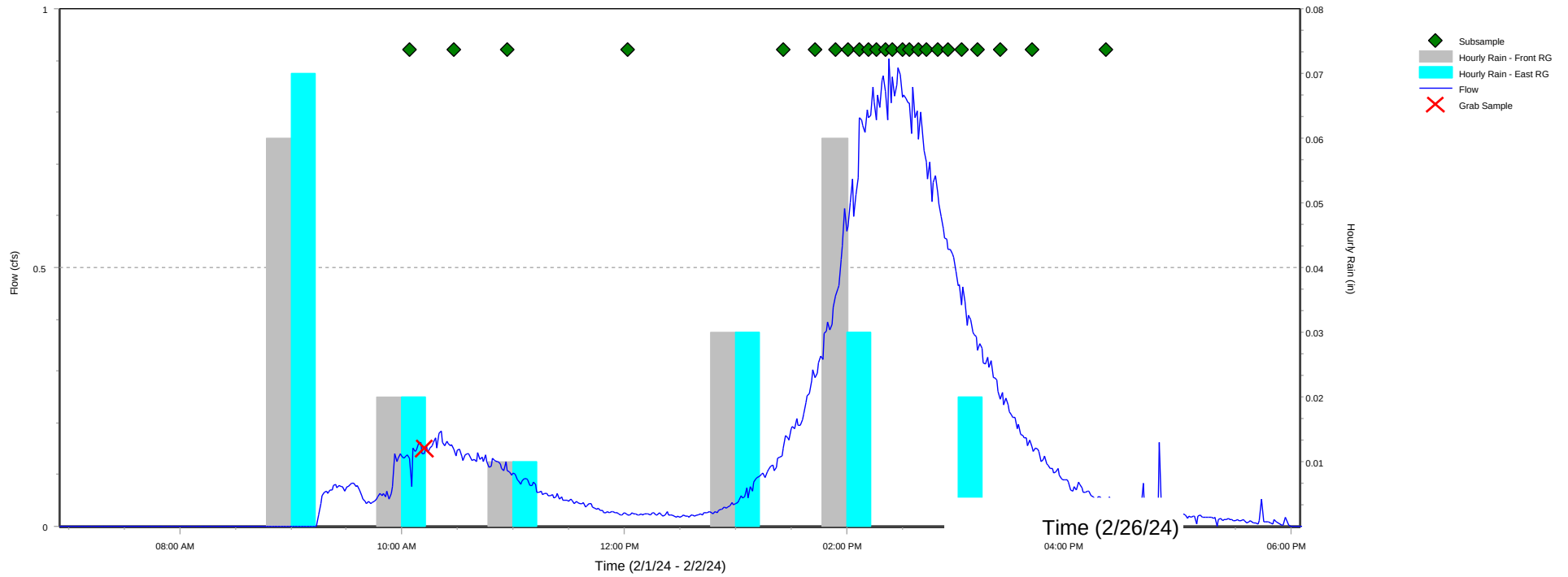
Main Hydrograph



Americana Hydrograph



AS_6 Hydrograph



Attachment C: Field Forms

Grab Sample Data Form

STATION: Lucky

Personnel: ST. PB **Date/Time On-Site:** 2/26/24 9:57

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
10:02	3.72	89.21 GPM	0.55	12.9		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site <i>E. Coli</i>	240226-03 -WG	2/26/24	10:17	☒
Field Duplicate <i>E. Coli</i>	-101			☐
Field Blank <i>E. Coli</i>	-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP07	10:12	4.75	4.89	8.27	125.4

Sampler Current Status	
First Subsample Date/Time	2/26/24 9:05
Last Subsample Date/Time	2/26/24 10:04
# of Subsamples taken	3

Comments:

Flow reading in GPM instead of cfs.

Grab Sample Data Form

STATION: Whitewater

Personnel: ST, PD

Date/Time On-Site: 9:10⁵ 2/26/24

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
9:15	251	0.16	0.50	—		

Grab Information					
	Sample ID		Date	Time	Labeled?
Site E.Coli	240226-11 -WG		2/26/24	9:28	☒
Field Duplicate E.Coli	240226-11 -101		2/26/24	9:37:12:00	☒
Field Blank E.Coli	240226-11 -001		2/26/24	9:38:12:00	☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP07	9:42	5.97	10.88	7.74	749.2

Sampler Current Status	
First Subsample Date/Time	9:23
Last Subsample Date/Time	9:40
# of Subsamples taken	2

Comments:

~~Field duplicate + blank dumped. Main grab QC was successful.~~ ST
 Whitewater - alternate QC site. Main grab QC was successful, so whitewater's QC discarded and not submitted to the lab. -ST

Grab Sample Data Form

STATION: MAIN

Personnel: KC, LS, MV Date/Time On-Site: 9:12 AM 2/26/24

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
9:12	5.10	311.35	1.25	12.9	—	—

Grab Information					
	Sample ID		Date	Time	Labeled?
Site E.Coli	240226-12	-WG	240226	0919	☒
Field Duplicate E.Coli	240226-12	-101	240226	0922	☒
Field Blank E.Coli	240226-12	-001	240226	0925	☒

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MR11	9:31	9.53	9.79	7.94	165.88

Sampler Current Status	
First Subsample Date/Time	22:38 2/25
Last Subsample Date/Time	9:09 2/26
# of Subsamples taken	6

Comments:

Grab Sample Data Form

STATION:

Americamp

Personnel:

KG, LS, MV

Date/Time On-Site:

9:42 2/26/24

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
9:42	9.19	5.24	3.130	12.09	—	—

Grab Information				
	Sample ID	Date	Time	Labeled?
Site <i>E.Coli</i>	24022614 -WG	240226	0948	☐
Field Duplicate <i>E.Coli</i>	-101			☐
Field Blank <i>E.Coli</i>	-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP11	0951	8.74	10.54	7.53	470.55

Sampler Current Status	
First Subsample Date/Time	8:57 on 2/26
Last Subsample Date/Time	9:35 - 2/26
# of Subsamples taken	5

Comments:

Grab Sample Data Form

STATION: AS-6

Personnel: LE, LS, MV Date/Time On-Site: 10:05 2/26/24

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
10:05	2.962	0.15	0.71	12.2	—	—

Grab Information				
	Sample ID	Date	Time	Labeled?
Site <i>E.Coli</i>	240226-206 -WG	2/26 2/26/24	10:13	☒
Field Duplicate <i>E.Coli</i>	-101			☐
Field Blank <i>E.Coli</i>	-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP11	10:15	16.49	8.939	7.44	124.28

Sampler Current Status	
First Subsample Date/Time	10:04 - 2/26/24
Last Subsample Date/Time	10:04 - 2/26/24
# of Subsamples taken	1

Comments:

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

TATION: Lucky

SET UP

Personnel: KC, ST

Date/Time 2/25/24 10:15

On-Site: offsite at 10:40

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
10:22	1.72	0.00	0.00	12.9
Enable Condition or Velocity Cutoff:			2.72	
Deadband:			1.00	
Trigger Volume:			2895	

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments:

SHUT DOWN

Personnel: ST

Date/Time 2/27/24 1253

On-Site:

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
12:57	1.72	1.72	0.02		12.6
Downloaded to:		ST flashdrive			

If flow monitoring is complete:

- ☒ Halt program on flowmeter
- ☒ Download flowmeter data
- ☒ Remove flowmeter battery

If continuing to monitor flow:

- ☐ Replace flowmeter battery
- ☐ Reset logging interval to 15 minutes
- ☐ Change velocity cutoff to 0.02 fps
- ☐ Start program
- ☐ Verify running

Comments:

Composite Sample Collection

STATION: Lucky
 Personnel: ST, PB

Bottle 1 of 1
 Date/Time On-Site: 10/20 2/24/21

☒ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	240226 - D3 -WC
Approx Sample Volume (mL):	2000 ml
Clarity (ex. Clear, Cloudy, Silty):	Clear
Color (ex. Clear, Gray, Tan, Brown, Black):	Tan
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	2/26 9:05	Soc 57	13		
2	2/26 9:38		14		
3	2/26 10:04		15		
4	1107		16		
5	1337		17		
6	1412		18		
7	1425		19		
8	1439		20		
9	1458		21		
10	1534		22		
11			23		
12			24		

Comments:

If sampling is complete:

- ☒ Power off sampler, if separate from flowmeter
- ☒ Keep flowmeter running
- ☒ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):

- ☐ Keep flowmeter running
- ☐ Install new 15L bottle, add ice
- ☐ Restart program from beginning

Date/Time Restarted: _____

- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Set Up/ Shut Down Form – ISCO (Whitewater, Americana, State)

STATION:

Whitewater

SET UP

Personnel:

ST, ICC

Date/Time

On-Site:

2/25/24 10:52

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
10:55	1.86	0.04	0.17	—
Enable Condition:		3.05		
Hysteresis:		1.00		
Flow Pulse Interval:		800cf		

On-Site

- ☒ Replace flowmeter battery, install sampler battery
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Set sampler program parameters
- ☒ Check date/time on sampler
- ☒ Verify all cable and tubing connections
- ☒ Verify sampler program is running

Flowlink (Refer to PG 411 or PG 412, if needed)

- ☐ Direct or Remote; Date/time Did not download
- ☒ Retrieve data and review recent flow history
- ☒ Change Wireless Power Control to Storm Event
- ☒ Change Data Storage Rates to 1 minute for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: On Trigger, and set Sampler Enable equation
- ☒ Set Sampler Pacing to Flow Paced, and set trigger volume

Comments:

Flowmeter time was 7 minutes off. Time corrected. Did not download data. Reviewed data on flowmeter screen.

SHUT DOWN

Personnel:

ST

Date/Time

On-Site:

2/27/24 1336

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1336	2.39	0.13	0.41	—
Downloaded to:		Flowlink		

On-Site

- ☒ Replace flowmeter battery
- ☒ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☒ Direct or Remote; Date/time 2/27 @ 10:25
- ☒ Retrieve data
- ☒ Change Wireless Power Control to Dry Weather
- ☒ Change Data Storage Rates to 15 minutes for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: Never

Comments:

Composite Sample Collection

STATION: Whitewater
 Personnel: EC, ST

Bottle 1 of 2
 Date/Time On-Site: 2/26/24 1454

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	<u>240226-11</u> -WC
Approx Sample Volume (mL):	<u>14000 mL</u>
Clarity (ex. Clear, Cloudy, Silty):	<u>Silty</u>
Color (ex. Clear, Gray, Tan, Brown, Black):	<u>Brown</u>
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	<u>2/26 0923</u>	<u>Success</u>	13	<u>2/26 1325</u>	<u>Success</u>
2	<u>0940</u>		14	<u>1344</u>	
3	<u>0956</u>		15	<u>1356</u>	
4	<u>1010</u>		16	<u>1404</u>	
5	<u>1023</u>		17	<u>1411</u>	
6	<u>1037</u>		18	<u>1416</u>	
7	<u>1051</u>		19	<u>1420</u>	
8	<u>1108</u>		20	<u>1425</u>	
9	<u>1128</u>		21	<u>1428</u>	
10	<u>1156</u>		22	<u>1432</u>	
11	<u>1219</u>		23	<u>1436</u>	
12	<u>1254</u>		24	<u>1439</u>	

Comments:

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☒ Keep flowmeter running ☒ Install new 15L bottle; add ice ☒ Restart program from beginning - Date/Time Restarted: <u>2/26 1456</u> ☒ Verify running
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Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: White Water
 Personnel: VCIST

Bottle 2 of 2

Date/Time On-Site: _____

☐ Halt sampler program
☐ Put lid on sample bottle; label sample bottle
Sample ID: <u>240226-11</u> -WC
Approx Sample Volume (mL): <u>9500 mL</u>
Clarity (ex. Clear, Cloudy, Silty): <u>Silty</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>Brown</u>
QA/QC Sample ID: _____ -103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	2/26/24 1455	Success	13	2/26/24 1715	Success
2	1500		14	1746	
3	1505		15	1824	
4	1511		16	1908	
5	1517		17		
6	1525		18		
7	1533		19		
8	1543		20		
9	1555		21		
10	1609		22		
11	1627		23		
12	1648		24		

Comments:

If sampling is complete: ☒ Power off sampler, if separate from flowmeter ☒ Keep flowmeter running ☒ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☐ Keep flowmeter running ☐ Install new 15L bottle; add ice ☐ Restart program from beginning Date/Time Restarted: _____ ☐ Verify running
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Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

STATION: Main

SET UP

Personnel: KC, ST

Date/Time

On-Site: 2/25/24 1133

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1136	0.87	0.00	0.00	12.8
Enable Condition or Velocity Cutoff:			1.87	
Deadband:			1.00	
Trigger Volume:			3411	

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments:

SHUT DOWN

Personnel: ST

Date/Time

On-Site: 2/27/24 1547

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1547	0.85	0.00	0.00		12.4
Downloaded to: <u>Steven's USB</u>					

If flow monitoring is complete:

- ☒ Halt program on flowmeter
- ☒ Download flowmeter data
- ☒ Remove flowmeter battery

If continuing to monitor flow:

- ☐ Replace flowmeter battery
- ☐ Reset logging interval to 15 minutes
- ☐ Change velocity cutoff to 0.02 fps
- ☐ Start program
- ☐ Verify running

Comments:

Composite Sample Collection

STATION: Main
 Personnel: KC, ST

Bottle 1 of 2
 Date/Time On-Site: 2/26/24 1440

☒ Halt sampler program
☐ Put lid on sample bottle; label sample bottle
Sample ID: <u>240226-2012</u> -WC
Approx Sample Volume (mL): <u>13250 ml</u>
Clarity (ex. Clear, Cloudy, Silty): <u>Silty</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>Brown</u>
QA/QC Sample ID: _____ -103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	2/25/24 2238	Success	13	2/26/24 1318	Success
2	↓ 2304	↓	14	1330	↓
3	↓ 2326		15	1341	
4	2/26/24 0835		16	1349	
5	0858		17	1355	
6	0909		18	1400	
7	0921		19	1405	
8	0937		20	1410	
9	1013		21	1415	
10	1042		22	1421	
11	1142		23	1429	
12	↓ 1304	✓	24	↓ 1440	✓

Comments:

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☒ Keep flowmeter running ☒ Install new 15L bottle, add ice ☒ Restart program from beginning - Date/Time Restarted: <u>2/26/24 1443</u> ☒ Verify running
--	---

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: Main
 Personnel: EG ST

Bottle 2 of 2

Date/Time On-Site: _____

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	<u>240226-12</u> -WC
Approx Sample Volume (mL):	<u>800 mL</u>
Clarity (ex. Clear, Cloudy, Silty):	<u>Clear</u>
Color (ex. Clear, Gray, Tan, Brown, Black):	<u>Clear</u>
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	<u>2/26/24 1502</u>	<u>Success</u>	13		
2	<u>↓ 1601</u>	<u>↓</u>	14		
3			15		
4			16		
5			17		
6			18		
7			19		
8			20		
9			21		
10			22		
11			23		
12			24		

Comments:

If sampling is complete: ☒ Power off sampler, if separate from flowmeter ☒ Keep flowmeter running ☒ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☐ Keep flowmeter running ☐ Install new 15L bottle; add ice ☐ Restart program from beginning Date/Time Restarted: _____ ☐ Verify running
--	---

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Set Up/ Shut Down Form – ISCO (Whitewater, Americana, State)

STATION: Americana

SET UP

Personnel: KC, ST

Date/Time

On-Site: 2/25/24 1212

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1212	5.53	2.168	2.061	12.41
Enable Condition: <u>6.53 7.59</u>				
Hysteresis: <u>1.00</u>				
Flow Pulse Interval: <u>2900 cfs</u>				

On-Site

- ☒ Replace flowmeter battery, install sampler battery
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Set sampler program parameters
- ☒ Check date/time on sampler
- ☒ Verify all cable and tubing connections
- ☒ Verify sampler program is running

Flowlink (Refer to PG 411 or PG 412, if needed)

- ☒ Direct or Remote; Date/time Did not need to download
- ☒ Retrieve data and review recent flow history
- ☒ Change Wireless Power Control to Storm Event
- ☒ Change Data Storage Rates to 1 minute for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: On Trigger, and set Sampler Enable equation
- ☒ Set Sampler Pacing to Flow Paced, and set trigger volume

Comments: Data not downloaded. Recent flow history was viewed on the flowmeter screen.

SHUT DOWN

Personnel: ST

Date/Time

On-Site: 2/27/24 1502

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
15:03	5.56	1.80	2.217	11.90
Downloaded to: <u>Flowlink</u>				

On-Site

- ☒ Replace flowmeter battery
- ☒ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☒ Direct or Remote; Date/time 2/27 10:21
- ☒ Retrieve data
- ☒ Change Wireless Power Control to Dry Weather
- ☒ Change Data Storage Rates to 15 minutes for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: Never

Comments:

Composite Sample Collection

STATION: Americana
 Personnel: ST, KC

Bottle 1 of 2
 Date/Time On-Site: 2/24/14 1415

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	<u>240226-14</u> -WC
Approx Sample Volume (mL):	<u>12,500 mL</u>
Clarity (ex. Clear, Cloudy, Silty):	<u>Silty</u>
Color (ex. Clear, Gray, Tan, Brown, Black):	<u>Brown</u>
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	<u>2/24/0857</u>	<u>Success</u>	13	<u>2/26/24/1104</u>	<u>Success</u>
2	<u>0908</u>		14	<u>1121</u>	
3	<u>0918</u>		15	<u>1137</u>	
4	<u>0926</u>		16	<u>1311450</u>	
5	<u>0935</u>		17	<u>1321</u>	
6	<u>0944</u>	<u>Sample skipped</u>	18	<u>1330</u>	
7	<u>0954</u>	<u>Success</u>	19	<u>1339</u>	
8	<u>1005</u>		20	<u>1347</u>	<u>skipped</u>
9	<u>1018</u>		21	<u>1354</u>	<u>Success</u>
10	<u>1031</u>		22	<u>1400</u>	
11	<u>1042</u>		23	<u>1405</u>	
12	<u>1053</u>		24	<u>1410</u>	

Comments:

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☒ Keep flowmeter running ☒ Install new 15L bottle; add ice ☒ Restart program from beginning - Date/Time Restarted: <u>2/26 1418</u> ☒ Verify running
--	--

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: Americana

Personnel: V.C. ST

Bottle 2 of 2

Date/Time On-Site: 2/26/24 1805

☒ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	<u>240226 - 14</u> -WC
Approx Sample Volume (mL):	<u>8,000 mL</u>
Clarity (ex. Clear, Cloudy, Silty):	<u>cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black):	<u>Tan</u>
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	<u>2/26/24 1420</u>	<u>Success</u>	13	<u>2/26/24 1406</u>	<u>Successful</u>
2	<u>1425</u>		14		
3	<u>1430</u>		15		
4	<u>1436</u>		16		
5	<u>1442</u>		17		
6	<u>1448</u>		18		
7	<u>1455</u>		19		
8	<u>1503</u>		20		
9	<u>1512</u>		21		
10	<u>1523</u>		22		
11	<u>1535</u>		23		
12	<u>1549</u>		24		

Comments:

If sampling is complete:

- ☒ Power off sampler, if separate from flowmeter
- ☒ Keep flowmeter running
- ☒ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):

- ☐ Keep flowmeter running
- ☐ Install new 15L bottle; add ice
- ☐ Restart program from beginning

Date/Time Restarted: _____

- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

STATION: AS-6

SET UP

Personnel: KC, ST

Date/Time
On-Site: 2/25/24 1253

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1253	0.00	0.00	0.00	11.9/12.4
Enable Condition or Velocity Cutoff:			0.02	
Deadband:				
Trigger Volume:			221	

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments:

SHUT DOWN

Personnel: ST

Date/Time
On-Site: 2/27/24 1352

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1353	0.000	0.00	0.00	5448.2	12.4
Downloaded to:		Rugged - SD drive			
		Raw data			

If flow monitoring is complete:

- ☒ Halt program on flowmeter
- ☒ Download flowmeter data
- ☒ Remove flowmeter battery

If continuing to monitor flow:

- ☐ Replace flowmeter battery
- ☐ Reset logging interval to 15 minutes
- ☐ Change velocity cutoff to 0.02 fps
- ☐ Start program
- ☐ Verify running

Comments:

Composite Sample Collection

STATION: AS-6
 Personnel: KC, ST

Bottle 1 of 2
 Date/Time On-Site: 2/26/24 1553

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	<u>240226-206</u> -WC
Approx Sample Volume (mL):	<u>12,500 mL</u>
Clarity (ex. Clear, Cloudy, Silty):	<u>Silty</u>
Color (ex. Clear, Gray, Tan, Brown, Black):	<u>Brown</u>
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	<u>2/26/24 1004</u>	<u>Success</u>	13	<u>2/26/24 1425</u>	<u>Success</u>
2	<u>1028</u>		14	<u>1430</u>	
3	<u>1057</u>		15	<u>1434</u>	
4	<u>1202</u>		16	<u>1439</u>	
5	<u>1326</u>		17	<u>1443</u>	
6	<u>1343</u>		18	<u>1449</u>	
7	<u>1354</u>		19	<u>1455</u>	
8	<u>1401</u>		20	<u>1502</u>	
9	<u>1407</u>		21	<u>1511</u>	
10	<u>1412</u>		22	<u>1523</u>	
11	<u>1416</u>		23	<u>1540</u>	
12	<u>1421</u>		24		

Comments:

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☒ Keep flowmeter running ☒ Install new 15L bottle, add ice ☒ Restart program from beginning - Date/Time Restarted: <u>2/26 4:07</u> ☒ Verify running
--	--

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: AS-6
 Personnel: VC, ST

Bottle 2 of 2
 Date/Time On-Site: 2/26/24 1853

☒ Halt sampler program
☐ Put lid on sample bottle; label sample bottle
Sample ID: <u>240226 - 206</u> -WC
Approx Sample Volume (mL): <u>400 mL</u>
Clarity (ex. Clear, Cloudy, Silty): <u>Clear</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>Tan</u>
QA/QC Sample ID: _____ -103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	<u>2/26/24 11020</u>	<u>Success</u>	13		
2			14		
3			15		
4			16		
5			17		
6			18		
7			19		
8			20		
9			21		
10			22		
11			23		
12			24		

Comments:

If sampling is complete: ☒ Power off sampler, if separate from flowmeter ☒ Keep flowmeter running ☒ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☐ Keep flowmeter running ☐ Install new 15L bottle; add ice ☐ Restart program from beginning Date/Time Restarted: _____ ☐ Verify running
--	---

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Attachment D: Storm Event Analytical Reports

Report Date: 03/08/2024 13:51



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00332-01	ACST1B	240226-03-WG	Water		02/26/2024	02/26/2024
AC00332-02	ACST1B	240226-11-WG	Water		02/26/2024	02/26/2024
AC00332-03	ACST1B	240226-12-WG	Water		02/26/2024	02/26/2024
AC00332-04	ACST1B	240226-12-101	Water		02/26/2024	02/26/2024
AC00332-05	ACST1B	240226-12-001	Water		02/26/2024	02/26/2024
AC00332-06	ACST1B	240226-14-WG	Water		02/26/2024	02/26/2024

Report Date: 03/08/2024 13:51



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location: ACST1B
Date/Time Collected: 02/26/2024 10:17
Lab Number: AC00332-01
Sample Type: Grab

Location Description: 240226-03-WG
Sample Collector: S.T
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method	Prepared	Analyzed	Analyst	
				MDL *	MDL				Reference	Initials
Microbiology										
E. Coli	B240669	37.9MPN/100 mL		1.0	1.0	IDEXX - Colilert	02/26/24 13:24	2/27/24 13:41	KMR	
Wet Chemistry										
Chlorine Screen	B240674	Absent				SM 4500-CL G-2000 mod	02/26/24	2/26/24 12:38	ALN	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 03/08/2024 13:51



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
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Fax (208) 608-7319

Analysis Report

Location: ACST1B
Date/Time Collected: 02/26/2024 09:28
Lab Number: AC00332-02
Sample Type: Grab

Location Description: 240226-11-WG
Sample Collector: S.T
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method Reference	Prepared	Analyzed	Analyst	
				MDL *	MDL				Initials	Qualifier
Microbiology										
E. Coli	B240669	38.3MPN/100 mL		1.0	1.0	IDEXX - Colilert	02/26/24 13:24	2/27/24 13:41	KMR	
Wet Chemistry										
Chlorine Screen	B240674	Absent				SM 4500-CL G-2000 mod	02/26/24	2/26/24 12:38	ALN	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 03/08/2024 13:51



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
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Fax (208) 608-7319

Analysis Report

Location: ACST1B

Location Description: 240226-12-WG

Date/Time Collected: 02/26/2024 09:19

Lab Number: AC00332-03

Sample Collector: L.S

Sample Type: Grab

Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method Reference	Prepared	Analyzed	Analyst	
				MDL *	MDL				Initials	Qualifier
Microbiology										
E. Coli	B240669	24.3MPN/100 mL		1.0	1.0	IDEXX - Colilert	02/26/24 13:24	2/27/24 13:41	KMR	
Wet Chemistry										
Chlorine Screen	B240674	Absent				SM 4500-CL G-2000 mod	02/26/24	2/26/24 12:38	ALN	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 03/08/2024 13:51



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
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Analysis Report

Location:	ACST1B	Location Description:	240226-12-101
Date/Time Collected:	02/26/2024 12:00		
Lab Number:	AC00332-04	Sample Collector:	L.S
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method Reference	Prepared	Analyzed	Analyst	
				MDL *	MDL				Initials	Qualifier
Microbiology										
E. Coli	B240669	26.9MPN/100 mL		1.0	1.0	IDEXX - Colilert	02/26/24 13:24	2/27/24 13:41	KMR	
Wet Chemistry										
Chlorine Screen	B240674	Absent				SM 4500-CL G-2000 mod	02/26/24	2/26/24 12:38	ALN	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 03/08/2024 13:51



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
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Analysis Report

Location: ACST1B Location Description: 240226-12-001
Date/Time Collected: 02/26/2024 12:00
Lab Number: AC00332-05 Sample Collector: L.S.
Sample Type: Grab Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method	Prepared	Analyzed	Analyst	
				MDL *	MDL				Reference	Initials
Microbiology										
E Coli	B240669	<1.0MPN/100 mL		1.0	1.0	IDEXX - Colilert	02/26/24 13:24	2/27/24 13:41	KMR	U
Wet Chemistry										
Chlorine Screen	B240674	Absent				SM 4500-CL G-2000 mod	02/26/24	2/26/24 12:42	ALN	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B, was corrected for dilution, dry weight, or method-defined ML.

Report Date: 03/08/2024 13:51



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location: ACST1B

Location Description: 240226-14-WG

Date/Time Collected: 02/26/2024 09:48

Lab Number: AC00332-06

Sample Collector: M.V

Sample Type: Grab

Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method Reference	Prepared	Analyzed	Analyst	
				MDL *	MDL				Initials	Qualifier
Microbiology										
E. Coli	B240669	125.9 MPN/100 mL		1.0	1.0	IDEXX - Colilert	02/26/24 13:24	2/27/24 13:41	KMR	
Wet Chemistry										
Chlorine Screen	B240674	Absent				SM 4500-CL G-2000 mod	02/26/24	2/26/24 12:42	ALN	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 03/08/2024 13:51



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Microbiology									
Batch: B240669									
Blank (B240669-BLK1)									
E. Coli	Absent						02/27/2024	KMR	
LCS (B240669-BS1)									
E. Coli				Present			02/27/2024	KMR	
Duplicate (B240669-DUP1) Source ID: WB02977-06									
E. Coli					Pass	128	02/27/2024	KMR	
Duplicate (B240669-DUP2) Source ID: AC00332-01									
E. Coli					Pass	128	02/27/2024	KMR	

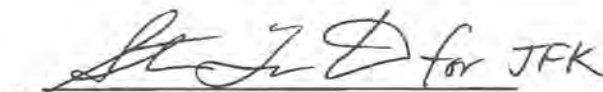


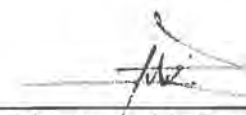
Notes and Definitions

Item	Definition
U	Analyte included in the analysis, but not detected

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846


Janet Finegan-Kelly
Water Quality Laboratory Manager


Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714-6418
Tel. (208) 387-6269
Fax (208) 387-6391
Purchase Order:
Project:
Sampler(s):

63065628

Stormwater-PI

Steven Turner
Paul Bomber
Kristen Christensen
Lindsey Sincot Mike Van Lydegraf

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix	Type	Composite	BOD ₅ - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Colliert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO ₃ +NO ₂ - EPA 353.2	NH ₃ - SM 4500 NH ₃ -D	Total Containers
Acc00332																									
-01	2/26/24		1017		240226-03-WG	ST	X	X												X					1
-02			0928		240226-11-WG	ST	X	X												X					1
-03			0919		240226-12-WG	LS	X	X												X					1
-04			1200		240226-12-101	LS	X	X												X					1
-05			1200		240226-12-001	LS	X	X												X					1
-06			0948		240226-14-WG	LV	X	X												X					1

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
<i>Kristen Christensen</i>	2/26/24 1201	<i>April [Signature]</i> 2-26-24 1204	

Report Date: 03/08/2024 13:51



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00333-01	ACST1B	240226-206-WG	Water		02/26/2024	02/26/2024

Report Date: 03/08/2024 13:51



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location: ACST1B
Date/Time Collected: 02/26/2024 10:12
Lab Number: AC00333-01
Sample Type: Grab

Location Description: 240226-206-WG
Sample Collector: M.V
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method Reference	Prepared	Analyzed	Analyst	
				MDL *	MDL				Initials	Qualifier
Microbiology										
E Coli	B240669	53.7 MPN/100 mL		1.0	1.0	IDEXX - Colilert	02/26/24 13:24	2/27/24 13:41	KMR	
Wet Chemistry										
Chlorine Screen	B240674	Absent				SM 4500-CL G-2000 mod	02/26/24	2/26/24 12:42	ALN	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 03/08/2024 13:51



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
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Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Microbiology									
Batch: B240669									
Blank (B240669-BLK1)									
E. Coli	Absent						02/27/2024	KMR	
LCS (B240669-BS1)									
E. Coli				Present			02/27/2024	KMR	
Duplicate (B240669-DUP1) Source ID: WB02977-06									
E. Coli					Pass	128	02/27/2024	KMR	
Duplicate (B240669-DUP2) Source ID: AC00332-01									
E. Coli					Pass	128	02/27/2024	KMR	



Notes and Definitions

Item	Definition
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No notes entered.

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846


Janet Finegan-Kelly
Water Quality Laboratory Manager


Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714-6418
Tel. (208) 387-6269
Fax (208) 387-6391
Purchase Order: 6
Project: S
Sampler(s): 2

Stormwater-PI

Kristen Chisholm
Lindsey Smeot
Mike Van Lydegraf

[illegible]

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
<i>Kristen Chisholm</i>	2/26/24 1201	<i>April B. Giff</i> 2-26-24 1204	

Revised Report



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00337-01	ACST1C	240226-03-WC	Water		02/26/2024	02/27/2024
Comments: Container temp #1 - 4.8 C						
AC00337-02	ACST1C	240226-11-WC	Water		02/26/2024	02/27/2024
Comments: Container temps: #1 - 6.4 C, #2 - 5.7 C						
AC00337-03	ACST1C	240226-12-WC	Water		02/26/2024	02/27/2024
Comments: Container temps: #1 - 8.4 C, #2 - 7.2 C						
AC00337-04	ACST1C	240226-14-WC	Water		02/26/2024	02/27/2024
Comments: Container temps: #1 - 7.4 C, #2 - 5.6 C						

Revised Report



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location: ACST1C

Location Description: 240226-03-WC

Date/Time Collected: 02/26/2024 09:05 - 02/26/2024 15:34

Lab Number: AC00337-01

Sample Collector: S.T

Sample Type: Composite

Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240744	0.476	mg/L	0.0500	0.0500	SM 4500-NH3 D-2011	03/01/24	3/1/24 11:29	MEC	
BOD5	B240684	13.5	mg/L	2.00	2.00	SM 5210 B-2016	02/27/24	3/3/24 11:21	BAK	
Chloride	B240796	8.92	mg/L	0.0150	0.0150	EPA 300.0, Rev. 2.1 (1993)	03/06/24	3/6/24 22:25	ALN	
COD	B240680	60.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/27/24	2/27/24 10:52	MCB	
Nitrate-Nitrite, as N	B240718	0.969	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/29/24	2/29/24 12:18	LRF	
TKN	B240816	1.71	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	03/07/24	3/8/24 9:46	JAL	
Total Dissolved Solids	B240696	114	mg/L	20.0	20.0	SM 2540 C-2015	02/28/24	2/29/24 13:59	MEC	
Total Suspended Solids	B240708	18.1	mg/L	0.900	0.900	SM 2540 D-2015	02/28/24	2/28/24 10:21	RKT	
Turbidity	B240698	18.9	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	02/28/24	2/28/24 8:26	ASE	
Dissolved Wet Chemistry										
Orthophosphate, as P	B240685	0.124	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/27/24	2/27/24 10:06	RKT	
Total Metals										
Mercury	B240817	0.0150	ug/L	0.0100	0.0100	EPA 245.1	03/07/24	3/8/24 8:12	SAS	
Arsenic	B240750	2.6	ug/L	0.070	0.070	EPA 200.8	03/02/24	3/3/24 13:49	DMW	
Cadmium	B240750	0.031	ug/L	0.010	0.010	EPA 200.8	03/02/24	3/3/24 13:49	DMW	
Calcium	B240695	17.6	mg/L	0.0400	0.0400	EPA 200.7	02/28/24	3/1/24 11:18	AMO	
Lead	B240750	0.72	ug/L	0.010	0.010	EPA 200.8	03/02/24	3/3/24 13:49	DMW	
Magnesium	B240695	2250	ug/L	80.0	80.0	EPA 200.7	02/28/24	3/1/24 11:18	AMO	
Phosphorus as P	B240695	0.262	mg/L	0.0120	0.0120	EPA 200.7	02/28/24	3/1/24 11:18	AMO	
Hardness	B240695	53.2	mg/L	0.100	0.100	SM 2340 B-2011	02/28/24	3/1/24 11:18	AMO	
Dissolved Metals										
Cadmium	B241178	0.011	ug/L	0.010	0.010	EPA 200.8	04/04/24	4/4/24 16:04	DMW	
Copper	B240802	4.5	ug/L	0.15	0.15	EPA 200.8	03/08/24	3/8/24 16:28	DMW	
Lead	B241178	0.028	ug/L	9.00E-3	9.00E-3	EPA 200.8	04/04/24	4/4/24 16:04	DMW	
Zinc	B240802	13.5	ug/L	0.50	0.50	EPA 200.8	03/08/24	3/8/24 16:28	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Revised Report



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location: ACST1C
Date/Time Collected: 02/26/2024 09:23 - 02/26/2024 19:08
Lab Number: AC00337-02
Sample Type: Composite

Location Description: 240226-11-WC
Sample Collector: S.T
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240744	0.596	mg/L	0.0500	0.0500	SM 4500-NH3 D-2011	03/01/24	3/1/24 11:45	MEC	
BOD5	B240684	12.6	mg/L	2.00	2.00	SM 5210 B-2016	02/27/24	3/3/24 11:12	BAK	
Chloride	B240796	44.4	mg/L	0.0150	0.0150	EPA 300.0, Rev. 2.1 (1993)	03/07/24	3/7/24 0:10	ALN	
COD	B240680	84.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/27/24	2/27/24 10:58	MCB	
Nitrate-Nitrite, as N	B240718	0.921	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/29/24	2/29/24 12:19	LRF	
TKN	B240816	2.43	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	03/07/24	3/8/24 9:47	JAL	
Total Dissolved Solids	B240696	182	mg/L	20.0	20.0	SM 2540 C-2015	02/28/24	2/29/24 14:00	MEC	
Total Suspended Solids	B240683	47.3	mg/L	0.900	0.900	SM 2540 D-2015	02/27/24	2/27/24 10:25	MEC	
Turbidity	B240698	52.3	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	02/28/24	2/28/24 9:53	ASE	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B240685	0.174	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/27/24	2/27/24 10:07	RKT	
Total Metals										
Mercury	B240817	0.0151	ug/L	0.0100	0.0100	EPA 245.1	03/07/24	3/8/24 8:16	SAS	
Arsenic	B240750	2.6	ug/L	0.070	0.070	EPA 200.8	03/02/24	3/3/24 13:52	DMW	
Cadmium	B240750	0.062	ug/L	0.010	0.010	EPA 200.8	03/02/24	3/3/24 13:52	DMW	
Calcium	B240695	22.5	mg/L	0.0400	0.0400	EPA 200.7	02/28/24	3/1/24 11:24	AMO	
Lead	B240750	3.8	ug/L	0.010	0.010	EPA 200.8	03/02/24	3/3/24 13:52	DMW	
Magnesium	B240695	5260	ug/L	80.0	80.0	EPA 200.7	02/28/24	3/1/24 11:24	AMO	
Phosphorus as P	B240695	0.347	mg/L	0.0120	0.0120	EPA 200.7	02/28/24	3/1/24 11:24	AMO	
Hardness	B240695	77.8	mg/L	0.100	0.100	SM 2340 B-2011	02/28/24	3/1/24 11:24	AMO	
Dissolved Metals										
Cadmium	B241178	0.014	ug/L	0.010	0.010	EPA 200.8	04/04/24	4/4/24 16:07	DMW	
Copper	B240802	4.4	ug/L	0.15	0.15	EPA 200.8	03/08/24	3/8/24 16:30	DMW	
Lead	B241178	0.093	ug/L	9.00E-3	9.00E-3	EPA 200.8	04/04/24	4/4/24 16:07	DMW	
Zinc	B240802	24.5	ug/L	0.50	0.50	EPA 200.8	03/08/24	3/8/24 16:30	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Revised Report



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location: ACST1C
Date/Time Collected: 02/25/2024 22:38 - 02/26/2024 16:01
Lab Number: AC00337-03
Sample Type: Composite

Location Description: 240226-12-WC
Sample Collector: S.T
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240744	0.829	mg/L	0.0500	0.0500	SM 4500-NH3 D-2011	03/01/24	3/1/24 11:37	MEC	
BOD5	B240684	13.9	mg/L	2.00	2.00	SM 5210 B-2016	02/27/24	3/3/24 11:07	BAK	
Chloride	B240796	17.0	mg/L	0.0150	0.0150	EPA 300.0, Rev. 2.1 (1993)	03/07/24	3/7/24 0:37	ALN	
COD	B240680	119	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/27/24	2/27/24 10:58	MCB	
Nitrate-Nitrite, as N	B240718	0.424	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/29/24	2/29/24 12:21	LRF	
TKN	B240816	1.96	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	03/07/24	3/8/24 9:48	JAL	
Total Dissolved Solids	B240696	85.2	mg/L	20.0	20.0	SM 2540 C-2015	02/28/24	2/29/24 14:01	MEC	
Total Suspended Solids	B240683	104	mg/L	0.900	0.900	SM 2540 D-2015	02/27/24	2/27/24 10:28	MEC	
Turbidity	B240698	94.7	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	02/28/24	2/28/24 9:08	ASE	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B240685	0.0631	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/27/24	2/27/24 10:09	RKT	
Total Metals										
Mercury	B240817	0.0191	ug/L	0.0100	0.0100	EPA 245.1	03/07/24	3/8/24 8:51	SAS	
Arsenic	B240750	1.5	ug/L	0.070	0.070	EPA 200.8	03/02/24	3/3/24 13:54	DMW	
Cadmium	B240750	0.13	ug/L	0.010	0.010	EPA 200.8	03/02/24	3/3/24 13:54	DMW	
Calcium	B240695	7.84	mg/L	0.0400	0.0400	EPA 200.7	02/28/24	3/1/24 11:51	AMO	
Lead	B240750	6.1	ug/L	0.010	0.010	EPA 200.8	03/02/24	3/3/24 13:54	DMW	
Magnesium	B240695	2470	ug/L	80.0	80.0	EPA 200.7	02/28/24	3/1/24 11:51	AMO	
Phosphorus as P	B240695	0.231	mg/L	0.0120	0.0120	EPA 200.7	02/28/24	3/1/24 11:51	AMO	
Hardness	B240695	29.8	mg/L	0.100	0.100	SM 2340 B-2011	02/28/24	3/1/24 11:51	AMO	
Dissolved Metals										
Cadmium	B241178	0.032	ug/L	0.010	0.010	EPA 200.8	04/04/24	4/4/24 16:09	DMW	
Copper	B240802	5.6	ug/L	0.15	0.15	EPA 200.8	03/08/24	3/8/24 16:33	DMW	
Lead	B241178	0.12	ug/L	9.00E-3	9.00E-3	EPA 200.8	04/04/24	4/4/24 16:09	DMW	
Zinc	B240802	51.7	ug/L	0.50	0.50	EPA 200.8	03/08/24	3/8/24 16:33	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Revised Report



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location: ACST1C
Date/Time Collected: 02/26/2024 08:57 - 02/26/2024 16:06
Lab Number: AC00337-04
Sample Type: Composite

Location Description: 240226-14-WC
Sample Collector: S.T
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analized	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240744	0.496	mg/L	0.0500	0.0500	SM 4500-NH3 D-2011	03/01/24	3/1/24 11:39	MEC	
BOD5	B240684	12.6	mg/L	2.00	2.00	SM 5210 B-2016	02/27/24	3/3/24 11:01	BAK	
Chloride	B240796	56.1	mg/L	0.0150	0.0150	EPA 300.0, Rev. 2.1 (1993)	03/07/24	3/7/24 1:03	ALN	
COD	B240680	85.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/27/24	2/27/24 10:58	MCB	
Nitrate-Nitrite, as N	B240718	0.940	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/29/24	2/29/24 12:22	LRF	
TKN	B240816	1.47	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	03/07/24	3/8/24 9:49	JAL	
Total Dissolved Solids	B240696	214	mg/L	20.0	20.0	SM 2540 C-2015	02/28/24	2/29/24 14:03	MEC	
Total Suspended Solids	B240683	54.3	mg/L	0.900	0.900	SM 2540 D-2015	02/27/24	2/27/24 11:21	MEC	
Turbidity	B240698	51.1	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	02/28/24	2/28/24 10:00	ASE	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B240685	0.106	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/27/24	2/27/24 10:10	RKT	
Total Metals										
Mercury	B240817	0.0148	ug/L	0.0100	0.0100	EPA 245.1	03/07/24	3/8/24 8:54	SAS	
Arsenic	B240750	3.3	ug/L	0.070	0.070	EPA 200.8	03/02/24	3/3/24 13:57	DMW	
Cadmium	B240750	0.097	ug/L	0.010	0.010	EPA 200.8	03/02/24	3/3/24 13:57	DMW	
Calcium	B240695	31.4	mg/L	0.0400	0.0400	EPA 200.7	02/28/24	3/1/24 11:57	AMO	
Lead	B240750	3.9	ug/L	0.010	0.010	EPA 200.8	03/02/24	3/3/24 13:57	DMW	
Magnesium	B240695	5710	ug/L	80.0	80.0	EPA 200.7	02/28/24	3/1/24 11:57	AMO	
Phosphorus as P	B240695	0.276	mg/L	0.0120	0.0120	EPA 200.7	02/28/24	3/1/24 11:57	AMO	
Hardness	B240695	102	mg/L	0.100	0.100	SM 2340 B-2011	02/28/24	3/1/24 11:57	AMO	
Dissolved Metals										
Cadmium	B241178	0.021	ug/L	0.010	0.010	EPA 200.8	04/04/24	4/4/24 16:12	DMW	
Copper	B240802	4.0	ug/L	0.15	0.15	EPA 200.8	03/08/24	3/8/24 16:43	DMW	
Lead	B241178	0.063	ug/L	9.00E-3	9.00E-3	EPA 200.8	04/04/24	4/4/24 16:12	DMW	
Zinc	B240802	24.3	ug/L	0.50	0.50	EPA 200.8	03/08/24	3/8/24 16:43	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

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Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry									
Batch: B240680									
Blank (B240680-BLK1)									
COD	<7	mg/L					02/27/2024	MCB	U
LCS (B240680-BS1)									
COD			100	90-110			02/27/2024	MCB	
Duplicate (B240680-DUP1)	Source ID: AC00335-01								
COD					3.92	10	02/27/2024	MCB	
Batch: B240683									
Blank (B240683-BLK1)									
Total Suspended Solids	<0.9	mg/L					02/27/2024	MEC	U
LCS (B240683-BS1)									
Total Suspended Solids			101	90-110			02/27/2024	MEC	
Duplicate (B240683-DUP1)	Source ID: BB03630-02								
Total Suspended Solids					8.03	20	02/27/2024	MEC	
Batch: B240684									
Blank (B240684-BLK1)									
BOD5	<2	mg/L					03/03/2024	BAK	U
LCS (B240684-BS1)									
BOD5			102	84.6-115.4			03/03/2024	BAK	
LCS (B240684-BS2)									
BOD5			109	84.6-115.4			03/03/2024	BAK	
Duplicate (B240684-DUP1)	Source ID: BB03630-03								
BOD5					3.10	30	03/03/2024	BAK	
Batch: B240696									
Blank (B240696-BLK1)									
Total Dissolved Solids	<20	mg/L					02/29/2024	MEC	U
LCS (B240696-BS1)									
Total Dissolved Solids			99.4	90-110			02/29/2024	MEC	
Duplicate (B240696-DUP1)	Source ID: LS01873-01								
Total Dissolved Solids					0.700	10	02/29/2024	MEC	

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Quality Control Report

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Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240698									
Blank (B240698-BLK1)									
Turbidity	<0.3	NTU					02/28/2024	ASE	U
LCS (B240698-BS1)									
Turbidity			98.2	90-110			02/28/2024	ASE	
Duplicate (B240698-DUP1) Source ID: AC00337-04									
Turbidity					3.45	25	02/28/2024	ASE	D
Batch: B240708									
Blank (B240708-BLK1)									
Total Suspended Solids	<0.9	mg/L					02/28/2024	RKT	U
LCS (B240708-BS1)									
Total Suspended Solids			96.2	90-110			02/28/2024	RKT	
Duplicate (B240708-DUP1) Source ID: BB03631-02									
Total Suspended Solids					3.63	20	02/28/2024	RKT	
Duplicate (B240708-DUP2) Source ID: BB03632-01									
Total Suspended Solids					6.00	20	02/28/2024	RKT	
Batch: B240718									
Blank (B240718-BLK1)									
Nitrate-Nitrite, as N	<0.025	mg/L					02/29/2024	LRF	U
Blank (B240718-BLK2)									
Nitrate-Nitrite, as N	<0.025	mg/L					02/29/2024	LRF	U
LCS (B240718-BS1)									
Nitrate-Nitrite, as N			104	90-110			02/29/2024	LRF	
LCS (B240718-BS2)									
Nitrate-Nitrite, as N			99.7	90-110			02/29/2024	LRF	
Duplicate (B240718-DUP1) Source ID: BB03631-02									
Nitrate-Nitrite, as N					NR	10	02/29/2024	LRF	
Duplicate (B240718-DUP2) Source ID: AC00336-01									
Nitrate-Nitrite, as N					0.514	10	02/29/2024	LRF	
Duplicate (B240718-DUP3) Source ID: LS01875-02									
Nitrate-Nitrite, as N					0.470	10	02/29/2024	LRF	
Matrix Spike (B240718-MS1) Source ID: BB03631-02									
Nitrate-Nitrite, as N			101	90-110			02/29/2024	LRF	
Matrix Spike (B240718-MS2) Source ID: AC00336-01									
Nitrate-Nitrite, as N			99.9	90-110			02/29/2024	LRF	
Matrix Spike (B240718-MS3) Source ID: LS01875-02									
Nitrate-Nitrite, as N			98.2	90-110			02/29/2024	LRF	
Matrix Spike Dup (B240718-MSD1) Source ID: BB03631-02									
Nitrate-Nitrite, as N			106	90-110	4.55	10	02/29/2024	LRF	
Matrix Spike Dup (B240718-MSD2) Source ID: AC00336-01									
Nitrate-Nitrite, as N			99.9	90-110	0.0278	10	02/29/2024	LRF	

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Quality Control Report

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Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240718 (Continued)									
Matrix Spike Dup (B240718-MSD3)	Source ID: LS01875-02								
Nitrate-Nitrite, as N			97.3	90-110	0.479	10	02/29/2024	LRF	
Batch: B240744									
Blank (B240744-BLK1)									
Ammonia, as N	<50	ug/L					03/01/2024	MEC	U
LCS (B240744-BS1)									
Ammonia, as N			97.7	90-110			03/01/2024	MEC	
Duplicate (B240744-DUP1)	Source ID: LS01873-02								
Ammonia, as N					1.34	10	03/01/2024	MEC	
Duplicate (B240744-DUP2)	Source ID: BB03629-03								
Ammonia, as N					1.56	10	03/01/2024	MEC	
Matrix Spike (B240744-MS1)	Source ID: LS01873-02								
Ammonia, as N			98.3	80-120			03/01/2024	MEC	
Matrix Spike (B240744-MS2)	Source ID: BB03629-03								
Ammonia, as N			104	80-120			03/01/2024	MEC	
Matrix Spike Dup (B240744-MSD1)	Source ID: LS01873-02								
Ammonia, as N			100	80-120	1.38	10	03/01/2024	MEC	
Matrix Spike Dup (B240744-MSD2)	Source ID: BB03629-03								
Ammonia, as N			106	80-120	1.01	10	03/01/2024	MEC	
Batch: B240796									
Blank (B240796-BLK1)									
Chloride	<0.015	mg/L					03/06/2024	ALN	U
Blank (B240796-BLK2)									
Chloride	<0.015	mg/L					03/07/2024	ALN	U
LCS (B240796-BS1)									
Chloride			95.7	90-110			03/06/2024	ALN	
LCS (B240796-BS2)									
Chloride			96.0	90-110			03/06/2024	ALN	
LCS (B240796-BS3)									
Chloride			95.4	90-110			03/07/2024	ALN	
Duplicate (B240796-DUP1)	Source ID: RW00054-10								
Chloride					3.94	10	03/07/2024	ALN	D
Duplicate (B240796-DUP2)	Source ID: RW00056-07								
Chloride					0.398	10	03/07/2024	ALN	D
Duplicate (B240796-DUP3)	Source ID: AC00337-01								
Chloride					0.672	10	03/06/2024	ALN	
Duplicate (B240796-DUP4)	Source ID: LS01873-01								
Chloride					0.319	10	03/07/2024	ALN	D
Matrix Spike (B240796-MS1)	Source ID: RW00054-10								
Chloride			96.6	90-110			03/07/2024	ALN	D

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Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240796 (Continued)									
Matrix Spike (B240796-MS2) Chloride	Source ID: RW00056-07		94.1	90-110			03/07/2024	ALN	D
Matrix Spike (B240796-MS3) Chloride	Source ID: AC00337-01		93.9	90-110			03/06/2024	ALN	
Matrix Spike (B240796-MS4) Chloride	Source ID: LS01873-01		94.6	90-110			03/07/2024	ALN	D
Matrix Spike Dup (B240796-MSD1) Chloride	Source ID: RW00054-10		97.2	90-110	0.377	10	03/07/2024	ALN	D
Matrix Spike Dup (B240796-MSD2) Chloride	Source ID: RW00056-07		94.2	90-110	0.0228	10	03/07/2024	ALN	D
Matrix Spike Dup (B240796-MSD3) Chloride	Source ID: AC00337-01		97.5	90-110	2.75	10	03/07/2024	ALN	
Matrix Spike Dup (B240796-MSD4) Chloride	Source ID: LS01873-01		95.4	90-110	0.336	10	03/07/2024	ALN	D
Batch: B240816									
Blank (B240816-BLK1) TKN	<0.1	mg/L					03/08/2024	JAL	U
Blank (B240816-BLK2) TKN	<0.1	mg/L					03/08/2024	JAL	U
Blank (B240816-BLK3) TKN	<0.1	mg/L					03/08/2024	JAL	U
LCS (B240816-BS1) TKN			96.1	80-120			03/08/2024	JAL	
LCS (B240816-BS2) TKN			105	80-120			03/08/2024	JAL	
LCS (B240816-BS3) TKN			104	80-120			03/08/2024	JAL	
Duplicate (B240816-DUP1) TKN	Source ID: BB03631-02				1.33	20	03/08/2024	JAL	D
Duplicate (B240816-DUP2) TKN	Source ID: BB03638-01				1.21	20	03/08/2024	JAL	D
Duplicate (B240816-DUP3) TKN	Source ID: LS01875-05				1.25	20	03/08/2024	JAL	D
Matrix Spike (B240816-MS1) TKN	Source ID: BB03631-02		106	80-120			03/08/2024	JAL	D
Matrix Spike (B240816-MS2) TKN	Source ID: BB03638-01		107	80-120			03/08/2024	JAL	D
Matrix Spike (B240816-MS3) TKN	Source ID: LS01875-05		108	80-120			03/08/2024	JAL	D

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Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
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Wet Chemistry (Continued)**Batch: B240816 (Continued)**

Matrix Spike (B240816-MS4) TKN	Source ID: RW00055-01		107	80-120			03/08/2024	JAL	D
Matrix Spike (B240816-MS5) TKN	Source ID: RW00055-03		105	80-120			03/08/2024	JAL	D
Matrix Spike (B240816-MS6) TKN	Source ID: RW00055-04		103	80-120			03/08/2024	JAL	D
Matrix Spike (B240816-MS7) TKN	Source ID: RW00055-06		102	80-120			03/08/2024	JAL	D
Matrix Spike Dup (B240816-MSD1) TKN	Source ID: BB03631-02		114	80-120	2.56	20	03/08/2024	JAL	D
Matrix Spike Dup (B240816-MSD2) TKN	Source ID: BB03638-01		115	80-120	2.66	20	03/08/2024	JAL	D
Matrix Spike Dup (B240816-MSD3) TKN	Source ID: LS01875-05		114	80-120	2.43	20	03/08/2024	JAL	D

Dissolved Wet Chemistry**Batch: B240685**

Blank (B240685-BLK1)										
Orthophosphate, as P		<0.003	mg/L				02/27/2024	RKT	U	
LCS (B240685-BS1)										
Orthophosphate, as P				96.3	90-110		02/27/2024	RKT		
Duplicate (B240685-DUP1)		Source ID: LS01873-02								
Orthophosphate, as P						0.0687	10	02/27/2024	RKT	D
Duplicate (B240685-DUP3)		Source ID: RW00054-07RE1								
Orthophosphate, as P						0.433	10	02/27/2024	RKT	D
Matrix Spike (B240685-MS1)		Source ID: LS01873-02								
Orthophosphate, as P				98.4	90-110			02/27/2024	RKT	D
Matrix Spike (B240685-MS3)		Source ID: RW00054-07RE1								
Orthophosphate, as P				101	90-110			02/27/2024	RKT	D
Matrix Spike Dup (B240685-MSD1)		Source ID: LS01873-02								
Orthophosphate, as P				98.5	90-110	0.0349	10	02/27/2024	RKT	D
Matrix Spike Dup (B240685-MSD3)		Source ID: RW00054-07RE1								
Orthophosphate, as P				101	90-110	0.0489	10	02/27/2024	RKT	D

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Quality Control Report

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Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals									
Batch: B240695									
Blank (B240695-BLK1)									
Calcium	<0.04	mg/L					03/01/2024	AMO	U
Magnesium	<80	ug/L					03/01/2024	AMO	U
Phosphorus as P	<0.012	mg/L					03/01/2024	AMO	U
LCS (B240695-BS1)									
Calcium			102	85-115			03/01/2024	AMO	
Magnesium			101	85-115			03/01/2024	AMO	
Phosphorus as P			108	85-115			03/01/2024	AMO	
Duplicate (B240695-DUP1) Source ID: AC00337-02									
Calcium					0.727	20	03/01/2024	AMO	
Magnesium					0.793	20	03/01/2024	AMO	
Phosphorus as P					0.100	20	03/01/2024	AMO	
Matrix Spike (B240695-MS1) Source ID: AC00337-02									
Calcium			102	70-130			03/01/2024	AMO	
Magnesium			99.6	70-130			03/01/2024	AMO	
Phosphorus as P			112	70-130			03/01/2024	AMO	
Matrix Spike Dup (B240695-MSD1) Source ID: AC00337-02									
Calcium			101	70-130	0.172	20	03/01/2024	AMO	
Magnesium			99.4	70-130	0.180	20	03/01/2024	AMO	
Phosphorus as P			113	70-130	0.221	20	03/01/2024	AMO	
Batch: B240750									
Blank (B240750-BLK1)									
Arsenic	<0.070	ug/L					03/03/2024	DMW	U
Cadmium	<0.010	ug/L					03/03/2024	DMW	U
Lead	<0.010	ug/L					03/03/2024	DMW	U
LCS (B240750-BS1)									
Arsenic			102	85-115			03/03/2024	DMW	
Cadmium			105	85-115			03/03/2024	DMW	
Lead			107	85-115			03/03/2024	DMW	
Duplicate (B240750-DUP1) Source ID: AC00336-01									
Arsenic					1.36	20	03/03/2024	DMW	
Cadmium					9.29	20	03/03/2024	DMW	
Lead					0.499	20	03/03/2024	DMW	
Matrix Spike (B240750-MS1) Source ID: AC00336-01									
Arsenic			98.2	70-130			03/03/2024	DMW	
Cadmium			100	70-130			03/03/2024	DMW	
Lead			96.4	70-130			03/03/2024	DMW	
Matrix Spike Dup (B240750-MSD1) Source ID: AC00336-01									
Arsenic			98.3	70-130	0.110	20	03/03/2024	DMW	
Cadmium			103	70-130	3.09	20	03/03/2024	DMW	
Lead			97.5	70-130	0.693	20	03/03/2024	DMW	

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Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals (Continued)									
Batch: B240817									
Blank (B240817-BLK1)									
Mercury	<0.01	ug/L					03/08/2024	SAS	U
LCS (B240817-BS1)									
Mercury			102	85-115			03/08/2024	SAS	
Duplicate (B240817-DUP1) Source ID: AC00336-01									
Mercury					1.32	20	03/08/2024	SAS	
Duplicate (B240817-DUP2) Source ID: BB03624-03									
Mercury					NR	20	03/08/2024	SAS	
Matrix Spike (B240817-MS1) Source ID: AC00336-01									
Mercury			99.4	70-130			03/08/2024	SAS	
Matrix Spike (B240817-MS2) Source ID: BB03624-03									
Mercury			106	70-130			03/08/2024	SAS	
Matrix Spike Dup (B240817-MSD1) Source ID: AC00336-01									
Mercury			98.6	70-130	0.699	20	03/08/2024	SAS	
Matrix Spike Dup (B240817-MSD2) Source ID: BB03624-03									
Mercury			107	70-130	0.600	20	03/08/2024	SAS	

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Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Dissolved Metals									
Batch: B240802									
Blank (B240802-BLK1)									
Copper	<0.15	ug/L					03/08/2024	DMW	U
Zinc	<0.50	ug/L					03/08/2024	DMW	U
LCS (B240802-BS1)									
Copper			91.8	85-115			03/08/2024	DMW	
Zinc			93.3	85-115			03/08/2024	DMW	
Duplicate (B240802-DUP1) Source ID: AC00337-03									
Copper					1.42	10	03/08/2024	DMW	
Zinc					1.17	10	03/08/2024	DMW	
Matrix Spike (B240802-MS1) Source ID: AC00337-03									
Copper			90.6	70-130			03/08/2024	DMW	
Zinc			89.1	70-130			03/08/2024	DMW	
Matrix Spike Dup (B240802-MSD1) Source ID: AC00337-03									
Copper			89.4	70-130	0.854	10	03/08/2024	DMW	
Zinc			86.0	70-130	1.20	10	03/08/2024	DMW	
Batch: B241178									
Blank (B241178-BLK1)									
Cadmium	<0.010	ug/L					04/04/2024	DMW	U
Lead	<0.0090	ug/L					04/04/2024	DMW	U
LCS (B241178-BS1)									
Cadmium			99.9	85-115			04/04/2024	DMW	
Lead			99.4	85-115			04/04/2024	DMW	
Duplicate (B241178-DUP1) Source ID: AC00340-01									
Cadmium					NR	10	04/04/2024	DMW	U
Lead					2.01	10	04/04/2024	DMW	
Matrix Spike (B241178-MS1) Source ID: AC00340-01									
Cadmium			102	70-130			04/04/2024	DMW	
Lead			98.4	70-130			04/04/2024	DMW	
Matrix Spike Dup (B241178-MSD1) Source ID: AC00340-01									
Cadmium			102	70-130	0.490	10	04/04/2024	DMW	
Lead			98.3	70-130	0.146	10	04/04/2024	DMW	

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Notes and Definitions

Item	Definition
D	Data reported from a dilution
U	Analyte included in the analysis, but not detected

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846


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Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Ada County Highway District

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Purchase Order:
Project:
Sampler(s):

63065628

Stormwater-PI

Kristen Chisholm
Steven Turner

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification		Sampler Initials	Water	Grab	Composite	BOD ₅ - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - BECK-Gottfert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO ₃ +NO ₂ - EPA 353.2	NH ₃ - SM 4500 NH ₃ -D	Total Contaminants
AC00 337-01	2/26/24	2/26/24	0905	1534	240226-03-WC	4.8°C	ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1
-02	2/26/24	2/26/24	0923	1908	240226-11-WC	6.4°C & 57°C	ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2
-03	2/25/24	2/26/24	2238	1601	240226-12-WC	8.4°C & 7.2°C	ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2
✓ -04	2/26/24	2/26/24	0857	1606	240226-14-WC	7.4°C & 56°C	ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristen Chisholm	2/26/24 2057	Roz 2-27-24 0705	If low volume for 240226-03-WC, please prioritize NOx + Diss Cd, Cu, Pb, Zn, & Orthophosphate.

ACHD SAMPLE FILTRATION, SPLITTING, AND COMPOSITING FOR METALS

PAGE 1 OF 2

Sample	Split/Filter Info	Filter Used	Bottle/Lid Lots	Bottles Split	Comments
Lims#: AC000337-01 Location: <u>-03</u> Sample Date: 2-26-24 Sample ID: ACSTIC #1	Split <u>7</u> Date: 2-26-24 (P) Start Split: <u>C 726</u> Start Filter: <u>0726</u> Comp Time: <u>N/A</u> Analyst: <u>AMO/DKT</u>	Filter: ☒ Voss ☒ 0.45µm high-cap. ☒ 5.0µm ☒ 10.0µm	Coll Jug: <u>CC00051-25</u> Comp Jug: <u>N/A</u> SS Tubing: CC00051-28 SS Helper: SSA1 Stir Bar: CC00040-46 Connector: CC00044-99 (x2)	☒ Teflon Total ☒ Teflon Diss (F) ☒ Hg CVAA ☒ BOD ☒ TSS ☒ TDS ☒ COD ☒ TKN ☒ NH ₃ ☒ NO _x (F) ☒ ortho-P (F) ☒ Turb ☒ <u>IC(F)</u> ☐ _____	Prioritize NO _x , Diss, metals & DRP per ACHD.
Lims#: AC000337-02 Location: <u>-11</u> Sample Date: 2-26-24 Sample ID: ACSTIC #2	Split <u>7</u> Date: 2-26-24 (P) Start Split: <u>0744</u> Start Filter: <u>0744</u> Comp Time: <u>0739</u> Analyst: <u>AMO/DKT</u>	Filter: ☒ Voss ☒ 0.45µm high-cap. ☒ 5.0µm ☒ 10.0µm	Coll Jug: <u>CC00048-77</u> Comp Jug: <u>CC00051-37</u> SS Tubing: CC00051-28 SS Helper: SSA4 Stir Bar: CC00040-41 31-41 Connector: CC00044-99/48-69	☒ Teflon Total ☒ Teflon Diss (F) ☒ Hg CVAA ☒ BOD ☒ TSS ☒ TDS ☒ COD ☒ TKN ☒ NH ₃ ☒ NO _x (F) ☒ ortho-P (F) ☒ Turb ☒ <u>IC(F)</u> ☐ _____	2 jugs composited into 40L
Lims#: AC000337-03 Location: <u>-12</u> Sample Date: 2-26-24 Sample ID: ACSTIC #3	Split <u>7</u> Date: 2-26-24 (P) Start Split: <u>0823</u> Start Filter: <u>0823</u> Comp Time: <u>0819</u> Analyst: <u>AMO/DKT</u>	Filter: ☒ Voss ☒ 0.45µm high-cap. ☒ 5.0µm ☒ 10.0µm	Coll Jug: <u>CC00051-25</u> Comp Jug: <u>CC00051-25</u> SS Tubing: CC00051-28 SS Helper: SSA5 Stir Bar: CC00051-26 Connector: CC00044-99/48-69	☒ Teflon Total ☒ Teflon Diss (F) ☒ Hg CVAA ☒ BOD ☒ TSS ☒ TDS ☒ COD ☒ TKN ☒ NH ₃ ☒ NO _x (F) ☒ ortho-P (F) ☒ Turb ☒ <u>IC(F)</u> ☐ _____	2 jugs composited into 16L
Lims#: AC000337-04 Location: <u>-14</u> Sample Date: 2-26-24 Sample ID: ACSTIC #4	Split <u>7</u> Date: 2-26-24 (P) Start Split: <u>0803</u> Start Filter: <u>0803</u> Comp Time: <u>0759</u> Analyst: <u>AMO/DKT</u>	Filter: ☒ Voss ☒ 0.45µm high-cap. ☒ 5.0µm ☒ 10.0µm	Coll Jug: <u>CC00048-77</u> Comp Jug: <u>CC00051-37</u> SS Tubing: CC00051-28 SS Helper: SSA7 Stir Bar: CC00051-28 Connector: CC00048-69 (x2)	☒ Teflon Total ☒ Teflon Diss (F) ☒ Hg CVAA ☒ BOD ☒ TSS ☒ TDS ☒ COD ☒ TKN ☒ NH ₃ ☒ NO _x (F) ☒ ortho-P (F) ☒ Turb ☒ <u>IC(F)</u> ☐ _____	2 jugs composited into 40L
Lims#: AC000336-01 Location: <u>-206</u> Sample Date: 2-26-24 Sample ID: ACSTIC #5	Split <u>7</u> Date: 2-26-24 (P) Start Split: <u>0833</u> Start Filter: <u>0833</u> Comp Time: <u>0834</u> Analyst: <u>AMO/DKT</u>	Filter: ☒ Voss ☒ 0.45µm high-cap. ☒ 5.0µm ☒ 10.0µm	Coll Jug: <u>CC00051-38</u> Comp Jug: <u>CC00051-38</u> SS Tubing: CC00051-28 SS Helper: SSA8 Stir Bar: CC00051-36 Connector: CC00048-69 (x2)	☒ Teflon Total ☒ Teflon Diss (F) ☒ Hg CVAA ☒ BOD ☒ TSS ☒ TDS ☒ COD ☒ TKN ☒ NH ₃ ☒ NO _x (F) ☒ ortho-P (F) ☒ Turb ☒ <u>IC(F)</u> ☐ _____	2 jugs composited into 16L used 2nd set of Voss filters (+3), connector cont 2's - CC00051-27 (x2)

* ASE and SMC observed splitting

Report Date: 04/11/2024 08:19

Revised Report



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Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00336-01	ACST1C	240226-206-WC	Water		02/26/2024	02/27/2024

Comments:

Container temps: #1 - 7.0 C, #2 - 8.1 C

Revised Report



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Analysis Report

Location: ACST1C

Location Description: 240226-206-WC

Date/Time Collected: 02/26/2024 10:04 - 02/26/2024 16:20

Lab Number: AC00336-01

Sample Collector: S.T

Sample Type: Composite

Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240744	0.522	mg/L	0.0500	0.0500	SM 4500-NH3 D-2011	03/01/24	3/1/24 11:42	MEC	
BOD5	B240684	17.7	mg/L	2.00	2.00	SM 5210 B-2016	02/27/24	3/3/24 11:26	BAK	
Chloride	B240796	9.39	mg/L	0.0150	0.0150	EPA 300.0, Rev. 2.1 (1993)	03/06/24	3/6/24 21:58	ALN	
COD	B240680	122	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/27/24	2/27/24 11:18	MCB	
Nitrate-Nitrite, as N	B240718	0.278	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/29/24	2/29/24 12:13	LRF	
TKN	B240816	2.43	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	03/07/24	3/8/24 9:44	JAL	
Total Dissolved Solids	B240696	85.8	mg/L	20.0	20.0	SM 2540 C-2015	02/28/24	2/29/24 13:58	MEC	
Total Suspended Solids	B240683	75.8	mg/L	0.900	0.900	SM 2540 D-2015	02/27/24	2/27/24 10:39	MEC	
Turbidity	B240698	75.5	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	02/28/24	2/28/24 9:41	ASE	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B240685	0.289	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/27/24	2/27/24 10:05	RKT	
Total Metals										
Mercury	B240817	0.0183	ug/L	0.0100	0.0100	EPA 245.1	03/07/24	3/8/24 7:58	SAS	
Arsenic	B240750	2.2	ug/L	0.070	0.070	EPA 200.8	03/02/24	3/3/24 13:40	DMW	
Cadmium	B240750	0.087	ug/L	0.010	0.010	EPA 200.8	03/02/24	3/3/24 13:40	DMW	
Calcium	B240695	5.43	mg/L	0.0400	0.0400	EPA 200.7	02/28/24	3/1/24 11:13	AMO	
Lead	B240750	6.3	ug/L	0.010	0.010	EPA 200.8	03/02/24	3/3/24 13:40	DMW	
Magnesium	B240695	2110	ug/L	80.0	80.0	EPA 200.7	02/28/24	3/1/24 11:13	AMO	
Phosphorus as P	B240695	0.570	mg/L	0.0120	0.0120	EPA 200.7	02/28/24	3/1/24 11:13	AMO	
Hardness	B240695	22.2	mg/L	0.100	0.100	SM 2340 B-2011	02/28/24	3/1/24 11:13	AMO	
Dissolved Metals										
Cadmium	B241178	0.016	ug/L	0.010	0.010	EPA 200.8	04/04/24	4/4/24 16:02	DMW	
Copper	B240802	5.0	ug/L	0.15	0.15	EPA 200.8	03/08/24	3/8/24 16:25	DMW	
Lead	B241178	0.26	ug/L	9.00E-3	9.00E-3	EPA 200.8	04/04/24	4/4/24 16:02	DMW	
Zinc	B240802	20.2	ug/L	0.50	0.50	EPA 200.8	03/08/24	3/8/24 16:25	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Revised Report



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Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry									
Batch: B240680									
Blank (B240680-BLK1) COD	<7	mg/L					02/27/2024	MCB	U
LCS (B240680-BS1) COD			100	90-110			02/27/2024	MCB	
Duplicate (B240680-DUP1) COD	Source ID: AC00335-01				3.92	10	02/27/2024	MCB	
Batch: B240683									
Blank (B240683-BLK1) Total Suspended Solids	<0.9	mg/L					02/27/2024	MEC	U
LCS (B240683-BS1) Total Suspended Solids			101	90-110			02/27/2024	MEC	
Duplicate (B240683-DUP1) Total Suspended Solids	Source ID: BB03630-02				8.03	20	02/27/2024	MEC	
Batch: B240684									
Blank (B240684-BLK1) BOD5	<2	mg/L					03/03/2024	BAK	U
LCS (B240684-BS1) BOD5			102	84.6-115.4			03/03/2024	BAK	
LCS (B240684-BS2) BOD5			109	84.6-115.4			03/03/2024	BAK	
Duplicate (B240684-DUP1) BOD5	Source ID: BB03630-03				3.10	30	03/03/2024	BAK	
Batch: B240696									
Blank (B240696-BLK1) Total Dissolved Solids	<20	mg/L					02/29/2024	MEC	U
LCS (B240696-BS1) Total Dissolved Solids			99.4	90-110			02/29/2024	MEC	
Duplicate (B240696-DUP1) Total Dissolved Solids	Source ID: LS01873-01				0.700	10	02/29/2024	MEC	

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Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240698									
Blank (B240698-BLK1)									
Turbidity	<0.3	NTU					02/28/2024	ASE	U
LCS (B240698-BS1)									
Turbidity			98.2	90-110			02/28/2024	ASE	
Duplicate (B240698-DUP1) Source ID: AC00337-04									
Turbidity					3.45	25	02/28/2024	ASE	D
Batch: B240718									
Blank (B240718-BLK1)									
Nitrate-Nitrite, as N	<0.025	mg/L					02/29/2024	LRF	U
Blank (B240718-BLK2)									
Nitrate-Nitrite, as N	<0.025	mg/L					02/29/2024	LRF	U
LCS (B240718-BS1)									
Nitrate-Nitrite, as N			104	90-110			02/29/2024	LRF	
LCS (B240718-BS2)									
Nitrate-Nitrite, as N			99.7	90-110			02/29/2024	LRF	
Duplicate (B240718-DUP1) Source ID: BB03631-02									
Nitrate-Nitrite, as N					NR	10	02/29/2024	LRF	
Duplicate (B240718-DUP2) Source ID: AC00336-01									
Nitrate-Nitrite, as N					0.514	10	02/29/2024	LRF	
Duplicate (B240718-DUP3) Source ID: LS01875-02									
Nitrate-Nitrite, as N					0.470	10	02/29/2024	LRF	
Matrix Spike (B240718-MS1) Source ID: BB03631-02									
Nitrate-Nitrite, as N			101	90-110			02/29/2024	LRF	
Matrix Spike (B240718-MS2) Source ID: AC00336-01									
Nitrate-Nitrite, as N			99.9	90-110			02/29/2024	LRF	
Matrix Spike (B240718-MS3) Source ID: LS01875-02									
Nitrate-Nitrite, as N			98.2	90-110			02/29/2024	LRF	
Matrix Spike Dup (B240718-MSD1) Source ID: BB03631-02									
Nitrate-Nitrite, as N			106	90-110	4.55	10	02/29/2024	LRF	
Matrix Spike Dup (B240718-MSD2) Source ID: AC00336-01									
Nitrate-Nitrite, as N			99.9	90-110	0.0278	10	02/29/2024	LRF	
Matrix Spike Dup (B240718-MSD3) Source ID: LS01875-02									
Nitrate-Nitrite, as N			97.3	90-110	0.479	10	02/29/2024	LRF	

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Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240744									
Blank (B240744-BLK1)									
Ammonia, as N	<50	ug/L					03/01/2024	MEC	U
LCS (B240744-BS1)									
Ammonia, as N			97.7	90-110			03/01/2024	MEC	
Duplicate (B240744-DUP1) Source ID: LS01873-02									
Ammonia, as N					1.34	10	03/01/2024	MEC	
Duplicate (B240744-DUP2) Source ID: BB03629-03									
Ammonia, as N					1.56	10	03/01/2024	MEC	
Matrix Spike (B240744-MS1) Source ID: LS01873-02									
Ammonia, as N			98.3	80-120			03/01/2024	MEC	
Matrix Spike (B240744-MS2) Source ID: BB03629-03									
Ammonia, as N			104	80-120			03/01/2024	MEC	
Matrix Spike Dup (B240744-MSD1) Source ID: LS01873-02									
Ammonia, as N			100	80-120	1.38	10	03/01/2024	MEC	
Matrix Spike Dup (B240744-MSD2) Source ID: BB03629-03									
Ammonia, as N			106	80-120	1.01	10	03/01/2024	MEC	
Batch: B240796									
Blank (B240796-BLK1)									
Chloride	<0.015	mg/L					03/06/2024	ALN	U
Blank (B240796-BLK2)									
Chloride	<0.015	mg/L					03/07/2024	ALN	U
LCS (B240796-BS1)									
Chloride			95.7	90-110			03/06/2024	ALN	
LCS (B240796-BS2)									
Chloride			96.0	90-110			03/06/2024	ALN	
LCS (B240796-BS3)									
Chloride			95.4	90-110			03/07/2024	ALN	
Duplicate (B240796-DUP1) Source ID: RW00054-10									
Chloride					3.94	10	03/07/2024	ALN	D
Duplicate (B240796-DUP2) Source ID: RW00056-07									
Chloride					0.398	10	03/07/2024	ALN	D
Duplicate (B240796-DUP3) Source ID: AC00337-01									
Chloride					0.672	10	03/06/2024	ALN	
Duplicate (B240796-DUP4) Source ID: LS01873-01									
Chloride					0.319	10	03/07/2024	ALN	D
Matrix Spike (B240796-MS1) Source ID: RW00054-10									
Chloride			96.6	90-110			03/07/2024	ALN	D
Matrix Spike (B240796-MS2) Source ID: RW00056-07									
Chloride			94.1	90-110			03/07/2024	ALN	D

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Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240796 (Continued)									
Matrix Spike (B240796-MS3) Chloride	Source ID: AC00337-01		93.9	90-110			03/06/2024	ALN	
Matrix Spike (B240796-MS4) Chloride	Source ID: LS01873-01		94.6	90-110			03/07/2024	ALN	D
Matrix Spike Dup (B240796-MSD1) Chloride	Source ID: RW00054-10		97.2	90-110	0.377	10	03/07/2024	ALN	D
Matrix Spike Dup (B240796-MSD2) Chloride	Source ID: RW00056-07		94.2	90-110	0.0228	10	03/07/2024	ALN	D
Matrix Spike Dup (B240796-MSD3) Chloride	Source ID: AC00337-01		97.5	90-110	2.75	10	03/07/2024	ALN	
Matrix Spike Dup (B240796-MSD4) Chloride	Source ID: LS01873-01		95.4	90-110	0.336	10	03/07/2024	ALN	D
Batch: B240816									
Blank (B240816-BLK1) TKN		<0.1 mg/L					03/08/2024	JAL	U
Blank (B240816-BLK2) TKN		<0.1 mg/L					03/08/2024	JAL	U
Blank (B240816-BLK3) TKN		<0.1 mg/L					03/08/2024	JAL	U
LCS (B240816-BS1) TKN			96.1	80-120			03/08/2024	JAL	
LCS (B240816-BS2) TKN			105	80-120			03/08/2024	JAL	
LCS (B240816-BS3) TKN			104	80-120			03/08/2024	JAL	
Duplicate (B240816-DUP1) TKN	Source ID: BB03631-02				1.33	20	03/08/2024	JAL	D
Duplicate (B240816-DUP2) TKN	Source ID: BB03638-01				1.21	20	03/08/2024	JAL	D
Duplicate (B240816-DUP3) TKN	Source ID: LS01875-05				1.25	20	03/08/2024	JAL	D
Matrix Spike (B240816-MS1) TKN	Source ID: BB03631-02		106	80-120			03/08/2024	JAL	D
Matrix Spike (B240816-MS2) TKN	Source ID: BB03638-01		107	80-120			03/08/2024	JAL	D
Matrix Spike (B240816-MS3) TKN	Source ID: LS01875-05		108	80-120			03/08/2024	JAL	D
Matrix Spike (B240816-MS4) TKN	Source ID: RW00055-01		107	80-120			03/08/2024	JAL	D

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Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
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Wet Chemistry (Continued)**Batch: B240816 (Continued)**

Matrix Spike (B240816-MS5) TKN	Source ID: RW00055-03		105	80-120			03/08/2024	JAL	D
Matrix Spike (B240816-MS6) TKN	Source ID: RW00055-04		103	80-120			03/08/2024	JAL	D
Matrix Spike (B240816-MS7) TKN	Source ID: RW00055-06		102	80-120			03/08/2024	JAL	D
Matrix Spike Dup (B240816-MSD1) TKN	Source ID: BB03631-02		114	80-120	2.56	20	03/08/2024	JAL	D
Matrix Spike Dup (B240816-MSD2) TKN	Source ID: BB03638-01		115	80-120	2.66	20	03/08/2024	JAL	D
Matrix Spike Dup (B240816-MSD3) TKN	Source ID: LS01875-05		114	80-120	2.43	20	03/08/2024	JAL	D

Dissolved Wet Chemistry**Batch: B240685**

Blank (B240685-BLK1) Orthophosphate, as P		<0.003	mg/L				02/27/2024	RKT	U
LCS (B240685-BS1) Orthophosphate, as P			96.3	90-110			02/27/2024	RKT	
Duplicate (B240685-DUP1) Orthophosphate, as P	Source ID: LS01873-02				0.0687	10	02/27/2024	RKT	D
Duplicate (B240685-DUP3) Orthophosphate, as P	Source ID: RW00054-07RE1				0.433	10	02/27/2024	RKT	D
Matrix Spike (B240685-MS1) Orthophosphate, as P	Source ID: LS01873-02		98.4	90-110			02/27/2024	RKT	D
Matrix Spike (B240685-MS3) Orthophosphate, as P	Source ID: RW00054-07RE1		101	90-110			02/27/2024	RKT	D
Matrix Spike Dup (B240685-MSD1) Orthophosphate, as P	Source ID: LS01873-02		98.5	90-110	0.0349	10	02/27/2024	RKT	D
Matrix Spike Dup (B240685-MSD3) Orthophosphate, as P	Source ID: RW00054-07RE1		101	90-110	0.0489	10	02/27/2024	RKT	D

Revised Report



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals									
Batch: B240695									
Blank (B240695-BLK1)									
Calcium	<0.04	mg/L					03/01/2024	AMO	U
Magnesium	<80	ug/L					03/01/2024	AMO	U
Phosphorus as P	<0.012	mg/L					03/01/2024	AMO	U
LCS (B240695-BS1)									
Calcium			102	85-115			03/01/2024	AMO	
Magnesium			101	85-115			03/01/2024	AMO	
Phosphorus as P			108	85-115			03/01/2024	AMO	
Duplicate (B240695-DUP1) Source ID: AC00337-02									
Calcium					0.727	20	03/01/2024	AMO	
Magnesium					0.793	20	03/01/2024	AMO	
Phosphorus as P					0.100	20	03/01/2024	AMO	
Matrix Spike (B240695-MS1) Source ID: AC00337-02									
Calcium			102	70-130			03/01/2024	AMO	
Magnesium			99.6	70-130			03/01/2024	AMO	
Phosphorus as P			112	70-130			03/01/2024	AMO	
Matrix Spike Dup (B240695-MSD1) Source ID: AC00337-02									
Calcium			101	70-130	0.172	20	03/01/2024	AMO	
Magnesium			99.4	70-130	0.180	20	03/01/2024	AMO	
Phosphorus as P			113	70-130	0.221	20	03/01/2024	AMO	
Batch: B240750									
Blank (B240750-BLK1)									
Arsenic	<0.070	ug/L					03/03/2024	DMW	U
Cadmium	<0.010	ug/L					03/03/2024	DMW	U
Lead	<0.010	ug/L					03/03/2024	DMW	U
LCS (B240750-BS1)									
Arsenic			102	85-115			03/03/2024	DMW	
Cadmium			105	85-115			03/03/2024	DMW	
Lead			107	85-115			03/03/2024	DMW	
Duplicate (B240750-DUP1) Source ID: AC00336-01									
Arsenic					1.36	20	03/03/2024	DMW	
Cadmium					9.29	20	03/03/2024	DMW	
Lead					0.499	20	03/03/2024	DMW	
Matrix Spike (B240750-MS1) Source ID: AC00336-01									
Arsenic			98.2	70-130			03/03/2024	DMW	
Cadmium			100	70-130			03/03/2024	DMW	
Lead			96.4	70-130			03/03/2024	DMW	
Matrix Spike Dup (B240750-MSD1) Source ID: AC00336-01									
Arsenic			98.3	70-130	0.110	20	03/03/2024	DMW	
Cadmium			103	70-130	3.09	20	03/03/2024	DMW	
Lead			97.5	70-130	0.693	20	03/03/2024	DMW	

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Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals (Continued)									
Batch: B240817									
Blank (B240817-BLK1)									
Mercury	<0.01	ug/L					03/08/2024	SAS	U
LCS (B240817-BS1)									
Mercury			102	85-115			03/08/2024	SAS	
Duplicate (B240817-DUP1) Source ID: AC00336-01									
Mercury					1.32	20	03/08/2024	SAS	
Duplicate (B240817-DUP2) Source ID: BB03624-03									
Mercury					NR	20	03/08/2024	SAS	
Matrix Spike (B240817-MS1) Source ID: AC00336-01									
Mercury			99.4	70-130			03/08/2024	SAS	
Matrix Spike (B240817-MS2) Source ID: BB03624-03									
Mercury			106	70-130			03/08/2024	SAS	
Matrix Spike Dup (B240817-MSD1) Source ID: AC00336-01									
Mercury			98.6	70-130	0.699	20	03/08/2024	SAS	
Matrix Spike Dup (B240817-MSD2) Source ID: BB03624-03									
Mercury			107	70-130	0.600	20	03/08/2024	SAS	

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Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Dissolved Metals									
Batch: B240802									
Blank (B240802-BLK1)									
Copper	<0.15	ug/L					03/08/2024	DMW	U
Zinc	<0.50	ug/L					03/08/2024	DMW	U
LCS (B240802-BS1)									
Copper			91.8	85-115			03/08/2024	DMW	
Zinc			93.3	85-115			03/08/2024	DMW	
Duplicate (B240802-DUP1) Source ID: AC00337-03									
Copper					1.42	10	03/08/2024	DMW	
Zinc					1.17	10	03/08/2024	DMW	
Matrix Spike (B240802-MS1) Source ID: AC00337-03									
Copper			90.6	70-130			03/08/2024	DMW	
Zinc			89.1	70-130			03/08/2024	DMW	
Matrix Spike Dup (B240802-MSD1) Source ID: AC00337-03									
Copper			89.4	70-130	0.854	10	03/08/2024	DMW	
Zinc			86.0	70-130	1.20	10	03/08/2024	DMW	
Batch: B241178									
Blank (B241178-BLK1)									
Cadmium	<0.010	ug/L					04/04/2024	DMW	U
Lead	<0.0090	ug/L					04/04/2024	DMW	U
LCS (B241178-BS1)									
Cadmium			99.9	85-115			04/04/2024	DMW	
Lead			99.4	85-115			04/04/2024	DMW	
Duplicate (B241178-DUP1) Source ID: AC00340-01									
Cadmium					NR	10	04/04/2024	DMW	U
Lead					2.01	10	04/04/2024	DMW	
Matrix Spike (B241178-MS1) Source ID: AC00340-01									
Cadmium			102	70-130			04/04/2024	DMW	
Lead			98.4	70-130			04/04/2024	DMW	
Matrix Spike Dup (B241178-MSD1) Source ID: AC00340-01									
Cadmium			102	70-130	0.490	10	04/04/2024	DMW	
Lead			98.3	70-130	0.146	10	04/04/2024	DMW	

Revised Report



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Notes and Definitions

Item	Definition
D	Data reported from a dilution
U	Analyte included in the analysis, but not detected

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846


Janet Finegan-Kelly
Water Quality Laboratory Manager


Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Ada County Highway District

Attn: Steven Turner
 3775 Adams Street
 Garden City, Idaho 83714-6418
 Tel. (208) 387-6269
 Fax (208) 387-6391
 Purchase Order:
 Project:
 Sampler(s):

63065628

Stormwater-PI

Kristin Cluskey
 Steven Turner

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix	Type	Composite	BOD ₅ - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 246.2	E. Coli - IDEXX-Gallert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO ₃ +NO ₂ - EPA 353.2	NH ₃ - SM 4500 NH ₃ - D	Total Contaminants
✓ AC0033601	2/26/24	2/26/24	1004	1620	240226-206-WC 7.0°C & 8.1°C	ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristin Cluskey	2/26/24 2:58	Steve 2-27-24 07:05	



Technical Memorandum

1290 W. Myrtle St. Suite 340
Boise, ID 83702

Phone: 801.316.9859

Prepared for: Ada County Highway District
Project Title: NPDES Phase I Stormwater Support WY 2024
Project No.: 159103

Technical Memorandum

Subject: ACHD Phase I Storm Event Report for March 28, 2024
Date: June 20, 2024
To: Monica Lowe
Cc: Steven Turner
Kristen Chisholm
From: Zuly Lapa, Project Engineer

Prepared by: Zuly Lapa, EIT, Project Engineer

Reviewed by: Melissa Jannusch, PE, Project Manager

Limitations:

This document was prepared solely for ACHD in accordance with professional standards at the time the services were performed and in accordance with the contract between ACHD and Brown and Caldwell dated October 10, 2023. This document is governed by the specific scope of work authorized by ACHD; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by ACHD and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

Section 1: Introduction

The Environmental Protection Agency Region 10 reissued a Municipal Separate Storm Sewer System Phase I National Pollutant Discharge Elimination System Permit (NPDES) Permit, effective October 1, 2021, to Ada County Highway District (ACHD), Boise City, Ada County Drainage District No. 3, Idaho Transportation Department District 3, Boise State University, and Garden City. Under the NPDES Permit, Permittees are required to continue to conduct wet weather stormwater outfall monitoring and subwatershed monitoring. Four outfall monitoring sites (Lucky, Whitewater, Main, and Americana) and one subwatershed monitoring site (AS_6) have been established. The AS_6 site represents a subwatershed located within the Americana watershed. At each site, a minimum of three composite and three grab samples will be collected during Water Year (WY) 2024 (October 1, 2023, through September 30, 2024). The following storm event report summarizes stormwater sampling results from the March 28, 2024, storm event.

Section 2: Project Status

Table 2-1 is a summary of the sample types collected to date for WY 2024 Phase I Stormwater Outfall Monitoring. When samples are qualified, additional samples will be attempted from subsequent storms to collect unqualified samples.

Table 2-1. WY 2024 Samples Collected					
Date	Lucky	Whitewater	Main	Americana	AS_6
October 10, 2023	G, C ^{1,2}	G	--	G, C ³	--
November 19, 2023	G, C	G, C	G, C	G ⁴ , C	G, C
February 1, 2024	G ⁵ , C	G ⁵ , C ⁶	G ⁵ , C	G ⁵ , C	G ⁵ , C
February 26, 2024	G, C	G, C	G, C ⁷	G, C	G, C
March 28, 2024	--	C	G, C	G	G
Unqualified Samples:	3G, 3C	3G, 3C	3G, 3C	3G, 3C	3G, 3C
Samples Remaining:	0G, 0C	0G, 0C	0G, 0C	0G, 0C	0G, 0C

Notes:

-- = no samples taken

C = composite sample

G = grab sample

¹ Composite samples qualified due to lack of representativeness (50%–75%).

² Incomplete water quality analysis due to low composite sample volume.

³ Composite samples qualified due to lack of representativeness (50%–75%) of the calculated flow volume.

⁴ Incomplete field parameter collection on the grab sample data form due to field error.

⁵ E. coli sample qualified due to exceeded hold time.

⁶ Composite sample rejected due to automatic sampler triggering prior to storm event runoff. The subsamples taken prior to the event represented more than 10% of the composite volume.

⁷ Composite sample qualified due to automatic sampler triggering prior to storm event runoff. The subsamples taken prior to the event represented less than 10% of the composite volume.

Section 3: Storm Event Summary

The March 28, 2024, storm event and the subsequent preparation and sampling efforts are detailed in the following sections.

3.1 Storm Detail

A summary of the forecast on which monitoring decisions were based is detailed below. The sampling event communication form that describes the forecast and summarizes the decision-making process from March 28, 2024, is included in Attachment A for reference.

Wednesday, March 27, 2024 to Thursday, March 28, 2024

- On the morning of March 27, the National Weather Service issued a forecast of rain shadowing and light rain in the Boise area, starting March 27 at 1800 until March 28 at 0300. Rain was predicted to increase until March 28, 2024 at 1000. The chance of precipitation was 90%, with more than 0.1 inches of precipitation forecasted.
- Setup was accomplished in the afternoon of March 27. An expected precipitation depth of 0.11 inches was used to set trigger volumes at monitoring stations. A runoff calculations worksheet showing how the trigger volumes were calculated is included in Attachment A.
- Moderate rain first started at approximately March 27 at 1901 and ended March 28 at 1249.
- Precipitation totals ranged between 0.53 and 0.59 inches at local rain gauges.

Flow measurements and precipitation data are listed in Table 1 along with a sampling summary.

Hydrographs for the Whitewater, Main, Americana and AS_6 sites showing flow, rain, and sample collection data are included in Attachment B.

3.2 Sampling Summary

Whitewater and Main monitoring stations were set up on March 27, to collect flow-proportional composite samples during the storm. Sampler enable conditions were programmed into the Whitewater and Americana flowmeters. A site-specific velocity cutoff value was programmed into Main and AS_6 flowmeter. Setup and sampling information are included in Table 1. The field forms completed during setup/shutdown and sampling are included in Attachment C.

Grab Samples

A two-member team mobilized to collect stormwater runoff grab samples and verify operation of the automatic sampling equipment on March 28 around 0131. Grab samples for Main, Americana, and AS_6 was submitted to the West Boise Water Quality Lab (WQL) at 0816 on March 28.

Results for grab samples, including field parameter and analytical data, are included in Table 2. Laboratory analytical reports are included in Attachment D.

Composite Samples

Composite samples were collected at the Main monitoring station and submitted to the WQL at 1134 on March 28. The composite sample at Whitewater monitoring station was submitted at 1314 on March 28 to the WQL.

Analytical results are shown in Table 2 and pollutant loading estimates for the event are detailed in Table 3. Laboratory analytical reports are included in Attachment D.

Section 4: Quality Assurance/Quality Control

A summary of quality control samples collected during the March 28, 2024, storm event is presented below in Table 4-1. A field blank and a field duplicate were collected from the Main monitoring station. A field blank composite sample was collected from the Americana monitoring station. The analytical results for these samples are included in Table 4.

Table 4-1. Quality Control Samples			
Sample ID	Sample Type	Parent Sample	Conclusions
240328-12-001	Field blank	Main grab	No <i>E. coli</i> detection was reported in the field blank.
240328-12-101	Field duplicate	Main grab	Relative percent difference was within the acceptable range.
240328-14-002	Field blank composite	None	No composite parameter detection was reported on the field blank composite.

Data quality objectives for this storm were evaluated and tracked using the data validation review checklist included in Attachment A. Performance criteria for analytical and non-analytical data was met for this storm event.

Section 5: Notes and Recommendations

Whitewater

At Whitewater, composite sample bottle 3 had a power failed error message from 0405 until 0407 on March 28, due to the battery on the sampler running low. The error message was present for the last four subsamples in bottle 3. The battery was replaced prior to installing bottle 4, resolving the error message.

Data Tables



TAB-1

Table 1. Sampling and Flow Summary					
	Lucky	Whitewater	Main	Americana	AS_6
Grab samples collected and submitted?	NO	NO	YES	YES	YES
Composite samples collected and submitted?	NO	YES	YES	NO	NO
Trigger volume (ft ³)	--	800 cf	3411 gal	--	--
Velocity cutoff (fps)	--	--	--	--	--
Sampler enable condition (in)	--	Level > 3.3 "	Level > 1.84 "	--	--
Runoff start time	--	1919 ¹	1911 ¹	1901 ¹	1930 ¹
Grab sample collection time	--	--	0137	0159	0219
Composite sample stop time	--	1133	0739	--	--
Runoff stop time	--	1249 ²	0817 ²	0928 ²	1013 ²
Volume of discharge sampled (ft ³)	--	127,090	37,197	--	--
Total runoff volume (ft ³)	--	154,801	48,613	372,974	37,320
Percent of storm flow sampled (%)	--	82%	77%	--	--
Composite sample duration (hrs)	--	13	11	--	--
Storm Precipitation (in)	0.53	0.59	0.53	0.53/0.56	0.53/0.56
Referenced Rain Gauge	Cynthia Mann	Whitewater	Front	Front/East	Front/East
Sampler messages (counts): Success	--	159	70	--	--
Number of composite bottles filled	--	8	3	--	--
Composite sample volume (Approx.; ml)	--	88,300 ml	40,500 ml	--	--

Notes:

-- = No data.

¹ Storm runoff started on 3/27/2024.

² Storm runoff ended on 3/28/2024.

Monitoring Station	Sample Date	Sample ID Grab	Table 2. Field and Analytical Data Summary																									
			Field Parameters				E. coli mpn/100 mL	Sample ID Composite	Analytical Parameters																			
			Dissolved Oxygen	pH	Conductivity	Temperature			BOD ₅	COD	Hardness as CaCO ₃	Turbidity	TSS	TDS	Total Phosphorus	Orthophosphate as P	Ammonia as N	Nitrate + Nitrite as N	TKN	Arsenic, total	Cadmium, dissolved	Cadmium, total	Copper, dissolved	Lead, dissolved	Lead, total	Mercury, total	Zinc, dissolved	
			mg/L	S.U.	uS/cm	C			mg/L	mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	
Lucky	3/28/2024	240328-03-WG	--	--	--	--	--	240328-03-WC	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Whitewater	3/28/2024	240328-11-WG	--	--	--	--	--	240328-11-WC	8.20	84.0	31.9	26.2	131	76.0	0.318	0.131	0.236	0.277	1.63	2.0	<0.0100	0.074	1.9	0.097	5.8	0.0151	9.80	
Main	3/28/2024	240328-12-WG	10.02	7.82	116.08	10.91	21.6	240328-12-WC	5.03	104	12.6	24.6	91.7	44.2	0.145	0.0494	0.293	0.151	1.18	1.1	<0.0100	0.071	2.3	0.068	5.9	0.0171	14.7	
Americana	3/28/2024	240328-14-WG	10.57	7.28	255.40	9.79	365.4	240328-14-WC	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AS_6	3/28/2024	240328-206-WG	9.92	7.60	108.59	7.74	387.3	240328-206-WC	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

Notes:
 -- = No data.

Table 3. Event Pollutant Loading Estimates in Pounds						
Monitoring Station	Event Date	TSS	Total Phosphorus	Ammonia as N	Nitrate + Nitrite as N	TKN
Lucky	3/28/2024	--	--	--	--	--
Whitewater	3/28/2024	1266	3.07	2.28	2.68	15.7
Main	3/28/2024	278.2	0.440	0.889	0.458	3.58
Americana	3/28/2024	--	--	--	--	--
AS_6	3/28/2024	--	--	--	--	--

Notes:

-- = No data.

Table 4. QC Sample Summary																							
Date	Parent Sample	Sample ID	Type	E. coli	BOD ₅	COD	Hardness as CaCO3	Turbidity	TSS	TDS	Total Phosphorus	Dissolved Orthophosphate	Ammonia	Nitrate + Nitrite (N)	TKN	Arsenic, total	Cadmium, dissolved	Cadmium, total	Copper, dissolved	Lead, dissolved	Lead, total	Mercury, total	Zinc, dissolved
				mpn/100 mL	mg/L	mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
3/28/2024	240328-12-WG	240328-12-001	Field Blank	<1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3/28/2024	240328-12-WG	240328-12-101	Field Duplicate	17.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Calculated parent/duplicate RPD				5%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Allowable RPD				40%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
3/28/2024	--	240328-14-002	Field Blank Composite	--	<2.00	<7.00	<0.100	<0.3	<0.900	<20.0	<0.0120	<3.00E-3	<0.0450	<0.0250	<0.100	<0.0700	<0.0100	<0.0100	<0.150	<9.00E-3	<0.0100	<0.0100	<0.500

Notes:
-- = No data.

Attachment A: Supplemental Documents

Sampling Event Communication Form

Data Validation Checklist

Runoff Calculation Worksheet

SAMPLING EVENT COMMUNICATION FORM

Date: 03/27/2024	Time: 8:10 AM	Initials: ST
Is there a targeted sampling event during the next 36 hours? (Or, if it is Friday, is a targeted event expected before 5:00 PM Monday?)		Maybe

Past 72 hr Precip	0.08" at airport
Date and time of expected event	3/28/24 @ 3:00 am
Expected amount of precipitation	0.16"
Percent chance of precipitation	94%
Percent chance of >0.10" over 12 hours	90%

NWS Update

Spoke with Les from NWS and he said the main band of the rain will start around 3:00 AM with some light sprinkles around 6:00 pm on 3/27/24 resulting from rain shadowing. The total rain from 6:00 PM (3/27) – 3:00 AM (3/28) will be 0.02". There will be constant showers until 10:00 AM and there may be some light sprinkles till 12:00 PM. Theres a 90% chance we will receive over 0.1" of rain.

<u>Targeted Station & Samples</u>					
Lucky ☐ Grab ☐ Composite	Whitewater ☐ Grab ☒ Composite	Main ☒ Grab ☒ Composite	Americana ☒ Grab ☐ Composite	AS_6 ☒ Grab ☐ Composite	State (Phase II) ☒ Grab ☒ Composite

Type of Forecasted Precipitation

☐ Light Rain	☒ Rain	☐ Rain on Snow
☐ Scattered Showers	☐ Thunder Showers	☐ Snowmelt
☐ Other:		

Reasons for Not Targeting a Forecasted Storm and/or Stations

☐ Holiday

☐ Waiting on Antecedent Dry Period – Expires:

☐ Equipment Concerns:

☐ Other:

Text Forecast

NWS Forecast for: 2 Miles NNW Garden City ID
 Issued by: National Weather Service Boise, ID
 Last Update: 3:29 am MST Mar 27, 2024

Today: Scattered showers after noon. Mostly cloudy, with a high near 58. Southeast wind 7 to 14 mph. Chance of precipitation is 30%.

Tonight: Showers. Low around 39. East southeast wind 6 to 13 mph. Chance of precipitation is 90%. New precipitation amounts between a tenth and quarter of an inch possible.

Thursday: Showers likely, with thunderstorms also possible after noon. Mostly cloudy, with a high near 54. Calm wind becoming west 5 to 8 mph in the afternoon. Chance of precipitation is 70%.

Thursday Night: A 20 percent chance of showers before midnight. Mostly cloudy, with a low around 35. West southwest wind around 6 mph becoming east southeast after midnight.

Friday: A 20 percent chance of showers after noon. Partly sunny, with a high near 55. East southeast wind 3 to 7 mph.

Friday Night: Mostly cloudy, with a low around 34.

Saturday: Partly sunny, with a high near 59.

Saturday Night: A 20 percent chance of showers after midnight. Partly cloudy, with a low around 35.
Sunday: A 30 percent chance of showers, mainly before noon. Mostly sunny, with a high near 60.
Sunday Night: Mostly clear, with a low around 34.
Monday: Sunny, with a high near 63.
Monday Night: Mostly clear, with a low around 38.
Tuesday: Sunny, with a high near 71.

Forecast Discussion

Area Forecast Discussion

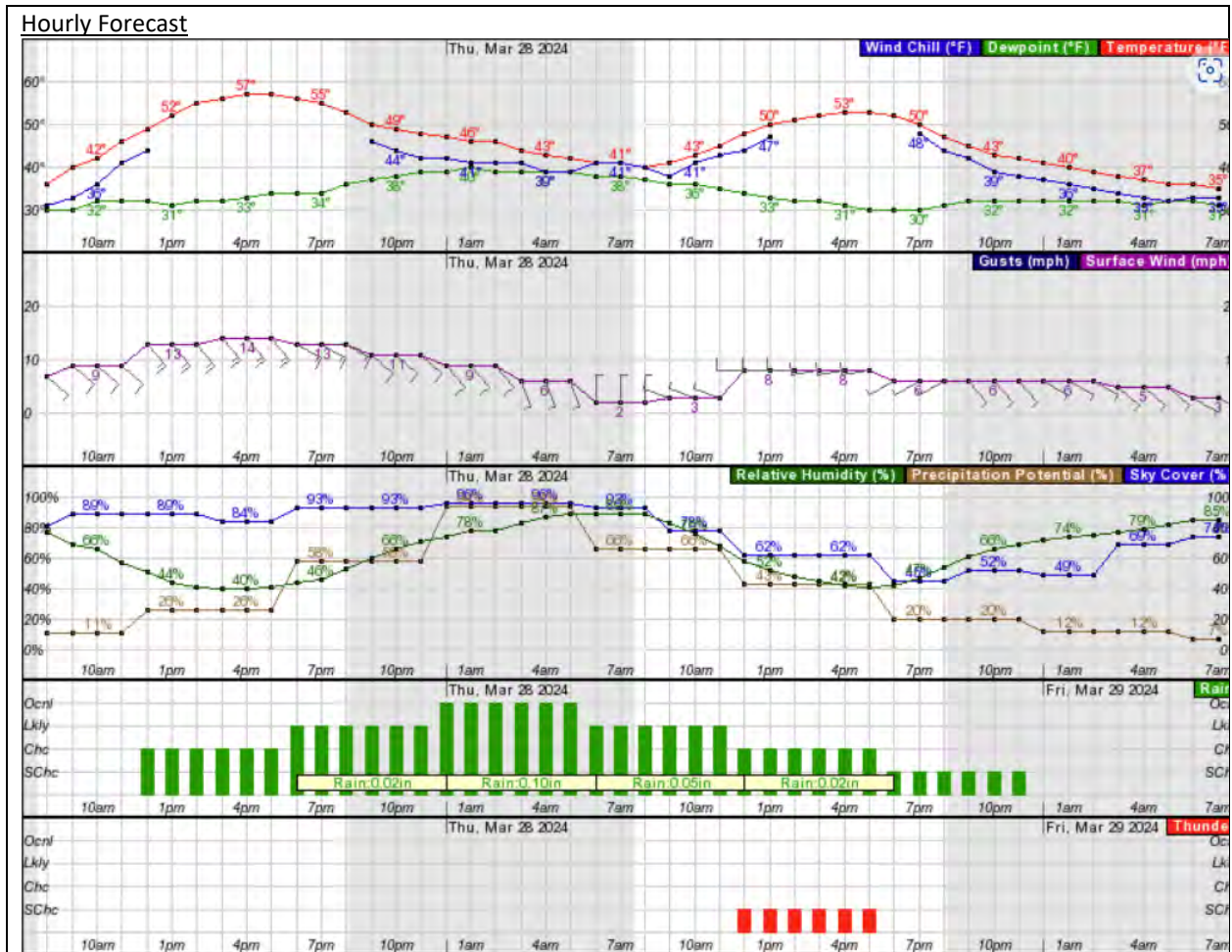
National Weather Service Boise ID
356 AM MDT Wed Mar 27 2024

.SHORT TERM...Today through Friday night...A warm frontal passage this morning will open up into moist southwest aloft this afternoon. Precipitation will initiate over southeast Oregon early in the afternoon, spreading into southwest Idaho by early evening. While the thunderstorm threat today is less than 15% an overlap in daytime heating and increasing instability aloft could support a strike/flash over portions of SE Oregon, mainly Harney/Malheur counties. The increased flow aloft and deep Pacific low will bring breezy conditions today, the strongest winds across southeast Oregon. **Wednesday night is wet across the region as a broad upper low approaches the Pac NW coast.** The mountains of e-central Oregon and w-central Idaho see the focus of heaviest precipitation through Thursday morning where liquid totals of 0.50 to 1.00 inch are expected. Snow levels through Wednesday night will run 5000 to 6000 kft dropping to 3500 to 5000 ft Thursday. Total accumulation of 5 to 10 inches is expected above 6000 ft with up to 2 inches in mountain valleys above 4500 feet. **Lower elevations that stay dry into Wednesday evening will see precipitation fill in overnight with the passage of a cold front. Lower valleys are likely to see 0.10 to 0.20 inch of rain.** The main low will reach the WA coast on Thursday, the accompanying colder air aloft and daytime heating supporting a continued chance of showers and slight chance of thunderstorms. The shower threat retreats to the mountains Thursday night, expanding again on Friday with a 20% chance in the valleys and 40 to 70 percent chance in the mountains.

.LONG TERM...Saturday through Wednesday...The closed upper level low will move to our southwest on Saturday, becoming a positively tilted upper level trough that will keep temperatures cool through the weekend. Lingering moisture with this trough will also allow for a slight chance of precipitation (20-30% chance) over high terrain and near the Nevada border on Saturday and Sunday. Temperatures will be slightly below normal, with snow levels right around 4000-5000 feet. Any snow accumulations will be minimal, with higher elevations in the mountains seeing anywhere from 1-3 inches by Sunday night. This low will begin to move out on Monday, with a deep ridge building in over the region late Monday into Tuesday, bringing above normal temperatures and dry conditions through Wednesday. Tuesday looks to be the warmest day, with temperatures in the valleys reaching the upper 60s and low 70s.

Good model agreement exists with this pattern through next week, with only slight variation in the deterministic model's evolution of the closed low. This accounts for the forecast uncertainty in precipitation this weekend, although all ensembles and deterministic solutions show light precipitation

in the region.



Storm Event QA/QC Checklist – Phase I

STORM DATE		3/28/24								
A. Event and Data Completeness		Yes	No	N/A	Notes					
1. Field data sheets filled out completely and clearly		X								
2. Field parameters reviewed, and any problems/issues addressed		X								
3. All samples collected as specified		X								
4. All samples delivered to lab promptly (review chain of custody rpts)		X								
5. Inconsistencies/clarifications discussed with sampling team member				X						
6. All analytical reports from lab received		X								
B. Validation and Verification Methods		Yes	No	N/A	Notes					
1. Outliers and unexpected values discussed with lab				X						
2. Appropriate analytical methods used		X								
3. All lab QA samples were within method acceptance criteria		X								
4. All samples reviewed and data qualifiers assigned if needed		X								
5. Data quality objective achieved		X								
C. Specific Storm and Sample QA/QC Criteria		Lucky	Whitewater	Main	Americana	AS_6	Program Criteria	Met	Qualify	Reject
1. Antecedent dry period (inches in previous 72-hours)		0.01	0.01	0.00	0.00/0.02	0.00/0.02	< 0.11" in 72 hrs	X		
2. Precipitation (inches)		0.53	0.59	0.53	0.53/0.5	0.53/0.56	> 0.10"	X		
3. Sampled amount (% of total run-off)		—	82%	77%	—	—	>= 75% or >= 6 hrs: no qualifier			
4. Composite sample duration (hours)		—	13	11	—	—	>= 50% and <75%: qualify	X		
							< 50%: reject			
4. Ecoli sample holding time (hours)		—	—	7.0	7.0	6.5	<=8 hrs: no qualifier	X		
							>8 and <=16 hrs.: qualify			
							>16 hrs.: reject			
5. Filtering of samples for dissolved parameter analysis (hours)		—	2.5	5.0	—	—	<= 24 hrs: no qualifier	X		
							> 24 hrs.: reject			
D. Notes										

Reviewed by Steven Turner

Date 5/16/24

Approved by

Monica Rowe

Date 5/17/24

Storm Runoff Estimates and Trigger Volumes

Step 1. Enter runoff coefficients in yellow cells.

Step 2. Enter expected precipitation depth (in) in blue cell.

Step 3. Read trigger volumes (**bold**) in green cells.

Expected Precipitation Depth = 0.11
 Aliquots per Sample = 17

Site	Area (ac)	Using RC calculated from flow data		
		RC	Expected Vol (ft ³)	Trigger Vol (ft ³)
Lucky	105	0.157	6582.5	387
Whitewater	498	0.069	13621.3	801
Main	79	0.246	7760.0	456
Main Alt	60	0.200	4791.6	282
Americana	875	0.144	50311.8	2960
AS_6	204	0.046	3747.0	220
State	34	0.160	2172.2	128

Notes:

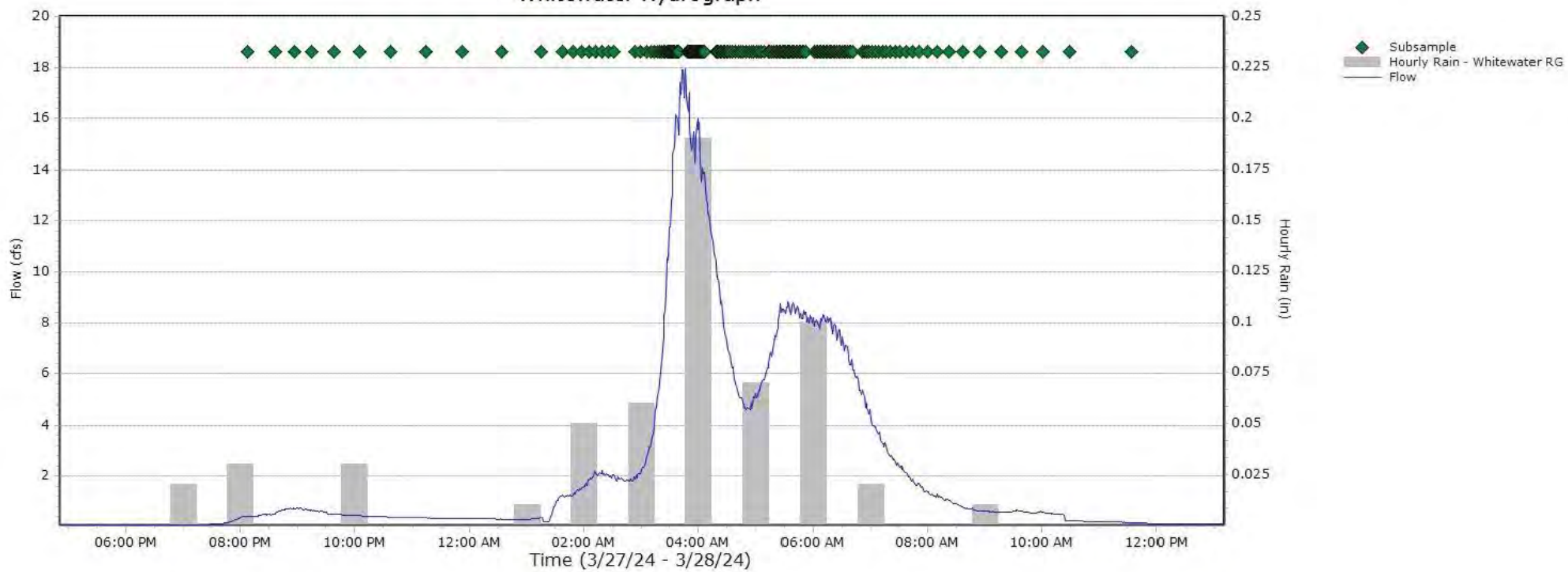
Calculated RC = Average (precip (ft) / [volume (ft³) x area (ft²)])

Where precip (ft) is the measured amount from local rain guage, and volume (ft³) is the measured discharge, and area (ft²) is the watershed area

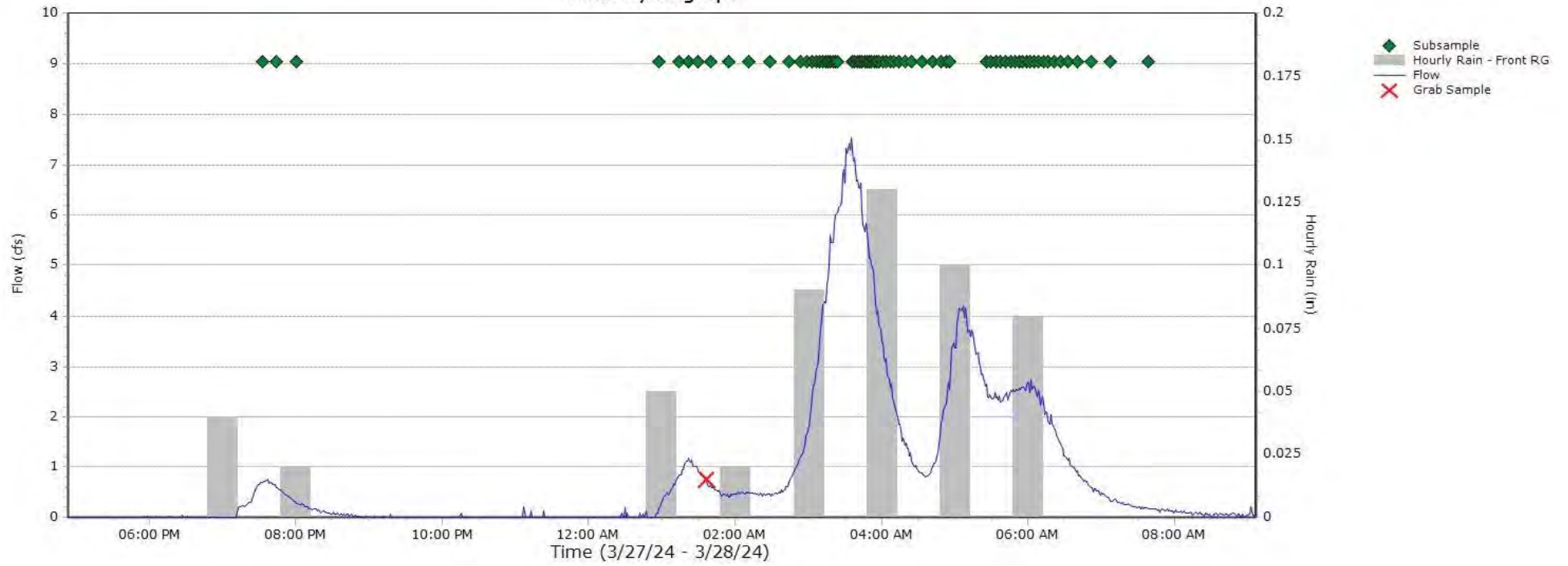
Expected volume (ft³) = RC x expected precip (ft) x area (ft²)

Attachment B: Storm Event Hydrographs

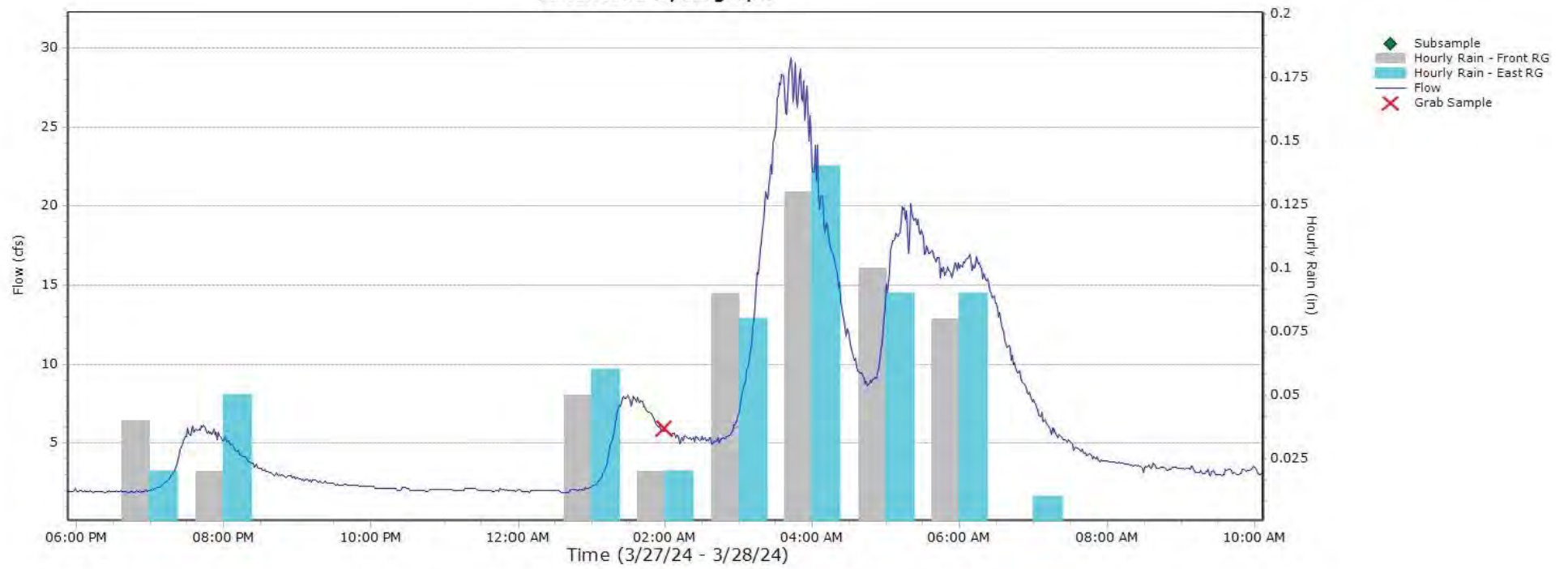
Whitewater Hydrograph



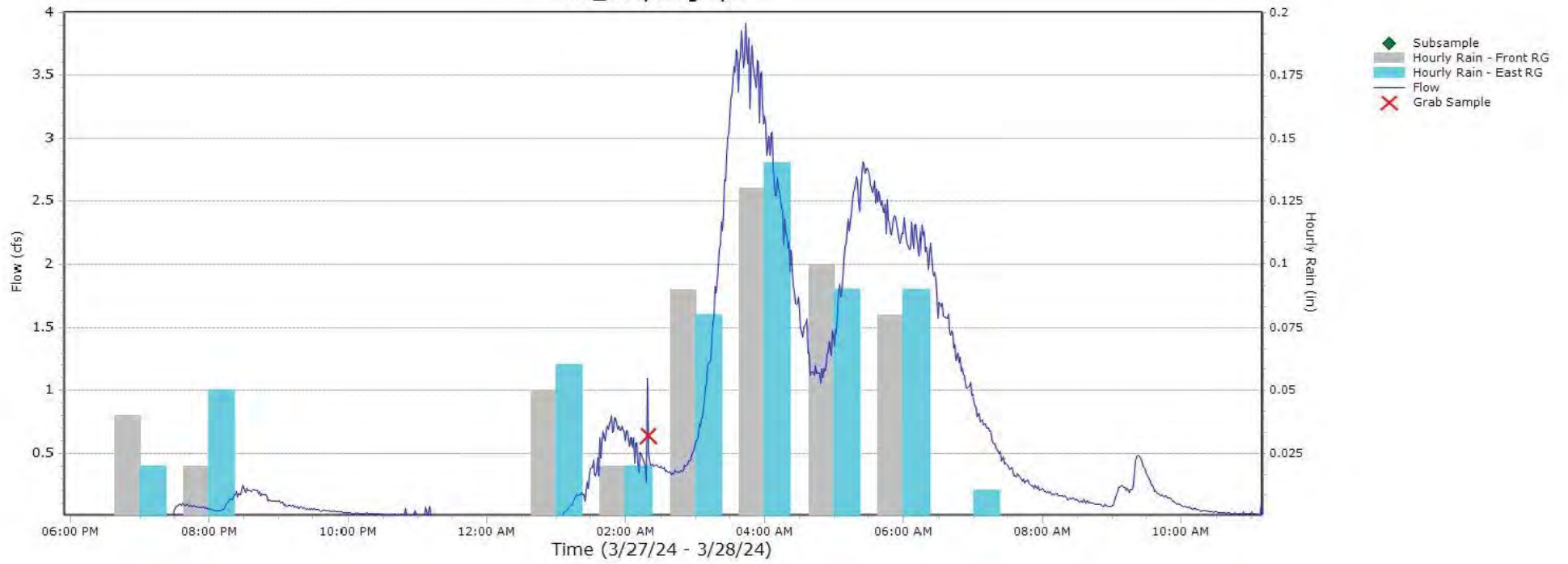
Main Hydrograph



Americana Hydrograph



AS_6 Hydrograph



Attachment C: Field Forms

Set Up/ Shut Down Form – ISCO (Whitewater, Americana, State)

TATION: Whitewater

SET UP

Personnel: KC, ST

Date/Time

On-Site: 3/27/24 1315

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1315	2.21	0.07	0.25	—
Enable Condition:		3.3		
Hysteresis:		1		
Flow Pulse Interval:		800cf		

On-Site

- ☒ Replace flowmeter battery, install sampler battery
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Set sampler program parameters
- ☒ Check date/time on sampler
- ☒ Verify all cable and tubing connections
- ☒ Verify sampler program is running

Flowlink (Refer to PG 411 or PG 412, if needed)

- ☒ Direct or Remote; Date/time 3/27/24 1327
- ☒ Retrieve data and review recent flow history
- ☒ Change Wireless Power Control to Storm Event
- ☒ Change Data Storage Rates to 1 minute for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: On Trigger, and set Sampler Enable equation
- ☒ Set Sampler Pacing to Flow Paced, and set trigger volume

Comments:

SHUT DOWN

Personnel: ST

Date/Time

On-Site: 3/29/24 1209

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
12:09	2.13	0.09	0.33	—
Downloaded to:		Stevens USB		

On-Site

- ☒ ~~Replace flowmeter battery~~
- ☒ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☒ Direct or Remote; Date/time 3/29 1210
- ☒ Retrieve data
- ☒ Change Wireless Power Control to Dry Weather
- ☒ Change Data Storage Rates to 15 minutes for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: Never

Comments:

STATION: Whitewater
 Personnel: ST, KC

Composite Sample Collection

Bottle 1 of 8
 Date/Time On-Site: 3/28 2:35

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	<u>240328-11-WC</u>
Approx Sample Volume (mL):	<u>9500 mL</u>
Clarity (ex. Clear, Cloudy, Silty):	<u>Tan Cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black):	<u>↓</u>
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	<u>3/27/24 2007</u>	<u>SUCCESS</u>	13	<u>0148</u>	<u>SUCCESS</u>
2	<u>2036</u>		14	<u>0157</u>	
3	<u>2056</u>		15	<u>0205</u>	
4	<u>2115</u>		16	<u>0212</u>	
5	<u>2138</u>		17	<u>0219</u>	
6	<u>2206</u>		18	<u>0225</u>	
7	<u>2238</u>		19	<u>0231</u>	<u>↓</u>
8	<u>2313</u>		20	<u>0238</u>	<u>Skipped</u>
9	<u>2352</u>		21		
10	<u>3/28/24 0033</u>		22		
11	<u>0115</u>		23		
12	<u>0137</u>	<u>↓</u>	24		

Comments:

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☒ Keep flowmeter running ☒ Install new 15L bottle; add ice ☒ Restart program from beginning - Date/Time Restarted: <u>2:45 3/28 3/28</u> ☒ Verify running
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Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: Whitewater
 Personnel: KC, ST

Bottle 2 of 8
 Date/Time On-Site: 3/28/24 0345

☒ Halt sampler program
☐ Put lid on sample bottle; label sample bottle
Sample ID: <u>240328-11</u> -WC
Approx Sample Volume (mL): <u>1400 mL</u>
Clarity (ex. Clear, Cloudy, Silty): <u>Cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>gray</u>
QA/QC Sample ID: <u> </u> -103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	<u>3/28/24 0253</u>	<u>Success</u>	13	<u>3/28/24 0329</u>	<u>Success</u>
2	<u>0259</u>		14	<u>0330</u>	
3	<u>0305</u>		15	<u>0332</u>	
4	<u>0310</u>		16	<u>0333</u>	
5	<u>0313</u>		17	<u>0333</u>	
6	<u>0317</u>		18	<u>0334</u>	
7	<u>0319</u>		19	<u>0335</u>	
8	<u>0321</u>		20	<u>0336</u>	
9	<u>0323</u>		21	<u>0337</u>	
10	<u>0325</u>		22	<u>0338</u>	
11	<u>0326</u>		23	<u>0339</u>	
12	<u>0328</u>		24	<u>0340</u>	

Comments:

Date/Time Off-Site: 3/28/24 0350

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☒ Keep flowmeter running ☒ Install new 15L bottle; add ice ☒ Restart program from beginning - Date/Time Restarted: <u>0347 3/28</u> ☒ Verify running
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Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: Whitewater
 Personnel: VC: 88

Bottle 3 of 8
 Date/Time On-Site: 3/28/24 415

☒ Halt sampler program
☒ Put lid on sample bottle; label sample bottle
Sample ID: <u>3 240328 - 11</u> -WC
Approx Sample Volume (mL): <u>11,000 mL</u>
Clarity (ex. Clear, Cloudy, Silty): <u>Cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>Gray</u>
QA/QC Sample ID: _____ -103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	<u>3/28/24 0347</u>	<u>Success</u>	13	<u>3/28/24 357</u>	<u>Success</u>
2	<u>0348</u>		14	<u>358</u>	
3	<u>0349</u>		15	<u>359</u>	
4	<u>350</u>		16	<u>400</u>	
5	<u>351</u>		17	<u>401</u>	
6	<u>352</u>		18	<u>402</u>	
7	<u>352</u>		19	<u>403</u>	
8	<u>353</u>		20	<u>404</u>	
9	<u>354</u>		21	<u>405</u>	<u>Power Failed</u>
10	<u>355</u>		22	<u>406</u>	
11	<u>356</u>		23	<u>406</u>	
12	<u>356</u>		24	<u>407</u>	

Comments:

Date/Time Off-Site: 3/28/24 0420

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☒ Keep flowmeter running ☒ Install new 15L bottle; add ice ☒ Restart program from beginning - Date/Time Restarted: <u>3/28/24 418</u> ☐ Verify running
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Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: Whitewater
 Personnel: LC 85

Bottle 4 of 8
 Date/Time On-Site: 3/28/24 434

☒ Halt sampler program
☒ Put lid on sample bottle; label sample bottle
Sample ID: <u>240528-11</u> -WC
Approx Sample Volume (mL): <u>13250 mL</u>
Clarity (ex. Clear, Cloudy, Silty): <u>Cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>Gray</u>
QA/QC Sample ID: <u>-103</u> (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	<u>3/28/24 410</u>	<u>Success</u>	13	<u>439</u>	<u>Success</u>
2	<u>420</u>		14	<u>442</u>	
3	<u>421</u>		15	<u>445</u>	
4	<u>422</u>		16	<u>447</u>	
5	<u>424</u>		17	<u>450</u>	
6	<u>426-24</u>		18	<u>453</u>	
7	<u>428</u>		19	<u>456</u>	
8	<u>429</u>		20	<u>458</u>	
9	<u>431</u>		21	<u>501</u>	
10	<u>433</u>		22	<u>504</u>	
11	<u>435</u>		23	<u>506</u>	
12	<u>437</u>	<u>Skipped</u>	24	<u>509</u>	

Comments:

If sampling is complete:

- ☐ Power off sampler, if separate from flowmeter
- ☐ Keep flowmeter running
- ☐ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):

- ☒ Keep flowmeter running
- ☒ Install new 15L bottle; add ice
- ☒ Restart program from beginning
- Date/Time Restarted: 3/28 512
- ☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: 100 ft in water
 Personnel: ICC, ST

Bottle 5 of 8
 Date/Time On-Site: 3/28/24 0555

☒ Halt sampler program
☒ Put lid on sample bottle; label sample bottle
Sample ID: <u>240328-11</u> -WC
Approx Sample Volume (mL): <u>13250</u>
Clarity (ex. Clear, Cloudy, Silty): <u>Cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>Gray</u>
QA/QC Sample ID: _____ -103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	3/28/24 513	Success	13	3/28/24 534	Success
2	515		14	535	
3	517		15	537	
4	519		16	538	
5	521		17	540	
6	522		18	541	
7	524		19	543	
8	526		20	545	
9	527		21	546	
10	529		22	548	
11	531		23	549	
12	532		24	551	

Comments:

If sampling is complete:

- ☐ Power off sampler, if separate from flowmeter
- ☐ Keep flowmeter running
- ☐ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):

- ☒ Keep flowmeter running
- ☒ Install new 15L bottle; add ice
- ☒ Restart program from beginning
- Date/Time Restarted: 3/28/24 602
- ☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: Whitewater
 Personnel: VC, ST

Bottle 6 of 8

Date/Time On-Site: 3/28/24

☒ Halt sampler program
☒ Put lid on sample bottle; label sample bottle
Sample ID: <u>240328-11</u> -WC
Approx Sample Volume (mL): <u>13250</u>
Clarity (ex. Clear, Cloudy, Silty): <u>Cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>gray</u>
QA/QC Sample ID: _____ -103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	3/28/24 1001	Success	13	3/28/24 1021	Success
2	1002		14	1022	
3	1004		15	1024	
4	1006		16	1026	
5	1008		17	1027	
6	1009		18	1029	
7	1011		19	1031	
8	1012		20	1033	
9	1014		21	1035	
10	1016		22	1037	
11	1017		23	1039	
12	1019		24	1041	

Comments:

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☒ Keep flowmeter running ☒ Install new 15L bottle; add ice ☒ Restart program from beginning - Date/Time Restarted: <u>3/28/24 1049</u> ☒ Verify running
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Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: White Sulphur
 Personnel: KC, ST

Bottle 7 of 8
 Date/Time On-Site: 3/28/24 1025

☒ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	240328-11 -WC
Approx Sample Volume (mL):	13250
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Tan
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	3/28/24 650	Success	13	3/28/24 737	Success
2	653		14	743	
3	656		15	751	
4	658		16	759	
5	701		17	810	
6	705		18	821	
7	708		19	836	
8	712		20	855	
9	716		21	916	
10	721		22	938	
11	725		23	1001	
12	731		24	1029	

Comments:

If sampling is complete:

- ☐ Power off sampler, if separate from flowmeter
- ☐ Keep flowmeter running
- ☐ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):

- ☒ Keep flowmeter running
- ☒ Install new 15L bottle; add ice
- ☒ Restart program from beginning

Date/Time Restarted: 3/28/24 1033

- ☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: Whitewater
 Personnel: PCST

Bottle 8 of 8

Date/Time On-Site: _____

☒ Halt sampler program
☒ Put lid on sample bottle; label sample bottle
Sample ID: <u>240328-11</u> -WC
Approx Sample Volume (mL): <u>800 mL</u>
Clarity (ex. Clear, Cloudy, Silty): <u>Clear</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>Tan</u>
QA/QC Sample ID: _____ -103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	<u>3/28/24 1133</u>	<u>Success</u>	13		
2			14		
3			15		
4			16		
5			17		
6			18		
7			19		
8			20		
9			21		
10			22		
11			23		
12			24		

Comments:

If sampling is complete: ☒ Power off sampler, if separate from flowmeter ☒ Keep flowmeter running ☒ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☐ Keep flowmeter running ☐ Install new 15L bottle; add ice ☐ Restart program from beginning Date/Time Restarted: _____ ☐ Verify running
--	---

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

TATION: Main

SET UP

Personnel: KC, ST

Date/Time
On-Site: 3/27/24 12:37

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1237	6.84	0.00	0.00	12.8
Enable Condition or Velocity Cutoff:			1.84	
Deadband:			1	
Trigger Volume:			341	

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments:

Replaced deadband on flowmeter -

Offsite 3/27/24 1300

SHUT DOWN

Personnel: ST

Date/Time
On-Site: 3/29/24 12:22

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
12:22	7.45	0.00	0.00	-	12.6
Downloaded to:		Stevens USB			

If flow monitoring is complete:

- ☒ Halt program on flowmeter
- ☒ Download flowmeter data
- ☒ Remove flowmeter battery

If continuing to monitor flow:

- ☐ Replace flowmeter battery
- ☐ Reset logging interval to 15 minutes
- ☐ Change velocity cutoff to 0.02 fps
- ☐ Start program
- ☐ Verify running

Comments:

Composite Sample Collection

STATION: Main
 Personnel: ST, KC

Bottle 1 of 3
 Date/Time On-Site: 3/28/24 1:30

☒ Halt sampler program		
☒ Put lid on sample bottle; label sample bottle		
Sample ID:	<u>240528-12</u>	-WC
Approx Sample Volume (mL):	<u>4000 mL</u>	
Clarity (ex. Clear, Cloudy, Silty):	<u>Cloudy</u>	
Color (ex. Clear, Gray, Tan, Brown, Black):	<u>Gray</u>	
QA/QC Sample ID:		-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	3/27/24 19:53	Success	13	3/28/24 02:53	Success
2	19:48		14	02:59	
3	20:01		15	03:03	
4	3/28 00:58		16	03:06	
5	01:14		17	03:09	
6	01:22		18	03:12	
7	01:30		19	03:14	
8	01:40		20	03:16	
9	01:55		21	03:18	
10	02:12		22	03:20	
11	02:29		23	03:22	
12	02:44		24	03:24	

Comments:

If sampling is complete:

- ☐ Power off sampler, if separate from flowmeter
- ☐ Keep flowmeter running
- ☐ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):

- ☒ Keep flowmeter running
- ☒ Install new 15L bottle, add ice
- ☒ Restart program from beginning

Date/Time Restarted: 3/28/24 03:35

- ☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: Main
Personnel: KLST

Bottle 2 of 3
Date/Time On-Site: 3/28/24 0426

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	<u>240328-12</u> -WC
Approx Sample Volume (mL):	<u>14000 mL</u>
Clarity (ex. Clear, Cloudy, Silty):	<u>Cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black):	<u>gray</u>
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	<u>3/28/24 0336</u>	<u>Success</u>	13	<u>401</u>	<u>Success</u>
2	<u>338</u>		14	<u>404</u>	
3	<u>340</u>		15	<u>407</u>	
4	<u>342</u>		16	<u>410</u>	
5	<u>344</u>		17	<u>414</u>	
6	<u>346</u>		18	<u>419</u>	
7	<u>348</u>		19	<u>425</u>	
8	<u>350</u>		20	<u>433</u>	
9	<u>352</u>		21	<u>442</u>	
10	<u>354</u>		22	<u>449</u>	
11	<u>356</u>		23	<u>453</u>	
12	<u>358</u>		24	<u>456</u>	

Comments:

Date/Time Off-Site: 3/28 17:26

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☒ Keep flowmeter running ☒ Install new 15L bottle; add ice ☒ Restart program from beginning Date/Time Restarted: <u>3/28 523</u> ☒ Verify running
--	--

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

STATION: Main Composite Sample Collection Bottle 5 of 3
 Personnel: ST, KC Date/Time On-Site: 3/28/24 750

☒ Halt sampler program
☒ Put lid on sample bottle; label sample bottle
Sample ID: <u>240328-12</u> -WC
Approx Sample Volume (mL): <u>12500 mL</u>
Clarity (ex. Clear, Cloudy, Silty): <u>Cloudy</u>
Color (ex. Clear, Gray, Tan, Brown, Black): <u>Gray</u>
QA/QC Sample ID: _____ -103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	3/28/24 526	Success 609 ⁴	13	3/28/24 609	Success
2	530		14	613	
3	534		15	617	
4	538		16	622	
5	542		17	627	
6	546		18	633	
7	550		19	641	
8	553		20	652	
9	556		21	708	
10	559		22	739	
11	602		23		
12	605		24		

Comments:

Date/Time Off-Site: 3/28/24 755

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☒ Keep flowmeter running ☒ Install new 15L bottle; add ice ☒ Restart program from beginning - Date/Time Restarted: <u>3/28/24 755</u> ☐ Verify running
--	---

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Grab Sample Data Form

STATION: Mein

Personnel: KC, ST Date/Time On-Site: 3/28/24 1.31

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1.31	6.16	394.17 GPM	1.21	12.9	—	—

Grab Information					
	Sample ID		Date	Time	Labeled?
Site <i>E.Coli</i>	240328-12	-WG	3/28/24	0137	☒
Field Duplicate <i>E.Coli</i>	240328-12	-101	3/28/24	0138	☒
Field Blank <i>E.Coli</i>	240328-12	-001	3/28/24	0141	☒

*Note: time on bottle for QC samples is 1200 -

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP09	0141	10.91	10.02	7.82	116.08

Sampler Current Status	
First Subsample Date/Time	3/27/24 1933
Last Subsample Date/Time	3/28/24 0130
# of Subsamples taken	7

Comments:

Set Up/ Shut Down Form – ISCO (Whitewater, Americana, State)

STATION: Americana

SET UP

Personnel: ST, KC

Date/Time: 3/27/24 3:10 PM ST

On-Site: 16:10
15

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
16:12	5.99	1.99	2.200	12.29
Enable Condition:				
Hysteresis:				
Flow Pulse Interval:				

On-Site

- ☒ Replace flowmeter battery, install sampler battery
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☐ Set sampler program parameters
- ☐ Check date/time on sampler
- ☐ Verify all cable and tubing connections
- ☐ Verify sampler program is running

Flowlink (Refer to PG 411 or PG 412, if needed)

- ☒ Direct or Remote; Date/time 16:14 3/27/24
- ☒ Retrieve data and review recent flow history
- ☒ Change Wireless Power Control to Storm Event
- ☒ Change Data Storage Rates to 1 minute for Level, Velocity, Total Flow, and Flow Rate
- ☐ ~~Enable Sampler: On Trigger, and set Sampler Enable equation~~
- ☐ ~~Set Sampler Pacing to Flow Paced, and set trigger volume~~

Comments: Installed & Blank composite. Set up flowmeter only. No composite needed.

offsite: 3/27/24 15:23

SHUT DOWN

Personnel: ST

Date/Time: 3/29/24 12:35

On-Site: 12:35

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
12:36	6.52	2.35	2.299	12.07
Downloaded to: <u>Stevens USB</u>				

On-Site

- ☒ Replace flowmeter battery
- ☒ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☒ Direct or Remote; Date/time 3/29 12:36
- ☒ Retrieve data
- ☒ Change Wireless Power Control to Dry Weather
- ☒ Change Data Storage Rates to 15 minutes for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: Never

Comments:

STATION: Americana Composite Sample Collection Bottle 1 of 1
 Personnel: _____ Date/Time On-Site: _____

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	-WC
Approx Sample Volume (mL):	
Clarity (ex. Clear, Cloudy, Silty):	
Color (ex. Clear, Gray, Tan, Brown, Black):	
QA/QC Sample ID:	240328-14-002-103- blank (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1			13		
2			14		
3			15		
4			16		
5			17		
6			18		
7			19		
8			20		
9			21		
10			22		
11			23		
12			24		

Comments: QC Blank filed at 3/27/24 1510-1514. Removed at 10:08

If sampling is complete: ☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	If continuing sampling (sample bottle change-out): ☐ Keep flowmeter running ☐ Install new 15L bottle; add ice ☐ Restart program from beginning Date/Time Restarted: _____ ☐ Verify running
--	--

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Grab Sample Data Form

STATION: Americana

Personnel: KCST Date/Time On-Site: 3/28/14 0153

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
0156	9.94	6.33	3.368	12.16	—	—

Grab Information					
	Sample ID		Date	Time	Labeled?
Site E.Coli	240328-14	-WG	3/28/24	0159	☒
Field Duplicate E.Coli		-101			☐
Field Blank E.Coli		-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP08 ^{ve} 9	0102	9.79	10.57	7.28	255.40

Sampler Current Status	
First Subsample Date/Time	—
Last Subsample Date/Time	—
# of Subsamples taken	—

Comments: Not collecting composite sample for this set.

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

STATION: AS-6

SET UP

Personnel: KC, ST

Date/Time
On-Site: 3/27/24 1444

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1449	0.00	0.00	0.00	12.4
Enable Condition or Velocity Cutoff:				—
Deadband:				—
Trigger Volume:				—

- ☒ Install batteries on flowmeter and sampler
- ☐ Perform decon. cycle
- ☐ Install 15L sample bottle, with ice
- ☐ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☐ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments:

Set up flowmeter only. No composite for this site.

offsite: 1451

SHUT DOWN

Personnel: ST

Date/Time
On-Site: 3/29/24 13:29

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
13:29	0.000	0.000	0.000	39.608	12.4
Downloaded to:				<u>Rugged</u>	

If flow monitoring is complete:

- ☒ Halt program on flowmeter
- ☒ Download flowmeter data
- ☒ Remove flowmeter battery

If continuing to monitor flow:

- ☐ Replace flowmeter battery
- ☐ Reset logging interval to 15 minutes
- ☐ Change velocity cutoff to 0.02 fps
- ☐ Start program
- ☐ Verify running

Comments:

Grab Sample Data Form

STATION: AS-6

Personnel: KC, ST Date/Time On-Site: 3/28/24 0210

Flow Meter Current Status					
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Rainfall (in) (Whitewater Only)
0214	6.710	0.46	0.69	12.3	—

Grab Information				
	Sample ID	Date	Time	Labeled?
Site <i>E.Coli</i>	240328-206-WG	3/28/24	2:19	☒
Field Duplicate <i>E.Coli</i>	-101			☐
Field Blank <i>E.Coli</i>	-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP009	2:25	7.74	9.92	7.60	108.59

Sampler Current Status	
First Subsample Date/Time	—
Last Subsample Date/Time	—
# of Subsamples taken	—

Comments: No composite taken at this site.

Date/Time Off-Site: 3/28/24 2:26

Attachment D: Storm Event Analytical Reports

Report Date: 05/02/2024 14:28



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00338-01	ACST1B	240328-12-WG	Water		03/28/2024	03/28/2024
AC00338-02	ACST1B	240328-12-101	Water		03/28/2024	03/28/2024
AC00338-03	ACST1B	240328-12-001	Water		03/28/2024	03/28/2024
AC00338-04	ACST1B	240328-14-WG	Water		03/28/2024	03/28/2024

Report Date: 05/02/2024 14:28



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	240328-12-WG
Date/Time Collected:	03/28/2024 01:37		
Lab Number:	AC00338-01	Sample Collector:	S.T
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method Reference	Prepared	Analyzed	Analyst	
				MDL *	MDL				Initials	Qualifier
Microbiology										
E. Coli	B241140	21.6MPN/100 mL		1.0	1.0	IDEXX - Colilert	03/28/24 08:46	3/29/24 10:00	KMR	
Net Chemistry										
Chlorine Screen	B241146	Absent				SM 4500-CL G-2000 mod	03/28/24	3/28/24 8:26	ALM	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML

Report Date: 05/02/2024 14:28



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location: ACST1B
Date/Time Collected: 03/28/2024 12:00
Lab Number: AC00338-02
Sample Type: Grab

Location Description: 240328-12-101
Sample Collector: S.T
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B241140	17.3MPN/100 mL		1.0	1.0	IDEXX - Colilert	03/28/24 08:46	3/29/24 10:00	KMR	
Wet Chemistry										
Chlorine Screen	B241146	Absent				SM 4500-CL G-2000 mod	03/28/24	3/28/24 8:26	ALM	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 05/02/2024 14:28



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location: ACST1B Location Description: 240328-12-001
Date/Time Collected: 03/28/2024 12:00
Lab Number: AC00338-03 Sample Collector: S.T
Sample Type: Grab Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method Reference	Prepared	Analyzed	Analyst	
				MDL *	MDL				Initials	Qualifier
Microbiology										
E. Coli	B241140	<1.0MPN/100 mL		1.0	1.0	IDEXX - Colilert	03/28/24 08:46	3/29/24 10:00	KMR	U
Net Chemistry										
Chlorine Screen	B241146	Absent				SM 4500-CL G-2000 mod	03/28/24	3/28/24 8:26	ALM	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B, was corrected for dilution, dry weight, or method-defined ML.

Report Date: 05/02/2024 14:28



Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
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Analysis Report

Location: ACST1B
Date/Time Collected: 03/28/2024 01:59
Lab Number: AC00338-04
Sample Type: Grab

Location Description: 240328-14-WG
Sample Collector: S.T
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method	Prepared	Analyzed	Analyst	
				MDL *	MDL				Reference	Initials
Microbiology										
E. Coli	B241140	365.4 MPN/100 mL		1.0	1.0	IDEXX - Colilert	03/28/24 08:46	3/29/24 10:00	KMR	
Wet Chemistry										
Chlorine Screen	B241146	Absent				SM 4500-CL G-2000 mod	03/28/24	3/28/24 8:26	ALM	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 05/02/2024 14:28



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Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Microbiology									
Batch: B241140									
Blank (B241140-BLK1)									
E. Coli	Absent						03/29/2024	KMR	
LCS (B241140-BS1)									
E. Coli				Present			03/29/2024	KMR	
Duplicate (B241140-DUP1) Source ID: LS01907-10									
E. Coli					Pass	128	03/29/2024	KMR	

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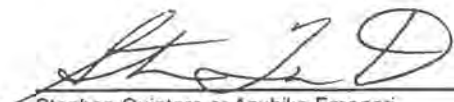
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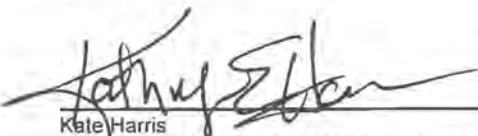
Notes and Definitions

Item	Definition
U	Analyte included in the analysis, but not detected

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846


Stephen Quintero or Azubike Emenari
QA/QC Coordinator


Kate Harris
Interim Water Quality Laboratory Manager

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714-6418

Tel. (208) 387-6269

Fax (208) 387-6391

Purchase Order:

63065628

Project:

Stormwater-PI

Sampler(s):

Kristen Chislholm
Steven Turner

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix	Type	BOD ₅ - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Colilert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO ₃ +NO ₂ - EPA 353.2	NH ₃ - SM 4500 NH ₃ -D	Total Containers
00338-01	3/28/24		0137		240328-12-WG	ST	X	X											X					1
-02	3/28/24		1200		240328-12-101	ST	X	X											X					1
-03	3/28/24		1200		240328-12-001	ST	X	X											X					1
-04	3/28/24		0159		240328-14-WG	ST	X	X											X					1

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
<i>Kristen Chislholm</i>	3/28/24 0814	<i>Steven Turner</i> 3/28/24 0816	

Report Date: 05/02/2024 14:28



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Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00339-01	ACST1B	240328-206-WG	Water		03/28/2024	03/28/2024

Report Date: 05/02/2024 14:28



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Analysis Report

Location: ACST1B

Date/Time Collected: 03/28/2024 02:19

Lab Number: AC00339-01

Sample Type: Grab

Location Description: 240328-206-WG

Sample Collector: S.T

Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted Method		Analysis Method	Prepared	Analyzed	Analyst	
				MDL *	MDL	Reference			Initials	Qualifier
Microbiology										
E. Coli	B241140	387.3 MPN/100 mL		1.0	1.0	IDEXX - Colilert	03/28/24 08:46	3/29/24 10:00	KMR	
Net Chemistry										
Chlorine Screen	B241146	Absent				SM 4500-CL G-2000 mod	03/28/24	3/28/24 8:26	ALM	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 05/02/2024 14:28



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Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Microbiology									
Batch: B241140									
Blank (B241140-BLK1)									
E. Coli	Absent						03/29/2024	KMR	
LCS (B241140-BS1)									
E. Coli				Present			03/29/2024	KMR	
Duplicate (B241140-DUP1) Source ID: LS01907-10									
E. Coli					Pass	128	03/29/2024	KMR	



Notes and Definitions

Item	Definition
No notes entered.	

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846


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QA/QC Coordinator


Kate Harris
Interim Water Quality Laboratory Manager

Ada County Highway District

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Fax (208) 387-6391
Purchase Order:
Project:
Sampler(s):

63065628

Stormwater-PI

Kristen Christensen
Steven Turner

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix	Type	BOD ₅ - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Colilert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO ₃ +NO ₂ - EPA 353.2	NH ₃ - SM 4500 NH ₃ -D	Total Containers
00339-01	3/28/24		0219		240328-206-WG	ST	X	X																1

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristen Christensen	3/28/24 0814	River 3/28/24 0814	

AC00339 Ar AD339

Report Date: 05/02/2024 14:36



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Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00341-01	ACST1C	240328-11-WC	Water		03/28/2024	03/28/2024

Report Date: 05/02/2024 14:36



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Analysis Report

Location:	ACST1C	Location Description:	240328-11-WC
Date/Time Collected:	03/27/2024 20:07 - 03/28/2024 11:33		
Lab Number:	AC00341-01	Sample Collector:	K.C
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted Method MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B241161	0.236	mg/L	0.0450	0.0450	Timberline Ammonia-001	03/29/24	3/29/24 11:19	ALN	
IOD5	B241168	8.20	mg/L	2.00	2.00	SM 5210 B-2016	03/29/24	4/3/24 9:59	ALM	
Chloride	B241409	14.9	mg/L	0.0150	0.0150	EPA 300.0, Rev. 2.1 (1993)	04/18/24	4/18/24 15:37	SMC	
IOD	B241167	84.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	03/29/24	3/29/24 9:37	RKT	
Nitrate-Nitrite, as N	B241189	0.277	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	04/01/24	4/1/24 14:29	JAL	
TKN	B241263	1.63	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	04/04/24	4/5/24 12:53	EDM	
Total Dissolved Solids	B241163	76.0	mg/L	20.0	20.0	SM 2540 C-2015	03/28/24	3/30/24 15:18	BAK	
Total Suspended Solids	B241172	131	mg/L	0.900	0.900	SM 2540 D-2015	03/29/24	3/29/24 10:10	SMC	
Turbidity	B241159	26.2	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	03/28/24	3/28/24 14:35	LRF	
Dissolved Wet Chemistry										
Orthophosphate, as P	B241173	0.131	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	03/29/24	3/29/24 13:02	JAL	
Total Metals										
Mercury	B241233	0.0151	ug/L	0.0100	0.0100	EPA 245.1	04/04/24	4/5/24 7:58	SAS	
Arsenic	B241177	2.0	ug/L	0.070	0.070	EPA 200.8	04/13/24	4/14/24 17:54	DMW	
Cadmium	B241177	0.074	ug/L	0.010	0.010	EPA 200.8	04/13/24	4/14/24 17:54	DMW	
Calcium	B241226	7.94	mg/L	0.0400	0.0400	EPA 200.7	04/03/24	4/11/24 17:34	EDM	
Lead	B241177	5.8	ug/L	0.010	0.010	EPA 200.8	04/13/24	4/14/24 17:54	DMW	
Magnesium	B241226	2930	ug/L	80.0	80.0	EPA 200.7	04/03/24	4/11/24 17:34	EDM	
Phosphorus as P	B241226	0.318	mg/L	0.0120	0.0120	EPA 200.7	04/03/24	4/11/24 17:34	EDM	
Hardness	B241226	31.9	mg/L	0.100	0.100	SM 2340 B-2011	04/03/24	4/11/24 17:34	EDM	
Dissolved Metals										
Cadmium	B241178	<0.0100	ug/L	0.010	0.010	EPA 200.8	04/04/24	4/4/24 16:00	DMW	U
Copper	B241178	1.9	ug/L	0.15	0.15	EPA 200.8	04/04/24	4/4/24 16:00	DMW	
Lead	B241178	0.097	ug/L	9.00E-3	9.00E-3	EPA 200.8	04/04/24	4/4/24 16:00	DMW	
Zinc	B241178	9.8	ug/L	0.50	0.50	EPA 200.8	04/04/24	4/4/24 16:00	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 05/02/2024 14:36



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Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry									
Batch: B241159									
Blank (B241159-BLK1)									
Turbidity	<0.3	NTU					03/28/2024	LRF	U
LCS (B241159-BS1)									
Turbidity			102	90-110			03/28/2024	LRF	
Duplicate (B241159-DUP1) Source ID: AC00340-01									
Turbidity					0.809	25	03/28/2024	LRF	
Batch: B241161									
Blank (B241161-BLK1)									
Ammonia, as N	<0.045	mg/L					03/29/2024	ALN	U
Blank (B241161-BLK2)									
Ammonia, as N	<0.045	mg/L					03/29/2024	ALN	U
LCS (B241161-BS1)									
Ammonia, as N			99.1	87-104			03/29/2024	ALN	
Duplicate (B241161-DUP1) Source ID: WB03028-08									
Ammonia, as N					0.615	20	03/29/2024	ALN	D
Matrix Spike (B241161-MS1) Source ID: WB03028-08									
Ammonia, as N			101	84-115			03/29/2024	ALN	D
Matrix Spike (B241161-MS2) Source ID: EP00320-01									
Ammonia, as N			101	84-115			03/29/2024	ALN	
Matrix Spike (B241161-MS3) Source ID: AC00341-01									
Ammonia, as N			102	84-115			03/29/2024	ALN	
Matrix Spike Dup (B241161-MSD1) Source ID: WB03028-08									
Ammonia, as N			99.6	84-115	0.840	20	03/29/2024	ALN	D
Batch: B241163									
Blank (B241163-BLK1)									
Total Dissolved Solids	<20	mg/L					03/30/2024	BAK	U
LCS (B241163-BS1)									
Total Dissolved Solids			99.3	90-110			03/30/2024	BAK	
Duplicate (B241163-DUP1) Source ID: RW00064-08									
Total Dissolved Solids					7.62	10	03/30/2024	BAK	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Net Chemistry (Continued)									
Batch: B241167									
Blank (B241167-BLK1)									
COD	<7	mg/L					03/29/2024	RKT	U
LCS (B241167-BS1)									
COD			98.3	90-110			03/29/2024	RKT	
Duplicate (B241167-DUP1)	Source ID: AC00341-01								
COD					3.64	10	03/29/2024	RKT	
Batch: B241168									
Blank (B241168-BLK1)									
BOD5	<2	mg/L					04/03/2024	ALM	U
LCS (B241168-BS1)									
BOD5			103	84.6-115.4			04/03/2024	ALM	
LCS (B241168-BS2)									
BOD5			106	84.6-115.4			04/03/2024	ALM	
Duplicate (B241168-DUP1)	Source ID: LS01908-02								
BOD5					3.16	30	04/03/2024	ALM	
Batch: B241172									
Blank (B241172-BLK1)									
Total Suspended Solids	<0.9	mg/L					03/29/2024	SMC	U
LCS (B241172-BS1)									
Total Suspended Solids			91.2	90-110			03/29/2024	SMC	
Duplicate (B241172-DUP1)	Source ID: LS01908-02								
Total Suspended Solids					0.951	20	03/29/2024	SMC	
Batch: B241189									
Blank (B241189-BLK1)									
Nitrate-Nitrite, as N	<0.025	mg/L					04/01/2024	JAL	U
LCS (B241189-BS1)									
Nitrate-Nitrite, as N			96.2	90-110			04/01/2024	JAL	
Duplicate (B241189-DUP1)	Source ID: AC00340-01								
Nitrate-Nitrite, as N					2.37	10	04/01/2024	JAL	
Matrix Spike (B241189-MS1)	Source ID: AC00340-01								
Nitrate-Nitrite, as N			97.6	90-110			04/01/2024	JAL	
Matrix Spike Dup (B241189-MSD1)	Source ID: AC00340-01								
Nitrate-Nitrite, as N			96.8	90-110	0.678	10	04/01/2024	JAL	

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Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier		
Wet Chemistry (Continued)											
Batch: B241263											
Blank (B241263-BLK1) TKN	<0.1	mg/L					04/05/2024	EDM	U		
Blank (B241263-BLK2) TKN	<0.1	mg/L					04/05/2024	EDM	U		
LCS (B241263-BS1) TKN			98.7	80-120			04/05/2024	EDM			
LCS (B241263-BS2) TKN			95.9	80-120			04/05/2024	EDM			
Duplicate (B241263-DUP1) TKN	Source ID: AC00341-01				4.82	20	04/05/2024	EDM			
Duplicate (B241263-DUP2) TKN	Source ID: RW00065-02				0.416	20	04/05/2024	EDM	D		
Duplicate (B241263-DUP3) TKN	Source ID: RW00065-07				3.97	20	04/05/2024	EDM	D		
Matrix Spike (B241263-MS1) TKN	Source ID: AC00341-01				102	80-120	04/05/2024	EDM			
Matrix Spike (B241263-MS2) TKN	Source ID: RW00065-02				101	80-120	04/05/2024	EDM	D		
Matrix Spike (B241263-MS3) TKN	Source ID: RW00065-07				88.7	80-120	04/05/2024	EDM	D		
Matrix Spike Dup (B241263-MSD1) TKN	Source ID: AC00341-01				97.7	80-120	3.03	20	04/05/2024	EDM	
Matrix Spike Dup (B241263-MSD2) TKN	Source ID: RW00065-02				98.7	80-120	1.20	20	04/05/2024	EDM	D
Matrix Spike Dup (B241263-MSD3) TKN	Source ID: RW00065-07				95.8	80-120	3.01	20	04/05/2024	EDM	D
Batch: B241409											
Blank (B241409-BLK1) Chloride	<0.015	mg/L					04/18/2024	SMC	U		
Blank (B241409-BLK2) Chloride	<0.015	mg/L					04/19/2024	SMC	U		
Blank (B241409-BLK3) Chloride	<0.015	mg/L					04/19/2024	SMC	U		
LCS (B241409-BS1) Chloride			96.8	90-110			04/18/2024	SMC			
LCS (B241409-BS2) Chloride			96.2	90-110			04/18/2024	SMC			
LCS (B241409-BS3) Chloride			96.3	90-110			04/19/2024	SMC			



Quality Control Report
Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Vet Chemistry (Continued)									
Batch: B241409 (Continued)									
Duplicate (B241409-DUP1) Chloride	Source ID: AC00340-01				0.0752	10	04/18/2024	SMC	
Duplicate (B241409-DUP2) Chloride	Source ID: RW00065-13				0.328	10	04/18/2024	SMC	D
Duplicate (B241409-DUP4) Chloride	Source ID: RW00069-11				0.239	10	04/19/2024	SMC	
Duplicate (B241409-DUP5) Chloride	Source ID: RW00070-08				0.923	10	04/19/2024	SMC	D
Duplicate (B241409-DUP6) Chloride	Source ID: RW00067-10RE1				0.341	10	04/20/2024	SMC	D
Matrix Spike (B241409-MS1) Chloride	Source ID: AC00340-01		97.9	90-110			04/18/2024	SMC	
Matrix Spike (B241409-MS2) Chloride	Source ID: RW00065-13		96.8	90-110			04/18/2024	SMC	D
Matrix Spike (B241409-MS4) Chloride	Source ID: RW00069-11		98.8	90-110			04/19/2024	SMC	
Matrix Spike (B241409-MS5) Chloride	Source ID: RW00070-08		98.2	90-110			04/19/2024	SMC	D
Matrix Spike (B241409-MS6) Chloride	Source ID: RW00067-10RE1		95.5	90-110			04/20/2024	SMC	D
Matrix Spike Dup (B241409-MSD1) Chloride	Source ID: AC00340-01		97.9	90-110	0.0119	10	04/18/2024	SMC	
Matrix Spike Dup (B241409-MSD2) Chloride	Source ID: RW00065-13		97.0	90-110	0.105	10	04/19/2024	SMC	D
Matrix Spike Dup (B241409-MSD4) Chloride	Source ID: RW00069-11		99.6	90-110	0.708	10	04/19/2024	SMC	
Matrix Spike Dup (B241409-MSD5) Chloride	Source ID: RW00070-08		98.8	90-110	0.380	10	04/19/2024	SMC	D
Matrix Spike Dup (B241409-MSD6) Chloride	Source ID: RW00067-10RE1		96.6	90-110	0.595	10	04/20/2024	SMC	D

Report Date: 05/02/2024 14:36



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Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier		
Dissolved Wet Chemistry											
Batch: B241173											
Blank (B241173-BLK1) Orthophosphate, as P	<0.003	mg/L					03/29/2024	JAL	U		
Blank (B241173-BLK2) Orthophosphate, as P	<0.003	mg/L					03/29/2024	JAL	U		
LCS (B241173-BS1) Orthophosphate, as P			97.4	90-110			03/29/2024	JAL			
LCS (B241173-BS2) Orthophosphate, as P			98.8	90-110			03/29/2024	JAL			
Duplicate (B241173-DUP1) Orthophosphate, as P	Source ID: AC00340-01				0.151	10	03/29/2024	JAL			
Duplicate (B241173-DUP2) Orthophosphate, as P	Source ID: RW00064-08				0.870	10	03/29/2024	JAL	D		
Duplicate (B241173-DUP3) Orthophosphate, as P	Source ID: WB03032-06				0.481	10	03/29/2024	JAL	D		
Matrix Spike (B241173-MS1) Orthophosphate, as P	Source ID: AC00340-01				99.1	90-110	03/29/2024	JAL			
Matrix Spike (B241173-MS2) Orthophosphate, as P	Source ID: RW00064-08				99.9	90-110	03/29/2024	JAL	D		
Matrix Spike (B241173-MS3) Orthophosphate, as P	Source ID: WB03032-06				99.8	90-110	03/29/2024	JAL	D		
Matrix Spike Dup (B241173-MSD1) Orthophosphate, as P	Source ID: AC00340-01				98.4	90-110	0.459	10	03/29/2024	JAL	
Matrix Spike Dup (B241173-MSD2) Orthophosphate, as P	Source ID: RW00064-08				101	90-110	0.438	10	03/29/2024	JAL	D
Matrix Spike Dup (B241173-MSD3) Orthophosphate, as P	Source ID: WB03032-06				101	90-110	0.301	10	03/29/2024	JAL	D

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Quality Control Report
Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals									
Batch: B241177									
Blank (B241177-BLK1)									
Arsenic	<0.070	ug/L					04/14/2024	DMW	U
Cadmium	<0.010	ug/L					04/14/2024	DMW	U
Lead	<0.010	ug/L					04/14/2024	DMW	U
LCS (B241177-BS1)									
Arsenic			101	85-115			04/14/2024	DMW	
Cadmium			102	85-115			04/14/2024	DMW	
Lead			103	85-115			04/14/2024	DMW	
Duplicate (B241177-DUP1) Source ID: ES00308-04									
Arsenic					1.20	20	04/14/2024	DMW	
Cadmium					NR	20	04/14/2024	DMW	U
Lead					0.466	20	04/14/2024	DMW	
Matrix Spike (B241177-MS1) Source ID: ES00308-04									
Arsenic			100	70-130			04/14/2024	DMW	
Cadmium			101	70-130			04/14/2024	DMW	
Lead			101	70-130			04/14/2024	DMW	
Matrix Spike Dup (B241177-MSD1) Source ID: ES00308-04									
Arsenic			101	70-130	0.462	20	04/14/2024	DMW	
Cadmium			102	70-130	1.01	20	04/14/2024	DMW	
Lead			101	70-130	0.120	20	04/14/2024	DMW	
Batch: B241226									
Blank (B241226-BLK1)									
Calcium	<0.04	mg/L					04/11/2024	EDM	U
Magnesium	<80	ug/L					04/11/2024	EDM	U
Phosphorus as P	<0.012	mg/L					04/11/2024	EDM	U
LCS (B241226-BS1)									
Calcium			98.9	85-115			04/11/2024	EDM	
Magnesium			101	85-115			04/11/2024	EDM	
Phosphorus as P			102	85-115			04/11/2024	EDM	
Duplicate (B241226-DUP1) Source ID: AC00341-01									
Calcium					1.81	20	04/11/2024	EDM	
Magnesium					1.16	20	04/11/2024	EDM	
Phosphorus as P					2.27	20	04/11/2024	EDM	
Matrix Spike (B241226-MS1) Source ID: AC00341-01									
Calcium			100	70-130			04/11/2024	EDM	
Magnesium			102	70-130			04/11/2024	EDM	
Phosphorus as P			101	70-130			04/11/2024	EDM	
Matrix Spike Dup (B241226-MSD1) Source ID: AC00341-01									
Calcium			102	70-130	1.34	20	04/11/2024	EDM	
Magnesium			103	70-130	0.658	20	04/11/2024	EDM	
Phosphorus as P			103	70-130	1.62	20	04/11/2024	EDM	

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Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals (Continued)									
Batch: B241233									
Blank (B241233-BLK1)									
Mercury	<0.01	ug/L					04/05/2024	SAS	U
LCS (B241233-BS1)									
Mercury			104	85-115			04/05/2024	SAS	
Duplicate (B241233-DUP1) Source ID: AC00340-01									
Mercury					47.0	20	04/05/2024	SAS	QC-02
Duplicate (B241233-DUP2) Source ID: BB03721-01									
Mercury					NR	20	04/05/2024	SAS	U
Matrix Spike (B241233-MS1) Source ID: AC00340-01									
Mercury			97.8	70-130			04/05/2024	SAS	
Matrix Spike (B241233-MS2) Source ID: BB03721-01									
Mercury			101	70-130			04/05/2024	SAS	
Matrix Spike (B241233-MS3) Source ID: EP00317-02RE1									
Mercury			75.9	70-130			04/05/2024	SAS	D
Matrix Spike Dup (B241233-MSD1) Source ID: AC00340-01									
Mercury			91.3	70-130	5.80	20	04/05/2024	SAS	
Matrix Spike Dup (B241233-MSD2) Source ID: BB03721-01									
Mercury			102	70-130	1.06	20	04/05/2024	SAS	



Quality Control Report
Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Dissolved Metals									
Batch: B241178									
Blank (B241178-BLK1)									
Cadmium	<0.010	ug/L					04/04/2024	DMW	U
Copper	<0.15	ug/L					04/04/2024	DMW	U
Lead	<0.0090	ug/L					04/04/2024	DMW	U
Zinc	<0.50	ug/L					04/04/2024	DMW	U
LCS (B241178-BS1)									
Cadmium			99.9	85-115			04/04/2024	DMW	
Copper			93.2	85-115			04/04/2024	DMW	
Lead			99.4	85-115			04/04/2024	DMW	
Zinc			94.5	85-115			04/04/2024	DMW	
Duplicate (B241178-DUP1) Source ID: AC00340-01									
Cadmium					NR	10	04/04/2024	DMW	U
Copper					0.527	10	04/04/2024	DMW	
Lead					2.01	10	04/04/2024	DMW	
Zinc					1.59	10	04/04/2024	DMW	
Matrix Spike (B241178-MS1) Source ID: AC00340-01									
Cadmium			102	70-130			04/04/2024	DMW	
Copper			91.6	70-130			04/04/2024	DMW	
Lead			98.4	70-130			04/04/2024	DMW	
Zinc			91.2	70-130			04/04/2024	DMW	
Matrix Spike Dup (B241178-MSD1) Source ID: AC00340-01									
Cadmium			102	70-130	0.490	10	04/04/2024	DMW	
Copper			91.9	70-130	0.188	10	04/04/2024	DMW	
Lead			98.3	70-130	0.146	10	04/04/2024	DMW	
Zinc			89.8	70-130	0.970	10	04/04/2024	DMW	



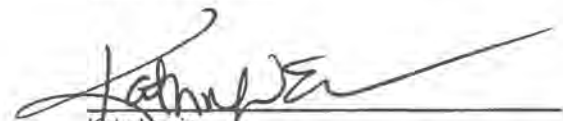
Notes and Definitions

Item	Definition
D	Data reported from a dilution
QC-02	The RPD is greater than the method acceptance criteria. At least one of the values used to calculate the RPD, is less than or equal to the PQL.
U	Analyte included in the analysis, but not detected

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846


Stephen Quintero or Azubike Emenari
QA/QC Coordinator


Kate Harris
Interim Water Quality Laboratory Manager

Ada County Highway District

Attn: Steven Turner
 3775 Adams Street
 Garden City, Idaho 83714-6418
 Tel. (208) 387-6269
 Fax (208) 387-6391
 Purchase Order:
 Project:
 Sampler(s):

63065628

Stormwater-PI

Kristen Chusholm
Steven Turner

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix	Type	Composite	BOD ₅ - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Confirm Chlorides EPA 300.0	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO ₃ +NO ₂ - EPA 353.2	NH ₃ - SM 4500 NH ₃ - D	Total Containers
AC00341-01	3/27/24	3/28/24	2007	1133	240328-11-WC	KC	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	8

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
<u>Kristen Chusholm</u>	3/28/24 1314	<u>[Signature]</u> 3/28/24 1314	

AC00341

Report Date: 05/02/2024 14:37



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11818 Joplin Road
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Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00340-01	ACST1C	240328-12-WC	Water		03/28/2024	03/28/2024
AC00340-02	ACST1C	240328-14-002	Water		03/28/2024	03/28/2024

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Analysis Report

Location: ACST1C

Location Description: 240328-12-WC

Date/Time Collected: 03/27/2024 19:33 - 03/28/2024 07:39

Lab Number: AC00340-01

Sample Collector: K.C

Sample Type: Composite

Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Net Chemistry										
Ammonia, as N	B241161	0.293	mg/L	0.0450	0.0450	Timberline Ammonia-001	03/29/24	3/29/24 11:29	ALN	
BOD5	B241168	5.03	mg/L	2.00	2.00	SM 5210 B-2016	03/29/24	4/3/24 10:05	ALM	
Chloride	B241409	5.19	mg/L	0.0150	0.0150	EPA 300.0, Rev. 2.1 (1993)	04/18/24	4/18/24 13:51	SMC	
COD	B241167	104	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	03/29/24	3/29/24 9:37	RKT	
Nitrate-Nitrite, as N	B241189	0.151	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	04/01/24	4/1/24 14:23	JAL	
TKN	B241263	1.18	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	04/04/24	4/5/24 12:51	EDM	
Total Dissolved Solids	B241163	44.2	mg/L	20.0	20.0	SM 2540 C-2015	03/28/24	3/30/24 15:17	BAK	
Total Suspended Solids	B241172	91.7	mg/L	0.900	0.900	SM 2540 D-2015	03/29/24	3/29/24 10:11	SMC	
Turbidity	B241159	24.6	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	03/28/24	3/28/24 14:17	LRF	
Dissolved Wet Chemistry										
Orthophosphate, as P	B241173	0.0494	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	03/29/24	3/29/24 12:56	JAL	
Total Metals										
Mercury	B241233	0.0171	ug/L	0.0100	0.0100	EPA 245.1	04/04/24	4/5/24 7:41	SAS	
Arsenic	B241177	1.1	ug/L	0.070	0.070	EPA 200.8	04/13/24	4/14/24 17:49	DMW	
Cadmium	B241177	0.071	ug/L	0.010	0.010	EPA 200.8	04/13/24	4/14/24 17:49	DMW	
Calcium	B241226	2.99	mg/L	0.0400	0.0400	EPA 200.7	04/03/24	4/11/24 17:24	EDM	
Lead	B241177	5.9	ug/L	0.010	0.010	EPA 200.8	04/13/24	4/14/24 17:49	DMW	
Magnesium	B241226	1260	ug/L	80.0	80.0	EPA 200.7	04/03/24	4/11/24 17:24	EDM	
Phosphorus as P	B241226	0.145	mg/L	0.0120	0.0120	EPA 200.7	04/03/24	4/11/24 17:24	EDM	
Hardness	B241226	12.6	mg/L	0.100	0.100	SM 2340 B-2011	04/03/24	4/11/24 17:24	EDM	
Dissolved Metals										
Cadmium	B241178	<0.0100	ug/L	0.010	0.010	EPA 200.8	04/04/24	4/4/24 15:50	DMW	U
Copper	B241178	2.3	ug/L	0.15	0.15	EPA 200.8	04/04/24	4/4/24 15:50	DMW	
Lead	B241178	0.068	ug/L	9.00E-3	9.00E-3	EPA 200.8	04/04/24	4/4/24 15:50	DMW	
Zinc	B241178	14.7	ug/L	0.50	0.50	EPA 200.8	04/04/24	4/4/24 15:50	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

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Analysis Report

Location: ACST1C
Date/Time Collected: 03/28/2024 12:00
Lab Number: AC00340-02
Sample Type: Composite

Location Description: 240328-14-002
Sample Collector: K.C
Sample Matrix: Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B241161	<0.0450	mg/L	0.0450	0.0450	Timberline Ammonia-001	03/29/24	3/29/24 11:26	ALN	U
BOD5	B241168	<2.00	mg/L	2.00	2.00	SM 5210 B-2016	03/29/24	4/3/24 10:05	ALM	U
Chloride	B241409	<0.0150	mg/L	0.0150	0.0150	EPA 300.0, Rev. 2.1 (1993)	04/18/24	4/18/24 17:23	SMC	U
COD	B241167	<7.00	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	03/29/24	3/29/24 9:37	RKT	U
Nitrate-Nitrite, as N	B241189	<0.0250	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	04/01/24	4/1/24 14:28	JAL	U
TKN	B241263	<0.100	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	04/04/24	4/5/24 12:52	EDM	U
Total Dissolved Solids	B241163	<20.0	mg/L	20.0	20.0	SM 2540 C-2015	03/28/24	3/30/24 15:18	BAK	U
Total Suspended Solids	B241172	<0.900	mg/L	0.900	0.900	SM 2540 D-2015	03/29/24	3/29/24 9:42	SMC	U
Turbidity	B241159	<0.3	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	03/28/24	3/28/24 14:43	LRF	U
Dissolved Wet Chemistry										
Orthophosphate, as P	B241173	<3.00E-3	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	03/29/24	3/29/24 13:01	JAL	U
Total Metals										
Mercury	B241233	<0.0100	ug/L	0.0100	0.0100	EPA 245.1	04/04/24	4/5/24 7:54	SAS	U
Arsenic	B241177	<0.0700	ug/L	0.070	0.070	EPA 200.8	04/13/24	4/14/24 17:51	DMW	U
Cadmium	B241177	<0.0100	ug/L	0.010	0.010	EPA 200.8	04/13/24	4/14/24 17:51	DMW	U
Calcium	B241226	<0.0400	mg/L	0.0400	0.0400	EPA 200.7	04/03/24	4/11/24 17:31	EDM	U
Lead	B241177	<0.0100	ug/L	0.010	0.010	EPA 200.8	04/13/24	4/14/24 17:51	DMW	U
Magnesium	B241226	<80.0	ug/L	80.0	80.0	EPA 200.7	04/03/24	4/11/24 17:31	EDM	U
Phosphorus as P	B241226	<0.0120	mg/L	0.0120	0.0120	EPA 200.7	04/03/24	4/11/24 17:31	EDM	U
Hardness	B241226	<0.100	mg/L	0.100	0.100	SM 2340 B-2011	04/03/24	4/11/24 17:31	EDM	U
Dissolved Metals										
Cadmium	B241178	<0.0100	ug/L	0.010	0.010	EPA 200.8	04/04/24	4/4/24 15:47	DMW	U
Copper	B241178	<0.150	ug/L	0.15	0.15	EPA 200.8	04/04/24	4/4/24 15:47	DMW	U
Lead	B241178	<9.00E-3	ug/L	9.00E-3	9.00E-3	EPA 200.8	04/04/24	4/4/24 15:47	DMW	U
Zinc	B241178	<0.500	ug/L	0.50	0.50	EPA 200.8	04/04/24	4/4/24 15:47	DMW	U

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.



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Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Vet Chemistry									
Batch: B241159									
Blank (B241159-BLK1)									
Turbidity	<0.3	NTU					03/28/2024	LRF	U
LCS (B241159-BS1)									
Turbidity			102	90-110			03/28/2024	LRF	
Duplicate (B241159-DUP1) Source ID: AC00340-01									
Turbidity					0.809	25	03/28/2024	LRF	
Batch: B241161									
Blank (B241161-BLK1)									
Ammonia, as N	<0.045	mg/L					03/29/2024	ALN	U
Blank (B241161-BLK2)									
Ammonia, as N	<0.045	mg/L					03/29/2024	ALN	U
LCS (B241161-BS1)									
Ammonia, as N			99.1	87-104			03/29/2024	ALN	
Duplicate (B241161-DUP1) Source ID: WB03028-08									
Ammonia, as N					0.615	20	03/29/2024	ALN	D
Matrix Spike (B241161-MS1) Source ID: WB03028-08									
Ammonia, as N			101	84-115			03/29/2024	ALN	D
Matrix Spike (B241161-MS2) Source ID: EP00320-01									
Ammonia, as N			101	84-115			03/29/2024	ALN	
Matrix Spike (B241161-MS3) Source ID: AC00341-01									
Ammonia, as N			102	84-115			03/29/2024	ALN	
Matrix Spike Dup (B241161-MSD1) Source ID: WB03028-08									
Ammonia, as N			99.6	84-115	0.840	20	03/29/2024	ALN	D
Batch: B241163									
Blank (B241163-BLK1)									
Total Dissolved Solids	<20	mg/L					03/30/2024	BAK	U
LCS (B241163-BS1)									
Total Dissolved Solids			99.3	90-110			03/30/2024	BAK	
Duplicate (B241163-DUP1) Source ID: RW00064-08									
Total Dissolved Solids					7.62	10	03/30/2024	BAK	

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Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B241167									
Blank (B241167-BLK1)									
COD	<7	mg/L					03/29/2024	RKT	U
LCS (B241167-BS1)									
COD			98.3	90-110			03/29/2024	RKT	
Duplicate (B241167-DUP1)	Source ID: AC00341-01								
COD					3.64	10	03/29/2024	RKT	
Batch: B241168									
Blank (B241168-BLK1)									
BOD5	<2	mg/L					04/03/2024	ALM	U
LCS (B241168-BS1)									
BOD5			103	84.6-115.4			04/03/2024	ALM	
LCS (B241168-BS2)									
BOD5			106	84.6-115.4			04/03/2024	ALM	
Duplicate (B241168-DUP1)	Source ID: LS01908-02								
BOD5					3.16	30	04/03/2024	ALM	
Batch: B241172									
Blank (B241172-BLK1)									
Total Suspended Solids	<0.9	mg/L					03/29/2024	SMC	U
LCS (B241172-BS1)									
Total Suspended Solids			91.2	90-110			03/29/2024	SMC	
Duplicate (B241172-DUP1)	Source ID: LS01908-02								
Total Suspended Solids					0.951	20	03/29/2024	SMC	
Batch: B241189									
Blank (B241189-BLK1)									
Nitrate-Nitrite, as N	<0.025	mg/L					04/01/2024	JAL	U
LCS (B241189-BS1)									
Nitrate-Nitrite, as N			96.2	90-110			04/01/2024	JAL	
Duplicate (B241189-DUP1)	Source ID: AC00340-01								
Nitrate-Nitrite, as N					2.37	10	04/01/2024	JAL	
Matrix Spike (B241189-MS1)	Source ID: AC00340-01								
Nitrate-Nitrite, as N			97.6	90-110			04/01/2024	JAL	
Matrix Spike Dup (B241189-MSD1)	Source ID: AC00340-01								
Nitrate-Nitrite, as N			96.8	90-110	0.678	10	04/01/2024	JAL	

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(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Net Chemistry (Continued)									
Batch: B241263									
Blank (B241263-BLK1)									
TKN	<0.1	mg/L					04/05/2024	EDM	U
Blank (B241263-BLK2)									
TKN	<0.1	mg/L					04/05/2024	EDM	U
LCS (B241263-BS1)									
TKN			98.7	80-120			04/05/2024	EDM	
LCS (B241263-BS2)									
TKN			95.9	80-120			04/05/2024	EDM	
Duplicate (B241263-DUP1)	Source ID: AC00341-01								
TKN					4.82	20	04/05/2024	EDM	
Duplicate (B241263-DUP2)	Source ID: RW00065-02								
TKN					0.416	20	04/05/2024	EDM	D
Duplicate (B241263-DUP3)	Source ID: RW00065-07								
TKN					3.97	20	04/05/2024	EDM	D
Matrix Spike (B241263-MS1)	Source ID: AC00341-01								
TKN			102	80-120			04/05/2024	EDM	
Matrix Spike (B241263-MS2)	Source ID: RW00065-02								
TKN			101	80-120			04/05/2024	EDM	D
Matrix Spike (B241263-MS3)	Source ID: RW00065-07								
TKN			88.7	80-120			04/05/2024	EDM	D
Matrix Spike Dup (B241263-MSD1)	Source ID: AC00341-01								
TKN			97.7	80-120	3.03	20	04/05/2024	EDM	
Matrix Spike Dup (B241263-MSD2)	Source ID: RW00065-02								
TKN			98.7	80-120	1.20	20	04/05/2024	EDM	D
Matrix Spike Dup (B241263-MSD3)	Source ID: RW00065-07								
TKN			95.8	80-120	3.01	20	04/05/2024	EDM	D
Batch: B241409									
Blank (B241409-BLK1)									
Chloride	<0.015	mg/L					04/18/2024	SMC	U
Blank (B241409-BLK2)									
Chloride	<0.015	mg/L					04/19/2024	SMC	U
Blank (B241409-BLK3)									
Chloride	<0.015	mg/L					04/19/2024	SMC	U
LCS (B241409-BS1)									
Chloride			96.8	90-110			04/18/2024	SMC	
LCS (B241409-BS2)									
Chloride			96.2	90-110			04/18/2024	SMC	
LCS (B241409-BS3)									
Chloride			96.3	90-110			04/19/2024	SMC	

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(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B241409 (Continued)									
Duplicate (B241409-DUP1) Chloride	Source ID: AC00340-01				0.0752	10	04/18/2024	SMC	
Duplicate (B241409-DUP2) Chloride	Source ID: RW00065-13				0.328	10	04/18/2024	SMC	D
Duplicate (B241409-DUP4) Chloride	Source ID: RW00069-11				0.239	10	04/19/2024	SMC	
Duplicate (B241409-DUP5) Chloride	Source ID: RW00070-08				0.923	10	04/19/2024	SMC	D
Duplicate (B241409-DUP6) Chloride	Source ID: RW00067-10RE1				0.341	10	04/20/2024	SMC	D
Matrix Spike (B241409-MS1) Chloride	Source ID: AC00340-01		97.9	90-110			04/18/2024	SMC	
Matrix Spike (B241409-MS2) Chloride	Source ID: RW00065-13		96.8	90-110			04/18/2024	SMC	D
Matrix Spike (B241409-MS4) Chloride	Source ID: RW00069-11		98.8	90-110			04/19/2024	SMC	
Matrix Spike (B241409-MS5) Chloride	Source ID: RW00070-08		98.2	90-110			04/19/2024	SMC	D
Matrix Spike (B241409-MS6) Chloride	Source ID: RW00067-10RE1		95.5	90-110			04/20/2024	SMC	D
Matrix Spike Dup (B241409-MSD1) Chloride	Source ID: AC00340-01		97.9	90-110	0.0119	10	04/18/2024	SMC	
Matrix Spike Dup (B241409-MSD2) Chloride	Source ID: RW00065-13		97.0	90-110	0.105	10	04/19/2024	SMC	D
Matrix Spike Dup (B241409-MSD4) Chloride	Source ID: RW00069-11		99.6	90-110	0.708	10	04/19/2024	SMC	
Matrix Spike Dup (B241409-MSD5) Chloride	Source ID: RW00070-08		98.8	90-110	0.380	10	04/19/2024	SMC	D
Matrix Spike Dup (B241409-MSD6) Chloride	Source ID: RW00067-10RE1		96.6	90-110	0.595	10	04/20/2024	SMC	D

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Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier		
Dissolved Wet Chemistry											
Batch: B241173											
Blank (B241173-BLK1) Orthophosphate, as P	<0.003	mg/L					03/29/2024	JAL	U		
Blank (B241173-BLK2) Orthophosphate, as P	<0.003	mg/L					03/29/2024	JAL	U		
LCS (B241173-BS1) Orthophosphate, as P			97.4	90-110			03/29/2024	JAL			
LCS (B241173-BS2) Orthophosphate, as P			98.8	90-110			03/29/2024	JAL			
Duplicate (B241173-DUP1) Orthophosphate, as P	Source ID: AC00340-01				0.151	10	03/29/2024	JAL			
Duplicate (B241173-DUP2) Orthophosphate, as P	Source ID: RW00064-08				0.870	10	03/29/2024	JAL	D		
Duplicate (B241173-DUP3) Orthophosphate, as P	Source ID: WB03032-06				0.481	10	03/29/2024	JAL	D		
Matrix Spike (B241173-MS1) Orthophosphate, as P	Source ID: AC00340-01				99.1	90-110	03/29/2024	JAL			
Matrix Spike (B241173-MS2) Orthophosphate, as P	Source ID: RW00064-08				99.9	90-110	03/29/2024	JAL	D		
Matrix Spike (B241173-MS3) Orthophosphate, as P	Source ID: WB03032-06				99.8	90-110	03/29/2024	JAL	D		
Matrix Spike Dup (B241173-MSD1) Orthophosphate, as P	Source ID: AC00340-01				98.4	90-110	0.459	10	03/29/2024	JAL	
Matrix Spike Dup (B241173-MSD2) Orthophosphate, as P	Source ID: RW00064-08				101	90-110	0.438	10	03/29/2024	JAL	D
Matrix Spike Dup (B241173-MSD3) Orthophosphate, as P	Source ID: WB03032-06				101	90-110	0.301	10	03/29/2024	JAL	D

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(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals									
Batch: B241177									
Blank (B241177-BLK1)									
Arsenic	<0.070	ug/L					04/14/2024	DMW	U
Cadmium	<0.010	ug/L					04/14/2024	DMW	U
Lead	<0.010	ug/L					04/14/2024	DMW	U
LCS (B241177-BS1)									
Arsenic			101	85-115			04/14/2024	DMW	
Cadmium			102	85-115			04/14/2024	DMW	
Lead			103	85-115			04/14/2024	DMW	
Duplicate (B241177-DUP1) Source ID: ES00308-04									
Arsenic					1.20	20	04/14/2024	DMW	
Cadmium					NR	20	04/14/2024	DMW	U
Lead					0.466	20	04/14/2024	DMW	
Matrix Spike (B241177-MS1) Source ID: ES00308-04									
Arsenic			100	70-130			04/14/2024	DMW	
Cadmium			101	70-130			04/14/2024	DMW	
Lead			101	70-130			04/14/2024	DMW	
Matrix Spike Dup (B241177-MSD1) Source ID: ES00308-04									
Arsenic			101	70-130	0.462	20	04/14/2024	DMW	
Cadmium			102	70-130	1.01	20	04/14/2024	DMW	
Lead			101	70-130	0.120	20	04/14/2024	DMW	
Batch: B241226									
Blank (B241226-BLK1)									
Calcium	<0.04	mg/L					04/11/2024	EDM	U
Magnesium	<80	ug/L					04/11/2024	EDM	U
Phosphorus as P	<0.012	mg/L					04/11/2024	EDM	U
LCS (B241226-BS1)									
Calcium			98.9	85-115			04/11/2024	EDM	
Magnesium			101	85-115			04/11/2024	EDM	
Phosphorus as P			102	85-115			04/11/2024	EDM	
Duplicate (B241226-DUP1) Source ID: AC00341-01									
Calcium					1.81	20	04/11/2024	EDM	
Magnesium					1.16	20	04/11/2024	EDM	
Phosphorus as P					2.27	20	04/11/2024	EDM	
Matrix Spike (B241226-MS1) Source ID: AC00341-01									
Calcium			100	70-130			04/11/2024	EDM	
Magnesium			102	70-130			04/11/2024	EDM	
Phosphorus as P			101	70-130			04/11/2024	EDM	
Matrix Spike Dup (B241226-MSD1) Source ID: AC00341-01									
Calcium			102	70-130	1.34	20	04/11/2024	EDM	
Magnesium			103	70-130	0.658	20	04/11/2024	EDM	
Phosphorus as P			103	70-130	1.62	20	04/11/2024	EDM	



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Quality Control Report

Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals (Continued)									
Batch: B241233									
Blank (B241233-BLK1)									
Mercury	<0.01	ug/L					04/05/2024	SAS	U
LCS (B241233-BS1)									
Mercury			104	85-115			04/05/2024	SAS	
Duplicate (B241233-DUP1) Source ID: AC00340-01									
Mercury					47.0	20	04/05/2024	SAS	QC-02
Duplicate (B241233-DUP2) Source ID: BB03721-01									
Mercury					NR	20	04/05/2024	SAS	U
Matrix Spike (B241233-MS1) Source ID: AC00340-01									
Mercury			97.8	70-130			04/05/2024	SAS	
Matrix Spike (B241233-MS2) Source ID: BB03721-01									
Mercury			101	70-130			04/05/2024	SAS	
Matrix Spike (B241233-MS3) Source ID: EP00317-02RE1									
Mercury			75.9	70-130			04/05/2024	SAS	D
Matrix Spike Dup (B241233-MSD1) Source ID: AC00340-01									
Mercury			91.3	70-130	5.80	20	04/05/2024	SAS	
Matrix Spike Dup (B241233-MSD2) Source ID: BB03721-01									
Mercury			102	70-130	1.06	20	04/05/2024	SAS	

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(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Dissolved Metals									
Batch: B241178									
Blank (B241178-BLK1)									
Cadmium	<0.010	ug/L					04/04/2024	DMW	U
Copper	<0.15	ug/L					04/04/2024	DMW	U
Lead	<0.0090	ug/L					04/04/2024	DMW	U
Zinc	<0.50	ug/L					04/04/2024	DMW	U
LCS (B241178-BS1)									
Cadmium			99.9	85-115			04/04/2024	DMW	
Copper			93.2	85-115			04/04/2024	DMW	
Lead			99.4	85-115			04/04/2024	DMW	
Zinc			94.5	85-115			04/04/2024	DMW	
Duplicate (B241178-DUP1) Source ID: AC00340-01									
Cadmium					NR	10	04/04/2024	DMW	U
Copper					0.527	10	04/04/2024	DMW	
Lead					2.01	10	04/04/2024	DMW	
Zinc					1.59	10	04/04/2024	DMW	
Matrix Spike (B241178-MS1) Source ID: AC00340-01									
Cadmium			102	70-130			04/04/2024	DMW	
Copper			91.6	70-130			04/04/2024	DMW	
Lead			98.4	70-130			04/04/2024	DMW	
Zinc			91.2	70-130			04/04/2024	DMW	
Matrix Spike Dup (B241178-MSD1) Source ID: AC00340-01									
Cadmium			102	70-130	0.490	10	04/04/2024	DMW	
Copper			91.9	70-130	0.188	10	04/04/2024	DMW	
Lead			98.3	70-130	0.146	10	04/04/2024	DMW	
Zinc			89.8	70-130	0.970	10	04/04/2024	DMW	

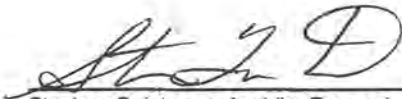


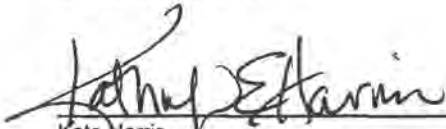
Notes and Definitions

Item	Definition
	Data reported from a dilution
IC-02	The RPD is greater than the method acceptance criteria. At least one of the values used to calculate the RPD, is less than or equal to the PQL.
	Analyte included in the analysis, but not detected

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846


Stephen Quintero or Azubike Emenari
QA/QC Coordinator


Kate Harris
Interim Water Quality Laboratory Manager

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714-6418
Tel. (208) 387-6269
Fax (208) 387-6391
Purchase Order:
Project:
Sampler(s):

63065628
Stormwater-PI
Kristen Chisholm
#Steven Turner

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Water	Grab	Composite	BOD ₅ - SM 5210	COD - Hach 8000	TSS - SM 2540	TDS - SM 2540	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E-Gel - EPA 200.0	Chlorides EPA 200.0	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO ₃ +NO ₂ - EPA 353.2	NH ₃ - SM 4500 NH ₃ -D	Total Containers
00340-01	3/27/24	3/28/24	1933	0739	23 240328-12-WC	KC	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3
↓ -02		3/23/24		1200	240328-14- WE 002	KC	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristen Chisholm	3/28/24 1130	Steven Turner 3/28/24 1134	

Attachment 9

Permit Year 3 Americana Subwatershed Monitoring Summary Report

Americana Subwatershed Monitoring Summary Report

Water Year 2024

Prepared by
Brown and Caldwell

Prepared for
Ada County Highway District
December 19, 2024



This document was prepared solely for ACHD in accordance with professional standards at the time the services were performed and in accordance with the contract between ACHD and Brown and Caldwell dated September 12, 2024. This document is governed by the specific scope of work authorized by ACHD; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by ACHD and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

Americana Subwatershed Monitoring Summary WY 2024

Ada County Highway District
12/19/2024

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Section 1: Introduction

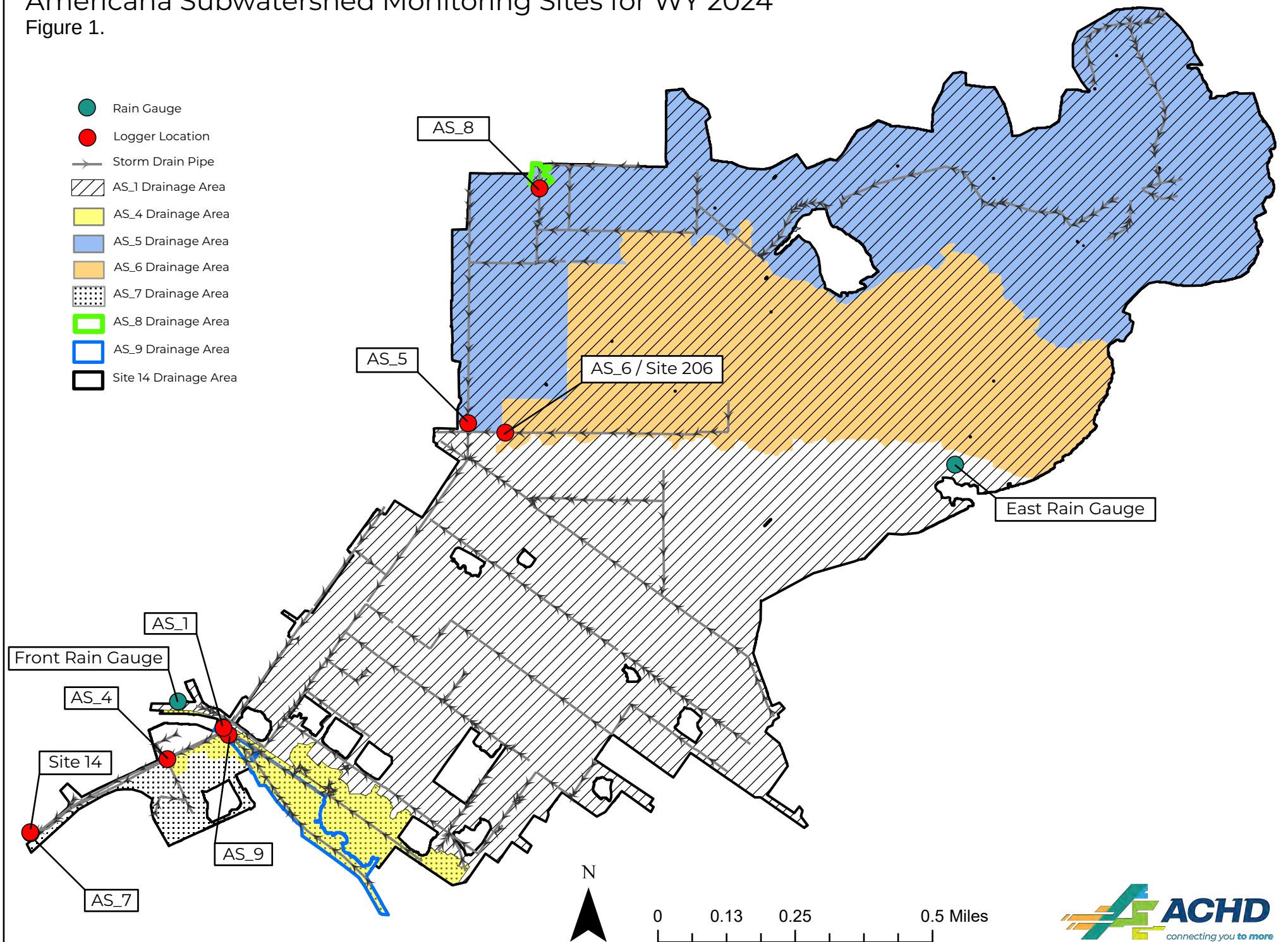
Ada County Highway District, Boise State University, City of Boise, City of Garden City, Drainage District #3, and the Idaho Transportation Department District #3 (Permittees) were issued a National Pollutant Discharge Elimination System Phase I Permit #IDS-027561 (Permit) on October 1, 2021. The Permit authorizes the Permittees to discharge from municipal separate storm sewer system outfalls to the Boise River and its tributaries. According to Permit Part 6.2.2, *Subwatershed Monitoring*, Permittees are required to conduct monitoring within the Americana subwatershed to better define wet weather and dry weather flow volumes, sources, and pollutant loads.

The Americana subwatershed is one of the largest urban subwatersheds on the lower Boise River and drains a significant portion of downtown Boise and the North End and Foothills residential areas. Stormwater discharge monitoring (flow measurement and analytical sample collection) is currently conducted at the Americana outfall as identified in the [Stormwater Outfall Monitoring Plan](#) (ACHD, 2022). While data collected at the outfall is important for understanding discharges to the Boise River, the dataset does not provide much information about the pollutant load and dry weather sources farther up in the storm drain system. Guided by the [Americana Subwatershed Plan](#) (ACHD, 2020), the Americana subwatershed is divided into subcatchments at major nodes in the system to parse out non-stormwater flow sources and characterize pollutant contributions. The following summary describes Americana subwatershed monitoring activities during water year (WY) 2024 (October 1, 2023–September 30, 2024).

In WY 2024, data collection throughout the Americana subwatershed included precipitation, water level, flow, and water quality samples. Precipitation data were collected at two representative locations, and water level data were collected at six subwatershed locations and at the Americana monitoring station. The water level data were compared to the precipitation data to look for anomalies in the municipal separate storm sewer system, such as instances when the water level in pipe increases or decreases without a corresponding precipitation event and when the water level increases from isolated subcatchment areas. Additionally, water quality data from wet weather discharges were collected from one subcatchment site (Site 206) to compare with the Americana outfall site (Site 14). The water quality data, along with flow data, were used to calculate pollutant loads and identify pollutants discharging from Site 206 that are disproportionately high compared to Site 14.

Americana Subwatershed Monitoring Sites for WY 2024

Figure 1.



Section 2: Monitoring Sites, Equipment, and Sample Types

Data was collected at the following monitoring sites during WY 2024: AS_1, AS_4, AS_7, AS_8, AS_9, Site 14, Site 206, Front, and East (Figure 1). Details on each of the monitoring sites, including subcatchment areas, pipe characteristics, and equipment deployment start and end dates, are found in Table 1. Figure 2 shows the locations of the monitoring sites in relation to each other using a conceptual layout of the storm drain system. Midway through WY 2023, the AS_5 and AS_6 logger sites were discontinued.

Site 14 is the Americana outfall monitoring station used in the National Pollutant Discharge Elimination System Phase I Stormwater Outfall Monitoring program. This monitoring site is equipped with a flowmeter and sampler to collect water level, velocity, flow, and composite samples. Water level, velocity, and flow data are collected at 15-minute intervals during dry weather and 1-minute intervals when the equipment is set up to monitor a forecasted storm event.

Site 206 is a subcatchment of the Americana subwatershed. Similar to Site 14, it is equipped with a flowmeter and sampler to collect flow and water quality data during targeted storm events.

AS_7 is a secondary outfall to Site 14, with a connection between storm drain pipes farther up in the system. This site is equipped with a flowmeter to capture continuous water level, velocity, and flow data at 5-minute intervals.

The AS_8 site was installed during the second quarter of WY 2023 to replace AS_5. The AS_8 subwatershed is much smaller than the AS_5 subwatershed; however, it still captures Hull's Gulch flows into the Americana storm drain system.

The AS_9 site was added to measure dry weather flow at AS_4 by splitting the subwatershed into two areas, with AS_9 representing the upstream portion of the AS_4 subwatershed.

The AS_6 logger site was discontinued in the second quarter of WY 2023; however, Site 206 still collects flow and water quality data during targeted storm events.

AS_1, AS_4, AS_8, and AS_9 represent subcatchment areas within the Americana subwatershed. Each site is equipped with a water level logger to collect in-pipe water level data. The loggers continuously record pressure readings at 5-minute intervals. The pressure readings are corrected using local barometric pressure and converted to water level.

Front and East are rain gauge sites and are equipped with tipping bucket rain gauges. The rain gauges collect continuous precipitation data in 0.01-inch increments using event data loggers. The precipitation data are used to determine the date and times of wet weather storm events and dry weather periods.

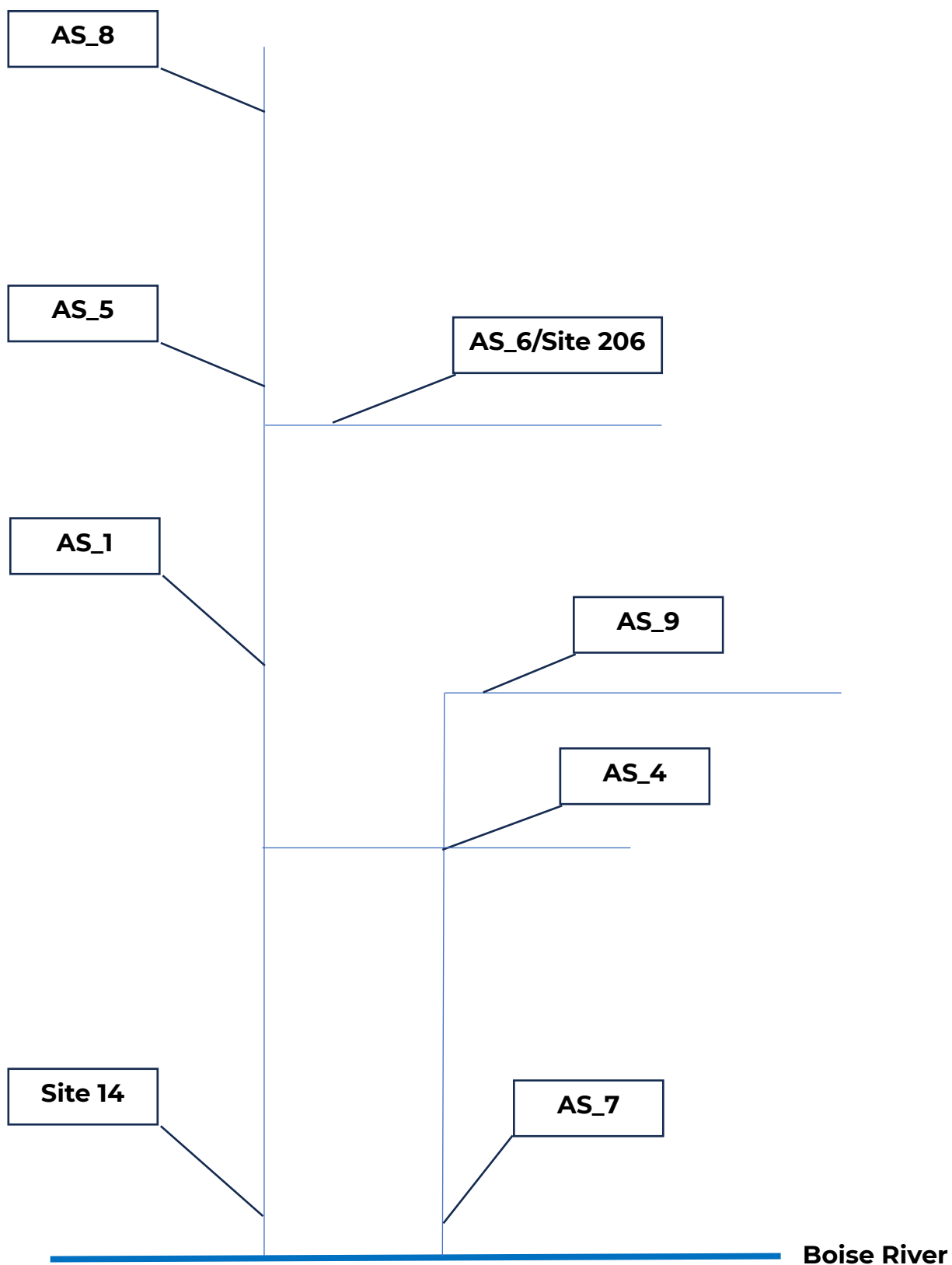


Figure 2. Conceptual Layout of Monitoring Sites

2.1 Water Quality Sample Types

The sample types collected during WY 2024 include grab samples and composite samples. Grab samples represent a discrete measurement from the overall storm discharge while composite samples represent the entire discharge.

Grab samples were manually collected from wet weather discharges using a swing sampler. The grab samples were submitted to the Boise City Public Works Water Quality Laboratory (WQL) and analyzed for *E. coli*. At the time that the grab samples were collected, field parameters (temperature, pH, dissolved oxygen, and conductivity) were measured using In-Situ smarTROLL or In-Situ Aqua TROLL handheld instruments.

Composite samples were collected using automatic samplers, which worked in conjunction with flowmeters. After a predetermined volume of flow was discharged, the flowmeters triggered the sampler to collect a subsample. Each subsample was deposited into a 15-liter carboy, resulting in a flow-proportional composite sample. The composite samples were submitted to WQL where they were split for analysis. The following constituents were analyzed: biological oxygen demand, 5-day (BOD₅); chemical oxygen demand (COD); hardness as calcium carbonate (CaCO₃); turbidity; total suspended solids (TSS); total dissolved solids (TDS); total phosphorus (TP); orthophosphate as P; ammonia, as N; nitrate + nitrite, as N; total Kjeldahl nitrogen (TKN); total arsenic; dissolved and total cadmium; dissolved copper; dissolved and total lead; total mercury; and dissolved zinc.

Section 3: Americana Subwatershed Monitoring Results

This section describes water level monitoring results and water quality results and provides high-level conclusions and outcomes based on WY 2024 data.

3.1 Water Level Monitoring Results

For WY 2024, water level data from six monitoring sites (AS_1, AS_4, AS_7, AS_8, AS_9, and Site 14) were evaluated for occurrences of increasing or decreasing water level not attributed to precipitation. Though the pipe size at each site differs, the change in water level is still evident in the data. When a change in water level is seen at one or more sites, the discharge must originate from the site that is farthest “up pipe” in the storm drain system. Figures 3–6 show hydrographs for each quarter of WY 2024. Color bands were applied to the hydrographs to indicate periods where no rain was recorded, but the water level fluctuated at one or more sites. Fluctuations of less than 2 hours were not included in the analysis as non-stormwater sources. Fluctuations lasting more than 72 hours are marked as extended periods of non-stormwater flow and are denoted in the hydrographs with hatched color bands. The following conclusions were extracted from visually inspecting the hydrographs:

- Sudden water level increases and decreases were observed, which are likely caused by human-related activities such as turning on a pump or opening a headgate.
- Reoccurring water level spikes were observed at AS_7 between 2330 and 0900. Similar spikes were observed in the second and third quarters of WY 2023. Therefore, AS_7 water level spikes were omitted from WY 2024 quarterly summaries, unless the AS_7 water level spike aligned with another site(s). An investigation on the source of level spikes at AS_7 is ongoing.
- Concurrent water level increases and decreases were observed at AS_1 and AS_4 but not in AS_9. Using the conceptual pipe layout in Figure 2 as a reference, it becomes apparent that there must be a different pipe connection farther in the AS_4 subcatchment area causing water

level anomalies. An investigation to confirm the location of the pipe in the AS_4 subcatchment area is ongoing.

- Based on historical Google Earth imagery, significant building and road construction activities have been observed in the AS_4 subwatershed area.
- An extended period of non-stormwater flow originating from AS_1 subcatchment (which includes downtown Boise) occurred on November 22, 2023, through November 27, 2023 (approx. 6 days).
- An extended period of non-stormwater flow originating from AS_8 subcatchment occurred on February 8, 2023, through February 13 (approx. 6 days). The non-stormwater source is likely snow melt in Hull's Gulch. A non-extended, non-stormwater discharge originating from AS_8 occurred once on February 26, 2024.
- Non-stormwater discharge originated from the AS_1 subcatchment 50 times, with the most anomalies generally occurring in the third quarter (36 percent)
- Non-stormwater discharge originated from AS_4 subcatchment 40 times, with the most anomalies generally occurring in the fourth quarter (38 percent)
- No anomalies were found at Site 14 and AS_9.

3.2 Water Quality Monitoring Results

During WY 2024, water quality samples from wet weather discharges were collected from one subcatchment site (Site 206) to compare with the Americana outfall site (Site 14). Samples were collected from five storm events. A summary of the storm dates and sample types collected is provided in Table 3-1. Attempts were made to collect samples from both Site 14 and Site 206 during the same storm event. When paired samples were successfully collected from both sites, the water quality results were directly compared to one another. Results from samples that were collected from only one of the two sites were omitted from the subsequent discussion; however, the values will be used when calculating statistics for the final report. Comprehensive analytical results from all samples collected are included in Table 2, attached.

Table 3-1. Storm Event Summary		
Storm Event Date	Site 14	Site 206
10/10/23	Grab, composite ¹	–
11/19/23	Grab ² , composite	Grab, composite
02/01/24	Grab ³ , composite	Grab ³ , composite
02/26/24	Grab, composite	Grab, composite
03/28/24	Grab	Grab

– No data

¹ Composite sample qualified due to lack of representativeness (50%–75%) of the calculated flow volume.

² Incomplete field parameter collection on the grab sample data form due to field error.

³ E. coli sample qualified due to exceeded hold time.

3.2.1 Grab Samples

Paired grab samples were collected from Site 14 and Site 206 on November 19, 2023; February 26, 2024; and March 28, 2024. *E. coli* and temperature results were compared from the samples collected on November 19, 2023. On February 26, 2024, and March 28, 2024, the samples were analyzed for *E. coli*, temperature, pH, dissolved oxygen, and conductivity. Notable conclusions from each storm event are provided below.

November 19, 2023

- *E. coli* at Site 206 was approximately one time higher than at Site 14.
- Field parameters (pH, dissolved oxygen, and conductivity) were not collected for Site 14 during sampling event due to field error.

February 26, 2024

- *E. coli* at Site 14 was approximately two times higher than at Site 206.
- Specific conductivity at Site 14 was nearly four times higher than Site 206.

March 28, 2024

- *E. coli* at Site 206 was approximately one time higher than at Site 14.
- Specific conductivity at Site 14 was two times higher than at Site 206

3.2.2 Composite Samples

Paired composite samples were collected from Site 14 and Site 206 on November 19, 2023; February 1, 2024; and February 26, 2024.

Event-specific pollutant loads for each analyzed constituent were calculated by multiplying the volume of discharge as measured at the site by the constituent concentration. The pollutant loads, in pounds, are in Table 3, attached.

To evaluate the contribution Site 206 had on the overall pollutant load discharging from the Americana outfall, the percentage of the pollutant load was compared to the percentage of discharge volume. When the percentage of the pollutant load is greater than the percentage of discharge volume, the pollutant load discharging from the subcatchment is disproportionately high. This logic statement is illustrated below.

$$\begin{array}{c} \text{IF} \\ \frac{\text{pollutant load (lbs) from subcatchment}}{\text{pollutant load (lbs) from outfall}} > \frac{\text{discharge volume (cf) from subcatchment}}{\text{discharge volume (cf) from outfall}} \\ \text{THEN} \\ \text{pollutant load from subcatchment is disproportionately high} \end{array}$$

The percent contribution of pollutant load and the percent contribution of discharge volume were calculated for both Site 206 and Site 14 from each storm event (Figures 7, 8, and 9). The graphs include a vertical orange line indicating the value for the percent of discharge. Constituent loads that exceed the orange line are disproportionately high. Noteworthy outcomes from each paired storm event are presented below.

November 19, 2023

- Load contributions from Site 206 were disproportionately high for all constituents except for the following parameters: hardness as CaCO₃; nitrate + nitrite, as N; total arsenic; total cadmium; and total mercury.
- The percent pollutant load from Site 206 was approximately 5.5 times higher than the percent of discharge volume for dissolved lead.
- The percent pollutant load from Site 206 was between 3.5 to 4.0 times higher than the percent discharge volume for the following parameters: BOD₅ and orthophosphate as P.

- The percent pollutant load from Site 206 was between 3.0 to 3.5 times higher than the percent discharge volume for the following parameters: total phosphorus and COD.
- The percent pollutant load from Site 206 was between 2.0 to 2.5 times higher than the percent discharge volume for the following parameters: TKN and dissolved zinc.
- The percent pollutant load from Site 206 was between 1.5 to 2.0 times higher than the percent discharge volume for the following parameters: TDS, dissolved copper, and total lead.

February 1, 2024

- Load contributions from Site 206 were disproportionately high for all constituents except for the following parameters: hardness as CaCO_3 ; TDS; ammonia, as N; nitrate + nitrite, as N; total arsenic; dissolved cadmium; and dissolved zinc.
- The percent pollutant load from Site 206 was approximately 3 times higher than the percent of discharge volume for dissolved lead.
- The percent pollutant load from Site 206 was between 2.0 to 2.5 times higher than the percent discharge volume for the following parameters: total phosphorus and orthophosphate as P.
- The percent pollutant load from Site 206 was between 1.5 to 2.0 times higher than the percent discharge volume for the following parameters: BOD_5 , COD, TKN, total lead, and total mercury.

February 26, 2024

- Load contributions from Site 206 were disproportionately high for all constituents except for the following parameters: hardness as CaCO_3 ; TDS, nitrate + nitrite, as N; total arsenic; dissolved cadmium; total cadmium; and dissolved zinc.
- The percent pollutant load from Site 206 was approximately 3.5 times higher than the percent of discharge volume for dissolved lead.
- The percent pollutant load from Site 206 was approximately 2.5 times higher than the percent of discharge volume for orthophosphate as P.
- The percent pollutant load from Site 206 was between 1.5 to 2.0 times higher than the percent discharge volume for the following parameters: total phosphorus, TKN, and total lead.

Tables

Table 1. Monitoring Site Information

Table 2. Field and Analytical Data Summary

Table 3. Event Pollutant Loading Estimates in Pounds

Table 1. Monitoring Site Information															
Location Name	Study ID	Latitude/ Longitude	Manhole ID (SWMM File)	Manhole ID (Americana Manholes Files)	Subcatchment Total Area (acres)	Subcatchment Impervious Area (acres)	Pipe Diameter (in)	Pipe Construction	Manning's Coefficient (n value)	Pipe Slope	Water Level During Installation (in)	Equipment ID	Equipment Deploy Start Date	Equipment Deploy End Date	Installation Notes
Americana Monitoring Station	Site 14	Americana Monitoring Station	NA	NA	915	291	48	concrete	NA	NA	NA	Hach Flowmeter (FL-23)	2013	9/8/2020	
												Hach Sampler (SA-17)	2013	9/8/2020	
												ISCO Signature Flowmeter (FL-29)	9/8/2020	NA	
												ISCO 6712 Sampler (SA-20)	9/8/2020	NA	
16th_Front	AS_1	43°37'7.57"N 116°12'52.66"W	J87872	33634	869	255	42	concrete	0.015	0.0001	4.13	HOBO Logger (SN:20029104)	8/10/2018	9/15/2023	Logger installed downstream of manhole with conduit facing downstream
												ISCO 2150 Flowmeter (FL-21)	10/25/2019	1/24/2020	
												HOBO Logger (SN:20029102)	9/15/2023	11/7/2023	
												HOBO Logger (SN:20029105)	11/7/2023	NA	
Americana_River_South	AS_2	43°37'4.63"N 116°13'0.20"W	J5567	35568	39	28	42	concrete	0.015	0.0001	1.5	HOBO Logger (SN:20029109)	8/10/2018	4/28/2020	Large pipe downstream of manhole (south) that leads to secondary outfall with conduit facing downstream flow
Americana_River_East	AS_3	43°37'4.63"N 116°13'0.20"W	J5567	35568	10	5	16	concrete	0.015	0.0001	2	HOBO Logger (SN:20029106)	8/10/2018	1/6/2021	Small pipe upstream of manhole (east) with conduit facing upstream
Americana_River	AS_4	43°37'4.63"N 116°13'0.20"W	J5567	35568	29	23	42	concrete	0.015	0.0001	NA	HOBO Logger (SN:20029101)	8/10/2018	3/7/2024	Large pipe upstream of manhole (north) with conduit perpendicular to flow
											2.7	ISCO 2150 Flowmeter (FL-21)	7/10/2020	3/5/2021	Water level at installation: 2.7 inches
											2	HOBO Logger (SN:20029102)	3/7/2024	4/2/2024	Water level at installation: 2.0 inches
											3	HOBO Logger (SN:21904490)	4/2/2024	NA	Water level at installation: 3.0 inches
15th_Resseguie	AS_5	43°37'36.17"N 116°12'21.10"W	J5577	23810	289	49	30	concrete	0.015	0.0001	1.5	HOBO Logger (SN:20029105)	8/10/2018	2/17/2023	Logger installed downstream of manhole with conduit facing downstream
14th_Resseguie	AS_6/ Site 206	43°37'35.73"N 116°12'16.60"W	J16834	13187	206	23	22	corrugated metal	0.024	0.0001	NA	HOBO Logger (SN:20029102)	8/17/2018	3/7/2023	Installed downstream of vault
					203	22	22	corrugated metal	0.024	0.0001	NA	Hach Flowmeter (FL-25)	1/23/2020	3/4/2020	Installed upstream of vault, has smaller drainage area than HOB0 logger
												Hach Flowmeter (FL-18)	3/4/2020	4/18/2024	
												Hach Sampler (SA-11)	1/23/2020	10/9/2020	
												Hach Sampler (SA-13)	10/9/2020	12/10/2021	Installed upstream of vault, has smaller drainage area than HOB0 logger
												Hach Sampler (SA-09)	12/10/2021	4/18/2024	
												ISCO Signature Flowmeter (FL-31)	9/18/2024	NA	
Americana East	AS_7	43°36'57.66"N 116°13'17.75"W	NA	NA	40	30	42	concrete	0.015	0.0001	NA	ISCO 2150 Flowmeter (FL-20)	1/11/2019	NA	ISCO flowmeter installed
13th_Lemp to Heron	AS_8	43°37'59.05" 116°12'11.83"	NA	NA	1	0	36	corrugated metal	0.024	0.0001	NA	HOBO logger (SN: 20029106)	2/24/2023	11/7/2023	
												HOBO logger (SN:20029104)	11/7/2023	NA	
16th_Rhodes	AS_9	43°37'7.18" 116°12'52.07"	NA	NA	10	5	21	concrete	0.015	0.0001	NA	HOBO logger (SN:20029109)	2/24/2023	4/2/2024	
												HOBO logger (SN:21904491)	4/2/2024	NA	

Table 2. Field and Analytical Data Summary																												
Sample Date	Monitoring Station	Sample ID Grab	Field Parameters				Analytical Parameters																					
			Dissolved Oxygen	pH	Conductivity	Temperature	E. coli	Sample ID Composite	BOD ₅	COD	Chloride	Hardness as CaCO ₃	Turbidity	TSS	TDS	Total Phosphorus	Orthophosphate as P	Ammonia as N	Nitrate + Nitrite as N	TKN	Arsenic, total	Cadmium, dissolved	Cadmium, total	Copper, dissolved	Lead, dissolved	Lead, total	Mercury, total	Zinc, dissolved
			mg/L	S.U.	µS/cm	C	MPN/100 mL		mg/L	mg/L	mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
10/10/2023	Site 14	231010-14-WG	8.40	6.53	247.08	16.78	129.6	231010-14-WC	19.7 ^{2j}	77.0 ^{2j}	--	<0.100 ^{2j}	33.6 ^{2j}	23.6 ^{2j}	236 ^{2j}	0.308 ^{2j}	0.169 ^{2j}	0.353 ^{2j}	0.930 ^{2j}	1.44 ^{2j}	5.5 ^{2j}	0.021 ^{2j}	0.072 ^{2j}	8.2 ^{2j}	0.095 ^{2j}	2.4 ^{2j}	< 0.0100 ^{2j}	22.0 ^{2j}
11/19/2023	Site 14	231119-14-WG	_ ^{3j}	_ ^{3j}	_ ^{3j}	14.16	1340.0	231119-14-WC	36.5	94.0	--	57.8	15.0	21.7	153	0.504	0.402	0.454	0.614	1.27	2.1	0.022	0.061	4.0 ¹	0.11	1.9	< 0.0100	27.2
	Site 206	231119-206-WG	9.44	7.18	184.28	9.04	1732.9	231119-206-WC	162	329	--	43.3	21.1	28.7	263	2.06	1.71	0.563	0.136	3.17	1.7	0.029	0.059	8.5	0.93	3.3	< 0.0100	61.8
2/1/2024	Site 14	240201-14-WG	10.05	7.73	552.2	8.34	65.0 ^{4j}	240201-14-WC	6.98	55.0	64.1	93.3	89.6	50.7	224	0.213	0.116	0.193	0.905	1.05	3.4	0.016	0.063	3.4 ¹	0.090	4.2	< 0.0100	17.3
	Site 206	240201-206-WG	9.33	8.03	542.9	5.55	290.9 ^{4j}	240201-206-WC	11.6	108	14.5	16.8	143	70.3	116	0.464	0.285	0.159	0.191	1.83	3.0	0.013	0.077	4.5	0.29	6.7	0.0168	10.5
2/26/2024	Site 14	240226-14-WG	10.54	7.53	470.55	8.74	125.9	240226-14-WC	12.6	85.0	56.1	102	51.1	54.3	214	0.276	0.106	0.496	0.940	1.47	3.3	0.021	0.097	4.0 ¹	0.063	3.9	0.0148	24.3
	Site 206	240226-206-WG	9.39	7.44	124.28	6.49	53.7	240226-206-WC	17.7	122	9.39	22.2	75.5	75.8	85.8	0.570	0.289	0.522	0.278	2.43	2.2	0.016	0.087	5.0	0.26	6.3	0.0183	20.2
3/28/2024	Site 14	240328-14-WG	10.57	7.28	255.40	9.79	365.4	240328-14-WC	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Site 206	240328-206-WG	9.92	7.60	108.59	7.74	387.3	240328-206-WC	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

- No data

¹ Analytical parameter is qualified due to being less than five times the value detected in the rinsate blank. See Table 6 in the WY 2024 Stormwater Outfall Monitoring Summary for rinsate blank results.

^{2j} Data qualified due to lack of representativeness (50%–75%) of the calculated flow volume.

^{3j} Incomplete field parameter collection on the grab sample form due to field error.

^{4j} E. coli sample qualified due to exceeded hold time.

Table 3. Event Pollutant Loading Estimates in Pounds																				
Event Date	BOD ₅		COD		Hardness as CaCO3		Turbidity		TSS		TDS		Total Phosphorus		Orthophosphate as P		Ammonia as N		Nitrate + Nitrite as N	
	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206
11/19/2023	723	215	1861	436	1144	57.3	0.0	0.0	430	38.0	3029	348	10.0	2.73	7.96	2.26	8.99	0.746	12.2	0.180
2/1/2024	114	11.5	895	107	1518	16.7	0.0	0.0	825	69.8	3644	115	3.46	0.461	1.89	0.283	3.14	0.158	14.7	0.190
2/26/2024	110	6.02	743	41.5	891	7.55	0.0	0.0	474	25.8	1870	29.2	2.41	0.194	0.926	0.098	4.33	0.177	8.21	0.0945

Table 3. Event Pollutant Loading Estimates in Pounds																		
Event Date	TKN		Arsenic, total		Cadmium, dissolved		Cadmium, total		Copper, dissolved		Lead, dissolved		Lead, total		Mercury, total		Zinc, dissolved	
	mg/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206
11/19/2023	25.1	4.20	0.0416	0.00225	0.000436	0.0000384	0.00121	0.0000781	0.0792	0.0113	0.00218	0.00123	0.0376	0.00437	0.000198	0.0000132	0.538	0.0818
2/1/2024	17.1	1.82	0.0553	0.00298	0.000260	0.0000129	0.00102	0.0000765	0.0553	0.00447	0.00146	0.000288	0.0683	0.00665	0.000163	0.0000167	0.281	0.0104
2/26/2024	12.8	0.826	0.0288	0.000748	0.000183	0.00000544	0.000848	0.0000296	0.0350	0.00170	0.000550	0.0000884	0.0341	0.00214	0.000129	0.00000622	0.212	0.00687

Figures

Figure 3. Americana Subwatershed Water Level WY 2024 October–November

Figure 4. Americana Subwatershed Water Level WY 2024 January–March

Figure 5. Americana Subwatershed Water Level WY 2024 April–June

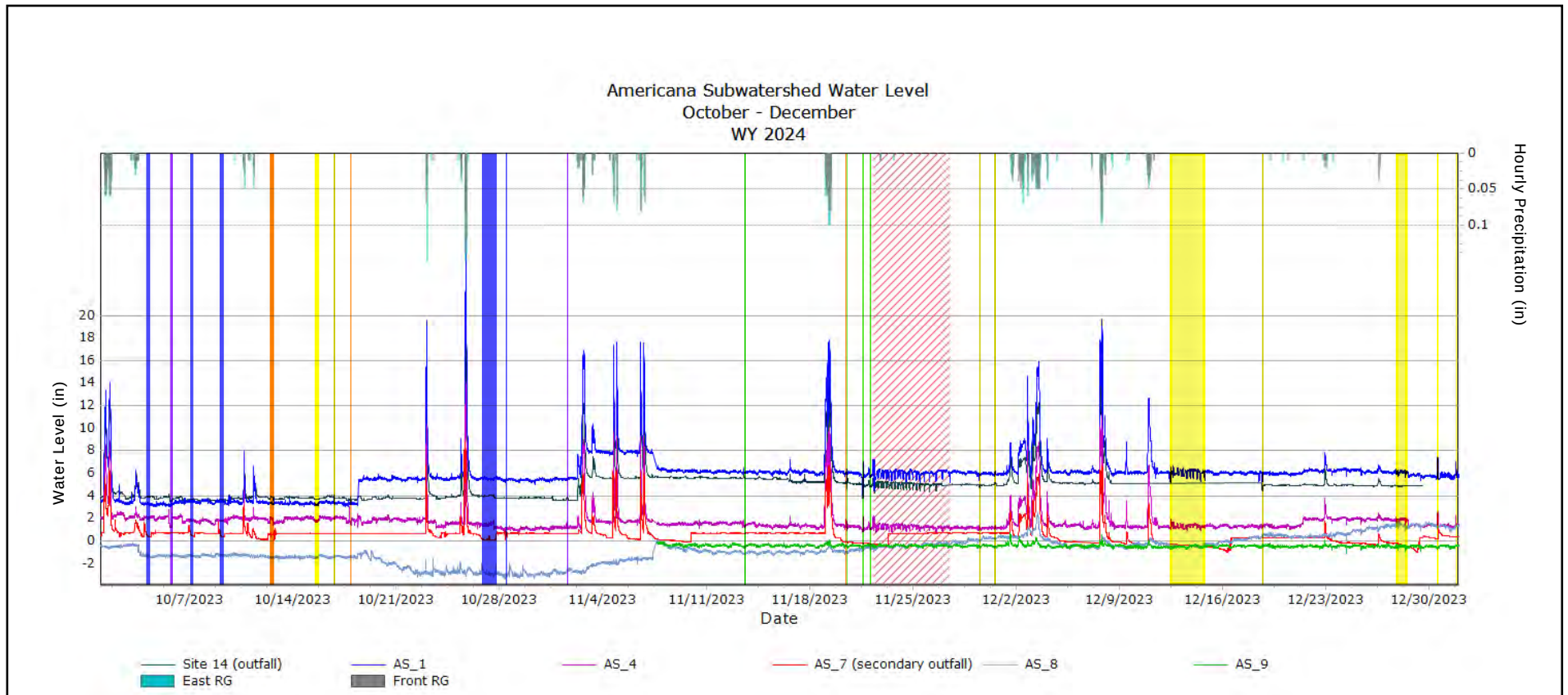
Figure 6. Americana Subwatershed Water Level WY 2024 July–September

Figure 7. Percent Contribution for Storm Event 11/19/2023

Figure 8. Percent Contribution for Storm Event 2/1/2024

Figure 9. Percent Contribution for Storm Event 2/26/2024

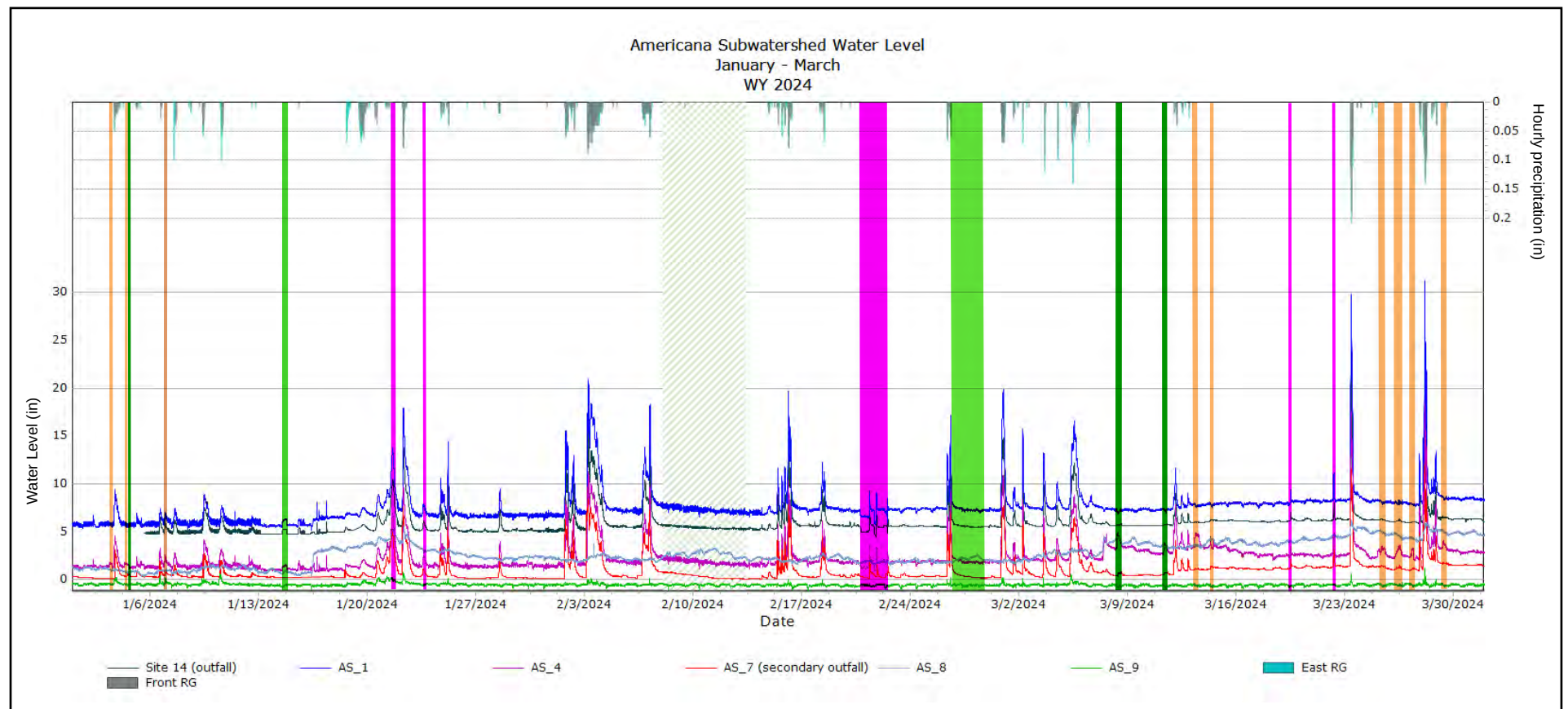
Americana Subwatershed Review WY24 Q1
Figure 3.



Americana Subwatershed Review WY24 Q1

Color Code	Beginning Date Time	Duration (hrs)	Sites Included	Non-stormwater source
	10/3/2023 23:00:00	10.5	AS_7	AS_7 Subcatchment
	10/5/2023 15:00:00	6.0	AS_4, Site 14	AS_4 Subcatchment
	10/6/2023 23:00:00	9.5	AS_7	AS_7 Subcatchment
	10/8/2023 23:00:00	10.0	AS_7	AS_7 Subcatchment
	10/12/2023 8:00:00	10.0	AS_4, AS_7, Site 14	AS_4 Subcatchment
	10/15/2023 10:00:00	10.0	AS_1, AS_4	AS_1 Subcatchment
	10/16/2023 18:30:00	2.0	AS_1, Site 14	AS_1 Subcatchment
	10/17/2023 20:30:00	3.0	AS_4	AS_4 Subcatchment
	10/26/2023 18:30:00	25.0	AS_7	AS_7 Subcatchment
	10/28/2023 8:00:00	5.0	AS_7	AS_7 Subcatchment
	11/1/2023 13:00:00	2.5	AS_4, Site 14	AS_4 Subcatchment
	11/13/2023 13:00:00	2.5	AS_1, AS_4, Site 14	AS_1 Subcatchment
	11/20/2023 9:00:00	4.0	AS_4	AS_4 Subcatchment
	11/20/2023 13:00:00	2.0	AS_1, AS_4, Site 14	AS_1 Subcatchment
	11/21/2023 13:00:00	4.5	AS_1, AS_4, Site 14	AS_1 Subcatchment
	11/22/2023 0:00:00	3.0	AS_1, AS_4, Site 14	AS_1 Subcatchment
	11/22/2023 7:00:00	127.0	AS_1, AS_4, Site 14 (elongated)	AS_1 Subcatchment
	11/29/2023 12:00:00	2.0	AS_1, Site 14	AS_1 Subcatchment
	11/30/2023 12:00:00	4.0	AS_1, Site 14	AS_1 Subcatchment
	12/12/2023 8:00:00	60.0	AS_1, AS_4	AS_1 Subcatchment
	12/18/2023 15:00:00	2.5	AS_1, Site 14	AS_1 Subcatchment
	12/27/2023 15:30:00	22.5	AS_1, AS_4	AS_1 Subcatchment
	12/30/2023 13:00:00	2.0	AS_1, AS_4	AS_1 Subcatchment
	12/31/2023 18:00:00	2.5	AS_1, AS_4	AS_1 Subcatchment

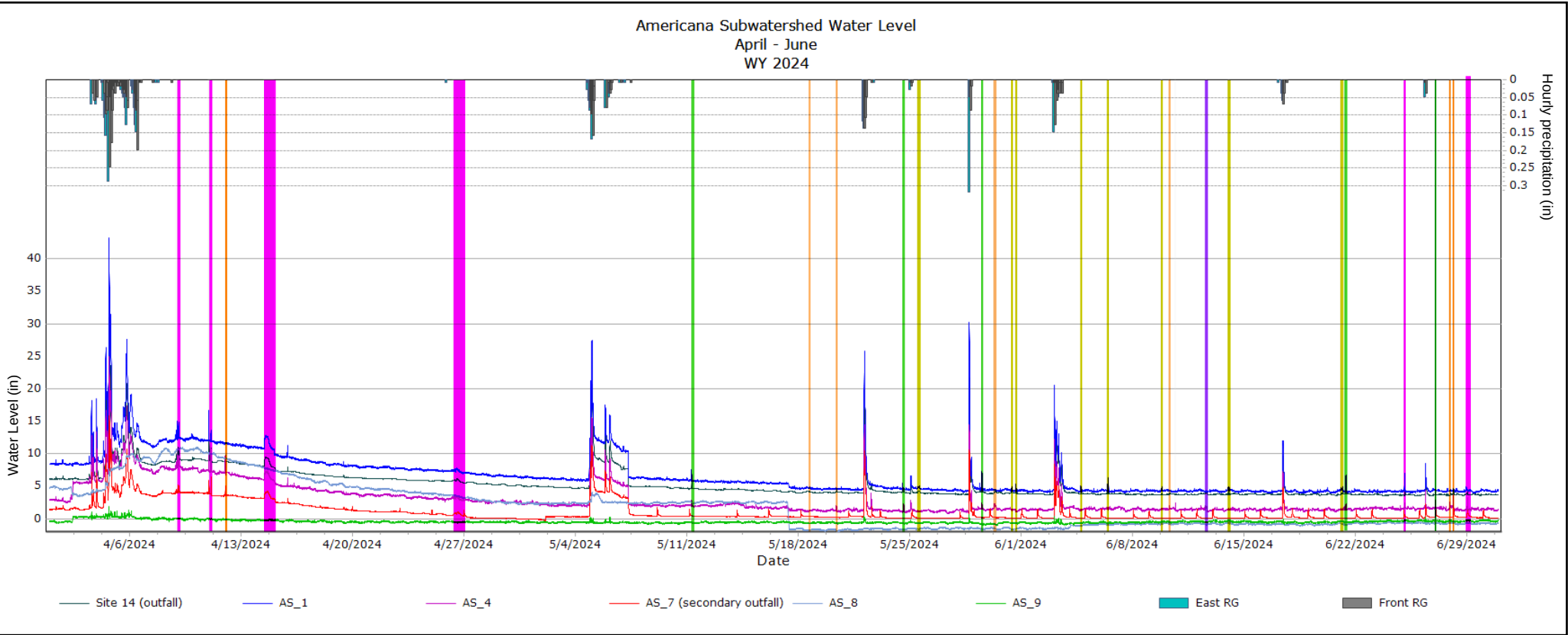
Americana Subwatershed Review WY24 Q2
Figure 4.



Americana Subwatershed Review WY24 Q2

Color Code	Beginning Date Time	Duration (hrs)	Sites Included	Non-stormwater source
	1/3/2024 9:00:00	5.0	AS_4	AS_4 Subcatchment
	1/4/2024 8:00:00	4.5	AS_4	AS_4 Subcatchment
	1/4/2024 12:30:00	5.0	AS_4, AS_7	AS_4 Subcatchment
	1/6/2024 22:00:00	5.0	AS_1, AS_4, AS_9, Site 14	AS_1 Subcatchment
	1/14/2024 13:00:00	7.0	AS_1, AS_4, Site 14	AS_1 Subcatchment
	1/21/2024 11:00:00	9.5	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	1/23/2024 13:00:00	4.5	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	2/8/2024 1:00:00	129.5	AS_8 (elongated)	Hull's Gulch
	2/20/2024 18:30:00	44.0	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	2/26/2024 18:00:00	47.5	AS_8	AS_8 Subcatchment
	3/8/2024 6:00:00	10.5	AS_4, AS_7	AS_4 Subcatchment
	3/11/2024 7:30:00	9.0	AS_4, AS_7	AS_4 Subcatchment
	3/13/2024 7:30:00	9.0	AS_4	AS_4 Subcatchment
	3/14/2024 7:30:00	7.0	AS_4	AS_4 Subcatchment
	3/19/2024 11:30:00	2.0	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	3/22/2024 5:30:00	3.0	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	3/25/2024 1:30:00	14.0	AS_4	AS_4 Subcatchment
	3/26/2024 4:30:00	13.0	AS_4	AS_4 Subcatchment
	3/27/2024 5:00:00	10.5	AS_4	AS_4 Subcatchment
	3/29/2024 5:00:00	10.5	AS_4	AS_4 Subcatchment

Americana Subwatershed Review WY24 Q3
Figure 5.

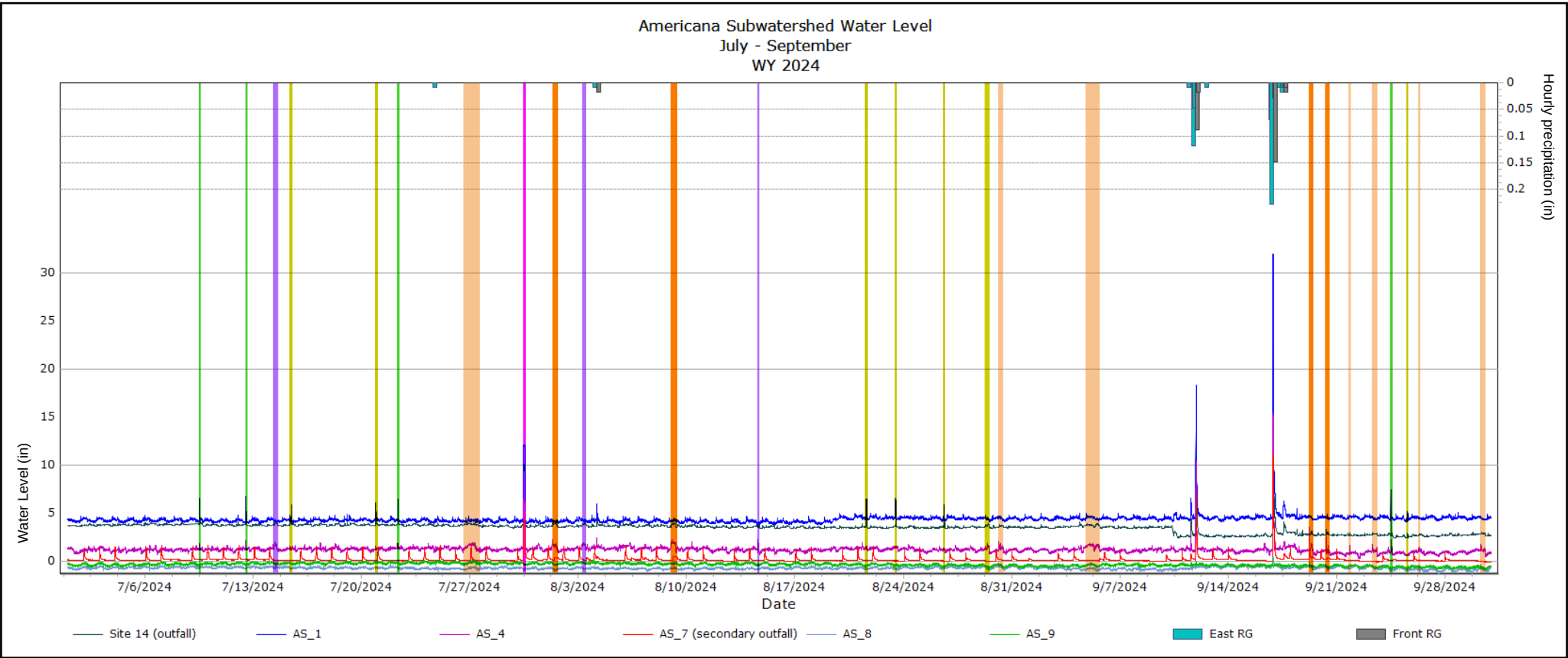


Note: Reoccurring water level spikes were observed at the AS_7 station. These spikes occur for an approximate duration of 4 hours between 2330 and 0900. The spikes have been omitted from this anomaly summary due to the uniformity of the spikes and similarity to spikes observed during WY 2023.

Americana Subwatershed Review WY24 Q3

Color Code	Beginning Date Time	Duration (hrs)	Sites Included	Non-stormwater source
	4/8/2024 22:00:00	6.0	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	4/10/2024 23:00:00	5.0	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	4/12/2024 0:30:00	2.0	AS_4, AS_7, Site 14	AS_4 Subcatchment
	4/14/2024 11:00:00	17.5	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	4/26/2024 7:00:00	19.5	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	5/11/2024 7:00:00	2.0	AS_1, AS_4, Site 14	AS_1 Subcatchment
	5/20/2024 9:00:00	3.0	AS_4	AS_4 Subcatchment
	5/24/2024 14:00:00	3.0	AS_1, AS_4, Site 14	AS_1 Subcatchment
	5/25/2024 13:00:00	4.0	AS_1, Site 14	AS_1 Subcatchment
	5/29/2024 12:30:00	2.0	AS_1, AS_4, Site 14	AS_1 Subcatchment
	5/30/2024 7:00:00	5.0	AS_4	AS_4 Subcatchment
	5/31/2024 9:30:00	2.0	AS_1, Site 14	AS_1 Subcatchment
	5/31/2024 16:00:00	4.0	AS_1, Site 14	AS_1 Subcatchment
	6/4/2024 18:00:00	2.5	AS_1, Site 14	AS_1 Subcatchment
	6/6/2024 10:30:00	4.0	AS_1, Site 14	AS_1 Subcatchment
	6/9/2024 19:00:00	3.0	AS_1, Site 14	AS_1 Subcatchment
	6/10/2024 7:00:00	2.5	AS_4	AS_4 Subcatchment
	6/10/2024 16:00:00	2.5	AS_4	AS_4 Subcatchment
	6/12/2024 14:00:00	4.0	AS_4, Site 14	AS_4 Subcatchment
	6/13/2024 23:30:00	4.0	AS_1, Site 14	AS_1 Subcatchment
	6/21/2024 1:00:00	4.0	AS_1, Site 14	AS_1 Subcatchment
	6/21/2024 7:30:00	4.5	AS_1, AS_4, Site 14	AS_1 Subcatchment
	6/25/2024 0:30:00	3.5	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	6/27/2024 0:00:00	4.0	AS_4, AS_7	AS_4 Subcatchment
	6/27/2024 23:00:00	3.5	AS_4, AS_7, Site 14	AS_4 Subcatchment
	6/28/2024 4:00:00	2.5	AS_4, AS_7, Site 14	AS_4 Subcatchment
	6/29/2024 0:00:00	7.0	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment

Americana Subwatershed Review WY24 Q4
Figure 6.



Note: Reoccurring water level spikes were observed at the AS_7 station. These spikes occur for an approximate duration of 4 hours between 2330 and 0900. The spikes have been omitted from this anomaly summary due to the uniformity of the spikes and similarity to spikes observed during WY 2023.

Americana Subwatershed Review WY24 Q4

Color Code	Beginning Date Time	Duration (hrs)	Sites Included	Non-stormwater source
	7/9/2024 11:00:00	3.0	AS_1, AS_4, Site 14	AS_1 Subcatchment
	7/12/2024 12:00:00	2.0	AS_1, AS_4, Site 14	AS_1 Subcatchment
	7/14/2024 7:00:00	8.0	AS_4, Site 14	AS_4 Subcatchment
	7/15/2024 8:30:00	4.5	AS_1, Site 14	AS_1 Subcatchment
	7/20/2024 21:00:00	2.5	AS_1, Site 14	AS_1 Subcatchment
	7/22/2024 7:00:00	2.5	AS_1, AS_4, Site 14	AS_1 Subcatchment
	7/26/2024 13:00:00	28.5	AS_4	AS_4 Subcatchment
	7/30/2024 10:30:00	4.0	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	8/1/2024 6:30:00	10.5	AS_4, AS_7, Site 14	AS_4 Subcatchment
	8/3/2024 5:30:00	6.5	AS_4, Site 14	AS_4 Subcatchment
	8/8/2024 21:30:00	12.5	AS_4, AS_7, Site 14	AS_4 Subcatchment
	8/14/2024 13:30:00	3.5	AS_4, Site 14	AS_4 Subcatchment
	8/21/2024 13:30:00	3.5	AS_1, Site 14	AS_1 Subcatchment
	8/23/2024 11:00:00	2.5	AS_1, Site 14	AS_1 Subcatchment
	8/26/2024 13:30:00	4.0	AS_1, Site 14	AS_1 Subcatchment
	8/29/2024 7:00:00	7.5	AS_4, Site 14	AS_4 Subcatchment
	8/30/2024 4:30:00	9.0	AS_4	AS_4 Subcatchment
	9/4/2024 19:30:00	22.0	AS_4	AS_4 Subcatchment
	9/19/2024 5:30:00	8.0	AS_4, AS_7, Site 14	AS_4 Subcatchment
	9/20/2024 7:30:00	6.0	AS_4, AS_7, Site 14	AS_4 Subcatchment
	9/21/2024 19:30:00	3.0	AS_4	AS_4 Subcatchment
	9/23/2024 7:30:00	8.5	AS_4	AS_4 Subcatchment
	9/24/2024 9:00:00	6.5	AS_1, AS_4, Site 14	AS_1 Subcatchment
	9/25/2024 12:00:00	5.5	AS_1, Site 14	AS_1 Subcatchment
	9/26/2024 7:00:00	5.5	AS_4	AS_4 Subcatchment
	9/30/2024 7:00:00	8.0	AS_4	AS_4 Subcatchment

Figure 7. Percent Contribution 11/19/2023

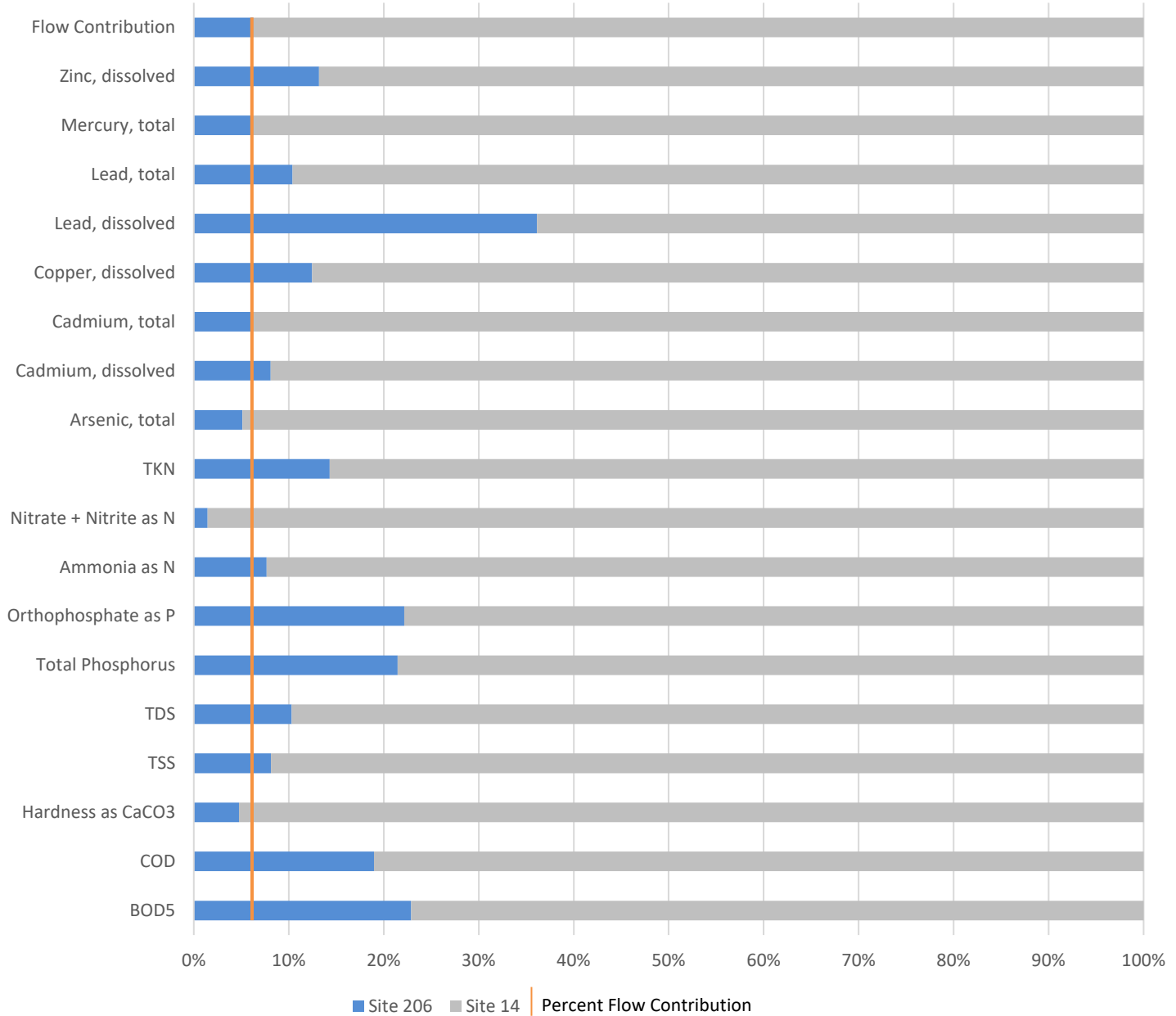


Figure 8. Percent Contribution 2/1/2024

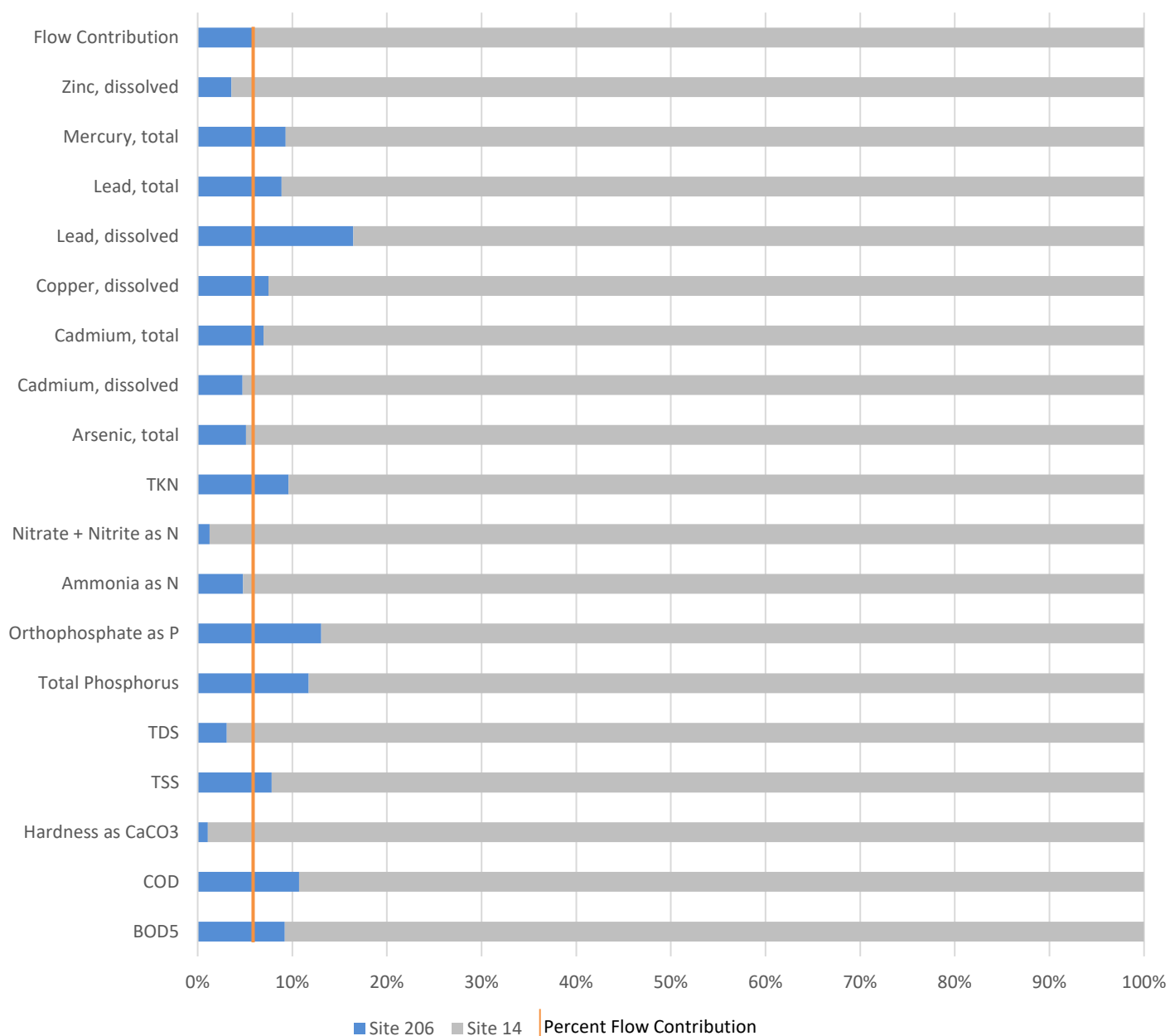
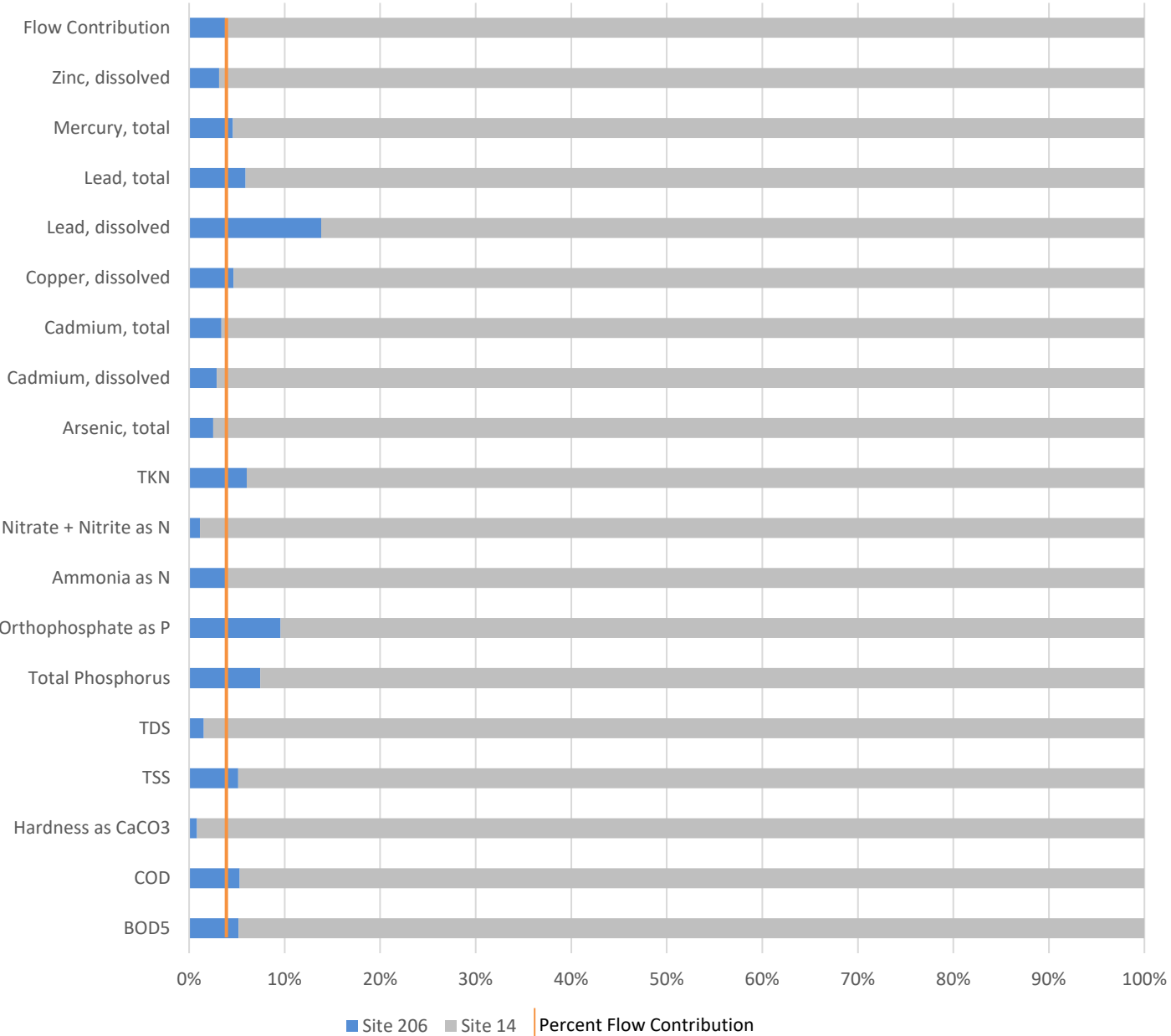


Figure 9. Percent Contribution 2/26/2024



Attachment 10

Permit Year 3 Temperature Monitoring Summary

Temperature Monitoring Summary WY 2024

Ada County Highway District

11/13/2024

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1. Introduction

Ada County Highway District, Boise State University, City of Boise, City of Garden City, Drainage District #3, and the Idaho Transportation Department District #3 (Permittees) were issued a National Pollutant Discharge Elimination System Phase I Permit #IDS027561 (Permit) on October 1, 2021. The Permit authorizes the Permittees to discharge from municipal separate storm sewer (MS4) outfalls to the Boise River and its tributaries. According to Permit Part 4.1, *Temperature Monitoring*, Permittees must monitor temperature in stormwater discharges from the MS4 to the Boise River including assessment units 17050114SW005_06, 17050114SW005_06a, and 17050114SW005_06b. The Boise River assessment units (AU) within the Permit area are 17050114SW011a_06 and 17050114SW005_06. The remaining two AUs, 17050114SW005_06a and 17050114SW005_06b are not in the Permit area and therefore do not receive Permittee stormwater contributions. Temperature data is collected from all water quality samples collected from the MS4 to the Boise River and other waterways. The following summary provides temperature data collected during water year (WY) 2024 (October 1, 2023 – September 20, 2024) from the MS4 directly to the Boise River assessment units 17050114SW011a_06 and 17050114SW005_06.

2. Monitoring Sites, Equipment, and Sample Type

Temperature monitoring occurred at 12 outfalls that discharge to the Boise River assessment units 17050114SW011a_06 and 17050114SW005_06. Temperature measurements are collected as either discrete or continuous. Discrete measurements represent one instance in time and were measured manually using an In-Situ aqua Troll or smarTroll handheld instrument. Continuous measurements were taken at a specified interval by equipment that is installed at the outfall site. In WY 2024, continuous temperature readings were taken at four outfall locations: three using area-velocity sensors and one using a Hobo Temperature Logger. Table 2-1 below shows the number of outfalls where temperature data was collected, the outfall ID, sample type, receiving water and assessment unit designation. Figure 1 is a map of the sampled outfall locations.

Table 2-1. Temperature Monitored Outfalls				
Receiving Water	Assessment Unit	# of Temperature Monitored Outfalls	Outfall ID (Station Name)	Sample Type
Boise River	17050114SW011a_06	10	3n2e04_010 (Main)	Discrete and Continuous
			3n2e09_024 (Americana)	Discrete and Continuous
			3n2e09_025 (AS_7)	Continuous
			3n2e10_012	Discrete
			3n2e10_022	Discrete
			3n2e10_031	Discrete
			3n2e14_012	Discrete
			3n2e14_013	Discrete
			3n2e14_017	Discrete
			3n2e24_025	Discrete
	17050114SW005_06	2	4n2e30_012 (Plantation)	Continuous
			4n2e32_015	Discrete

3. Results

Discrete temperature results are depicted in Figure 2. These results were derived from both wet weather and dry weather discharges, which are symbolized by a circle or a star, respectively. Table 3-1 contains all discrete measurements by outfall site.

Graphs of continuous temperature results are found in Figures 3-6. Figure 4 depicts continuous temperature collected only during selected storm events. The graphs from sites where temperature is recorded using an area-velocity sensor (Figures 3-5) display water temperature, water level and hourly precipitation for reference. Temperature at the Plantation site is recorded using a Hobo Temperature Logger that records data associated with the presence of water. Notable observations from these graphs are discussed below.

Throughout the summer months, AS_7 (Figure 5), is generally characterized by no dry weather flow except for almost daily level spikes recorded during early morning hours. According to the sensor manufacturer, accuracy of the area velocity sensor decreases at water levels below one inch. Therefore, it is difficult to discern the accuracy of the low flow data and distinguish between air and water temperature under these conditions. Therefore, all recorded temperature data from AS_7 has been included in the graph shown in Figure 5.

Data gaps in the temperature data shown in Figure 6, Plantation (4n2e30_012), indicate water was not present or the data was rejected due to sediment interference. Unlike the other graphs of continuous temperature results, water level data is not available at this monitoring site. Sediment was observed on the temperature logger in October 2023 during routine data downloads. The presence of sediment yielded results that water was present when it was observed the site was dry. During WY24, ACHD increased inspection frequency of the logger, noting changes in site conditions when present. The storm drain system was cleaned in February 2024 and inspected bimonthly for sediment build up throughout the water year. Sediment on the logger was observed again from the end of September 2024 through the beginning of November 2024, indicating more frequent maintenance is required. Additionally, data from WY23 showed water was present, based on the recorded temperature data, when rainfall was not recorded. Visual observations during WY24 of the watershed indicate sprinkler runoff as a source of this flow. From mid-May through the end of September, daily intermittent water temperature readings were recorded. Due to the daily occurrences of these readings, temperature in Figure 6 appears to be continuous despite being intermittent throughout each day.

Table 3-1. Discrete Temperature Results			
Outfall ID (Station Name)	Date	Weather	Temperature (C)
3n2e04_010 (Main)	11/19/2023	Wet Weather	10.54
	2/1/2024		6.3
	2/26/2024		9.53
	3/28/2024		10.91
3n2e09_024 (Americana)	12/14/2023 8/1/2024	Dry Weather	14.31 20.82
3n2e09_024 (Americana)	10/10/2023	Wet Weather	16.78
	11/19/2023		14.16
	2/1/2024		8.34
	2/26/2024 3/28/2024		8.74 9.79
3n2e10_012	2/14/2024 8/5/2024	Dry Weather	8.76 15.94
3n2e10_022	3/15/2024 7/9/2024	Dry Weather	14 18.36
3n2e10_031	6/24/2024	Dry Weather	15.04
3n2e14_012	1/31/2024	Dry Weather	15.04
3n2e14_013	1/31/2024	Dry Weather	14.62
	8/13/2024		16.12
3n2e14_017	12/17/2023	Dry Weather	15.33
	1/3/2024		13.54
3n2e24_025	5/22/2023	Dry Weather	16.15
4n2e32_015	8/1/2023	Dry Weather	17.85

Appendix A: Figures

Figure 1. Overview Map

Figure 2. Discrete Temperature Results

Figure 3. Continuous Temperature Results – Main

Figure 4. Continuous Temperature Results – Americana

Figure 5. Continuous Temperature Results – AS_7

Figure 6. Continuous Temperature Results – Plantation

Figure 1

WY2024 Temperature Monitored Outfalls

Created: 11/19/2024



Figure 2

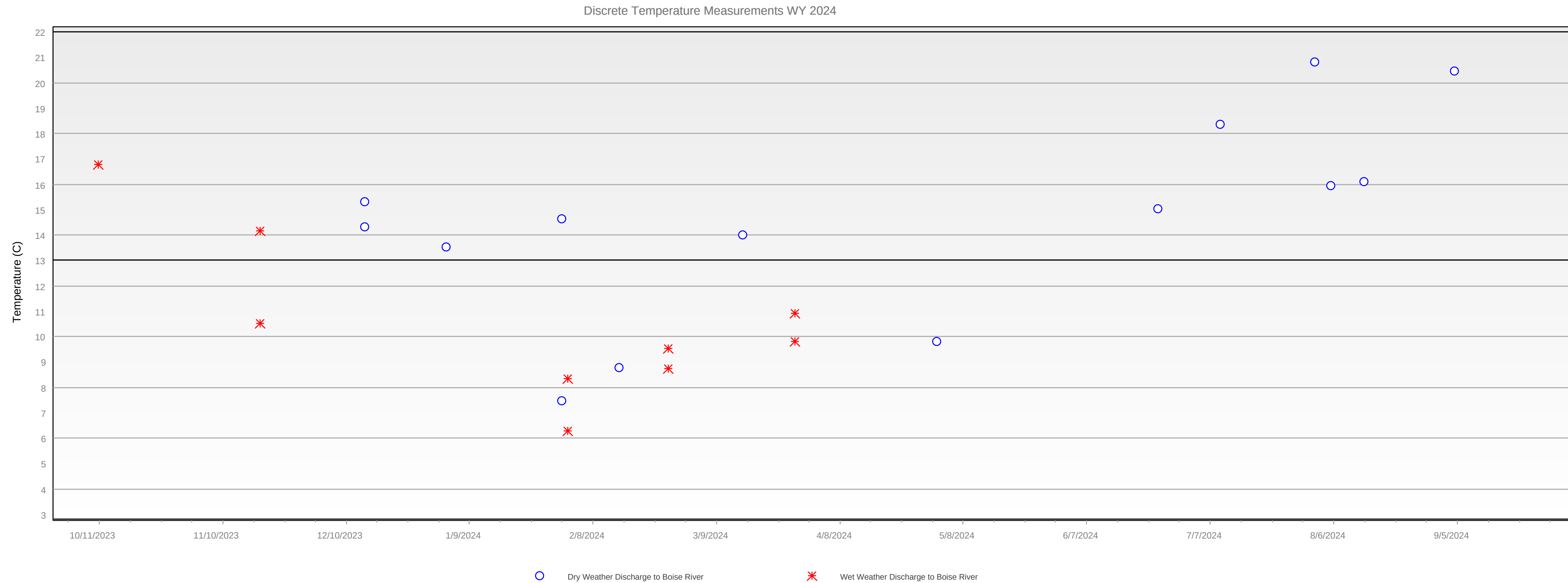


Figure 3

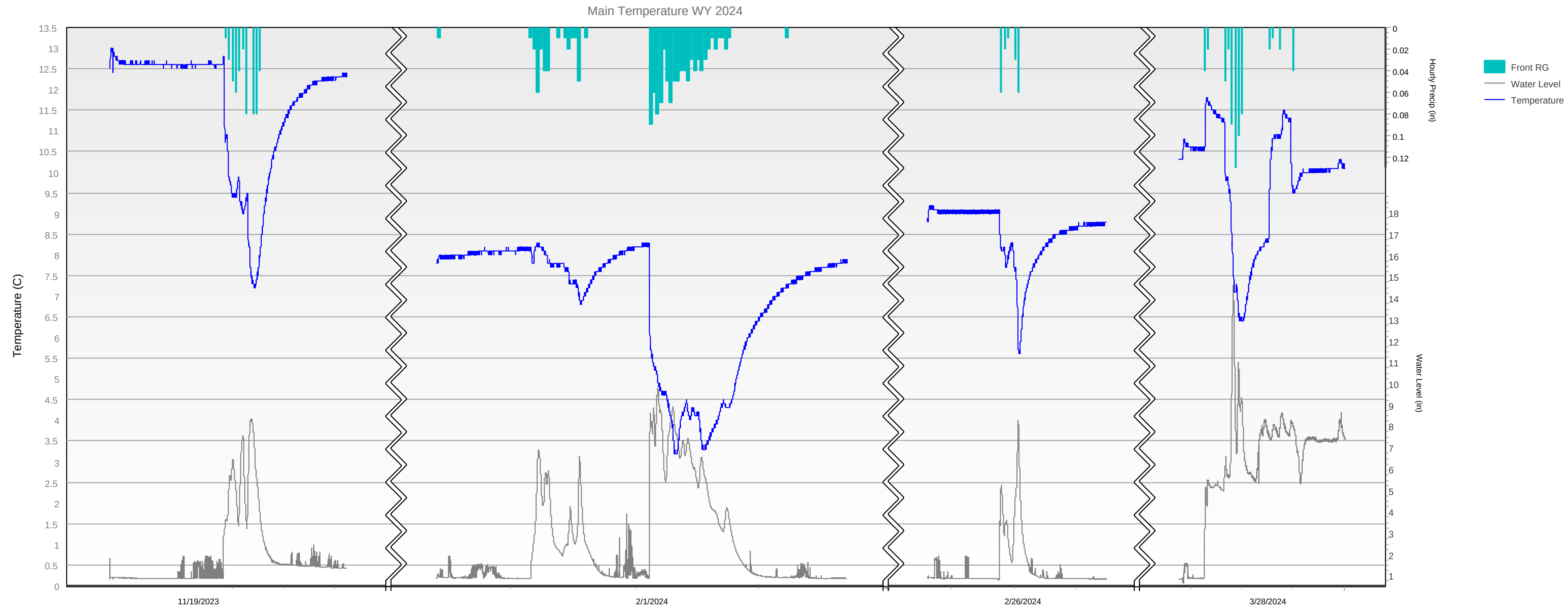


Figure 4

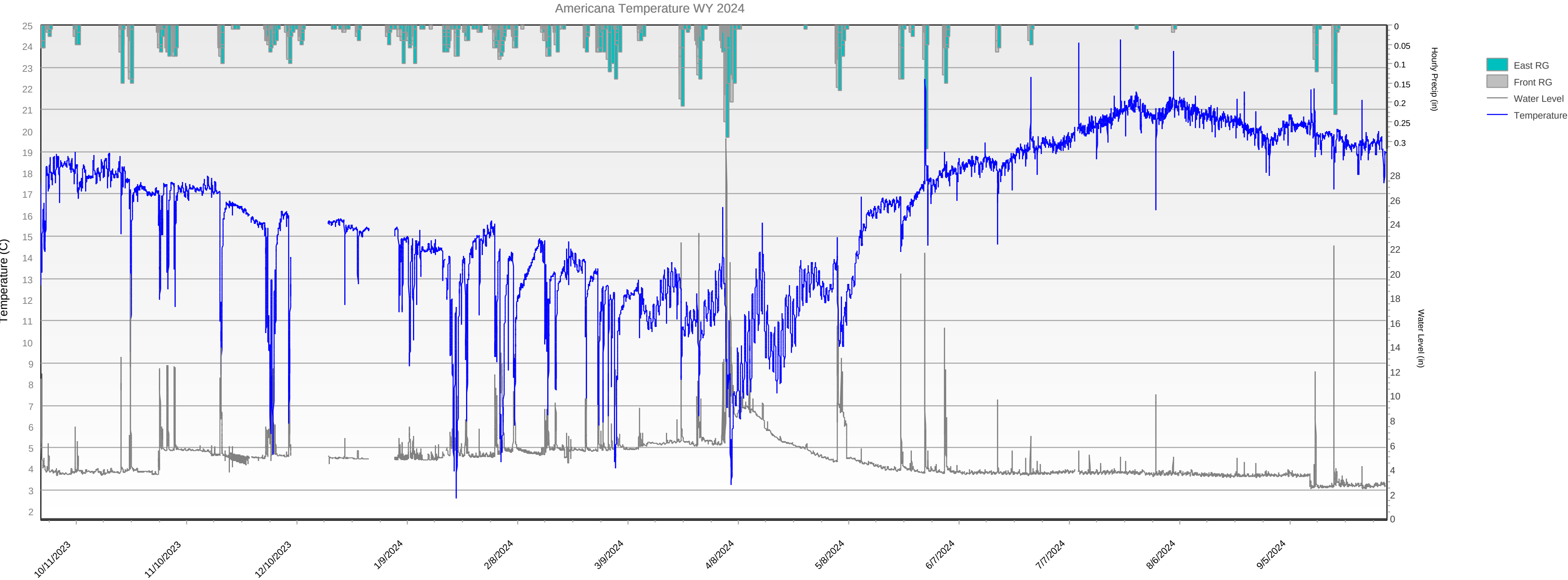


Figure 5

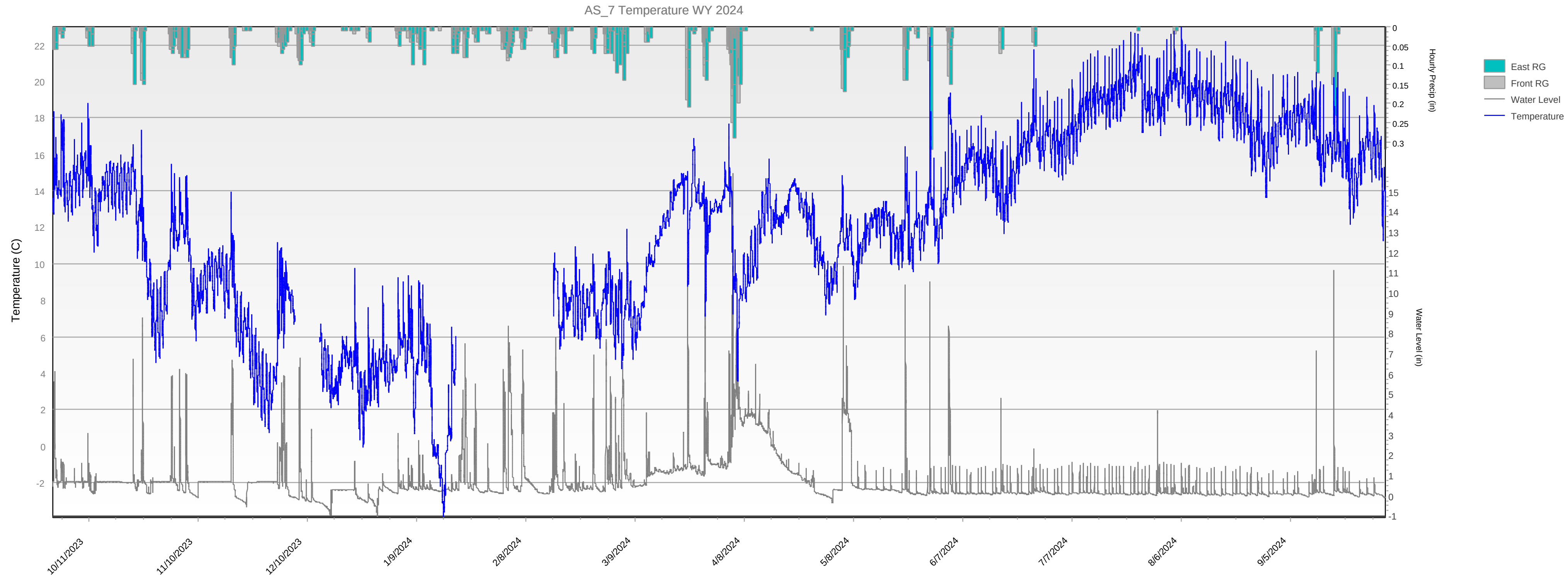


Figure 6

