



Las Vegas Valley NPDES Municipal Stormwater Discharge Permit

Annual Report 2022-2023

September
2023

REGIONAL FLOOD CONTROL DISTRICT

CLARK COUNTY NEVADA

CITY OF LAS VEGAS NEVADA

CITY OF NORTH LAS VEGAS

HENDERSON

Brown AND Caldwell

HDR

REGIONAL FLOOD CONTROL DISTRICT

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September 30, 2023

Kristie Black
Bureau of Water Pollution Control
Nevada Division of Environmental Protection
901 S. Stewart Street, Suite 4001
Carson City NV 89701

RE: 2022 – 2023 Annual Report
Las Vegas Valley NPDES MS4 Permit

Dear Ms. Black:

Please find enclosed a copy of the 2022 – 2023 Annual Report for the Las Vegas Valley National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit. This report was prepared in cooperation with Brown and Caldwell and HDR, Inc., and is hereby submitted for your review. The Annual Report details compliance activities for the period from July 1, 2022, through June 30, 2023. These activities were performed in accordance with Permit No. NV0021911 and the approved Stormwater Management Plan.

If you should have any questions, please do not hesitate to call.
Sincerely,

ARR
Andrew R. Trelease (Sep 20, 2023 16:56 PDT)

Andrew R. Trelease, P.E., CFM
Assistant General Manager

Enclosure

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2022-2023
Annual Report

Las Vegas Valley National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Permit

Prepared for:

Las Vegas Valley
Stormwater Quality Management Committee (SQMC)

Clark County Regional Flood Control District
City of Henderson
City of Las Vegas
City of North Las Vegas
Clark County

Prepared by:



September, 2023

LAS VEGAS VALLEY
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
MUNICIPAL SEPARATE STORM SEWER SYSTEM PERMIT

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Acronyms and Abbreviations

ac-ft	Acre-feet
BLM	Bureau of Land Management
BMP	Best Management Practice
BOD	Biochemical Oxygen Demand
BS_1	Burns Street Channel dry weather sampling site
CC	Clark County
CCPRO	Clark County Public Response Office
CCRFCD	Clark County Regional Flood Control District
CESQG	Conditionally Exempt Small Quantity Generators of Hazardous Waste
CFR	Code of Federal Regulations
CLV	City of Las Vegas
CNLV	City of North Las Vegas
COD	Chemical Oxygen Demand
COH	City of Henderson
conc.	Concentration
CWA	Clean Water Act
DB	Detention Basin
DC_1	Duck Creek dry weather sampling site
DES	Clark County Department of Environment and Sustainability
E. Coli	*Escherichia coli*
EDB	Extended Detention Basin
EPA	Environmental Protection Agency
FOG	Fats, Oils and Grease
FW_0	Flamingo Wash dry weather sampling site
GIS	Geographic Information System
GPCD	Gallons per capita per day
IC	Ion Chromatography
ICAP	Inductively Coupled Argon Plasma Spectroscopy
IDDE	Illicit Discharge Detection and Elimination
IR	Nevada 2014 Water Quality Integrated Report
lbs/day	pounds per day
LID	Low Impact Development
LMWQF	Lake Mead Water Quality Forum
LVMC	Las Vegas Municipal Code
LVV	Las Vegas Valley
LVVWAC	Las Vegas Valley Watershed Advisory Committee
LVW	Las Vegas Wash
LVWCC	Las Vegas Wash Coordination Committee
LW12.1	Las Vegas Wash dry weather sampling site
MBAS	Methylene Blue Active Substance (Surfactants)
MC_1	Monson Channel dry weather sampling site
MEP	Maximum Extent Practicable

MGD	million gallons per day
mg/L	milligrams per liter
µg/L	micrograms per liter
MM-##	Maintenance Measure Best Management Practices
MPU	Master Plan Update
MS4	Municipal Separate Storm Sewer System
NA	Not Available / Not Analyzed
NAC	Nevada Administrative Code
NAICS	North American Industry Classification System
ND	Non-detect / Not Detected
NDEP	Nevada Division of Environmental Protection
NDOT	Nevada Department of Transportation
NDSR	New Development and Significant Redevelopment
N	Nitrogen
NOI	Notice of Intent
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
NPS	Non-Point Source
NTU	Nephelometric Turbidity Units
P	Phosphorus
PE	Professional Engineer
pH	Measure of acidity or alkilinity
PSA	Public Service Announcement
RCRA	Resource Conservation and Recovery Act
RCV	Required Capture Volume
RTC	Regional Transportation Commission of Southern Nevada
SARA	Superfund Amendments and Reauthorization Act
SC-##	Source Control Best Management Practices
SC_1	Sloan Channel dry weather sampling site
SD-##	Site Design Best Management Practices
SIC	Standard Industrial Classification
SNHD	Southern Nevada Health District
SNWA	Southern Nevada Water Authority
SNWS	Southern Nevada Water System
sq. ft.	square feet
SQMC	Stormwater Quality Management Committee
SVOC	Semivolatile Organic Compound
SWMP	Stormwater Management Plan
SWPPP	Stormwater Pollution Prevention Plan
TC-##	Treatment Control Best Management Practices
TDS	Total Dissolved Solids
TKN	Total Kjeldahl Nitrogen
TM	Technical Memorandum
TMDL	Total Maximum Daily Load

TOC	Total Organic Carbon
TON	Total Organic Nitrogen
TRI	Toxic Release Inventory
TSS	Total Suspended Solids
UDB	Ultimate Development Boundary
USGS	United States Geological Survey
VOC	Volatile Organic Compound
WLA	Wasteload Allocation
WQCV	Water Quality Capture Volume
WQS	Water Quality Standard
WWTP	Wastewater Treatment Plant



Executive Summary

Executive Summary

1 Introduction

The United States Environmental Protection Agency (EPA) has adopted regulations to control pollutants entering the environment through storm drainage facilities associated with the Municipal Separate Storm Sewer System (MS4). In compliance with these regulations, the Nevada Division of Environmental Protection (NDEP) issued National Pollutant Discharge Elimination System (NPDES) MS4 Permit No. NV0021911 jointly to the Clark County Regional Flood Control District (CCRFCD), the City of Las Vegas (CLV), the City of North Las Vegas (CNLV), the City of Henderson (COH), and Clark County (CC), collectively known as the Las Vegas Valley Permittees (Permittees).

According to permit requirements, the Permittees developed a Stormwater Management Plan (SWMP) that described specific activities, responsibilities, and measurable goals adopted to comply with the various permit provisions. This Annual Report highlights the Permittees' compliance with the permit and SWMP requirements for the permit year spanning from July 1, 2022 through June 30, 2023.

2 Area of Coverage

The Las Vegas Valley NPDES MS4 Permit applies to all the urbanized and urbanizing watershed areas that are naturally tributary to the Las Vegas Wash. The permit area of coverage includes the cities of Las Vegas, the majority of North Las Vegas, and Henderson, as well as the portions of unincorporated Clark County that lie within the Las Vegas Valley. The permit does not apply to federal or state-owned land in the Las Vegas Valley or to sites that have their own NPDES MS4 permit.

3 Water Quality Standards

The Las Vegas Valley NPDES MS4 Permit requires the Permittees to evaluate whether stormwater discharges contribute directly or indirectly to the impairment of waterbodies, according to Section 303(d) of the Clean Water Act. The Permittees identified five 303(d) list impaired waterbodies within the permit area of coverage (Duck Creek, Flamingo Wash, Las Vegas Creek, Las Vegas Wash, and Sloan Channel). The impairments identified included: boron, *E. Coli*, fluoride, iron, selenium, total dissolved solids (TDS), temperature, and Total Suspended Solids (TSS). MS4 discharges were found to have primarily indirect effects on the concentrations of these constituents. The NPDES MS4 Permit requires the Permittees to comply with permit Section II.B.2 (SWMP) for constituents with established TMDLs. Only phosphorous has an established Total Maximum Daily Load (TMDL). During the permit year, the phosphorous TMDL was not exceeded in either dry or wet weather conditions. The Best Management Practices (BMPs) employed by the Permittees to address the MS4's potential contribution to the concentration of phosphorous, and the concentration of the other constituents without a TMDL, in the Las Vegas Wash and its tributaries were found to comply with permit requirements.

4 Legal Authority

Section III of the NPDES MS4 Permit for the Las Vegas Valley requires each of the Permittees to have an ordinance in place to authorize or enable all requirements of the permit. Further, Section IV.A.4 of the permit requires the Permittees to present a review of legal authority to implement the requirements of the permit and the SWMP, and to identify additional ordinances or regulatory mechanisms to be adopted. During the permit year, each of the municipal Permittees (CLV, CNLV, CC, and COH) was supported by local ordinances that grant them the authority to implement the requirements of the NPDES MS4 Permit. The Permittees reviewed local stormwater ordinances during the 2022-2023 MS4 permit year, with some revisions as noted in Chapter 4.

5 Stormwater Management Approach

The Las Vegas Valley NPDES MS4 Permit required the Permittees to develop a SWMP that was suited to the unique local hydrologic, hydrogeologic, and regional conditions of the Las Vegas Valley, and that was also consistent with local and state laws, regulations, and water resources plans. The Las Vegas Valley SWMP that applies to the 2022-2023 MS4 permit year was approved by NDEP in 2011 and was implemented in November 2013. The SWMP details the BMPs assigned to each of the SWMP Programs and are described in this Annual Report.

6 Source Identification

In compliance with permit Section IV.B., the Permittees provided updated maps of their stormwater infrastructure systems, including the locations of all major outfalls.

7 Stormwater Monitoring Program

To satisfy the requirements of permit Section IV.C.I, the Permittees conducted wet weather monitoring using two automated monitoring stations and sampling protocols as were used in previous years. Wet weather samples were collected from stormwater runoff at The Club at Sunrise and Rainbow Gardens sampling sites, after three significant events in July 2022, August 2022, and June 2023. In general, the laboratory analysis of wet weather samples did not show evidence of trends or changes in water quality characteristics that would indicate the need to modify the SWMP or improve performance of specific BMPs.

Dry weather monitoring, a component of the Illicit Discharge Detection and Elimination Program is also discussed in this section. Dry weather sampling was conducted by the Southern Nevada Water Authority (SNWA) and consisted of quarterly sampling at six Las Vegas Valley monitoring sites. Some individual dry weather sampling indicated higher pollutant concentrations than typical. However, there is no evidence indicating persistent illicit discharges to the sampled waterbodies.

8 Public Outreach and Education Program

The Permittees satisfied the requirements of permit Section IV.D. through the implementation of seven BMPs directed at educating the public to reduce the discharge of pollutants to the MS4 to the maximum extent practicable. During the permit year, the Permittees maintained the storm drain inlet marking program; disseminated printed educational materials at 47 community events, including materials targeted at reducing pet waste; broadcasted several public service announcements;

maintained the collaborative stormwater website (www.LVstormwater.com); as well as presented educational sessions to local elementary school students.

9 Source Control and MS4 Maintenance Program

Section IV.E of the NPDES MS4 Permit for the Las Vegas Valley includes requirements for a Source Control and MS4 Maintenance Program to reduce pollutants in stormwater runoff from commercial and residential areas. During the permit year, the Permittees continued to implement several maintenance and source control BMPs to meet permit requirements. The municipal Permittees swept curbed-and-paved public city streets once every 30 days; inspected at least 20% of the total number of drop inlets within their jurisdiction and cleaned them as appropriate; inspected detention basins twice annually and cleaned them as needed; as well as reviewed public facility maintenance plans. The Permittees also trained staff on proper application of fertilizers / pesticides and continued to explore the use of alternative products and application procedures. Additionally, the Permittees maintained and enforced their stormwater ordinances, which resulted in over 2,500 recorded enforcement actions, ranging in severity from verbal warnings to administrative penalties.

Permittee ordinances also supported water conservation measures, with reports from SNWA indicating that the community uses approximately 104 gallons per capita per day in the Las Vegas Valley, while water savings from the Smart Landscapes (“turf conversion”) Program exceeded 705 million gallons during the permit year. Further, Republic Services also continued to serve as a local resource for household hazardous waste collection.

10 Post-Construction Program for New Development and Significant Redevelopment

The Permittees implemented all planned measures to address new development and significant redevelopment (NDSR) in the permit area, according to permit Section IV.F. NDSR was identified in updated GIS maps of the Las Vegas Valley and included approximately 1,575 acres.

The BMPs that continue to be implemented for the Post-Construction NDSR Program are appropriate for the Las Vegas Valley’s unique hydrologic, hydrogeologic, and regional conditions. During the permit year, all Permittees reviewed development plans for compliance with: open space and landscaping objectives, rural land overlay, hillside development ordinances, standard drainage design criteria, and parking lot Low Impact Development (LID) measures. The Permittees also promoted green building initiatives and other Low Impact Development measures, when appropriate. It was standard practice to cover and raise fuel areas, as well as provide emergency shut-off switches at all new gas stations. Some Permittees also utilized treatment control BMPs and installed sand / oil separators to further the removal of solids and floatable materials from stormwater.

The Permittees utilize their Watershed Program approach for addressing runoff from areas of new development. The Watershed Program is included in the SWMP, however it is not a specific MS4 permit requirement. As such, it is incorporated into the NDSR discussion. The Permittees rely on the Watershed Program to mitigate potential impacts of stormwater runoff from existing and new development of all kinds. Key elements include: regional detention basin construction, regional channel lining, construction of Las Vegas Wash channel stabilization structures, and installing water quality features in regional detention basins. During the permit year, the Grand Park and the Silverado Ranch Detention Basins were constructed; and include water quality features, increasing the total WQCV of the Las Vegas Valley by 28.6 AF.

11 Illicit Discharge Detection and Elimination Program

The Permittees implemented all planned program elements for detecting and eliminating illicit discharges to the storm drain system, per permit Section IV.G. Key program elements included twice yearly MS4 system inspections, quarterly dry weather flow sampling, and sanitary sewer line inspections to minimize sanitary sewer overflows. Storm channel inspections and dry weather monitoring data did not indicate a trend of illicit discharge.

12 Industrial Facility Monitoring and Control Program

In compliance with Permit Section IV.H., the Permittees implemented all planned elements of the Industrial Facility Monitoring and Control Program. During the permit year, the Permittees utilized an industrial facility stormwater inspection checklist to perform annual inspections of all of the Superfund Amendments and Reauthorization Act (SARA) Title III Section 313 facilities and hazardous waste treatment, disposal, and recovery facilities within their jurisdictions. Additional industrial facilities were inspected during the permit year, as indicated in the updated industrial facility inventories. During the permit year, the Permittees continued to perform industrial facility pretreatment inspections and grease interceptor inspections. Training of the Permittees' industrial facility inspectors was conducted on an as needed basis.

13 Construction Site Program

The Permittees satisfied the requirements of permit Sections IV.I and IV.J. by continuing to implement three source control BMPs. Review of the Las Vegas Valley Construction Site BMP Guidance Manual was conducted during the permit year, with changes to the manual anticipated after the issuance of a new NPDES permit. During the permit year, construction site inspections were conducted to identify active discharges, as well as to evaluate BMPs for their efficacy at preventing potential discharges and to educate construction site operators. The Permittees inspected construction sites over 100 acres and construction sites deemed a "significant threat" to water quality on a monthly basis, while other construction sites were inspected at least two times during the construction period. The Permittees utilized a construction site stormwater inspection checklist to identify potential violations. When identified, the Permittees responded to 100% of violations in accordance with Standard Operating Procedures. To keep the construction industry informed about local and state stormwater requirements and to minimize violations, the Permittees collectively hosted four training sessions during the permit year, which were attended by over 190 construction professionals.

14 Staff and Resources

According to permit Section V.C.3.k, the Permittees provided information on annual expenditures for the major programs identified in the SWMP for the current permit year. Annual program expenditures for the 2022-2023 MS4 permit year were approximately $162 million for all Permittees combined. The budget for the 2023-2024 MS4 permit year is approximately $202 million. Funding mechanisms and staffing for the Las Vegas Valley MS4 Program for the 2023-2024 MS4 permit year are expected to be similar to those of the current permit year.

15 Conclusion

The Permittees prepared this Annual Report for the 2022-2023 MS4 permit year to report to NDEP on the status of the MS4 program and to highlight compliance with the permit and SWMP. Annual Report requirements in the MS4 permit were satisfied and all program BMP goals were achieved.



Section 1

Introduction

1 Introduction

The United States Environmental Protection Agency (EPA) has adopted regulations to control pollutants entering the environment through storm drainage facilities associated with the Municipal Separate Storm Sewer System (MS4). In compliance with these regulations, on February 9, 2010, the Nevada Division of Environmental Protection (NDEP) issued National Pollutant Discharge Elimination System (NPDES) Permit No. NV0021911 jointly to the Clark County Regional Flood Control District (CCRFCD), the City of Las Vegas (CLV), the City of North Las Vegas (CNLV), the City of Henderson (COH), and Clark County (CC), collectively known as the Las Vegas Valley Permittees (Permittees). The permit authorizes the Permittees to discharge stormwater from outfalls to the Las Vegas Wash and its tributaries. The permit was issued for a period of five years (2010-2015) and is currently operating under administrative continuation until a new permit is issued.

1.1 Annual Report Organization

This Annual Report was prepared to verify that the Permittees have complied with the permit requirements and measurable goals identified in the Stormwater Management Plan (SWMP) for the year from July 1, 2022 through June 30, 2023. The Annual Report is organized to address each of the main programs required by the NPDES MS4 Permit and associated SWMP for the Las Vegas Valley:

- Section 1.0 Introduction
- Section 2.0 Area of Coverage
- Section 3.0 Water Quality Standards
- Section 4.0 Legal Authority
- Section 5.0 Stormwater Management Approach
- Section 6.0 Source Identification
- Section 7.0 Stormwater Monitoring Program
- Section 8.0 Public Outreach and Education Program
- Section 9.0 Source Control and MS4 Maintenance Program
- Section 10.0 Post-Construction Program for New Development and Significant Redevelopment
- Section 11.0 Illicit Discharge Detection and Elimination Program
- Section 12.0 Industrial Facility Monitoring and Control Program
- Section 13.0 Construction Site Program
- Section 14.0 Staff and Resources
- Section 15.0 Conclusion

1.2 Permit Coordination

The CCRFCD has taken the lead for general administration of the permit conditions, preparation of reports, coordination among Permittees, and serving as the liaison with NDEP. In addition, the

CCRFCD provides funding for many of the regional permit compliance efforts. The CCRFCD also retained Brown & Caldwell and HDR to assist with preparation of information required to comply with the conditions of the permit.

Further permit coordination during the permit year was facilitated by the Stormwater Quality Management Committee (SQMC). The SQMC is comprised of representatives from each of the Permittees (Public Works Director or equivalent), who vote on topics critical for permit implementation. Public SQMC meetings were held three times, on November 8, 2022, February 14, 2023, and May 9, 2023. The August 9, 2022 meeting was not held due to several Representative and Alternatives attending a stormwater conference, so a quorum could not be present. Quarterly information was still provided to all Representatives to confirm that all Permittees were on track to meet permit requirements.

SQMC meetings were regularly attended by other employees of the Permittees, employees of other local agencies and entities that have an interest in water quality issues (i.e., stakeholders), and members of the general public. Meeting agendas and meeting minutes were made available to the public and time was allowed in each meeting for public comments.

The SQMC Representatives for the 2022-2023 MS4 permit year are shown in Table 1-1.

Table 1-1: 2022-2023 Stormwater Quality Management Committee (SQMC) Representatives

SQMC Representatives	Title	Permittee
Steve Parrish, PE (Chair)	General Manager/Chief Engineer	Clark County Regional Flood Control District
Lance Olson, PE	Director of Public Works	City of Henderson
Mike Janssen, PE	Director of Public Works	City of Las Vegas
Dale Daffern, PE	Director of Public Works	City of North Las Vegas
Denis Cederburg, PE	Director of Public Works	Clark County
SQMC Alternate Representatives	**Title**	**Permittee**
Andrew Trelease, PE	Assistant General Manager	Clark County Regional Flood Control District
Keegan Littrell, PE	City Engineer	City of Henderson
Rosa Cortez, PE	City Engineer / Deputy Director	City of Las Vegas
Mike Hudgeons, PE	Manager of Engineering	City of North Las Vegas
Jimmy Floyd, PE	Manager of Construction Management	Clark County



Section 2

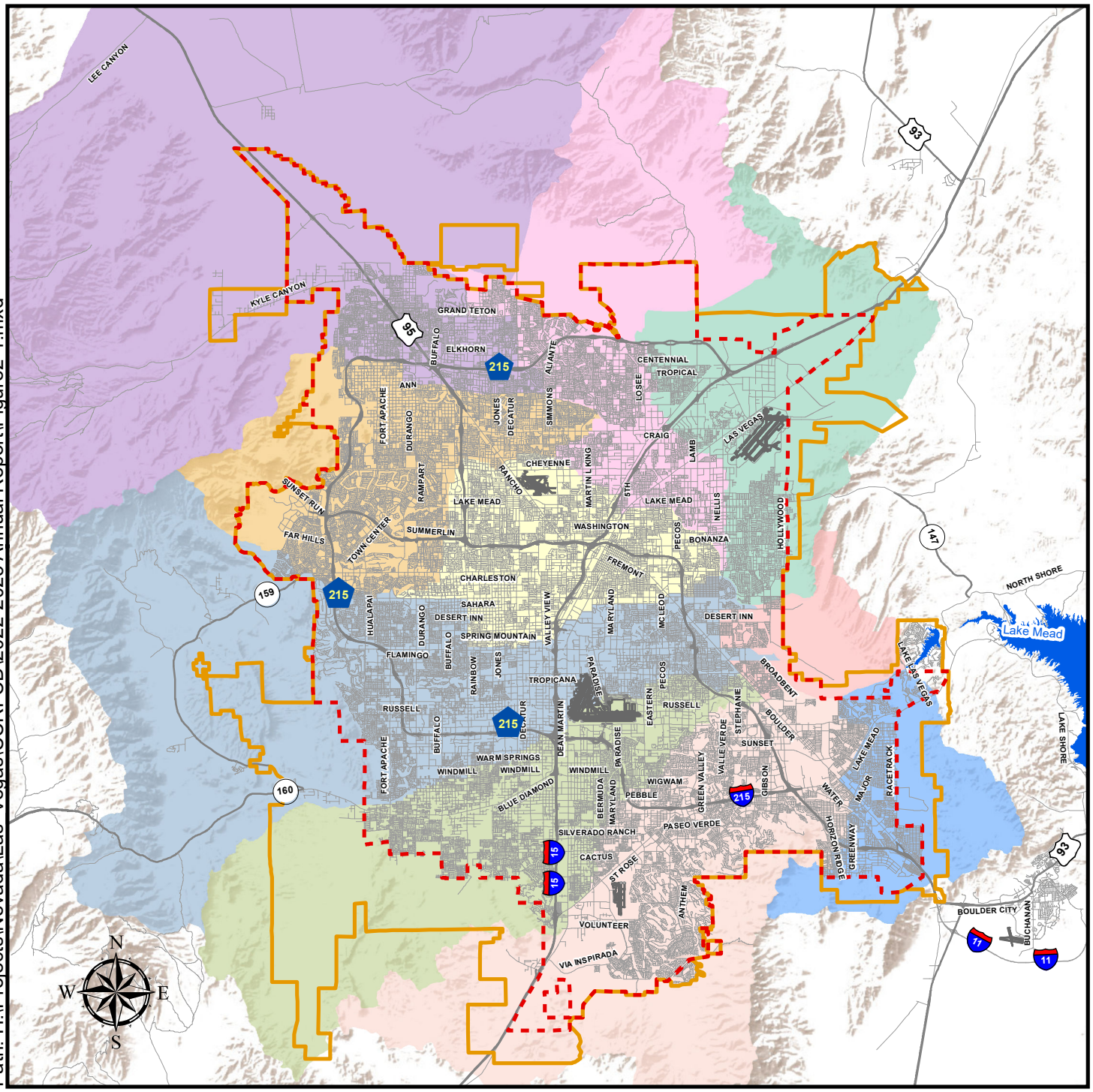
Area of Coverage

2 Area of Coverage

The Las Vegas Valley NPDES MS4 Permit applies to all the urbanized and urbanizing watershed areas that are naturally tributary to the Las Vegas Wash. The Las Vegas Wash is upstream of Lake Las Vegas, which is located approximately two miles upstream of Lake Mead. The permit area of coverage includes the cities of Las Vegas, the majority of North Las Vegas, and Henderson, as well as the portions of unincorporated Clark County that lie within the Las Vegas Valley. The permit does not apply to federal or state-owned land in the Las Vegas Valley or to sites that have their own NPDES MS4 Permit (i.e., Nellis Air Force Base, Nevada Department of Transportation [NDOT] facilities).

The CCRFCD established an ultimate development boundary (UDB) in the 2008 Las Vegas Valley Flood Control Master Plan Update (MPU), which was revised in the 2018 MPU. The UDB assumes the full “build out” condition is reached and all available land within the Las Vegas Valley is fully developed. This condition is assumed to ensure that flood control facilities built today will have capacity for future run-off. The development of the UDB is based on the limits of where development is expected to occur in the Las Vegas Valley, using criteria such as locations of protected lands and mountain terrains that surround the Valley. The Bureau of Land Management (BLM) manages a “disposal boundary” in the Las Vegas Valley, which designates federally managed lands that could eventually be privatized and potentially developed.

The permit area encompasses the area within the 2018 UDB area within the LVV watershed that ultimately contributed to the Las Vegas Wash. A full description of refinement of the MS4 Permit boundary is included in the 2018 – 2019 Annual Report. The area of coverage for the 2022-2023 MS4 permit year includes the UDB 2018 – Updated for the Las Vegas Valley MS4 Program and the BLM Disposal Boundary, as shown in Figure 2-1.



Legend

- Ultimate Development Boundary Updated for the Las Vegas Valley MS4 Program (2018 MPU)
- Las Vegas Valley Disposal Boundary
- Airport
- Street

Watersheds

- C1
- CENTRAL
- DUCK CREEK
- FLAMINGO/TROPICANA
- GOWAN
- LOWER LAS VEGAS WASH
- LOWER NORTHERN
- PITTMAN
- RANGE WASH
- UPPER NORTHERN

0 2 4 8 12

Scale in Miles

Service Layer Credits: Sources: Esri, USGS, NOAA

Figure 2-1
Area of Coverage
2022-2023 Annual Report



Section 3

Water Quality Standards

3 Water Quality Standards

Sections II.A and II.B of the 2010-2015 NPDES MS4 Permit for the Las Vegas Valley include requirements relative to potential contributions of stormwater to impaired waters of the United States. In accordance with the requirements of Section 303(d) of the Clean Water Act (CWA), the Permittees must evaluate whether stormwater discharges from any part of the MS4 contribute directly or indirectly to the listing of a waterbody as an impaired waterbody on the 303(d) list. If MS4 discharges are found to contribute to the listing of a waterbody on the 303(d) list, the Permittees must also determine whether a Total Maximum Daily Load (TMDL) has been approved by NDEP for the waterbody, as well as determine compliance with the established TMDL.

3.1 Impaired Waters in the Las Vegas Valley

In accordance with the CWA, every two years the NDEP conducts a comprehensive water quality data analysis concerning Nevada's surface waters to determine compliance with established water quality standards. The Nevada 2020-2022 Water Quality Integrated Report (IR), which assessed data from October 1, 2013 through September 30, 2020, was finalized in February 2022.

Segments of the Las Vegas Wash and selected tributaries were identified in the IR as waterbodies impaired for the following parameters: boron, selenium, total dissolved solids (TDS), total suspended solids (TSS), fluoride, iron, *Escherichia coli* (*E. Coli)*, and temperature, as indicated in Table 3-1.

Table 3-1: 303(d) List of Impaired Waterbodies in the Las Vegas Valley (2022)

Waterbody	Location	Impairment Parameter	Beneficial Use(s)
Duck Creek	From its origin to the Las Vegas Wash	Boron	Irrigation
		Fluoride	Irrigation
		Selenium	Aquatic Life, Irrigation
		Total Dissolved Solids (TDS)	Livestock
		Temperature	Aquatic Life
Flamingo Wash	From its origin to the Las Vegas Wash	Boron	Irrigation
		Iron	Aquatic Life
		Selenium	Aquatic Life, Irrigation
		Total Suspended Solids (TSS)	Aquatic Life
Las Vegas Creek	From its origin to the Las Vegas Wash	Selenium	Aquatic Life
Las Vegas Wash	Above treatment plants	Boron	Irrigation
		E. Coli	Recreation no Contact
		Iron	Aquatic Life
		Selenium	Aquatic Life
		Total Dissolved Solids (TDS)	Livestock
		Total Suspended Solids (TSS)	Aquatic Life
Sloan Channel	From North Las Vegas Blvd to the Las Vegas Wash	Boron	Irrigation
		Fluoride	Irrigation
		Selenium	Aquatic Life, Irrigation

Sources of constituents causing impairment, as included in the 303(d) list that have the potential for direct or indirect contributions by flows from the MS4 system, are summarized in Table 3-2. MS4 discharges have the potential to cause or contribute to the identified water quality impairments, however constituent contributions in the Las Vegas Valley are primarily through indirect means. As stated in the IR, waterbody impairments are largely due to nonpoint source pollution (e.g., recharge to shallow groundwater aquifers and increased erosion of unlined stream channels).

Table 3-2: Sources of Pollutants and Effects of MS4 Discharges on Impaired Waterbodies in the Las Vegas Valley

Constituent	Constituent Sources in the Las Vegas Valley	Direct or Indirect Effects of MS4 Discharges
Boron	Flow through native sub-surface soils	**Indirect** - Increased urban baseflow may recharge upper portions of shallow aquifers and force high-boron groundwater into the MS4, which carries it to the impaired segments
E. Coli	Wastewater discharges Animals/wildlife	**Indirect** - Increases in storm flows may contribute to high *E. Coli* transported in channels **Direct** - Potentially contaminated runoff enters the MS4 and discharges to surface waters
Fluoride	Flow through native sub-surface soils	**Indirect** - Increased urban baseflow may recharge upper portions of shallow aquifers and force high-fluoride groundwater into the MS4, which carries it to the impaired segments
Iron	Sediment transported in stream channels	**Indirect** - Increases in dry weather flows and storm flows may increase channel erosion and volume of sediment transported in channels
Selenium	Flow through native sub-surface soils; Resurfacing shallow groundwater	**Indirect** - Increased urban baseflow may recharge upper portions of shallow aquifers and force high-selenium groundwater into the MS4, which carries it to the impaired segments
TDS	Flow through native sub-surface soils; Resurfacing shallow groundwater; Wastewater discharges	**Indirect** - Increased urban baseflow may recharge upper portions of shallow aquifers and force high-TDS groundwater into the MS4, which carries it to the impaired segments
Temperature	Weather conditions Resurfacing shallow groundwater Sediment transported in stream channels Wastewater discharges	**Indirect** - Increased volume of sediments transported in channels may contribute to high temperature **Direct** - Potentially contaminated runoff enters the MS4 and discharges to surface waters
TSS	Sediment transported in stream channels Soil runoff	**Indirect** - Increased in wet weather flows may increase the volume of sediments transported in channels

3.2 Water Quality Standards

The Nevada Administrative Code (NAC) Section 445A outlines water quality standards designed to protect Nevada's surface waters. Table 3-3 presents the water quality standards for constituents identified as causing impairment to at least one of the Las Vegas Valley's waterbodies, per the IR.

Table 3-3: Las Vegas Valley Water Quality Standards for Impaired Surface Water

Constituent	Nevada Water Quality Standard
Boron	0.75 mg/L
E. Coli	630 cfu/100 mL
Fluoride	1 mg/L
Iron	5 mg/L
Selenium	0.005 mg/L (chronic); 0.020 mg/L (acute)
TDS	3,000 mg/L
Temperature	34 °C
TSS	135 mg/L

It is important to note that some of the NAC 445A water quality standards pertain to the municipal or domestic water supply (e.g., selenium), while others pertain to water used for irrigation or watering livestock (e.g., boron, fluoride, and TDS) or exist as standards to maintain other beneficial uses, such as aquatic life, in the Las Vegas Wash (e.g., temperature).

As discussed in more detail in Section 7.0 and Section 11.0 of this Annual Report, the Permittees characterize both wet and dry weather conditions to evaluate water quality. Dry weather samples were

collected once quarterly from six sample locations, while wet weather samples were collected from three storm events at two sample locations. Refer to Figure 7-1 for the sampling locations. While the sampling protocols under the Las Vegas Valley MS4 Stormwater Monitoring Program for wet weather monitoring and the Southern Nevada Water Authority (SNWA) Urban Tributary Program for dry weather monitoring do differ from the protocol for determining the 303(d) list, the programs provide the best available data for water quality characterization. As such, exceedances for wet or dry weather sampling for the MS4 permit year were based on results from individual samples collected through these programs, which were compared to the water quality standards identified in NAC 445A; results are depicted in Table 3-4.

Table 3-4: Frequency of Wet and Dry Weather Exceedances of Nevada Water Quality Standards in the Current MS4 Permit Year (2022-2023)

Constituent			Boron	*E. Coli*	Fluoride	Iron	Selenium		TDS	Temperature	TSS
Standard			0.75 mg/L	630 cfu/100 mL	1 mg/L	5 mg/L	0.005 mg/L (chronic)	0.02 mg/L (acute)	3,000 mg/L	34 °C	135 mg/L
Type	Location	Number of Samples	Frequency of Nevada Water Quality Standard Exceedances								
Wet Weather	Las Vegas Wash at The Club at Sunrise	3	0	1 [a]	0	3	0	0	0	0 [a]	3
	Las Vegas Wash at Rainbow Gardens	3	0	1 [a]	0	1	0	0	0	0 [a]	2
Dry Weather	Burns Street Channel	4	1 [a]	0	3 [b]	0	4	0	4	0	0
	Duck Creek	4	1 [a]	1	3 [b]	0	4	0	4	0	0
	Flamingo Wash	4	0 [a]	3	0 [b]	0	4	0	0	0	0
	The Club at Sunrise	4	1 [a]	2	0 [b]	0	4	0	4	0	0
	Monson Channel	4	1 [a]	0	0 [b]	0	4	0	4	0	0
	Sloan Channel	4	0 [a]	0	0 [b]	0	1	0	0	0	0

Notes:
[a] Number of samples: one
[b] Number of samples: three

At the Club at Sunrise, one of the wet weather samples exhibited a concentration higher than the water quality standard (WQS) for *E. Coli*. Additionally, three samples registered concentrations higher than the WQS for Iron, and another three samples showed concentrations higher than the WQS for total suspended solids.

At the Rainbow Gardens site, one sample displayed a concentration that was higher than the WQS for *E. Coli*, while another sample was higher than the WQS for iron. Furthermore, two samples recorded concentrations higher than the WQS for total suspended solids. This situation is addressed in the Nevada water quality standards under NAC 445A.121.8.:

> *"The specified standards are not considered violated when the natural conditions of the receiving water are outside the established limits, including periods of extreme high or low flow. Where effluents are discharged to such waters, the discharges are not considered a contributor to substandard conditions provided maximum treatment in compliance with permit requirements is maintained."*

The 2022-2023 dry weather samples frequently exceeded the standards for boron, selenium, and TDS; elevated concentrations of these constituents in dry weather are characteristic of water quality in the Las Vegas Valley. In addition, there were some dry weather exceedances of the fluoride and *E. Coli* standard.

NDEP is proposing a new state-wide standard for selenium:

- 30-day average, lentic (lake) water - 1.9 µg/L
- 30-day average, lotic (river) water - 3.9 µg/L

NDEP intends to propose the new state-wide standard for selenium for all of Nevada except the Las Vegas Wash. NDEP is working with the local jurisdictions over the next year to establish site-specific standards for the Las Vegas Wash and tributaries. In the interim, the prior selenium standards apply for the Las Vegas Wash.

3.3 Load Estimates

Constituent loads contributed by the MS4 to the Las Vegas Wash were calculated for the 2022-2023 MS4 permit year, for both wet and dry weather conditions. Wet weather loads were calculated using the concentration from three storm runoff samples collected from the Las Vegas Wash site at Rainbow Gardens for the MS4 permit year and an estimate of the total storm runoff volume from July 1, 2022 to June 30, 2023 at the Las Vegas Wash at Three Kids (LW 3.4) United States Geological Survey (USGS) gauge site. Refer to Figure 7-1 for the locations of these gauge sites. Wet weather load estimates are demonstrated in Table 3-5.

Table 3-5: Wet Weather Load Estimates for the Current MS4 Permit Year (2022-2023) and the Prior Three MS4 Permit Years

Wet Weather Las Vegas Wash at Rainbow Gardens								
Constituent	**2022-2023**		**2021-2022**		**2020-2021** [a]		**2019-2020**	
Standard	**Median Conc. (mg/L)**	**Annual Load (tons)**	**Median Conc. (mg/L)**	**Annual Load (tons)**	**Median Conc. (mg/L)**	**Annual Load (tons)**	**Median Conc. (mg/L)**	**Annual Load (tons)**
Annual Flow (ac-ft)	**5,542**		**5,722**		**4,191**		**13,207**	
TSS	268	2,019	2,600	20,228	-	-	105	1,886
TDS	940	7,083	1,020	7,936	-	-	790	14,186
Total Phosphorus (as P)	0.77	5.80	1.98	15.4	-	-	0.4	7.18
Orthophosphate (as P)	< 0.05	< 0.38	0.2	1.56	-	-	0.24	4.31
Nitrate (as N)	6.26	47.2	6.2	48.2	-	-	5.32	95.5

Table 3-5: Wet Weather Load Estimates for the Current MS4 Permit Year (2022-2023) and the Prior Three MS4 Permit Years

Wet Weather Las Vegas Wash at Rainbow Gardens								
Constituent	**2022-2023**		**2021-2022**		**2020-2021 [a]**		**2019-2020**	
Standard	**Median Conc. (mg/L)**	**Annual Load (tons)**	**Median Conc. (mg/L)**	**Annual Load (tons)**	**Median Conc. (mg/L)**	**Annual Load (tons)**	**Median Conc. (mg/L)**	**Annual Load (tons)**
Annual Flow (ac-ft)	**5,542**		**5,722**		**4,191**		**13,207**	
Total Copper	0.0185	0.14	<0.001	< 0.01	-	-	0.0225	0.4
Total Lead	0.0072	0.05	0.0467	0.36	-	-	0.0044	0.08
Total Zinc	0.14	1.05	0.18	1.37	-	-	0.0545	0.98

Notes:
[a] No sample data available

Dry weather flows were estimated using information from the LW 3.4 USGS gauge site. Dry weather loads were calculated using the median concentrations from four samples taken at LW 3.4. Data was available from the SNWA Lower Colorado River Water Quality Database. The LW 3.4 sampling site is downstream of wastewater treatment facilities. The average wastewater discharge for the Las Vegas Valley wastewater treatment plants (WWTPs) is approximately 170 MGD (approximately 190,000 ac-ft per year). As in previous years, the wastewater flows were removed from the total dry weather flow of 233,616 ac-ft. It is important to note that the MS4 permit is not required to do (and therefore not performed) continuous water quality monitoring. The annual data is extrapolated from the four samples mentioned above. As wastewater effluent volumes may also vary annually, the constituent load estimates provided in this Annual Report are considered approximations.

Table 3-6: Dry Weather Load Estimates for the Current MS4 Permit Year (2022-2023) and the Prior Three MS4 Permit Years

Dry Weather Las Vegas Wash at Rainbow Gardens								
Constituent	**2022-2023**		**2021-2022**		**2020-2021**		**2019-2020**	
Standard	**Median Conc. (mg/L)**	**Annual Load (tons)**	**Median Conc. (mg/L)**	**Annual Load (tons)**	**Median Conc. (mg/L)**	**Annual Load (tons)**	**Median Conc. (mg/L)**	**Annual Load (tons)**
Annual Flow [a] (ac-ft)	**22,271**		**23,561**		**23,169**		**23,358**	
TSS	8.7	263	9.6	308	8.55	269	14.2	451
TDS	1,365	41,334	1,310	41,966	1,290	40,638	1,330	42,240
Total Phosphorus (as P)	0.078	2.35	0.064	2.05	0.052	1.62	0.08	2.59
Orthophosphate (as P)	0.052	1.59	0.032	1.01	0.023	0.73	0.05	1.50
Nitrate (as N)	13.7	414.9	13.5	432.5	13.8	434.7	13.8	438.3
Total Copper	< 0.005	< 0.15	<0.0045	< 0.14	<0.01	0.32	<0.01	0.32
Total Lead	< 0.0003	< 0.009	<0.0005	< 0.016	<0.0006	0.019	<0.0006	0.019
Total Zinc	0.023	0.68	0.024	0.76	0.027	0.84	0.031	0.97

[a] Wastewater treatment plant discharge volume was excluded from the annual dry weather flow volume estimate.

3.4 Permit Compliance for Constituents with a TMDL

The NPDES MS4 Permit requires the Permittees to comply with permit Section II.B.2 for constituents with established TMDLs. The NDEP has approved a TMDL for total phosphorous and total ammonia for the Las Vegas Wash. However, the total ammonia TMDL is allocated entirely to point source discharges. As such, this subsection only responds to the specific permit requirements regarding the MS4's potential contribution to total phosphorous pollutant loads.

II.B.2.a Determine and report whether the approved TMDL is for a pollutant likely to be found in stormwater discharges from the Permittees' MS4;

Phosphorus is found in stormwater discharges and in dry weather discharges from the MS4.

II.B.2.b Determine and report whether the TMDL includes a pollutant wasteload allocation ("WLA") or other performance requirements specifically for stormwater discharge from the Permittees' MS4;

The phosphorus TMDL includes a load allocation of 100 lbs/day for all nonpoint sources combined. This includes stormwater, urban flows, groundwater return flows, and any other discharges not originating from WWTPs. The TMDL does not include a separate load allocation for stormwater.

II.B.2.c Determine and report whether the TMDL addresses a flow regime likely to occur during periods of stormwater discharge;

The phosphorus TMDL only addresses nonpoint sources in aggregate. Although the TMDL language does not specifically exclude stormwater discharges from compliance, the NDEP computations used to establish the nonpoint load allocation of 100 lbs/day excluded data from days with stormwater runoff. Therefore, it is assumed for NPDES MS4 Permit compliance that the TMDL load allocation for nonpoint sources does not apply during periods of stormwater runoff, however it does apply at all other times.

II.B.2.d Assess whether the WLAs are being met through implementation of existing stormwater control measures or if additional control measures are necessary;

The load allocation of 100 lbs/day for total phosphorus is currently being met during both wet and dry weather conditions. At the Las Vegas Wash at Rainbow Gardens, the estimated wet weather contribution was approximately 32 lbs/day, while the estimated dry weather contribution was approximately 12.9 lbs/day during the MS4 permit year.

II.B.2.e Document all control measures currently being implemented or planned to be implemented to be consistent with the WLA. Also include a schedule of implementation for all planned controls. Document the calculations or other evidence that shows that the WLA will be met;

BMPs adopted in the SWMP that address phosphorus and other nutrients are listed in Table 3-7.

Table 3-7: Las Vegas Valley NPDES MS4 Permit BMPs that Address Phosphorus

BMP Type	Existing BMP
Constituent Category: Nutrients	
Maintenance Measures	MM-1-Street Sweeping
	MM-2-Local Storm Drain System Maintenance
	MM-3-Regional Detention Basin Maintenance
Source Control Measures	SC-1-Water Conservation (Drought) Ordinance
	SC-2-Turf Conversion Program
	SC-3-Public Employee Supervisor Fertilizer/Pesticide Training
	SC-4-Use of Alternate Products and Application Procedures
	SC-5-Household Hazardous Waste Collection
	SC-6-Commercial/Industrial Housekeeping Practices
	SC-7-Ordinances Prohibiting Non-Stormwater Discharges and Littering
	SC-8-Desert Dumping Controls
	SC-10-Dust Control Measures
	SC-11-Storm Drain Marking Program
	SC-16-Regional Water Quality Planning
	SC-30-LVV Stormwater Quality Website
	SC-31-Public Outreach Events
	SC-32-Elementary School Presentations
	SC-33-Public Service Announcement/Flood Control
	SC-34-Brochures and Printed Material
Site Design	SD-1-Open Space and Landscaping Objectives
	SD-2-Rural Land Overlay
	SD-3-Hillside Development Ordinances
	SD-9-Parking Lots Low Impact Development (LID) Measures
	SD-10-Low Impact Development (LID) Measures

Table 3-7: Las Vegas Valley NPDES MS4 Permit BMPs that Address Phosphorus

BMP Type	Existing BMP
Constituent Category: Nutrients	
Treatment Control	TC-1-Regional Detention Basins
	TC-2-Regional Channel Lining
	TC-3-Las Vegas Wash Stabilization Structures
	TC-4-Sand/Oil Separator
	TC-5-Sand Filter
	TC-6-Regional Detention Basin Retrofit
SWMP Target	Identify BMPs implemented to comply with TMDL allocations

II.B.2.f Describe a monitoring program to determine whether the stormwater controls are adequate to meet the WLA;

Dry weather phosphorus loads are lower than the load allocation for nonpoint sources; thus, it is concluded that existing BMPs are adequate to meet the WLA for phosphorus and no additional monitoring of these programs is necessary. Continued wet and dry weather monitoring in the Lower Las Vegas Wash by the MS4 Permittees and other agencies is sufficient to track phosphorous loads to Las Vegas Bay and Lake Mead.

II.B.2.g If the evaluation shows that additional or modified controls are necessary, describe the type and schedule for the control additions/revisions, and an analysis that demonstrates the overall effectiveness.

No additional or modified BMPs are necessary beyond those described above.

3.5 Permit Compliance for Constituents without a TMDL

Section II.B.3 of the permit identifies compliance requirements for constituents that cause impairments, however they do not have an approved TMDL (i.e., boron, fluoride, pH, selenium, and TDS).

II.B.3 When a TMDL has not been established as described in Part II.B.2, the Permittees must include a section in the annual report describing the condition for which the water has been listed, evaluating possible Best Management Practices ("BMPs") that might practicably be implemented, examining whether these BMPs would have a substantial effect on achieving compliance, and identifying any BMPs that are selected for implementation.

Conditions for which the listed constituents cause impairments have been described previously in this section. Table 3-8 lists the BMPs in the Las Vegas Valley SWMP that may be beneficial in addressing the identified constituents. These BMPs satisfy the reduction of constituents in stormwater discharges to the Maximum Extent Practicable (MEP) standard for BMP implementation under the NPDES MS4 Permit.

Table 3-8: Las Vegas Valley NPDES MS4 Permit BMPs that Address Constituents without a TMDL

BMP Type	Existing BMP
Constituent Category: Sediment	
Maintenance Measures	MM-1-Street Sweeping
	MM-2-Local Storm Drain System Maintenance
	MM-3-Regional Detention Basin Maintenance
Source Control Measures	SC-10-Dust Control Measures
	SC-16-Regional Water Quality Planning
	SC-20-Construction Site BMP Guidance Manual
	SC-21-Construction Site Inspections
	SC-22-Construction Site Training Workshops
	SC-30-LVV Stormwater Quality Website
	SC-31-Public Outreach Events
	SC-32-Elementary School Presentations

Table 3-8: Las Vegas Valley NPDES MS4 Permit BMPs that Address Constituents without a TMDL

BMP Type	Existing BMP
Source Control Measures	SC-33-Public Service Announcement/Flood Control
	SC-34-Brochures and Printed Material
Site Design	SD-1-Open Space and Landscaping Objectives
	SD-2-Rural Land Overlay
	SD-3-Hillside Development Ordinances
	SD-9-Parking Lots Low Impact Development (LID) Measures
	SD-10-Low Impact Development (LID) Measures
Treatment Control	TC-1-Regional Detention Basins
	TC-2-Regional Channel Lining
	TC-3-Las Vegas Wash Stabilization Structures
	TC-4-Sand/Oil Separator
	TC-5-Sand Filter
Treatment Control	TC-6-Regional Detention Basin Retrofit
Constituent Category: Heavy Metals	
Maintenance Measures	MM-1-Street Sweeping
	MM-2-Local Storm Drain System Maintenance
	MM-3-Regional Detention Basin Maintenance
Source Control Measures	SC-7-Ordinances Prohibiting Non-Stormwater Discharges and Littering
	SC-8-Desert Dumping Controls
	SC-10-Dust Control Measures
	SC-16-Regional Water Quality Planning
	SC-30-LVV Stormwater Quality Website
	SC-31-Public Outreach Events
	SC-32-Elementary School Presentations
	SC-33-Public Service Announcement/Flood Control
	SC-34-Brochures and Printed Material
Site Design	SD-1-Open Space and Landscaping Objectives
	SD-2-Rural Land Overlay
	SD-3-Hillside Development Ordinances
	SD-9-Parking Lots Low Impact Development (LID) Measures
	SD-10-Low Impact Development (LID) Measures
Treatment Control	TC-1-Regional Detention Basins
	TC-2-Regional Channel Lining
	TC-3-Las Vegas Wash Stabilization Structures
	TC-4-Sand/Oil Separator
	TC-5-Sand Filter
	TC-6-Regional Detention Basin Retrofit
Constituent Category: Selenium Fluoride	
Source Control Measures	SC-1-Water Conservation (Drought) Ordinance
	SC-2-Turf Conversion Program
	SC-16-Regional Water Quality Planning
	SC-30-LVV Stormwater Quality Website
	SC-31-Public Outreach Events
	SC-32-Elementary School Presentations
	SC-33-Public Service Announcement/Flood Control
	SC-34-Brochures and Printed Material
Constituent Category: Total Dissolved Solids (Salinity)	
Source Control Measures	SC-1-Water Conservation (Drought) Ordinance
	SC-2-Turf Conversion Program
	SC-16-Regional Water Quality Planning
	SC-30-LVV Stormwater Quality Website
	SC-31-Public Outreach Events
	SC-32-Elementary School Presentations
	SC-33-Public Service Announcement/Flood Control
	SC-34-Brochures and Printed Material
Constituent Category: pH	
Source Control Measures	SC-1-Water Conservation (Drought) Ordinance

Table 3-8: Las Vegas Valley NPDES MS4 Permit BMPs that Address Constituents without a TMDL

BMP Type	Existing BMP
Source Control Measures	SC-2-Turf Conversion Program
	SC-16-Regional Water Quality Planning
	SC-30-LVV Stormwater Quality Website
	SC-31-Public Outreach Events
	SC-32-Elementary School Presentations
	SC-33-Public Service Announcement/Flood Control
	SC-34-Brochures and Printed Material
SWMP Target	Identify BMPs implemented to address constituents without a TMDL

Certain BMPs commonly used in other communities should not be implemented in the Las Vegas Valley to avoid exacerbating existing water quality impairments. For example, TDS impairments in Duck Creek, Flamingo Wash, and the Las Vegas Wash upstream of the WWTPs are indicative of the overall salinity problem in the Colorado River Basin and the Las Vegas Valley. Selenium impairments in Las Vegas Creek, Flamingo Wash, Duck Creek, and Las Vegas Wash upstream of the WWTPs, and in Sloan Channel are also indicative of regional problems in the Las Vegas Valley. Both selenium and TDS originate primarily from the shallow aquifer in the lower Las Vegas Valley. This situation has been previously described in Section 3 of the SWMP. As such, the SWMP recommends stormwater infiltration be discouraged throughout the Las Vegas Valley and that it only be permitted in locations where site-specific geotechnical studies can demonstrate that it is technically feasible and will not adversely affect surface water quality.



Section 4

Legal Authority

4 Legal Authority

Section III of the NPDES MS4 Permit for the Las Vegas Valley requires each of the Permittees to have an ordinance in place to authorize or enable all requirements of the permit. Further, Section IV.A.4 of the permit requires the Permittees to present a review of legal authority to implement the requirements of the permit and the SWMP and to identify additional ordinances or regulatory mechanisms to be adopted.

4.1 Ordinances and Revisions to Ordinances

Each of the Permittees is supported by local ordinances that grant them the authority to implement the requirements of the NPDES MS4 Permit. The Permittees' existing stormwater ordinances, as well as the status of revisions to ordinances related to stormwater for the permit year, are listed in Table 4-1. When appropriate, modifications to ordinances were adopted within the 12 month target window.

Current stormwater ordinances for each municipal Permittee are found by searching the municode library website by location (https://library.municode.com). The existing legal authority of Permittees is adequate to prohibit illegal discharges to the MS4, to control spills, and to determine and require compliance with all current NPDES MS4 Permit program components.

Table 4-1: Las Vegas Valley MS4 Permittees' Local Stormwater Ordinances and Status of Revisions to Ordinances

Municipal Permittee	Local Stormwater Ordinance(s)	Annual Review Performed	Revisions to Ordinances
City of Henderson	Chapter 13.04 of the City of Henderson Municipal Code: Stormwater Regulations	Yes	Bill No. 3905 passed City Council 9/13/22 Updates to Title 14 on Nonfunction turf, spray irrigation, water waste violation fee, adoption AB356 Bill No. 3665 passed City Council 10/4 15.12.020 added definition: Illegal discharge means any direct or indirect non-storm water discharge to the storm drain system that is not exempted in Henderson Municipal Code Chapter 13.04.100. Bill No 3702 adopted 3/7/23 City Council Amend Section 14.14.040 - Golf Courses Reducing the golf course water budgets from 6.3 AFY per irrigated acre to 4.0 AFY per irrigated acre for all golf course April 18 City Council Development Code Updates effective 5/19/23. Changes included definition updates for turf, open space, etc.

Table 4-1: Las Vegas Valley MS4 Permittees' Local Stormwater Ordinances and Status of Revisions to Ordinances

Municipal Permittee	Local Stormwater Ordinance(s)	Annual Review Performed	Revisions to Ordinances
City of Las Vegas	Chapter 14.18 of the City of Las Vegas Municipal Code (LVMC): Stormwater and Stormwater Management	Yes	Rural Land Overlay for Chapter 19.07 were under development as part of zoning implementation for the 2050 Master Plan. City Council adoption on 9/7/22 for Urban Forestry Program and 8/17/22 for Wildland-Urban interface code, respectively. City Council adopted the Desert Edge and Outdoor Recreation Ordinance on 06/21/23. Open Space & Landscaping policies, Water Conservation ordinance, and LID measures for Chapter 19.07 are under development as part of zoning implementation for the 2050 Master Plan.
City of North Las Vegas	None	Yes	None
Clark County	Title 24, Chapter 24.40 Storm Sewer System Discharge / Other related ordinances include: Title 30 - Open Space Requirements in several chapters, 30.64 – Site Landscape and Screening Standards, 30.56.100 – Hillside Development, 25.10 – Building Water Conservation, 25.20 – The Energy Conservation, 30.24.080 – Design Standards and Guidelines, 30.24.090 – Special Development Standards, 30.52.050 – Improvement Standards, 30.68 - Site Environmental Standards, 30.52 - Off-Site Development Requirements, 11 - Abatement and Nuisances, 10.40 - Enforcement, 10.36 - Animals, noise, waste, restraint, sanitation & dead animals, 9.08 - Air Quality & Environmental Management	Yes	None
SWMP Target	Ordinances provide legal authority to Permittees to conduct SWMP activities		
	Ordinances reviewed annually		
	New or modified ordinances adopted within 12 months		

4.2 Compliance and Enforcement

Each Permittee requires compliance with its stormwater ordinances and regulations, as it does with all local jurisdiction ordinances. The public and business communities are made aware of local stormwater regulations through a variety of outreach measures, including the Las Vegas Valley NPDES MS4 Permit Public Outreach and Education Program (described in Section 8.0 of this Annual Report). Local ordinances and individual standard operating procedures regarding enforcement were reviewed by each Permittee during the permit year.

Regular inspection and monitoring procedures used by the Permittees to track compliance with stormwater ordinances prohibiting illegal dumping and discharges to the MS4 are presented in Section 9.0 and Section 11.0 of this Annual Report. Inspection and monitoring procedures used to

track compliance with stormwater ordinances specifically related to industrial sites and construction activities are presented in Section 12.0 and Section 13.0 of this Annual Report, respectively.

Stormwater inspectors, law enforcement officers, code enforcement officers, and / or pretreatment officials for COH, CLV, CNLV, and CC have the legal authority to enforce their jurisdiction's stormwater ordinances and other regulations. Municipal/County codes describe enforcement measures that are applied to violators of stormwater ordinances and regulations. Enforcement responses vary in severity from verbal warnings up to fines or judicial actions. The Southern Nevada Health District (SNHD) also enforces ordinances prohibiting dumping of solid waste, semisolid waste, liquid waste, and sewage to the Las Vegas Valley MS4. Members of the SQMC work together to coordinate cross-jurisdictional cooperation and compliance with all stormwater ordinances.



Section 5

Stormwater Management Approach

5 Stormwater Management Approach

The Las Vegas Valley NPDES MS4 Permit requires the Permittees to develop a Stormwater Management Plan (SWMP) that is suited to the unique local hydrologic, hydrogeologic, and regional conditions of the Las Vegas Valley. The SWMP is consistent with local and state laws, regulations, and water resources plans. The Las Vegas Valley SWMP that applies to the 2022-2023 MS4 permit year was approved by NDEP on November 1, 2011 and was implemented in November 2013. A copy of the current SWMP is provided at www.LVstormwater.com.

The Las Vegas Valley SWMP is uniquely tailored to local conditions and relies on a regional management approach. The SWMP framework utilizes common stormwater treatment train principles, which include progressively applied layers of controls from pollution prevention, onsite controls, maintenance measures, and treatment control. The Las Vegas Valley SWMP framework is outlined in Section 3.3 of the SWMP.

5.1 Overview of Best Management Practices

The SWMP provides details on the Best Management Practices (BMPs) that were adopted by the Permittees to address permit requirements. Many BMPs provide benefits to multiple NPDES MS4 programs. However, to simplify tracking and reporting for the SWMP and this Annual Report, BMPs that may provide benefits to multiple programs were only assigned to one. This program was determined based on the primary benefits that these BMPs provide. BMPs implemented in each program to comply with permit requirements are shown in Table 5-1.

Table 5-1: Best Management Practices Organized by Las Vegas Valley Stormwater Management Plan Program

Type	ID No.	Best Management Practices	Stormwater Management Plan Program						
			Public Outreach and Education Program	Source Control and MS4 Maintenance Program	Post-Construction Program for NDSR	Illicit Discharge and Elimination Program	Industrial Facility Monitoring and Control Program	Construction Site Program	Watershed Program
Maintenance Measures	MM-1	Street Sweeping		X					
	MM-2	Local Storm Drain System Maintenance		X					
	MM-3	Regional Detention Basin Maintenance		X					
	MM-4	Maintenance of Public Facilities		X					
Source Control	SC-1	Water Conservation (Drought) Ordinance		X					
	SC-2	Turf Conversion Program		X					
	SC-3	Public Employee Supervisor Fertilizer/ Pesticide Training		X					
	SC-4	Use of Alternate Products and Application Procedures		X					
	SC-5	Household Hazardous Waste Collection		X					
	SC-6	Commercial / Industrial Housekeeping Practices					X		
	SC-7	Ordinances Prohibiting Non-Stormwater Discharges and Littering		X					
	SC-8	Desert Dumping Controls		X					
	SC-9	Grease Interceptor Program					X		
	SC-10	Dust Control Measures		X					
	SC-11	Storm Drain Marking Program	X						
	SC-12	Spill Control Prevention Plan				X			
	SC-13	Industrial Pretreatment Program					X		
	SC-14	Trash Receptacle Enclosures		X					
	SC-15	Southern Nevada Health District Inspections					X		
	SC-16	Regional Water Quality Planning				X			
	SC-17	Pet Waste Management	X						
	SC-18	Stormwater Outfall Map			X				

Note: Cells marked with an “X” indicate the primary program that utilizes the identified BMP. However, the BMP may also be utilized by other MS4 Management Plan Programs.

Table 5-1: Best Management Practices Organized by Las Vegas Valley Stormwater Management Plan Program

Type	ID No.	Best Management Practices	Stormwater Management Plan Program						
			Public Outreach and Education Program	Source Control and MS4 Maintenance Program	Post-Construction Program for NDSR	Illicit Discharge and Elimination Program	Industrial Facility Monitoring and Control Program	Construction Site Program	Watershed Program
Source Control	SC-19	Sanitary Sewer Line Inspection and Replacement Program				X			
	SC-20	Construction Site BMP Guidance Manual						X	
	SC-21	Construction Site Inspections						X	
	SC-22	Construction Site Training Workshops						X	
	SC-23	Industrial Facility Stormwater Inspections					X		
	SC-24	Industrial Facility Stormwater Inventory					X		
	SC-25	Industrial Facility Stormwater Inspection Checklist					X		
	SC-26	Storm Channel Inspections				X			
	SC-27	Dry Weather Monitoring				X			
	SC-28	Industrial Facility Inspector Training Workshops					X		
	SC-29	Stormwater-Related Complaint Response				X			
	SC-30	LVV Stormwater Quality Website	X						
	SC-31	Public Outreach Events	X						
	SC-32	Elementary School Presentations	X						
	SC-33	Public Service Announcements / Flood Channel	X						
	SC-34	Brochures and Printed Material	X						
	SC-35	Stormwater Outfall Map with Areas of NDSR			X				
Site Design	SD-1	Open Space and Landscaping Objectives			X				
	SD-2	Rural Land Overlay			X				
	SD-3	Hillside Development Ordinances			X				

Note: Cells marked with an “X” indicate the primary program that utilizes the identified BMP. However, the BMP may also be utilized by other MS4 Management Plan Programs.

Table 5-1: Best Management Practices Organized by Las Vegas Valley Stormwater Management Plan Program

Type	ID No.	Best Management Practices	Stormwater Management Plan Program						
			Public Outreach and Education Program	Source Control and MS4 Maintenance Program	Post-Construction Program for NDSR	Illicit Discharge and Elimination Program	Industrial Facility Monitoring and Control Program	Construction Site Program	Watershed Program
Site Design	SD-4	Sustainability and Green Building Initiatives			X				
	SD-5	Covered Fuel Areas			X				
	SD-6	Raised Fuel Areas			X				
	SD-7	Emergency Shut-Off Switch and Shear Valve			X				
	SD-8	Standard Drainage Design Criteria			X				
	SD-9	Parking Lot Low Impact Development (LID) Measures			X				
	SD-10	LID Measures			X				
Treatment Control	TC-1	Regional Detention Basins			X				
	TC-2	Regional Channel Lining			X				
	TC-3	Las Vegas Wash Stabilization Structures			X				
	TC-4	Sand / Oil Separator			X				
	TC-5	Sand Filter			X				
	TC-6	Regional Detention Basin Retrofit			X				

Note: Cells marked with an “X” indicate the primary program that utilizes the identified BMP. However, the BMP may also be utilized by other MS4 Management Plan Programs.



Section 6

Source Identification

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6 Source Identification

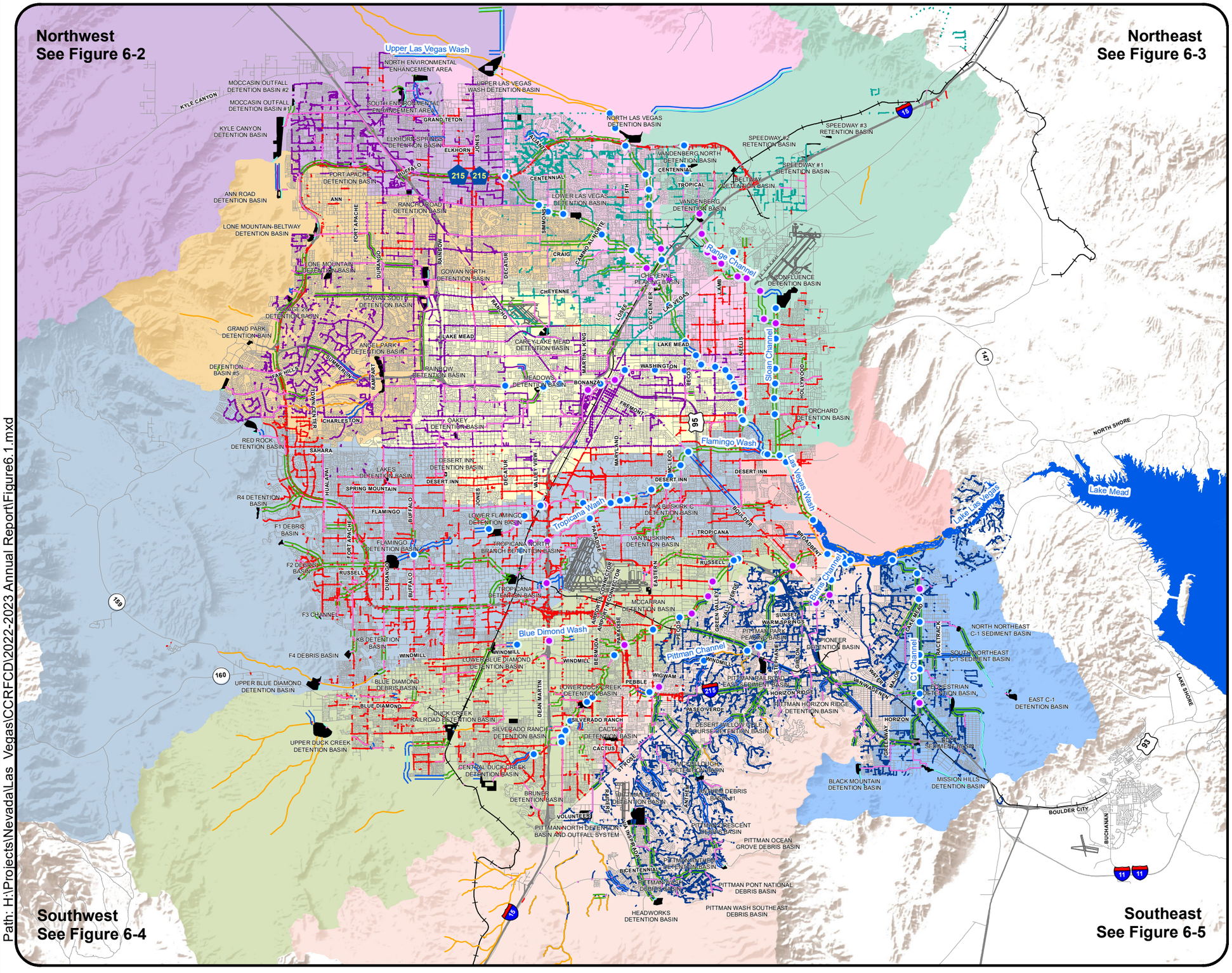
Section IV.B.1 of the Las Vegas Valley NPDES MS4 Permit requires the preparation of a map of the existing regional storm drain system to depict major stormwater outfalls in the area of coverage. During the permit year, the stormwater system map was updated to assist Permittees, regulatory agencies, and others in determining where potential stormwater quality problems may exist or originate. The map is based on existing computerized inventory information from the Permittees that defines the existing drainage and flood control system.

The map was prepared using regional information from the CCRFCD Geographic Information System (GIS), which was developed for the Las Vegas Valley Master Plan Update, as well as GIS data available from the individual Permittees. The stormwater system map depicts changes resulting from new development and updates to the flood control infrastructure. Locations of regional detention basins (constructed and under construction), channels (lined and unlined), washes, and outfall locations for the Las Vegas Valley stormwater system are shown in Figure 6-1.

To provide more detail, Figure 6-2 through Figure 6-5 depict sectional areas of the Las Vegas Valley (northwest, northeast, southwest, and southeast, respectively). The overall stormwater system map meets the permit requirements for source identification of major outfalls that discharge into waters of the United States.

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Figure 6-1
Las Vegas Valley Stormwater System: Overview



Legend

- Potential Outfall Location
- Potential Outfall Location in Industrial Area

Regional Facilities

- Natural Channels/Washes
- Unlined Stabilized Channels
- Concrete-Lined Channels
- Levee
- Storm Drains

Local Facilty

- Clark County Stormwater Infrastructure
- City of Las Vegas Stormwater Infrastructure
- City of North Las Vegas Stormwater Infrastructure
- City of Henderson Stormwater Infrastructure

Detention Basins

- Completed
- Under Construction
- Airports
- Streets
- Railroads

Watersheds

- C1
- CENTRAL
- DUCK CREEK
- FLAMINGO/TROPICANA
- GOWAN
- LOWER LAS VEGAS WASH
- LOWER NORTHERN
- PITTMAN
- RANGE WASH
- UPPER NORTHERN

N W E S

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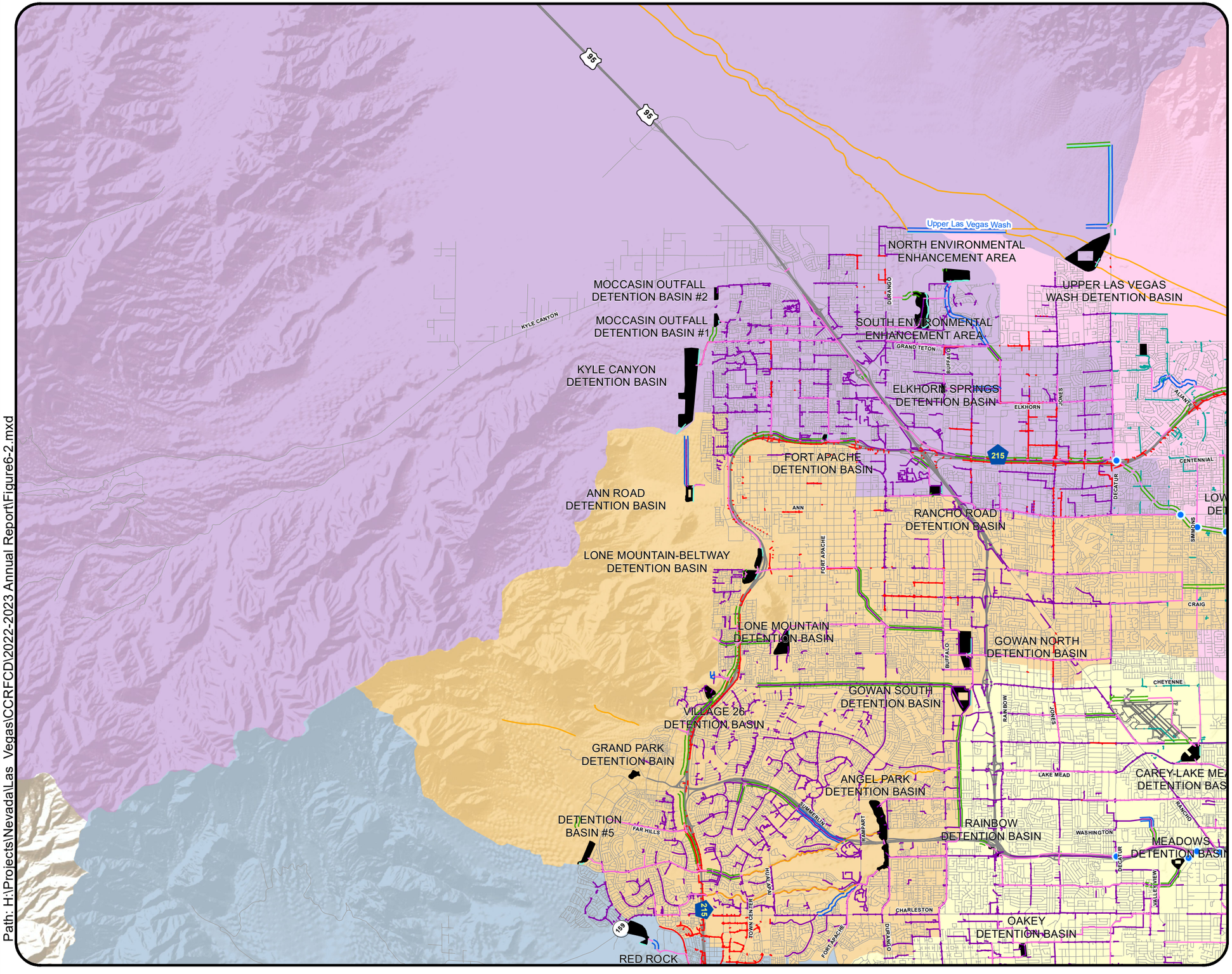
Scale in Miles

Service Layer Credits: Sources: Esri, USGS, NOAA

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Figure 6-2
Las Vegas Valley Stormwater System: Northwest



Legend

- Potential Outfall Location
- Potential Outfall Location in Industrial Area

Regional Facilities

- Natural Channels/Washes
- Unlined Stabilized Channels
- Concrete-Lined Channels
- Levee
- Storm Drains

Local Facilty

- Clark County Stormwater Infrastructure
- City of Las Vegas Stormwater Infrastructure
- City of North Las Vegas Stormwater Infrastructure
- City of Henderson Stormwater Infrastructure

Detention Basins

- Completed
- Under Construction
- Airports
- Streets
- Railroads

Watersheds

- C1
- CENTRAL
- DUCK CREEK
- FLAMINGO/TROPICANA
- GOWAN
- LOWER LAS VEGAS WASH
- LOWER NORTHERN
- PITTMAN
- RANGE WASH
- UPPER NORTHERN

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Scale in Miles

Service Layer Credits: Sources: Esri, USGS, NOAA

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Figure 6-3
Las Vegas Valley Stormwater System: Northeast

Legend

- Potential Outfall Location
- Potential Outfall Location in Industrial Area

Regional Facilities

- Natural Channels/Washes
- Unlined Stabilized Channels
- Concrete-Lined Channels
- Levee
- Storm Drains

Local Facilty

- Clark County Stormwater Infrastructure
- City of Las Vegas Stormwater Infrastructure
- City of North Las Vegas Stormwater Infrastructure
- City of Henderson Stormwater Infrastructure

Detention Basins

- Completed
- Under Construction
- Airports
- Streets
- Railroads

Watersheds

- C1
- CENTRAL
- DUCK CREEK
- FLAMINGO/TROPICANA
- GOWAN
- LOWER LAS VEGAS WASH
- LOWER NORTHERN
- PITTMAN
- RANGE WASH
- UPPER NORTHERN

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Scale in Miles

Service Layer Credits: Sources: Esri, USGS, NOAA

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VEGAS
ION BASIN
NORTH LAS VEGAS
DETENTION BASIN
VANDENBERG NORTH
DETENTION BASIN
SPEEDWAY #2
RETENTION BASIN
SPEEDWAY #3
RETENTION BASIN
SPEEDWAY #1
DETENTION BASIN
BELTWAY
DETENTION BASIN
LOWER LAS VEGAS
DETENTION BASIN
VANDENBERG
DETENTION BASIN
CHEYENNE
PEAKING BASIN
CONFLUENCE
DETENTION BASIN
CAREY-LAKE MEAD
DETENTION BASIN
MEADOWS
DETENTION BASIN
ORCHARD
DETENTION BASIN
Lower Las Vegas Wash
Upper Las Vegas Wash
Range Channel
Las Vegas Wash
Sloan Channel
GRAND TETON
ELKHORN
ALIANTE
CENTENNIAL
CAMINO EL DORADO
TROPICAL
ANN
SIMMONS
LOSEE
CRAIG
CHEYENNE
CIVIC CENTER
5TH
LAKE MEAD
LAKE MEAD SOUTH
RANCHO
MARTIN L KING
EASTERN
PECOS
LAMB
BONANZA
NELLIS
LAS VEGAS
WASHINGTON
HOLLYWOOD
VALLEY VIEW
CHARLESTON
FREMONT
MARYLAND
SAHARA
NORTH SHORE
215
15
95
147

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Figure 6-4
Las Vegas Valley Stormwater System: Southwest

RED ROCK DETENTION BASIN
R4 DETENTION BASIN
F1 DEBRIS BASIN
F2 DEBRIS BASIN
F3 CHANNEL
F4 DEBRIS BASIN
UPPER BLUE DIAMOND DETENTION BASIN
UPPER DUCK CREEK DETENTION BASIN
KB DETENTION BASIN
BLUE DIAMOND DEBRIS BASIN
LAKES DETENTION BASIN
OAKEY DETENTION BASIN
DESERT INN DETENTION BASIN
FLAMINGO DETENTION BASIN
LOWER FLAMINGO DETENTION BASIN
TROPICANA NORTH BRANCH DETENTION BASIN
TROPICANA DETENTION BASIN
LOWER BLUE DIAMOND DETENTION BASIN
DUCK CREEK RAILROAD DETENTION BASIN
CENTRAL DUCK CREEK DETENTION BASIN
BRUNER DETENTION BASIN
PITTMAN NORTH DETENTION BASIN AND OUTFALL SYSTEM
LOWER DUCK CREEK DETENTION BASIN
SILVERADO RANCH DETENTION BASIN
CACTUS DETENTION BASIN
Flamingo Wash
Tropicana Wash
Blue Dimond Wash
Duck Creek Channel

Legend

- Potential Outfall Location
- Potential Outfall Location in Industrial Area

Regional Facilities

- Natural Channels/Washes
- Unlined Stabilized Channels
- Concrete-Lined Channels
- Levee
- Storm Drains

Local Facilty

- Clark County Stormwater Infrastructure
- City of Las Vegas Stormwater Infrastructure
- City of North Las Vegas Stormwater Infrastructure
- City of Henderson Stormwater Infrastructure

Detention Basins

- Completed
- Under Construction

- Airports
- Streets
- Railroads

Watersheds

- C1
- CENTRAL
- DUCK CREEK
- FLAMINGO/TROPICANA
- GOWAN
- LOWER LAS VEGAS WASH
- LOWER NORTHERN
- PITTMAN
- RANGE WASH
- UPPER NORTHERN

N W E S

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Scale in Miles

Service Layer Credits: Sources: Esri, USGS, NOAA

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Figure 6-5
Las Vegas Valley Stormwater System: Southeast

Legend

- Potential Outfall Location
- Potential Outfall Location in Industrial Area

Regional Facilities

- Natural Channels/Washes
- Unlined Stabilized Channels
- Concrete-Lined Channels
- Levee
- Storm Drains

Local Facilty

- Clark County Stormwater Infrastructure
- City of Las Vegas Stormwater Infrastructure
- City of North Las Vegas Stormwater Infrastructure
- City of Henderson Stormwater Infrastructure

Detention Basins

- Completed
- Under Construction

- Airports
- Streets
- Railroads

Watersheds

- C1
- CENTRAL
- DUCK CREEK
- FLAMINGO/TROPICANA
- GOWAN
- LOWER LAS VEGAS WASH
- LOWER NORTHERN
- PITTMAN
- RANGE WASH
- UPPER NORTHERN

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Scale in Miles

Service Layer Credits: Sources: Esri, USGS, NOAA

2022-2023 Annual Report

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Section 7

Stormwater Monitoring Program

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7 Stormwater Monitoring Program

Section V.A of the NPDES MS4 Permit for the Las Vegas Valley describes the requirements for a monitoring program, which includes the evaluation of available water quality characterization data for the permit area. Sections V.C.3.e and V.C.3.f include additional requirements for reporting on the monitoring program. This section of the Annual Report includes data collected from the dry weather monitoring effort (part of the Illicit Discharge Detection and Elimination Program, described in Section 11.0 of this Annual Report), as well as data from the Wet Weather (Stormwater) Monitoring Program, as required by the MS4 permit year 2022-2023.

7.1 Dry Weather Monitoring (SC-27)

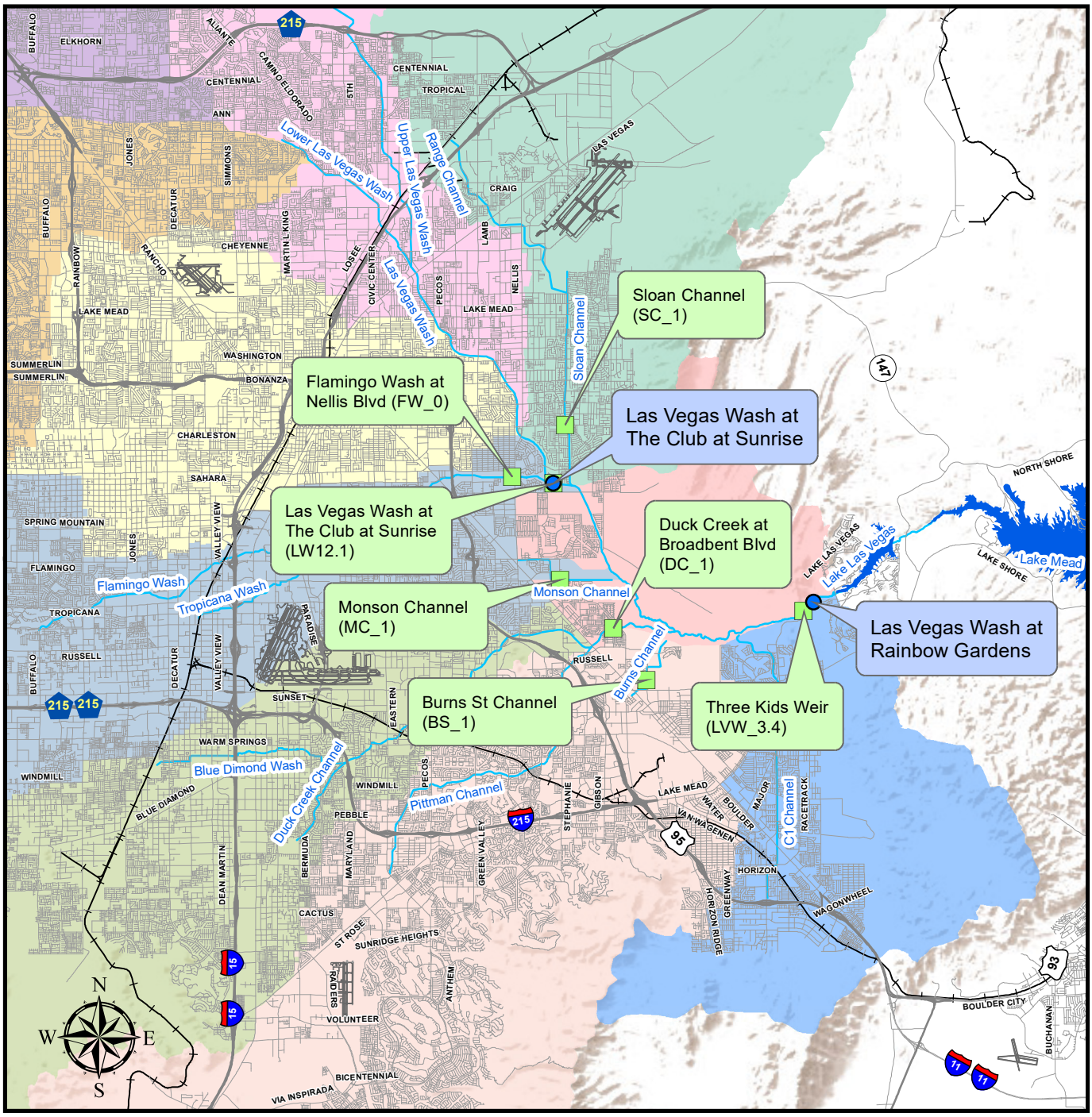
Dry weather monitoring for the Las Vegas Valley NPDES MS4 Permit has two primary objectives:

1. To target potential illegal or illicit discharges to the MS4 (e.g., from industrial activity).
2. To add to the baseline of dry weather surface water quality data, against which future changes can be measured and which can be used to estimate urban pollutant loading to receiving waters.

7.1.1 Dry Weather Sampling Procedures

SNWA conducted dry weather sampling under its Urban Tributaries Water Quality Monitoring Program. Data were shared with CCRFCD through a cooperative agreement and were used to comply with the NPDES MS4 Permit for the 2022-2023 MS4 permit year. The Urban Tributaries Water Quality Monitoring Program followed the same protocols used by SNWA in previous years, which consisted of quarterly grab sampling at each of six monitoring sites, located on tributaries to the Las Vegas Wash and on the Las Vegas Wash. All samples were properly preserved in accordance with Code of Federal Regulations 40 CFR 136 and were analyzed using approved methods. Dry weather monitoring sites are identified in Figure 7-1 and include:

- Flamingo Wash at Nellis Boulevard (FW_0)
- Sloan Channel at Charleston Boulevard (SC_1)
- Monson Channel at Stephanie Street (MC_1)
- Duck Creek at Broadbent Boulevard (DC_1)
- Las Vegas Wash at The Club at Sunrise (LW12.1)
- Burns Street Channel (BS_1)



Legend

- Wet Weather Sampling Point
- Dry Weather Sampling Point
- Airports
- Streets
- Railroads
- Lakes
- Washes

Watersheds

- C1
- CENTRAL
- DUCK CREEK
- FLAMINGO/TROPICANA
- GOWAN
- LOWER LAS VEGAS WASH
- LOWER NORTHERN
- PITTMAN
- RANGE WASH
- UPPER NORTHERN

0 1 2 4 6

Scale in Miles

Service Layer Credits: Sources: Esri, USGS, NOAA

Figure 7-1
Dry & Wet Weather Monitoring Sites
2022-2023 Annual Report

Quarterly samples were collected in July, October, January, and April of the MS4 permit year at dry weather sampling sites. Single grab samples were collected at each monitoring site during dry weather. Most constituents were analyzed by the Southern Nevada Water System (SNWS), and Silver State Analytical Laboratories. However, selenium analyses were performed by SNWA under a separate monitoring program.

7.1.2 Dry Weather Constituents Analyzed

The list of dry weather constituents analyzed, and laboratory methods used for the 2022-2023 MS4 permit year are shown in Table 7-1.

Table 7-1: Constituents and Analytical Methods in Dry Weather Samples for the Current MS4 Permit Year (2022-2023)

Analytical Method	Constituents Analyzed
SM 2320B	Alkalinity, bicarbonate, carbonate
300.1	Bromide, chlorate
200.7	Calcium, magnesium, potassium, silica, sodium, boron
300	Chloride, sulfate, fluoride
SM 2510B	Electrical conductivity
9222D	Fecal coliform
9230C (3c)	Fecal Streptococcus
515.3	Herbicides
200.8	Iron, selenium, aluminum, antimony, barium, beryllium, cadmium, chromium, copper, copper (dissolved), lead, lead (dissolved), arsenic, manganese, nickel, silver, thallium, zinc, zinc (dissolved)
245.1	Mercury
353.2	Nitrate-N, nitrite-N
4524.2, 551.1, 556, 624	Organics
508, 8141A	Pesticides
SM 4500-HB	pH
SM 5540C	Surfactants
SM 2540C	TDS
351.2	Total Kjeldahl Nitrogen (TKN)
365.1, 365.3	Total phosphorous-P, orthophosphate-P
SM 2540D	TSS
8270C, 525.2, 524.2	Volatile Organic Compounds

Analytical results from the 2022-2023 dry weather sampling program are provided in Table 7-2, with detected dry weather organics data presented in more detail in Table 7-3. A comprehensive dataset of all historical SNWA dry weather sampling data, collected from 1991-2023, is provided in Appendix A.

7.2 Wet Weather Monitoring

Wet weather (stormwater) monitoring for the Las Vegas Valley NPDES MS4 Permit has two primary objectives:

1. To characterize the water quality of stormwater discharges.
2. To add to the baseline of wet weather surface water quality data, against which future changes can be measured and which can be used to assess the appropriateness of existing BMPs.

7.2.1 Wet Weather Sampling Procedures

The wet weather monitoring program for MS4 permit year 2022-2023 followed the same protocols used in previous years. All samples were properly preserved and analyzed using approved methods in accordance with 40 CFR 136 and were analyzed within the maximum allowable holding times. Sampling is conducted at the following locations, as displayed in Figure 7-1:

- Las Vegas Wash at The Club at Sunrise (The Club at Sunrise)
- Las Vegas Wash at Rainbow Gardens (Rainbow Gardens)

The wet weather sampling procedure for the 2022-2023 MS4 permit year included the goal of collecting three samples per year, with a maximum of ten samples per year, from each of the two sample sites during significant storm events. A significant storm event was defined as having a total rainfall depth of 0.16 inches at any rain gauge within the drainage area tributary to a monitoring station. To generate sufficient runoff for sampling, a storm depth of at least 0.16 inches was required, based on past experience. The sampling team used both the CCRFCD website (https://www.regionalflood.org) and the USGS website (http://waterdata.usgs.gov/nv/nwis/current/?type=flow) to view rainfall maps and stream gauge water levels in the Las Vegas Valley in real time. This data helped determine if the storm was likely to meet the stormwater sampling criteria. During the 2022-2023 MS4 permit year this level of rain event occurred three times at The Club at Sunrise and the Rainbow Gardens site. Sampling crews were mobilized when available data indicated the potential for runoff producing storm events. Storm events of a significant size would trigger the actuators, installed at both sampling sites, to collect samples.

The collected stormwater samples were brought back to the in-office laboratory for preparation. Composite samples were prepared for each site by either combining approximately equal volumes from each bottle, where variable stormwater volumes were included in the composite sample. For each sample in the 2022-2023 MS4 permit year, composite samples were prepared, and volumes were individually extracted into laboratory sample bottles and preserved, according to laboratory/method requirements. Samples were then delivered to Silver State Analytical Laboratories, a laboratory certified by the State of Nevada for each constituent analyzed.

Table 7-2: Dry Weather Monitoring Constituent Data for the Current MS4 Permit Year (2022-2023)

Parameter	Units	Burns Street Channel BS_1					Duck Creek DC_1					Flamingo Wash FW_0				
		Jul 22	Oct 22	Jan 23	April 23	Median	Jul 22	Oct 22	Jan 23	April 23	Median	Jul 22	Oct 22	Jan 23	April 23	Median
NPDES Constituents [a]																
Total Dissolved Solids (TDS)	mg/L	3,550	3,120	3,180	3,260	3,220	4,740	4,690	4,390	4,630	4,660	2,790	2,550	2,790	2,780	2,785
Total Suspended Solids (TSS)	mg/L	9.0	< 6.0	< 6.0	< 6.0	< 6.0	< 5.0	< 6.0	< 6.0	< 6.0	< 6.0	< 5.0	< 6.0	16.6	120.0	11.3
Total Phosphorus-P	mg/L	0.314	0.021	0.087	0.051	0.07	0.751	0.022	0.06	0.029	0.046	0.15	0.02	0.07	0.14	0.10
Orthophosphate-P	mg/L	< 0.05	0.004	< 0.014	0.005	0.01	< 0.050	0.006	0.006	0.003	0.006	0.109	0.002	0.008	< 0.001	0.005
Nitrite, Nitrogen by IC	mg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.14	< 0.10	< 0.10	0.10	< 0.10
Nitrate-N by IC	mg/L	4.11	5.5	5.2	4.7	5.0	5.3	5.7	6.3	6.0	5.8	3.1	4.2	5.0	3.6	3.9
Total Kjeldahl Nitrogen (TKN)	mg/L	1.15	NA	0.33	NA	0.7	1.07	NA	0.38	NA	0.72	1.21	NA	0.28	NA	0.74
Copper, Total, ICAP	mg/L	0.002	0.005	< 0.015	< 0.050	0.010	0.001	< 0.005	0.015	0.050	0.010	0.005	< 0.005	< 0.015	< 0.050	< 0.010
Lead, Total, ICAP	mg/L	< 0.0013	< 0.0003	< 0.0009	< 0.0030	< 0.0011	< 0.0013	< 0.0003	< 0.0009	< 0.0030	< 0.0011	< 0.0013	< 0.0003	< 0.0009	< 0.0030	< 0.0011
Zinc, Total, ICAP	mg/L	0.0074	< 0.005	0.007	< 0.050	0.007	0.011	< 0.005	< 0.015	< 0.050	< 0.013	0.010	0.009	0.027	< 0.050	0.018
Copper, Dissolved, ICAP	mg/L	0.029	< 0.005	< 0.015	< 0.025	< 0.020	0.0016	< 0.0050	< 0.0150	< 0.0250	< 0.0100	< 0.0037	< 0.0050	< 0.0150	< 0.0250	< 0.010
Lead, Dissolved, ICAP	mg/L	< 0.0013	< 0.0003	< 0.0009	< 0.0015	< 0.0011	< 0.0013	< 0.0003	< 0.0009	< 0.0015	< 0.0011	< 0.0013	< 0.0003	< 0.0009	< 0.0015	< 0.0011
Zinc, Dissolved, ICAP	mg/L	< 0.018	< 0.005	< 0.015	< 0.025	< 0.02	0.022	< 0.005	< 0.015	< 0.025	< 0.019	0.013	< 0.005	< 0.015	< 0.025	< 0.01
Boron, Total, ICAP	mg/L	1.78	NA	NA	NA	1.78	2.18	NA	NA	NA	2.18	0.68	NA	NA	NA	0.68
Turbidity	NTU	5.0	4.0	1.82	7.22	4.50	8.0	5.0	5.2	8.6	6.58	3.3	8.0	15.4	64.1	11.70
Fecal Coliform Bacteria	cfu/100mL	582	1,633	< 20	223	403	13,300	957	< 20	240	599	12,400	5,467	580	6,000	5,734
Fecal Streptococci	cfu/100mL	NA					NA					NA				
SNWA Expansion Constituents [b]																
Aluminum, Total, ICAP	mg/L	0.380	0.015	< 0.015	< 0.050	< 0.033	0.060	0.018	0.034	< 0.050	0.042	< 0.050	0.035	0.298	0.632	0.174
Antimony, Total, ICAP	mg/L	< 0.0013	< 0.0004	< 0.0012	< 0.0040	< 0.0012	< 0.0013	< 0.0004	< 0.0012	< 0.0040	< 0.0012	< 0.0013	< 0.0004	< 0.0012	< 0.0040	< 0.0012
Arsenic, Total, GF	mg/L	0.033	0.044	0.038	0.033	0.036	0.044	0.062	0.049	0.031	0.047	0.005	0.005	0.005	0.006	0.005
Barium, Total, ICAP	mg/L	0.0362	0.0296	< 0.060	< 0.200	0.048	0.023	< 0.02	< 0.06	0.200	0.041	0.045	0.040	< 0.060	< 0.20	0.052
Beryllium, Total, ICAP	mg/L	< 0.0013	< 0.0004	< 0.0012	< 0.0040	< 0.0012	< 0.0013	< 0.0004	< 0.0012	< 0.0040	< 0.0012	< 0.0013	< 0.0004	< 0.0012	< 0.0040	< 0.0012
Bicarbonate Alkalinity as HCO_3	mg/L	74	32.8	151	144	109	204	193	191	189	192	200	187	203	166	194
Bromide	mg/L	0.75	0.91	0.78	0.77	0.77	0.70	0.72	0.77	0.84	0.74	0.37	0.44	0.49	0.49	0.47
Carbonate, Alkalinity as $CaCO_3$	mg/L	NA	37.9	< 2	10.1	10	NA	< 2	< 2	< 2	< 2	NA	14.4	5.22	3.86	5
Cadmium, Total, ICAP	mg/L	< 0.0013	< 0.0005	< 0.0015	< 0.0050	< 0.0014	< 0.0013	< 0.0005	< 0.0015	< 0.0050	< 0.0014	< 0.0013	< 0.0005	< 0.0015	< 0.0050	< 0.0014
Calcium, Total, ICAP	mg/L	326	275	335	352	331	478	461	459	410	460	299	294	320	316	308
Chlorate, IC	mg/L	2.61	NA	NA	NA	2.61	0.10	NA	NA	NA	0.10	2.14	NA	NA	NA	2.14
Chloride	mg/L	549	543	463	389	503	618	603	544	515	574	313	274	315	332	314
Chromium, Total, ICAP	mg/L	0.0040	0.0047	< 0.0090	< 0.030	< 0.0069	< 0.0013	< 0.003	< 0.0090	< 0.030	< 0.006	< 0.001	< 0.003	< 0.009	< 0.030	< 0.006
Fluoride	mg/L	NA	1.07	1.11	1.10	1.10	NA	1.64	1.26	1.59	1.59	NA	0.49	0.47	0.53	0.49
Iron, Total, ICAP	mg/L	0.12	< 0.10	< 0.05	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.36	0.85	0.23
Magnesium, Total, ICAP	mg/L	145	154	178	187	166.0	243	302	273	230	258	153	183	198	185	184
Manganese, Total, ICAP	mg/L	0.011	< 0.005	< 0.015	< 0.050	< 0.013	0.009	0.012	< 0.015	< 0.050	< 0.013	0.003	0.006	0.016	0.050	0.011
Mercury	mg/L	< 0.00032	NA	< 0.00032	NA	< 0.00032	< 0.00032	NA	< 0.00032	NA	< 0.00032	< 0.00032	NA	< 0.00032	NA	< 0.00032
Nickel, Total, ICAP	mg/L	0.010	< 0.005	< 0.015	< 0.050	< 0.013	0.016	0.006	< 0.015	< 0.050	< 0.016	0.0112	< 0.005	< 0.015	< 0.050	< 0.013
pH (field)	units	8.37	8.74	8.40	8.46	8.43	6.86	8.42	8.46	7.63	8.03	8.09	8.03	8.35	8.53	8.22
Potassium, Total, ICAP	mg/L	30.6	37.6	38.2	38.3	38	62.2	82.6	63.7	49.6	63.0	23.9	27.8	29.9	31.7	28.9
Silica as SiO_2	mg/L	55.0	61.0	59.3	59.0	59	61.5	72.0	58.3	37.7	59.9	32.6	33.2	36.9	31.2	32.9
Selenium, Total [c]	mg/L	NA	0.011	0.008	< 0.010	0.010	NA	0.016	0.015	0.012	0.015	NA	0.013	0.014	0.012	0.013
Selenium, Dissolved	mg/L	0.012	0.011	0.009	0.007	0.010	0.014	0.017	0.015	0.013	0.014	0.014	0.013	0.015	0.013	0.013
Silver, Total, ICAP	mg/L	< 0.001	< 0.005	< 0.015	< 0.050	< 0.010	< 0.001	< 0.005	< 0.015	< 0.050	< 0.010	< 0.001	< 0.005	< 0.015	< 0.050	< 0.010
Sodium, Total, ICAP	mg/L	481	490	389	361	435	490	494	464	401	477	238	231	258	269	248
Conductance (Field)	µS/cm	4,349	4,204	4,421	4,343	4,346	5,763	4,507	5,619	5,523	5,571	3,343	3,220	3,400	3,420	3,372
Sulfate	mg/L	1,570	1,440	1,570	1,460	1,515	2,640	2,510	2,170	2,180	2,345	1,330	1,340	1,430	1,170	1,335
Surfactants	mg/L	0.076	NA	NA	NA	0.08	< 0.069	NA	NA	NA	< 0.069	< 0.069	NA	NA	NA	< 0.069
Thallium, Total, ICAP	mg/L	< 0.0013	< 0.0002	< 0.0006	< 0.0020	< 0.0009	< 0.0013	< 0.0002	< 0.0006	< 0.0020	< 0.0009	< 0.0013	< 0.0002	< 0.0006	< 0.0020	< 0.0009

Notes:
NA = Not Available / Not Analyzed
ND = Non-detect / Not Detected above laboratory method reporting limit
[a] NPDES Constituents = Constituents originally analyzed under the Las Vegas Valley MS4 Dry Weather Sampling Program (starting in 1991)
[b] SNWA Expansion Constituents = Constituents added to the list of analytes by SNWA as part of the Urban Tributary Water Quality Monitoring Program
[c] Selenium data reported from SNWA's Monthly Tributary Sampling program, using the sample date closest to the quarterly, Urban Tributary Water Quality Sampling program collection date

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Table 7-2: Dry Weather Monitoring Constituent Data for the Current MS4 Permit Year (2022-2023) Continued

Parameter	Units	Las Vegas Wash The Club at Sunrise LW12.1					Monson Channel MC_1					Sloan Channel SC_1					Median of Six Sites 2022-2023	Historical Median 1991-2023	Historical Range 1991-2023	
		Jul 22	Oct 22	Jan 23	April 23	Median	Jul 22	Oct 22	Jan 23	April 23	Median	Jul 22	Oct 22	Jan 23	April 23	Median				
NPDES Constituents [a]																				
Total Dissolved Solids (TDS)	mg/L	4,340	3,280	4,230	4,090	4,160	3,900	3,620	3,340	3,660	3,640	1,050	914	950	964	957	3,125	3,355	500	- 6,760
Total Suspended Solids (TSS)	mg/L	27.0	18.6	< 6.0	< 6.0	12.3	< 5.0	< 6.0	< 6.0	< 6.0	< 6.0	< 5.0	< 6.0	< 6.0	6.8	< 6.0	< 10	< 5.0	3	- 3,600
Total Phosphorus-P	mg/L	0.40	0.18	0.04	0.04	0.11	0.31	< 0.02	0.04	0.06	0.05	0.24	0.10	0.06	0.07	0.09	0.13	0.024	< 0.001	- 45
Orthophosphate-P	mg/L	< 0.050	0.087	0.006	0.002	0.028	< 0.050	0.003	0.007	0.002	0.005	< 0.050	0.076	0.021	0.009	0.035	0.05	0.01	< 0.00083	- 11
Nitrite, Nitrogen by IC	mg/L	< 0.10	0.16	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.02	< 0.02	0.06	< 0.04	< 0.10	< 0.10	< 0.01	- 76
Nitrate-N by IC	mg/L	1.8	1.7	3.8	2.8	2.3	3.2	4.2	3.9	4.3	4.1	3.6	4.4	4.3	3.9	4.1	4.1	4.37	< 0.08	- 110
Total Kjeldahl Nitrogen (TKN)	mg/L	1.43	NA	0.23	NA	0.83	1.04	NA	0.20	NA	0.62	1.49	NA	0.85	NA	1.17	1.10	0.04	< 0.007	- 25
Copper, Total, ICAP	mg/L	0.003	0.006	< 0.015	< 0.050	0.011	0.001	< 0.005	< 0.015	< 0.050	< 0.010	0.027	0.006	< 0.015	< 0.050	< 0.021	0.003	< 0.023	< 0.00013	- 1.1
Lead, Total, ICAP	mg/L	< 0.0013	< 0.0003	< 0.0009	< 0.0030	< 0.0011	< 0.0013	< 0.0003	< 0.0009	< 0.0030	< 0.0011	< 0.0013	< 0.0003	< 0.0009	< 0.0030	< 0.0011	< 0.0013	< 0.0003	< 0.000017	- 0.11
Zinc, Total, ICAP	mg/L	0.014	0.009	< 0.015	< 0.050	< 0.014	0.010	0.005	0.015	0.05	0.013	0.052	0.039	0.043	< 0.050	0.046	0.011	0.0075	< 0.0001	- < 0.5
Copper, Dissolved, ICAP	mg/L	0.0019	< 0.0050	< 0.0150	0.0250	< 0.010	< 0.0013	< 0.0050	< 0.0150	< 0.0250	< 0.010	0.0026	< 0.005	< 0.015	< 0.025	< 0.010	0.0025	< 0.015	< 0.00013	- 1.00
Lead, Dissolved, ICAP	mg/L	< 0.0013	< 0.0003	< 0.0009	< 0.0015	< 0.0011	< 0.0013	< 0.0003	< 0.0009	< 0.0015	< 0.0011	< 0.0013	< 0.0003	< 0.0009	< 0.0015	< 0.0011	< 0.0013	< 0.0002	< 0.000031	- < 0.1
Zinc, Dissolved, ICAP	mg/L	0.015	0.006	< 0.015	< 0.025	< 0.01	0.015	< 0.005	< 0.015	0.025	0.015	0.048	0.037	0.027	< 0.025	0.032	< 0.01	< 0.005	< 0.0008	- 0.09
Boron, Total, ICAP	mg/L	1.30	NA	NA	NA	1.30	1.33	NA	NA	NA	1.33	0.30	NA	NA	NA	0.30	1.4	1.45	0.09	- 4.4
Turbidity	NTU	4.0	8.0	4.3	6.6	5.4	1.0	6.0	5.0	7.3	6	2.0	19.0	1.3	12.3	7.2	2.51	1.49	0.051	- 1,000
Fecal Coliform Bacteria	cfu/100mL	6,500	8,200	< 20	1,040	3,770	300	6,400	420	228	360	9,600	393	< 20	< 20	207	3,000	460	< 3	- 540,000
Fecal Streptococci	cfu/100mL			NA					NA					NA			NA	246	< 1	- 25,000
SNWA Expansion Constituents [b]																				
Aluminum, Total, ICAP	mg/L	0.187	0.026	< 0.015	< 0.050	< 0.04	< 0.050	0.008	0.035	0.159	0.043	< 0.05	0.019	< 0.015	< 0.05	< 0.03	< 0.05	< 0.0238	< 0.0001	- 30
Antimony, Total, ICAP	mg/L	0.0014	0.0006	< 0.0012	< 0.0040	< 0.001	< 0.0013	< 0.0004	< 0.0012	< 0.004	< 0.001	0.001	0.001	0.001	< 0.004	0.001	< 0.001	< 0.00052	< 0.000045	- 0.013
Arsenic, Total, GF	mg/L	0.015	0.013	0.016	0.015	0.015	0.011	0.010	0.011	0.011	0.011	< 0.001	0.001	0.001	< 0.003	< 0.001	0.010	0.013	< 0.0004	- 0.11
Barium, Total, ICAP	mg/L	0.029	0.045	< 0.060	< 0.20	0.05	0.018	< 0.02	< 0.060	< 0.200	< 0.040	0.060	0.053	0.117	< 0.200	0.088	0.034	0.040	0.014	- 2
Beryllium, Total, ICAP	mg/L	< 0.0013	< 0.0004	< 0.0012	< 0.0040	< 0.0012	< 0.0013	< 0.0004	< 0.0012	< 0.0040	< 0.0012	< 0.0013	< 0.0004	< 0.0012	< 0.0040	< 0.0012	< 0.0007	< 0.0001	< 0.000033	- 0.002
Bicarbonate Alkalinity as HCO_3	mg/L	228	180	245	206	217	186	167	192	146	177	152	129	122	73.9	126	218	215	45	- 850
Bromide	mg/L	0.89	0.78	1.09	1.07	0.98	0.62	0.71	0.68	0.76	0.70	< 0.10	0.05	0.06	0.09	0.07	0.75	0.83	0.02	- 1.7
Carbonate, Alkalinity as $CaCO_3$	mg/L	NA	< 40.2	< 2.0	12.2	< 12.2	NA	6.8	< 2.0	24.2	< 6.8	NA	9.9	12.3	44.9	12.3	< 5	< 2.0	< 0.56	- 240
Cadmium, Total, ICAP	mg/L	< 0.0013	< 0.0005	< 0.0015	< 0.0050	< 0.0014	< 0.0013	< 0.0005	< 0.0015	< 0.0025	< 0.0014	< 0.0013	< 0.0005	< 0.0015	< 0.0050	< 0.0014	< 0.0007	< 0.0001	< 0.000041	- 0.005
Calcium, Total, ICAP	mg/L	249	212	270	242	246	417	398	369	412	405	81.5	77.7	80.1	81.1	80.6	312	316	47	- 768
Chlorate, IC	mg/L	0.10	NA	NA	NA	0.10	0.25	NA	NA	NA	0.25	0.11	NA	NA	NA	0.11	0.29	0.26	0.01	- 8.9
Chloride	mg/L	433	357	438	389	411	311	326	309	283	310	221	240	239	237	238	350	348	140	- 1,200
Chromium, Total, ICAP	mg/L	0.0013	< 0.0030	< 0.0090	< 0.0300	< 0.0060	< 0.0013	< 0.0030	< 0.0090	< 0.0300	< 0.0060	< 0.0013	< 0.0030	< 0.0090	< 0.0300	< 0.0060	0.0013	0.0013	< 0.0001	- 1.5
Fluoride	mg/L	NA	0.74	0.66	0.76	0.74	NA	0.44	0.46	0.44	0.44	NA	0.76	0.81	0.81	0.81	< 0.31	0.60	0.09	- 1.6
Iron, Total, ICAP	mg/L	0.17	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.05	< 0.23	< 0.10	< 0.10	< 0.10	< 0.05	< 0.10	< 0.10	< 0.10	0.036	< 0.00091	- 71
Magnesium, Total, ICAP	mg/L	308	287	391	364	298	218	257	243	266	250	25.2	26.2	26.9	27.6	26.6	186	227	22	- 471
Manganese, Total, ICAP	mg/L	0.076	0.040	0.048	< 0.050	0.048	< 0.0013	< 0.005	< 0.015	< 0.050	< 0.010	0.007	0.008	< 0.015	< 0.050	0.011	0.008	0.0053	< 0.0001	- 1.4
Mercury	mg/L	< 0.00032	NA	< 0.00032	NA	< 0.00032	< 0.00032	NA	< 0.00032	NA	< 0.00032	< 0.00032	NA	< 0.00032	NA	< 0.00032	< 0.00019	< 0.00005	< 0.000017	- < 0.0003
Nickel, Total, ICAP	mg/L	0.011	< 0.005	< 0.015	< 0.050	< 0.013	0.014	0.005	< 0.015	< 0.050	< 0.014	0.004	0.005	< 0.015	< 0.050	0.010	< 0.004	0.0035	< 0.000011	- 0.04
pH (field)	units	8.47	8.77	8.29	8.46	8.47	7.0	8.38	8.26	8.59	8.3	7.19	7.85	8.50	9.15	8.18	8.37	8.26	6.44	- 11.00
Potassium, Total, ICAP	mg/L	74.1	63.6	81.3	76.4	75.3	28.3	32.7	27.3	30.1	29.2	24.0	18.3	20.5	18.2	19.4	33	33	13	- 100
Silica as SiO_2	mg/L	58.6	43.2	58.2	47.0	52.6	39.2	42.1	38.5	39.9	39.6	3.8	9.0	7.9	5.2	6.5	43	51.5	9.1	- 140
Selenium, Total [c]	mg/L	NA	0.013	0.017	0.014	0.014	NA	0.019	0.018	0.018	0.018	NA	< 0.001	< 0.003	< 0.010	< 0.003	0.014	0.0138	< 0.002	- 0.176
Selenium, Dissolved	mg/L	0.017	0.013	0.017	0.015	0.016	0.018	0.020	0.018	0.018	0.018	0.005	< 0.001	< 0.003	< 0.005	< 0.004	0.013	0.014	0.0118	0.0172
Silver, Total, ICAP	mg/L	< 0.001	< 0.005	< 0.015	< 0.050	< 0.010	< 0.001	< 0.005	< 0.015	< 0.050	< 0.010	< 0.001	< 0.005	< 0.015	< 0.050	< 0.010	< 0.0007	< 0.0002	< 0.000062	- 0.01
Sodium, Total, ICAP	mg/L	426	367	445	426	426	304	304	299	323	304	191	193	191	199	192	340	360	120	- 680
Conductance (Field)	µS/cm	5,055	4,220	5,030	4,980	5,005	4,073	4,270	3,970	4,260	4,167	1,627	1,597	1,608	2,328	1,618	4,015	4.2	0.06	- 10.65
Sulfate	mg/L	2,250	1,690	2,230	2,100	2,165	2,070	2,090	1,800	1,700	1,935	257	263	276	280	270	1,585	1,725	210	- 2,800
Surfactants	mg/L	0.156	NA	NA	NA	0.156	< 0.069	NA	NA	NA	< 0.069	0.08	NA	NA	NA	0.08	< 0.069	< 0.05	< 0.02	- 0.366
Thallium, Total, ICAP	mg/L	< 0.0013	< 0.0002	< 0.0006	< 0.0020	< 0.0009	< 0.0013	< 0.0002	< 0.0006	< 0.0020	< 0.0009	< 0.0013	< 0.0002	< 0.0006	< 0.0020	< 0.0009	< 0.0007	< 0.0002	< 0.000014	- 0.0013

Notes:
NA = Not Available / Not Analyzed
ND = Non-detect / Not Detected above laboratory method reporting limit
[a] NPDES Constituents = Constituents originally analyzed under the Las Vegas Valley MS4 Dry Weather Sampling Program (starting in 1991)
[b] SNWA Expansion Constituents = Constituents added to the list of analytes by SNWA as part of the Urban Tributary Water Quality Monitoring Program
[c] Selenium data reported from SNWA's Monthly Tributary Sampling program, using the sample date closest to the quarterly, Urban Tributary Water Quality Sampling program collection date

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Table 7-3: Dry Weather Monitoring Detected Organics Data for the Current MS4 Permit Year (2022-2023)

Parameter	Units	Burns Street Channel BS_1					Duck Creek DC_1					Flamingo Wash FW_0					Las Vegas Wash The Club at Sunrise LW12.1					Monson Channel MC_1					Sloan Channel SC_1					Total Detections 2022-2023
		Jul 22	Oct 22	Jan 23	April 23	Detections	Jul 22	Oct 22	Jan 23	April 23	Detections	Jul 22	Oct 22	Jan 23	April 23	Detections	Jul 22	Oct 22	Jan 23	April 23	Detections	Jul 22	Oct 22	Jan 23	April 23	Detections	Jul 22	Oct 22	Jan 23	April 23	Detections	
Herbicides																															
Dimethyl tetrachloroterephthalate (DCPA)	µg/L	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	36	NA	NA	NA	**1**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	**1**
Dalapon	µg/L	ND	ND	ND	ND	**0**	ND	ND	ND	ND	**0**	ND	ND	ND	ND	**0**	ND	ND	ND	ND	**0**	ND	ND	ND	ND	**0**	ND	ND	ND	ND	**0**	**0**
Pesticides																															
Glyoxal	µg/L	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	**0**
Methylglyoxal	µg/L	ND	ND	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	**0**
Volatile Organic Compounds (VOCs)																															
Acetaldehyde	µg/L	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	**0**
Acetone	µg/L	NA	ND	NA	NA	**0**	NA	ND	NA	NA	**0**	NA	ND	NA	NA	**0**	NA	ND	NA	NA	**0**	NA	ND	NA	NA	**0**	NA	ND	NA	NA	**0**	**0**
Butanal	µg/L	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	**0**
Bromodichloromethane	µg/L	ND	ND	NA	NA	**0**	ND	ND	NA	NA	**0**	ND	ND	NA	NA	**0**	ND	ND	NA	NA	**0**	ND	ND	NA	NA	**0**	1.80	4.5	NA	NA	**2**	**2**
Chloroform	µg/L	ND	ND	NA	NA	**0**	ND	ND	NA	NA	**0**	ND	ND	NA	NA	**0**	ND	ND	NA	NA	**0**	ND	ND	NA	NA	**0**	4.16	12	NA	NA	**2**	**2**
Formaldehyde	µg/L	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	**0**
Hexanal	µg/L	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	**0**
Pentanal	µg/L	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	**0**
Propanal (Propionaldehyde)	µg/L	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	NA	NA	NA	NA	**0**	**0**
Semivolatile Organic Compounds (SVOCs)																															
Diethylphthalate	µg/L	NA	ND	NA	ND	**0**	NA	ND	NA	ND	**0**	ND	ND	NA	ND	**0**	NA	ND	NA	ND	**0**	NA	ND	NA	ND	**0**	NA	ND	NA	ND	**0**	**0**
Caffeine	µg/L	NA	NA	NA	ND	**0**	NA	NA	NA	ND	**0**	NA	NA	NA	0.11	**1**	NA	NA	NA	0.055	**1**	NA	NA	NA	ND	**0**	NA	NA	NA	ND	**0**	**2**

Notes:
NA = Not Available / Not Analyzed
ND = Non-detect / Not Detected above laboratory method reporting limit

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7.2.2 Wet Weather Constituents

The wet weather program identified two separate suites of constituents for laboratory analysis – the "long list" and a condensed "short list". The "long list" of constituents included constituents that were analyzed in the original NPDES MS4 sampling program, as well as an expanded list of constituents that are also sampled by the SNWA for the dry weather monitoring program. The condensed, "short list" of constituents consisted of MS4 constituents of interest, most of which were the original MS4 constituents. The constituents for the 2022-2023 MS4 permit year are shown in Table 7-4. The "short list" of constituents is included in the table and are indicated in bold text.

Table 7-4: Constituents and Analytical Methods in Wet Weather Samples for the Current MS4 Permit Year (2022-2023)

Analytical Method	Constituents Analyzed
8260B	2-chloroethyl vinyl ether
SM 2320B	Alkalinity, bicarbonate, carbonate
SM 4500NH3D	**Ammonia**
SM 5210B	**Biological Oxygen Demand (BOD)**
531 / 632	Carbamate pesticides
SM 5220D	**Chemical Oxygen Demand (COD)**
SM 4500CNE	Cyanide
SM 2510B	Electrical conductivity
SM 9223B	***E. Coli***
Colilert-18	**Fecal coliform**
Enterolert	**Fecal *Streptococcus***
SM 2340B	Hardness
8151A	Herbicides
200.7	Magnesium, sodium, iron, aluminum
SM 5540C	**Methylene Blue Active Substances (MBAS) (Surfactants)**
245.2	**Mercury**
300	**Nitrate-N, nitrite-N**, bromide, sulfate, fluoride
1664A	**Oil and grease**
525.2, 531.2, 551.1, 556, 625, 8081A, 8082, 8270D	Organics
556	Pesticides, volatile organic compounds
SM 4500-HB	**pH**
200.8	**Selenium**, **selenium (dissolved)**, antimony, barium, beryllium, **boron**, cadmium, chromium, **copper, copper (dissolved), lead, lead (dissolved)**, arsenic, manganese, nickel, silver, thallium, **zinc, zinc (dissolved)**
SM 5540C, 425.1	Surfactants
SM 2540C	**TDS**
Thermal Analysis	**Temperature**
SM 5310C, 415.3	Total Organic Carbon (TOC)
Calculation	**Total Organic Nitrogen (TON)**
SM 4500NorgC	**Total Kjeldahl Nitrogen (TKN)**
SM 4500PE	**Total phosphorous-P, orthophosphate-P**
SM 2540D	**TSS**
SM 2130B	**Turbidity**

Note: Bold text indicates a constituent that is also part of the "short list" of wet weather constituents.

7.2.3 Wet Weather Monitoring Results

During the 2022-2023 MS4 permit year, three significant storm events occurred, leading to three sample collections from the sampling locations: The Club at Sunrise and Rainbow Gardens. The samples were collected with automated samplers and composite samples were prepared for laboratory analysis.

The laboratory analyzed the “long list” of constituents for the storm events of the MS4 permit year, as shown in Table 7-5. Wet weather sampling reports for the significant storm events and historic wet weather sampling data are included in Appendix B.

Table 7-5: Wet Weather Sampling Events for the Current MS4 Permit Year (2022-2023)

Sampling Location	“Long List” Constituents Analyzed		
The Club at Sunrise	07/25/2022	08/11/22	06/16/23
Rainbow Gardens	07/25/2022	08/12/22	06/16/23

Table 7-6 and Table 7-7 present wet weather monitoring data collected in the 2022-2023 MS4 permit year for both The Club at Sunrise and Rainbow Gardens sampling locations, respectively. Table 7-8 and Table 7-9 further identify the detections of organic compounds for the current MS4 permit year and the prior three MS4 permit years for The Club at Sunrise and Rainbow Gardens, in stormwater samples. Review of data collected for the Wet Weather Monitoring Program in 2022-2023 does not show identifiable trends in wet weather constituent concentrations that would suggest a change in the nature of stormwater-related pollutants generated from the Las Vegas Valley watershed. Data was generally consistent with the previously collected wet weather characterization data.

7.2.4 Wet and Dry Weather Comparison

Median wet weather monitoring results from storm events were compared to dry weather sampling data. Comparisons for the current MS4 permit year, prior three MS4 permit years, and period of record up to the current MS4 permit year are presented in Table 7-10. These comparisons help the Permittees identify whether wet or dry conditions are more likely to generate high concentrations of each constituent in the table. Median wet weather concentrations of many constituents are several times greater than median dry weather concentrations. Values less than one indicate the exceptions (e.g. TDS which is more of a dry weather influenced constituent in the Las Vegas Valley).

Table 7-6: The Club at Sunrise Wet Weather Monitoring Constituent Data for the Current MS4 Permit Year (2022-2023)

Parameter	Units	25-July-2022	11-Aug-2022	16-Jun-2023	Median 2022-2023	Historical Median 1997-2023	Historical Range 1997-2023		
NPDES Constituents [a]									
Oil and Grease - Gravimetric	mg/L	10.3	7.3	3.6	7.3	< 5	< 2.4	-	1,180
Total Dissolved Solids (TDS)	mg/L	456	230	250	250	536	100	-	2,500
Total Suspended Solids (TSS)	mg/L	825	860	560	825	855	18	-	8,350
Total Phosphorus-P	mg/L	1.57	1.42	1.42	1.42	0.93	0.17	-	3.9
Orthophosphate-P	mg/L	0.18	0.35	0.94	0.35	0.17	< 0.01	-	1.5
Nitrite, Nitrogen by IC	mg/L	< 0.1 ND	< 0.1 ND	0.11	< 0.1 ND	< 0.10	< 0.089	-	6.5
Nitrate-N by IC	mg/L	< 0.1 ND	1.55	1.27	1.27	1.32	< 0.1	-	165
Total Kjeldahl Nitrogen (TKN)	mg/L	6.99	5.99	6.12	6.12	4.60	< 0.2	-	28.0
Copper, Total, ICAP	mg/L	0.039	0.032	0.038	0.038	0.043	0.005	-	0.69
Lead, Total, ICAP	mg/L	0.015	0.024	0.012	0.015	0.022	< 0.0005	-	0.18
Zinc, Total, ICAP	mg/L	0.16	0.16	0.24	0.16	0.19	0.01	-	4.6
Copper, ICAP, Dissolved	mg/L	0.006	0.004	0.006	0.006	0.009	< 0.002	-	0.11
Lead, ICAP, Dissolved	mg/L	< 0.0012 ND	< 0.0012 ND	< 0.0010 ND	< 0.0012 ND	< 0.0005	< 0.0005	-	< 0.1
Zinc, ICAP, Dissolved	mg/L	0.10	0.03	0.05	0.05	< 0.02	< 0.001	-	0.4
Boron, Total, ICAP	mg/L	0.18	0.09	0.11	0.11	0.22	< 0.02	-	0.84
Turbidity	NTU	526	666	353	526	401	28	-	5,200
Temperature	Thermal Analysis	NA	NA	22.3	22.3	17.5	12.0		26.6
Fecal Coliform Bacteria	MPN/100mL	> 24,196	58,100	435,200	58,100	58,100	130	-	160,000,000
Fecal Streptococci	MPN/100mL	375	15,200	6,100	6100	23,943	< 1	-	3,300,000
E. Coli	MPN/100mL	NA	NA	172,000	172,000	172,000	172,000	-	172,000
Semivolatile Organic Compounds (SVOCs) [c]	No. of Detects	2	0	3	2.0	2	0	-	7
Volatile Organic Compounds (VOCs) [c]	No. of Detects	0	2	0	0	2	0	-	14
Pesticides [c]	No. of Detects	0	0	0	0	0	0	-	5
Herbicides [c]	No. of Detects	0	0	1	0	1	0	-	4
SNWA Expansion Constituents [b]									
Alkalinity as $CaCO_3$	mg/L	102	130	204	130	101	51	-	960
Aluminum, Total, ICAP	mg/L	10.1	12.8	5.47	10.1	5.00	0.0113	-	56
Antimony, Total, ICAP	mg/L	0.0041	0.0036	0.0044	0.0041	0.0040	< 0.001	-	0.1
Arsenic, Total, ICAP	mg/L	0.0071	0.0041	0.0058	0.0058	0.0076	0.0014	-	0.046
Barium, Total, ICAP	mg/L	0.468	0.338	0.148	0.338	0.21	0.058	-	1.8
Beryllium, Total, ICAP	mg/L	< 0.0012 ND	< 0.0012 ND	< 0.001 ND	< 0.0012 ND	< 0.001	< 0.001	-	< 0.01
Bicarbonate Alkalinity as HCO_3^-	mg/L	102	130	204	130	120	51	-	960
BOD	mg/L	52.8	27.8	34.7	34.7	34.7	< 2	-	263
Bromide	mg/L	0.07	0.03	0.03	0.03	0.06	< 0.005	-	0.53
Carbonate, Calculated	mg/L	< 5.00 ND	< 5.00 ND	< 5.00 ND	< 5.00 ND	< 2.00	< 0.028	-	< 10.0
Cadmium, Total, ICAP	µg/L	< 1.25 ND	< 1.25 ND	< 1.0 ND	< 1.25 ND	< 1.0	< 0.5	-	6.9
Chloride	mg/L	28.1	9.8	13.0	13.0	35.5	5.86	-	266
Chromium, Total, ICAP	mg/L	0.0117	0.0102	0.0116	0.0116	0.0140	< 0.0001	-	15.0
COD	mg/L	202	256	231	231	169	< 38.6	-	990
Fluoride	mg/L	0.406	0.178	0.265	0.265	0.318	0.076	-	1.08
Hardness as $CaCO_3$	mg/L	629	606	390	606	741	101	-	5,600
Hydroxide as OH^-, Calc	mg/L	< 5.00 ND	< 5.00 ND	< 5.00 ND	< 5.00 ND	< 2.00	0.001	-	13.0
Iron, Total, ICAP	mg/L	9.24	11.6	5.14	9.24	8.50	0.018	-	100
Magnesium, Total, ICAP	mg/L	43.1	41.1	26.8	41.1	47	6.2	-	490
Manganese, Total, ICAP	mg/L	0.17	0.19	0.15	0.17	0.23	0.03	-	2.4
Mercury	mg/L	< 0.00032 ND	0.00506	< 0.00032 ND	< 0.00032 ND	< 0.0002	< 0.00016	-	0.00506
Nickel, Total, ICAP	mg/L	0.0159	0.0126	0.0101	0.0126	0.0194	0.0038	-	0.14
pH, Lab	Standard Units	7.41	7.78	7.60	7.60	7.57	5.92	-	8.57
Selenium, Total	mg/L	< 0.0025 ND	< 0.0012 ND	< 0.001 ND	< 0.0012 ND	< 0.005	< 0.001	-	< 0.05
Selenium, Dissolved	mg/L	< 0.0025 ND	< 0.0012 ND	< 0.001 ND	< 0.0012 ND	< 0.0011	0.0005	-	< 0.0025
Silver, Total, ICAP	mg/L	< 0.0012 ND	< 0.0012 ND	< 0.001 ND	< 0.0012 ND	< 0.0005	< 0.0005	-	< 0.005
Sodium, Total, ICAP	mg/L	26.2	9.2	12.9	12.9	38.2	6.5	-	1,020
Sulfate	mg/L	113	39.6	48.4	48.4	167	19	-	1,300
Surfactants	mg/L	1.53	0.91	0.81	0.91	0.36	< 0.05	-	2.18
Thallium Total, ICAP	mg/L	< 0.0012 ND	< 0.0012 ND	< 0.001 ND	< 0.0012 ND	< 0.001	< 0.001	-	< 0.01
Total Organic Carbon	mg/L	59.2	22.2	103	59.2	41	6.42	-	131

Notes:
NA = Not Available / Not Analyzed
ND = Non-detect / Not detected above laboratory method reporting limit
[a] NPDES Constituents = Constituents originally analyzed under the Las Vegas Valley MS4 Wet Weather Sampling Program (Starting in 1991)
[b] SNWA Expansion Constituents = Constituents added to the list of analytes by SNWA as part of the Urban Tributary Water Quality Monitoring Program
[c] Refer to Table 7-8 for The Club at Sunrise Wet Weather Monitoring Detected Organics Data for the Current MS4 Permit Year (2022-2023) and Prior Three Permit Years

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Table 7-7: Rainbow Gardens Wet Weather Monitoring Constituent Data for the Current MS4 Permit Year (2022-2023)

Parameter	Units	25-Jul-2022	12-Aug-2022	16-Jun-2023	Median 2022-2023	Historical Median 1997-2023	Historical Range 1997-2023		
NPDES Constituents [a]									
Oil and Grease-Gravimetric	mg/L	5.7	6.8	< 5.0 ND	5.7	< 5.0	1.4	-	10
Total Dissolved Solids (TDS)	mg/L	1,400	690	940	940	1,125	270	-	2,560
Total Suspended Solids (TSS)	mg/L	125	786	268	268	395	< 5	-	12,000
Total Phosphorus-P	mg/L	0.35	2.22	0.77	0.77	0.56	0.074	-	4.3
Orthophosphate-P	mg/L	< 0.05 ND	0.30	< 0.05 ND	< 0.05 ND	0.13	< 0.01	-	3.0
Nitrite, Nitrogen by IC	mg/L	< 0.10 ND	< 0.10 ND	0.41	0.41	< 0.10	< 0.001	-	1.9
Nitrate-N by IC	mg/L	9.78	4.97	6.26	6.26	7.40	< 0.1	-	45
Total Kjeldahl Nitrogen (TKN)	mg/L	2.89	9.32	5.75	5.75	2.00	< 0.2	-	24.5
Copper, Total, ICAP	mg/L	0.0057	0.0294	0.0185	0.0185	0.0255	0.0013	-	0.218
Lead, Total, ICAP	mg/L	0.0066	0.0203	0.0072	0.0072	0.0080	< 0.0005	-	0.151
Zinc, Total, ICAP	mg/L	0.05	0.16	0.14	0.14	0.08	0.029	-	0.62
Copper, ICAP, Dissolved	mg/L	0.0017	0.0030	< 0.001 ND	0.0017	0.010	< 0.001	-	0.0329
Lead, ICAP, Dissolved	mg/L	< 0.0012 ND	< 0.0012 ND	< 0.001 ND	< 0.0012 ND	< 0.0005	< 0.0005	-	0.109
Zinc, ICAP, Dissolved	mg/L	0.0305	0.0560	< 0.05 ND	< 0.05 ND	0.0238	< 0.005	-	0.109
Boron, Total, ICAP	mg/L	0.43	0.26	0.39	0.39	0.41	0.05	-	0.75
Turbidity	NTU	45.1	564	202	202	195	3	-	3,700
Temperature	Thermal Analysis	NA	NA	25.3	25.3	25.3	25.3		25.3
Fecal Coliform Bacteria	MPN/100mL	> 24,196	648,800	2,419,600	648,800	75,155	23	-	5,000,000
Fecal Streptococci	MPN/100mL	> 24,196	21,600	7,300	21,600	11,780	< 1	-	500,000
E. Coli	MPN/100mL	NA	NA	1,410,000	1,410,000	1,410,000	1,410,000	-	1,410,000
Semivolatile Organic Compounds (SVOCs) [c]	No. of Detects	0	0	2	0	1	0	-	5
Volatile Organic Compounds (VOCs) [c]	No. of Detects	0	3	0	0	4	0	-	12
Pesticides [c]	No. of Detects	0	0	0	0	0	0	-	3
Herbicides [c]	No. of Detects	0	0	1	0	0	0	-	4
SNWA Expansion Constituents [b]									
Alkalinity as $CaCO_3$	mg/L	136	94	164	136	119	65	-	420
Aluminum, Total, ICAP	mg/L	1.75	13.1	3.11	3.11	3.50	0.0096	-	69
Antimony, Total, ICAP	mg/L	< 0.0012 ND	0.0030	0.0031	0.0030	< 0.002	< 0.001	-	0.02
Arsenic, Total, ICAP	mg/L	0.007	0.007	0.010	0.007	0.011	0.0048	-	0.099
Barium, Total, ICAP	mg/L	0.102	0.235	0.115	0.115	0.160	0.044	-	1.6
Beryllium, Total, ICAP	mg/L	< 0.0012 ND	< 0.0012 ND	< 0.001 ND	< 0.0012 ND	< 0.001	< 0.0002	-	< 0.005
Bicarbonate Alkalinity as HCO_3^-	mg/L	136	94	164	136	140	79	-	420
BOD	mg/L	15.6	18.9	79.5	18.9	13.0	< 2	-	79.5
Bromide	mg/L	0.17	0.08	0.12	0.12	0.131	< 0.001	-	4.07
Carbonate, Calculated	mg/L	< 5.00 ND	< 5.00 ND	< 5.00 ND	< 5.00 ND	< 2.0	0.27	-	< 10
Cadmium, Total, ICAP	µg/L	< 1.20 ND	< 1.20 ND	< 1.0 ND	< 1.20 ND	< 1.0	< 0.1	-	610
Chloride	mg/L	259	97.9	159	159	190	59	-	369
Chromium, Total, ICAP	mg/L	0.003	0.009	0.006	0.006	0.0084	0.001	-	2.5
COD	mg/L	40.4	186	182	182	72	19.3	-	909
Fluoride	mg/L	0.63	0.32	0.99	0.63	0.55	< 0.1	-	1.0
Hardness as $CaCO_3$	mg/L	514	678	539	539	675	323	-	3,000
Hydroxide as OH^-, Calc	mg/L	< 5.00 ND	< 5.00 ND	< 5.00 ND	< 5.00 ND	< 2.00	0.005	-	< 5.0
Iron, Total, ICAP	mg/L	1.32	12	2.95	2.95	3.40	0.09	-	71
Magnesium, Total, ICAP	mg/L	48.3	49.4	48.4	48.4	64	29	-	200
Manganese, Total, ICAP	mg/L	0.24	0.51	0.32	0.32	0.33	0.012	-	3.6
Mercury	mg/L	< 0.00032 ND	0.00083	< 0.00032	< 0.00032	< 0.0002	< 0.0001	-	0.0019
Nickel, Total, ICAP	mg/L	0.0105	0.0140	0.0081	0.0105	0.0130	0.0014	-	0.14
pH, Lab	Standard Units	7.91	7.52	6.90	7.52	7.57	6.9	-	8.48
Selenium, Total	mg/L	0.0031	< 0.0025 ND	0.0025	< 0.0025 ND	< 0.005	< 0.001	-	< 0.15
Selenium, Dissolved	mg/L	0.0021	< 0.0020 ND	0.0019	< 0.0020 ND	0.0019	0.0018		0.0027
Silver, Total, ICAP	mg/L	< 0.0012 ND	< 0.0012 ND	< 0.001 ND	< 0.0012 ND	< 0.0005	< 0.0005	-	1.0
Sodium, Total, ICAP	mg/L	201	80.9	133	133	143	64	-	303
Sulfate	mg/L	440	233	350	350	420	165	-	1,100
Surfactants	mg/L	0.29	0.63	0.88	0.63	0.12	< 0.035	-	0.76
Thallium Total, ICAP	mg/L	< 0.0012 ND	< 0.0012 ND	< 0.0012 ND	< 0.0012 ND	< 0.001	< 0.001	-	< 0.005
Total Organic Carbon	mg/L	8.88	17.4	82.7	17.4	14.4	5.6	-	82.7

Notes:
NA = Not Available / Not Analyzed
ND = Non-detect / Not detected above laboratory method reporting limit
[a] NPDES Constituents = Constituents originally analyzed under the Las Vegas Valley MS4 Wet Weather Sampling Program (Starting in 1991)
[b] SNWA Expansion Constituents = Constituents added to the list of analytes by SNWA as part of the Urban Tributary Water Quality Monitoring Program
[c] Refer to Table 7-9 for Rainbow Gardens Wet Weather Monitoring Detected Organics Data for the Current MS4 Permit Year (2022-2023) and Prior Three Permit Years

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Table 7-8: The Club at Sunrise Wet Weather Monitoring Detected Organics Data for the Current MS4 Permit Year (2022-2023) and the Prior Three MS4 Permit Years

Parameter		Detections 2022-2023	Detections 2021-2022	Detections 2020-2021 [a]	Detections 2019-2020	Historical Range of Detections 1997-2022
Herbicide Detections	2,4-D	X	X		X	0 - 4
	Bentazon					
	Benzoic Acid					
	Dalapon					
	Dicamba		X			
	Picloram					
	Total No. of Detects:	1	2	-	1	
Pesticide Detections	Aldicarb Sulfone				X	0 - 5
	Alpha-BHC					
	Beta-BHC					
	Carbaryl					
	Total No. of Detects:	0	0	-	1	
SVOC Detections	4-Nitrophenol					0 - 7
	4-Methylphenol				X	
	Benzyl Alcohol	X	X		X	
	Bis(2-ethylhexyl)adipate					
	Bis(2-ethylhexyl)phthalate				X	
	Diethylphthalate	X			X	
	Dimethylphthalate					
	Di-n-Butylphthalate					
	Di-n-Octylphthalate					
	Phenol	X	X		X	
	Total No. of Detects:	3	2	-	5	
VOC Detections	2-Butanone				X	0 - 14
	Acetone	X	X		X	
	Acrylonitrile					
	Benzene					
	Bromodichloromethane					
	Chloroform					
	Chloromethane					
	Dibromomethane					
	Methyl ethyl ketone (MEK)	X	X			
	Tetrachloroethene					
	Toluene					
	Total No. of Detects:	2	2	-	2	

Notes:

Cells marked with an "X" indicate that the constituent was detected in the sample

[a] During the 2020-2021 MS4 permit year no significant storm events occurred that generated sufficient runoff for sampling

Table 7-9: Rainbow Gardens Wet Weather Monitoring Detected Organics Data for the Current MS4 Permit Year (2022-2023) and the Prior Three MS4 Permit Years

Parameter		Detections 2022-2023	Detections 2021-2022	Detections 2020-2021 [a]	Detections 2019-2020	Historical Range of Detections 2003-2022
Herbicide Detections	2,4-D	X			X	0 - 4
	Bentazon					
	Benzoic Acid				X	
	Dalapon				X	
	Picloram					
	Total No. of Detects:	1	0	-	3	
Pesticide Detections	Aldicarb Sulfone				X	0 - 3
	Alpha-BHC					
	Beta- BHC					
	Carbaryl					
	Carbofuran					
	Total No. of Detects:	0	0	-	1	
SVOC Detections	4-Nitrophenol					0 - 5
	4-Methylphenol					
	Benzyl alcohol	X	X			
	Di(2-ethylhexyl)phthalate					
	Di-n-Butylphthalate					
	Di-n-Octylphthalate					
	Diethylphthalate				X	
	Phenol	X				
	Total No. of Detects:	2	1	-	1	
VOC Detections	2-Butanone				X	0 - 12
	Acetone	X			X	
	Acrylonitrile					
	Benzene					
	Bromodichloromethane					
	Caprolactam		X			
	Chloroform	X			X	
	Chloromethane					
	Dibromomethane					
	Methyl ethyl ketone (MEK)	X				
	Naphthalene					
	Tetrachloroethene					
	Toluene					
	Total No. of Detects:	3	1	-	3	

Notes:

Cells marked with an "X" indicate that the constituent was detected in the sample

[a] During the 2020-2021 MS4 permit year no significant storm events occurred that generated sufficient runoff for sampling

Table 7-10: Wet and Dry Weather Comparison

Parameter	Units	2022-2023			2021-2022			2020-2021			2019-2020			1991-2023		
		Median Dry Weather	Median Wet Weather	Wet/Dry Comparison	Median Dry Weather	Median Wet Weather [a]	Wet/Dry Comparison	Median Dry Weather	Median Wet Weather [a]	Wet/Dry Comparison [a]	Median Dry Weather	Median Wet Weather	Wet/Dry Comparison	Median Dry Weather	Median Wet Weather	Wet/Dry Comparison
Total Dissolved Solids (TDS)	mg/L	3,310	573	0.17	3,125	752	0.24	3,325	-	-	3,310	615	0.186	3,355	831	0.25
Total Suspended Solids (TSS)	mg/L	< 6.0	673	112.2	< 10	2,700	270	< 5	-	-	< 5	120	24	< 5	625	125
Total Phosphorus-P	mg/L	0.07	1.42	20.3	0.13	2.17	16.7	0.012	-	-	0.013	0.50	38.5	0.024	0.75	31.3
Orthophosphate-P	mg/L	0.007	0.24	34.3	0.05	0.13	2.64	0.032	-	-	0.028	0.26	9.3	0.01	0.15	15.0
Nitrate-N by IC	mg/L	4.2	3.26	0.78	4.1	6.20	1.51	4.7	-	-	4.7	3.0	0.6	4.37	4.36	0.998
Total Kjeldahl Nitrogen (TKN)	mg/L	0.94	6.06	6.45	1.1	6.47	5.88	0.18	-	-	0.11	2.4	21.8	0.40	3.30	8.25
Copper, Total, ICAP	mg/L	< 0.015	0.031	2.07	0.003	0.042	14.1	0.002	-	-	0.0019	0.024	12.6	0.0023	0.034	14.8
Lead, Total, ICAP	mg/L	< 0.0011	0.014	12.73	< 0.0013	0.040	31.2	< 0.0002	-	-	< 0.0002	0.007	35	< 0.0003	0.015	50.0
Zinc, Total, ICAP	mg/L	0.015	0.16	10.67	0.011	0.198	18	0.01	-	-	0.005	0.108	21.6	0.0075	0.135	18.0
Copper, ICAP, Dissolved	mg/L	< 0.015	0.004	0.27	0.0025	0.0031	1.22	0.0015	-	-	0.0012	0.006	5.0	0.0015	0.0093	6.2
Lead, ICAP, Dissolved	mg/L	< 0.0011	< 0.0012	< 1.09	< 0.0013	< 0.0008	< 0.58	< 0.0002	-	-	< 0.0002	< 0.001	5.0	< 0.0002	< 0.0005	2.5
Zinc, ICAP, Dissolved	mg/L	< 0.015	< 0.048	< 3.20	< 0.01	0.031	3.08	< 0.01	-	-	< 0.005	0.046	9.2	< 0.005	0.0243	4.86
Boron, Total, ICAP	mg/L	1.32	0.217	0.164	1.4	0.305	0.22	1.4	-	-	1.55	0.206	0.13	1.45	0.312	0.22
Turbidity	NTU	5.6	439.5	78.5	2.51	1,030	410.4	2.35	-	-	1.52	116	76.3	1.49	298	200.0
Fecal Coliform Bacteria	cfu / 100mL	581	246,650	424.5	3,000	> 48,392	16.1	704	-	-	670	12,669	18.9	460	66,628	144.8
Fecal Streptococci	cfu / 100mL	NA	11,250	NA	NA	> 48,392	NA	NA	-	-	NA	10,133	NA	246	17,862	72.61
Cadmium, Total	µg/L	1.4	< 1.2	0.86	< 0.7	1.38	1.96	< 0.2	-	-	< 0.1	< 1.0	< 10	< 0.1	1.0	10.0
Chromium, Total	mg/L	< 0.0069	0.0098	1.42	0.0013	0.024	18.4	0.0011	-	-	0.001	0.00829	8.3	0.0013	0.0112	8.62
Nickel	mg/L	< 0.015	0.0116	0.773	< 0.004	0.0277	6.91	< 0.002	-	-	0.00105	0.0117	11.1	0.0034	0.0162	4.76
Mercury	mg/L	< 0.00032	< 0.00032	< 1.0	< 0.00019	< 0.0003	< 1.63	< 0.00005	-	-	< 0.00005	< 0.0003	< 6.0	< 0.00005	< 0.0002	4.0
Silver	mg/L	< 0.010	< 0.0012	< 0.12	< 0.0007	0.0014	1.99	< 0.0002	-	-	< 0.0002	< 0.001	< 5.0	< 0.0002	< 0.0005	2.5
Arsenic	mg/L	0.012	0.0072	0.60	0.01	0.013	1.30	0.013	-	-	0.014	0.0065	0.46	0.013	0.0093	0.72
pH	Standard Units	8.39	7.56	0.90	8.37	7.14	0.85	8.17	-	-	8.25	7.375	0.89	8.26	7.57	0.92
Surfactants	mg/L	< 0.073	0.85	11.64	< 0.069	0.16	2.31	< 0.05	-	-	< 0.05	0.3665	7.3	< 0.05	0.24	4.8
Selenium	mg/L	0.013	< 0.0025	0.192	0.014	< 0.002	0.143	0.0144	-	-	0.0158	0.0016	0.0997	0.0138	< 0.005	0.36

Notes:
NA = Not available / Not analyzed; ND = Non-detect / Not detected above laboratory method reporting limit
[a] During the 2020-2021 MS4 permit year no significant storm events occurred that generated sufficient runoff for sampling

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7.2.5 2023-2024 Stormwater Monitoring Plan

Wet weather characterization monitoring will continue to be performed at the two existing Las Vegas Wash monitoring sites: Las Vegas Wash at The Club at Sunrise and Las Vegas Wash at Rainbow Gardens.

It is anticipated that, as in previous years, stormwater runoff from three storms, up to a maximum of ten storms, will be sampled using composite sampling techniques. It is anticipated that the "long list" of constituents will be analyzed for the first three samples at each site. Table 7-11 shows the constituents that will be analyzed in the 2023-2024 MS4 permit year. All other sampling and analysis objectives will be the same as those adopted for 2022-2023 MS4 permit year.

Dry weather characterization monitoring conducted for the Las Vegas Valley NPDES MS4 Permit will continue to be performed by SNWA. Data collected by SNWA for its Urban Tributary Water Quality Monitoring Program will continue to be used to characterize dry weather water quality in the Las Vegas Wash and the major tributaries. It is anticipated that this will continue to consist of grab samples collected four times during the MS4 permit year at each of the six identified dry weather sampling sites.

While no changes to the stormwater monitoring plan are currently anticipated, the program will be modified, if necessary, in response to permit requirements identified in the next permit year.

Table 7-11: Anticipated Constituents and Analytical Methods in Wet Weather Samples for the Next MS4 Permit Year (2023-2024)

Analytical Method	Constituent Analyzed
8260B	2-chloroethyl vinyl ether
SM 2320B	Alkalinity, bicarbonate, carbonate
SM 4500NH3D	**Ammonia**
SM 5210B	**Biological Oxygen Demand (BOD)**
531 / 632	Carbamate pesticides
SM 5220D	**Chemical Oxygen Demand (COD)**
SM 4500CNE	Cyanide
SM 2510B	Electrical conductivity
SM 9223B	***E. Coli***
Colilert-18	**Fecal coliform**
Enterolert	**Fecal *Streptococcus***
SM 2340B	Hardness
8151A	Herbicides
200.7	Magnesium, sodium, iron, aluminum
SM 5540C	**Methylene Blue Active Substances (MBAS) (Surfactants)**
245.2	**Mercury**
300	**Nitrate-N, nitrite-N**, bromide, sulfate, fluoride
1664A	**Oil and grease**
525.2, 531.2, 551.1, 556, 625, 8081A, 8082, 8270D	Organics
556	Pesticides, volatile organic compounds
SM 4500-HB	**pH**
200.8	**Selenium**, **selenium (dissolved)**, antimony, barium, beryllium, **boron**, cadmium, chromium, **copper, copper (dissolved), lead, lead (dissolved)**, arsenic, manganese, nickel, silver, thallium, **zinc, zinc (dissolved)**
SM 5540C, 425.1	Surfactants
SM 2540C	**TDS**
Thermal Analysis	**Temperature**
SM 5310C, 415.3	Total Organic Carbon (TOC)
Calculation	**Total Organic Nitrogen (TON)**

Table 7-11: Anticipated Constituents and Analytical Methods in Wet Weather Samples for the Next MS4 Permit Year (2023-2024)

Analytical Method	Constituent Analyzed
SM 4500NorgC	**Total Kjeldahl Nitrogen (TKN)**
SM 4500PE	**Total phosphorous-P, orthophosphate-P**
SM 2540D	**TSS**
SM 2130B	**Turbidity**

Note: Bold text indicates a constituent that is also part of the “short list” of wet weather constituents.



Section 8

Public Outreach and Education Program

8 Public Outreach and Education Program

Section IV.D of the 2010-2015 NPDES MS4 Permit for the Las Vegas Valley includes requirements for a Public Outreach and Education Program. The permit requires that the SWMP describe: 1) the public outreach and education program intended to reduce the discharge of pollutants to the maximum extent practicable; 2) the different types of educational materials to be distributed; 3) the specific educational and public activities undertaken; and 4) how the Permittees inform developers, contractors, architects, engineers, local officials, etc. about water quality issues associated with urban runoff, NPDES requirements, and the availability of educational / training workshops pertaining to urban runoff.

The overall objectives of the Public Outreach and Education Program are to:

- Inform the general public in the Las Vegas Valley about important water quality issues related to stormwater runoff in the Las Vegas Valley.
- Influence behavior of the general public to reduce activities that have a negative impact on stormwater runoff quality and increase activities that have a positive impact on stormwater runoff quality in the Las Vegas Valley.

8.1 Overview of Best Management Practices

Table 5-1 in Section 5.0 (Stormwater Management Approach) of this Annual Report identifies the BMPs employed by the Las Vegas Valley in the 2022-2023 MS4 permit year, to meet permit requirements. Specifically, the Public Outreach and Education Program employed the following Source Control (SC) BMPs, discussed in the following subsections:

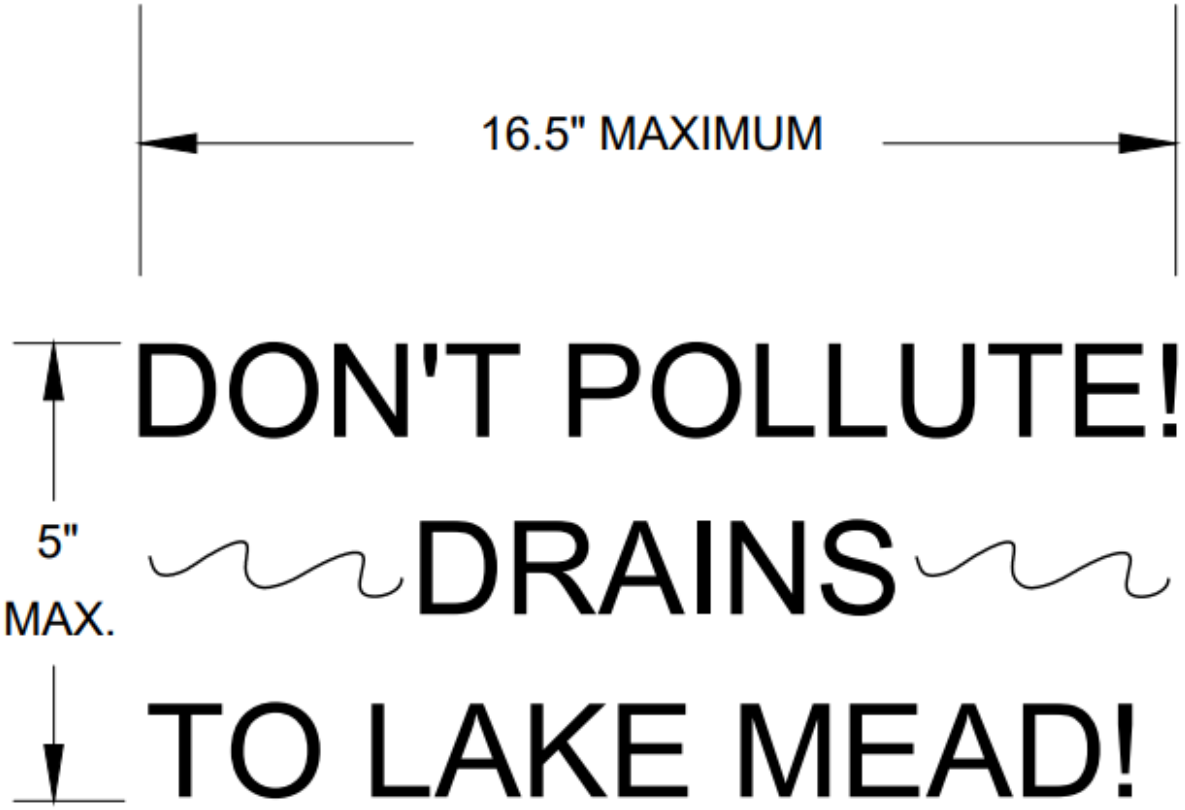
- SC-11 Storm Drain Marking Program
- SC-17 Pet Waste Management
- SC-30 LVV Stormwater Quality Website
- SC-31 Public Outreach Events
- SC-32 Elementary School Presentations
- SC-33 Public Service Announcements / Flood Channel
- SC-34 Brochures and Printed Material

8.2 Description of Individual Best Management Practices

8.2.1 Storm Drain Marking Program (SC-11)

The storm drain marking program consisted of imprinting the curb at storm drain inlets in new developments and areas of significant redevelopment. Figure 8-1 shows the Regional Transportation Commission of Southern Nevada (RTC) standard drawing No. 421 “Storm Water Quality Management Stamp and Sign Detail”. The stamps were required for new drain inlets installed in the public right-of-way and were intended to educate the public on the connection between the storm drain system and their drinking water source (Lake Mead), as well as to discourage illegal dumping.

Figure 8-1: Regional Transportation Commission of Southern Nevada (RTC) Standard Drawing No. 421 "Stormwater Quality Management Stamp and Sign Detail"



During the permit year there were no new or revised standards for storm drain marking. In 2022-2023, stamps were installed at 100% of new developments in the Las Vegas Valley, per the RTC standards. The Permittees continued to educate their inspectors and contractors of this requirement, per the RTC standard and per the SWMP. Inspectors verified that this requirement was met for all new development. During the permit year, City of Henderson bought 1,500 KIP plaques and installed 555 plaques on curbs that predated Standard Drawing No. 421.

8.2.2 Pet Waste Management (SC-17)

Pet waste management was largely addressed through public outreach events and activities targeted to pet owners. Pet owners were encouraged to clean up waste left by their pets in yards, parks, and open spaces. The Permittees provided educational materials at public outreach events, which are discussed in more detail in a later subsection. Public service campaigns regarding pet waste management are provided at the www.LVstormwater.com website.

In addition to providing educational materials, the Permittees also purchased pet waste disposal bags and dispensers and provided them at parks and open spaces. These measures can substantially reduce the potential for stormwater to pick up pathogens from pet waste in public and private areas. Table 8-1 provides a summary of pet waste disposal bags purchased during the current permit year and prior three permit years.

Table 8-1: Pet Waste Disposal Bags Purchased by Permittees during the Current Permit Year (2022-2023) and the Prior Three Permit Years

Municipal Permittee	2022-2023	2021-2022	2020-2021	2019-2020
City of Henderson	1,500,000	1,500,000	1,824,000	1,784,000
City of Las Vegas	1,320,000	1,600,000	1,620,000	1,600,000
City of North Las Vegas	120,000	100,000	480,000	100,000
Clark County	960,000	2,462,000	2,760,000	1,702,000
SWMP Target	Direct Public Outreach and Education to Pet Owners			

8.2.3 Las Vegas Valley (LVV) Stormwater Quality Website (SC-30)

The Stormwater Quality Management Committee (SQMC) continued to host the LVV stormwater quality website, www.LVstormwater.com, on behalf of the Permittees. The website provides information about the storm drain system, Las Vegas Valley monitoring programs, the NPDES MS4 Permit Program, federal and state regulations, and more. Several guidance documents are available for the construction industry, homeowners, businesses, and other industry to educate the public and special interest groups about reducing pollutants and improving the quality of stormwater runoff. The LVstormwater.com website was reviewed more than twice in the permit year, as shown in Table 8-2: (1) review of brochures, and (2) full review of accuracy and completeness.

In addition to the SQMC LVV stormwater quality website, the municipal Permittees continued to maintain stormwater information on their respective websites. During the permit year, the Permittees reviewed their respective websites and updated them as needed. The Permittee websites may include stormwater outreach materials, regulations, links for reporting illicit discharges or spills, and links to additional resources, including www.LVstormwater.com.

Table 8-2: Stormwater Quality Website Reviews during the Current Permit Year

Date Reviewed	Item(s) Reviewed
August 2022 – March 2023	Brochures
November 2022 March 2023	Overall accuracy and completeness
SWMP Target	Review lvstormwater.com website every six months

8.2.4 Public Outreach Events (SC-31)

During the permit year, the Permittees attended environmental fairs and community events to distribute educational materials on stormwater quality and respond to public questions or concerns. Table 8-3 provides an overview of the number of public outreach events that occurred during the current permit year and the prior three permit years.

Table 8-3: Number of Public Outreach and Education Events Attended by the Permittees for the Current Permit Year (2022-2023) and the Prior Three Permit Years

Municipal Permittee	2022-2023	2021-2022	2020-2021	2019-2020
City of Henderson	6	3	1	1
City of Las Vegas	8	6	2	5
City of North Las Vegas	0	0	0	0
Clark County	3	11	4	9
Clark County Regional Flood Control District	30	61	0	3
TOTAL Number of Events Attended [a]	47	80	7	16
SWMP Target	Attend three total public outreach events annually			

Note:
[a] Total does not always equal the sum of individual Permittee attendance, as some events were attended by multiple Permittees

Some examples of the public outreach and education events attended by Permittees during the current permit year included:

- Art in the Park, Rainbow Family Park
- Bark in the Park
- Centennial Hills Active Adult Center Senior Citizen Presentation
- City of Henderson employee Stormwater Awareness
- City of Las Vegas ECE Wastewater and Stormwater Issues for Residents at Doolittle Community Center
- City of Las Vegas Employee Picnic
- City of Las Vegas Employees Values Conference
- City of Las Vegas SHIFT Community Fair
- City of Las Vegas Small Business & Food Truck Safety Expo
- City of Las Vegas Take Your Kids to Work Day
- Clark County Employee Presentations for New Employees
- Discovery Children's Museum Kiosk Grand Opening Drainger Danger exhibit
- Earth Day at the Springs Preserve
- Fire Station 82, 83, 91 and 93 Open Houses
- Flash Flood Safety News Conference
- National Night Out
- Nevada Contractors Construction Career Day
- Paws in the Park event, Desert Breeze Soccer Complex
- Reading with Rascal

8.2.5 Elementary School Presentations (SC-32)

In an effort to introduce the importance of stormwater quality management at an early age, the CCRFCD also provided presentations to elementary school students on important stormwater concepts. The presentations were provided during normal school sessions and day camps for students. The presentations focused on stormwater quality and flood safety concerns. Table 8-4 provides a summary of the elementary school presentation effort during the current permit year and the prior three permit years.

Table 8-4: Summary of Elementary School Presentations for the Current Permit Year (2022-2023) and the Prior Three Permit Years

Number of Contacts	2022-2023	2021-2022	2020-2021	2019-2020
Students	1,963	630	405	5,678
Elementary Schools	14	1	13	44
SWMP Target	Conduct five elementary school presentations annually			

8.2.5.1 FY2023 Clark County Water Quality Grant Funded Public Outreach

MS4 Permit requirements for public outreach and education are fulfilled by the Permittees. Grant funded public outreach and education provided by Clark County Water Quality are above and beyond that which is necessary to comply with the MS4 Permit. Items of note included:

- The educational kiosk at the Discovery Children's Museum recorded 1,650 user sessions in Q1.
- Clark County's educational stormwater website (StormwaterVegas.com) received 1,044 webpage visits.
- Water Quality participated in the Earth Day event at the Springs Preserve, the BioBlast at the Clark County Wetlands Park, and the Las Vegas Science and Technology Festival.
- Water Quality shared the 'Only Rain in the Storm Drain' logos with the U.S. Naval Facilities Engineering System Command to use and distribute.

8.2.6 Public Service Announcements / Flood Channel (SC-33)

In the Las Vegas Valley, there were additional methods utilized to provide stormwater-related information to the general public, particularly the use of public service announcements (PSAs) and segments presented on the CCRFCD-sponsored Flood Channel. The CCRFCD has produced several PSAs that were broadcast during the current permit year and produced new Flood Channel segments. Topics included: proper disposal of pet waste and household chemicals, the importance of commercial car washes, and avoiding or reporting clogged storm drains. Details regarding the dissemination of PSAs is provided in Table 8-5.

Table 8-5: Summary of Public Service Announcements for the Current Permit Year (2022-2023)

Public Service Announcement Type	Distribution Source	Duration
Half-hour Flood Channel Segments and paid radio spots	Local cable Channels 2 and 4 plus Anthem HOA TV - The Flood Channel. Local Channels 3, 5, 8, 13, and Telemundo--Stormwater Quality	June-September 2022 Airs six to seven times a week. Airs approximately 28 times a month.

Table 8-5: Summary of Public Service Announcements for the Current Permit Year (2022-2023)

Public Service Announcement Type	Distribution Source	Duration
Virtual Reality video	City of North Las Vegas CCTV city building lobby and Clark County CCTV County building lobby	Continuously
Social Media PSAs	Facebook and X (formerly Twitter)	Continuously
Stormwater Pollution Prevention Pool Tips Flyer	City of Henderson email to pool contractors	May 2023
Be Lake Friendly PSA	North Las Vegas City Hall Lobby	Continuously on community information video loop
SWMP Target	Produce or update one PSA every 2 years	
	Broadcast one PSA annually, for at least a two month duration	

8.2.7 Brochures and Printed Material (SC-34)

The Permittees have a variety of brochures and printed material available to educate the public, many of which are created by the SQMC. Currently brochures are available for construction site BMPs, information for residents, guidelines for businesses and homeowners, construction site supervision, industrial stormwater permits, industrial and commercial BMPs, and stormwater pollution prevention information for businesses and homeowners.

Clark County has also created over 30 different stormwater pollution prevention flyers and brochures, developed in both English and Spanish through Non-Point Source (NPS) grants. These include the Stormwater Adventure Guide, Private Lift Station BMP flyer, and Where Does Our Water Go? flyer. Most of the brochures and flyers are available on their website (https://www.clarkcountynv.gov/government/departments/water_quality/index.php).

CCRFCD created and distributed Drainger Danger Activity books, Dog Poop flyers, Disturbing the Land, and Stormwater Pollution brochures. They also shared the Clark County Water Reclamation District's Stormwater Adventure Guide, to distributed at outreach events.

City of Las Vegas distributed brochures for: *Environmental Best Management Practices for Mobile Vendors*, *Best Management Practices to Protect Our Drinking Water and Sewer Collection and Treatment System*, and *Landscape Activities*. The brochures are available in both English and Spanish.

During the permit year COH distributed the following brochures: General Residential Stormwater Awareness Flyer, Construction Flyer (in Spanish) and a Car Wash Flyer, Sanitary Sewer Stormwater Flyer, Restaurant Flyers, Nursery & Golf Course Flyers, Automotive Flyers in English and Spanish. In addition, COH provided dog waste coloring sheets to kids.

Throughout the permit year, the Permittees routinely distributed information on stormwater quality and how it can be influenced by common behaviors, including the importance of proper pet waste disposal. In addition, the Permittees distributed materials in-person at environmental, community events, during construction inspections, industrial inspection and when responding to customer complaints. Table 8-6 identifies the materials printed by the municipal Permittees to supplement CCRFCD materials for the permit year.

Table 8-6: Educational Brochures Printed for the Current Permit Year (2022-2023)

Permittee	Number of Educational Brochures Printed
City of Henderson	1,080
City of Las Vegas	550
City of North Las Vegas	0 [a]
Clark County	3,400
SWMP Target	Produce printed material annually, as needed

Note:

[a] Previously created materials were distributed



Section 9

Source Control and MS4 Maintenance Program

9 Source Control and MS4 Maintenance Program

Section IV.E of the 2010-2015 NPDES MS4 Permit for the Las Vegas Valley includes requirements for a Source Control and MS4 Maintenance Program to reduce pollutants in stormwater runoff from commercial and residential areas. The permit requires that the SWMP describe: 1) the maintenance activities and schedule to reduce pollutant discharges from the MS4; 2) the practices for operating and maintaining public roadways and procedures for reducing the impact on receiving waters; 3) the evaluation, monitoring, and reduction in pollution runoff from municipal facilities; and 4) the evaluation and reduction in pollution from the MS4 associated with the application of pesticides, herbicides, and fertilizer. The focus of the Source Control portion of the program is pollution minimization, while the focus of the MS4 maintenance portion of the program is removing sediment and other pollutants from public streets and drainage systems.

9.1 Overview of Best Management Practices

Table 5-1 in Section 5 (Stormwater Management Approach) of this Annual Report identifies the BMPs employed by the Permittees and other stakeholders in the 2022-2023 MS4 permit year, to meet permit requirements. Specifically, the Source Control and MS4 Maintenance Program employed the following Maintenance Measure (MM) and Source Control (SC) BMPs, discussed in the following subsections:

- MM-1 Street Sweeping
- MM-2 Local Storm Drain Maintenance
- MM-3 Regional Detention Basin Maintenance
- MM-4 Maintenance of Public Facilities
- SC-1 Water Conservation Ordinances
- SC-2 Turf Conversion Program
- SC-3 Public Employee Supervisor Fertilizer / Pesticide Training
- SC-4 Use of Alternate Products and Application Procedures
- SC-5 Household Hazardous Waste Collection
- SC-7 Ordinances Prohibiting Non-Stormwater Discharges and Littering
- SC-8 Desert Dumping Controls
- SC-10 Dust Control Measures
- SC-14 Trash Receptacle Enclosures

9.2 Description of Individual Best Management Practices

9.2.1 Street Sweeping (MM-1)

The Las Vegas Valley street sweeping program applies to public streets under the jurisdiction of the municipal Permittees and is expanded as new areas are developed. In contrast, state highway and freeway maintenance are the responsibility of the Nevada Department of Transportation (NDOT), while maintenance of private streets and parking lots is the responsibility of the private owner. Public street maintenance includes street sweeping of paved streets with curb and gutter. Curbed-and-paved public streets are swept on a regular basis to remove accumulated sediment, debris, trash, hydrocarbons, and other chemicals.

The number of miles of public streets maintained by each Permittee include:

- City of Henderson 941 centerline miles
- City of Las Vegas 10,692 curb miles
- City of North Las Vegas 2,712 centerline miles
- Clark County 4,780 centerline miles

Table 9-1 provides a summary of the miles of street swept and the amount of material removed for each Permittee during the current permit year and the prior three permit years.

Table 9-1: Summary of Street Sweeping Activity for the Current Permit Year (2022-2023) and the Prior Three Permit Years

Municipal Permittee		2022-2023	2021-2022	2020-2021	2019-2020
City of Henderson	Street Swept [miles]	74,692 [a]	64,507 [a]	66,936 [a]	69,771 [a]
	Material Removed [cubic yards]	4,882 [b]	3,928 [b]	4,145 [b]	5,882 [b]
City of Las Vegas	Street Swept [curbed miles]	116,156	174,246	168,156	172,100
	Material Removed [cubic yards]	9,810	14,740	15,718	23,740
City of North Las Vegas	Street Swept [miles]	14,138	20,152	20,547	22,719
	Material Removed [cubic yards]	3,634	5,974	6,230	6,688
Clark County	Street Swept [miles]	73,400	67,650	64,800	78,675
	Material Removed [cubic yards]	6,927	25,500	27,588	24,812
SWMP Target	Sweep curbed-and-paved public city streets once every 30 days				

Notes:

[a] Odometer miles

[b] Material removed is a total of street sweeping and drain inlet material removed

9.2.2 Local Storm Drain System Maintenance (MM-2)

The Permittees inspect and, as needed, clean (i.e., remove sediment, debris, and trash) storm drain inlets and catch basins in the Las Vegas Valley MS4 system. Routine maintenance is performed to assure proper hydraulic performance, prevent clogging, and to remove potential sources of pollution. After large storms, additional inspections of facilities that historically have problems with debris accumulation and clogging are performed and the facilities are cleaned, if necessary, in preparation for the next storm event.

The number of storm drain drop inlets in the public right-of-way maintained by each Permittee include:

- City of Henderson 4,978 storm drain inlets
- City of Las Vegas 8,586 storm drain inlets
- City of North Las Vegas 2,978 storm drain inlets
- Clark County 13,829 storm drain inlets

Table 9-2 provides a summary of the number of storm drain inlets cleaned / maintained and the amount of material removed for each Permittee during the current permit year and the prior three permit years.

Table 9-2: Summary of Storm Drain Maintenance Activity for the Current Permit Year (2022-2023) and the Prior Three Permit Years

Metric		2022-2023	2021-2022	2020-2021	2019-2020
City of Henderson	Number of Inlets Inspected/Cleaned	996	1,049	1,910	1,003
	Percentage of Total Drop Inlets Inspected	20%	21%	39%	21%
	Material Removed [cubic yards]	4,882 [a]	3,928 [a]	4,145 [a]	5,882 [a]
City of Las Vegas	Number of Inlets Inspected/Cleaned	16,125	15,192	13,860	18,466
	Percentage of Total Drop Inlets Inspected	188% [b]	192% [b]	175% [b]	265% [b]
	Material Removed [cubic yards]	568	460	446	884
City of North Las Vegas	Number of Inlets Inspected/Cleaned	607	759	569	553
	Percentage of Total Drop Inlets Inspected	20%	25%	20%	20%
	Material Removed [cubic yards]	3,183	2,351	66	197
Clark County	Number of Inlets Inspected/Cleaned	5,629	14,198	16,059	14,260
	Percentage of Total Drop Inlets Inspected	41%	103% [b]	116% [b]	100%
	Material Removed [cubic yards]	1,517	2,882	476	637
SWMP Target	Inspect 20% of drop inlets a minimum of once per year; clean as appropriate				

Notes:

[a] Material removed is a total of street sweeping and drain inlet material removed

[b] Percentage exceeds 100%, as the same drain inlet may be inspected several times during the permit year

9.2.3 Regional Detention Basin Maintenance (MM-3)

Based on criteria developed by the CCRFCD and adopted by all Permittees, regional detention basins are designed to control the 100-year flood to discharges that can be safely conveyed in downstream facilities. The purpose of the detention basin maintenance program is to remove sediment, debris, and other pollutants from detention basins, so they are not transported downstream through the MS4. The Permittees inspect and, as needed, clean (i.e., remove sediment, debris, and trash) detention basins within their jurisdiction. Maintenance activities, including rehabilitation, are also performed to preserve flood storage capacity, assure proper hydraulic performance, and remove potential sources of pollution.

The number of detention basins within the permit area include:

- City of Henderson 13 detention basins
- City of Las Vegas 21 detention basins
- City of North Las Vegas 10 detention basins

- Clark County 32 detention basins

Table 9-3 provides a summary of the number of detention basin inlets cleaned / maintained, and the amount of material removed for each Permittee during the current permit year and the prior three permit years.

Table 9-3: Summary of Detention Basin Maintenance Activity for the Current Permit Year (2022-2023) and the Prior Three Permit Years

Municipal Permittee		2022-2023	2021-2022	2020-2021	2019-2020
City of Henderson	Number of Detention Basins Inspected/Cleaned	33 [a]	39 [a]	26 [a]	24 [a]
	Material Removed [cubic yards]	12,106 [b]	2,739	4,366	1,453
City of Las Vegas	Number of Detention Basins Inspected/Cleaned	105 [a]	69 [a]	40 [a]	34 [a]
	Material Removed [cubic yards]	9,691	11,470	21,253	43,747
City of North Las Vegas	Number of Detention Basins Inspected/Cleaned	23 [a]	41 [a]	53 [a]	17 [a]
	Material Removed [cubic yards]	530	2,566	5,254	1,390
Clark County	Number of Detention Basins Inspected/Cleaned	128 [a]	120 [a]	116 [a]	116 [a]
	Material Removed [cubic yards]	1,660	4,324	2,085	6,438
SWMP Target	Inspect twice annually and after major storms; clean as appropriate				

Notes:

[a] Number is total number of detention basins inspected/cleaned during the permit year (may include multiple cleans/ inspections at individual detention basins).

[b] Number includes material removed from storm channel maintenance.

9.2.4 Maintenance of Public Facilities (MM-4)

This measure is aimed at Permittee-owned sites with urban land uses such as parks, golf courses, parking lots, garages, vehicle wash areas, as well as vehicle storage and maintenance areas. This measure is similar to MM-1 and MM-2 and involves street sweeping, drain inlet cleaning, and vehicle maintenance on publicly owned parcels.

BMP MM-4's target goal is that public facility maintenance plans should be reviewed every other year, during odd permit years. The Permittees reviewed and modified public facility maintenance plans during the 2022-2023 MS4 permit year as follows:

- City of Henderson – Reviewed and updated the contact information for Van Wagenon and Park Maintenance plans. The Park Maintenance plan was also revised for park sites. The Sweeper yard maintenance plans were updated for the yard description.
- City of Las Vegas – Reviewed and updated their contact information and staffing on the Fleet Services and Parks Maintenance.

- Clark County – Reviewed and updated the Public Facility Maintenance Plan. Reviewed contact information, location maps, and miscellaneous data was updated.

9.2.5 Water Conservation (Drought) Ordinances (SC-1)

Each Permittee has a water conservation ordinance designed to reduce use of water outdoors. The water conservation ordinances adopted by the Permittees include restrictions on new turfed areas, particularly in front yards, and requires the use of xeriscaping in new development. The local water conservation ordinances are the City of Henderson Municipal Code, Chapter 14.14, Conservation; the City of Las Vegas Municipal Code, Chapter 14.11, Drought Plan; the City of North Las Vegas, Chapter 13.08, Water Conservation; and the Clark County Code, Chapter 24.34, Water Use Restrictions. Minimizing outdoor water use reduces water waste and limits the amount of pollutants transported to the MS4 via overwatering. As discussed in Section 3.0 of this Annual Report, dry weather flow volumes are similar to previous years.

In addition, the SNWA (2023 Water Resource Plan) has a regional water use goal of 86 total system gallons per capita per day (GPCD) by 2035. This goal addresses changing conditions and identifies that additional progress is needed to maximize available supplies. The total system GPCD is calculated by dividing all SNWA water sources diverted (excluding off-stream storage) less corresponding Colorado River return-flow credits by total SNWA resident population served per day.

The 2023 Water Resource Plan states that warmer and drier conditions will possibly increase local water demands. System age and climate change could increase this demand by 10 GPCD or more by 2035. Improving the efficiency of turf irrigation and cooling uses are some actions that can help to keep local supply in balance.

SNWA GPCD recognizes that not all water delivered by SNWA is consumed, as SNWA recycles nearly all indoor water use, either through return-flow credits or direct reuse, and also allows reporting to reflect actual weather conditions. Table 9-4 shows Consumptive Use GPCD over the past several years.

Table 9-4: SNWA Reported Per Capita Water Use Rate (GPCD) for the Current Permit Year (2022-2023) and the Prior Three Permit Years

Metric	2022	2021	2020	2019
Gallons per Capita per Day (GPCD)	104	110	112	101
SWMP Target	100% compliance with drought ordinances			
	No increase in per capita water use rates			

9.2.6 Turf Conversion Program (SC-2)

One goal of the Source Control and MS4 Maintenance Program is to reduce runoff from irrigated urban areas. In combination with drought ordinances, turf removal can assist with this effort. The SNWA has a Water Smart Landscapes program (https://www.snwa.com/rebates/wsl/index.html) that offers a rebate to consumers for removal of existing turf. This program helps Southern Nevada conserve water and eliminates the need to apply fertilizers and herbicides to the converted areas. The SNWA currently offers a Water Smart Landscapes rebate to customers of $3.00 per square foot of grass that is removed and replaced with desert landscaping up to the first 10,000 square feet converted per property, per fiscal year. Beyond the first 10,000 square feet, SNWA will provide a

rebate of $1.50 per square foot of turf conversion. The program has helped the community upgrade more than 210 million square feet of lawn to water-efficient landscaping, saving the community 170 billion of gallons of water since the program began in 1999.

In June 2021, the Nevada Legislature passed Assembly Bill (AB) 356, which directed the SNWA Board of Directors to develop a plan for the removal of nonfunctional turf in the Las Vegas Valley. The legislation prohibits Southern Nevada's water supply from watering existing unused grass on properties that are not zoned exclusively for single-family residences after January 1, 2027. According to SNWA, removing this nonfunctional turf can save about 9.5 billion gallons of water per year.

The City of Henderson is partnering with SNWA on the Water Smart Landscapes Rebate. COH is supplementing the SNWA Water Smart Landscapes program rebate by $1.50 per square foot above 10,000 square feet up to a maximum of 40,000 square feet of turf converted for non-single-family residential customers. For the 2022-2023 permit year, the City of Henderson rebate funding available was $500,000, the rebate actual expenditure was $99,668 for 479,731 square feet of turf converted for an estimated water saving of 26,385,205 gallons annually.

Table 9-5 provides a summary of the Water Smart Landscapes Program during the current permit year and the prior three permit years.

Table 9-5: SNWA Water Smart Landscapes Program Data for the Current Permit Year (2022-2023) and the Prior Three Permit Years

SNWA Water Smart Landscapes Program Elements	2022	2021	2020	2019
Rebate Funding Available	$25,250,000	$25,048,889	$17,200,000	$11,368,667
Turf Converted (sq. ft.)	12,643,927	5,999,043	4,524,720	4,013,945
Estimated Water Savings (gallons)	705,531,127	334,746,599	252,479,376	223,978,131
Actual Funding Expenditure	$31,420,105	$16,331,092	$12,023,946	$11,021,019

9.2.7 Public Employee Supervisor Fertilizer / Pesticide Training (SC-3)

Permittees require supervisors responsible for personnel who commonly use fertilizers, pesticides, and herbicides to be trained. This primarily includes Public Works employees and Permittees' Parks and Recreation Department personnel responsible for landscaping maintenance. For the permit year, 100% of the supervisors or specialists responsible for herbicide and pesticide application for COH, CLV, CNLV, and CC were properly trained.

9.2.8 Use of Alternate Products and Application Procedures (SC-4)

Permittees may experiment with or transition to use of "green" products to replace traditional fertilizers, pesticides, and herbicides. Permittees try alternative products and application procedures on an intermittent basis, when promising products or methods become available. As such, there may be no experimental applications to be reported in some years. Products and application procedures were reviewed during the permit year; there are no revisions to the lists of products or application procedures for any of the Permittees for the current permit year.

9.2.9 Household Hazardous Waste Collection (SC-5)

Many common household chemicals can cause significant water quality degradation when disposed of improperly and allowed to access the MS4. These household chemicals are considered hazardous waste and may include: paint thinners, solvents, paint removers, gasoline, diesel fuel, lighter fluid, waste oil, batteries, garden chemicals, pool chemicals, cleaning fluids, and aerosol cans. Republic Services (the Las Vegas Valley's recycling and waste disposal company) continues to provide household hazardous waste collection and recycled oil services for all residents in the Las Vegas Valley. Household hazardous waste is limited to 40 pounds dry or 15 gallons liquid per customer (gasoline restricted to 5 gallons). Republic Services provides two drop-off locations (South Valley: 560 Cape Horn Drive, Henderson and North Valley: 333 W. Gowan Road, North Las Vegas) that are open on rotating weeks, Wednesday through Saturday from 9 am to 1 pm. Table 9-6 provides a summary of the quantities of household hazardous waste received by Republic Services, and presumably spared from storm drains, for the current permit year.

Table 9-6: Republic Services Household Hazardous Waste Collection for the Current Permit Year (2022-2023)

Hazardous Waste Type	Pounds Collected
Aerosols	30,672
Alkaline Batteries - Wet, Sealed, Universal Waste	1,181
Alkaline Batteries - Wet, Spillable, Universal waste	300
Antifreeze Oil Liquid	4,275
Caustic Alkali Liquids	183
Compact Fluor Lamps	25
Corrosive Liquid, Acidic, Organic	386
Fertilizers Solids and Liquids	468
Flammable Liquids	3,938
Fluorescent Light Bulbs	600
Gasoline	65,900
Hydrochloric Acid	2,375
Inorganic Acid	471
NiCd Batteries (Wet)(Spillable) - Universal waste	250
Oxidizing Solids	96
Pesticides, Herbicide, Insecticides	3,971
RCRA Exempt Pesticide Liquids in Consumer Packaging	18,800
RCRA Exempt Pesticide Solids in Consumer Packaging	2,275
RCRA Exempt Processable Paints in Cans	24,650
Regular Bleach Calcium Hypochlorite in paper wrap	225
Sodium Hydroxide	1,175
Used Motor Oil	2,350
VAC Waste - Oil, Water	1,400
Waste Paint Related Material	4,828
Total	**170,794**

9.2.10 Ordinances Prohibiting Non-Stormwater Discharges and Littering (SC-7)

All municipal Permittees have ordinances prohibiting discharges of non-stormwater (except as expressly permitted) to the MS4. Local ordinances give the entities the authority to take enforcement action against illegal and illicit discharges, illegal dumping, littering, and other practices that may adversely affect the quality of water in the MS4, including those actions that have the "potential to

pollute". Violations may be reported by code enforcement officers, public agency staff, or by general citizens through hotlines and Permittee websites.

Section 4.0 of this Annual Report identifies the relevant stormwater ordinance(s) for each municipal Permittee and discusses the review and revision actions taken by Permittees for the permit year. Under those ordinances, the Permittees are granted enforcement authority. Table 9-7 summarizes the non-stormwater discharge enforcement activity undertaken by each Permittee for the current permit year and the prior three permit years.

Table 9-7: Enforcement of Non-Stormwater Discharges and Litter Complaints / Responses for the Current Permit Year (2022-2023) and the Prior Three Permit Years

Municipal Permittee	2022-2023	2021-2022	2020-2021	2019-2020
City of Henderson	43 enforcement actions [a] (from 77 complaints)	39 enforcement actions [a] (from 69 complaints)	38 enforcement actions [a] (from 259 complaints)	5 enforcement actions [a] (from 271 complaints)
City of Las Vegas	83 enforcement actions [b] and 93 Biohazard ROW Cleanup Responses	40 enforcement actions [b] and 124 Biohazard ROW Cleanup Responses	60 enforcement actions and 83 biohazard cleanup responses	308 enforcement actions and 68 biohazard ROW cleanup responses
City of North Las Vegas	2,377 enforcement actions [b]	2,142 enforcement actions [b]	1,348 enforcement actions [b]	840 enforcement actions [b]
Clark County	3,162 solid waste cases, 99 biohazard, 53 sewage, 7 chemical/fuel, 323 illegal dumping complaints, and 48 enforcement actions [b]	2,247 solid waste cases, 436 illegal dumping complaints, and 342 enforcement actions [b]	1,994 solid waste cases, 263 illegal dumping complaints, and 133 enforcement actions [b]	1,486 solid waste cases, 155 illegal dumping complaints, and 212 enforcement actions [b]
SWMP Target	Maintain and enforce stormwater ordinances			

Notes:

[a] City of Henderson enforcement actions do not include: verbal warnings; for Desert Dumping and Illicit Discharge complaints, they do include notice of violations, certified letters to abate, misdemeanor citations, and fines

[b] Enforcement actions include: verbal warning, corrective notice, Notice of Violation, Notice to Abate, Cease and Desist Orders, and judicial actions

9.2.11 Desert Dumping Controls (SC-8)

The Permittees have ordinances prohibiting dumping of materials in the desert surrounding the developed areas of the Las Vegas Valley. In addition to being unsightly and posing threats to the local ecology and human health, illegally dumped materials could be sources of water pollution if they come in to contact with stormwater (e.g., old vehicles, household waste, commercial and industrial waste, construction waste, landscaping refuse). Depending on the type and location of the observation, reports of illegal dumping may be referred to the BLM (data not reported in this Annual Report), the Southern Nevada Health District (SNHD), or the Clark County Public Response Office (CCPRO) for investigation and enforcement. Table 9-8 summarizes the desert dumping enforcement activity undertaken by each Permittee or relevant agency for the current permit year and the prior three permit years.

Table 9-8: Enforcement of Desert Dumping Complaints / Responses for the Current Permit Year (2022-2023) and the Prior Three Permit Years

Municipal Permittee	2022-2023	2021-2022	2020-2021	2019-2020
City of Henderson	7 enforcement actions [a] from 64 complaints	2 enforcement actions [a] from 57 complaints	0 enforcement actions [a] from 9 complaints	10 enforcement actions [a] from 14 complaints
City of Las Vegas	0 enforcement actions [b]	0 enforcement actions [b]	0 enforcement actions [b]	0 enforcement actions [b]
City of North Las Vegas	258 enforcement actions	335 enforcement actions	164 enforcement actions	126 enforcement actions
Clark County Public Response Office	3,162 solid waste cases and 323 illegal dumping complaints	2,247 solid waste cases and 436 illegal dumping complaints	1,994 solid waste cases and 263 illegal dumping complaints	1,486 solid waste cases and 155 illegal dumping complaints
Southern Nevada Health District	907 complaints; 60 NOVs; 44 cases adjudicated; $82,000 in penalties	1,085 complaints; 91 NOVs; 72 cases adjudicated; $119,200 in penalties	1,244 complaints; 61 NOVs; 89 cases adjudicated; $74,350 in penalties	1,537 complaints; 102 NOVs; 77 cases adjudicated; $76,625 in penalties
SWMP Target	Maintain and enforce stormwater ordinances			

Notes:

[a] City of Henderson enforcement actions do not include: verbal warnings; for Desert Dumping and Illicit Discharge complaints, they do include notice of violations, certified letters to abate, misdemeanor citations, and fines

[b] CLV is called by SNHD to clean up desert dumping on CLV public property; CLV defers to SNHD for enforcement actions on private properties

9.2.12 Dust Control Measures (SC-10)

To meet regulations associated with the Clean Air Act, agencies within the Las Vegas Valley enforce dust control measures at construction sites and stationary industrial sites that may generate significant dust (e.g., cement plants, rock crushing facilities). In the Las Vegas Valley, the Clark County Department of Environment and Sustainability (DES) has primary responsibility for assuring that air quality regulations are met. During the permit year the DES performed 8,483 dust inspections. Inspections resulted in 64 enforcement actions, with a total of $260,875 in fines assessed.

9.2.13 Trash Receptacle Enclosures (SC-14)

Municipal codes for each of the Permittees require that trash receptacles for commercial sites, industrial sites, and multi-family developments be enclosed, however they do not need to be covered. These code requirements reduce the potential for stormwater to contact pollutants such as organics and bacteria, and minimize the potential for litter to be blown from the trash receptacle into the MS4. Code requirements apply to all new development. During the permit year, plan reviews included reviews of trash enclosures for compliance with design standards.



Section 10

Post-Construction Program for New Development and Significant Redevelopment

10 Post-Construction Program for New Development and Significant Redevelopment

Section IV.F of the 2010-2015 NPDES MS4 Permit for the Las Vegas Valley includes requirements for a Post-Construction Program for New Development and Significant Redevelopment (NDSR). The purpose of the Post-Construction Program for NDSR is to utilize BMPs to address impacts to urban runoff water quality after construction activities have ceased.

There are no specific NPDES MS4 Permit requirements for a Watershed Program. However, the SWMP includes a description of the Las Vegas Valley Watershed Program, in response to the unique factors affecting the Las Vegas Valley and stakeholder interest in the development of such a program. As such, the Permittees report on their progress towards watershed-based BMPs in this section of the Annual Report.

10.1 Overview of Best Management Practices

Table 5-1 in Section 5 (Stormwater Management Approach) of this Annual Report identifies the BMPs employed by the Las Vegas Valley in the 2022-2023 MS4 permit year to meet permit requirements. Specifically, the Post-Construction Program for NDSR employed the following Source Control (SC), Site Design (SD), and Treatment Control (TC) BMPs, discussed in the following subsections:

- SC-18 Stormwater Outfall Map (discussed in Section 6.0 of this Annual Report)
- SC-35 Stormwater Outfall Map with Areas of NDSR
- SD-1 Open Space and Landscaping Objectives
- SD-2 Rural Land Overlay
- SD-3 Hillside Development Ordinances
- SD-4 Sustainability and Green Building Initiatives
- SD-5 Covered Fuel Areas
- SD-6 Raised Fuel Areas
- SD-7 Emergency Shut-off Switch and Shear Valve
- SD-8 Standard Drainage Design Criteria
- SD-9 Parking Lot Low Impact Development (LID) Measures
- SD-10 LID Measures
- TC-4 Sand / Oil Separator
- TC-5 Sand Filter

The following Watershed Program Treatment Control (TC) BMPs are also discussed:

- TC-1 Regional Detention Basins
- TC-2 Regional Channel Lining

- TC-3 Las Vegas Wash Stabilization Structures
- TC-6 Regional Detention Basin Retrofit

10.2 Description of Best Management Practices

Table 10-1 provides a summary of the Permittees' activities for the current permit year that satisfy the Site Design and Treatment Control BMPs identified in the SWMP for the Post-Construction Program for NDSR.

Table 10-1: Post-Construction Program for New Development and Significant Redevelopment BMP Activity for the Current Permit Year (2022-2023)

BMP	Purpose of the BMP	Permittee Activities
SD-1 Open Space and Landscaping Objectives	▪ Reduce runoff and resulting pollutant load ▪ Natural wash areas may provide natural runoff treatment ▪ Minimize impact of development immediately adjacent to active stream courses	Development plans were reviewed for compliance and developer agreements used to define standards for master planned communities, when applicable.
SD-2 Rural Land Overlay	▪ Reduce runoff and resulting pollutant load	Development plans were reviewed for compliance.
SD-3 Hillside Development Ordinances	▪ Limit development or set strict criteria ▪ Reduce high flow rates from erosion susceptible areas	Development plans were reviewed for compliance.
SD-4 Sustainability and Green Building Initiatives	▪ Reduce runoff and resulting pollutant load ▪ Provide onsite treatment for new developments	Green Building Initiatives promoted, when applicable.
SD-5 Covered Fuel Areas	▪ Cover fueling areas with roofs or awnings	Standard practice. All new fueling areas were constructed with covered roofs or awnings.
SD-6 Raised Fuel Areas	▪ Raise fueling areas above the surrounding pavement	Standard practice. All new fueling areas were constructed on a small concrete platform.
SD-7 Emergency Shut-Off Switch and Shear Valve	▪ Isolate fueling areas after spills by installing emergency shut-off switches `and valves at new gas stations	Standard practice. All new gas stations were constructed with emergency shut-off switches or valves.
SD-8 Standard Drainage Design Criteria	▪ Provide drainage design criteria requiring stabilization of drainage ways to prevent erosion ▪ Implement Low Impact Development (LID) designs, when applicable	Development plans were reviewed for compliance.
SD-9 Parking Lot LID Measures	▪ Reduce parking lot runoff and resulting pollutant load ▪ Implement LID requirements for medium and large parking lots	Development plans were reviewed for compliance.
SD-10 LID Measures	▪ Minimize the impact of individual urban developments on stormwater runoff quantity and quality	LID measures promoted, when applicable. Ordinances did not require an update.
TC-4 Sand / Oil Separator	▪ Remove solids and floatables, including hydrocarbons from stormwater or wastewater	▪ CC installed 3 sand / oil separators ▪ CLV installed 8 sand / oil separators
TC-5 Sand Filter	▪ Remove small particulates and some dissolved pollutants from stormwater	No sand filters were installed during the permit year
SWMP Target	100% compliance with design criteria, standards, and policies	

10.2.1 Stormwater Outfall Map with Areas of NDSR

The Las Vegas Valley NPDES MS4 Permit requires the Permittees to prepare an annual map of NDSR within the permit area. Figure 10-1 presents a Valley-wide GIS map depicting areas, or approximate areas, of NDSR in the Las Vegas Valley for the permit year. Figure 10-2 through Figure 10-5 provide a more detailed view of four Las Vegas Valley regions (northwest, northeast, southwest, and southeast, respectively). These maps were prepared based on stormwater infrastructure data provided from the Permittees and parcel level data from Clark County. Data were compiled only for development projects that were completed (e.g., have received Certificates of Occupancy, Certificates of Completion) during the permit year.

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Figure 10-1
Las Vegas Valley
NDSR: Overview

Northwest
See Figure 10-2

Northeast
See Figure 10-3

Southwest
See Figure 10-4

Southeast
See Figure 10-5

UPPER NORTHERN WATERSHED
LOWER NORTHERN WATERSHED
RANGE WATERSHED
GOWAN WATERSHED
CENTRAL WATERSHED
LOWER LAS VEGAS WASHWATERSHED
FLAMINGO/TROPICANA WATERSHED
DUCK CREEK WATERSHED
PITTMAN WATERSHED
C-1 WATERSHED
APEX

Legend

- New Development and Significant Redevelopment from July 1, 2022 to June 30, 2023
- Major Washes
- Watershed

Detention Basins

- Completed
- Under Construction
- Ultimate Development Boundary Updated for the Las Vegas Valley MS4 Program (2018 MPU)

Jurisdictional Boundaries

- City of Henderson
- City of Las Vegas
- City of North Las Vegas
- Airports
- Streets
- Railroads
- Areas Unsuitable for Infiltration

N
W E
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0 1 2 4 6
Scale in Miles

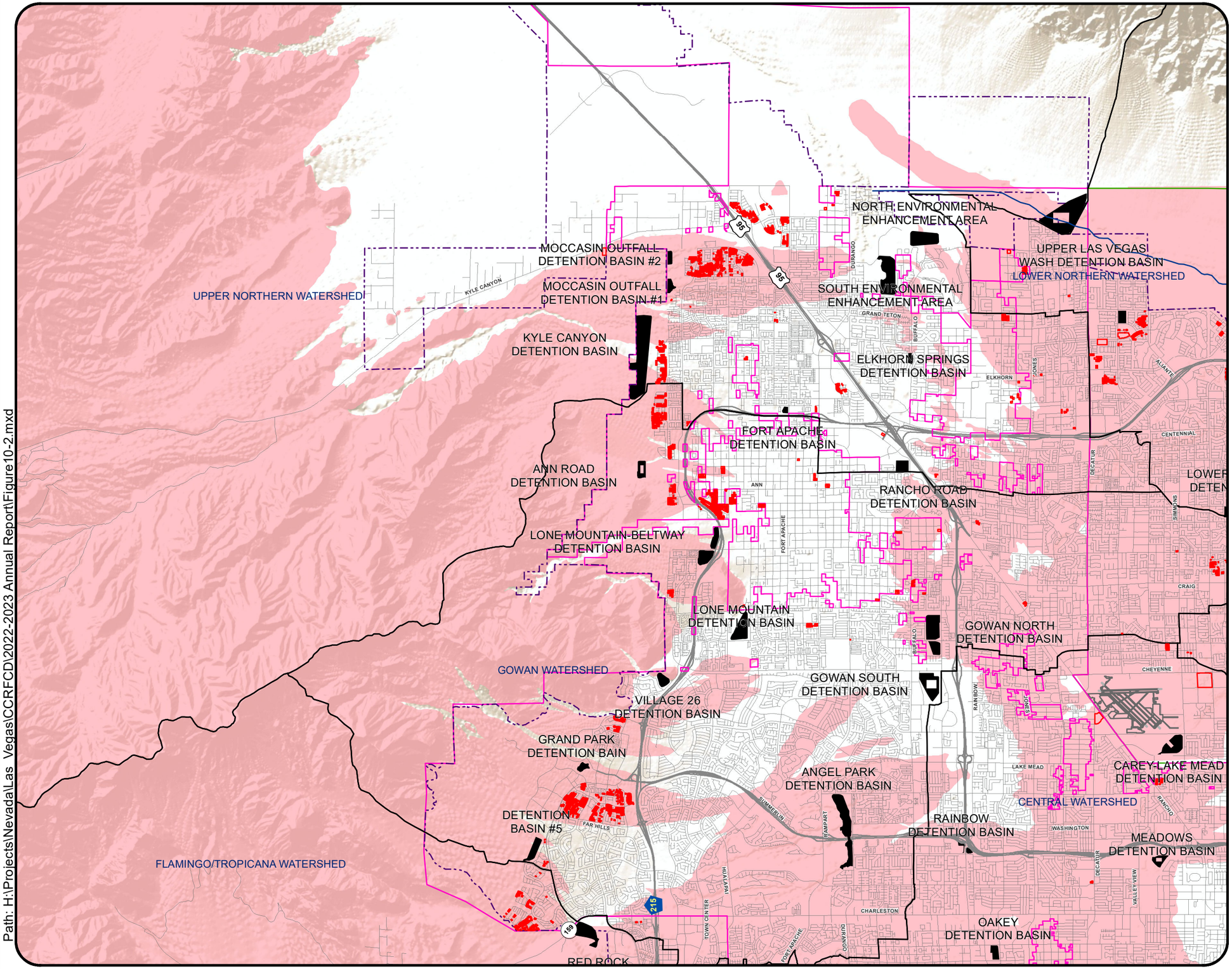
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Figure 10-2
Las Vegas Valley
NDSR: Northwest



Legend

- New Development and Significant Redevelopment from July 1, 2022 to June 30, 2023
- Major Washes
- Watershed

Detention Basins

- Completed
- Under Construction
- Ultimate Development Boundary Updated for the Las Vegas Valley MS4 Program (2018 MPU)
- Areas Unsuitable for Infiltration

Jurisdictional Boundaries

- City of Henderson
- City of Las Vegas
- City of North Las Vegas
- Airports
- Streets
- Railroads

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Scale in Miles

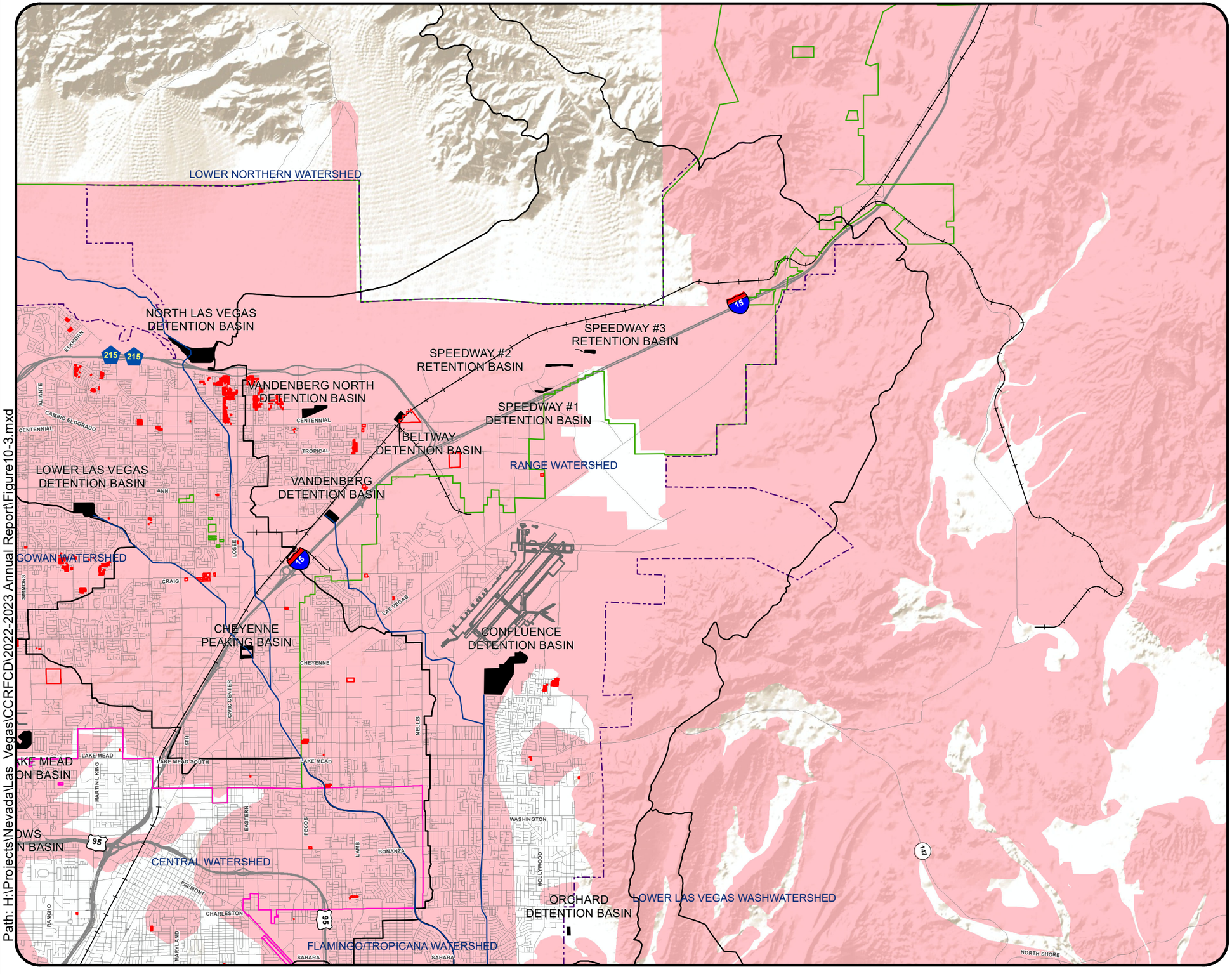
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Figure 10-3
Las Vegas Valley
NDSR: Northeast



Legend

- New Development and Significant Redevelopment from July 1, 2022 to June 30, 2023
- Major Washes
- Watershed

Detention Basins

- Completed
- Under Construction
- Ultimate Development Boundary Updated for the Las Vegas Valley MS4 Program (2018 MPU)
- Areas Unsuitable for Infiltration

Jurisdictional Boundaries

- City of Henderson
- City of Las Vegas
- City of North Las Vegas
- Airports
- Streets
- Railroads

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Scale in Miles

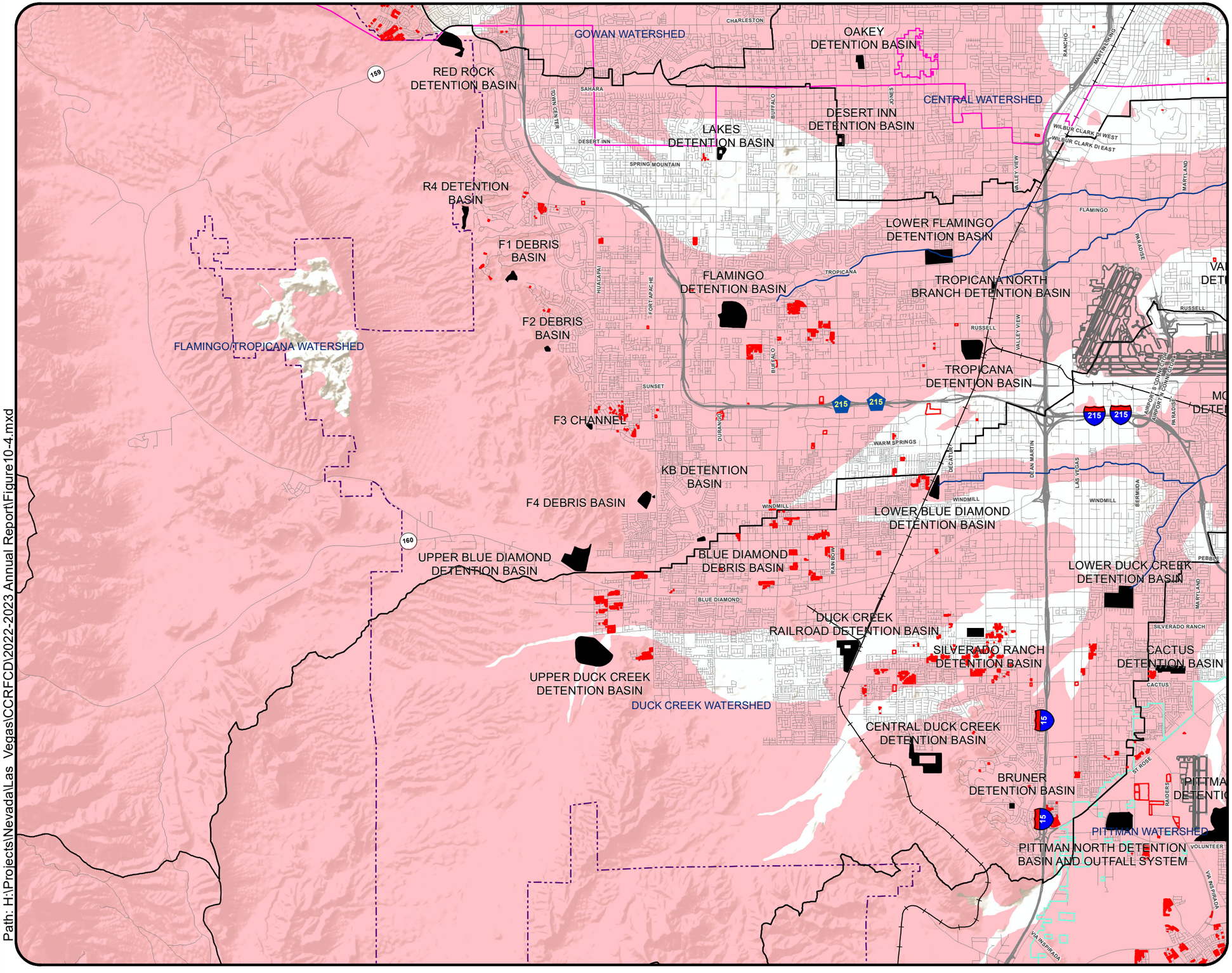
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Figure 10-4
Las Vegas Valley
NDSR: Southwest



Legend

- New Development and Significant Redevelopment from July 1, 2022 to June 30, 2023
- Major Washes
- Watershed

Detention Basins

- Completed
- Under Construction
- Ultimate Development Boundary Updated for the Las Vegas Valley MS4 Program (2018 MPU)
- Areas Unsuitable for Infiltration

Jurisdictional Boundaries

- City of Henderson
- City of Las Vegas
- City of North Las Vegas
- Airports
- Streets
- Railroads

N W E S

0 0.5 1 2 3

Scale in Miles

Service Layer Credits: Sources: Esri, USGS, NOAA

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Figure 10-5
Las Vegas Valley
NDSR: Southeast

Legend

- New Development and Significant Redevelopment from July 1, 2022 to June 30, 2023
- Major Washes
- Watershed

Detention Basins

- Completed
- Under Construction
- Ultimate Development Boundary Updated for the Las Vegas Valley MS4 Program (2018 MPU)
- Areas Unsuitable for Infiltration

Jurisdictional Boundaries

- City of Henderson
- City of Las Vegas
- City of North Las Vegas
- Airports
- Streets
- Railroads

N W E S

0 0.5 1 2 3

Scale in Miles

Service Layer Credits: Sources: Esri, USGS, NOAA

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10.2.2 Areas of NDSR in Watersheds with Impaired Waterbodies

As shown in Figure 10-1 through Figure 10-5, during the permit year, NDSR occurred in watersheds that convey water to tributaries listed as impaired waterbodies on the 303(d) list. Construction of new development was not likely to impact the segments listed for boron or fluoride. Table 10-2 shows the acreage of NDSR in the watersheds that drain to tributaries that are listed for TDS, TSS, temperature, iron, *E. Coli* and/or selenium.

Table 10-2: NDSR Acreage in Watersheds with Impaired Waterbodies for the Current Permit Year (2022-2023)

Watershed	Impaired Waterbody	Impairment Parameter	NDSR (Acres)
Central	Las Vegas Creek - From its origin to the Las Vegas Wash	Selenium	63.6
Duck Creek	Duck Creek - From its origin to the Las Vegas Wash	Selenium, Temperature, and TDS	256.6
Flamingo / Tropicana	Flamingo Wash - From its origin to the Las Vegas Wash	Selenium, iron, and TSS	160.7
Range	Sloan Channel - From North Las Vegas Blvd. to the Las Vegas Wash	Selenium	104.2
Upper and Lower Northern	Las Vegas Wash - Above wastewater treatment plants	*E. Coli*, Iron, Selenium, TDS, and TSS	309.0

In addition to depicting areas of NDSR, Figure 10-1 through Figure 10-5 show the portions of the Las Vegas Valley watershed previously identified to be unsuitable for infiltration. In these areas, NDSR may induce infiltration to shallow alluvial groundwater along stream courses, which could affect TDS and selenium loads in listed waterbodies. As such, BMP practices adopted for NDSR by the Permittees are designed to minimize the impacts of these pollutants by preventing or discouraging infiltration measures.

10.2.3 Water Quality Capture Volume

The Permittees utilize a regional approach to manage water quality. One of the regional strategies includes the effective use of detention basins as BMPs. The status of design and construction projects for new or retrofitted regional detention basins is discussed in more detail later in this section.

New or modified regional detention basins incorporate extended detention basins (EDBs) or other water quality features to improve water quality. The water quality features and the associated proposed construction schedules are discussed in detail in the SWMP Technical Memorandum (TM) IV.16 Strategic Plan for Use of Regional Detention Basins for Water Quality Management. The volume of water captured and treated by these features is referred to as the water quality capture volume (WQCV) in the regional detention basins.

Increasing development within the Las Vegas Valley watersheds increases the demand on regional detention basins. The required capture volume (RCV), which represents the stormwater quality requirement created by additional acres of NDSR, is compared to the WQCV provided by regional detention basins.

During the permit year, two detention basins were constructed that included water quality features, Grand Park (9 AF) and Silverado Ranch (19.6 AF). This increased the total WQCV of the Las Vegas Valley by 28.6 AF.

Table 10-3 provides a summary of estimated NDSR acreage, the RCV, and the WQCV for the current permit year and the prior three permit years, as well as cumulative totals summed from the beginning of the Post-Construction Program for NDSR in 2013.

Figure 10-6 depicts the progress of the WQCV implementation schedule. For planning purposes, as the RCV reaches 85% of the cumulative WQCV, design of the next new detention basin or retrofit is initiated, if not already in progress. During the 2022-2023 permit year, three detention basins were under design (Airport Peaking basin, North Las Vegas, and Meadows), two design completed (Jim McGaughey and Paradise), and two under construction (Pabco North Peaking Basin and Pabco South Peaking Basin).

Table 10-3: RCV vs WQCV for NDSR for the Current Permit Year (2022-2023) and the Prior Three Permit Years

Metric	2022-2023		2021-2022		2020-2021		2019-2020	
	Annual	Cumulative [a]	Annual	Cumulative [a]	Annual	Cumulative [a]	Annual	Cumulative [a]
NDSR [b] [acres]	1,575	19,123	1,878	17,548	1,749	15,670	1,509	13,921
WQCV in Regional DBs [acre-feet]	28.6	247	4.5	218.4	45	213.9	52.1	168.95
RCV [acre-feet]	21.01	226.81	25.05	205.8	23.33	180.75	20.13	157.42
Net WQCV (WQCV - RCV) [acre-feet]	7.59	20.19	-20.55	12.6	21.67	33.15	31.97	11.53

Notes:

[a] Cumulative values presented begin from NDSR program implementation in the 2013-2014 permit year

[b] Includes parcels with areas less than 1 acre that fall outside of the scope of the NDSR Program

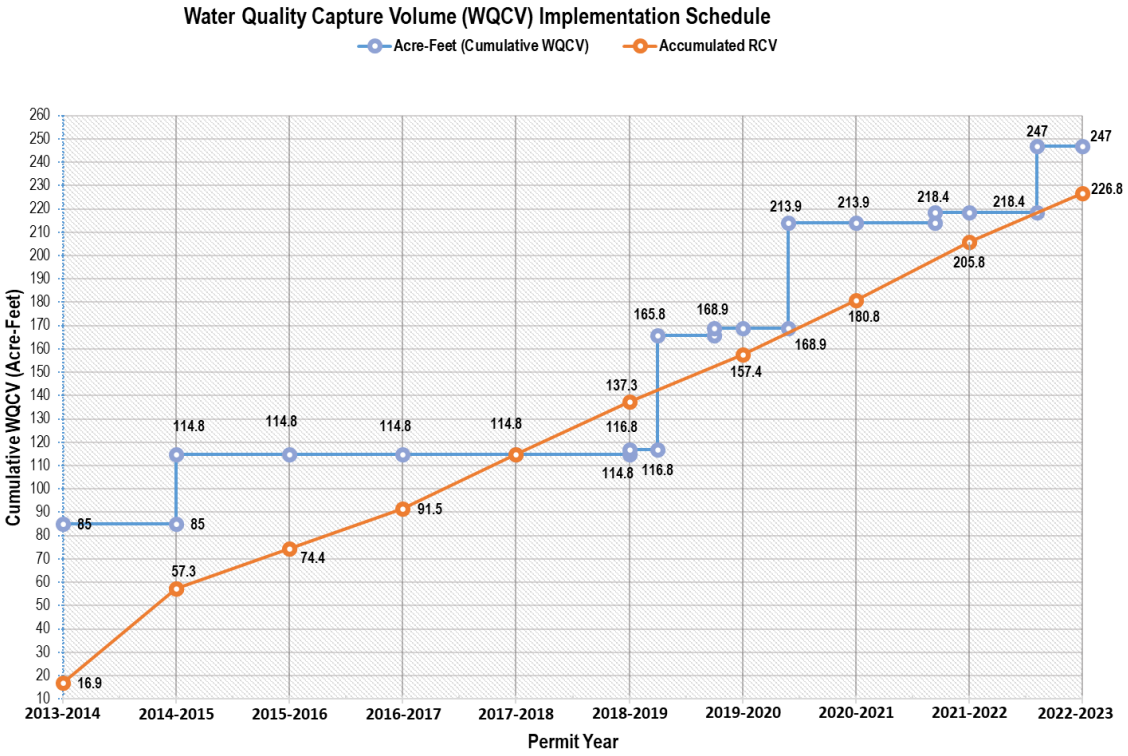


Figure 10-6: Las Vegas Valley Regional WQCV Implementation Schedule

10.2.4 Regional Detention Basins (TC-1)

Regional flood control detention basins are a key component of the MS4 Watershed Program. Due to the infrequency, localization, and variable magnitude of storm events in the Las Vegas Valley, the use of regional detention basins to capture and regulate runoff and associated pollutants is more efficient than the use of smaller scale facilities. Table 10-4 summarizes the status of regional detention basins designed and constructed during the current permit year and the prior three permit years.

Table 10-4: Status of Regional Detention Basins for the Current Permit Year (2022-2023) and the Prior Three Permit Years

Metric	2022-2023		2021-2022		2020-2021		2019-2020	
	Number	Details	Number	Details	Number	Details	Number	Details
Detention Basins in Design	3	Meadows (upgrade), Airport Peaking Basin, North Las Vegas (upgrade)	4	Airport Peaking Basin, Jim McGaughey, Paradise, Meadows	3	Airport Peaking Basin, Jim McGaughey, Paradise	4	Silverado Ranch, Airport Peaking Basin, Speedway 2 (expansion), Jim McGaughey
Detention Basins Completed Design	2	Paradise, Jim McGaughey	2	Silverado Ranch, Pittman East [a]	2	Speedway 2, Silverado Ranch	1	Silverado Ranch
Detention Basins Under Construction	2	Pabco North Peaking Basin, Pabco South Peaking Basin	1	Grand Park	2	Grand Park, Beltway	2	Vandenberg North, Grand Park
Detention Basins Completed Construction	2	Grand Park, Silverado Ranch	2	Beltway, Speedway 2 [a]	1	Vandenberg North	3	Pittman North, Park Highlands West, Moccasin Outfall #2 [b]

Notes:

NA = Not Applicable

[a] Addition of water quality features

[b] Formerly referred to as Skye Canyon #2

10.2.5 Regional Channel Lining

The Hydrologic Criteria and Drainage Design Manual requires all regional flood control channels to be stabilized in some manner. In addition to improving hydraulic performance, channel lining eliminates channel erosion that would contribute to downstream sediment load, TSS, and turbidity. Slopes in the Las Vegas Valley are generally moderate-to-steep, flow velocities are high, and soils are erodible; therefore, most channels are stabilized using concrete lining. The CCRFCD prefers providing concrete lining for regional flood control channels to minimize capital costs, right-of-way requirements, and maintenance costs. As a result of the CCRFCD policy, very few channels within the existing developed area are unlined. However, occasionally unlined channels are replaced. Table 10-5 provides a summary of regional channel lining projects completed during the current permit year and the prior three permit years.

Table 10-5: Miles of Regional Channel Stabilization for the Current Permit Year (2022-2023) and the Prior Three Permit Years

Metric	2022-2023	2021-2022	2020-2021	2019-2020
Miles of Regional Channel Stabilized (e.g., replacing an unlined channel with an armored channel or reinforced concrete box)	0.25	2.4	2.2	0

10.2.6 Las Vegas Wash Stabilization Structures (TC-3)

Over the past 40 years, erosion in the Las Vegas Wash due to treated wastewater discharges from WWTP's and urban stormwater runoff has resulted in dramatic channel down cutting and reduction in wetland areas from approximately 2,000 acres to 200 acres. This in turn contributed to downstream water quality degradation in the Las Vegas Wash and Las Vegas Bay. SNWA, through the Las Vegas Wash Coordination Committee (LVWCC), was delegated responsibility for constructing grade control structures in sections where the Las Vegas Wash is eroding. SNWA installed and maintained 21 erosion control structures (i.e.,weirs) and more than 13 miles of bank protection in the Lower Las Vegas Wash.

The SNWA has successfully finished the removal of vegetation and replacement of riprap at the Three Kids Weir. Additionally, they have concluded the sediment and vegetation removal project between the Three Kids and Rainbow Gardens weirs. This year's activities also encompassed the annual inspection of weir structures along with their associated bank protection measures. Furthermore, the SNWA has initiated the coordination of repairs at soil stockpile sites dedicated to Stormwater Best Management Practices.

10.2.7 Regional Detention Basin Retrofit (TC-6)

Regional detention basins are designed to reduce peaks from large flood events. In most cases, small runoff events pass through the regional detention basins with relatively little attenuation and little removal of constituents. The SWMP TM IV.16 was prepared to identify existing detention basins that could benefit from stormwater quality retrofits and to plan water quality features in the construction of new detention basins, which would result in enough total WQCV to address the runoff from NDSR. Stormwater Quality features are tracked as part of TC-1, Regional Detention Basins.



Section 11

Illicit Discharge Detection and Elimination Program

11 Illicit Discharge Detection and Elimination Program

Section IV.G of the 2010-2015 NPDES MS4 Permit for the Las Vegas Valley includes requirements for an Illicit Discharge Detection and Elimination Program. The Illicit Discharge Detection and Elimination (IDDE) Program consists of four components: field screening, field inspections, public reporting opportunities, and a spill response strategy. The components are designed to detect and eliminate illicit discharges and improper disposal into the MS4.

Essentially all aspects of the MS4 management program are directed toward reducing or eliminating illicit and illegal discharges to the MS4 in some way. Accordingly, all BMPs in the Las Vegas Valley MS4 program are connected directly or indirectly to IDDE. This section of the Annual Report focuses on BMPs that specifically target illicit discharges that are not discussed in other sections of the report.

11.1 Overview of Best Management Practices

Table 5-1 in Section 5 (Stormwater Management Approach) of this Annual Report identifies the BMPs employed by the Las Vegas Valley in the 2022–2023 MS4 permit year, to meet permit requirements. Specifically, the Illicit Discharge Detection and Elimination Program employed the following Source Control (SC) BMPs, discussed in the following subsections:

- SC-12 Spill Control Prevention Plan
- SC-16 Regional Water Quality Planning
- SC-19 Sanitary Sewer Line Inspection and Replacement Program
- SC-26 Storm Channel Inspections
- SC-27 Dry Weather Monitoring (as discussed in Section 7.0 of this Annual Report)
- SC-29 Stormwater-Related Complaint Response

11.2 Description of Individual Best Management Practices

11.2.1 Spill Control Prevention Plan (SC-12)

Spill Control Prevention Plans are plans to prevent and contain spills of hazardous materials that would impact downstream water quality. The Permittees currently have spill prevention and response regulation programs in place through their fire departments and contracts with special emergency response contractors. These regulations and programs are authorized in response to other State requirements but provide benefits to the MS4 program.

11.2.2 Regional Water Quality Planning (SC-16)

Regional water quality planning activities are performed by a variety of agencies and organizations including the SNWA, the Las Vegas Valley Watershed Advisory Committee (LVVWAC), the Las Vegas Wash Coordination Committee (LVWCC), and the Lake Mead Water Quality Forum

(LMWQF). These regional coalitions allow for the coordination of activities designed to benefit stormwater quality throughout the Las Vegas Valley. The Permittees participate in these meetings. During the permit year, the LMWQF did not hold any quarterly meetings. However, there were five meetings for the LVVWAC and two meetings for the LVWCC. All Permittees had representatives at LVVWAC and LVWCC meetings.

11.2.3 Sanitary Sewer Line Inspection and Replacement Program (SC-19)

This program is intended to prevent exfiltration from the sanitary sewer system to the MS4, by assuring the integrity of the sanitary sewer collection system. This program focuses on assessing both maintenance and structural deficiencies, as well as identifying areas of infiltration, which in some instances could lead to exfiltration. Table 11-1 provides a summary of sanitary sewer lines inspected and repaired for the current permit year and the prior three permit years.

Table 11-1: Summary of Sanitary Sewer Line Inspection and Replacement Activity for the Current Permit Year (2022-2023) and the Prior Three Permit Years

Permittee	Metric	2022-2023	2021-2022	2020-2021	2019-2020
City of Henderson	Inspected [miles]	75 miles 6,138 manholes	95 miles 6,124 manholes	96 miles 7,412 manholes	101
	Repaired [miles repaired or jetted]	243	246	240	237 miles jetted; 300-linear feet of sanitary sewer replaced, and 2 spot repairs performed
City of Las Vegas	Inspected [miles]	148 miles 25 sewer laterals televised 47 manholes	31 sewer laterals televised 28 manholes	147 miles 19 manholes	511 miles of main lines, 29 laterals televised
	Repaired [miles repaired or jetted]	2.5 miles repaired 421.5 miles 47 manholes	574 miles 28 manholes	567	469 miles cleaned, 35 inline sewer patches, 20 manholes
City of North Las Vegas	Inspected [miles]	107 miles [a] 854 manholes	100 miles [a] 812 manholes	51 miles [a] 891 manholes	41.6 [a]
	Repaired [miles repaired or jetted]	0	83 LF	1.82	2.9
Clark County	Inspected [miles]	111	124 miles 352 manholes	123 miles 179 manholes	140
	Repaired [miles repaired or jetted]	722 miles, 64 manholes	754 Miles jetted and 89 repairs, 64 manholes	764 Miles jetted and 69 repairs, 64 manholes	666
SWMP Target	Minimize sanitary sewer overflows				

Note:
N/A: Not Available / Not Analyzed
[a] This number includes miles inspected and/or jetted

11.2.4 Storm Channel Inspections (SC-26)

Semi-annual inspections of open storm channels and detention basins include, but are not limited to, inspecting for evidence of illicit discharges and illegal dumping. MS4 facilities were inspected by the Permittees in Fall 2022 and Spring 2023. Inspections included visually inspecting exposed storm channels and detention basins, to look for evidence of non-stormwater discharges. Emphasis was

placed on those areas that had a reasonable potential for containing illicit discharges, exfiltration from the sanitary sewer system, or other sources of non-stormwater. Heavy sediment loads that may be associated with construction site runoff were also inspected.

In general, dry weather flows in Las Vegas Valley MS4 channels were minor. Erosion, gravel/silt, and debris were commonly observed along the channels and within detention basins. Vegetation, trash, debris, and graffiti were commonly found in channels inspected by City of North Las Vegas, City of Henderson, and City of Las Vegas. Clark County commonly observed vegetation, gravel/silt, and debris during the inspections.

11.2.5 Stormwater-Related Complaint Response (SC-29)

The Permittees provide several avenues by which the public can report potential illicit discharges to the MS4, including:

- Websites
    - The Permittees' collective SQMC website, www.LVstormwater.com, has a link for reporting illicit discharges. This link gives contact information for reporting illicit discharges and clogged storm drains.
    - Individual Permittee websites also include links for reporting illicit discharges or illegal dumping within their jurisdiction.
- Southern Nevada Health District (SNHD)
    - The SNHD has the authority to enforce ordinances prohibiting dumping of solid waste, semisolid waste, liquid waste, and sewage to the Las Vegas Valley MS4. The public can call SNHD and report problems directly or can submit a complaint form for reporting evidence of illegal dumping via their website: www.southernnevadahealthdistrict.org/solid-waste/illegal-dumping.php
- Clark County Public Response Office
    - The CCPRO receives public complaints related to illegal dumping and other ordinance violations and is empowered to respond and address these problems via their website: http://www.clarkcountynv.gov/administrative-services/pro/Pages/default.aspx
- Direct Contact with Permittees
    - Each of the Permittees receives direct reports from citizens reporting dumping, illegal discharges of non-stormwater to the drainage system, maintenance problems, and other activities that may affect water quality. The CLV, CNLV, and COH follow up on these complaints within their jurisdiction; Clark County follows up on complaints in unincorporated Clark County. The CCRFCD also routinely receives reports through its citizen contact system, often in response to its PSAs. Complaints are directed to the appropriate jurisdiction for resolution.

Table 11-2 provides a summary of the number of reported stormwater-related complaints for the current permit year and the prior three permit years.

Table 11-2: Stormwater-Related Complaints Received for the Current Permit Year (2022-2023) and the Prior Three Permit Years

Permittee	2022-2023	2021-2022	2020-2021	2019-2020
City of Henderson	177	197	50	33
City of Las Vegas	83	61	60	81
City of North Las Vegas	19	18	20	27
Clark County	596	535	496	514
SWMP Target	Respond to 100% of stormwater-related complaints.			



Section 12

Industrial Facility Monitoring and Control Program

12 Industrial Facility Monitoring and Control Program

Section IV.H of the 2010-2015 NPDES MS4 Permit for the Las Vegas Valley includes requirements for an Industrial Facility Monitoring and Control Program. Activities conducted under the Las Vegas Valley Industrial Facility Monitoring and Control Program consisted of identifying industrial facilities that could be potential pollutant sources, conducting inspections of industrial facilities, and conducting an ongoing training program for local industrial facility inspectors. This program is intended to complement the separate industrial facility permitting program conducted by NDEP.

12.1 Overview of Best Management Practices

Table 5-1 in Section 5 (Stormwater Management Approach) of this Annual Report identifies the BMPs employed by the Las Vegas Valley in the 2022-2023 MS4 permit year to meet permit requirements. Specifically, the Industrial Facility Monitoring and Control Program employed the following Source Control (SC) BMPs, discussed in the following subsections:

- SC-6 Commercial / Industrial Housekeeping Practices
- SC-9 Grease Interceptor Program
- SC-13 Industrial Pretreatment Program
- SC-15 Southern Nevada Health District Inspections
- SC-23 Industrial Facility Stormwater Inspections
- SC-24 Industrial Facility Stormwater Inventory
- SC-25 Industrial Facility Stormwater Inspection Checklist
- SC-28 Industrial Facility Inspector Training Workshops

12.2 Description of Individual Best Management Practices

12.2.1 Commercial / Industrial Housekeeping Practices (SC-6)

Commercial and industrial facility operators are encouraged to apply good housekeeping practices in exterior areas, such that stormwater runoff would not contact pollutant sources and contribute a substantial load of pollutants to the MS4. In addition, municipal codes for each of the municipal Permittees require that all activities and operations at industrial facilities and commercial facilities where hazardous materials and chemicals are used, be conducted in, and contained by enclosed structures. Permittees promote good commercial / industrial facility maintenance by providing facility owners with information regarding good housekeeping practices during inspections and through the www.LVstormwater.com website.

12.2.2 Grease Interceptor Program (SC-9)

Municipal Permittees have existing ordinances requiring proper removal and disposal of grease from grease interceptors in restaurants and industrial facilities. Clogged grease interceptors could allow

wastewater to be directed to the MS4. Public wastewater treatment service providers inspect over 2,000 restaurants and industrial facilities each year. BMPs are enforced consistently among each of the Permittees in the Las Vegas Valley. Table 12-1 provides a summary of the number of inspections the Permittees completed during the current permit year and the prior three permit years.

Table 12-1: Number of Grease Interceptor Inspections Performed for the Current Permit Year (2022-2023) and the Prior Three Permit Years

Permittee	2022-2023	2021-2022	2020-2021	2019-2020
City of Henderson	110	106	105	98
City of Las Vegas	919	863	1,171	997
City of North Las Vegas	599	904	269	597
Clark County	4,004	6,221	8,531	5,571
SWMP Target	Minimize sanitary sewer overflows			

12.2.3 Industrial Pretreatment Program (SC-13)

Permittees have industrial pretreatment programs associated with their wastewater systems. All new qualifying industrial facilities must comply with the industrial pretreatment program and are subject to periodic pretreatment inspections. Activities associated with this BMP are reported separately under individual NPDES discharge permits.

12.2.4 Southern Nevada Health District Inspections (SC-15)

The Southern Nevada Health District (SNHD) performs inspections of commercial and industrial facilities that are conditionally exempt small quantity generators of hazardous waste (CESQG). These are smaller facilities that do not fall under the State's hazardous materials regulations. In addition, the SNHD Solid Waste and Compliance Division inspect several underground storage tanks (UST) and permitted disposal facilities (PDF). SNHD sets the policies and procedures to comply with the BMP. Table 12-2 provides a summary of the number of inspections the SNHD completed during the current permit year and the prior three permit years.

Table 12-2: Summary of Southern Nevada Health District Industrial Facility Inspections for the Current Permit Year (2022-2023) and the Prior Three Permit Years

Inspection Type	2022-2023	2021-2022	2020-2021	2019-2020
Permitted Disposal Facilities	245	238	225	233
Underground Storage Tank	960	734	1,185	639
Waste Management Audit	3,431	3,424	3,459	2,779

12.2.5 Industrial Facility Stormwater Inspections (SC-23)

The Permittees are required to conduct inspections of industrial facilities that are included on their industrial facility inventories (discussed in the next subsection). Annual inspections are required for industrial facilities that belong to one of four categories: 1) Industrial facilities subject to Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986; 2) Municipal landfills: 3) Hazardous waste, treatment, disposal, and recovery facilities; and 4) Other industrial facilities determined by the Permittees to be contributing a substantial pollutant load to the MS4. The Permittees did not identify any Category 4 industrial facilities during the permit year.

Industrial facilities were inspected for compliance with stormwater BMPs, however they are also regularly inspected as a requirement of other regulatory programs (e.g., pretreatment inspections). As such, in Table 12-3, the Permittees report the total number of industrial facility inspections

performed based on permit requirements, as well as the number of follow-up actions taken during the current permit year and the prior three permit years.

Table 12-3: Summary of Industrial Facility Stormwater Inspections and Follow-Up Actions for the Current Permit Year (2022-2023) and the Prior Three Permit Years

Permittee	Metric	2022-2023	2021-2022	2020-2021	2019-2020
City of Henderson	Number of Inspections	142	146	109	71
	Number of Follow-Up Actions	12	13	9	0 [a]
City of Las Vegas	Number of Inspections	207	301	264	285
	Number of Follow-Up Actions	8	7	16	13
City of North Las Vegas	Number of Inspections	221	231	194	135
	Number of Follow-Up Actions	10	12	7	15
Clark County	Number of Inspections	331	510	510	1,060
	Number of Follow-Up Actions	463 [b]	544 [b]	544 [b]	633 [b]
SWMP Target	Conduct annual inspections of industrial facilities identified as belonging to Category 1, 2, or 3				

Notes:

Number of inspections includes the total number of industrial site inspections based on permit requirements

[a] Any violations detected while inspecting were corrected during the inspection, re-evaluated and passed inspection upon corrective action was taken

[b] Follow-up actions include follow-up inspections, correction orders, violation notices, enforcement meetings, and penalties.

12.2.6 Industrial Facility Stormwater Inventory (SC-24)

The Permittees are required to provide an inventory of industrial facilities within their jurisdiction to the NDEP; the inventory is updated annually. The four categories of industrial facilities that require annual inspections, according to the permit, are discussed in more detail in the following subsections.

12.2.6.1 SARA Title III Section 313

SARA Title III Section 313 requires certain classes of industrial facilities to submit reports to the EPA, based on their potential for toxic chemical releases. The EPA regulates and maintains a list of these industrial facilities, as well as other facilities that release certain amounts of regulated chemicals into the environment. The EPA's website (https://www.epa.gov/enviro/tri-search) was used to identify all Toxics Release Inventory (TRI) facilities in the Las Vegas Valley. However, some inaccuracies in the EPA GIS data may be present. Section 313 facilities within the Las Vegas Valley that require an industrial inspection are included in the Permittees' inventories and are also identified in Table 12-4.

Table 12-4: Industrial Facilities in the Las Vegas Valley Subject to SARA Title III Section 313, According to EPA TRI Search for the Current Permit Year (2022-2023)

Industrial Facility Name	Address	Inspected Annually By
Accurate Metal Solutions, Las Vegas, LLC [a]	3261 Builders Ave., Las Vegas, NV 89101	NA [d]
Aggregate Industries SWR Gown Asphalt	413 E Gowan Rd., North Las Vegas, NV 89030	City of North Las Vegas
Amazon.com Services LLC (LSA Development)	5801 Nicco Way, Las Vegas, NV 89115	City of North Las Vegas
Anderson Dairy	801 Searles Ave., Las Vegas, NV 89101	City of Las Vegas
Calportland Company Gary Plant	6501 W Richmar Ave., Las Vegas, NV 89139	Clark County
Calportland Company Gowan Plant	143 W Gowan Rd., North Las Vegas, NV 89032	City of North Las Vegas
Calportland Company Henderson Plant (Silver State Materials)	450 Eastgate Rd., Henderson, NV 89014	City of Henderson
Calportland Company Range Ready Mix Plant	5910 Range Rd., North Las Vegas, NV 89115	City of North Las Vegas
Calportland Company Sloan Plant	5300 Sloan Rd., Sloan, NV 89124	Clark County
Capital Cabinet Corp [b]	3645 Losee Rd., North Las Vegas, NV 89030	NA [d]
Casino Ready Mix [b]	5355 N Beesley Dr., Las Vegas, NV 89115	NA [d]
Cemex - Block Plant	5030 N Lamb Blvd., Las Vegas, NV 89115	City of North Las Vegas
Cemex – Sloan Plant	14998 S Las Vegas Blvd., Las Vegas, NV 89124	Clark County
Cemex Anthem Plant #1856 [b]	2403 Democracy Way, Henderson, NV 89044	NA [d]
Cemex Blue Diamond Plant 1855 [b]	9325 S Jones Blvd., Las Vegas, NV 89119	NA [d]
Cemex Gowan Plant #1860	29 W Gowan., North Las Vegas, NV 89030	City of North Las Vegas
Cemex Kyle Canyon Plant #1866	10025 Moccasin Rd., Las Vegas, NV 89143	City of Las Vegas
Cemex MGM City Center [b]	3790 S Las Vegas Blvd., Las Vegas, NV 89109	NA [d]
Cemex North Las Vegas Plant #1853	4001 N Losee Rd., North Las Vegas, NV 89030	City of North Las Vegas
Cemex Turnberry Plant #1859 [b]	2777 Paradise Rd., Las Vegas, NV 89109	NA [d]
Certain Teed Gypsum - Las Vegas Finishing Plant	3838 Civic Center Dr., North Las Vegas, NV 89030	City of North Las Vegas
Certain Teed Gypsum - Las Vegas Plant	13500 Blue Diamond Rd Las Vegas, NV 89161	Clark County
CMC Economy Steel and CMC Rebar Las Vegas	4485 E Colton Ave., Las Vegas, NV 89115	Clark County
Custom Building Products	3115 E. Lone Mountain Rd., Suite 1000, North Las Vegas, NV 89081	City of North Las Vegas
Ergon Asphalt & Emulsions Inc. - Las Vegas	3901 W Ponderosa Way, Las Vegas, NV 89118	Clark County
Ergon Asphalt & Emulsions Inc. - Las Vegas	6400 W Richmar Ave., Las Vegas, NV 89139	Clark County
Farm Fresh Foods	3840 Civic Center Dr., North Las Vegas, NV 89030	City of North Las Vegas
Firestone Building Products	4272 Corporate Center Dr., North Las Vegas, NV 89030	City of North Las Vegas
Grand Products Inc. (CES) [b]	751 Pilot Rd. Suite A, Las Vegas, NV 891119	Clark County
HD Supply Construction Supply LTD (Harris Real Estate Nevada LLC)	2437 1/2 Losee Rd., North Las Vegas, NV 89030	City of North Las Vegas
IGT [b]	6355 S Buffalo Dr., Las Vegas, NV 89113	Clark County [d]
Jensen Precast	3853 Losee Rd., North Las Vegas, NV 89030	City of North Las Vegas

Notes:
[a] This business is not operational / does not have a business license in CLV
[b] Facility not operational or no longer exists
[c] Stormwater inspections not required, due to facility process change
[d] NA = Not Applicable; no inspection necessary

Table 12-4: Industrial Facilities in the Las Vegas Valley Subject to SARA Title III Section 313, According to EPA TRI Search for the Current Permit Year (2022-2023)

Industrial Facility Name	Address	Inspected Annually By
Jensen Precast	3840 N Bruce St., North Las Vegas, NV 89030	City of North Las Vegas
Jensen Precast [b]	2750 Marion Dr., Las Vegas, NV 89115	NA [d]
Kalco Lighting LLC	6355 S Windy St. Suite 3, Las Vegas, NV 89119	Clark County
Ken's Foods Inc. Las Vegas	8925 Ken's Ct., Las Vegas, NV 89139	Clark County
Las Vegas Cultured Marble Inc. [b]	6875 Speedway Blvd. Building U-102, Las Vegas, NV 89115	NA [d]
Las Vegas Paving Corp	10846 W. Lone Mountain Rd., Las Vegas, NV 89129	City of Las Vegas
Las Vegas Paving Corp [b]	6600 Speedway Blvd., Las Vegas, NV 89115	City of North Las Vegas
Las Vegas Paving Corp	3300 N 5th St., North Las Vegas, NV 89030	City of North Las Vegas
Las Vegas Paving Corp	3400 N 5th St., North Las Vegas, NV 89030	City of North Las Vegas
Las Vegas Paving Corp	521 Cape Horn Dr., Henderson, NV 89011	City of Henderson
Las Vegas Paving Corp	9325 S Jones Blvd., Las Vegas, NV 89139	Clark County
Las Vegas Paving Corp [b]	0.75 Miles W of I-15 & 15 SW of US 95, Las Vegas, NV 89115	NA [d]
Las Vegas Paving Corp [b]	1.5 Miles N of Hollywood & Las Vegas Blvd., Las Vegas, NV 89115	NA [d]
Lighthouse VIP Products [b]	4601 E Cheyenne Ave., Las Vegas, NV 89115	NA [d]
Mars Chocolate NA	1 Sunset Way, Henderson, NV 89014	City of Henderson
May Manufacturing LLC (dba Artesian Spas)	4720 N Lamb Blvd., Las Vegas NV 89115	Clark County
MCC-Uniflex LLC [b]	1151 Grier Dr., Las Vegas, NV 89119	NA [d]
Meadow Gold Dairies	6350 E Centennial Pkwy., North Las Vegas, NV 89115	City of North Las Vegas
Metl-Span a Div of NCI Group Inc.	4700 Engineers Way Suite 103, North Las Vegas, NV 89081	City of North Las Vegas
Nevada Ready Mix Arville	4301 W Hacienda Ave., Las Vegas, NV 89109	Clark County
Nevada Ready Mix [b]	2200 Bowes St., Henderson, NV 89044	NA [d]
Nevada Ready Mix Bonanza	601 W Bonanza Rd., Las Vegas, NV 89106	City of Las Vegas
Nevada Ready Mix Echelon [b]	2920 S Industrial Rd., Las Vegas, NV 89109	NA [d]
Nevada Ready Mix Le Reve [b]	Sands & S Las Vegas Blvd., Las Vegas, NV 89109	NA [d]
Nevada Ready Mix Lone Mountain	10811 W Washburn Ave., Las Vegas, NV 89129	Clark County
Nevada Ready Mix Plant 9 [b]	8755 W Sunset Rd., Las Vegas, NV 89123	NA [d]
Nitrex Inc.	201 E Mayflower Ave., North Las Vegas, NV 89030	City of North Las Vegas
Ocean Spray Cranberries Inc. [c]	1301 American Pacific Dr., Henderson, NV 89014	NA [d]
Pacific Engineering & Production Co. of Nevada [b]	8291 Gibson Rd., Henderson, NV 89015	NA [d]
Pioneer Americas LLC D/B/A Olin Chlor Alkali Products	350 S Fourth St., Henderson, NV 89015	Clark County
PLI (CPI Card Group)	1220 Trade Drive, North Las Vegas, NV 89030	City of North Las Vegas
Poly-West [b]	251 Conestoga Way, Henderson, NV 89002	NA [d]
Pro Petroleum LLC.	4985 N Sloan Ln., Las Vegas, NV 89115	Clark County
Pro Terminal Operators LLC	4800 E El Campo Grande Ave., Las Vegas, NV 89115	City of North Las Vegas
Rebel Oil Co Inc.	5054 N Sloan Ln., Las Vegas, NV 89115	Clark County
Reladyne (New West Holdings LLC)	2420 Losee Rd., North Las Vegas, NV 89030	City of North Las Vegas
Rinker Materials Blue Diamond [b]	9275 S Jones Blvd., Las Vegas, NV 89139	NA [d]

Notes:
[a] This business is not operational / does not have a business license in CLV
[b] Facility not operational or no longer exists
[c] Stormwater inspections not required, due to facility process change
[d] NA = Not Applicable; no inspection necessary

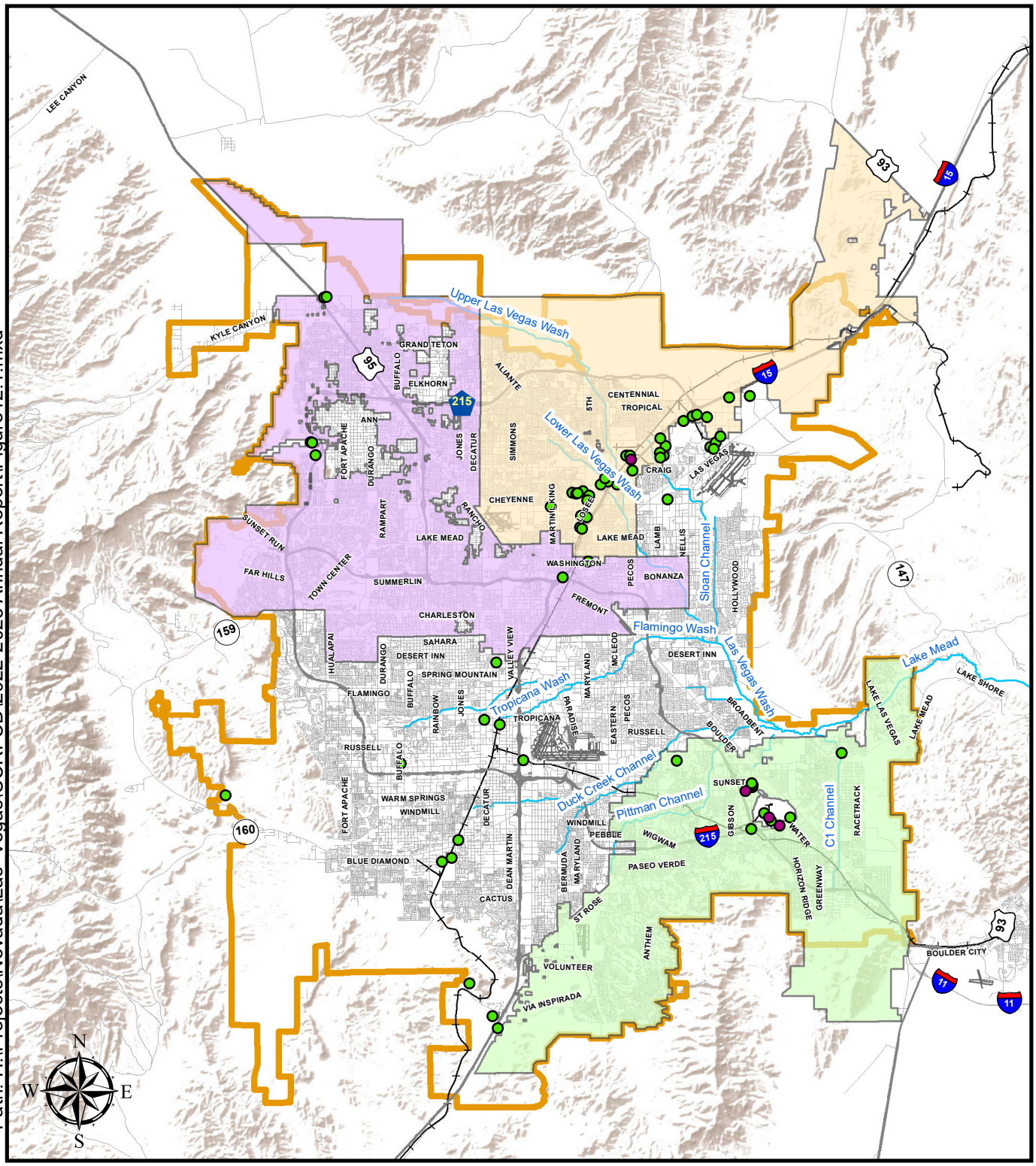
Table 12-4: Industrial Facilities in the Las Vegas Valley Subject to SARA Title III Section 313, According to EPA TRI Search for the Current Permit Year (2022-2023)

Industrial Facility Name	Address	Inspected Annually By
Rinker Materials Buffalo Main 1850 [b]	4511 S Buffalo Dr., Las Vegas, NV 89147	NA [d]
Rinker Materials Henderson 1854 [b]	750 Capehorn Dr., Henderson, NV 89015	NA [d]
Safety-Kleen Systems North Las Vegas (LVN)	4582 Donovan Way, North Las Vegas, NV 89081	City of North Las Vegas
Saguaro Power Company	435 S Fourth St., Henderson, NV 89015	Clark County
Service Rock Products (Robertson's Ready Mix)	8350 4th St Henderson, NV, 89015	Clark County
Service Rock Products Inc. Las Vegas [b]	800 Feet S of Intersection of Cactus Rd. & Polluck Dr., Las Vegas, NV 89102	NA [d]
Service Rock Products (Robertson's Ready Mix)	10811 W Washburn, Las Vegas, NV 89149	Clark County
Service Rock Products Inc - Sloan (Robertson's Ready Mix)	14575 Arville St., Las Vegas, NV 89124	Clark County
Service Rock Products Inc – Beesley (Robertson's Ready Mix)	5255 Beesley Dr., Las Vegas, NV 89115	Clark County
Sierra North Batch Plant	4150 Smiley Rd., North Las Vegas, NV 89081	City of North Las Vegas
Sierra West Batch Plant	10021 Moccasin Rd., Las Vegas, NV 89143	City of Las Vegas
Southern Nevada Paving Summerlin Asphalt Plant [b]	Summerlin Pkwy. & I-215, Las Vegas, NV 89145	NA [d]
Sparkletts Drinking Water Corp	4225 W Desert Inn Rd., Las Vegas, NV 89102	Clark County
Sparkletts Water System Aqua Vend [b]	3140 Polaris Ave. #10, Las Vegas, NV 89102	NA [d]
Spartan of Nevada, Inc. [b]	2441 W Desert Inn Rd., Las Vegas, NV 89109	NA [d]
Thatcher Co of Nevada	90 Business Center St., Henderson, NV 89014	City of Henderson
Thermo Fluids Inc. Antifreeze Services	4000 Arcata Way, North Las Vegas, NV 89030	City of North Las Vegas
Thomas Petroleum - Las Vegas Bonanza [b]	715 W Bonanza Rd., Las Vegas NV 89106	NA [d]
Thomas Petroleum LLC Sloan [b]	4825 N Sloan Ln., Las Vegas NV 89115	Clark County
Titanium Metals Corp	181 N Water St., Henderson, NV 89015	Clark County
Transportation Systems Services Operations Inc.	5406 E El Campo Grande Ave., North Las Vegas, NV 89115	City of North Las Vegas
Tronox LLC (EMD Acquisitions LLC)	560 W Lake Mead Pkwy., Henderson NV, 89015	Clark County
Wells Enterprises Inc.	1001 Olsen St., Henderson, NV 89015	City of Henderson
Universal Urethane Inc.	4201 E Lone Mountain Rd., North Las Vegas, NV 89081	City of North Las Vegas
Washington Group International [b]	4610 N Grand Canyon Dr., Las Vegas, NV 89129	NA [d]
West District Oil #75 LAS	4581 Eaker St., North Las Vegas, NV 89081	City of North Las Vegas
Westlake Royal Roofing (formerly Boral Roofing, LLC)	430 Eastgate Rd., Henderson, NV 89011	City of Henderson
Young Electric Sign Co.	5119 S Cameron St., Las Vegas, NV 89118	Clark County
SWMP Target	Provide an annual update to the inventory of industrial facilities to be inspected	

Notes:
[a] This business is not operational / does not have a business license in CLV
[b] Facility not operational or no longer exists
[c] Stormwater inspections not required, due to facility process change
[d] NA = Not Applicable; no inspection necessary

12.2.7 Industrial Facility Stormwater Inspection Boundary

The boundary for the Industrial Facility Inspections for the 2022-2023 Annual Report is based on the 2018 Ultimate Development Boundary (UDB) Updated for the Las Vegas Valley MS4 Program. While no changes to the boundary are currently anticipated, the program will be modified, if necessary, in response to any updates to the UDB.



Legend

- Ultimate Development Boundary Updated for the Las Vegas Valley MS4 Program (2018 MPU)
- Hazardous Waste Treatment Disposal and Recovery Facilities
- Industrial Facility Subject to Section 313
- Airports
- Streets
- Railroads

Jurisdictional Boundaries

- City of Henderson
- City of Las Vegas
- City of North Las Vegas
- Clark County

0 1.5 3 6 9

Scale in Miles

Service Layer Credits: Sources: Esri, USGS, NOAA

Figure 12-1
Industrial Facility Locations
2022-2023 Annual Report

12.2.8 Municipal Landfills

The Apex Regional Landfill is currently the only active local landfill in the Las Vegas area, however it is located outside of the Las Vegas Wash watershed. As there are no active municipal landfills in the Las Vegas Wash drainage area, the Permittees did not identify any municipal landfills for inclusion on their industrial facility inspection inventories.

12.2.9 Hazardous Waste Treatment, Disposal, and Recovery Facilities

The EPA keeps a list of hazardous waste treatment, disposal, and recovery facilities that are subject to the control of hazardous waste under the Resource Conservation and Recovery Act (RCRA). The EPA RCRA Info website (https://enviro.epa.gov/facts/rcrainfo/search.html) was searched to find hazardous waste treatment, disposal, and recovery facilities within the Las Vegas Valley. The facilities subject to RCRA within the Las Vegas Valley that require an industrial inspection are included in the Permittees' inventories and are also identified in Table 12-5.

Table 12-5: Hazardous Waste Treatment, Disposal, and Recovery Facilities in the Las Vegas Valley, According to EPA RCRA Info for the Current Permit Year (2022-2023)

Industrial Facility Name	Address	Inspected Annually By
Basic Remediation Company (BRC)	875 W Warm Springs Rd., Henderson, NV 89011	Clark County
Safety Kleen Systems, Inc	4582 Donovan Way, North Las Vegas, NV 89081	City of North Las Vegas
Pioneer Americas LLC D/B/A Olin Chlor Alkali Products	350 S Fourth St., Henderson, NV 89015	Clark County
Tronox LLC (EMD Acquisitions LLC)	560 W Lake Mead Pkwy., Henderson, NV 89105	Clark County
SWMP Target	Provide an annual update to the inventory of industrial facilities to be inspected	

12.2.10 Other Facilities that Contribute a Substantial Pollutant Load to the MS4

The Permittees have not identified any other facilities contributing a substantial pollutant load to the MS4. However, many industrial facilities, in addition to those listed in Table 12-5, are being inspected each year in the Las Vegas Valley by the Co-permittees, and under other programs.

12.2.11 Industrial Facility Inventory

Table 12-6 lists the inventory of facilities and the frequency of inspection that will be inspected during the 2023-2024 MS4 permit year. This list is reviewed every year and submitted to NDEP as part of the Annual Report.

Table 12-6: Inventory of Facilities and Inspection Frequency for 2023-2024 Permit Year

Type of Industrial Facility	Facility Name	SIC Code(s)	NAICS Code(s)	Address	Jurisdiction	Minimum Inspection Frequency
Section 313 of SARA	Calportland Company Gary Plant	3273	327320	6501 W Richmar Ave., Las Vegas, NV 89139	Clark County	Once Annually
	Calportland Company Sloan Plant	3273	327320	5300 Sloan Rd., Las Vegas, NV 89054		
	Cemex Sloan Plant	3273	327320	14998 S Las Vegas Blvd., Las Vegas, NV 89124		
	Certain Teed Gypsum - Las Vegas Plant	NA	212399	13500 Blue Diamond Rd Las Vegas, NV 89161		
	CMC Economy Steel and CMC Rebar Las Vegas	3441	332312	4485 E Colton Ave., Las Vegas, NV 89115		
	Creative Electronics and Software, Inc.	3672	334412	751 E Pilot Rd, Las Vegas, NV 89119		
	Ergon Asphalt & Emulsions Inc. - Las Vegas	2951	324121	3901 W Ponderosa Way, Las Vegas, NV 89118		
	Ergon Asphalt & Emulsions Inc. - Las Vegas	2951	324121	6400 W Richmar Ave., Las Vegas, NV 89139		
	IGT	3999	339999	6355 S Buffalo Dr., Las Vegas, NV 89113		
	Kalco Lighting LLC	3999	335122	6355 S Windy St. Suite 3, Las Vegas, NV 89119		
	Ken's Foods Inc. Las Vegas	2099	311941	8925 Ken's Ct., Las Vegas, NV 89139		
	Las Vegas Paving Corp	1081	324121	9325 S Jones Blvd., Las Vegas, NV 89139		
	May Manufacturing LLC (dba Artesian Spas)	3088	326191	4720 N Lamb Blvd., Las Vegas NV 89115		
	Nevada Ready Mix Arville	3273	327320	4301 W Hacienda Ave., Las Vegas, NV 89109		
	Nevada Ready Mix Lone Mountain	3273	327320	10811 W Washburn Ave., Las Vegas, NV 89129		
	Pro Petroleum Inc.	5171	424710	4985 N Sloan Ln., Las Vegas, NV 89115		
	Rebel Oil Co Inc.	5171	424710	5054 N Sloan Ln., Las Vegas, NV 89115		
	Saguaro Power Company	4939	221112	435 Fourth St., Henderson, NV 89015		
	Service Rock Products (Robertson's Ready Mix)	3273	327320	8350 4th St Henderson, NV, 89015		
	Service Rock Products (Robertson's Ready Mix)	3273	327320	10815 W Washburn Rd., Las Vegas, NV 89149		

Table 12-6: Inventory of Facilities and Inspection Frequency for 2023-2024 Permit Year

Type of Industrial Facility	Facility Name	SIC Code(s)	NAICS Code(s)	Address	Jurisdiction	Minimum Inspection Frequency
Section 313 of SARA	Service Rock Products Inc – Sloan (Robertson's Ready Mix)	3273	327320	14575 Arville St., Las Vegas, NV 89124	Clark County	Once Annually
	Service Rock Products Inc – Beesley (Robertson's Ready Mix)	3273	327320	5255 Beesley Dr., Las Vegas, NV 89115		
	Sparkletts Drinking Water Corp	5149	312112	4225 W Desert Inn Rd., Las Vegas, NV 89102		
	Thomas Petroleum LLC Sloan	5171	424710	5000 N Sloan Ln., Las Vegas NV 89115		
	Titanium Metals Corp	3339	331419	181 N Water St., Henderson, NV 89015		
	Young Electric Sign Co.	3993	811121	5119 S Cameron St., Las Vegas, NV 89118		
Section 313 of SARA	Anderson Dairy	2023, 2024, 2026	311511, 311514, 311520	801 Searles Ave., Las Vegas, NV 89101	City of Las Vegas	Once Annually
	Apex Materials LLC	1442	212321	10551 Skye Village Rd., Las Vegas, NV 89136		
	Arteaga Concrete Inc.	3273	327320	2550 Highland Dr., Las Vegas, NV 89109		
	Capriati Construction Corp.	1429	212319	10051 Moccasin Rd., Las Vegas, NV 89143		
	Cemex Kyle Canyon Plant #1866	3273	327320	10025 Moccasin Rd., Las Vegas, NV 89143		
	Las Vegas Paving Corp.	3273	324121	10846 W. Lone Mountain Rd., Las Vegas, NV 89129		
	Mel Clark Inc. Lone Mountain Pit	1429	212319	10550 W Lone Mtn Rd., Las Vegas, NV 89129		
	Nevada Ready Mix Bonanza	3273	327320	601 W Bonanza Rd., Las Vegas, NV 89106		
	Sierra West Batch Plant	3273	327320	10021 Moccasin Rd., Las Vegas, NV 89143		
	Wells Cargo Inc. Lone Mountain Pit	1429	212319	10191 Park Run Dr., Las Vegas, NV 89145		
Section 313 of SARA	Aggregate Industries SWR Gown Asphalt	2951	23411, 23571, 324121	413 E Gowan Rd., North Las Vegas, NV 89030	City of North Las Vegas	Once Annually
	Amazon.com Services LLC (LSA Development)	5961	454110	5801 Nicco Way., Las Vegas, NV 89115		
	American Eagle	NA	NA	120 W Delhi Ave., North Las Vegas, NV 89030		
	Calportland Company Gowan Plant	NA	327320	143 W Gowan Rd., North Las Vegas, NV 89032		

Table 12-6: Inventory of Facilities and Inspection Frequency for 2023-2024 Permit Year

Type of Industrial Facility	Facility Name	SIC Code(s)	NAICS Code(s)	Address	Jurisdiction	Minimum Inspection Frequency
Section 313 of SARA	Calportland Company Range Ready Mix Plant	NA	327320	5910 Range Rd., North Las Vegas, NV 89115	City of North Las Vegas	Once Annually
	Cemex - Block Plant	3251, 3273	327320, 327331	5030 N Lamb Blvd., Las Vegas, NV 89115		
	Cemex Gowan Plant #1860	3273	327320	29 W Gowan., North Las Vegas, NV 89030		
	Cemex North Las Vegas Plant #1853	3273	327320	4001 N Losee Rd., North Las Vegas, NV 89030		
	Certain Teed Gypsum - Las Vegas Finishing Plant	3275	327420	3838 Civic Center Dr., North Las Vegas, NV 89030		
	Core & Main	NA	NA	2829 Losee Rd., North Las Vegas, NV 89030		
	Custom Building Products	3272	327999, 327390	3115 E. Lone Mountain Rd. Suite 1000, North Las Vegas, NV 89081		
	Farm Fresh Foods	5147	311991	3840 Civic Center Dr., North Las Vegas, NV 89030		
	Firestone Building Products	3081	326113	4272 Corporate Center Dr., North Las Vegas, NV 89030		
	Jensen Precast	3272	327390, 327331	3853 Losee Rd., North Las Vegas, NV 89030		
	Jensen Precast	3272	327390, 327331	3840 N Bruce St., North Las Vegas, NV 89030		
	HD Supply Construction Supply LTD (Harris Real Estate Nevada LLC)	1791	2381201	2437 1/2 Losee Rd., North Las Vegas, NV 89030		
	Las Vegas Paving Corp	2951	324121	6600 Speedway Blvd., Las Vegas, NV 89115		
	Las Vegas Paving Corp	NA	324121	3400 N 5th St., North Las Vegas, NV 89030		
	Meadow Gold Dairies	2026	311511, 311514, 424430	6350 E Centennial Pkwy., North Las Vegas, NV 89115		
	Metl-Span a Div of NCI Group Inc.	3448	332311	4700 Engineers Way Suite 103, North Las Vegas, NV 89081		
	Nitrex Inc.	3398	332811	201 E Mayflower Ave., North Las Vegas, NV 89030		
	PLI (CPI Card Group)	NA	326199, 323111,	1220 Trade Drive, North Las Vegas, NV 89030		

Table 12-6: Inventory of Facilities and Inspection Frequency for 2023-2024 Permit Year

Type of Industrial Facility	Facility Name	SIC Code(s)	NAICS Code(s)	Address	Jurisdiction	Minimum Inspection Frequency
Section 313 of SARA	Pro Terminal Operators LLC	5171	424710	4800 E El Campo Grande Ave., Las Vegas, NV 89115	City of North Las Vegas	Once Annually
	Quikrete	3273	327320	112 W Brooks Ave North Las Vegas, NV 89030		
	Reladyne (New West Holdings LLC)	5171	424710	2420 Losee Rd., North Las Vegas, NV 89030		
	Sierra North Batch Plant	NA	327320	4150 Smiley Rd., North Las Vegas, NV 89081		
	Thermo Fluids Inc. Antifreeze Services	2899, 5093	325998, 423930	4000 Arcata Way, North Las Vegas, NV 89030		
	Transportation Systems Services Operations Inc.	3743	336510, 33651	5406 E El Campo Grande Ave., North Las Vegas, NV 89115		
	Universal Urethane Inc.	3069, 3086, 3714	326150, 32615	4201 E Lone Mountain Rd., North Las Vegas, NV 89081		
	West District Oil #75 LAS	NA	424710	4581 Eaker St., North Las Vegas, NV 89081		
Section 313 of SARA	Calportland Company Henderson Plant (Silver State Materials)	3273	327320	450 Eastgate Rd., Henderson, NV 89014	City of Henderson	Once Annually
	Las Vegas Paving Corp	2951	324121	521 Cape Horn Dr., Henderson, NV 89011		
	Mars Chocolate NA	2066	311352, 445292	1 Sunset Way, Henderson, NV 89014		
	Rinker Las Vegas Pipe	3273	327320	1899 Burns Rd. Henderson, NV 89011		
	Thatcher Co of Nevada	0111, 9999	3251, 32512, 325180, 325188	90 Business Center St., Henderson, NV 89014		
	Wells Enterprises	2024	311520	1001 Olsen St., Henderson, NV 89015		
	Westlake Royal Roofing (formerly Boral Roofing, LLC)	3251	327390	430 Eastgate Rd., Henderson, NV 89011		
Hazardous Waste Treatment, Disposal, and Recovery	Tronox LLC (EMD Acquisitions LLC)	2819, 1799	32518, 325180, 325188	560 W Lake Mead Pkwy., Henderson NV, 89015	Clark County	Once Annually
	Basic Remediation Company (BRC)	2819	325188	875 W Warm Springs Rd., Henderson, NV 89011		
	Pioneer Americas LLC D/B/A Olin Chlor Alkali Products	2812	325181, 325188, 32532, 32512	350 S Fourth St., Henderson, NV 89015		

Table 12-6: Inventory of Facilities and Inspection Frequency for 2023-2024 Permit Year

Type of Industrial Facility	Facility Name	SIC Code(s)	NAICS Code(s)	Address	Jurisdiction	Minimum Inspection Frequency
Hazardous Waste Treatment, Disposal, and Recovery	Safety-Kleen Systems Inc.	7389, 4953	325998, 484220, 484230, 562112, 532490	4582 Donovan Way, North Las Vegas, NV 89031	City of North Las Vegas	Once Annually
Landfills	None in the Las Vegas Valley					
Other Facilities Contributing a Substantial Pollutant Load	None in the Las Vegas Valley					

The following facilities were added to the industrial facilities inventory per the SIC codes and the inspections will initiate in the 2023-2024 permit year:

- Quikrete – Las Vegas NV Plant
- Rinker Las Vegas Pipe

12.2.12 Industrial Facility Stormwater Inspection Checklist (SC-25)

The Permittees have a standard checklist that is used by inspectors to conduct industrial facility inspections. A revised Industrial Facility Stormwater Inspection Checklist was approved by NDEP in early 2016. Each Permittee modified the standard checklist slightly to meet its needs. However, the general information collected during inspections by each Permittee was similar, according to permit requirements.

12.2.13 Industrial Facility Inspector Training Workshops (SC-28)

The Permittees train new inspectors and refresh the training of existing inspectors utilizing a presentation that includes a description of the Las Vegas Valley NPDES MS4 Permit and the Las Vegas Valley SWMP, a description of the local ordinances, and the Industrial Facility Monitoring and Control Program. The industrial facility inspector training was updated during the permit year, in response to the 2014 NDEP audit, and was accepted by NDEP. Table 12-7 provides a summary of the number of industrial facility inspectors for each Permittee during the current permit year and the prior three permit years.

Table 12-7: Number of Industrial Facility Inspectors for the Current Permit Year (2021-2022) and the Prior Three Permit Years

Inspection Type	2022-2023	2021-2022	2020-2021	2019-2020
City of Henderson	5	4 [a]	9	8
City of Las Vegas	4	4	2	4
City of North Las Vegas	3	3	3	3
Clark County	1 [b]	8 [b]	15 [b]	13 [b]

Note:

[a] 11 Inspectors; however only 5 generally conduct the stormwater industrial inspections

[b] Also employ 16 part-time stormwater inspectors

Industrial facility inspector training workshops are performed on an as-needed basis by each of the Permittees. If changes to the program and associated procedures have not occurred and no new inspectors have been on boarded, then a formal workshop may not be conducted. However, the

Permittees often provide internal stormwater training to multiple staff departments, which may include industrial facility inspectors as well.



Section 13

Construction Site Program

13 Construction Site Program

Section IV.I of the 2010-2015 NPDES MS4 Permit for the Las Vegas Valley includes requirements for a Construction Site Program to reduce pollutants in stormwater runoff from construction sites to the MS4. In addition, Section IV.J includes requirements for inspection of construction sites to verify compliance with local ordinances and permits, as well as requirements to identify the implementation and enforcement actions necessary to assure compliance.

13.1 Overview of Best Management Practices

Table 5-1 in Section 5 (Stormwater Management Approach) of this Annual Report identifies the BMPs employed by the Las Vegas Valley in the 2022-2023 MS4 permit year to meet permit requirements. Specifically, the Construction Site Program employed the following Source Control (SC) BMPs, discussed in the following subsections:

- SC-20 Construction Site BMP Guidance Manual
- SC-21 Construction Site Inspections
- SC-22 Construction Site Training Workshops

13.2 Description of Individual Best Management Practices

13.2.1 Construction Site BMP Manual (SC-20)

In 2009, the Permittees produced the Las Vegas Valley Construction Site Best Management Practices Guidance Manual that describes the construction site runoff management program and provides non-structural and structural BMP implementation guidance for contractors, engineers, and other construction professionals. The manual provides guidance on selecting and designing construction site BMPs that are suitable to the unique environment and conditions in the Las Vegas Valley. Table 11-3 of the SWMP provides a list of the various BMPs that are described in the Las Vegas Valley Construction Site BMP Guidance Manual. Both documents are available on the CCRFCD website and on the www.LVstormwater.com website. During the permit year the manual was reviewed. Revisions to the manual are expected after negotiation of the next permit and development of the updated SMWP.

The Las Vegas Valley MS4 Construction Site Program complements, but is independent of, the NDEP's State construction site permitting program. The Las Vegas Valley Construction Site BMP Guidance Manual includes information for developers, engineers, and operators about the requirements for complying with both the local and State construction site stormwater programs; procedures for State compliance are also summarized in Table 13-1.

Table 13-1: Summary of Procedures for Notifying Developers, Engineers, and Operators about NDEP Construction Site Program Requirements

Procedure	City of Henderson	City of Las Vegas	City of North Las Vegas	Clark County
Grading improvement plan submittals require the completed Las Vegas Valley Stormwater Quality Management Program Construction Permit Submittal Checklist, and a copy of the Notice of Intent (NOI) or a copy of the letter of authorization from NDEP	X	X	X	X
Standard comment on Grading Permit review letter notifying developer of need for NDEP construction permit	X	X	X	X
Standard general condition for construction plans or specifications on Public Works projects assigning the owner or contractor the responsibility for obtaining the NDEP construction permit	X	X	X	X
SWMP Target	Notify developers of the requirements to comply with all State and local construction site stormwater permitting programs			

Note: An "X" indicated that the Permittee utilizes this procedure

13.2.2 Construction Site Inspections (SC-21)

Supported by the Permittees' local ordinance language, construction sites in the Las Vegas Valley are inspected not only for active discharges to the MS4, but also for the potential to discharge (e.g., absence of or poorly installed and maintained BMPs), effective waste management onsite, and effective erosion and sediment control practices. Every effort is made to resolve minor infractions through close coordination between the inspector and the site operator. The goal of the construction site inspection program is education and compliance, rather than punishment. Inspectors have the authority to review the Stormwater Pollution Prevention Plans (SWPPP) required by NDEP's Stormwater General Permit if site conditions warrant. However, this is not a required aspect of every inspection.

The frequency of a site inspection is determined by the site's characteristics. All construction sites disturbing 100 acres or more, any site determined by the Permittees as "a significant threat to water quality," and all sites disturbing more than 1 acre that are tributary to an impaired waterbody (for sediment or turbidity), were inspected at least monthly.

During the permit year, the Permittees identified the following number of construction sites requiring inspections at least monthly:

- City of Henderson
    - 0 site disturbing >100 acres; 0 sites determined to be a "significant threat"
- City of Las Vegas
    - 2 sites disturbing >100 acres; 3 sites determined to be a "significant threat"
- City of North Las Vegas
    - 0 sites disturbing >100 acres; 0 sites determined to be a "significant threat"
- Clark County
    - 2 site disturbing >100 acres; 32 sites determined to be a "significant threat"

In previous MS4 permit years, the Las Vegas Wash nor tributary segments were identified as impaired for sediment or turbidity. However, updates were made in the Nevada 2020-2022 Water Quality Integrated Report (February 2022). The Nevada 2020-2022 Water Quality Integrated Report identified the Flamingo Wash (from its origin to the Las Vegas Wash) and the Las Vegas Wash (above all wastewater treatment plants) waterbodies as impaired for TSS. All sites disturbing more than 1 acre that are tributary to these impaired waterbodies need to be inspected at least monthly during the 2022-2023 permit year. Further, all construction sites greater than 1 acre that were not identified as a “significant threat to water quality” were inspected at least twice during ground disturbing activities.

The Permittees’ construction site inspections consist of the following activities:

- Assess compliance with Permittee stormwater ordinances
- Verify proper implementation and maintenance of BMPs
- Assess potential BMP effectiveness
- Conduct visual observations for non-stormwater discharges, potential illicit connections, and the potential to discharge pollutants to the MS4
- Provide education and outreach materials to site personnel on stormwater pollution prevention, the NPDES MS4 Permit, and NDEP construction permit processes, as needed
- Prepare a written or electronic inspection record

The Permittees used existing inspection staff or a third party contractor to perform construction site inspections. A standard Construction Site Inspection Checklist was approved by NDEP in 2016 and is in use by the Permittees. Each Permittee customized the standard checklist slightly to meet its needs. However, the general information collected during inspections by each Permittee remained similar, according to permit requirements. Table 13-2 summarizes the construction site inspection activities for the current permit year and the prior three permit years.

Table 13-2: Construction Site Inspection Activities for the Current Permit Year (2022-2023) and the Prior Three Permit Years

Permittee	Metric	2022-2023	2021-2022	2020-2021	2019-2020
City of Henderson	Number of Construction Site Inspections Conducted	1,535	1,498	1,628	1,807
	Number of Follow-Up Actions	242	230	269	218
City of Las Vegas	Number of Construction Site Inspections Conducted	1,392	1,233	738	1,244
	Number of Follow-Up Actions	189	285	246	295
City of North Las Vegas	Number of Construction Site Inspections Conducted	237	241	153	479
	Number of Follow-Up Actions	63	10	19	41
Clark County	Number of Construction Site Inspections Conducted	1,635	1,684	1,684	1,696
	Number of Follow-Up Actions	1,676 [a]	1,112 [a]	1,121 [a]	1,175 [a]
SWMP Targets	Inspect 100% of construction sites > 1 acre, per Permittee policies				
	Follow-Up on 100% of potential violations, per Permittee policies				

Notes:

[a] Includes follow-up inspections, correction orders, and violation notices

13.2.3 Construction Site Training Workshops (SC-22)

The Permittees provide regular training to their internal construction site inspectors and other staff on construction site-related sources of stormwater pollution, appropriate construction site BMPs, and the proper procedures for conducting construction site inspections. If changes to the program and associated procedures have not occurred and no new inspectors have been on boarded, then a formal workshop may not be conducted. However, the Permittees often provide internal stormwater training to multiple staff departments, which may include construction inspectors or construction inspectors may attend training conducted by other parties.

Collectively, as an SQMC-sponsored function, the Permittees host construction site training workshops that are open to Las Vegas area contractors, developers, and other interested stakeholders. These workshops included presentations from NDEP and NDOT on their specific stormwater-related construction site requirements.

During the permit year, the Permittees updated the Stormwater Training for Construction Contractors workshop. Four training sessions were held for the construction industry: two sessions on April 17, 2023 and two sessions on April 18, 2023. A summary of Permittee attendance at these, and other internal construction site training sessions is provided in Table 13-3.

Table 13-3: Summary of Construction Site Training Workshops for the Current Permit Year (2022-2023)

Permittee	Number of Trainings Conducted	Estimated Number of Attendees
City of Henderson	2	2
City of Las Vegas	4	100
City of North Las Vegas	0	0
Clark County	4	43
Permittee Training for Construction Contractors	4	193
SWMP Target	Conduct a minimum of one contractor training workshop annually	



Section 14

Staff and Resources

14 Staff and Resources

Section V.C.3.k of the 2010-2015 NPDES MS4 Permit for the Las Vegas Valley requires Permittees to provide information on annual expenditures for the reporting period, broken down by the major programs indicated in the SWMP. The summary of current expenditures and the anticipated budget for the next permit year are included in Table 14-1 and Table 14-2, respectively.

Table 14-1: Annual Las Vegas Valley MS4 Program Expenditures for the Current Permit Year (2022-2023)

Permit Element	Clark County Regional Flood Control District	City of Henderson	City of Las Vegas	City of North Las Vegas	Clark County
Public Outreach and Education Program	$100,000	$32,336	$23,235	$15,000	N/A
Stormwater Monitoring Program	$80,527	N/A	N/A	N/A	N/A
Source Control and MS4 Maintenance Program [a]	$9,666,307	$1,054,352	$25,943,843	$2,144,791	$7,202,560
Post-Construction Program for NDSR	$10,000	$1,230,499	$584,447	$15,000	$1,314,437
Illicit Discharge Detection and Elimination Program	$5,000	$452,857	$816,735	$2,225,000	$22,133,704
Industrial Facility Monitoring and Control Program	$0	$66,710	$202,645	$75,000	$1,425,269
Construction Site Program	$10,000	$119,033	$130,557	$60,000	$339,761
Watershed Program	$80,034,600	N/A	$2,693,760	Included in Source Control	$679,216
MS4 Program Management [b]	$444,537	$37,658	$135,244	$75,000	$217,632
TOTAL [c]	$90,350,972	$2,993,445	$30,530,465	$4,609,791	$33,312,579

Notes:

[a] Amount does not include funding from CCRFCD

[b] This category includes staff and consulting costs, management, and administrative costs, reporting, tracking, Permittee coordination, and other related costs

[c] There may be expenditures made by the Permittees, SNWA, SNHD, and others that are not captured in this estimate

Table 14-2: Anticipated Las Vegas Valley MS4 Program Budget for the Next Permit Year (2023-2024)

Permit Element	Clark County Regional Flood Control District	City of Henderson	City of Las Vegas	City of North Las Vegas	Clark County
Public Outreach and Education Program	$144,500	$28,149	$25,391	$15,500	N/A
Stormwater Monitoring Program	$156,824	N/A	N/A	N/A	N/A
Source Control and MS4 Maintenance Program [a]	$18,074,916	$1,253,630	$29,924,790	$2,209,135	$9,254,847
Post-Construction Program for NDSR	$10,000	$1,277,235	$601,980	$15,500	$1,437,911
Illicit Discharge Detection and Elimination Program	$5,000	$471,925	$1,095,494	$2,291,000	$44,516,866
Industrial Facility Monitoring and Control Program	$0	$69,234	$208,724	$77,500	$1,702,939
Construction Site Program	$10,000	$122,654	$134,474	$62,000	$406,274
Watershed Program	$80,202,800	N/A	$2,744,574	Included in Source Control	$2,792,727
MS4 Program Management [b]	$534,286	$40,093	$160,236	$77,500	$264,858
TOTAL [c]	$99,138,326	$3,262,921	$34,895,663	$4,748,135	$60,376,422

Notes:

[a] Amount does not include funding from CCRFCD

[b] This category includes staff and consulting costs, management, and administrative costs, reporting, tracking, Permittee coordination, and other related costs

[c] There may be expenditures made by the Permittees, SNWA, SNHD, and others that are not captured in this estimate

14.1 Funding

The CCRFCD will continue to fund its MS4 program responsibilities from revenue collected from the ¼ cent sales tax that provides funding for all CCRFCD functions. The other Permittees (CC, CLV, CNLV, and COH) will continue to fund their projects primarily from their respective general tax revenues. A portion of the construction program measures (e.g., inspections, design reviews) may also be financed through development permit fees.

14.2 Staffing

Although Permittee personnel dedicated solely to the Las Vegas Valley MS4 Program are limited, staff from multiple departments are involved in program activities including: industrial site inspections, construction site inspections, development submittals, and storm drain system maintenance activities.

Overall permit program management activities have also been supported in part by outside consultants, Brown and Caldwell and HDR. Permittee personnel are further supplemented by staff of other agencies that are responsible for performing specific BMPs. For example, the SNWA is responsible for dry weather monitoring and water conservation measures, while the SNHD is responsible for enforcement of illegal discharge ordinances. These relationships are expected to continue into the next permit year.



Section 15

Conclusion

15 Conclusion

The Permittees prepared this Annual Report for the 2022-2023 MS4 permit year to report to NDEP on the status of the MS4 program and to highlight compliance with the permit and current SWMP. Annual Report requirements in the MS4 permit were also satisfied as described below and all program BMP goals were achieved.

- V.C.3.a: Status of compliance with permit conditions – This is discussed in each Annual Report section. All permit conditions were met.
- V.C.3.b: Appropriateness of BMPs – Current BMPs remain appropriate. No significant additions are proposed.
- V.C.3.c: Progress towards reducing discharges to the maximum extent practicable (MEP) – The Permittees believe that continued implementation of current BMP programs is making progress toward meeting the MEP goal given the unique conditions in the Las Vegas Valley.
- V.C.3.d: Achievement of measurable goals – This is discussed in each Annual Report section. All permit conditions were met.

  V.C.3.e: Results of information analysis – Wet weather and dry weather water quality remained largely consistent with data collected historically. Three of the wet weather samples at the Club at Sunrise and one at the Rainbow Gardens showed higher concentration than WQS for iron. In the wet weather samples, three of the wet weather samples at the Club at Sunrise and two at the Rainbow Gardens showed higher concentration than WQS for total suspended solids. Both sites showed one higher concentration than WQS for E. Coli. The Nevada water quality standards address this type of instance in NAC 445A.121.8:

  "The specified standards are not considered violated when the natural conditions of the receiving water are outside the established limits, including periods of extreme high or low flow. Where effluents are discharged to such waters, the discharges are not considered a contributor to substandard conditions provided maximum treatment in compliance with permit requirements is maintained."

  There were no significant changes to the impact of stormwater runoff on attainment of water quality standards.
- V.C.3.f: Summary of stormwater activities planned for next permit cycle – The Permittees intend to continue all current BMP programs. While no new programs are anticipated, possible improvements to current programs will be evaluated, particularly when negotiating the next permit.
- V.C.3.g: Changes to the SWMP – A SWMP update is anticipated after negotiation of the next permit.
- V.C.3.h: Reliance on another governmental agency to satisfy permit obligations – Permittees rely on other governmental agencies (e.g., SNWA, SNHD) to perform activities for specific BMPs, but not to satisfy overall permit obligations.
- V.C.3.i: Estimated reductions in loadings of pollutants to surface and ground water due to MS4 program – Permittees have not found a reliable, defensible method to quantify

reductions in pollutant loadings attributable to the BMPs in their MS4 program. This is not currently being reported. However, data show that population and land development have increased dramatically in the Las Vegas Valley since the MS4 program inception in 1991, without a commensurate increase in stormwater pollutant concentrations. This suggests that BMPs in the MS4 program have been effective in offsetting pollutant loading increases that could have occurred due to development.

- V.C.3.j: Summary of inspections – More than 900 industrial facility inspections and more than 4,700 construction site inspections were completed by the Permittees during the permit year. Inspections are documented in Section 12 and Section 13 of this Annual Report.
- V.C.3.k: Annual expenditures and budget for the following year – This information is provided in Section 14 of this Annual Report. Annual program expenditures for the 2022- 2023 MS4 permit year were approximately $162 million for all Permittees combined. The budget for the 2023-2024 MS4 permit year is approximately $202 million.



Appendices



Appendix A

Historic Dry Weather Data

Notes for Dry Weather Monitoring Data, 1991-2023

Refer to these notes for all set of databases

Notes:
NA = Not Available / Not Analyzed
NS = No sample
1) In cases where measured constituent concentrations were less than detection limits, 1/2 of the detection limit was used to compute the average concentration. When this approach resulted in a computed average value which was less than the detection limit, the average value was reported as less than the detection limit.
2) Discharge values for Flamingo at Nellis taken from USGS streamgage records, average daily flow, for 8/27/91 - 8/28/95.
[a] Values for 7/20/2010, 10/26/2010, 1/31/2011 were calculated from Nitrate (as NO_3) lab results.
[b] Selenium sample results from Monthly Tributary using date closest to quarterly tributary sampling.
[c] Results for Selenium (SDSU) sample results are no longer included in report as of 2012-2013 permit year.
[d] Surfactants not sampled by SNWA during 2012-2013 permit year.
[e] Samples taken this date and below were collected by SNWA.
[f] Sample was taken by SNWA.

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Location	Date	Q cfs	Temp Deg C	Oil & Grease mg/L	TSS mg/L	TDS mg/L	pH [f]	Surfactants[d] (MBAS) mg/L	Ortho-Phosphate mg/L	Total Phosphate-Phosphorous mg/L	NO3-N[a] mg/L	NO2-N mg/L	NH3-N mg/L	TKN mg/L	Total Nitrogen mg/L	Copper mg/L	Chromium mg/L	Lead mg/L	Mercury mg/L	Cadmium mg/L	Zinc mg/L	Silver mg/L	Nickel mg/L	Selenium[b] mg/L	Selenium Dissolved mg/L
Las Vegas Wash at The Club at Sunrise (Formerly known as Desert Rose Golf Course)	09/24/97	42.5	25.2	< 3	16	2,395	8.40	0.070	< 0.0100	0.01	4.00		< 0.05	1.10	5.1	< 0.0100		< 0.10000			0.0230				
	09/23/98	54.1		< 3	55	2,280				0.02	5.70	< 0.10	< 0.05	1.70	7.3	< 0.0100		< 0.10000			0.0260				
	11/04/99	10.0		< 3	26	1,880				0.04	4.47	< 0.20	< 0.05	< 0.20	4.5	< 0.0100		< 0.10000			0.0300				
	11/05/99	10.0		< 3	39	1,340				< 0.02	4.65	< 0.20	< 0.05	0.63	5.3	< 0.0100		< 0.10000			0.0250				
	10/03/00	18.4		< 3	< 10	3,700				< 0.02	5.45	< 2.00	< 0.05	0.29	5.7	< 0.0100		< 0.10000			< 0.0200				
	10/04/00	18.4		< 3	< 10	3,600				< 0.02	4.42	< 2.00	< 0.05	0.44	4.9	< 0.0100		< 0.10000			< 0.0200				
	12/18/00	31.6		< 3	< 10	3,570				< 0.02	5.31	< 0.50	< 0.05	0.41	5.7	< 0.0100		< 0.10000			< 0.0200				
	01/18/01																								
	04/25/01																								
	07/30/01																								
	10/24/01																								
	01/23/02																								
	04/24/02																								
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	04/23/03																								
	07/23/03																								
	10/22/03																								
	01/21/04																								
	07/21/04[e]		23.8			3,200	8.18		0.0100	0.11	2.40	NA	0.05	1.10		< 0.0020	0.00100	0.00050			0.0110		0.0100	0.0093	
	10/27/04		13.4			3,560	8.37		NA	NA	4.30	NA	NA	NA		< 0.0020	< 0.00100	< 0.00050			0.0340		< 0.0050	NA	
	01/26/05		14.1			1,730	8.16		0.0400	0.39	2.60	< 0.08	0.38	2.70		< 0.0020	< 0.00100	0.01100			0.1300		< 0.0050	0.0064	
	04/19/05		15.2			3,470	8.49		0.0100	0.02	4.30	< 0.08	< 0.08	0.96		0.0033	0.00230	< 0.00050			0.0082		0.0100	0.0114	
	07/20/05		26.7			3,200	8.02		0.0100	< 0.02	2.00	< 0.08	0.13	0.68		< 0.0020	< 0.00100	< 0.00050			0.0550		< 0.0050	0.0061	
	10/26/05		15.2			500	7.74		0.0600	0.05	< 0.08	< 0.08	0.16	0.73		0.0088	< 0.00100	< 0.00050			0.0190		< 0.0050	0.0062	
	01/19/06		9.6			3,300	8.28		0.0100		4.40	< 0.08				0.0034	0.00080	< 0.00050			0.0100		0.0069	0.0079	
	04/18/06		13.6			2,600	8.34		0.0100		2.60	< 0.08				0.0021	0.00010	0.00052			0.0290		0.0086	0.0074	
	07/27/06		26.8			3,200	8.58		< 0.0100	0.06	2.71	0.20	< 0.08	0.92		0.0024	0.00050	0.00020			0.0054		0.0021	0.0092	
	10/25/06		15.4			3,900	8.06		NA	0.08	4.06	0.11	< 0.08	0.89		0.0028	0.00100	0.00030			0.0091		< 0.0050	0.0093	
	01/23/07		8.0			3,300	8.38		0.0100	0.03	4.97	0.08	< 0.08	0.64		0.0029	0.00090	0.00030			0.0056		0.0014	0.0130	
	04/18/07		15.6			3,100	8.04		0.0200	0.03	3.16	0.10	< 0.08	1.40		0.0031	0.00060	< 0.00020			0.0078		0.0020	0.0096	
	07/18/07		26.5			2,300	8.11		0.0050	0.02	1.72	0.19	0.12	0.56		0.0014	0.00060	0.00030			0.0067		0.0014	0.0082	
	10/27/07		16.5			4,000	8.43		0.0050	0.02	4.74	< 0.10	0.11	0.39		0.0014	0.00070	ND			0.0150		0.0015	0.0120	
	01/22/08		10.0			3,300	8.29		0.0090	0.01	4.74	< 0.10	0.28	< 0.10		0.0015	0.00090	< 0.00002			< 0.0050		0.0050	0.0140	
	04/23/08		17.6			3,400	8.13		0.0050	< 0.01	3.16	< 0.10	< 0.10	0.42		0.0016	0.00040	< 0.00002			< 0.5000		0.0012	0.0111	
	07/23/08		27.9			3,500	8.57		0.0052	0.02	1.81	0.38	0.10	1.30		0.0019	0.00040	0.00030			0.0053		0.0030	0.0089	
	10/22/08		16.8			3,500	8.78		0.0026	0.01	4.29	0.11	< 0.10	0.18		0.0016	0.00070	< 0.00020			0.0060		0.0035	0.0094	
	01/28/09		9.1			2,800	7.22		0.0044	< 0.01	3.61	< 0.10	< 0.10	0.32		< 0.0025	< 0.00100	< 0.00100			< 0.0250		< 0.0040	0.0089	
	04/29/09		18.7			3,300	8.17		0.0048	10.00	3.16	< 0.15	< 0.10	0.51		0.0024	< 0.00020	< 0.00020			0.0067		0.0010	0.0013	
	07/27/09		30.6			2,700	8.61		0.0048	0.06	1.19	< 0.03	< 0.05	0.93		0.0020	0.00100	< 0.00002			0.0060		0.0020	0.0087	
	10/20/09		15.8			3,400	8.54		0.0070	0.02	3.60	< 0.03	< 0.05	0.23		0.0020	0.00100	< 0.00002			< 0.0003		0.0020	0.0140	
	01/26/10		11.8			3,200	8.10		0.0350	0.04	3.86	< 0.03	< 0.05	0.57		0.0020	0.00200	< 0.00002			0.0120		0.0050	0.0120	
	04/20/10		20.6			3,200	8.35		0.0039	0.01	NA	< 0.03	< 0.05	0.92		0.0020	0.00100	< 0.00002			< 0.0003		0.0040	0.0094	
	07/20/10		29.8		16	3,000	8.12	< 0.050	0.0036	0.03	0.86	0.16	0.12	0.81	3.8	0.0015	0.00050	0.00030	< 0.00005	< 0.00010	< 0.0050	< 0.00020	0.0052	0.0073	
	10/26/10		16.9		6	2,900	8.32	0.063	0.0420	0.06	3.18	< 0.01	< 0.10	0.55	1.0	0.0030	0.00070	< 0.00040	< 0.00005	< 0.00010	< 0.0050	< 0.00020	0.0044	0.0090	
	01/31/11		11.1		10	3,200	8.21	< 0.050	0.0051	0.02	5.91	< 0.01	< 0.10	< 0.10	1.0	0.0032	0.00150	< 0.00100	< 0.00005	< 0.00050	< 0.0250	< 0.00100	0.0063	0.0160	
	05/24/11		19.8		5	2,470	8.18	NA	0.0050	0.02	1.20	0.14	< 0.10	0.81	1.2	0.0016	0.00030	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.00020	0.0049	0.0063	
	08/29/11		27.0		20		8.12	NA	0.0067	0.03	2.40	< 0.10	< 0.10	0.81	2.4	0.0023	0.00049	0.00052	< 0.00005	< 0.00010	0.0065	< 0.00020	0.0018	NA	
	11/22/11		12.1		< 5	3,380	8.28	NA	0.0270	0.06	4.20	< 0.10	< 0.10	< 0.10	4.2	0.0013	0.00059	0.00023	< 0.00005	< 0.00010	0.0050	< 0.00020	0.0013	0.0120	
	02/27/12		11.3		< 5	3,500	8.16	< 0.050	0.0084	0.01	3.30	< 0.10	< 0.10	0.41	3.3	0.0011	0.00054	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.00040	0.0013	0.0140	
	05/22/12		22.8		22	3,460	8.06	NA	0.0049	0.05	1.60	< 0.10	< 0.10	0.69	1.6	0.0033	0.00130	0.00140	< 0.00005	< 0.00010	0.0100	< 0.00020	0.0024	0.0078	
	08/27/12		28.7		14	2,140	8.69	NA	0.0088	0.03	1.30	< 0.10	< 0.10	1.20	2.6	0.0016	0.00052	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.00020	0.0016	0.0079	
	11/19/12		15.5		< 5	3,010	8.60	NA	0.0071	0.01	3.60	< 0.10	< 0.10	0.23	3.9	0.0017	0.00068	0.00022	< 0.00005	< 0.00010	< 0.0050	< 0.00020	0.0012	0.0098	
	02/25/13		9.1		< 5	3,110	8.28	NA	0.0041	0.01	3.20	< 0.10	< 0.10	0.12	3.4	0.0012	0.00071	0.00025	< 0.00005	< 0.00010	< 0.0050	< 0.00020	0.0012	0.0110	
	05/20/13		21.1		12	3,310	8.20	NA	0.0054	0.03	2.20	< 0.10	0.67	0.52	2.8	0.0017	0.00059	0.00037	< 0.00005	< 0.00010	0.0052	< 0.00020	0.0016	0.0076	
	08/12/13		23.7		7	3,000	8.26	0.051	0.0042	0.06	1.30	0.17	0.25	0.93	2.4	0.0025	0.00041	0.00047	< 0.00005	0.00014	0.0060	< 0.00020	0.0075	0.0067	
	12/02/13		13.9		340	3,000	8.39	< 0.051	0.0270	0.07	4.00	< 0.10	< 0.10	0.57	4.6	0.0012	0.00150	0.00022	< 0.00005	< 0.00010	< 0.0050	< 0.00020	0.0008	0.0120	
	02/24/14	No Samples Taken - Construction on Going on this area of the Las Vegas Wash																							
	05/27/14																								
	08/26/14																								
	11/19/14		14.0		200	3,810	8.30	0.076	0.0170	0.16	4.50	< 0.10	< 0.10	0.46	5.0	0.0035	0.00260	0.00190	< 0.00005	0.00018	0.0130	< 0.00020	0.0079	0.0100	
	03/24/15		17.7		< 5	3,940	8.27	0.140	0.0044	0.01	3.70	< 0.10	< 0.10	0.29	4.1	0.0015	0.00063	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.00020	0.0015	0.0140	
	06/09/15		28.8		< 5	4,090	8.54	0.100	0.0092	0.02	2.50	< 0.10	< 0.10	0.48	3.0	0.0014	< 0.00040	< 0.00040	< 0.00005	< 0.00020	< 0.0100	< 0.00040	< 0.0016	0.0130	
	08/17/15		30.2		< 5	3,480	8.72	0.150	0.0100	0.05	1.60	< 0.10	< 0.10	0.68	2.4	0.0021	0.00040	0.00030	< 0.00005	< 0.00010	< 0.0050	< 0.00020	0.0018	0.0140	
	11/16/15		11.0		27	3,550	8.63	< 0.050	0.0070	0.04	3.70	< 0.15	< 0.10	0.30	4.1	0.0510	0.00090	0.00030	< 0.00005	< 0.00010	0.0060	< 0.00020	0.0057	0.0150	
	02/22/16		17.0		580	3,420	8.28	< 0.050	0.0180	0.84	4.20	< 0.10	< 0.10	3.90	8.2	0.0130	0.01200	0.01000	< 0.00005	0.00040	0.0610	< 0.00020	0.0110	0.0180	
	06/27/16		NA		600	3,400	7.84	< 0.050	0.0120	0.19	3.70	0.16	< 0.10	1.50	5.4	0.0056	0.00550	0.00480	< 0.00005	0.00020	0.0300	< 0.00020	0.0050	0.0260	
	08/01/16				450	2,030	8.05	ND	ND	0.43	1.60	1.80		2.50		0.0130	0.01100	0.00970	ND	0.00024	0.0620	ND	0.0110	0.0242	
	11/01/16				300	5,280	8.19	ND	0.0130	0.20	4.30	4.30		0.58		0.0055	0.00760	0.00370	ND	0.00031	0.0170	ND	0.0120	0.0195	
	02/01/17				1,200	4,020	8.09	ND	0.0460	0.88	4.00	4.10		3.00		0.0380	0.02300	0.02300	0.00013	0.00069	0.1500	ND	0.0190	0.0123	
	05/01/17				NA	4,150	8.21	NA	NA	NA	NA	NA		NA		NA	NA	NA	NA	NA	NA	NA	NA	0.0145	
	08/28/17		29.3		1,000	4,610	8.21	< 0.02	0.1100	0.29	4.60	0.11	< 0.05	1.00	5.7	0.0092	0.00480	0.00430	< 0.00002	0.00015	0.0410	< 0.00006	0.0044	0.0132	
	11/20/17		11.4		92	4,210	8.01	< 0.02	0.0067	0.12	4.30	< 0.01	< 0.05	0.57	4.9	0.0031	0.00200	0.00150	< 0.00002	< 0.00008	0.0120	< 0.00012	0.0027	0.0147	
	02/20/18		13.3		79	4,030	8.09	< 0.02	0.0590	0.07	4.80	< 0.01	< 0.05	0.48	5.3	0.0037	0.00240	0.00130	< 0.00002	< 0.00004	0.0130	< 0.00006	0.0023	0.1760	
	06/25/18		25.9		8	4,590	8.01	< 0.02	0.8800	0.06	3.70	0.10		0.55		0.0019	0.00050	ND	ND	ND	0.0050	ND	0.0015	0.0186	
	08/27/18		27.8		320	4,410	8.10	< 0.02	0.0590	0.37	4.80	0.14	0.16	2.60	7.3	0.0200	0.00860	0.00780	< 0.00002	0.00023	0.0900	< 0.00006	0.0081	0.0164	
	11/26/18		14.9		560	4,360	8.16	< 0.02	0.2000	0.49	4.30	< 0.01	< 0.05	0.39	4.8	0.0260	0.01200	0.01200	< 0.00002	0.00028	0.1100	< 0.00006	0.0100	0.0167	
	02/19/19		9.5		2,300	2,360	7.04	0.08	0.0880	1.60	3.50	< 0.01	< 0.05	1.30	4.8	0.0470	0.03900	0.02900	0.00008	0.00130	0.2200	< 0.00012	0.0350	0.0149	
	05/20/19		19.0		3,600	3,980	8.08	< 0.02	0.0210	2.50	3.80	0.17	0.42	12.00	16.0	0.0770	0.05000	0.04500	< 0.00003	0.00130	0.3800	0.00034	0.0390	0.0158	
	08/19/19		26.0		13	4,370	10.40	< 0.05	0.0390	0.02	4.10	0.18	< 0.10	0.17	4.4	0.0014	0.00060	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.00020	0.0015	0.0166	
	11/18/19		14.2		5	4,210	8.14	< 0.05	0.0280	0.01	4.60	< 0.10	< 0.10	< 0.10	4.7	0.0011	0.00060	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.00020	0.0013	0.0161	
	02/24/20		11.9		22	1,660	8.11	0.18	0.0410	0.12	2.30	< 0.10	< 0.10	1.10	3.5	0.0073	0.00200	0.00130	< 0.00005	< 0.00010	0.0250	< 0.00020	0.0020	0.0125	0.0140
	05/18/20		19.2		130	3,770	8.01	< 0.05	0.0160	0.16	3.20	0.25	< 0.10	1.00	4.5	0.0060	0.00280	0.00240	< 0.00005	< 0.00010	0.0260	< 0.00020	0.0034	0.0136	0.0141
	08/24/20		28.6		6	2,130	8.36	0.15	0.4900	0.60	1.30	< 0.10	0.76	2.20	3.5	0.0031	0.00057	< 0.00020	< 0.00005	< 0.00010	0.0053	< 0.00020	0.0014	0.0125	0.0127
	11/23/20		12.2		10	3,770	8.11	< 0.05	0.0210	0.03	3.40	< 0.10	< 0.10	0.49		0.1000	0.00073	< 0.00020	< 0.00005	< 0.00020	< 0.0100	< 0.00020	< 0.0020	0.0140	0.0160
	02/09/21		12.9		1,500	3,400	8.37	< 0.05	0.0720	0.89	3.60	< 0.10	< 0.10	2.00	5.6	0.0310	0.01000	< 0.00020	< 0.00005	0.00029	0.1100	< 0.00020	0.0084	0.0160	0.0134
	04/12/21		16.4		< 5	3,240	8.04	< 0.05	0.0160	< 0.01	3.00	< 0.10	< 0.10	0.54	3.6	0.0018	0.00043	< 0.00020	< 0.00005	< 0.00020	< 0.0100	< 0.00020	< 0.0020	0.0150	0.0133
	08/16/21		31.0		40	3,650	8.41	< 0.05	0.0160	0.03	2.80	0.16	< 0.05	0.71	3.4	0.0028	0.00080	0.00073	< 0.00005	< 0.00020	0.0100	0.00020	0.0020	0.0137	0.0123
	10/06/21		18.4		6	3,640	8.04	< 0.05	0.0310	0.02	3.30	0.15	< 0.05	0.63	4.0	< 0.0019	0.00046	< 0.00020	< 0.00005	< 0.00020	< 0.0100	< 0.00020	< 0.0020	0.0140	0.0115
	01/19/22		9.2		< 10	2,970	7.87	0.34	< 0.0500	0.30	3.30	0.13	0.07	1.48	4.9	0.0061	< 0.00125	< 0.00125	< 0.00032	< 0.00125	0.0178	< 0.00125	0.0134	0.0163	0.0133
	04/19/22		18.1		< 10	2,970	8.26	< 0.07	< 0.0500	0.33	1.64	0.12	< 1.00	1.31	3.1	0.0030	< 0.00125	< 0.00125	< 0.00032	< 0.00125	0.0134	< 0.00125	0.0086	NA	0.0143
	07/20/22		30.3		27	4,340	8.47	0.16	< 0.0500	0.40	1.80	< 0.10	< 0.10	1.43	3.3	0.0030	0.00130	< 0.00130	< 0.00032	< 0.00130	0.0140	< 0.00100	0.0110	NA	0.0170
	10/17/22		20.9		19	3,280	8.77	NA	0.0870	0.18	1.70	< 0.16	NA	NA	2.5	0.0060	< 0.00300	< 0.00030	NA	< 0.00050	0.0090	< 0.00500	< 0.0050	0.0130	0.0130
	01/24/23		9.4		< 6	4,230	8.29	NA	0.0060	0.04	3.80	< 0.10	< 0.10	0.23	4.1	< 0.0150	< 0.00900	< 0.00090	< 0.00032	< 0.00150	< 0.0150	< 0.01500	< 0.0150	0.0170	0.0170
	04/24/23		24.4		< 6	4,090	8.46	NA	0.0020	0.04	2.80	< 0.10	NA	NA	3.1	< 0.0500	< 0.03000	< 0.00300	NA	< 0.00500	< 0.0500	< 0.05000	< 0.0500	0.0140	0.0150
	Median	**18.4**	**16.9**	**< 3.0**	**16**	**3,310**	**8.21**	**< 0.05**	**0.0100**	**0.04**	**3.60**	**< 0.10**	**< 0.10**	**0.64**	**4.1**	**0.0029**	**0.00100**	**< 0.00050**	**< 0.00005**	**< 0.00015**	**0.0100**	**< 0.00020**	**0.0040**	**0.0125**	**0.0137**
	Maximum	**54.1**	**31.0**	**< 3.0**	**3,600**	**5,280**	**10.40**	**0.34**	**0.8800**	**10.00**	**5.91**	**4.30**	**1.00**	**12.00**	**16.0**	**1.1000**	**0.05000**	**< 0.10000**	**0.00032**	**0.00500**	**< 0.5000**	**0.0500**	**0.0500**	**0.1760**	**0.0170**
	Minimum	**10.0**	**8.0**	**< 3.0**	**< 5**	**500**	**7.04**	**< 0.02**	**0.0020**	**< 0.01**	**< 0.08**	**< 0.01**	**< 0.05**	**< 0.10**	**1.0**	**0.0011**	**0.00010**	**< 0.00002**	**< 0.00002**	**< 0.00004**	**< 0.0003**	**< 0.00006**	**0.0008**	**0.0013**	**0.0115**

Location	Date	Selenium (SDSU)[c] mg/L	Aluminum mg/L	Antimony mg/L	Arsenic mg/L	Barium mg/L	Beryllium mg/L	Bicarbonate Alkalinity as HCO3 mg/L	Boron mg/L	Bromide mg/L	Carbonate Alkalinity as CaCO3 mg/L	Calcium mg/L	Chlorate mg/L	Chloride mg/L	Cyanide mg/L	Copper Dissolved mg/L	Fluoride mg/L	Iron mg/L	Lead Dissolved mg/L	Magnesium mg/L	Manganese mg/L	Potassium mg/L
Las Vegas Wash at The Club at Sunrise (Formerly known as Desert Rose Golf Course)	09/24/97								0.96						< 0.005							
	09/23/98								1.00							< 0.0100			< 0.10000			
	11/04/99								0.91							< 0.0100			< 0.10000			
	11/05/99								0.94							< 0.0100			< 0.10000			
	10/03/00								1.30							< 0.0100			< 0.10000			
	10/04/00								1.30							< 0.0100			< 0.10000			
	12/18/00								1.20							< 0.0100			< 0.10000			
	01/18/01											260	0.11									
	04/25/01											220	0.45									
	07/30/01											230	0.10									
	10/24/01											240	0.34									
	01/23/02											230	0.11									
	04/24/02											230	0.12									
	04/24/02											240	1.60									
	07/24/02											210	0.43									
	10/23/02											250	0.15									
	01/22/03											210	0.26									
	04/23/03											200	0.24									
	07/23/03											180	0.16									
	10/22/03											220	0.07									
	01/21/04											240	0.15									
	07/21/04[e]				0.0061							220	0.45									
	10/27/04				0.0074							250	0.12									
	01/26/05				< 0.0010							180	1.30									
	04/19/05				0.0084							240	0.13									
	07/20/05				0.0077							220	0.11									
	10/26/05				0.0033							67	0.05									
	01/19/06				0.0056								0.15									
	04/18/06				0.0046								1.10									
	07/27/06				0.0080								0.20									
	10/25/06				0.0065								0.08									
	01/23/07				0.0064							260	0.12									
	04/18/07				0.0069							210	0.07									
	07/18/07				0.0062							210	0.10									
	10/27/07				0.0072							230	0.24									
	01/22/08				0.0076							240	0.14									
	04/23/08				0.0060							240	0.10									
	07/23/08				0.0069							220	0.14									
	10/22/08	0.0104			0.0053							240	0.17									
	01/28/09	0.0068			0.0056							190	0.10									
	04/29/09	0.0105			0.0066							210	0.14									
	07/27/09	NA			0.0073							180	0.74									
	10/20/09	0.0171			0.0067							240	0.11									
	01/26/10	0.0095			0.0074							250	0.10									
	04/20/10	0.0106			0.0046							230	0.29									
	07/20/10	0.0079	0.090		0.0007	0.033			1.40			220	0.05		< 0.005	0.0011		0.084	< 0.0002		0.0660	
	10/26/10	0.0088	0.032		0.0054	0.076			1.10			240	0.11		< 0.005	0.0023		0.037	< 0.0004		0.0240	
	01/31/11	0.0164	0.041		0.0047	0.038			0.94			340	0.48		< 0.005	0.0027		0.031	< 0.0010		0.0035	
	05/24/11	0.0063	0.007		0.0064	0.044			1.50			240	0.26		NA	0.0017		0.037	< 0.0002		0.0150	
	08/29/11	0.0097	0.100	0.0010	0.0081	0.042	< 0.0001	270	1.30	0.73	< 2	220	0.10	300	NA	0.0017	0.53	0.140	< 0.0002	300	0.0140	58
	11/22/11	0.0097	0.020	< 0.0005	0.0067	0.026	< 0.0001	270	1.30	0.76	< 2	250	0.17	300	NA	0.0010	0.50	< 0.020	< 0.0002	310	0.0043	56
	02/27/12	0.0107	< 0.005	< 0.0005	0.0072	2.000	< 0.0001	300	1.20	0.75	< 2			320	NA	0.0011	0.54	< 0.020	< 0.0002	310	0.0009	59
	05/22/12	0.0068	0.500	0.0006	0.0090	0.046	< 0.0001	290	1.20	0.78	< 2			310	NA	0.0010	0.54	0.600	< 0.0002	300	0.1500	59
	08/27/12	NA	0.029	0.0011	0.0064	0.082	< 0.0001	170	0.84	0.48	31			190	NA	0.0017	0.44	0.031	< 0.0002	170	0.0080	33
	11/19/12	NA	0.016	< 0.0005	0.0063	0.035	< 0.0001	260	1.10	0.64	18			260	NA	0.0015	0.44	< 0.020	< 0.0002	239	0.0018	47
	02/25/13	NA	0.025	< 0.0005	0.0064	0.031	< 0.0001	270	1.10	0.78	20	223	0.09	280	NA	0.0015	0.46	0.026	0.0002	283	0.0061	49
	05/20/13	NA	0.150	< 0.0005	0.0069	0.046	< 0.0001	290	1.20	0.74	< 2	215	0.10	280	NA	0.0011	0.51	0.140	< 0.0002	275	0.0290	51
	08/12/13	NA	0.070	0.0007	0.0060	0.071	< 0.0001	270	1.10	0.67	< 2	205	0.09	280	NA	0.0021	0.53	0.087	0.0003	254	0.0360	50
	12/02/13	NA	0.120	< 0.0005	0.0063	0.051	< 0.0001	330	1.10	0.69	< 2	221	0.17	260	NA	0.0011	0.45	0.110	< 0.0002	266	0.0300	48
	02/24/14	No Samples Taken - Construction on Going on this area of the Las Vegas Wash																				
	05/27/14																					
	08/26/14																					
	11/19/14	NA	1.200	< 0.0005	0.0073	0.051	< 0.0001	310	1.20	0.87	< 2	302	0.18	400	NA	0.0010	0.69	1.200	< 0.0002	333	0.08100	63
	03/24/15	NA	0.016	< 0.0005	0.0110	0.035	< 0.0001	250	1.50	0.93	31	283	0.12	420	NA	0.0013	0.50	< 0.020	< 0.0002	358	0.02400	67
	06/09/15	NA	0.018	< 0.0010	0.0130	0.037	< 0.0002	200	1.50	1.10	33	263	0.06	400	NA	0.0013	0.59	< 0.040	< 0.0004	331	0.00500	62
	08/17/15	NA	0.016	0.0012	0.0100	0.062	< 0.0001	180	1.30	0.83	45	251	ND	320	NA	0.0020	0.59	0.025	0.0002	300	0.02600	58
	11/16/15	NA	0.150	< 0.0005	0.0080	0.044	< 0.0001	250	1.30	0.80	200	252	0.08	400	NA	0.0038	0.43	0.190	< 0.0002	302	0.05000	57
	02/22/16	NA	7.800	0.0009	0.0140	0.140	0.0004	290	1.10	0.78	240	348	0.06	370	NA	0.0022	0.42	7.000	< 0.0002	318	0.27000	60
	06/27/16	NA	3.800	0.0051	0.0170	0.069	0.0002	310	1.70	1.00	< 2	254	0.07	430	NA	< 0.0001	0.16	3.000	< 0.0002	411	0.15000	71
	08/01/16	NA	ND	0.0024	0.0140	0.140	ND	250	0.73	0.49	ND	219	0.08	200		0.0023	0.32	6.300	0.0003	179	0.26000	34
	11/01/16	NA	ND	ND	0.0120	0.070	ND	320	1.70	1.20	ND	352	ND	500		0.0012	ND	4.000	ND	471	0.17000	100
	02/01/17	NA	ND	ND	0.0220	0.260	ND	850	1.40	0.91	ND	430	0.18	380		0.0018	0.61	14.000	ND	394	0.52000	87
	05/01/17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	291	ND	NA		NA	NA	NA	NA	NA	NA	NA
	08/28/17		2.800	0.0012	0.0160	0.140	0.0002	240	1.90	1.30	< 1	350	0.12	370		0.0018	< 0.20	2.400	< 0.00003	382	0.14000	96
	11/20/17		0.980	< 0.0001	0.0140	0.048	< 0.0002	280	1.60	1.00	< 1	283	0.10	304		< 0.0003	< 0.20	1.100	< 0.00006	359	0.09600	86
	02/20/18		0.820	< 0.0000	0.0140	0.048	< 0.00003	270	1.60	1.00	< 1	277	0.11	290		< 0.0015	< 0.20	0.790	< 0.00003	356	0.07200	80
	06/25/18		0.026	0.0007	0.0150	0.031	ND	270	1.60	1.00	ND	263	0.05	360		0.0018	ND	0.029	ND	367	0.06500	89
	08/27/18		5.600	0.0013	0.0170	0.120	0.0003	260	1.80	1.10	< 1	321	0.11	370		0.0009	0.67	5.000	< 0.00003	374	0.22000	99
	11/26/18		8.300	0.0011	0.0190	0.140	0.0004	210	1.50	0.95	49	334	0.06	470		0.0019	< 0.40	7.500	< 0.00003	375	0.25000	89
	02/19/19		22.000	0.0017	0.0180	0.370	0.0014	260	0.44	0.50	< 1	250	0.04	200		0.0017	< 0.40	23.000	< 0.00003	123	0.82000	25
	05/20/19		30.000	0.0005	0.0320	0.420	0.0020	300	1.50	0.93	< 1	768	0.10	310		< 0.0001	< 0.40	31.000	< 0.00003	436	1.40000	87
	08/19/19		0.035	0.0006	0.0150	0.022	< 0.0001	290	1.60	1.10	< 2	261	0.08	470		0.0012	< 0.40	0.036	< 0.0002	377	0.04600	85
	11/18/19		0.022	< 0.0005	0.0140	0.022	< 0.0001	300	1.50	1.00	< 2	269	0.07	470		0.0010	< 0.40	0.025	< 0.0002	382	0.02600	87
	02/24/20		0.650	0.0024	0.0058	0.052	< 0.0001	190	0.66	0.40	< 2	139	0.05	180		0.0047	< 0.18	0.540	< 0.0002	139	0.03900	33
	05/18/20		1.600	0.0006	0.0130	0.055	< 0.0001	300	1.40	0.90	< 5	264	0.06	310		0.0019	< 0.18	1.500	< 0.0002	340	0.07200	71
	08/24/20		0.031	0.0008	0.0073	0.048	< 0.0001	240	0.75	0.46	< 5	152	< 0.03	250		0.0023	< 0.09	0.097	< 0.0002	165	0.06200	37
	11/23/20		0.029	< 0.0005	0.0140	0.030	< 0.0001	280	1.40	1.00	< 5	267	< 0.05	400		1.0000	< 0.09	0.040	< 0.0002	352	0.05600	67
	02/09/21		4.400	0.0012	0.0150	0.120	0.0003	290	1.20	0.84	< 5	317	0.07	370		0.0017	< 0.18	5.800	< 0.0002	341	0.20000	60
	04/12/21		0.020	< 0.0005	0.0099	0.030	< 0.0001	250	1.20	0.96	< 5	204	0.41	360		0.0017	< 0.18	0.020	< 0.0002	297	0.02000	52
	08/16/21		0.230	0.0006	0.0130	0.044	< 0.0001	260	1.30	0.93	< 5	235	0.12	400		0.0020	< 0.18	0.210	0.0004	329	0.05500	65
	10/06/21		0.022	< 0.0005	0.0130	0.033	< 0.0001	290	1.30	0.93	< 5	241	0.30	410		0.0016	< 0.18	0.029	< 0.0002	332	0.03500	66
	01/19/22		< 0.050	0.0042	0.0105	0.028	< 0.0013	234	1.12	0.77	NA	204	0.06	310		0.0048	0.69	< 0.100	< 0.0013	231	0.05310	51
	04/19/22		0.108	< 0.0013	0.0100	0.022	< 0.0013	256	1.15	0.67	NA	215	< 0.10	299		0.0028	0.51	< 0.100	< 0.0013	247	0.02790	50
	07/20/22		0.187	0.0014	0.0150	0.029	< 0.0013	228	1.30	0.89	NA	249	0.10	433		0.0019	NA	0.170	< 0.0013	308	0.07600	74
	10/17/22		0.026	0.0006	0.0130	0.045	< 0.0006	180	NA	0.78	< 40	212	NA	357		< 0.0050	0.74	< 0.100	< 0.0003	287	0.04000	64
	01/24/23		< 0.015	< 0.0012	0.0160	< 0.060	< 0.0012	245	NA	1.09	< 2	270	NA	438		< 0.0150	0.66	< 0.100	< 0.0009	391	0.04800	81
	04/24/23		< 0.050	< 0.0040	0.0150	< 0.200	< 0.0040	206	NA	1.07	12	242	NA	389		0.0250	0.76	< 0.100	< 0.0015	364	< 0.05000	76
	Median	**0.0097**	**0.070**	**0.0007**	**0.0075**	**0.048**	**< 0.00010**	**270**	**1.30**	**0.88**	**< 2**	**240**	**0.11**	**359**	**< 0.005**	**0.0018**	**0.44**	**0.100**	**< 0.00020**	**324**	**0.05000**	**63**
	Maximum	**0.0171**	**30.00**	**0.0051**	**0.0320**	**2.000**	**0.00400**	**850**	**1.90**	**1.30**	**240**	**768**	**1.60**	**500**	**< 0.005**	**< 1.0000**	**0.76**	**31.000**	**0.100**	**471**	**1.40000**	**100**
	Minimum	**0.0063**	**< 0.005**	**< 0.00005**	**0.0007**	**0.022**	**< 0.00003**	**170**	**0.44**	**0.40**	**< 1**	**67**	**0.03**	**180**	**< 0.005**	**< 0.0001**	**0.09**	**< 0.020**	**< 0.00003**	**123**	**0.00092**	**25**

Location	Date	Silica mg/L	Sodium mg/L	Sulfate mg/L	Thallium mg/L	Zinc Dissolved mg/L	BOD mg/L	COD mg/L	Apparent Color ACU	Turbidity NTU	Phenol mg/L	Total Petroleum Hydrocarbons mg/L	Total Chlorine mg/L	Conductance mmhos/cm	Fecal Coliform MPN/100 mL	Fecal Strep. MPN/100 mL	Total Coliform MPN/100 mL	Salmonella MPN/100 m)	VOC # detects	SOC # detects	Pesticides # detects	Herbicides # detects
Las Vegas Wash at The Club at Sunrise (Formerly known as Desert Rose Golf Course)	09/24/97						< 6	< 10	10	2.50	< 0.010	< 1.0	0.25	0.07	500	850		< 2.2			0	0
	09/23/98					< 0.020									900	1,050		< 2.2	0	0	0	0
	11/04/99					< 0.020									1,300	1,300			3	0	0	0
	11/05/99					< 0.020									700	240			3	0	0	0
	10/03/00					< 0.020									900	3,000			0	0	0	0
	10/04/00					< 0.020									900	2,400			0	0	0	0
	12/18/00					< 0.020									700	2,400			0	1	0	0
	01/18/01																					
	04/25/01																					
	07/30/01																					
	10/24/01																					
	01/23/02																					
	04/24/02																					
	04/24/02																					
	07/24/02																					
	10/23/02																					
	01/22/03																					
	04/23/03																					
	07/23/03																					
	10/22/03																					
	01/21/04																					
	07/21/04[c]									2.87				3.85	9,100							
	10/27/04									3.05				4.06	1,683							
	01/26/05									132.00				2.56	3,600							
	04/19/05									1.54				4.04	< 200							
	07/20/05									1.76				3.75	4,600				3		1	
	10/26/05									140.00				1.74	16,800				1	1		
	01/19/06									3.05				3.72	450							
	04/18/06									1.28				3.09	< 200							
	07/27/06									2.96				3.94	3,400				2	0	0	0
	10/25/06									2.72				3.66	17,200				5	0	0	0
	01/23/07	45								1.21				3.95	< 100				5	0	0	2
	04/18/07	34								1.82				3.49	3,600				5	0	2	1
	07/18/07	26								5.29				3.56	3,900							
	10/27/07	40								4.40				3.92	2,600							
	01/22/08	43								1.87				4.09	< 1,000							
	04/23/08	41								1.42				4.13	< 1,000							
	07/23/08	35								4.26				3.93	183				2	1	1	0
	10/22/08	37								1.92				4.07	6,000				5	0	1	0
	01/28/09	30								1.04				3.33	< 200				3	0	1	0
	04/29/09	30								2.21				3.97	500				0	0	0	0
	07/27/09	28								4.32				3.37	8,400				2	2	2	0
	10/20/09	30								3.38				3.99	< 5,000				0	0	0	0
	01/26/10	45								1.85				3.69	< 20,000				1	0	0	0
	04/20/10	34								0.95				4.15	243				1	0	0	0
	07/20/10	35				< 0.005				5.10	< 0.005			3.97	180,000							
	10/26/10	46				< 0.005				7.10	< 0.005			3.48	6,400							
	01/31/11	28				< 0.025				3.44	< 0.005			3.10	< 1,000							
	05/24/11	35				< 0.005				1.25	< 0.001			4.01	350							
	08/29/11	33	330	1,800	< 0.0002	0.006				2.78	< 0.001			3.85	5,400	10,500			3	6	1	1
	11/22/11	44	330	1,700	< 0.0002	< 0.005				0.85	< 0.001			3.86	70	83			2	5	1	1
	02/27/12		350	1,900	< 0.0002	< 0.005				1.64	< 0.001			3.91		< 40			3	6	2	1
	05/22/12		340	1,800	< 0.0002	< 0.005				17.60	< 0.001			3.89	750	2,200			2	5	1	1
	08/27/12		200	1,100	< 0.0002	< 0.005				3.75	< 0.001			2.62	5,280	112			1	1	0	0
	11/19/12		270	1,700	< 0.0002	< 0.005				1.52	< 0.001			3.54	< 200	< 80			1	1	0	0
	02/25/13	36	300	1,700	< 0.0002	< 0.005				2.22	< 0.001			3.59	< 100	< 100			0	0	0	0
	05/20/13	39	330	1,700	< 0.0002	< 0.005				10.90	< 0.001			3.86	350	760			1	0	1	0
	08/12/13	41	320	1,500	< 0.0002	0.005				8.06	< 0.001			3.57	1,120	< 40			1	1	0	0
	12/02/13	45	310	1,500	< 0.0002	< 0.005				8.88	< 0.001			3.56	270	< 40			1	1	0	0
	02/24/14	No Samples Taken - Construction on Going on this area of the Las Vegas Wash																				
	05/27/14																					
	08/26/14																					
	11/19/14	61	380	2,100	< 0.0002	< 0.005				260.00	< 0.001			4.29	275,000	1,380			3	0	0	0
	03/24/15	48	400	2,400	< 0.0002	< 0.005				3.21	< 0.001			4.46	200	400			1	0	0	0
	06/09/15	47	380	2,200	< 0.0004	< 0.010				2.15	< 0.001			4.67	235	115			2	0	0	0
	08/17/15	51	340	1,800	< 0.0002	< 0.005				1.53	< 0.001			4.12	10,100	270			1	0	1	0
	11/16/15	52	360	1,900	< 0.0002	< 0.005				12.00	< 0.001			4.07	< 4,000	430			1	1	1	0
	02/22/16	68	320	1,800	< 0.0002	< 0.005				348.00	< 0.001			3.48	1,200	930			1	2	1	0
	06/27/16	88	470	2,300	< 0.0002	< 0.005				NA	< 0.001			4.21	NA	NA			1	0	0	0
	08/01/16	79	190	1,100	ND	0.008				1000.00				2.94	108,000	25,000			3		2	0
	11/01/16	89	470	2,800	ND	ND				389.00				6.03	720	330			1		0	0
	02/01/17	83	380	2,000	0.0003	0.005				983.00				4.94	2,000	8,300			1		0	0
	05/01/17	74	NA	NA	NA	NA				87.30				5.14	660	700			0		0	0
	08/28/17	82	500	2,200	< 0.00001	0.006				129.00	< 0.0002			5.63	260,000				3	2	1	0
	11/20/17	60	430	2,000	< 0.00003	< 0.002				25.60	< 0.0002			4.81	1,080				2	0	0	1
	02/20/18	56	430	1,700	< 0.00001	< 0.001				51.10	< 0.0002			4.66	340				1	0	1	0
	06/25/18	60	440	1,500	ND	ND				3.00				4.31	5,440				3	0	1	0
	08/27/18	92	450	2,100	< 0.00001	0.005				207.00	< 0.0002			5.36	42,000				2	0	1	0
	11/26/18	91	430	2,400	< 0.00001	< 0.001				139.00	< 0.0002			5.06	3,100				1	0	1	0
	02/19/19	74	120	1,000	< 0.00003	0.006				278.00	< 0.0002			2.90	4,200				1	0	2	0
	05/20/19	140	400	1,700	0.00055	< 0.001				312.00	< 0.002			4.49	8,600				3	0	1	0
	08/19/19	61	430	2,400	< 0.0002	< 0.005				3.95	< 0.001			5.23	27,200				0	0	0	0
	11/18/19	54	430	2,500	< 0.0002	< 0.005				1.50	< 0.001			4.91	520				0	0	0	0
	02/24/20	30	170	1,000	< 0.0002	0.014				40.80	< 0.002			2.18	13,600				3	1	2	1
	05/18/20	68	380	1,600	< 0.0002	0.010				93.80	< 0.001			4.43	7,400				1	0	0	0
	08/24/20	35	220	1,100	< 0.0002	< 0.005				8.16	< 0.002			4.31	540,000				2	1	2	0
	11/23/20	53	400	1,900	< 0.0002	< 0.010				22.00	< 0.001			4.46	1,129				2	0	0	0
	02/09/21	78	380	2,000	< 0.0002	< 0.010				264.00	< 0.002			4.20	608				0	4	0	0
	04/12/21	43	330	1,900	< 0.0002	< 0.010				2.29	< 0.001			4.75	800				1	1	0	0
	08/16/21	57	400	2,100	< 0.0002	0.010				360.00	< 0.0002			4.45	16,000				2	0	1	0
	10/06/21	52	380	2,000	< 0.0002	< 0.010				13.70	< 0.0002			4.44	1,050				2	1	0	0
	01/19/22	33	324	1,780	< 0.0013	0.022				2.64	NA			3.88	4,500				5	2	0	0
	04/19/22	40	314	1,550	< 0.0013	0.017				NA	NA			3.17	320				0	1	0	0
	07/20/22	59	426	2,250	< 0.0013	0.015				4.00	NA			5.06	6,500				0	0	0	0
	10/17/22	43	367	1,690	< 0.0002	0.006				8.00	NA			4.22	8,200				0	0	0	0
	01/24/23	58	445	2,230	< 0.0006	< 0.015				4.30	NA			5.03	20				0	0	0	0
	04/24/23	47	426	2,100	< 0.0020	< 0.025				6.60	NA			4.98	1,040				0	1	0	0
	Median	**46**	**380**	**1,850**	**< 0.00020**	**< 0.005**	**< 6**	**< 10**	**10**	**4.13**	**< 0.0010**	**< 1.0**	**0.25**	**3.98**	**1,165**	**700**		**< 2.2**	**1**	**0**	**0**	**0**
	Maximum	**140**	**500**	**2,800**	**0.00200**	**0.025**	**< 6**	**< 10**	**10**	**1,000**	**< 0.0100**	**< 1.0**	**0.25**	**6.03**	**540,000**	**25,000**		**< 2.2**	**5**	**6**	**2**	**2**
	Minimum	**26**	**120**	**1,000**	**< 0.00001**	**< 0.001**	**< 6**	**< 10**	**10**	**0.85**	**< 0.0002**	**< 1.0**	**0.25**	**0.07**	**20**	**< 40**		**< 2.2**	**0**	**0**	**0**	**0**

Location	Date	Q cfs	Temp Deg C	Oil & Grease mg/L	TSS mg/L	TDS mg/L	pH [f]	Surfactants[d] (MBAS) mg/L	Ortho-Phosphate mg/L	Total Phosphate-Phosphorous mg/L	NO3-N[e] mg/L	NO2-N mg/L	NH3-N mg/L	TKN mg/L	Total Nitrogen mg/L	Copper mg/L	Chromium mg/L	Lead mg/L	Mercury mg/L	Cadmium mg/L	Zinc mg/L	Silver mg/L	Nickel mg/L	Selenium[b] mg/L	Selenium Dissolved mg/L
Flamingo Wash at Nellis Blvd	06/24/91	3.7	22.4	< 3	3	3,400	8.10	< 0.05	< 0.0500		3.9		< 0.05			< 0.010	< 0.0100		< 0.00020	< 0.0050	0.0220	< 0.0100	< 0.040		
	07/14/91	3.9	23.3	< 3	13	3,400	8.20	0.10	< 0.0500	< 0.050	3.6		< 0.05	< 1.00	4.3	< 0.010	< 0.0100	< 0.0020	< 0.00020	< 0.0050	< 0.0200	< 0.0100	< 0.040		
	08/26/91	6.2	25.4	< 3	15	3,225	8.30	< 0.05	< 0.0500	< 0.050	4.1		< 0.05	< 1.00	4.5	< 0.010	< 0.0100	< 0.0020	< 0.00020	< 0.0050	0.0250	< 0.0100	< 0.040		
	04/07/92	9.6				3,310	7.80				4.1					< 0.010									
	09/13/92	12.5	24.0	< 3	13	3,450	8.20	< 0.05	< 0.0500	< 0.050	1.4		< 0.05	< 1.00	1.4-2.4	< 0.010	< 0.0100	< 0.0100	< 0.00020	< 0.0050	0.0250	< 0.0100	< 0.040		
	03/07/93	8.3	21.2			3,640	8.70				4.6					< 0.010									
	08/23/93	5.4	29.6	< 3	18	3,270	8.30	0.06	< 0.0500	< 0.050	4.1		0.08	< 1.00	5.1	< 0.010	< 0.0100	< 0.0020	< 0.00020	< 0.0050	0.0880	< 0.0100	< 0.020	< 0.020	
	04/03/94	5.0	14.5			3,710	8.20				4.5					< 0.010									
	08/28/94	27.0	25.6	< 3	21	3,300	8.40	< 0.05	< 0.0500	< 0.050	4.0		< 0.05	< 1.00	5.0	< 0.010	0.0100	< 0.0020	< 0.00020	< 0.0050	< 0.0200	< 0.0100	< 0.010	0.020	
	03/26/95	25.0	20.5			3,780	8.40				5.2					< 0.010									
	08/28/95	18.0	27.0	< 3	8	3,290	8.45	0.07	0.0500	< 0.050	3.3		< 0.05	< 1.00	4.3	< 0.010	< 0.0100	< 0.0020	< 0.00020	< 0.0050	< 0.0200	< 0.0100	< 0.010	0.014	
	09/10/96	7.6	31.0	< 3	25	3,490	8.55	< 0.05	< 0.0500	< 0.050	3.0		< 0.05	< 1.00	3.5	< 0.010		< 0.0010			< 0.0200				
	09/24/97	15.3	20.5	< 3	19	1,840	8.30	0.09	0.0700	0.050	2.9		< 0.05	1.20	4.1	0.016		< 0.1000			< 0.0250				
	No Sample Taken for 1998, 1999, or 2000 Dry Weather Monitoring Program																								
	01/18/01		9.0			3,470	8.38		0.0170	0.029	6.1	< 0.08	< 0.08	0.10	6.2	0.008	0.0046	ND			0.0170		0.016		
	04/25/01[f]	0.4	24.5			3,010	8.43		NA	0.010	3.9	< 0.08	< 0.08	0.10	4.0	0.014	0.0020	ND			0.0150		0.014		
	07/30/01	0.3	26.8			3,250	8.60		NA	0.010	3.6	< 0.08	< 0.08	NA	3.6	0.012	0.0018	ND			0.0110		0.015		
	10/24/01	7.1	14.9			3,400	9.21		0.0200	0.020	4.4	< 0.08	< 0.08	NA	4.4	0.009	ND	ND			0.0110		0.008		
	01/23/02	6.0	8.0			3,410	8.37		0.0090	0.007	5.5	< 0.08	< 0.08	NA		0.005	0.0032	0.0007			0.0140		0.016	0.018	
	04/24/02	6.2	21.7			3,000	8.62		< 0.0050	0.007	4.6	< 0.08	< 0.08	0.10		< 0.010	0.0012	ND			ND		0.008	0.017	
	07/24/02	5.6	29.2		31	3,060	8.53		0.0070	0.079	2.9	< 0.08	< 0.08	1.30	2.9	0.003	0.0030	ND			0.0008		0.016	0.014	
	10/23/02	6.0	15.0			3,200	8.31		0.0240	0.032	4.3	< 0.08	< 0.08	0.50	4.4	0.005	0.0030	0.0006			0.0110		0.015	0.014	
	01/22/03		10.4			3,200	8.35		0.0310	0.042	4.4	< 0.08	< 0.08	NA	4.4	0.009	0.0019	ND			0.0120		0.010	0.015	
	04/23/03		16.4			2,910	8.23		0.0230	NA	4.2	< 0.08	< 0.08	NA	4.2	0.013	0.0013	ND			0.0150		0.007	0.015	
	07/23/03		26.1			3,140	7.89		0.0060	0.030	3.5	< 0.08	< 0.05	0.70	4.2	0.013	0.0690	< 0.0020			0.0098		0.009	< 0.005	
	10/22/03		17.3			3,210	8.06		0.0080	< 0.050	4.9	< 0.08	< 0.05	0.47	5.4	0.005	0.0560	< 0.0020			< 0.0200		0.019	< 0.005	
	01/21/04		8.9			3,240	8.24		0.0110	< 0.050	5.1	< 0.08	< 0.05	0.38	5.5	< 0.010	0.0320	< 0.0020			< 0.0200		< 0.010	< 0.005	
	04/21/04		14.9			3,100	8.12		0.0080	< 0.050	4.1	< 0.08	< 0.05	0.40	4.5	< 0.010	0.0310	< 0.0020			< 0.0200		< 0.010	< 0.005	
	07/21/04		22.9			2,980	8.00		0.0080	< 0.010	4.0	NA	NA	0.53	5.3	0.003	0.0012	0.0005			0.0160		0.013	0.014	
	10/27/04		14.7			3,070	8.24		NA	NA	4.9	NA	NA	0.150		< 0.0010	< 0.0010	< 0.0005			0.0380		< 0.005	< 0.001	
	01/26/05		14.6			2,310	8.18		0.0360	0.110	4.6	< 0.08	< 0.08	1.10		< 0.010	< 0.0010	0.0033			0.0740		< 0.005	0.013	
	04/19/05		13.1			3,090	8.21		0.0090	< 0.010	5.9	< 0.08	< 0.08	0.67		0.005	0.0024	0.0014			0.0820		0.014	0.016	
	07/20/05		25.3			2,910	8.05		0.0050	< 0.050	3.8	< 0.08	< 0.08	0.51		< 0.010	< 0.0010	< 0.0005			< 0.0200		< 0.010	0.013	
	10/26/05		15.0			1,260	8.14		0.0560	0.050	< 0.1	< 0.08	0.12	0.73		0.007	0.0026	0.0007			0.0120		0.006	0.006	
	No Sample Taken for 01/19/06 Dry Weather Monitoring Program																								
	04/18/06		12.5			2,900	8.45		0.0040		4.8	< 0.08	< 0.08	NA		0.002	0.0014	< 0.0005			0.0072		0.019	0.020	
	07/27/06		25.5			2,900	8.09		< 0.0500	0.022	4.7	0.17	0.17	0.50	0.2	0.003	0.0009	< 0.0020			0.0087		0.002	0.013	
	10/25/06		15.9			3,700	8.20		NA	0.046	4.7	< 0.08	< 0.08	0.26	0.3	0.002	0.0047	0.0003			0.0091		0.010	0.014	
	01/23/07		9.4			2,800	8.26		< 0.0020	< 0.001	5.9	< 0.08	< 0.08	< 1.00	< 0.2	0.001	0.0021	< 0.0020			0.0040		0.001	0.016	
	04/18/07		14.0			3,100	8.23		0.0060	< 0.001	4.3	0.10	< 0.10	0.80	0.8	0.002	0.0010	0.0002			0.0011		0.002	0.015	
	07/18/07		25.1			2,500	8.14		0.0160	0.017	4.3	< 0.10	0.13	< 0.10		0.002	0.0010	< 0.0002			0.0082		0.001	0.014	
	10/24/07		16.1			3,000	8.19		0.0070	0.019	6.3	< 0.10	< 0.10	< 0.20		0.002	0.0025	ND			0.0120		0.001	0.016	
	01/22/08		10.4			2,800	8.24		0.0030	0.011	4.7	< 0.10	0.12	< 0.10		0.002	0.0019	< 0.0002			0.0086		0.006	0.017	
	04/23/08		15.8			2,900	8.10		0.0050	< 0.010	4.1	< 0.10	< 0.10	0.73		0.033	0.0009	0.0090			< 0.0010		0.001	0.015	
	07/23/08		26.5			3,000	8.14		0.0040	0.016	3.4	0.14	< 0.10	0.58		0.003	0.0009	< 0.0002			0.0073		0.004	0.013	
	10/22/08		15.7			2,900	8.16		0.0035	0.012	4.5	< 0.10	< 0.10	< 0.10		0.003	0.0015	< 0.0002			0.0140		0.005	0.013	
	01/28/09		9.1			3,000	8.14		0.0025	< 0.010	5.4	< 0.10	< 0.10	1.80		0.002	0.0016	< 0.0010			0.0098		< 0.002	0.016	
	04/29/09		16.5			2,700	8.16		0.0046	0.010	3.4	< 0.15	< 0.10	< 0.10		0.003	0.0004	< 0.0002			0.0098		< 0.001	0.015	
	07/27/09		29.6			2,900	8.09		0.0045	0.021	3.4	0.12	< 0.05	0.18		0.002	0.0010	0.0005			0.0110		0.002	0.015	
	10/20/09		14.8			2,700	8.34		0.0091	0.084	5.5	< 0.03	< 0.05	< 0.01		0.002	0.0013	< 0.0000			0.0050		0.002	0.016	
	01/26/10		12.1			3,000	7.91		0.1800	0.170	5.5	< 0.03	0.90	1.60		0.004	0.0005	< 0.0000			0.0150		0.003	0.019	
	04/20/10		20.5			2,800	7.90		< 0.0016	0.016	NA	< 0.03	< 0.05	0.26		0.003	0.0009	< 0.0000			< 0.0003		0.005	0.012	
	07/20/10		28.0			2,800	8.26		0.0320	0.018	3.4	< 0.10	< 0.10	0.14		0.002	0.0011	< 0.0002	< 0.00005	< 0.0001	0.0052	< 0.0002	0.006	0.012	
	10/26/10		15.2			3,000	8.13		0.0270	0.036	5.0	< 0.10	< 0.05	0.71		0.004	0.0016	< 0.0004	< 0.00005	< 0.0001	0.0120	< 0.0002	0.005	0.014	
	01/31/11		12.6		9	3,700	8.74		0.0056	0.016	4.3	< 0.10	< 0.05	0.57		< 0.003	0.0012	< 0.0010	< 0.00005	< 0.0005	< 0.0250	< 0.0010	0.005	0.011	
	05/24/11		21.3		7	2,760	8.32		0.0021	0.016	110.0	0.14	6.20	< 0.10		0.003	0.0013	< 0.0002	< 0.00005	< 0.0001	0.0140	< 0.0002	0.007	0.013	
	08/29/11		26.9		12		8.25	NA	0.0270	0.053	3.3	< 0.10	0.17	0.40	3.8	0.003	0.0012	0.0003	< 0.00005	< 0.0001	0.0110	< 0.0002	0.002	NA	
	11/22/11		14.2	< 5		2,860	8.35	NA	0.0081	0.021	5.3	< 0.10	< 0.05	< 0.10	5.3	0.003	0.0013	< 0.0002	< 0.00005	< 0.0001	0.0066	< 0.0002	0.001	0.018	
	02/27/12		12.5		13	2,800	8.24	< 0.05	0.0230	0.035	4.1	< 0.10	< 0.05	< 0.10	4.1	0.004	0.0014	0.0006	< 0.00005	< 0.0001	0.0160	< 0.0004	0.002	0.016	
	05/22/12		25.3		15	2,800	8.36	NA	0.0065	0.029	3.5	< 0.10	< 0.05	0.56	4.1	0.003	0.0018	< 0.0002	< 0.00005	< 0.0001	0.0120	< 0.0002	0.002	0.015	
	08/27/12		29.9		8	2,630	8.77	NA	0.0092	0.022	2.1	< 0.10	< 0.10	0.31	2.4	0.002	0.0013	< 0.0002	< 0.00005	< 0.0001	< 0.0050	< 0.0002	0.002	0.013	
	11/19/12		19.8	< 5		2,850	8.61	NA	0.0064	0.011	4.9	< 0.10	< 0.10	< 0.10	4.9	0.002	0.0013	< 0.0002	< 0.00005	< 0.0001	< 0.0050	< 0.0002	0.001	0.012	
	02/25/13		16.3		60	2,740	8.68	NA	0.0049	0.150	3.9	< 0.10	< 0.10	2.20	6.2	0.005	0.0022	0.0009	< 0.00005	< 0.0001	0.0420	< 0.0002	0.002	0.022	
	05/20/13		16.3		8	3,150	8.57	NA	0.0054	0.015	3.4	< 0.10	< 0.10	0.33	3.8	0.002	0.0011	< 0.0002	< 0.00005	< 0.0001	< 0.0050	< 0.0002	0.001	0.025	
	08/12/13		30.0		9	2,810	8.52	0.05	0.0036	0.034	3.3	< 0.10	< 0.10	0.58	3.9	0.004	0.0012	< 0.0002	< 0.00005	< 0.0001	< 0.0050	< 0.0002	0.010	0.021	
	12/02/13		20.9		6	2,670	9.01	< 0.05	0.0058	0.038	3.9	< 0.10	< 0.10	0.66	4.6	0.003	0.0016	< 0.0002	< 0.00005	< 0.0001	< 0.0050	< 0.0002	< 0.001	0.012	
	02/24/14		22.0	< 5		2,450	8.75	< 0.05	0.0042	0.015	3.9	< 0.10	< 0.10	< 0.10	3.4	0.001	0.0012	< 0.0002	< 0.00005	< 0.0001	< 0.0050	< 0.0002	0.001	0.023	
	05/27/14		30.6		6	2,890	8.74	< 0.05	0.0042	0.012	3.6	< 0.10	< 0.10	0.43	4.1	0.002	0.0009	< 0.0002	< 0.00005	< 0.0001	< 0.0050	< 0.0002	0.006	0.021	
	08/26/14		27.7		10	2,700	8.52	0.05	0.0034	0.020	19.0	< 0.30	< 0.10	4.3	< 0.10	0.003	0.0012	< 0.0002	< 0.00005	< 0.0001	< 0.0050	< 0.0002	0.002	0.014	
	11/19/14		14.5		160	2,910	8.59	< 0.05	0.0051	0.150	5.5	< 0.10	< 0.10	< 0.10	5.5	0.005	0.0036	0.0018	< 0.00005	< 0.0001	0.0140	< 0.0002	0.008	0.015	
	03/24/15		18.2		14	2,880	8.31	0.06	0.0029	0.032	4.3	< 0.10	< 0.10	0.47	4.8	0.003	0.0011	< 0.0002	< 0.00005	< 0.0001	0.0100	< 0.0002	0.001	0.015	
	06/09/15		31.5		36	2,920	8.72	0.07	0.0059	0.027	3.5	< 0.10	< 0.10	0.29	3.9	0.003	0.0011	< 0.0004	< 0.00005	< 0.0002	0.0100	< 0.0004	0.002	0.015	
	08/17/15		31.4		13	2,700	8.83	0.08	0.0040	0.050	2.3	< 0.10	< 0.10	0.61	3.0	0.003	0.0012	0.0002	< 0.00005	< 0.0001	0.0070	< 0.0002	0.001	0.015	
	11/16/15		10.5		85	2,680	8.82	< 0.05	0.0120	0.120	4.0	< 0.15	< 0.10	0.54	4.6	0.016	0.0038	0.0040	< 0.00005	0.0002	0.0560	< 0.0002	0.008	0.017	
	02/22/16		19.7		24	2,720	8.85	< 0.05	0.0020	0.020	4.3	< 0.10	< 0.10	0.74	5.1	0.002	0.0011	< 0.0002	< 0.00005	< 0.0001	< 0.0050	< 0.0002	0.001	0.018	
	06/27/16		NA		19	2,670	8.71	0.05	0.0030	0.030	3.6	0.11	< 0.10	0.83	4.5	0.003	0.0010	< 0.0002	< 0.00005	0.0001	0.0050	< 0.0002	0.002	0.022	
	08/01/16				1500	2,690	8.73	ND	0.0260	0.750	3.3	3.40		2.50		0.340	0.0210	0.0210	ND	0.0005	0.1400	< 0.0002	0.016	0.016	
	11/01/16				210	2,670	8.68	0.05	0.0051	0.240	5.1	5.10		1.80		0.019	0.0046	0.0034	ND	0.0002	0.0640	ND	0.009	0.017	
	02/01/17				68	2,770	8.61	ND	0.0032	0.046	4.5	4.60		0.36		0.003	0.0020	0.0006	ND	0.0001	0.0110	ND	0.002	0.018	
	05/01/17				NA	2,770	8.65	NA	NA	NA	NA	NA		NA		NA	NA	NA	NA	NA	NA	NA	NA	0.017	
	08/28/17		32.5		240	2,630	8.72	< 0.02	0.0340	0.240	3.1	0.10	< 0.05	1.60	4.8	0.013	0.0023	0.0022	< 0.00002	< 0.00004	0.0470	< 0.0001	0.002	0.015	
	11/20/17		10.6		6	2,740	8.03	< 0.02	0.0063	0.018	5.0	< 0.01	< 0.05	0.24	5.3	0.002	0.0012	< 0.0001	< 0.00002	< 0.0001	< 0.0019	< 0.0001	< 0.0001	0.017	
	02/20/18		12.6		6	2,860	8.14	< 0.02	0.0430	0.018	6.2	< 0.01	< 0.05	< 0.05	6.2	0.002	0.0013	< 0.0000	< 0.00002	< 0.00004	0.0082	< 0.0001	0.001	0.018	
	06/25/18		24.7		7	2,550	8.29	< 0.02	0.0210	0.087	3.1	0.10		0.80		0.002	0.0009	0.0007	ND	ND	0.0110	ND	0.001	0.014	
	08/27/18		28.6		420	2,530	8.36	< 0.02	0.0290	0.280	4.2	< 0.01	0.20	1.50	5.7	0.016	0.0095	0.0075	< 0.00002	0.00015	0.0630	< 0.0001	0.0095	0.013	
	11/26/18		14.4		8	2,870	8.12	< 0.02	0.0620	0.014	5.0	< 0.01	< 0.05	< 0.05	5.0	0.002	0.0012	0.0004	< 0.00002	< 0.00004	0.0100	< 0.0001	0.001	0.016	
	02/19/19		7.5		45	2,290	7.71	< 0.02	0.2600	0.078	4.7	< 0.01	< 0.05	< 0.05	4.7	0.003	0.0020	0.0010	< 0.00002	< 0.00004	0.0180	< 0.0001	0.002	0.016	
	05/20/19		17.3		47	2,890	8.22	< 0.02	< 0.0008	0.038	5.2	< 0.01	< 0.05	0.55	5.7	0.005	0.0020	0.0009	< 0.00002	< 0.00004	0.0150	< 0.0001	0.002	0.017	
	08/19/19		24.8		13	2,700	9.85	< 0.05	0.0170	0.013	4.4	< 0.10	< 0.10	0.53	5.0	0.002	0.0011	< 0.00020	< 0.00005	< 0.0001	0.0073	< 0.0002	0.001	0.015	
	11/18/19		12.7		230	2,270	8.41	< 0.05	0.0260	0.180	4.7	< 0.10	< 0.10	0.63	5.4	0.008	0.0025	0.0022	< 0.00005	< 0.0001	0.0310	< 0.0002	0.002	0.012	
	02/24/20		12.3		8	2,480	7.98	0.06	< 0.0100	0.053	4.7	< 0.10	< 0.10	0.41	5.2	0.004	0.0012	0.0003	< 0.00005	< 0.0001	0.0190	< 0.0002	0.002	0.017	0.018
	05/18/20		20.9		15	2,810	8.28	< 0.05	< 0.0100	0.019	5.0	< 0.10	< 0.10	< 0.10	5.1	0.002	0.0012	< 0.0002	< 0.00005	< 0.0001	< 0.0050	< 0.0002	0.001	0.016	0.016
	08/24/20		28.7		5	2,620	8.47	< 0.05	0.0240	0.024	3.7	< 0.10	< 0.10	0.10	3.8	0.002	0.0011	< 0.0002	< 0.00005	< 0.0001	0.0077	< 0.0002	0.001	0.015	0.015
	11/23/20		11.1		13	2,560	8.24	< 0.05	0.0110	0.540	5.4	< 0.10	0.63	0.48	5.9	0.140	0.0028	0.0049	< 0.00005	< 0.0002	0.0720	< 0.0002	0.002	0.012	0.015
	02/09/21		12.7		650	2,720	8.13	0.07	0.0350	0.710	4.6	0.21	0.93	5.00	9.9	0.048	0.0071	0.0160	< 0.00005	< 0.0002	0.2600	0.0003	0.006	0.015	0.014
	04/12/21		14.9		8	2,550	8.36	< 0.05	< 0.0100	0.011	4.0	< 0.10	< 0.10	0.16	4.3	0.002	0.0009	< 0.0002	< 0.00005	< 0.0002	< 0.0100	0.0002	0.002	0.015	0.013
	08/16/21		29.6		20	2,420	8.55	< 0.05	< 0.0100	0.030	3.2	< 0.10	< 0.05	0.31	3.3	< 0.001	0.0009	0.0011	< 0.00005	< 0.0002	0.0100	0.0002	0.002	0.012	0.012
	10/06/21		18.0		5	2,410	8.35	< 0.05	0.0100	0.030	4.2	< 0.10	< 0.05	0.16	4.5	0.003	0.0011	< 0.0002	< 0.00005	< 0.0002	0.0110	< 0.0002	< 0.002	0.015	0.013
	01/19/22		9.4	< 10		2,640	7.93	0.09	< 0.0500	0.105	4.5	< 0.10	< 0.10	2.71	7.2	0.003	< 0.0013	< 0.0013	< 0.00032	< 0.0013	0.0234	< 0.0013	0.016	0.016	0.017
	04/19/22		19.3		66	2,740	8.42	< 0.07	< 0.0500	0.447	3.6	< 0.10	< 1.00	1.38	5.0	0.005	0.0018	< 0.0013	< 0.00032	< 0.0013	0.0187	< 0.0013	0.011	NA	0.015
	07/20/22		24.0		5	2,790	8.09	0.07	0.1090	0.150	3.1	0.14	< 0.10	1.21	4.4	0.005	< 0.0010	< 0.0013	< 0.00032	< 0.0013	0.0100	< 0.0010	0.011	NA	0.014
	10/17/22		19.8	< 6		2,550	8.03	NA	0.0020	0.020	4.2	< 0.10	NA	NA	4.7	< 0.005	< 0.0030	0.0003	NA	< 0.0005	0.0090	< 0.0050	0.005	0.013	0.013
	01/24/23		7.4		17	2,790	8.35	NA	0.0080	0.070	5.0	< 0.10	< 0.10	0.28	5.4	< 0.015	< 0.0090	< 0.0009	< 0.00032	< 0.0015	0.0270	< 0.0150	< 0.015	0.014	0.015
	04/24/23		23.8		120	2,780	8.53	NA	< 0.0010	0.140	3.6	0.10	NA	NA	4.6	< 0.050	< 0.0300	< 0.0030	NA	< 0.0050	< 0.0500	< 0.0500	< 0.050	0.012	0.013
	Median	**6.2**	**18.7**	**< 3.0**	**13**	**2,860**	**8.31**	**< 0.05**	**0.0091**	**0.032**	**4.2**	**< 0.10**	**< 0.08**	**0.50**	**4.5**	**0.004**	**0.0014**	**< 0.00050**	**< 0.00005**	**< 0.00010**	**0.0115**	**< 0.0002**	**0.0050**	**0.015**	**0.014**
	Maximum	**27.0**	**32.5**	**< 3.0**	**1,500**	**3,780**	**9.85**	**0.10**	**0.2600**	**0.750**	**110.0**	**5.10**	**6.20**	**5.00**	**9.9**	**0.340**	**0.0690**	**0.1000**	**< 0.00032**	**0.00500**	**0.2600**	**0.0500**	**0.025**	**0.018**	
	Minimum	**0.3**	**7.4**	**< 3.0**	**3**	**1,260**	**7.71**	**< 0.02**	**< 0.0008**	**< 0.001**	**< 0.1**	**< 0.01**	**< 0.05**	**< 0.01**	**< 0.2**	**0.001**	**0.0004**	**< 0.00002**	**< 0.00002**	**< 0.00004**	**0.0003**	**< 0.0001**	**< 0.0001**	**< 0.001**	**0.012**

[f] For constituents with ND levels, the ND level shown is for the current permit year. Minimum and Maximum calculations were only include data for 2001-current. Due to improved testing methods, sample dilution or other variables historical ND levels may be different.

Location	Date	Selenium (SDSU)[c] mg/L	Aluminum mg/L	Antimony mg/L	Arsenic mg/L	Barium mg/L	Beryllium mg/L	Bicarbonate Alkalinity as HCO3 mg/L	Boron mg/L	Bromide mg/L	Carbonate Alkalinity as CaCO3 mg/L	Calcium mg/L	Chlorate IC mg/L	Chloride mg/L	Cyanide mg/L	Copper Dissolved mg/L	Fluoride mg/L	Iron mg/L	Lead Dissolved mg/L	Magnesium mg/L	Manganese mg/L	Potassium mg/L
Flamingo Wash at Nellis Blvd	06/24/91								1.20						< 0.005							
	07/14/91				< 0.005				1.20						< 0.005							
	08/26/91				< 0.005				1.20						< 0.005							
	04/07/92								1.20						< 0.005							
	09/13/92				0.008				0.09						< 0.005							
	03/07/93								1.20						< 0.005							
	08/23/93				0.006				1.15						< 0.005							
	04/03/94								1.25						< 0.005							
	08/28/94				< 0.025				1.10						< 0.005							
	03/26/95								1.30						< 0.005							
	08/28/95				< 0.005				1.25						< 0.005							
	09/10/96								1.10						< 0.005							
	09/24/97								0.75						< 0.005							
		No Sample Taken for 1998, 1999, or 2000 Dry Weather Monitoring Program																				
	01/18/01				0.006							380	0.35									
	04/25/01[1]				0.008																	
	07/30/01				0.006							330	0.90									
	10/24/01				0.009							360	ND									
	01/23/02				0.008							350	3.40									
	04/24/02				0.007							350	0.48									
	07/24/02				0.009							340	0.89									
	10/23/02				0.007							330	0.20									
	01/22/03				0.005							300	0.45									
	04/23/03				0.005							270	1.40									
	07/23/03				0.006							270	2.00									
	10/22/03				0.005							330	0.83									
	01/21/04				0.007							360	0.75									
	04/21/04				0.005							320	1.00									
	07/21/04				0.005							330	1.20									
	10/27/04				0.007							310	1.10									
	01/26/05				< 0.001							270	0.74									
	04/19/05				0.007							330	1.00									
	07/20/05				0.009							300	1.50									
	10/26/05				0.004							150	0.24									
	01/19/06	No Sample Taken for 01/19/06 Dry Weather Monitoring Program																				
	04/18/06				0.005								0.91									
	07/27/06				0.006								1.50									
	10/25/06				0.006								1.30									
	01/23/07				0.004								0.55									
	04/18/07				0.005							290	0.54									
	07/18/07				0.006							310	1.20									
	10/24/07				0.005							310	1.80									
	01/22/08				0.005							310	0.32									
	04/23/08				0.005							310	1.00									
	07/23/08				0.006																	
	10/22/08	0.0130			0.005							310	0.86									
	01/28/09	0.0130			0.006							310	3.40									
	04/29/09	0.0125			0.005																	
	07/27/09	NA			0.006							300	0.77									
	10/20/09	0.0129			0.006							310	0.78									
	01/26/10	0.0151			0.010							400	0.30									
	04/20/10	0.0142			0.003							300	0.73									
	07/20/10	0.0135	0.017		0.005	0.057			0.85			310	0.61			0.0018		< 0.001	< 0.0002		0.0033	
	10/26/10	0.0142	0.015		0.004	0.074			0.73			350	0.82			0.0025		0.018	< 0.0004		0.0100	
	01/31/11	0.0013	< 0.0001		0.007	0.028			1.30			260	0.12			< 0.0025		< 0.001	< 0.0010		0.0150	
	05/24/11	0.0127	0.011		0.005	0.074			0.94			450	0.67			0.0029		0.060	< 0.0002		0.0020	
	08/29/11	0.0132	0.090	0.0007	0.006	0.056	< 0.0001	230	0.86	0.49	< 2	310	0.69	270		0.0019	0.54	0.100	< 0.0002	190	0.0070	26
	11/22/11	0.0139	0.010	< 0.0005	0.005	0.043	< 0.0001	230	0.88	0.68	< 2	340	1.00	290		0.0017	0.52	< 0.020	< 0.0002	200	0.0021	24
	02/27/12	0.0132	0.200	0.0005	0.006	0.046	< 0.0001	240	0.77	0.50	< 2			290		0.0017	0.54	0.220	< 0.0002	200	0.0043	24
	05/22/12	0.0131	0.070	0.0007	0.005	0.048	< 0.0001	230	0.80	0.57	< 2			270		0.0022	0.52	0.091	< 0.0002	190	0.0047	27
	08/27/12	NA	0.005	0.0007	0.004	0.047	< 0.0001	130	0.79	0.53	< 2			270		0.0020	0.55	< 0.020	< 0.0002	160	0.0030	25
	11/19/12	NA	0.018	< 0.0005	0.005	0.040	< 0.0001	210	0.76	0.55	< 2			280		0.0016	0.41	< 0.020	< 0.0002	176	0.0025	24
	02/25/13	NA	0.200	0.0006	0.007	0.048	< 0.0001	190	0.86	0.49	11	344	0.61	260		0.0020	0.43	0.220	< 0.0002	195	0.0140	26
	05/20/13	NA	0.010	< 0.0005	0.005	0.030	< 0.0001	200	0.81	0.63	21	315	0.62	280		0.0016	0.53	< 0.020	< 0.0002	202	0.0010	28
	08/12/13	NA	0.008	0.0005	0.003	0.037	< 0.0001	160	0.75	0.52	< 2			280		0.0031	0.62	0.042	< 0.0002	179	0.0017	26
	12/02/13	NA	0.029	< 0.0005	0.004	0.036	< 0.0001	120	0.78	0.40	< 2			300		0.0025	0.39	0.024	< 0.0002	175	0.0027	26
	02/24/14	NA	0.008	< 0.0005	0.004	0.036	< 0.0001	200	0.75	0.41	< 2	281	0.49	230		0.0013	0.52	< 0.020	< 0.0002	174	0.0008	23
	05/27/14	NA	0.008	< 0.0005	0.004	0.040	< 0.0001	170	0.98	0.63	< 2	325	1.10	290		0.0030	0.51	0.037	< 0.0002	207	0.0010	27
	08/26/14	NA	0.056	< 0.0005	0.005	0.044	< 0.0001	220	0.73	0.50	< 2	343	1.10	300		0.0064	0.47	0.043	< 0.0002	202	0.0042	27
	11/19/14	NA	1.100	0.0006	0.005	0.060	< 0.0001	220	0.77	0.52	< 2	367	1.00	400		0.0018	0.69	1.200	< 0.0002	196	0.0430	27
	03/24/15	NA	0.043	< 0.0005	0.005	0.050	< 0.0001	260	0.88	0.46	< 2	337	1.00	300		0.0021	0.36	0.049	< 0.0002	196	0.0042	27
	06/09/15	NA	0.068	< 0.0010	0.005	0.049	< 0.0002	170	0.84	0.51	< 2	312	1.30	320		0.0021	0.50	0.066	< 0.0004	175	0.0035	24
	08/17/15	NA	0.021	0.0130	0.004	0.053	< 0.0001	120	0.84	0.49	37			280	NA	0.0030	0.53	0.029	0.0002	176	0.0038	24
	11/16/15	NA	1.300	0.0018	0.006	0.080	< 0.0001	170	0.80	0.50	140	337	5.00	330	NA	0.0026	0.43	1.600	< 0.0002	177	0.0490	24
	02/22/16	NA	0.013	< 0.0005	0.005	0.047	< 0.0001	160	0.73	0.60	130	318	0.86	260	NA	0.0018	0.38	< 0.020	< 0.0002	181	0.0018	25
	06/27/16	NA	0.034	< 0.0005	0.006	0.048	< 0.0001	200	0.81	0.53	< 2	275	2.00	300	NA	0.0020	0.22	0.036	< 0.0002	189	0.0049	28
	08/01/16	NA	ND	0.0011	0.014	0.290	ND	240	0.73	0.51	ND	461	1.40	290		0.0014	0.62	13.000	ND	215	0.3900	25
	11/01/16	NA	ND	0.0011	0.006	0.083	ND	210	0.73	0.46	ND	330	1.20	300		0.0031	ND	1.800	ND	187	0.0640	26
	02/01/17	NA	ND	ND	0.006	0.047	ND	210	0.79	0.62	ND	292	0.99	250		0.0012	0.52	0.300	ND	196	0.0150	27
	05/01/17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	304	1.50	NA		NA	NA	NA	NA	NA	NA	NA
	08/28/17		0.900	0.0015	0.006	0.076	< 0.00003	140	0.88	0.53	36	315	3.20	270		0.0024	0.51	0.880	< 0.00003	173	0.0280	27
	11/20/17		0.020	< 0.0001	0.005	0.047	< 0.0002	250	0.82	0.50	< 1	306	1.50	210		0.0014	< 0.20	< 0.002	< 0.0001	184	0.0055	28
	02/20/18		0.015	< 0.00005	0.006	0.037	< 0.00003	240	0.90	0.60	4	322	1.10	190		0.0018	< 0.20	< 0.001	< 0.00003	197	0.0052	28
	06/25/18		0.023	ND	0.005	0.062	ND	230	0.70	0.42	2	265	1.50	300		0.0018	ND	0.037	0.0002	159	0.0070	23
	08/27/18		8.100	0.0007	0.009	0.170	0.00043	200	0.82	0.89	< 1	323	2.80	270		0.0013	< 0.20	7.100	< 0.00003	183	0.2500	32
	11/26/18		0.015	< 0.00005	0.006	0.051	< 0.00003	200	0.81	0.59	37	306	1.50	360		0.0015	< 0.40	< 0.001	< 0.00003	189	0.0058	29
	02/19/19		0.730	0.0008	0.005	0.057	< 0.00003	220	0.71	0.38	< 1	291	0.67	140		0.0015	< 0.40	0.570	< 0.00003	153	0.0280	24
	05/20/19		0.560	0.0005	0.006	0.059	< 0.00003	210	0.83	0.56	< 1	345	1.60	260		0.0015	< 0.40	0.510	< 0.00003	194	0.0210	29
	08/19/19		0.025	0.0008	0.005	0.047	< 0.0001	230	0.78	0.51	10	279	1.60	270		0.0019	< 0.40	0.031	< 0.0002	180	0.0082	26
	11/18/19		1.200	0.0008	0.005	0.057	< 0.0001	250	0.65	0.42	< 2	270	1.30	220		0.0023	< 0.40	1.100	< 0.0002	164	0.0380	25
	02/24/20		0.080	0.0011	0.005	0.049	< 0.0001	250	1.60	0.49	< 2	289	2.40	270		0.0023	< 0.18	0.100	< 0.0002	174	0.0095	26
	05/18/20		0.025	< 0.0005	0.005	0.026	< 0.0001	250	0.92	0.50	< 5	293	1.20	190		0.0017	< 0.18	0.063	< 0.0002	194	0.0062	31
	08/24/20		0.013	< 0.0005	0.005	0.046	< 0.0001	170	0.75	0.46	22	272	1.90	280		0.0018	< 0.09	0.021	< 0.0002	168	0.0056	27
	11/23/20		0.750	0.0005	0.006	0.069	< 0.0001	210	0.86	0.50	< 5	384	1.60	280		0.3600	< 0.09	0.810	< 0.0002	206	0.0310	28
	02/09/21		1.600	0.0030	0.011	0.110	< 0.0001	340	0.83	0.48	< 5	392	2.00	270		0.0010	< 0.09	2.700	< 0.0002	189	0.1300	31
	04/12/21		0.020	< 0.0005	0.004	0.036	< 0.0001	240	0.75	0.44	< 5	272	2.20	270		0.0020	< 0.09	0.020	< 0.0002	173	0.0029	25
	08/16/21		0.042	0.0005	0.004	0.056	< 0.0001	190	0.68	0.75	< 5	269	2.40	320		0.0022	< 0.09	0.040	< 0.0002	161	0.0037	24
	10/06/21		< 0.020	0.0005	0.005	0.045	< 0.0001	270	0.72	0.43	< 5	287	1.90	260		0.0021	< 0.09	0.022	< 0.0002	167	0.0079	25
	01/19/22		< 0.050	< 0.0013	0.005	0.047	< 0.0013	212	0.77	0.46	NA	307	0.57	340		0.0027	0.47	< 0.100	< 0.0013	180	0.0067	26
	04/19/22		0.569	< 0.0013	0.004	0.038	< 0.0013	180	0.85	0.42	NA	331	1.21	268		0.0026	0.43	0.510	< 0.0013	178	0.0120	28
	07/20/22		< 0.050	< 0.0013	0.005	0.045	< 0.0013	200	0.68	0.37	NA	299	2.14	313		0.0037	NA	< 0.100	< 0.0013	153	0.0030	24
	10/17/22		0.035	< 0.0004	0.005	0.040	< 0.0004	187	NA	0.44	14	294	NA	274		< 0.0050	0.49	< 0.100	< 0.0003	183	0.0060	28
	01/24/23		0.298	< 0.0012	0.005	< 0.060	< 0.0012	203	NA	0.49	5	320	NA	315		< 0.0150	0.47	0.360	< 0.0009	198	0.0160	30
	04/24/23		0.632	< 0.0040	0.006	< 0.200	< 0.0040	166	NA	0.49	4	316	NA	332		< 0.0250	0.53	0.850	< 0.0015	185	0.0500	32
	Median	**0.0132**	**0.0345**	**< 0.0005**	**0.005**	**0.048**	**< 0.00010**	**210**	**0.82**	**0.50**	**< 2**	**310.0**	**1.10**	**280**	**< 0.005**	**0.0020**	**0.43**	**0.060**	**< 0.00020**	**183**	**0.0060**	**26**
	Maximum	**0.0151**	**8.1000**	**0.0130**	**0.025**	**0.290**	**0.00400**	**340**	**1.60**	**0.89**	**140**	**461.0**	**5.00**	**400**	**< 0.005**	**0.3600**	**0.69**	**13.000**	**0.002**	**215**	**0.3900**	**32**
	Minimum	**0.0013**	**< 0.0001**	**< 0.00005**	**0.001**	**0.026**	**< 0.00003**	**120**	**0.09**	**0.37**	**< 1**	**150.0**	**0.12**	**140**	**< 0.005**	**0.0010**	**< 0.09**	**< 0.001**	**< 0.00003**	**153**	**0.0008**	**23**

[1]For constituents with ND levels, the ND level shown is for the current permit year. Minimum and Maximum calculations were only include data for 2001-current. Due to improved testing methods, sample dilution or other variables historical ND levels may be different.

Location	Date	Silica mg/L	Sodium mg/L	Sulfate mg/L	Thallium mg/L	Zinc Dissolved mg/L	BOD mg/L	COD mg/L	Apparent Color ACU	Turbidity NTU	Phenol mg/L	Total Petroleum Hydrocarbons mg/L	Total Chlorine mg/L	Conductance mmhos/cm	Fecal Coliform MPN/100 mL	Fecal Strep. MPN/100 mL	Total Coliform MPN/100 mL	Salmonella MPN/100 mL	VOC # detects	SOC # detects	Pesticides # detects	Herbicides # detects
	06/24/91								5.0	0.8	< 0.005		0.04	3.90	< 16	< 16						
	07/14/91						< 6	10	15	5.2	< 0.005		0.08	3.70	< 16	< 16						
	08/26/91						< 6	< 10	13	5.8	< 0.010		0.05	3.90	< 1,600	< 16						
	04/07/92										< 0.010		0.04		2,400		8,000					
	09/13/92						< 6	13	10	2.0	< 0.010		0.10	3.40	550	190						
	03/07/93										0.100		< 0.10	1.31	14		300					
	08/23/93						< 6	11	15	6.3	< 0.010		< 0.10	5.65	12,100	85						
	04/03/94										< 0.010		< 0.10	10.65	1,220		3,150					
	08/28/94						< 6	16	15	1.2	< 0.010		< 0.01	3.88	11,115	1,800		10.0				
	03/26/95										< 0.010		< 0.10	4.21	30	50	< 1,600					
	08/28/95						< 6	19	18	0.4	< 0.010		0.23	3.76	650	100		2.1				
	09/10/96						< 6	< 10	13	1.0	< 0.010	< 1.0	0.23	6.75	1,900	150		< 2.2			0	0
	09/24/97						< 6	12	15	5.7	< 0.010	< 1.0	0.26	0.06	6,150	2,615		< 2.2			0	0
		No Sample Taken for 1998, 1999, or 2000 Dry Weather Monitoring Program																				
	01/18/01									1.8				4.03	25							
	04/25/01[4]									2.0				3.47	40							
	07/30/01									1.1				3.77	330							
	10/24/01									2.6				3.77	475							
	01/23/02									3.2				3.97	730							
	04/24/02									0.9				3.75	190							
	07/24/02									2.2				3.74	3,000						0	0
	10/23/02									2.2				2.99	670						0	1
	01/22/03									1.1				3.69	110						0	0
	04/23/03									3.2				3.43	< 400						0	0
	07/23/03									1.4				3.73	4,800						0	0
	10/22/03									0.7				3.78	430						0	0
	01/21/04									1.3				3.77	< 200						0	0
	04/21/04									1.2				3.61	450						0	0
	07/21/04									9.0				3.59	16,600							
	10/27/04									9.7				3.55	593							
	01/26/05									10.0				2.91	4,000							
	04/19/05									14.0				3.62	< 200							
	07/20/05									2.7				3.45	2,100				4			1
	10/26/05									32.0				1.64	9,100					1		
	01/19/06	No Sample Taken for 01/19/06 Dry Weather Monitoring Program																				
	04/18/06									2.5				3.46	< 200							
	07/27/06									3.4					4,200				0	0	0	0
	10/25/06									5.6					4,600				3	0	0	0
	01/23/07	32								0.6				3.35	< 100				3	0	1	2
	04/18/07	26								1.7				3.47	4,200				4	0	1	0
	07/18/07	32								1.5				3.57	21,000							
	10/24/07	31								1.7				3.43	< 4,000							
	01/22/08	26								3.6				3.41	1,333							
	04/23/08	23								0.4				3.45	< 200				6	3	0	4
	07/23/08									1.8				3.46	210				4	1	0	1
	10/22/08	24								1.8				3.63	< 2,000				2	0	1	1
	01/28/09	29								1.0				3.55	< 400				2	0	1	1
	04/29/09									0.9				3.18	105				0	0	0	1
	07/27/09	29								3.0				3.41	7,300				0	1	0	1
	10/20/09	29								1.8				3.39	625				1	1	0	1
	01/26/10	37								2.4				3.50	< 100				0	0	0	0
	04/20/10	25								0.3				3.55	< 100				0	0	0	0
Flamingo Wash at Nellis Blvd	07/20/10	16				0.0052				1.1	< 0.005			3.58	450							
	10/26/10	35				0.0130				1.2	< 0.005			3.58	1,240							
	01/31/11	41				< 0.0250				1.4	< 0.005			4.90	< 400							
	05/24/11	22				0.0130				2.1	< 0.001			4.21	670							
	08/29/11	23	240	1,400	< 0.0002	0.0086				6.3	< 0.001			3.31	9,000	510			2	6	2	2
	11/22/11	32	240	1,400	< 0.0002	0.0070				1.0	< 0.001			3.20	93	146			2	4	1	2
	02/27/12		260	1,600	< 0.0002	0.0086				9.4	< 0.001			3.27	110	< 40			2	5	1	2
	05/22/12		260	1,500	< 0.0002	0.0076				5.8	< 0.001			3.33	253	90			2	4	1	1
	08/27/12		240	1,400	< 0.0002	< 0.0050				2.4	< 0.001			3.09	820	70			1	1	0	1
	11/19/12		220	1,500	< 0.0002	< 0.0050				1.4	< 0.001			3.34	300	84			0	1	0	1
	02/25/13	25	230	1,400	< 0.0002	< 0.0050				10.8	< 0.001			3.18	360	293			2	0	1	1
	05/20/13	29	280	1,600	< 0.0002	< 0.0050				1.7	< 0.001			3.65	690	100			1	1	0	1
	08/12/13		250	1,400	< 0.0002	< 0.0050				1.2	< 0.001			3.35	5,600	62			1	1	0	1
	12/02/13		280	1,400	< 0.0002	< 0.0050				1.1	< 0.001			3.29	150	< 40			0	1	0	1
	02/24/14	24	230	1,300	< 0.0002	< 0.0050				0.7	< 0.001			4.62	< 40	< 40			2	1	0	2
	05/27/14	30	280	1,500	< 0.0002	< 0.0050				1.9	< 0.001			3.42	420	50			1	0	0	1
	08/26/14	42	270	1,500	< 0.0002	< 0.0050				1.1	< 0.001			3.32	1,360	890			2	0	0	1
	11/19/14	47	270	2,100	< 0.0002	< 0.0050				54.6	< 0.001			3.44	< 400	< 200			2	0	0	0
	03/24/15	31	260	1,700	< 0.0002	< 0.0050				11.6	< 0.001			3.40	154	210			2	1	0	1
	06/09/15	28	250	1,500	< 0.0004	< 0.0100				3.2	< 0.001			3.53	415	170			2	0	1	1
	08/17/15		260	1,400	< 0.0002	0.0070				1.4	< 0.001			3.28	8,600	1,660			2	1	2	0
	11/16/15	44	270	1,400	< 0.0002	< 0.0050				40.2	< 0.001			3.32	27,000	11,400			1	0	0	2
	02/22/16	19	220	1,500	< 0.0002	< 0.0050				1.2	< 0.001			3.29	233	< 67			1	0	0	1
	06/27/16	37	260	1,400	< 0.0002	< 0.0050				NA	< 0.001			3.31	NA	NA			2	2	1	1
	08/01/16	110	210	1,400	0.0002	ND				1000.0				3.25	190,000	10,100			3		1	0
	11/01/16	46	220	1,400	ND	0.0080				168.0				3.30	2,900	4,500			3		1	1
	02/01/17	32	210	1,400	ND	ND				16.6				3.39	250	460			1		0	1
	05/01/17	29	NA	NA	NA	NA				7.0				3.47	310	150			0		0	0
	08/28/17	43	250	1,100	< 0.00001	0.0072				365.0	< 0.0002			3.24	43,000				3	1	1	0
	11/20/17	36	230	1,000	< 0.00003	< 0.0019				2.8	< 0.0002			3.25	1,040				3	1	1	0
	02/20/18	36	240	1,100	< 0.00001	0.0060				3.4	< 0.0002			3.34	< 20				1	2	0	1
	06/25/18	34	220	860	ND	0.0070				6.1				3.05	4,240				3	1	1	1
	08/27/18	83	240	1,100	< 0.00001	< 0.0009				1000.0	< 0.0002			3.23	55,500				3	0	2	1
	11/26/18	35	240	1,600	< 0.00001	0.0071				1.8	< 0.0002			3.56	800				1	1	0	1
	02/19/19	37	180	900	< 0.00001	0.0110				46.0	< 0.0002			2.73	290				1	1	0	1
	05/20/19	34	250	1,300	< 0.00001	< 0.0009				11.7	< 0.0002			3.47	940				1	0	0	1
	08/19/19	37	220	1,500	< 0.0002	0.0054				1.5	< 0.0002			3.35	16,200				0	0	0	0
	11/18/19	37	190	1,300	< 0.0002	0.0080				120.0	< 0.0002			2.86	4,667				2	0	0	1
	02/24/20	32	210	1,500	< 0.0002	0.0150				5.3	< 0.0002			3.04	2,000				2	1	0	2
	05/18/20	27	240	1,200	< 0.0002	< 0.0050				9.4	< 0.0010			3.40	2,050				1	0	0	1
	08/24/20	33	220	1,300	< 0.0002	0.0060				5.5	< 0.0010			3.18	4,900				3	1	1	1
	11/23/20	42	240	1,400	< 0.0002	0.0260				4.8	< 0.0010			3.15	4,560				3	0	0	1
	02/09/21	47	230	1,500	< 0.0002	< 0.0100				178.0	< 0.0002			3.36	28,000				7	0	2	2
	04/12/21	23	210	1,400	< 0.0002	< 0.0100				1.6	< 0.0010			3.14	1,500				2	0	0	1
	08/16/21	33	230	1,300	< 0.0002	0.0100				18.1	< 0.0003			3.08	4,364				2	1	1	1
	10/06/21	33	220	1,300	< 0.0002	< 0.0100				2.5	< 0.0002			3.00	3,400				2	1	0	1
	01/19/22	26	261	1,470	< 0.0013	0.0203				1.6	NA			3.44	34,400				3	1	0	0
	04/19/22	29	252	1,380	< 0.0013	0.0117				NA	NA			3.30	520				0	1	0	0
	07/20/22	33	238	1,330	< 0.0013	< 0.0130				3.3	NA			3.34	12,400				0	0	0	1
	10/17/22	33	231	1,340	< 0.0002	< 0.0050				8.0	0.0100			3.22	5,467				0	0	0	0
	01/24/23	37	258	1,430	< 0.0006	< 0.0150				15.4	NA			3.40	580				0	0	0	0
	04/24/23	31	269	1,170	< 0.0020	< 0.0250				64.1	NA			3.42	6,000				0	1	0	0
	Median	**32**	**240**	**1,400**	**< 0.00020**	**< 0.0070**	**< 6**	**11**	**15**	**2.5**	**< 0.0010**	**< 1.0**	**< 0.10**	**3.42**	**730**	**146**	**2,375**	**< 2.2**	**2**	**1**	**0**	**1**
	Maximum	**110**	**280**	**2,100**	**< 0.00200**	**< 0.0260**	**< 6**	**19**	**18**	**1,000**	**0.1000**	**< 1.0**	**0.26**	**10.65**	**190,000**	**11,400**	**8,000**	**10.0**	**7**	**6**	**2**	**4**
	Minimum	**16**	**180**	**860**	**< 0.00001**	**< 0.0009**	**< 6**	**< 10**	**5**	**0.3**	**< 0.0002**	**< 1.0**	**< 0.01**	**0.06**	**14**	**< 16**	**300**	**2.1**	**0**	**0**	**0**	**0**

[1]For constituents with ND levels, the ND level shown is for the current permit year. Minimum and Maximum calculations were only include data for 2001-current. Due to improved testing methods, sample dilution or other variables historical ND levels may be different.

Location	Date	Q cfs	Temp Deg C	Oil & Grease mg/L	TSS mg/L	TDS mg/L	pH [f]	Surfactants[d] (MBAS) mg/L	Ortho-Phosphate mg/L	Total Phosphate-Phosphorous mg/L	NO3-N[a] mg/L	NO2-N mg/L	NH3-N mg/L	TKN mg/L	Total Nitrogen mg/L	Copper mg/L	Chromium mg/L	Lead mg/L	Mercury mg/L	Cadmium mg/L	Zinc mg/L	Silver mg/L	Nickel mg/L	Selenium[b] mg/L	Selenium Dissolved mg/L
Duck Creek at Callahan or Broadbent	06/23/91	1.3	17.7	< 3	19	5,800	8.30	< 0.05	< 0.050	< 0.250	0.90		< 0.05	< 1.00	1.9	< 0.01000	< 0.01000	< 0.0020	< 0.00020	< 0.00500	0.0260	< 0.0100	< 0.040		
	08/26/91																								
	04/06/92	5.5				6,450	8.00				2.80					< 0.01000									
	09/13/92	1.6	25.6	< 3	84	6,030	8.00	< 0.05	< 0.050	0.070	6.80		0.07	< 1.00	6.8-7.8	< 0.01000	< 0.01000	< 0.0100	< 0.00020	< 0.00500	0.0300	< 0.0100	< 0.040		
	03/07/93	0.7	22.2			5,760	7.60				17.00					< 0.01000									
	08/23/93	1.4	22.2	< 3	26	5,570	7.95	< 0.05	< 0.050	< 0.050	9.90		< 0.05	< 1.00	10.9	< 0.01000	< 0.01000	< 0.0020	< 0.00020	< 0.00500	0.0380	< 0.0100	< 0.020	0.070	
	04/03/94	2.2	15.8			4,255	7.90				9.90					< 0.01000									
	08/28/94	3.0	23.5	< 3	31	5,255	8.10	< 0.05	< 0.050	< 0.050	4.00		< 0.05	< 1.00	5.0	< 0.01000	< 0.01000	< 0.0020	< 0.00020	< 0.00500	< 0.0200	< 0.0100	< 0.010	< 0.025	
	03/26/95	7.0	18.9			6,760	7.90				4.00					0.01700									
	08/28/95	5.0	24.8	< 3	7	5,335	8.15	< 0.05	< 0.050	< 0.050	3.80		< 0.05	< 1.00	4.8	< 0.01000	< 0.01000	< 0.0020	< 0.00020	< 0.00500	< 0.0200	< 0.0100	< 0.010	0.019	
	09/10/96		27.4	< 3	16	5,470	8.25	< 0.05	< 0.050	< 0.050	4.10		< 0.05	< 1.00	4.6	< 0.01000		< 0.0010			< 0.0200				
	09/24/97	13.2	25.2	< 3	28	4,235	8.20	0.10	0.010	0.050	4.90		< 0.05	1.20	6.6	< 0.01000		< 0.1000			< 0.0200				
	09/24/98	7.5		< 3	47	3,750				< 0.020	4.70	< 0.10	< 0.05	1.00	5.6	< 0.01000		0.1100			< 0.0200				
	11/04/99	11.1		< 3	10	3,240				< 0.020	9.60	< 0.20	< 0.05	< 0.20	9.6	< 0.01000		< 0.1000			< 0.0200				
	11/05/99	11.1		< 3	27	2,400				< 0.020	9.90	< 0.20	< 0.05	0.43	10.3	< 0.01000		< 0.1000			< 0.0200				
	10/03/00	20.0		< 3	< 10	4,930				< 0.020	5.94	< 2.00	< 0.05	0.34	6.3	< 0.01000		< 0.1000			< 0.0200				
	10/17/00			< 3	12	5,020				< 0.020	5.86	< 1.00	0.07	1.00	6.9	< 0.01000		< 0.1000			< 0.0200				
	12/18/00	18.1		< 3	< 10	5,070					4.900	6.58	< 0.50	< 0.05	0.70	7.3	< 0.01000		< 0.1000			< 0.0200				
	01/18/01																								
	04/25/01																								
	07/30/01																								
	10/24/01																								
	01/23/02																								
	04/24/02																								
	07/24/02																								
	10/23/02																								
	01/22/03																								
	04/23/03																								
	07/23/03																								
	07/21/04[e]	26.8	26.8			4,830	8.24		NA	NA	6.00	NA	0.17	0.88		0.00290	0.00140	< 0.0005			0.0095		0.020	0.026	
	10/27/04	15.0	15.0			6,100	7.71		NA	NA	4.10	< 0.08	NA	NA		< 0.00200	< 0.00100	< 0.0005			< 0.0050		0.027	NA	
	01/26/05	15.7	15.7			NA	NS		NS	NS	NS	NS	NS	NS		NS	NS	NS			NS		NS	NS	
	04/19/05	13.7	13.7			NA	8.34		0.010	< 0.010	< 0.08	< 0.08	< 0.08	0.40		< 0.00200	0.02500	< 0.0005			< 0.0050		0.020	0.022	
	07/20/05		26.7			4,880	8.11		0.010	0.040	6.00	< 0.08	< 0.08	0.57		< 0.01000	< 0.00100	< 0.0005			< 0.0050	< 0.010	0.021		
	10/26/05		16.4			4,150	8.22		0.020	< 0.020	< 0.08	< 0.08	0.17	0.46		< 0.01000	< 0.00100	< 0.0005			< 0.0050	< 0.010	0.022		
	01/19/06		9.6			5,200	8.21		0.020	NA	6.60	< 0.08				0.00100	0.00130	0.0002			0.0022		0.019	0.017	
	04/18/06		17.9			5,200	8.23		0.020	NA	7.50	< 0.08				0.00080	0.00110	< 0.0005			0.0200		0.023	0.027	
	07/27/06		27.2			4,500	7.74		0.002	0.002	5.42	< 0.08	< 0.08	< 0.20		0.00120	0.00080	< 0.0005			0.1000		0.003	0.018	
	10/25/06		19.2			5,800	8.41		< 0.010	0.024	6.77	< 0.08	< 0.08	0.32		0.00110	0.00100	< 0.0005			0.0038		0.014	0.019	
	01/23/07		16.6			5,000	7.82		0.003	< 0.010	6.55	< 0.08	< 0.08	0.38		0.00100	0.00100	< 0.0005			< 0.0050		0.002	0.023	
	04/18/07		20.3			5,100	7.85		0.010	< 0.010	7.23	< 0.10	< 0.10	0.84		< 0.00100	0.00100	< 0.0005			< 0.0050		0.001	0.022	
	07/18/07		32.4			3,900	8.13		0.012	0.015	6.77	< 0.10	< 0.10	0.40		0.00080	0.00100	< 0.0002			< 0.0050		0.001	0.021	
	10/27/07		25.0			5,400	7.53		0.012	0.014	6.77	< 0.10	< 0.10	0.47		ND	0.00080	ND			ND		0.002	0.021	
	01/22/08		17.4			4,400	8.15		0.014	< 0.010	6.77	< 0.10	< 0.10	< 0.10		0.00190	0.00110	< 0.0004			< 0.0100		0.008	0.021	
	04/23/08		22.5			5,200	7.79		0.006	0.012	7.00	< 0.10	< 0.10	< 0.10		0.00140	0.00070	< 0.0002			< 0.5000		0.002	0.017	
	07/23/08		33.1			3,000	8.29		0.009	0.018	4.96	< 0.10	< 0.10	0.41		0.00270	0.00080	< 0.0002			< 0.0050		0.004	0.018	
	10/22/08		18.6			2,900	8.21		0.008	< 0.010	6.32	< 0.10	< 0.10	< 0.10		0.00270	0.00130	< 0.0002			< 0.0130		0.006	0.016	
	01/28/09		11.2			3,000	8.27		0.006	0.014	7.22	< 0.10	< 0.10	0.22		0.00200	0.00130	0.0010			< 0.0250	< 0.004	0.021		
	04/29/09		22.8			2,700	7.73		0.014	0.012	7.00	76.00	< 0.10	< 0.10		0.00280	0.00120	0.0030			< 0.0250		0.004	0.026	
	07/27/09		28.3			4,100	8.23		0.008	0.100	5.00	< 0.03	< 0.05	< 0.01		0.00230	0.00100	< 0.0000			0.0067		0.002	0.021	
	10/20/09		14.9			4,400	8.27		0.018	0.043	7.05	< 0.03	< 0.05	< 0.01		0.00110	0.00080	< 0.0000			< 0.0003		0.002	0.021	
	01/26/10		14.0			4,700	8.06		0.020	0.019	7.27	< 0.03	< 0.05	< 0.01		0.00120	0.00100	< 0.0000			0.0058		0.002	0.024	
	04/20/10		20.9			4,700	7.82		0.009	0.010	NA	< 0.03	< 0.05	0.28		0.00230	0.00090	0.0004			< 0.0003		0.006	0.015	
	07/20/10		26.7			4,200	8.29		0.021	0.056	6.14	< 0.10	< 0.10	0.91		0.00140	0.00120	< 0.0002	< 0.00005	0.00010	0.0074	< 0.0002	0.007	0.016	
	10/26/10		15.2			4,700	8.30		0.012	0.012	6.59	< 0.10	< 0.10	< 0.10		0.00120	0.00120	< 0.0004	< 0.00005	< 0.00010	< 0.0003	< 0.0002	0.007	0.019	
	01/31/11		16.4			5,000	7.85		0.018	0.014	7.27	< 0.10	< 0.10	< 0.10		< 0.00250	< 0.00010	< 0.0010	< 0.00005	< 0.00050	< 0.0250	< 0.0010	0.010	0.013	
	05/24/11		21.8		10	4,250	7.73		0.008	0.013	6.30	< 0.10	< 0.10	< 0.10	6.3	0.00120	0.00100	< 0.0002	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.010	0.019	
	08/29/11		25.7		5		8.12		0.010	< 0.010	6.70	< 0.10	< 0.10	0.12	6.9	0.00150	0.00098	< 0.0002	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.002		
	11/22/11		14.9		5	4,400	8.17		0.007	< 0.010	7.50	< 0.10	< 0.10	< 0.10	7.5	0.00061	0.00110	< 0.0002	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.001	0.021	
	02/27/12		10.1		< 5	4,500	8.30	< 0.05	0.009	< 0.010	6.90	< 0.10	< 0.10	< 0.10	7.0	< 0.00050	0.00100	< 0.0002	< 0.00005	< 0.00010	< 0.0050	< 0.0004	0.002	0.021	
	05/22/12		24.7		6	4,340	8.23	NA	0.008	0.012	8.10	< 0.10	< 0.10	< 0.10	8.1	0.00140	0.01900	< 0.0002	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.001	0.023	
	08/27/12		26.9		< 5	4,160	8.01	NA	0.010	0.014	5.40	< 0.10	< 0.10	< 0.10	5.4	0.00088	0.00089	< 0.0002	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.002	0.018	
	11/19/12		16.8		< 5	4,500	8.12	NA	0.009	0.010	7.70	< 0.10	< 0.10	< 0.10	7.7	0.00070	0.00110	< 0.0002	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.001	0.016	
	02/25/13		14.6		11	4,690	8.04	NA	0.005	0.010	6.80	< 0.10	< 0.10	0.11	6.9	0.00130	0.00230	0.0006	< 0.00005	0.00012	0.0056	0.0003	0.003	0.019	
	05/20/13		21.9		5	4,680	8.19	NA	0.006	< 0.010	6.30	< 0.10	< 0.10	< 0.10	6.4	0.00076	0.00099	< 0.0002	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.002	0.018	
	08/12/13		23.9		< 5	4,390	8.07	< 0.05	0.006	0.014	6.70	< 0.10	< 0.10	< 0.10	6.7	0.00230	0.00130	< 0.0002	< 0.00005	0.00012	< 0.0050	< 0.0002	0.013	0.019	
	12/02/13		16.8		< 5	4,530	8.17	< 0.05	0.009	< 0.010	6.90	< 0.10	< 0.10	< 0.10	6.9	0.00059	0.00120	< 0.0002	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.001	0.021	
	02/24/14		12.8		< 5	4,230	7.31	< 0.05	0.008	0.011	8.30	< 0.10	< 0.10	< 0.10	7.2	0.00058	0.00130	< 0.0002	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.001	0.019	
	05/27/14		26.5		7	4,740	7.96	< 0.05	0.013	0.032	6.70	< 0.10	< 0.10	< 0.10	6.7	0.00170	0.00097	< 0.0002	< 0.00005	< 0.00011	< 0.0050	< 0.0002	0.009	0.021	
	08/26/14		26.0		< 5	4,420	8.17	< 0.05	0.006	0.014	27.00	< 0.30	< 0.10	< 0.10	6.2	0.00160	0.00100	< 0.0002	< 0.00005	< 0.00010	0.0100	< 0.0002	0.002	0.018	
	11/19/14		15.9		12	4,600	8.03	< 0.05	0.011	0.037	7.50	0.10	< 0.10	< 0.10	7.5	0.00088	0.00110	< 0.0002	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.009	0.018	
	03/24/15		19.7		6	4,440	8.27	0.06	0.009	0.028	6.30	0.10	< 0.10	< 0.10	6.3	0.00110	0.00098	< 0.0002	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.002	0.016	
	06/09/15		27.7		< 5	4,510	8.42	0.05	0.009	< 0.010	5.30	< 0.10	< 0.10	< 0.10	5.4	0.00110	0.00066	< 0.0004	< 0.00005	< 0.00020	< 0.0100	< 0.0004	< 0.002	0.018	
	08/17/15		28.5		< 5	3,840	8.19	0.07	0.009	0.030	7.10	< 0.10	< 0.10	< 0.10	7.1	0.00140	0.00170	0.0003	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.001	0.022	
	11/16/15		11.9		< 5	4,450	8.07	< 0.05	0.007	< 0.010	6.70	< 0.15	< 0.10	< 0.10	6.9	0.00200	0.00280	< 0.0002	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.010	0.022	
	02/22/16		15.8		6	4,410	8.42	< 0.05	0.013	< 0.010	5.70	< 0.10	< 0.10	0.33	6.1	0.00170	0.00240	< 0.0002	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.001	0.027	
	06/27/16		NA		7	4,100	8.37	< 0.05	0.007	0.010	6.10	< 0.10	< 0.10	< 0.10	6.1	< 0.00050	0.00140	< 0.0002	< 0.00005	0.00020	0.0050	< 0.0002	0.001	0.026	
	08/01/16				5	4,470	6.44	ND	0.006	ND	5.40	5.50		ND		0.00120	0.00140	ND	ND	ND	ND	ND	0.001	0.022	
	11/01/16				ND	4,540	8.58	ND	0.005	ND	6.70	6.70		ND		0.00140	0.00170	ND	ND	ND	ND	ND	0.009	0.022	
	02/01/17				ND	4,480	8.54	0.14	0.005	ND	5.50	5.50		ND		0.00160	0.00190	ND	ND	ND	ND	ND	0.002	0.021	
	05/01/17				NA	4,080	8.15	NA	NA	NA	NA	NA		NA		NA	NA	NA	NA	NA	NA	NA	NA	0.019	
	08/28/17		27.4		< 5	5,190	7.69	< 0.02	0.085	0.010	6.20	< 0.01	< 0.05	< 0.05	6.2	< 0.00013	0.00079	< 0.00003	< 0.00002	< 0.00004	< 0.0009	< 0.0001	0.003	0.019	
	11/20/17		21.5		< 5	5,060	7.84	< 0.02	0.010	0.014	6.20	< 0.01	< 0.05	0.19	6.4	< 0.00026	0.00082	< 0.0001	< 0.00002	0.00020	< 0.0019	< 0.0001	0.002	0.022	
	02/20/18		18.0		< 5	5,240	7.55	< 0.02	0.079	0.011	7.10	< 0.01	< 0.05	< 0.05	7.1	0.00053	0.00087	< 0.0000	< 0.00002	< 0.00004	< 0.0009	< 0.0001	0.002	0.019	
	06/25/18		28.7		23	4,020	8.25	< 0.02	0.036	0.048	6.90	ND		ND		0.00380	0.00140	ND	ND	ND	ND	ND	0.001	0.019	
	08/27/18		24.5		< 5	4,070	8.46	< 0.02	0.051	0.350	7.60	< 0.01	< 0.05	0.49	8.1	0.00084	0.00190	< 0.00003	< 0.00002	< 0.00004	< 0.0009	< 0.0001	0.001	0.017	
	11/26/18		22.1		< 5	5,250	7.70	< 0.02	0.098	0.012	6.30	< 0.01	0.15	< 0.05	6.4	0.00100	0.00087	< 0.00003	< 0.00002	< 0.00004	< 0.0009	< 0.0001	0.003	0.019	
	02/19/19		16.6		< 5	4,790	7.85	< 0.02	0.460	< 0.006	6.30	< 0.01	< 0.05	< 0.05	6.3	0.00095	0.00092	< 0.00003	< 0.00002	< 0.00004	< 0.0009	< 0.0001	0.002	0.019	
	05/20/19		24.1		< 5	5,320	7.72	< 0.02	0.048	< 0.001	6.20	< 0.01	< 0.05	< 0.05	6.2	0.00057	0.00090	< 0.00003	< 0.00002	< 0.00004	< 0.0009	< 0.0001	0.002	0.017	
	08/19/19		27.3		5	5,170	7.76	< 0.05	0.048	< 0.010	5.90	< 0.10	< 0.10	0.12	6.1	0.00270	0.00099	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.002	0.020	
	11/18/19		21.2		< 5	4,970	7.88	< 0.05	0.047	< 0.010	6.90	< 0.10	< 0.10	< 0.10	6.9	0.00065	0.00089	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.003	0.020	0.016
	02/24/20		21.3		< 5	4,770	8.00	< 0.05	0.037	< 0.010	6.70	< 0.10	< 0.10	< 0.10	6.7	0.00110	0.00083	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.003	0.017	0.019
	05/18/20		23.6		< 5	5,130	7.71	< 0.05	0.039	< 0.010	6.80	< 0.10	< 0.10	< 0.10	6.8	0.00073	0.00088	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.003	0.017	0.018
	08/24/20		27.5		< 5	5,110	7.58	< 0.05	0.078	0.012	5.90	< 0.10	< 0.10	< 0.10	6.0	< 0.00050	0.00092	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.003	0.014	0.017
	11/23/20		20.1		< 5	4,750	7.77	< 0.05	0.063	< 0.010	6.40	< 0.10	< 0.10	< 0.10	6.4	0.00066	0.00110	< 0.00020	< 0.00005	< 0.00020	< 0.0100	< 0.0002	0.002	0.017	0.018
	02/09/21		16.8		6	4,720	7.66	< 0.05	0.098	0.012	6.50	< 0.10	< 0.10	< 0.10	6.5	0.00071	0.00120	< 0.00020	< 0.00005	< 0.00020	< 0.0100	< 0.0002	0.002	0.016	0.015
	04/12/21		21.6		< 5	4,570	7.81	< 0.05	0.017	< 0.010	6.40	< 0.10	< 0.10	< 0.10	5.6	0.00060	0.00100	< 0.00020	< 0.00005	< 0.00020	< 0.0100	< 0.0002	< 0.002	0.016	0.015
	08/16/21		25.8		< 5	3,780	8.32	0.05	0.015	< 0.010	5.80	< 0.10	< 0.05	< 0.10	5.4	0.00200	0.00120	< 0.00200	< 0.00005	< 0.00020	0.0100	< 0.0002	< 0.002	0.015	0.014
	10/06/21		18.5		< 5	4,150	8.36	< 0.05	0.025	0.010	5.80	< 0.10	< 0.05	< 0.10	5.8	0.00078	0.00120	< 0.00200	< 0.00005	< 0.00020	< 0.0100	< 0.0002	< 0.002	0.015	0.012
	01/19/22		22.1		10	4,900	7.49	< 0.07	< 0.050	0.440	6.26	< 0.10	< 0.05	0.86	7.1	0.00254	< 0.00125	< 0.00125	< 0.00032	< 0.00125	0.0106	< 0.0013	0.025	0.017	0.014
	04/19/22		23.9		< 10	2,410	7.68	0.17	< 0.050	0.950	5.38	< 0.10	< 1.00	1.26	6.1	0.00624	0.00398	< 0.00125	< 0.00032	< 0.00125	0.0115	< 0.0013	0.016	NA	0.016
	07/20/22		30.8		< 5	4,740	6.86	< 0.07	< 0.050	0.751	5.34	< 0.10	< 0.10	1.07	NA	0.00139	< 0.00125	< 0.00125	< 0.00032	< 0.00125	0.0112	< 0.0013	0.016	NA	0.014
	10/17/22		24.9		< 6	4,690	8.42	NA	0.006	0.022	5.67	< 0.10	NA	NA	6.1	< 0.00500	< 0.00300	< 0.00030	NA	< 0.00050	< 0.0050	< 0.0050	0.006	0.016	0.017
	01/24/23		13.5		< 6	4,390	8.46	NA	0.006	0.063	6.26	< 0.10	< 0.10	0.38	6.7	0.01500	< 0.00900	< 0.00090	< 0.00032	< 0.00150	< 0.0150	< 0.0150	< 0.015	0.015	0.015
	04/24/23		25.7		< 6	4,630	7.63	NA	0.003	0.029	6.00	< 0.10	NA	NA	6.3	0.05000	< 0.03000	< 0.00300	NA	< 0.00500	< 0.0500	< 0.0500	< 0.0500	0.012	0.013
	Median	**7.5**	**21.8**	**< 3**	**5**	**4,630**	**8.09**	**< 0.05**	**0.012**	**0.014**	**6.40**	**< 0.10**	**< 0.10**	**< 0.10**	**6.4**	**0.0015**	**0.0011**	**< 0.00020**	**< 0.00005**	**< 0.00010**	**< 0.0050**	**< 0.0002**	**0.003**	**0.019**	**0.015**
	Maximum	**26.8**	**33.1**	**< 3**	**84**	**6,760**	**8.58**	**0.17**	**0.460**	**4.900**	**27.00**	**76.00**	**1.00**	**1.26**	**10.9**	**0.0500**	**0.0300**	**0.11000**	**< 0.00032**	**< 0.00500**	**< 0.5000**	**< 0.0500**	**< 0.050**	**0.070**	**0.019**
	Minimum	**0.7**	**9.6**	**< 3**	**< 5**	**2,400**	**6.44**	**< 0.02**	**0.002**	**< 0.001**	**< 0.08**	**< 0.01**	**< 0.05**	**< 0.01**	**1.9**	**< 0.00100**	**< 0.0001**	**< 0.00002**	**< 0.00002**	**< 0.00004**	**< 0.0003**	**< 0.0001**	**0.001**	**0.012**	**0.012**

Location	Date	Selenium (SDSU)[c] mg/L	Aluminum mg/L	Antimony mg/L	Arsenic mg/L	Barium mg/L	Beryllium mg/L	Bicarbonate Alkalinity as HCO3 mg/L	Boron mg/L	Bromide mg/L	Carbonate Alkalinity as CaCO3 mg/L	Calcium mg/L	Chlorate IC mg/L	Chloride mg/L	Cyanide mg/L	Copper Dissolved mg/L	Fluoride mg/L	Iron mg/L	Lead Dissolved mg/L	Magnesium mg/L	Manganese mg/L	Potassium mg/L
	06/23/91				0.047				2.7						< 0.005							
	08/26/91																					
	04/06/92								2.8						< 0.005							
	09/13/92				0.062				3.0						< 0.005							
	03/07/93								3.0						< 0.005							
	08/23/93				0.050				3.1						< 0.005							
	04/03/94								3.1						< 0.005							
	08/28/94				0.045				2.8						0.005							
	03/26/95								2.6						0.005							
	08/28/95				0.035				2.9						0.007							
	09/10/96								2.9						< 0.005							
	09/24/97								2.4						< 0.005							
	09/24/98								2.2							< 0.0100			0.1000			
	11/04/99								2.7							< 0.0100			< 0.1000			
	11/05/99								2.5							< 0.0100			< 0.1000			
	10/03/00								2.5							< 0.0100			< 0.1000			
	10/17/00								2.5							< 0.0100			< 0.1000			
	12/18/00								2.4							< 0.0100			< 0.1000			
	01/18/01											540	0.08									
	04/25/01											520	0.15									
	07/30/01											500	0.19									
	10/24/01											500	0.09									
	01/23/02											530	0.12									
	04/24/02											510	0.20									
	07/24/02											530	0.14									
	10/23/02											510	0.12									
	01/22/03											480	0.10									
	04/23/03											430	0.25									
	07/23/03											420	0.16									
	07/21/04[e]				0.042							490	0.22									
	10/27/04				0.058							590										
	01/26/05				NS																	
	04/19/05				0.053							500	0.13									
	07/20/05				0.054							490	0.24									
	10/26/05				0.043							430	0.21									
	01/19/06				0.057								0.10									
	04/18/06				0.049								0.16									
	07/27/06				0.059								0.14									
	10/25/06				0.054								0.18									
	01/23/07				0.049							440	0.12									
	04/18/07				0.049							460	0.14									
	07/18/07				0.046							450	0.13									
	10/27/07				0.066							480	0.11									
	01/22/08				0.036							430	0.17									
	04/23/08				0.069							530	0.10									
	07/23/08				0.054							450	0.16									
	10/22/08	0.0196			0.046							450	0.12									
	01/28/09	0.0207			0.042							450	0.12									
	04/29/09	0.0178			0.082							440	0.11									
	07/27/09	NA			0.044							410	0.13									
	10/20/09	0.0171			0.052							490	0.10									
	01/26/10	0.0187			0.045							470	0.12									
	04/20/10	0.0178			0.027							430	0.15									
Duck Creek at Callahan or Broadbent	07/20/10	0.0182	0.0200		0.040	0.030			2.1			420	0.16			0.0160		< 0.001	< 0.0002		0.0038	
	10/26/10	0.0162	< 0.0004		0.037	0.033			2.1			530	0.12			0.0009		< 0.001	< 0.0004		0.0086	
	01/31/11	0.0156	< 0.0001		0.056	0.016			2.8			520	0.09			< 0.0025		< 0.001	< 0.0010		0.0078	
	05/24/11	0.0185	0.0140		0.055	0.016			2.7			490	ND			0.0011		71.000	< 0.0002		0.0086	
	08/29/11	0.0121	0.0200	< 0.0005	0.055	0.030	< 0.0001	230	2.2	0.96	< 2	460	0.20	390		0.0015	1.50	< 0.020	< 0.0002	290	0.0056	68
	11/22/11	0.0166	0.0100	< 0.0005	0.042	0.025	< 0.0001	200	2.1	0.92	< 2	470	0.19	660		< 0.0005	1.20	< 0.020	< 0.0002	270	0.0052	52
	02/27/12	0.0174	0.0100	< 0.0005	0.046	0.023	< 0.0001	240	1.9	0.82	< 2			280		< 0.0005	1.20	< 0.020	< 0.0002	280	0.0012	57
	05/22/12	0.0175	0.0600	< 0.0005	0.032	0.033	< 0.0001	200	1.9	0.89	< 2			630		0.0010	1.00	< 0.076	< 0.0002	260	0.0060	49
	08/27/12	NA	< 0.0050	< 0.0005	0.049	0.042	< 0.0001	210	2.0	0.80	< 2			580		0.0007	1.20	< 0.020	< 0.0002	240	0.0160	56
	11/19/12	NA	0.0130	< 0.0005	0.046	0.028	< 0.0001	240	2.0	0.90	< 2			650		0.0007	1.40	< 0.020	< 0.0002	253	0.0065	54
	02/25/13	NA	0.1600	< 0.0005	0.110	0.053	< 0.0001	250	4.3	0.92	< 2	478	0.15	660		0.0007	1.30	0.120	< 0.0002	281	0.0270	54
	05/20/13	NA	0.0140	< 0.0005	0.048	0.025	< 0.0001	240	1.9	0.86	< 2	468	0.13	640		0.0007	1.50	< 0.020	< 0.0002	279	0.0066	60
	08/12/13	NA	0.0260	< 0.0005	0.032	0.030	< 0.0001	220	1.9	0.91	< 2	445	0.16	660		0.0021	1.30	0.079	< 0.0002	260	0.0043	56
	12/02/13	NA	0.0060	< 0.0005	0.046	0.024	< 0.0001	250	2.2	0.91	< 2	463	0.12	660		0.0006	1.20	< 0.020	< 0.0002	268	0.0054	59
	02/24/14	NA	0.0090	< 0.0005	0.038	0.024	< 0.0001	230	1.9	0.74	< 2	439	0.20	610		0.0006	1.00	0.022	< 0.0002	249	0.0025	49
	05/27/14	NA	0.0140	< 0.0005	0.032	0.024	< 0.0001	250	2.5	0.92	< 2	471	0.16	620		0.0016	1.50	0.052	< 0.0002	298	0.0069	61
	08/26/14	NA	0.0300	< 0.0005	0.047	0.026	< 0.0001	220	2.0	0.84	< 2	484	0.17	660		0.0011	1.10	0.020	< 0.0002	289	0.0036	59
	11/19/14	NA	0.0560	< 0.0005	0.030	0.023	< 0.0001	240	2.0	1.00	< 2	485	0.11	680		0.0007	1.10	0.120	< 0.0002	260	0.0110	56
	03/24/15	NA	0.0850	< 0.0005	0.045	0.023	< 0.0001	260	2.2	0.81	< 2	474	0.44	680		0.0006	1.10	0.085	< 0.0002	263	0.0086	55
	06/09/15	NA	0.0180	< 0.0010	0.042	0.026	< 0.0002	220	2.1	1.10	< 2	429	0.13	610		0.0015	1.10	< 0.040	< 0.0004	242	0.0034	51
	08/17/15	NA	0.0260	< 0.0005	0.030	0.038	< 0.0001	160	2.2	0.95	2	435	0.17	510		0.0011	0.87	0.024	< 0.0002	235	0.0140	45
	11/16/15	NA	0.0170	< 0.0005	0.030	0.023	< 0.0001	220	2.3	0.77	< 180	480	0.10	600		0.0017	0.94	0.060	< 0.0002	259	0.0057	55
	02/22/16	NA	0.0100	< 0.0005	0.044	0.021	< 0.0001	210	2.0	0.70	< 170	538	0.07	600		0.0015	0.89	0.021	< 0.0002	264	0.0025	57
	06/27/16	NA	0.0160	< 0.0005	0.043	0.028	< 0.0001	210	2.3	0.86	2	393	0.16	640		< 0.0001	0.52	0.023	< 0.0002	269	0.0038	66
	08/01/16	NA	ND	ND	0.050	0.029	ND	220	2.1	0.77	ND	436	0.16	630		0.00080	1.50	ND	ND	263	0.0037	56
	11/01/16	NA	ND	ND	0.033	0.021	ND	240	2.3	0.79	ND	448	0.15	620		0.00130	ND	0.046	ND	286	0.0027	60
	02/01/17	NA	ND	ND	0.047	0.021	ND	220	2.3	0.79	ND	460	0.15	510		0.00180	1.10	ND	ND	285	0.0031	65
	05/01/17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	419	0.28	NA		NA	NA	NA	NA	NA	NA	NA
	08/28/17		< 0.0013	< 0.00005	0.075	0.016	< 0.00003	260	3.3	0.99	< 1	493	0.06	510		< 0.0001	1.40	< 0.001	< 0.0000	334	0.0088	88
	11/20/17		< 0.0026	< 0.0001	0.068	0.016	< 0.0002	250	2.8	0.86	< 1	438	ND	560		< 0.0003	1.40	< 0.002	< 0.0001	308	0.0079	83
	02/20/18		0.0068	< 0.0000	0.069	0.016	< 0.00003	250	2.9	0.93	< 1	470	0.09	460		< 0.0001	1.20	< 0.001	< 0.0000	323	0.0067	83
	06/25/18		0.0410	ND	0.034	0.031	ND	180	2.1	0.80	ND	380	0.22	370		0.0016	ND	0.042	ND	227	0.0043	54
	08/27/18		0.0900	< 0.00005	0.034	0.033	< 0.00003	150	2.3	0.83	25	386	0.23	400		0.0006	< 0.20	0.100	< 0.00003	227	0.0035	61
	11/26/18		0.0051	< 0.00005	0.073	0.017	< 0.00003	230	2.9	0.82	29	426	0.06	670		0.0007	< 0.40	< 0.001	< 0.00003	303	0.0130	81
	02/19/19		0.0099	< 0.00005	0.064	0.019	< 0.00003	270	2.8	0.74	< 1	498	0.08	480		0.0007	1.20	< 0.001	< 0.00003	300	0.0093	78
	05/20/19		0.0057	< 0.00005	0.078	0.016	< 0.00003	260	2.8	0.89	< 1	525	0.08	550		< 0.0001	1.40	< 0.001	< 0.00003	348	0.0085	93
	08/19/19		0.0120	< 0.0005	0.077	0.017	< 0.0002	260	3.0	0.90	< 2	492	0.07	690		< 0.0005	1.60	< 0.020	< 0.00020	334	0.0130	87
	11/18/19		0.0180	< 0.0005	0.069	0.016	< 0.0001	250	2.7	0.91	< 2	459	0.10	690		0.0006	< 0.40	< 0.020	< 0.00020	316	0.0120	80
	02/24/20		< 0.0050	< 0.0005	0.063	0.016	< 0.0001	240	2.9	0.99	< 2	459	0.05	690		0.0010	< 0.18	< 0.020	< 0.00020	306	0.0120	74
	05/18/20		0.0071	< 0.0005	0.064	0.016	< 0.0001	250	2.9	0.94	< 5	475	0.03	580		0.0010	1.40	< 0.020	< 0.00020	311	0.0110	74
	08/24/20		0.0061	< 0.0005	0.077	0.014	< 0.0001	260	3.0	0.92	< 5	502	0.06	700		< 0.0005	< 0.18	0.031	< 0.00020	331	0.0110	78
	11/23/20		0.0250	< 0.0005	0.072	0.017	< 0.0001	260	2.9	0.83	< 5	537	0.08	620		0.0006	< 0.18	0.033	< 0.00020	341	0.0110	77
	02/09/21		< 0.0200	< 0.0005	0.063	0.019	< 0.0001	270	2.6	0.82	< 5	503	0.12	630		< 0.0005	< 0.18	< 0.020	< 0.00020	313	0.0098	67
	04/12/21		< 0.0200	< 0.0005	0.046	0.021	< 0.0001	230	2.4	0.91	< 5	445	0.06	630		0.0006	< 0.18	< 0.020	< 0.00020	271	0.0052	55
	08/16/21		0.0200	< 0.0005	0.000	0.037	< 0.0001	210	2.1	0.75	< 5	414	0.30	510		0.0011	< 0.18	< 0.020	0.00072	221	< 0.0066	42
	10/06/21		< 0.0200	< 0.0005	0.037	0.029	< 0.0001	220	2.3	0.75	< 5	459	0.17	560		0.0007	< 0.18	< 0.020	< 0.00200	260	0.0015	58
	01/19/22		< 0.0500	< 0.0013	0.065	0.014	< 0.0013	222	2.9	0.96	NA	495	< 0.04	630		0.0022	1.60	< 0.100	< 0.00125	290	0.0152	70
	04/19/22		0.0541	< 0.0013	0.057	0.015	< 0.0013	216	2.7	0.73	NA	491	< 0.10	588		0.0089	1.42	< 0.100	< 0.00125	282	0.0286	77
	07/20/22		0.0599	< 0.0013	0.044	0.023	< 0.0013	204	2.2	0.70	NA	478	0.10	618		0.0016	NA	< 0.100	< 0.00125	243	0.0088	62
	10/17/22		0.0175	< 0.0004	0.062	< 0.020	< 0.0004	193	NA	0.72	< 2	461	NA	603		< 0.0050	1.64	< 0.100	< 0.00030	302	0.0119	83
	01/24/23		0.0342	< 0.0012	0.049	< 0.060	< 0.0012	191	NA	0.77	< 2	459	NA	544		< 0.0150	1.26	< 0.100	< 0.00090	273	< 0.0150	64
	04/24/23		< 0.0500	< 0.0040	0.031	0.200	< 0.0040	189	NA	0.84	< 2	410	NA	515		< 0.0250	1.59	< 0.100	< 0.00150	230	< 0.0500	50
	Median	**0.0177**	**0.0173**	**< 0.00050**	**0.048**	**0.023**	**< 0.00010**	**230**	**2.5**	**0.86**	**< 2**	**470**	**0.13**	**618**	**< 0.005**	**0.0010**	**1.20**	**< 0.020**	**< 0.0002**	**279**	**0.0078**	**60**
	Maximum	**0.0207**	**0.1600**	**< 0.00400**	**0.110**	**0.200**	**< 0.00400**	**270**	**4.3**	**1.10**	**< 180**	**590**	**0.44**	**700**	**< 0.007**	**0.0250**	**1.64**	**71.000**	**< 0.1000**	**348**	**0.0500**	**93**
	Minimum	**0.0121**	**< 0.0001**	**< 0.00005**	**0.0004**	**0.014**	**< 0.00003**	**150**	**1.9**	**0.70**	**< 1**	**380.0**	**0.03**	**280**	**< 0.005**	**< 0.0001**	**0.18**	**< 0.001**	**< 0.00003**	**221**	**0.0012**	**42**

Location	Date	Silica mg/L	Sodium mg/L	Sulfate mg/L	Thallium mg/L	Zinc Dissolved mg/L	BOD mg/L	COD mg/L	Apparent Color ACU	Turbidity NTU	Phenol mg/L	Total Petroleum Hydrocarbons mg/L	Total Chlorine mg/L	Conductance mmhos/cm	Fecal Coliform MPN/100 mL	Fecal Strep. MPN/100 mL	Total Coliform MPN/100 mL	Salmonella MPN/100 mL	VOC # detects	SOC # detects	Pesticides # detects	Herbicides # detects
Duck Creek at Callahan or Broadbent	06/23/91						< 6	9	8	2.6	0.005		0.03	6.60	< 16	< 16						
	08/26/91														2,300							
	04/06/92										< 0.010		0.20		500		1,700					
	09/13/92						< 6	19	13	38.0	< 0.010		< 0.10	7.40	760	1,050						
	03/07/93										< 0.010		< 0.10	5.90	4		500					
	08/23/93						< 6	20	10	3.2	0.100		< 0.10		150	20,500						
	04/03/94										0.100		< 0.10	5.90	110		6,650					
	08/28/94						< 6	22	15	2.4	< 0.010		< 0.01	6.80	650	5,500		< 2.0				
	03/26/95										< 0.010		< 0.10	6.82	500	500	16,000					
	08/28/95						< 6	18	10	0.4	< 0.010		0.08	6.21	950	1,800		3.0				
	09/10/96						< 6	< 10	13	2.5	< 0.010	< 1.0	0.08	6.06	1,100	327		< 2.2			0	0
	09/24/97						< 6	16	10	2.4	< 0.010	< 1.0	0.35	0.06	500	650		< 2.2			0	1
	09/24/98					< 0.020									370	600		< 2.2	0	0	0	0
	11/04/99					< 0.020									300	240			0	0	0	0
	11/05/99					< 0.020									700	110			0	0	0	0
	10/03/00					< 0.020									500	500			0	0	0	0
	10/17/00					< 0.020									300	24,000			0	0	0	0
	12/18/00					< 0.020									80	500			0	0	0	0
	01/18/01																					
	04/25/01																					
	07/30/01																					
	10/24/01																					
	01/23/02																					
	04/24/02																					
	07/24/02																					
	10/23/02																					
	01/22/03																					
	04/23/03																					
	07/23/03																					
	07/21/04[a]									1.8				6.00	2,800							
	10/27/04									NS				7.02	< 200							
	01/26/05									NS				NS	NS							
	04/19/05									0.7				6.03	< 200							
	07/20/05									16.7				5.98	2,300				2	0	1	0
	10/26/05									2.2				5.38	1,917				0	1	0	0
	01/19/06									19.5				5.73	210				0	0	0	0
	04/18/06									1.2				5.68	< 200				0	0	0	0
	07/27/06									1.3				5.95	1,800				1	0	0	0
	10/25/06									1.6				5.59	1,400				5	0	0	0
	01/23/07	57								0.5				5.98	< 10				3	0	0	2
	04/18/07	51								0.9				3.84	210				4	0	1	0
	07/18/07	52												5.68	12,100							
	10/27/07	71								0.6				6.24	< 1,000							
	01/22/08	45								1.3				5.66	< 400							
	04/23/08	85								1.8				5.98	< 400							
	07/23/08	48								1.6				5.49	3,520				5	1	1	0
	10/22/08	54								NA				6.15	500				1	0	1	1
	01/28/09	53								10.0				5.43	< 200				4	0	1	0
	04/29/09	48								NA				5.90	210				0	0	0	0
	07/27/09	51								1.0				5.01	4,000				1	1	1	0
	10/20/09	67								0.7				5.48	240				2	0	1	0
	01/26/10	51								1.1				5.47	< 400				0	0	0	0
	04/20/10	50								2.5				5.73	200				1	0	0	0
	07/20/10	50				< 0.005				2.4	< 0.005			5.26	47,000							
	10/26/10	69				< 0.005				0.9	< 0.005			5.44	< 1,000							
	01/31/11	74				< 0.025				0.6	< 0.005			8.20	5,200							
	05/24/11	62				< 0.005				1.0	< 0.001			5.77	340							
	08/29/11	57	500	2,400	< 0.0002	< 0.005				1.3	< 0.001			5.22	2,100	960			2	5	1	1
	11/22/11	53	460	2,100	< 0.0002	< 0.005				1.6	< 0.001			5.42	293	620			3	4	1	1
	02/27/12		510	2,300	< 0.0002	< 0.005				0.8	< 0.001			5.58	68	109			2	4	1	1
	05/22/12		480	2,000	< 0.0002	< 0.005				3.4	< 0.001			5.14	2,100	380			4	5	2	1
	08/27/12		460	2,100	< 0.0002	< 0.005				1.1	< 0.001			4.81	2,920	54			1	1	0	0
	11/19/12		450	2,200	< 0.0002	< 0.005				1.5	< 0.001			5.20	200	84			2	1	0	0
	02/25/13	55	480	2,300	< 0.0002	< 0.005				1.2	< 0.001			5.25	< 50	60			1	0	1	0
	05/20/13	56	530	2,200	< 0.0002	< 0.005				1.4	< 0.001			5.35	840	640			0	0	0	0
	08/12/13	60	510	2,100	< 0.0002	< 0.005				0.7	< 0.001			5.20	6,700	223			1	1	0	0
	12/02/13	62	550	2,200	< 0.0002	< 0.006				0.4	< 0.001			5.18	70	< 40			2	1	0	0
	02/24/14	50	470	2,100	< 0.0002	< 0.005				0.8	< 0.001			5.07	155	62			1	0	1	0
	05/27/14	65	530	2,400	< 0.0002	< 0.005				1.3	< 0.001			5.42	340	450			4	0	0	0
	08/26/14	65	540	2,300	< 0.0002	0.007				2.9	< 0.001			5.29	1,400	148			2	0	0	0
	11/19/14	59	530	2,400	< 0.0002	< 0.005				3.1	< 0.001			5.44	< 400	980			1	0	0	0
	03/24/15	56	490	2,500	< 0.0002	< 0.005				4.1	< 0.001			5.25	270	860			2	0	0	0
	06/09/15	47	470	2,200	< 0.0004	< 0.010				1.5	< 0.001				580	4,400			2	0	0	0
	08/17/15	53	460	1,900	< 0.0002	< 0.005				1.2	< 0.001			4.62	3,300	< 200			2	0	1	0
	11/16/15	63	500	2,300	< 0.0002	< 0.005				1.2	< 0.001			5.27	580	330			1	0	0	0
	02/22/16	42	410	2,300	< 0.0002	< 0.005				1.6	< 0.001			5.07	93	< 67			2	0	0	0
	06/27/16	56	470	2,300	< 0.0002	< 0.005				NA	< 0.001			4.75	NA	NA			1	0	0	0
	08/01/16	53	440	2,300	ND	ND				1.4				5.35	560	217			1		0	0
	11/01/16	54	420	2,300	ND	ND				0.6				5.25	66	200			0		0	0
	02/01/17	48	430	2,100	ND	ND				0.5				5.21	92	460			1		0	0
	05/01/17	48	NA	NA	NA	NA				4.2				4.89	640	163			0		0	0
	08/28/17	93	570	2,100	< 0.00001	< 0.001				0.7	< 0.0002			5.97	840				2	0	0	0
	11/20/17	79	520	1,900	< 0.00003	< 0.002				0.1	< 0.0002			6.10	80				1	0	0	0
	02/20/18	82	560	1,800	< 0.00001	< 0.001				0.4	< 0.0002			6.18	187				1	0	0	0
	06/25/18	47	420	1,100	ND	ND				5.8				4.52	3,600				2	0	0	0
	08/27/18	54	440	1,700	< 0.00001	< 0.001				1.3	< 0.0002			5.28	4,600				1	0	2	0
	11/26/18	81	530	2,700	< 0.00001	< 0.001				1.0	< 0.0002			6.16	< 20				0	0	0	0
	02/19/19	76	510	1,800	< 0.00001	< 0.001				0.7	< 0.0002			5.81	89				0	0	0	0
	05/20/19	85	560	2,000	< 0.00001	< 0.001				0.6	< 0.0002			6.14	93				1	0	0	0
	08/19/19	83	530	2,400	< 0.0002	< 0.005				0.6	< 0.001			6.14	750				1	0	0	0
	11/18/19	82	540	2,800	< 0.0002	< 0.005				0.5	< 0.001			5.90	168				1	0	0	0
	02/24/20	78	500	2,800	< 0.0002	< 0.005				0.9	< 0.001			5.57	< 20				1	0	0	0
	05/18/20	76	530	2,100	< 0.0002	< 0.005				0.8	< 0.001			6.01	185				1	0	0	0
	08/24/20	89	560	2,700	< 0.0002	< 0.005				1.0	< 0.001			5.96	2,480				1	0	0	0
	11/23/20	69	570	2,600	< 0.0002	< 0.001				1.5	< 0.001			5.60	120				1	0	0	0
	02/09/21	75	550	2,500	< 0.0002	< 0.001				1.3	< 0.001			5.68	530				1	0	0	0
	04/12/21	55	460	2,500	< 0.0002	< 0.001				0.6	< 0.001			5.41	227				0	0	0	0
	08/16/21	49	420	2,000	< 0.0002	0.010				2.0	< 0.0002			4.63	3,000				1	0	0	0
	10/06/21	50	480	2,100	< 0.0002	< 0.010				1.6	< 0.0002			5.05	2,500				2	0	0	0
	01/19/22	79	583	2,750	< 0.0013	0.018				NA	NA			5.70	2,200				1	0	0	0
	04/19/22	72	526	2,460	< 0.0013	0.025				NA	NA			5.67	240				0	0	0	0
	07/20/22	62	490	2,640	< 0.0013	0.022				8.0	NA			5.76	13,300				0	0	0	0
	10/17/22	72	494	2,510	< 0.0002	< 0.005				5.0	< 0.001			4.50	957				0	0	0	0
	01/24/23	58	464	2,170	< 0.0006	< 0.015				5.2	NA			5.62	< 20				0	0	0	0
	04/24/23	38	401	2,180	< 0.0020	< 0.025				8.6	NA			5.52	240				0	0	0	0
	Median	**57**	**500**	**2,300**	**< 0.00020**	**< 0.005**	**< 6**	**18**	**10**	**1.3**	**< 0.001**	**< 1.0**	**< 0.10**	**5.59**	**400**	**380**	**4,175**	**< 2.2**	**1**	**0**	**0**	**0**
	Maximum	**93**	**583**	**2,800**	**< 0.00200**	**0.025**	**< 6**	**22**	**15**	**38.0**	**0.100**	**< 1.0**	**0.35**	**8.20**	**47,000**	**24,000**	**16,000**	**3.0**	**5**	**5**	**2**	**2**
	Minimum	**38**	**401**	**1,100**	**< 0.00001**	**< 0.001**	**< 6**	**9**	**8**	**0.1**	**< 0.0002**	**< 1.0**	**< 0.01**	**0.06**	**4**	**< 16**	**500**	**< 2.0**	**0**	**0**	**0**	**0**

Location	Date	Q cfs	Temp Deg C	Oil & Grease mg/L	TSS mg/L	TDS mg/L	pH [f]	Surfactants[d] (MBAS) mg/L	Ortho-Phosphate mg/L	Total Phosphate-Phosphorous mg/L	NO3-N[a] mg/L	NO2-N mg/L	NH3-N mg/L	TKN mg/L	Total Nitrogen mg/L	Copper mg/L	Chromium mg/L	Lead mg/L	Mercury mg/L	Cadmium mg/L	Zinc mg/L	Silver mg/L	Nickel mg/L	Selenium[b] mg/L
Sloan Channel	09/23/98	1.00		< 3	23	1,220				0.040	1.10	< 0.100	< 0.05	2.200	3.3	0.0100		< 0.10000			0.0200			
	No Sample Taken for 1999 Dry Weather Monitoring Program																							
	10/03/00	0.01		< 3	13	760				0.150	< 1.00	< 1.000	< 0.05	1.200	1.2	< 0.0100		< 0.10000			< 0.0200			
	10/04/00	0.01		< 3	12	750				0.120	< 0.50	< 10.000	< 0.05	1.300	1.3	< 0.0100		< 0.10000			0.0280			
	10/17/00[e]	0.01																						
	01/18/01		7.0			1,880	8.05		0.0900	0.076	2.97	< 0.080	0.96	1.600	3.9	0.0040	0.00350				0.0060		0.00860	
	04/25/01		18.2			1,970	8.12			0.010	2.45	< 0.080	0.16	0.900	2.6	0.0083	0.00340				0.0120		0.00600	
	07/30/01	0.15	22.9			2,150	7.98			0.030	1.33	0.210	0.11		1.5	0.0066	0.00280				0.0084		0.00600	
	10/24/01	0.20	15.0			1,770	8.46				2.96	< 0.080	< 0.08		3.0	0.0066	0.00540	0.00060			0.0120			
	01/23/02	0.25	1.2			1,860	8.54		0.0460	< 0.005						0.0034	0.00550	0.00065			0.0096		0.00550	0.0088
	04/24/02	0.25	22.7			1,700	8.96		0.0220	0.036						0.0056	0.00600	0.00089			0.0200		0.00600	0.0077
	07/24/02	0.25	29.3			1,660	8.87	0.102	0.0090	0.061	1.12	< 0.080	< 0.08	20.400	1.1	0.0056	0.00490	0.00059			0.0110		0.00130	0.0066
	10/23/02	0.20	17.5			1,750	9.08	0.052	0.0100	0.021	2.85	< 0.080	0.17	0.800	3.0	0.0027	0.00630						0.00280	0.0075
	01/22/03		7.5			1,810	8.57		0.0280	0.052	3.72	< 0.080	< 0.08		3.7		0.00490						0.00420	0.0078
	04/23/03		11.9			1,710	8.06		0.0410		2.35	0.090	0.19		2.5	0.0039	0.00240				0.0054		0.00250	0.0060
	07/23/03		31.0			1,750	9.27		0.0070	0.010	1.40		< 0.05	1.000	2.4	0.0069	0.00340	< 0.00100			0.0073		< 0.01000	< 0.0050
	10/22/03		21.7			1,900	8.90		0.0180	0.020	3.90	< 0.080	< 0.05	0.670	4.6	< 0.0100	0.00580	< 0.00100			< 0.0200		< 0.01000	0.0080
	01/21/04		8.6			1,990	9.32		0.0240	< 0.020	4.40	< 0.080	< 0.05	0.750	5.2	< 0.0100	0.00420	< 0.00100			< 0.0200		< 0.01000	< 0.0050
	04/21/04		15.9			2,000	8.67		0.0180	< 0.020	4.50	< 0.080	0.06	0.400	4.9	< 0.0100	< 0.00100	< 0.00100			< 0.0200		< 0.01000	< 0.0050
	07/21/04		33.3			1,950	9.24		NS	< NS	4.00	NA	< 0.08	0.530		0.0040	0.00390	< 0.00050			0.0100		< 0.00500	0.0087
	10/27/04		NS			NS	NS		NS	NS	4.90	NA	NA	NA		NS	NS	NS			NS		< 0.00500	NS
	01/26/05		NS			NS	NS		NS	NS	4.60	< 0.080	0.13			NS	NS	NS			NS		NS	NS
	04/19/05		11.4			2,210	8.37		0.0090	0.017	5.30	< 0.080	< 0.08	0.670		0.0025	0.00540	< 0.00050			< 0.0050		NS	0.0099
	07/20/05		23.0			1,320	8.21		0.0100	0.033	1.70	< 0.080	0.13	1.700		< 0.0100	< 0.00100	< 0.00050			0.0660		< 0.00500	0.0046
	10/26/05		NS			NS	NS		NS	NS	NS	NS	NS	NS		NS	NS	NS			NS		NS	NS
	01/19/06		NS			NS	NS		NS	NS	NS	NS	NS	NS		NS	NS	NS			NS		NS	NS
	04/18/06		17.1			1,400	9.21		0.0043		1.40					0.0022	1.50000	0.02200			0.0190		0.00640	0.0056
	07/27/06		31.1			2,900	9.43		0.0030	0.052	3.16	< 0.080	0.52	25.000		0.0180	0.00340	0.00110			0.0240		0.00160	0.0108
	10/25/06		13.1			2,900	8.35		NA	0.016	5.65	< 0.080	< 0.08	< 0.200		0.0017	0.00360	< 0.00050			0.0080		0.00230	0.0103
	01/23/07		6.4			2,400	8.51		0.0140	< 0.010	5.65	< 0.080	< 0.08	< 0.200		0.0009	0.00360	< 0.00050			0.0055		< 0.00500	0.0120
	04/18/07		9.1			2,500	8.36		0.0080	0.011	6.32	< 0.080	< 0.10	< 0.100		0.0018	0.00380	< 0.00020			< 0.0050		< 0.00080	0.0120
	07/18/07		25.5			2,200	8.65		0.0150	0.016	0.58	< 0.100	0.13	1.300		0.0022	0.00400	< 0.00020			< 0.0050		< 0.00080	0.0130
	10/24/07		13.6			3,900	8.57		0.0130	0.053	1.17	< 0.100	< 0.10	0.360		0.0044	0.00130	ND			0.0200		0.00100	0.0200
	01/22/08		12.6			2,300	8.80		0.0070	0.011	5.42	< 0.100	0.29	< 0.100		0.0011	0.00390	< 0.00020			< 0.0050		0.00200	0.0130
	04/23/08		15.7			2,300	8.49		0.0090	0.012	5.64	< 0.100	< 0.10	< 1.000		0.0044	0.00370	< 0.00020			< 0.0050		< 0.00080	0.0112
	07/23/08		28.3			2,300	8.75		0.0100	0.013	5.19	< 0.100	< 0.10	0.430		0.0012	0.00360	< 0.00020			< 0.0050		0.00100	0.0105
	10/22/08		14.9			2,400	8.35		0.0072	0.012	6.10	< 0.100	< 0.10	< 0.100		0.0013	0.00400	< 0.00002			< 0.0050		0.00170	0.0100
	01/28/09		11.4			2,300	8.80		0.0086	< 0.010	5.19	< 0.100	< 0.10	< 0.050		< 0.0025	0.00420	< 0.00100			< 0.0250		< 0.00400	0.0100
	04/29/09		21.2			2,300	8.51		0.0094	0.019	5.87	< 0.150	< 0.10	0.930		0.0023	0.00310	< 0.00020			0.0062		< 0.00080	0.0130
	07/27/09		30.9			2,200	8.77		0.0087	0.026	4.60	< 0.033	< 0.05	0.640		0.0042	0.00390	< 0.00002			0.0054		< 0.00001	0.0110
	10/20/09		16.5			1,400	8.37		0.0098	45.000	9.50	< 0.033	< 0.05	0.810		0.0029	0.00200	0.00100			0.0190		0.00140	0.0055
	01/26/10		14.1			2,400	8.82		0.0110	< 0.001	5.91	< 0.033	< 0.05	< 0.007		0.0011	0.00410	< 0.00002			< 0.0003		< 0.00011	0.0130
	04/20/10		24.7			2,100	8.74		0.0080	< 0.001	NA	< 0.033	< 0.05	< 0.007		0.0008	0.00370	< 0.00002			< 0.0003		0.00160	0.0088
	07/20/10		29.6			2,200	8.58		0.0078	0.015	5.68	< 0.100	< 0.10	< 0.100		0.0032	0.00430	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.00020	0.00220	0.0098
	10/26/10		18.4			2,400	8.82		0.0088	< 0.010	6.14	< 0.100	< 0.10	< 0.100		0.0013	0.00460	< 0.00040	< 0.00005	< 0.00020	< 0.0050	< 0.00040	0.00160	0.0110
	01/31/11		10.3			3,600	8.98		0.0083	0.033	9.77	0.250	< 0.10	0.640		0.1800	0.00260	< 0.00100	< 0.00005	< 0.00050	< 0.0250	< 0.00100	< 0.00400	0.0200
	05/24/11		20.9			2,470	8.10		0.0042	0.029	5.70	< 0.100	< 0.10	< 0.100	5.7	0.0011	0.00410	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.00020	0.00180	0.0120
	08/29/11		28.2		< 5		9.00	NA	0.1700	0.260	5.10	< 0.100	< 0.10	1.200	1.7	0.0027	0.00034	< 0.00020	< 0.00005	< 0.00010	0.0650	< 0.00020	0.00120	NA
	11/22/11		14.5		< 5	1,240	8.20	NA	0.0470	0.059	4.40	< 0.100	0.12	0.850	5.3	0.0016	0.00096	< 0.00020	< 0.00005	< 0.00010	0.0400	< 0.00020	0.00100	0.0054
	02/27/12		14.3		27	1,100	8.30	< 0.050	0.0890	1.700	3.20	< 0.100	0.22	7.800	11.0	0.0026	0.00086	< 0.00020	< 0.00005	< 0.00010	0.0640	< 0.00020	0.00100	< 0.0010
	05/22/12		23.1		< 5	925	9.20	NA	0.0052	0.086	1.70	< 0.100	0.13	1.200	2.9	0.0028	< 0.00020	< 0.00020	< 0.00005	< 0.00010	0.0330	< 0.00020	0.00190	< 0.0010
	08/27/12		29.3		< 5	801	9.16	NA	0.0057	0.022	1.70	< 0.170	< 0.10	0.820	2.7	0.0024	< 0.00020	< 0.00020	< 0.00005	< 0.00010	0.0220	< 0.00020	0.00160	< 0.0010
	11/19/12		19.4		< 5	798	9.05	NA	0.0068	0.020	2.80	< 0.100	0.12	0.990	3.8	0.0031	< 0.00020	< 0.00020	< 0.00005	< 0.00010	0.0480	< 0.00020	0.00130	< 0.0010
	02/25/13		15.1		5	838	8.95	NA	0.0340	0.075	2.70	< 0.100	< 0.10	1.000	3.8	0.0037	0.00023	< 0.00020	< 0.00005	< 0.00010	0.0630	< 0.00020	0.00160	< 0.0010
	05/20/13		18.9		150	1,360	8.99	NA	0.0093	0.300	2.10	< 0.100	< 0.10	4.900	7.0	0.0022	0.00120	< 0.00020	< 0.00005	< 0.00010	0.0380	< 0.00020	0.00110	< 0.0010
	08/12/13		24.6		< 5	861	9.05	0.070	0.0045	0.023	1.70	0.150	0.17	0.760	2.6	0.0035	0.00028	< 0.00020	< 0.00005	< 0.00010	0.0390	< 0.00020	0.00360	0.0029
	12/02/13		17.0		< 5	1,150	8.70	< 0.050	0.0067	0.140	4.30	< 0.100	< 0.10	1.400	5.7	0.0023	0.00140	0.00041	< 0.00005	< 0.00010	0.0550	< 0.00020	< 0.00080	< 0.0010
	02/24/14		18.1		5	818	9.61	0.074	0.0380	0.120	2.70	< 0.100	< 0.10	0.700	2.8	0.0027	0.00032	< 0.00020	< 0.00005	< 0.00010	0.0600	< 0.00020	0.00120	0.0024
	05/27/14		29.3		17	844	10.04	0.067	0.0034	0.084	< 0.10	< 0.100	< 0.10	1.800	1.8	0.0048	< 0.00020	< 0.00020	< 0.00005	< 0.00010	0.0350	< 0.00020	0.00200	< 0.0010
	08/26/14		25.9		90	939	8.86	< 0.200	0.0110	0.530	8.30	< 0.300	< 0.10	7.600	9.5	0.0039	0.00041	< 0.00020	< 0.00005	< 0.00010	0.0770	< 0.00020	0.00180	< 0.0010
	11/19/14		17.3		16	1,800	8.81	< 0.050	0.0170	0.150	6.20	< 0.100	< 0.10	1.300	7.5	0.0026	0.00250	0.00039	< 0.00005	< 0.00010	0.0410	< 0.00020	0.00300	< 0.0010
	03/24/15		19.5		57	1,160	8.40	0.100	0.0034	0.290	3.50	< 0.100	< 0.10	2.700	6.2	0.0026	0.00100	0.00038	< 0.00005	< 0.00010	0.0760	< 0.00020	0.00160	0.0022
	06/09/15		27.9		5	2,220	8.45	< 0.050	0.0130	0.013	5.80	< 0.100	< 0.10	< 0.100	5.8	0.0008	0.00340	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.00020	< 0.00080	0.0110
	08/17/15		27.2		5	2,200	8.71	0.092	0.0100	0.030	5.20	< 0.100	< 0.10	0.270	5.5	0.0017	0.00330	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.00020	< 0.00080	0.0160
	11/16/15		12.2		6	2,780	8.57	< 0.050	0.0110	0.040	5.20	< 0.015	< 0.10	< 0.100	5.3	0.0007	0.00310	< 0.00020	< 0.00005	< 0.00010	0.0150	< 0.00020	0.00300	0.0180
	02/22/16		17.1		12	2,240	8.73	< 0.050	0.0070	0.010	5.90	< 0.100	< 0.10	< 0.100	5.9	0.0011	0.00360	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.00020	< 0.00080	0.0230
	06/27/16		NA		5	2,980	8.76	< 0.050	0.0080	0.020	5.70	< 0.100	< 0.10	< 0.100	5.8	0.0007	0.00340	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.00020	< 0.00080	0.0290
	08/01/16				ND	1,860	8.62	ND	0.0060	0.012	4.00	4.100		0.200		0.0019	0.00290	ND	ND	ND	ND	ND	ND	0.0230
	11/01/16				ND	2,190	8.75	ND	0.0060	0.012	6.10	6.100		ND		0.0010	0.00380	ND	ND	ND	ND	ND	0.00230	0.0184
	02/01/17				ND	1,980	8.86	ND	0.0069	0.011	5.20	5.200		ND		0.0015	0.00300	ND	ND	0.00010	0.0090	ND	ND	0.0171
	05/01/17				NA	2,240	8.69	NA	NA	NA	NA	NA		NA		NA	NA	NA	NA	NA	NA	NA	NA	0.0166
	08/28/17		24.7		< 5	2,040	8.58	< 0.019	0.0420	0.033	5.40	0.110	< 0.05	< 0.050	5.5	0.0017	0.00300	< 0.00003	< 0.00002	< 0.00004	0.0051	< 0.00006	< 0.00005	0.0186
	11/20/17		13.3		< 5	2,300	8.15	< 0.02	0.0380	0.054	4.60	< 0.010	< 0.05	< 0.050	4.6	< 0.0003	0.00170	< 0.00006	< 0.00002	< 0.00008	0.0130	< 0.00012	< 0.00009	0.0173
	02/20/18		12.4		< 5	2,270	8.07	< 0.02	0.0340	0.021	6.30	< 0.010	< 0.05	0.400	6.7	0.0015	0.00140	< 0.00003	< 0.00002	< 0.00004	0.0210	< 0.00006	< 0.00005	0.0157
	06/25/18		23.0		ND	2,430	8.19	< 0.02	0.0360	0.370	5.60	ND		0.230		0.0012	0.00170	ND	ND	ND	0.0160	ND	ND	0.0152
	08/27/18		24.2		< 5	1,740	8.24	< 0.02	0.0500	0.011	5.30	< 0.010	< 0.05	0.350	5.7	0.0016	0.00260	< 0.00003	< 0.00002	< 0.00004	0.0170	< 0.00006	< 0.00005	0.0100
	11/26/18		16.4		< 5	1,720	8.40	< 0.02	0.0560	0.031	5.00	< 0.010	< 0.05	0.330	5.4	0.0023	0.00130	< 0.00003	< 0.00002	< 0.00004	0.0330	< 0.00006	0.0009	0.0083
	02/19/19		8.8		< 5	1,820	8.14	0.08	0.2000	0.042	6.10	0.110	< 0.05	0.210	6.4	0.0016	0.00140	< 0.00003	< 0.00002	< 0.00004	0.0190	< 0.00006	0.00088	0.0066
	05/20/19		19.0		< 5	1,650	8.55	0.06	0.0220	0.023	4.70	< 0.010	< 0.05	0.560	5.3	0.0020	0.00097	< 0.00003	< 0.00002	< 0.00004	0.0430	< 0.00006	0.00096	0.0087
	08/19/19		25.8		< 5	1,830	11.00	< 0.05	0.0270	0.034	4.30	< 0.100	< 0.10	0.510	4.8	0.0016	0.00130	< 0.00020	0.00010	< 0.00010	0.0250	< 0.00020	< 0.0008	0.0042
	11/18/19		19.3		< 5	1,360	8.25	< 0.05	0.0550	0.061	4.70	< 0.100	< 0.10	0.300	5.0	0.0022	0.00065	< 0.00020	< 0.00005	< 0.00010	0.0390	< 0.00020	0.001	0.0085
	02/24/20		15.3		< 5	1,560	8.83	0.079	0.0160	0.019	3.90	< 0.100	< 0.10	0.450	4.4	0.0022	0.00130	< 0.00020	< 0.00005	< 0.00010	0.0270	< 0.00020	0.00095	0.0043
	05/18/20		20.6		11	1,960	8.25	0.050	0.0440	0.100	4.70	< 0.100	< 0.10	0.520	5.3	0.0015	0.00130	< 0.00020	< 0.00005	< 0.00010	0.0210	< 0.00020	< 0.0008	0.0025
	08/24/20		28.0		< 5	1,090	8.67	< 0.050	0.0340	0.057	4.50	< 0.100	< 0.10	0.200	4.8	0.0020	0.00090	< 0.00020	< 0.00005	< 0.00010	0.0310	< 0.00020	0.0011	0.0027
	11/23/20		14.9		< 5	1,120	7.79	0.070	0.0340	0.740	5.00	< 0.100	0.29	0.450	5.5	0.2100	0.00110	< 0.00020	< 0.00005	< 0.00020	0.0520	< 0.00020	< 0.002	0.0021
	02/09/21		14.2		< 5	1,300	8.62	< 0.050	0.0500	0.048	4.30	< 0.100	< 0.10	0.600	5.0	0.0018	0.00120	< 0.00020	< 0.00005	< 0.00020	0.0400	< 0.00020	< 0.002	0.0047
	04/12/21		16.1		8	1,560	7.97	< 0.050	0.0320	0.061	4.70	0.160	< 0.10	0.690	5.6	0.0020	0.00094	< 0.00020	< 0.00005	< 0.00020	0.0430	< 0.00020	< 0.002	0.0043
	08/16/21		29.9		< 5	1,370	9.17	0.072	0.2200	0.270	2.90	< 0.100	< 0.05	1.100	3.8	0.0045	0.00087	0.00034	< 0.00005	< 0.00020	0.0490	< 0.00020	0.002	< 0.0002
	10/06/21		24.9		< 5	1,130	8.80	0.052	0.5300	0.620	5.20	< 0.100	< 0.05	1.000	6.2	0.0046	0.00047	< 0.00020	< 0.00005	< 0.00020	0.0560	< 0.00020	0.002	< 0.0002
	01/19/22		17.4		< 10	1,060	8.78	< 0.069	< 0.0500	0.163	3.80	< 0.100	0.05	1.680	5.5	0.0027	< 0.00125	< 0.00125	< 0.00032	< 0.00125	0.0429	< 0.00125	0.00513	< 0.0013
	04/19/22		17.7		< 10	1,120	8.62	< 0.069	< 0.0500	0.246	3.95	< 0.100	0.06	1.750	5.7	0.0023	0.00152	< 0.00125	< 0.00032	< 0.00125	0.0503	< 0.00125	0.00438	< 0.0013
	07/20/22		30.9		< 5	1,050	7.19	0.082	< 0.0500	0.244	3.58	< 0.100	< 0.10	1.490	5.1	0.0266	< 0.00125	< 0.00125	< 0.00032	< 0.00125	0.0520	< 0.00125	0.00402	NA
	10/17/22		25.8		< 6	914	7.85	NA	0.0755	0.100	4.42	< 0.020	NA	NA	5.2	0.0060	< 0.00300	< 0.00030	NA	< 0.00050	0.0394	< 0.00500	0.005	0.0010
	01/24/23		13.9		< 6	950	8.50	NA	0.0209	0.059	4.30	< 0.020	< 0.10	0.848	4.9	< 0.0150	< 0.00900	< 0.00090	< 0.00032	< 0.00150	0.0426	< 0.01500	< 0.015	0.0030
	04/24/23		24.4		7	964	9.15	NA	0.0094	0.073	3.91	< 0.061	NA	NA	4.5	< 0.0500	< 0.03000	< 0.00300	NA	< 0.00500	< 0.0500	< 0.05000	< 0.05	0.0050
	Median	**0.20**	**18.2**	**< 3**	**5**	**1,815**	**8.66**	**< 0.05**	**0.0130**	**0.033**	**4.50**	**< 0.100**	**< 0.10**	**0.670**	**5.0**	**0.0026**	**0.0029**	**< 0.00020**	**< 0.00005**	**< 0.00010**	**0.0200**	**< 0.0002**	**0.00180**	**0.0079**
	Maximum	**1.00**	**33.3**	**< 3**	**150**	**3,900**	**11.00**	**< 0.20**	**0.5300**	**45.0**	**9.77**	**< 10.000**	**0.96**	**25.000**	**11.0**	**0.2100**	**1.5000**	**< 0.10000**	**< 0.00032**	**< 0.00500**	**0.0770**	**< 0.0500**	**< 0.05000**	**0.0290**
	Minimum	**0.01**	**1.2**	**< 3**	**< 5**	**750**	**7.19**	**< 0.02**	**0.0030**	**< 0.001**	**< 0.10**	**< 0.010**	**< 0.05**	**< 0.007**	**1.1**	**< 0.0003**	**< 0.0002**	**< 0.00002**	**< 0.00002**	**< 0.00004**	**< 0.0003**	**< 0.0001**	**< 0.00001**	**< 0.0002**

Location	Date	Selenium Dissolved mg/L	Selenium (SDSU)[c] mg/L	Aluminum mg/L	Antimony mg/L	Arsenic mg/L	Barium mg/L	Beryllium mg/L	Bicarbonate Alkalinity as HCO3 mg/L	Boron mg/L	Bromide mg/L	Carbonate Alkalinity as CaCO3 mg/L	Calcium mg/L	Chlorate mg/L	Chloride mg/L	Cyanide mg/L	Copper Dissolved mg/L	Fluoride mg/L	Iron mg/L	Lead Dissolved mg/L	Magnesium mg/L	Manganese mg/L	Potassium mg/L
Sloan Channel	09/23/98									0.60							0.01000			< 0.1000			
	No Sample Taken for 1999 Dry Weather Monitoring Program																						
	10/03/00									0.30							< 0.01000			< 0.1000			
	10/04/00									0.24							< 0.01000			< 0.1000			
	10/17/00[e]																						
	01/18/01					0.0320							160	ND									
	04/25/01					0.0340							120	0.06									
	07/30/01					0.0330							120	ND									
	10/24/01					0.0180							120	0.01									
	01/23/02					0.0016							120	ND									
	04/24/02					0.0017							130	0.10									
	07/24/02					0.0140							130	0.02									
	10/23/02					0.0140							120	0.01									
	01/22/03					0.0190							130	ND									
	04/23/03					0.0017							110	0.02									
	07/23/03					0.0110							100	0.02									
	10/22/03					0.0190							136	ND									
	01/21/04					0.0200							130	0.02									
	04/21/04					0.0160							120	ND									
	07/21/04					0.0130							130	0.02									
	10/27/04					NS							71	0.02									
	01/26/05					NS																	
	04/19/05					0.0170							130	0.07									
	07/20/05					0.0084							120	0.41									
	10/26/05					NS																	
	01/19/06					NS																	
	04/18/06					0.0076								0.10									
	07/27/06					0.0120								8.90									
	10/25/06					0.0150																	
	01/23/07					0.0140							150	1.00									
	04/18/07					0.0170							130	0.52									
	07/18/07					0.0160							150	0.05									
	10/24/07					0.0140							190	0.04									
	01/22/08					0.0150							130	0.03									
	04/23/08					0.0160							140	0.04									
	07/23/08					0.0180							130	0.03									
	10/22/08		0.1080			0.0140							130	0.21									
	01/28/09		0.1040			0.0170							110	0.03									
	04/29/09		0.1080			0.0170							120	0.08									
	07/27/09		NA			0.0170							130	0.07									
	10/20/09		0.0050			0.0080							110	0.04									
	01/26/10		0.0109			0.0170							130	0.05									
	04/20/10		0.0108			0.0110							120	0.06									
	07/20/10		0.0106	0.0073		0.0170	0.041			1.90			120	0.04			0.00270		< 0.001	< 0.0002		0.0010	
	10/26/10		0.0115	< 0.0004		0.0130	0.032			1.70			130	0.06			0.00096		< 0.001	< 0.0004		0.0009	
	01/31/11		0.0198	0.0300		0.0130	0.027			4.40			190	0.13			0.00540		0.026	< 0.0010		0.0014	
	05/24/11		0.0120	0.0082		0.0160	0.032			2.00			120	ND			0.00095		0.024	< 0.0002		0.0006	
	08/29/11		0.0008	0.0300	0.0009	0.0016	0.098	< 0.0001	220	0.32	0.05	< 2	77	0.38	210		0.00260	1.20	< 0.020	< 0.0002	29	0.0026	16
	11/22/11		0.0049	0.0200	0.0006	0.0038	0.045	< 0.0001	190	0.63	0.31	< 2	83	0.14	230		0.00120	1.30	0.038	< 0.0002	60	0.0190	17
	02/27/12		0.0006	0.0100	0.0006	0.0044	0.074	< 0.0001	220	0.51	0.18	< 2			230		0.00250	1.10	< 0.020	< 0.0002	50	0.0320	18
	05/22/12		0.0011	0.0200	0.0007	0.0005	0.044	< 0.0001	98	0.28	0.07	29			1200		0.00280	1.00	0.025	< 0.0002	28	0.0074	17
	08/27/12		NA	0.0110	0.0006	0.0005	0.034	< 0.0001	67	0.29	0.37	55			190		0.00240	0.73	< 0.020	< 0.0002	23	0.0068	14
	11/19/12		NA	0.0200	0.0005	< 0.0004	0.058	< 0.0001	150	0.26	0.05	29			190		0.00300	0.88	< 0.020	< 0.0002	22	0.0047	14
	02/25/13		NA	0.0130	0.0006	0.0006	0.043	< 0.0001	120	0.31	0.06	59	64	0.32	200		0.00370	0.94	0.023	< 0.0002	25	0.0110	15
	05/20/13		NA	0.0200	0.0008	0.0051	0.061	< 0.0001	150	0.67	0.36	25	83	0.39	250		0.00190	0.96	0.021	< 0.0002	66	0.0030	16
	08/12/13		NA	0.0130	0.0006	0.0005	0.051	< 0.0001	150	0.25	0.10	18	71	0.19	220		0.00310	0.72	0.027	< 0.0002	25	0.0200	14
	12/02/13		NA	0.1700	0.0006	0.0038	0.069	< 0.0001	250	0.61	0.22	< 2	88	0.08	240		0.00140	0.94	0.280	< 0.0002	54	0.0870	17
	02/24/14		NA	0.0170	0.0007	0.0008	0.062	< 0.0001	140	0.31	0.04	47	67	0.10	200		0.00260	0.96	0.027	< 0.0002	24	0.0058	15
	05/27/14		NA	0.0240	0.0008	0.0006	0.037	< 0.0001	45	0.31	0.09	3	47	0.40	230		0.00430	0.83	0.033	< 0.0002	27	0.0056	16
	08/26/14		NA	0.1100	0.0006	0.0010	0.099	< 0.0001	210	0.28	0.07	< 2	116	0.40	250		0.00220	0.73	0.170	< 0.0002	35	0.0410	18
	11/19/14		NA	0.2800	0.0005	0.0076	0.068	< 0.0001	220	0.97	1.00	10	109	0.11	280		0.00180	0.93	0.330	< 0.0002	97	0.0340	16
	03/24/15		NA	0.2600	0.0007	0.0032	0.088	< 0.0001	230	0.53	0.22	< 2	96	0.16	280		0.00150	0.94	0.320	< 0.0002	46	0.0720	19
	06/09/15		NA	0.0190	< 0.0005	0.0180	0.038	< 0.0001	210	1.80	1.10	20	99	0.13	280		0.00058	1.00	< 0.020	< 0.0002	147	0.0013	16
	08/17/15		NA	0.0090	< 0.0005	0.0170	0.035	< 0.0001	190	1.90	1.00	26	104	0.13	260		0.00140	0.99	< 0.020	< 0.0002	157	0.0012	17
	11/16/15		NA	0.1600	< 0.0005	0.0130	0.032	< 0.0001	240	1.80	0.09	200	168	ND	270		0.00190	0.86	0.280	< 0.0002	274	0.0170	21
	02/22/16		NA	0.0440	< 0.0005	0.0190	0.034	< 0.0001	180	1.80	0.96	180	115	0.04	270		0.00053	0.89	0.045	< 0.0002	160	0.0019	18
	06/27/16		NA	0.0160	< 0.0005	0.0190	0.034	< 0.0001	240	1.90	0.91	< 2	105	0.07	260		0.00059	0.69	< 0.020	< 0.0002	165	0.0012	20
	08/01/16		NA	ND	ND	0.0150	0.051	ND	220	1.30	0.74	ND	97	0.01	190		0.00100	0.77	ND	ND	126	0.0012	13
	11/01/16		NA	ND	ND	0.0150	0.029	ND	230	1.90	0.91	ND	105	0.08	280		0.00080	ND	0.021	0.0002	162	0.0005	19
	02/01/17		NA	ND	ND	0.0170	0.034	ND	190	1.50	0.78	ND	98	0.09	230		0.00130	1.00	ND	ND	139	0.0009	19
	05/01/17		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	109	0.10	NA		NA	NA	NA	NA	NA	NA	NA
	08/28/17			0.0120	< 0.00005	0.0170	0.037	< 0.00003	210	1.80	0.90	10	108	0.14	210		0.00160	< 0.20	< 0.001	< 0.00003	148	0.0023	20
	11/20/17			< 0.0026	< 0.0001	0.0140	0.033	0.0002	230	1.40	0.72	< 1	143	ND	210		< 0.00026	< 0.20	< 0.002	< 0.0001	224	0.0021	24
	02/20/18			0.0079	< 0.0000	0.0110	0.042	< 0.00003	210	1.30	0.65	17	138	0.07	190		0.00140	< 0.20	< 0.001	< 0.00003	208	0.0012	23
	06/25/18			0.0050	0.0005	0.0150	0.035	ND	240	1.50	0.02	ND	130	0.05	220		0.00090	ND	ND	ND	203	0.0027	25
	08/27/18			0.0098	< 0.00005	0.0130	0.043	< 0.00003	150	1.50	0.63	35	90	0.14	180		0.00140	< 0.20	< 0.001	< 0.00003	113	0.0020	21
	11/26/18			0.0130	0.00057	0.0110	0.051	< 0.00003	180	1.10	0.40	39	108	0.05	220		0.00170	< 0.40	0.026	< 0.00003	129	0.0035	22
	02/19/19			0.0087	0.00052	0.0120	0.039	< 0.00003	230	1.20	0.44	17	122	0.04	200		0.00140	< 0.40	0.041	< 0.00003	141	0.0042	23
	05/20/19			0.0064	0.00065	0.0068	0.062	< 0.00003	220	0.81	0.36	< 1	108	0.09	190		0.00180	< 0.20	0.024	< 0.00003	124	0.0016	21
	08/19/19			0.0140	0.00060	0.0160	0.046	< 0.0001	220	1.20	0.44	8	120	0.10	230		0.00150	< 0.20	< 0.020	< 0.0002	146	0.0037	21
	11/18/19			0.0081	0.00058	0.0059	0.053	< 0.0001	220	0.62	0.27	< 2	98	0.11	230		0.00190	< 0.20	0.024	< 0.0002	102	0.0046	19
	02/24/20	0.0047		0.0370	0.00062	0.0110	0.045	< 0.0001	160	1.00	0.34	41	113	0.06	450		0.00230	< 0.18	0.042	< 0.0002	117	0.0027	20
	05/18/20	0.0026		0.0094	< 0.00050	0.0200	0.035	< 0.0001	190	1.30	0.49	< 5	138	< 0.03	160		0.00130	< 0.18	0.029	< 0.0002	180	0.0044	24
	08/24/20	0.0032		0.0081	0.00064	0.0150	0.049	< 0.0001	200	1.00	0.36	10	119	0.12	180		0.00180	< 0.09	0.023	< 0.0002	119	0.0085	23
	11/23/20	0.0034		< 0.0200	0.00063	0.0130	0.046	< 0.0001	170	1.10	0.31	32	115	0.10	200		0.00300	< 0.09	0.034	< 0.0002	114	0.0051	22
	02/09/21	0.0047		< 0.0200	0.00063	0.0130	0.051	< 0.0001	200	1.00	0.34	30	115	0.08	220		0.00150	1.00	0.022	< 0.0002	115	0.0012	22
	04/12/21	0.0046		0.0290	0.00063	0.0120	0.053	< 0.0001	250	0.98	0.33	< 5	113	0.05	230		0.00190	< 0.09	0.060	< 0.0002	111	0.0150	22
	08/16/21	0.0056		< 0.0200	0.00120	0.0081	0.043	< 0.0001	130	0.80	0.29	56	102	0.37	210		0.00410	< 0.09	0.027	0.0003	90	0.0087	20
	10/06/21	0.0024		< 0.0200	0.00084	0.0029	0.038	< 0.0001	160	0.47	0.17	18	92	0.13	240		0.00450	< 0.09	0.041	< 0.0002	65	0.0066	21
	01/19/22	0.0076		< 0.0500	< 0.00125	0.0025	0.046	< 0.0013	132	0.51	0.14	NA	75	< 0.04	209		0.00248	0.84	< 0.100	< 0.0013	41	0.0071	19
	04/19/22	0.0060		< 0.0500	< 0.00125	0.0029	0.055	< 0.0013	138	0.62	0.15	NA	84	0.10	209		0.00426	0.72	< 0.100	< 0.0013	39	0.0080	21
	07/20/22	0.0050		0.0500	0.00100	0.0010	0.060	0.0013	152	0.30	< 0.10	NA	82	0.11	221		0.00260	NA	< 0.100	< 0.0013	25	0.0070	24
	10/17/22	0.0010		0.0190	0.00100	0.0010	0.053	0.0004	129	NA	0.05	9.9	78	NA	240		< 0.00500	0.76	< 0.100	< 0.0003	26	0.0080	18
	01/24/23	0.0030		0.0150	0.00100	0.0010	0.117	0.0012	122	NA	0.06	12.3	80	NA	239		< 0.01500	0.81	< 0.050	< 0.0009	27	0.0150	21
	04/24/23	0.0050		0.0500	0.00400	0.0030	< 0.200	0.0040	74	NA	0.09	44.9	81	NA	237		< 0.02500	0.81	< 0.100	< 0.0015	28	0.0500	18
	Median	**0.0047**	**0.0109**	**0.0190**	**0.00062**	**0.0130**	**0.045**	**< 0.00010**	**190**	**0.98**	**0.31**	**17**	**116**	**0.08**	**230**		**0.00190**	**0.77**	**0.026**	**< 0.00020**	**102**	**0.0046**	**19**
	Maximum	**0.0076**	**0.1080**	**0.2800**	**0.00400**	**0.0340**	**0.200**	**0.0040**	**250**	**4.40**	**1.10**	**200**	**190**	**8.90**	**1,200**		**0.02500**	**1.30**	**0.330**	**< 0.10000**	**274**	**0.0870**	**25**
	Minimum	**0.0010**	**0.0006**	**< 0.0004**	**< 0.00005**	**< 0.0004**	**0.027**	**< 0.00003**	**45**	**0.24**	**0.02**	**< 0.56**	**47**	**0.01**	**160**		**< 0.00026**	**< 0.09**	**< 0.001**	**< 0.00003**	**22**	**0.0005**	**13**

Location	Date	Silica mg/L	Sodium mg/L	Sulfate mg/L	Thallium mg/L	Zinc Dissolved mg/L	BOD mg/L	COD mg/L	Apparent Color ACU	Turbidity NTU	Phenol mg/L	Total Petroleum Hydrocarbons mg/L	Total Chlorine mg/L	Conductance mmhos/cm	Fecal Coliform MPN/100 mL	Fecal Strep. MPN/100 mL	Total Coliform MPN/100 mL	Salmonella MPN/100 mL	VOC # detects	SOC # detects	Pesticides # detects	Herbicides # detects
Sloan Channel	09/23/98					< 0.020									162	225		< 2.2	0	0	0	0
														No Sample Taken for 1999 Dry Weather Monitoring Program								
	10/03/00					< 0.020									1,600	9,000			1	0	1	0
	10/04/00					< 0.020									1,700	9,000			1	0	0	0
	10/17/00[e]														300	2,200						
	01/18/01									1.35				2.53	257							
	04/25/01									3.26				2.55	680							
	07/30/01									3.18				2.71	260							
	10/24/01									2.57				3.95	1,103							
	01/23/02									0.75				2.39	60							
	04/24/02									15.50				2.38	355							
	07/24/02									3.09				2.20	5,800						0	0
	10/23/02									1.30				1.86	5,000						0	0
	01/22/03									0.08				2.35	1,390						0	0
	04/23/03									2.29				2.26	300						0	1
	07/23/03									1.32				2.51	36,000						0	1
	10/22/03									1.80				2.44	2,400						0	0
	01/21/04									2.16				2.56	< 200						0	0
	04/21/04									0.52				2.55	633						0	0
	07/21/04									2.21				2.37	NA							
	10/27/04									NS				NS	NS							
	01/26/05									NS				NS	NS							
	04/19/05									7.84				2.77	553							
	07/20/05									1.66				1.80	24,000				10	0	3	1
	10/26/05																		0	0	0	0
	01/19/06									NS				NS	NS				0	0	0	0
	04/18/06									3.50				1.89	< 200				3	0	1	0
	07/27/06									2.87				3.55	3,600				3	0	0	0
	10/25/06									0.72				2.95	6,667				5	1	0	0
	01/23/07	74								1.07				2.99	< 2,000				5	1	0	2
	04/18/07	69								0.42				3.06	330				4	0	1	0
	07/18/07	65								0.98				3.27	9,600							
	10/24/07	34								1.23				4.07	4,500							
	01/22/08	71								1.21				2.99	< 2,000							
	04/23/08	77								0.98				3.07	487							
	07/23/08	66								0.81				3.00	820				3	1	1	0
	10/22/08	75								0.52				3.13	< 4,000				3	0	1	0
	01/28/09	65								0.59				2.94	< 1,000				3	0	1	0
	04/29/09	70								3.64				3.14	650				2	0	0	0
	07/27/09	71								1.21				2.97	5,500				2	1	1	0
	10/20/09	33								3.38				2.08	2,050				8	0	2	0
	01/26/10	78								1.64				3.05	< 200				0	0	0	0
	04/20/10	65								0.77				3.15	337				0	1	0	0
	07/20/10	70				< 0.005				1.04	< 0.005			2.99	3,600							
	10/26/10	82				< 0.005				0.05	< 0.005			3.10	< 1,000							
	01/31/11	57				< 0.025				2.73	< 0.005			5.33	< 133							
	05/24/11	57				< 0.005				0.67	< 0.001			3.21	430							
	08/29/11	13	190	260	< 0.0002	0.063				1.40	< 0.001			1.44	480	300			5	5	2	2
	11/22/11	12	240	420	< 0.0002	0.035				1.24	< 0.001			1.84	< 40	86			6	4	2	2
	02/27/12		220	360	< 0.0002	0.063				63.60	< 0.001			1.84	8,800	670			6	4	2	1
	05/22/12		200	1,300	< 0.0002	0.032				1.33	< 0.001			1.50	270	40			5	5	2	1
	08/27/12		170	240	< 0.0002	0.023				0.72	< 0.001			1.30	320	< 40			6	0	1	0
	11/19/12		150	210	< 0.0002	0.046				0.30	< 0.001			1.30	< 133	< 20			5	0	1	1
	02/25/13	11	180	220	< 0.0002	0.063				0.67	< 0.001			1.31	< 3	< 50			5	0	1	0
	05/20/13	30	240	470	< 0.0002	0.030				15.40	< 0.001			1.93	1,060	373			3	1	1	1
	08/12/13	12	180	250	< 0.0002	0.041				0.45	< 0.001			1.38	80	< 40			4	1	0	0
	12/02/13	27	240	420	< 0.0002	0.040				0.65	< 0.001			1.78	42	42			3	1	0	1
	02/24/14	11	180	230	< 0.0002	0.060				1.31	< 0.001			1.33	< 27	< 1			5	1	0	1
	05/27/14	9	200	270	< 0.0002	0.023				7.62	< 0.001			1.35	< 5	< 100			4	1	0	1
	08/26/14	16	220	300	< 0.0002	0.046				13.70	< 0.010			1.51	1,420	115			6	0	2	1
	11/19/14	50	290	700	< 0.0002	0.026				62.00	< 0.010			2.68	< 400	< 200			5	0	2	0
	03/24/15	23	230	420	< 0.0002	0.053				4.55	< 0.001			1.77	126	78			7	0	1	1
	06/09/15	77	320	1,000	< 0.0002	< 0.005				2.08	< 0.001			2.88	3,100	2,150			3	0	0	0
	08/17/15	87	350	1,000	< 0.0002	< 0.005				1.34	< 0.001			2.88	10,100	250			2	0	1	0
	11/16/15	83	300	1,400	< 0.0002	< 0.005				2.15	< 0.001			3.33	< 400	393			2	0	0	0
	02/22/16	66	320	1,100	< 0.0002	< 0.005				3.13	< 0.001			2.94	172	540			1	0	0	0
	06/27/16	91	340	1,100	< 0.0002	< 0.005				NA	< 0.001			3.70	NA	NA			2	0	0	0
	08/01/16	63	250	900	ND	ND				19.20				2.51	340	2,200			1		0	0
	11/01/16	79	320	1,100	ND	ND				1.45				2.86	240	540			1		0	0
	02/01/17	63	290	630	ND	0.009				1.00				2.66	< 20	< 20			1		0	0
	05/01/17	76	NA	NA	NA	NA				2.52				3.06	2,000	700			0		0	0
	08/28/17	86	330	800	< 0.00001	0.007				1.73	< 0.0002			2.87	18,000				3	0	0	0
	11/20/17	64	250	1,000	< 0.00003	0.015				4.30	< 0.0002			3.01	86				2	0	0	0
	02/20/18	57	260	840	< 0.00001	0.021				2.60	< 0.0002			2.95	86				3	0	2	0
	06/25/18	68	260	1,100	ND	0.011				3.00				3.03	2,480				3	0	1	0
	08/27/18	67	280	680	< 0.00001	0.016				0.94	< 0.0002			2.49	7,300				2	0	0	0
	11/26/18	44	220	860	< 0.00001	0.030				0.60	< 0.0003			2.35	173				3	0	2	0
	02/19/19	47	220	780	< 0.00001	0.020				1.10	< 0.0002			2.58	170				1	1	2	0
	05/20/19	38	210	740	< 0.00001	0.043				0.60	< 0.0002			2.25	265				4	0	1	0
	08/19/19	57	220	910	< 0.0002	0.024				1.93	< 0.0001			2.51	2,700				3	0	2	0
	11/18/19	37	190	650	< 0.0002	0.039				1.90	< 0.0002			2.16	< 20				2	2	2	0
	02/24/20	45	200	1,600	0.0002	0.029				2.30	< 0.0001			2.16	48				4	1	1	0
	05/18/20	71	210	820	0.0002	0.017				5.16	< 0.0001			2.51	37,000				1	0	0	0
	08/24/20	50	200	660	< 0.0002	0.030				10.70	< 0.0001			1.69	5,933				5	0	1	0
	11/23/20	44	210	760	< 0.0002	0.036				4.52	< 0.0001			2.14	< 20				5	0	1	1
	02/09/21	42	220	770	< 0.0002	0.039				1.04	< 0.0001			2.59	330				4	0	2	0
	04/12/21	45	200	810	< 0.0002	0.040				5.25	< 0.0001			2.26	573				4	0	1	0
	08/16/21	35	200	620	< 0.0002	0.048				8.04	< 0.0002			2.06	15,200				4	1	2	1
	10/06/21	20	190	450	< 0.0002	0.056				1.50	< 0.0002			1.89	320				5	1	2	0
	01/19/22	16	192	380	< 0.0013	0.038				3.22	NA			1.63	57				7	0	0	0
	04/19/22	21	218	343	< 0.0013	0.050				NA	NA			1.75	1,050				0	0	0	0
	07/20/22	4	191	257	< 0.0013	0.048				2.0	NA			1.63	9,600				2	0	0	0
	10/17/22	9	193	263	< 0.0002	0.037				19.0	0.0100			1.60	393				2	0	0	0
	01/24/23	8	191	276	< 0.0006	0.027				1.3	NA			1.61	20				0	0	0	0
	04/24/23	5	199	280	< 0.0020	0.025				12.3	NA			2.33	20				0	0	0	0
	Median	**57**	**220**	**660**	**< 0.00020**	**0.028**				**1.70**	**< 0.0010**			**2.51**	**480**	**225**		**< 2**	**3**	**0**	**0**	**0**
	Maximum	**57**	**350**	**1,600**	**< 0.00200**	**0.063**				**63.60**	**< 0.0100**			**5.33**	**37,000**	**9,000**		**< 2**	**10**	**5**	**3**	**2**
	Minimum	**4**	**150**	**210**	**< 0.00001**	**< 0.005**				**0.05**	**< 0.0001**			**1.30**	**< 3**	**< 1**		**< 2**	**0**	**0**	**0**	**0**

Location	Date	Q cfs	Temp Deg C	Oil & Grease mg/L	TSS mg/L	TDS mg/L	pH [f]	Surfactants[d] (MBAS) mg/L	Ortho-Phosphate mg/L	Total Phosphate-Phosphorous mg/L	NO3-N[a] mg/L	NO2-N mg/L	NH3-N mg/L	TKN mg/L	Total Nitrogen mg/L	Copper mg/L	Chromium mg/L	Lead mg/L	Mercury mg/L	Cadmium mg/L	Zinc mg/L	Silver mg/L	Nickel mg/L	Selenium[b] mg/L
Monson Channel	10/25/00[e]		21.3			3,920	8.45		0.0400	0.040	1.11	< 0.080	< 0.080	0.800	1.91	0.0092	< 0.00200	0.00050			0.0220		0.0160	0.023
	01/18/01		12.1			4,660	8.58		0.0100	0.010	5.05	< 0.080	< 0.080	0.600	5.65	0.0096	0.00260	< 0.00100			0.0110		0.0180	< 0.005
	04/25/01		21.0			4,590	8.35			0.010	3.77	0.140	< 0.080	1.200	4.05	0.0170	< 0.00200	< 0.00100			0.0170		0.0180	< 0.005
	07/30/01		27.8			4,580	8.05			0.020	3.57	0.110	< 0.080		3.68	0.0150	0.00220	0.00090			0.0160		0.0170	< 0.005
	10/24/01		23.3			4,540	8.57		0.0100	0.010	4.16	< 0.080	< 0.080		4.16	0.0130	0.00190	0.00220			0.0190		0.0120	< 0.005
	01/23/02		6.3			5,250	8.31		0.0100	0.010	8.12	0.090	< 0.080		8.21	< 0.0020	< 0.00200	< 0.00100					< 0.0100	0.023
	04/24/02		21.3			4,300	8.14		0.0200	0.010	5.46	0.140	0.130	1.000	6.46	< 0.0020	< 0.00200	< 0.00100					< 0.0100	0.020
	07/24/02		27.6			4,230	8.29		0.0100	0.030	2.81	< 0.080	< 0.080	1.200	3.01	0.0026	0.00270	0.00060			0.0084		0.0190	0.022
	10/23/02		23.5			4,360	8.53		< 0.0100	0.030	4.20	< 0.080	0.170	0.200	4.40	0.0040	0.00270	< 0.00100			0.0060		0.0180	0.023
	01/22/03		10.8			4,570	8.18		0.0300	0.050	4.80	< 0.080	< 0.080		4.80	0.0045	0.00170	0.00070			0.0090		0.0140	0.023
	04/23/03		20.2			4,560	8.53		0.0200	NA	4.53	< 0.080	< 0.080		4.53	0.0036	< 0.00200	< 0.00100					0.0082	0.024
	07/23/03		26.8			4,550	7.81		0.0070	NA	3.10		0.078	0.580	3.68	0.0046	< 0.00200	< 0.00100			0.0075		0.0110	< 0.005
	10/22/03		19.7			4,630	8.18		0.0150	< 0.080	5.20	< 0.080	< 0.080	0.540	5.74	< 0.0020	< 0.00200	< 0.00100			< 0.0200		0.0250	< 0.005
	01/21/04		10.0			4,610	8.10		0.0170	< 0.080	5.40	< 0.080	< 0.080	0.420	5.82	< 0.0020	< 0.00200	< 0.00100			< 0.0200		< 0.0100	< 0.005
	04/21/04		15.0			4,710	8.13		0.0130	0.030	4.80	< 0.080	< 0.080	0.320	5.12	< 0.0020	< 0.00200	< 0.00100			< 0.0200		< 0.0100	< 0.005
	07/21/04		22.1			4,530	7.91		0.0160	< 0.010	4.30	< 0.080	< 0.080	3.700		0.0022	< 0.00100	< 0.00050			0.0120		0.0160	0.021
	10/27/04		16.6			4,520	8.18		NA	NA	5.00	< 0.080	NA	NA		< 0.0020	< 0.00100	< 0.00050			< 0.0050		< 0.0050	< 0.001
	01/26/05		14.7			4,310	8.17		0.0260	0.020	4.90	< 0.080	< 0.080	0.460		< 0.0020	< 0.00100	< 0.00050			0.0400		< 0.0050	0.021
	04/19/05		15.1			2,210	8.15		NS	NS	NS	NS	NS	NS		NS	NS	NS			NS		NS	NS
	07/20/05		25.3			4,520	7.98		0.0110	< 0.010	4.30	< 0.080	0.090	0.740		< 0.0020	< 0.00200	< 0.00050			< 0.0050		< 0.0050	0.021
	10/26/05		19.6			4,340	8.04		0.0200	< 0.010	< 0.08	< 0.080	0.350	0.440		< 0.0020	0.00042	< 0.00050			< 0.0050		0.0012	0.022
	01/19/06		12.4			4,600	8.18		0.0070	NA	6.40	< 0.080	NA	NA		0.0079	0.00068	< 0.00050			0.0023		0.0150	0.023
	04/18/06		18.0			5,000	8.53		0.0050	NA	2.98	0.120	NA	NA		0.0057	0.00086	< 0.00050			< 0.0050		0.0190	0.029
	07/27/06		28.1			4,400	8.16		0.0060	0.042	4.52	0.210	0.110	0.690		0.0030	0.00090	0.00110			0.0011		0.0024	0.022
	10/25/06		17.0			5,200	8.22		NA	0.013	5.65	< 0.080	< 0.080	0.360		0.0015	0.00080	0.00020			0.0066		0.0130	0.022
	01/23/07		9.8			4,400	8.17		< 0.0020	< 0.010	5.42	< 0.080	< 0.080	1.000		0.0018	0.00070	< 0.00050			0.0025		< 0.0100	0.025
	04/18/07		15.9			4,400	8.31		0.0030	< 0.010	5.42	< 0.100	< 0.100	0.310		0.0021	0.00070	< 0.00020			< 0.0050		< 0.0008	0.025
	07/18/07		29.6			3,200	8.07		0.0150	0.018	3.84	0.110	0.160	0.140		0.0530	0.00060	< 0.00020			0.0057		0.0009	0.024
	10/24/07		21.3			4,800	8.52		0.0140	0.017	5.65	< 0.100	< 0.100	0.250		0.0011	0.00070	ND			ND		ND	0.026
	01/22/08		16.1			3,900	8.62		0.0040	0.012	3.84	0.140	0.140	< 0.100		0.0019	0.00060	< 0.00020			< 0.0050		0.0066	0.024
	04/23/08		18.4			4,300	7.92		0.0060	0.014	< 0.10	4.060	< 0.100	0.340		0.0032	0.00060	< 0.00020			< 0.5000		< 0.0080	0.019
	07/23/08		34.5			4,300	8.22		0.0110	0.023	3.84	0.110	0.120	0.560		0.0280	0.00060	0.00050			< 0.0050		0.0037	0.020
	10/22/08		14.9			4,500	7.19		0.0074	< 0.010	5.65	< 0.100	< 0.100	< 0.100		0.0140	0.02400	< 0.00020			< 0.0050		0.0050	0.017
	01/28/09		13.5			3,900	8.39		0.0065	< 0.010	4.74	< 0.100	< 0.100	0.064		0.0250	0.00100	< 0.00100			0.0560		< 0.0040	0.018
	04/29/09		17.7			4,200	8.37		0.0062	0.014	4.29	< 0.150	< 0.100	0.250		0.0021	ND	ND			0.0220		ND	0.025
	07/27/09		25.7			4,200	7.94		0.0078	0.022	2.94	< 0.033	< 0.048	0.570		0.0021	0.00030	< 0.00002			< 0.0003		0.0014	0.024
	10/20/09		14.5			4,100	8.08		11.0000	< 0.010	5.10	< 0.033	< 0.048	< 0.007		0.0013	0.00060	< 0.00002			< 0.0003		0.0010	0.022
	01/26/10		10.3			4,200	8.30		0.0130	< 0.010	4.55	< 0.033	< 0.048	< 0.007		0.0017	0.00090	< 0.00002			0.0079		0.0009	0.024
	04/20/10		17.7			3,600	7.82		0.0780	< 0.010	NA	< 0.033	< 0.048	2.500		0.0014	0.00060	< 0.00002			< 0.0003		0.0056	0.015
	07/20/10		25.5			4,400	7.96		0.0062	< 0.010	3.64	0.130	< 0.100	0.280		0.0019	0.00040	0.00034	< 0.00005	< 0.00010	< 0.0050	< 0.0020	0.0063	0.019
	10/26/10		13.6			4,200	8.05		0.0120	0.015	4.55	< 0.100	< 0.100	< 0.100		0.0014	0.00070	< 0.00040	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.0043	0.023
	01/31/11		10.4			4,500	8.11		0.0100	0.032	5.45	< 0.100	< 0.100	< 0.100		0.0029	0.00120	< 0.00010	< 0.00005	< 0.00050	< 0.0250	< 0.0010	0.0077	0.021
	05/24/11		17.4			4,160	8.08		0.0057	< 0.010	4.00	< 0.100	< 0.100	< 0.100	4.10	0.0022	0.00074	0.00049	< 0.00005	< 0.00010	0.0055	< 0.0002	0.0067	0.021
	08/29/11		25.2		5		7.68	NA	0.0099	< 0.010	3.20	< 0.100	< 0.100	0.390	3.70	0.0012	0.00034	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.0008	
	11/22/11		13.3		< 5	3,970	8.17	NA	0.0036	< 0.010	4.20	< 0.100	< 0.100	< 0.100	4.30	0.0034	0.00086	0.00065	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.0010	0.026
	02/27/12		10.9		6	3,900	7.88	< 0.050	0.0049	< 0.010	3.80	< 0.100	< 0.100	< 0.100	3.80	0.0010	0.00058	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0004	0.0010	0.025
	05/22/12		20.8		7	4,010	7.88	NA	0.0055	0.014	2.50	< 0.100	< 0.100	0.380	3.00	0.0013	0.00050	0.00036	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.0010	0.022
	08/27/12		26.0		23	4,160	8.05	NA	0.0130	0.030	3.40	< 0.100	< 0.100	0.420	3.90	0.0017	0.00057	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.0016	0.023
	11/19/12		15.4		< 5	4,080	8.31	NA	0.0061	< 0.010	4.50	< 0.100	< 0.100	< 0.100	4.60	0.0010	0.00068	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	< 0.0008	0.020
	02/25/13		11.6		< 5	4,180	8.20	NA	0.0038	< 0.010	4.30	< 0.100	< 0.100	< 0.100	4.40	0.0009	0.00067	0.00024	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.0009	0.026
	05/20/13		19.3		< 5	4,380	8.10	NA	0.0030	0.011	2.80	< 0.100	0.140	0.260	3.10	0.0011	0.00038	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.0011	0.023
	08/12/13		22.6		< 5	4,210	7.96	< 0.050	0.0064	< 0.010	3.50	< 0.100	< 0.100	< 0.100	3.60	0.0033	0.00076	0.00023	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.0110	0.025
	12/02/13		17.0		< 5	3,970	8.31	< 0.050	0.0088	< 0.010	2.50	< 0.100	< 0.100	< 0.100	2.60	0.0008	0.00100	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	< 0.0008	0.025
	02/24/14		19.5		< 5	4,050	8.99	< 0.050	0.0053	< 0.010	4.70	< 0.100	< 0.100	< 0.100	4.10	0.0016	0.00079	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	< 0.0080	0.024
	05/27/14		30.9		< 5	4,110	8.73	< 0.050	0.0061	< 0.010	3.00	0.180	< 0.100	0.290	3.50	0.0022	0.00040	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.0077	0.027
	08/26/14		27.7		< 5	3,910	8.46	< 0.050	0.0066	0.016	14.00	< 0.300	< 0.100	0.100	3.30	0.0013	0.00032	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.0010	0.016
	11/19/14		17.2		15	3,530	8.43	< 0.050	0.0034	0.024	4.20	< 0.100	< 0.100	0.260	4.50	0.0020	0.00068	0.00025	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.0068	0.021
	03/24/15		20.5		< 5	4,030	8.56	0.066	0.0040	< 0.010	3.90	< 0.100	< 0.100	< 0.100	4.00	0.0010	0.00054	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	< 0.0008	0.026
	06/09/15		24.2		< 5	4,050	8.11	< 0.050	0.0096	0.013	2.70	0.240	< 0.100	0.440	3.40	0.0016	0.00100	< 0.00040	< 0.00005	< 0.00020	< 0.0100	< 0.0004	< 0.0016	0.023
	08/17/15		23.6		7	3,920	7.77	0.055	0.0170	0.030	3.20	0.120	0.110	0.480	3.80	0.0013	0.00050	0.00030	< 0.00005	< 0.00010	0.0060	< 0.0002	0.0008	0.028
	11/16/15		15.0		5	3,900	8.24	< 0.050	0.0150	0.020	7.20	< 0.150	< 0.100	< 0.100	7.40	0.0035	0.00100	0.00020	< 0.00005	0.00020	0.0240	< 0.0002	0.0079	0.022
	02/22/16		15.0		7	3,870	7.84	< 0.050	0.0060	0.010	4.10	< 0.100	< 0.100	0.710	4.90	0.0015	0.00060	0.00020	< 0.00005	< 0.00010	0.0050	< 0.0002	< 0.0008	0.026
	06/27/16		NA		6	3,760	8.45	< 0.050	0.0050	0.010	2.30	< 0.100	< 0.100	0.420	2.70	0.0005	0.00550	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	< 0.0008	0.033
	08/01/16				19	3,710	6.83	ND	0.0027	0.016	2.70	2.800		0.500		0.0025	0.00090	0.00050	ND	ND	0.0080	ND	0.0009	0.024
	11/01/16				6	3,770	8.56	ND	0.7900	0.014	4.20	4.200		0.200		0.0018	0.00080	0.00020	ND	0.00011	ND	ND	0.0063	0.027
	02/01/17				ND	3,710	7.99	ND	0.0047	ND	4.20	4.200		3.500		0.0017	0.00170	ND	ND	ND	ND	ND	0.0010	0.029
	05/01/17				NA	3,700	7.89	NA	NA	NA	NA	NA		NA		NA	NA	NA	NA	NA	NA	NA	NA	0.023
	08/28/17		29.7		10	3,340	8.42	< 0.02	0.0260	0.021	2.50	0.130	0.100	0.750	3.40	0.0021	0.00050	0.00330	< 0.00002	< 0.00004	0.0066	< 0.0001	< 0.0000	0.023
	11/20/17		15.4		< 5	3,570	8.48	< 0.02	0.0064	< 0.001	3.90	< 0.010	< 0.048	0.370	4.30	0.0013	0.00072	< 0.00020	< 0.00002	< 0.00008	< 0.0019	< 0.0001	< 0.0001	0.024
	02/20/18		12.1		< 5	3,600	8.44	< 0.02	0.0640	< 0.001	5.00	< 0.010	< 0.048	< 0.050	5.00	0.0006	0.00067	< 0.00003	< 0.00002	< 0.00004	< 0.0009	< 0.0001	< 0.0000	0.027
	06/25/18		24.4		ND	3,840	8.25	< 0.02	0.0180	0.045	3.10	ND		2.100		0.0014	0.00040	ND	ND	ND	ND	ND	ND	0.024
	08/27/18		22.4		< 5	3,850	7.77	< 0.02	0.0260	< 0.001	3.30	< 0.010	< 0.048	0.860	4.20	0.0015	0.00047	< 0.00003	< 0.00002	< 0.00004	< 0.0009	< 0.0001	< 0.00005	0.019
	11/26/18		17.3		< 5	3,810	8.52	< 0.02	0.0350	0.014	4.10	< 0.010	0.310	< 0.050	4.10	0.0029	0.00070	< 0.00003	< 0.00002	< 0.00004	< 0.0009	< 0.0001	< 0.00005	0.025
	02/19/19		13.1		< 5	3,790	8.36	< 0.02	0.4200	< 0.006	4.40	< 0.010	< 0.048	< 0.050	4.40	0.0014	0.00097	< 0.00003	< 0.00002	< 0.00004	< 0.0009	< 0.0001	< 0.00005	0.026
	05/20/19		17.9		< 5	3,920	8.35	< 0.02	0.0180	< 0.001	4.20	< 0.010	< 0.048	0.140	4.40	0.0017	0.00075	< 0.00003	0.00007	< 0.00004	< 0.0009	< 0.0001	< 0.00005	0.025
	08/19/19		26.6		< 5	3,590	8.30	< 0.050	0.0180	< 0.010	3.20	< 0.100	< 0.100	0.230	3.50	0.0012	0.00054	< 0.00020	0.00010	< 0.00010	< 0.0050	< 0.0002	< 0.0008	0.021
	11/18/19		17.9		< 5	3,850	8.46	< 0.050	0.0180	< 0.010	4.60	< 0.100	< 0.100	< 0.100	4.60	0.0009	0.00059	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	< 0.0008	0.025
	02/24/20		18.5		< 5	4,090	8.36	< 0.050	0.0180	0.021	4.40	< 0.100	< 0.100	< 0.100	4.40	0.0018	0.00082	< 0.00020	< 0.00005	< 0.00010	0.0073	< 0.0002	< 0.0008	0.024
	05/18/20		24.0		< 5	4,240	8.43	< 0.050	0.0200	< 0.010	4.20	< 0.100	< 0.100	< 0.100	4.20	0.0012	0.00061	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	< 0.0008	0.026
	08/24/20		30.2		< 5	3,890	8.48	0.050	0.0300	< 0.010	3.20	< 0.100	< 0.100	< 0.100	3.20	0.0013	0.00048	< 0.00020	< 0.00005	< 0.00010	< 0.0050	0.0002	< 0.0008	0.020
	11/23/20		14.5		5	3,900	8.09	< 0.050	0.0150	< 0.010	4.70	< 0.100	< 0.100	< 0.100	4.80	0.0011	0.00054	< 0.00020	< 0.00005	< 0.00020	< 0.0100	< 0.0002	< 0.0020	0.021
	02/09/21		12.3		8	3,460	8.20	0.074	0.0310	0.019	4.00	< 0.100	< 0.100	0.580	4.60	0.0033	0.00100	0.00037	< 0.00005	< 0.00020	0.0130	< 0.0002	< 0.0020	0.022
	04/12/21		17.0		< 5	3,970	8.27	< 0.050	0.0100	< 0.010	4.10	0.160	< 0.100	0.230	5.60	0.0014	0.00061	< 0.00020	< 0.00005	< 0.00020	< 0.0100	< 0.0002	< 0.0020	0.021
	08/16/21		28.6		< 5	3,930	7.77	0.160	0.0110	0.023	1.10	< 0.300	0.130	1.600	3.10	0.0060	0.00050	0.00130	< 0.00005	0.00020	0.0160	< 0.0002	0.0027	0.020
	10/06/21		20.2		< 5	3,820	8.42	< 0.050	0.0320	0.025	3.60	< 0.100	< 0.047	< 0.100	3.70	0.0021	0.00077	0.00032	< 0.00005	< 0.00020	< 0.0100	< 0.0002	< 0.0020	0.022
	01/19/22		14.6		< 10	3,750	7.95	< 0.069	< 0.0500	0.127	4.15	< 0.100	0.074	1.090	5.24	0.0303	< 0.00125	< 0.00125	< 0.00032	< 0.00125	0.0133	< 0.0013	0.0204	0.021
	04/19/22		20.8		30	3,190	8.45	0.229	< 0.0500	0.236	2.92	< 0.100	0.057	1.630	4.55	0.0044	0.00157	< 0.00125	< 0.00032	< 0.00125	0.0128	< 0.0013	0.0138	NA
	07/20/22		29.9		< 5	3,900	7.00	< 0.069	< 0.0500	0.306	3.24	< 0.100	< 0.100	1.040	4.28	0.0014	< 0.00125	< 0.00125	< 0.00032	< 0.00125	0.0101	< 0.0013	0.0138	NA
	10/17/22		21.5		< 6	3,620	8.38	NA	0.0025	0.020	4.16	< 0.100	NA	NA	4.66	< 0.0050	< 0.00300	< 0.00030	< NA	< 0.00050	< 0.0050	< 0.0050	0.0052	0.019
	01/24/23		11.9		< 6	3,340	8.26	NA	0.0065	0.039	3.94	< 0.100	< 0.100	0.202	4.32	< 0.0150	< 0.00900	< 0.00090	< 0.00032	< 0.00150	< 0.0150	< 0.0150	< 0.0150	0.018
	04/24/23		25.6		< 6	3,660	8.59	NA	0.0020	0.056	4.30	< 0.100	NA	NA	4.52	< 0.0500	< 0.03000	< 0.00300	< NA	< 0.00250	< 0.0500	< 0.0500	< 0.0500	0.018
	Median		**18.5**		**< 5**	**4,065**	**8.20**	**< 0.05**	**0.0100**	**< 0.012**	**4.16**	**< 0.100**	**< 0.100**	**0.290**	**4.28**	**< 0.0020**	**0.00078**	**0.00030**	**< 0.00005**	**< 0.00010**	**< 0.0050**	**< 0.0002**	**0.0042**	**0.023**
	Maximum		**34.5**		**30**	**5,250**	**8.99**	**0.23**	**11.0**	**< 0.306**	**14.00**	**4.200**	**0.350**	**3.700**	**8.21**	**0.0530**	**0.03000**	**0.00330**	**0.00032**	**< 0.00250**	**< 0.5000**	**< 0.0500**	**0.0500**	**0.033**
	Minimum		**6.3**		**< 5**	**2,210**	**6.83**	**< 0.02**	**< 0.0020**	**< 0.001**	**< 0.08**	**< 0.010**	**< 0.047**	**< 0.007**	**1.91**	**0.0005**	**0.00030**	**< 0.00002**	**< 0.00002**	**< 0.00004**	**< 0.0003**	**< 0.0001**	**< 0.00005**	**0.001**

Location	Date	Selenium Dissolved mg/L	Selenium (SDSU)[c] mg/L	Aluminum mg/L	Antimony mg/L	Arsenic mg/L	Barium mg/L	Beryllium mg/L	Bicarbonate Alkalinity as HCO3 mg/L	Boron mg/L	Bromide mg/L	Carbonate Alkalinity as CaCO3 mg/L	Calcium mg/L	Chlorate mg/L	Chloride mg/L	Cyanide mg/L	Copper Dissolved mg/L	Fluoride mg/L	Iron mg/L	Lead Dissolved mg/L	Magnesium mg/L	Manganese mg/L	Potassium mg/L
Monson Channel	10/25/00[e]					0.009																	
	01/18/01					0.012							480	0.19									
	04/25/01					0.016							430	0.20									
	07/30/01					0.015							440	0.22									
	10/24/01					0.012							440	0.43									
	01/23/02					0.026																	
	04/24/02					0.030																	
	07/24/02					0.013							430	0.23									
	10/23/02					0.020							430	0.29									
	01/22/03					0.018							400	0.55									
	04/23/03					0.014							430	0.41									
	07/23/03					0.019							370	0.40									
	10/22/03					0.017							480	0.33									
	01/21/04					0.020							450	0.34									
	04/21/04					0.021							440	0.32									
	07/21/04					0.017							430	0.97									
	10/27/04					0.019							440	0.28									
	01/26/05					0.021							430	0.31									
	04/19/05					NS																	
	07/20/05					0.019							420	0.72									
	10/26/05					0.014							410	0.39									
	01/19/06					0.012								0.46									
	04/18/06					0.012								0.44									
	07/27/06					0.016								0.35									
	10/25/06					0.016								5.90									
	01/23/07					0.013							400	0.65									
	04/18/07					0.014							400	0.49									
	07/18/07					0.015							400	0.34									
	10/24/07					0.014							390	0.54									
	01/22/08					0.015							410	0.50									
	04/23/08					0.012							430	0.58									
	07/23/08					0.016							410	0.42									
	10/22/08		0.020			0.024							430	0.44									
	01/28/09		0.017			0.013							380	0.52									
	04/29/09		0.018			0.013							390	0.57									
	07/27/09		NA			0.013							400	0.44									
	10/20/09		0.019			0.013							420	0.43									
	01/26/10		0.019			0.013							420	0.47									
	04/20/10		0.018			0.007							380	2.10									
	07/20/10		0.022	0.059		0.014	0.021			1.8			390	0.41			0.00013		0.052	< 0.0002		0.0027	
	10/26/10		0.024	0.023		0.008	0.026			1.6			470	0.43			0.00078		0.026	< 0.0004		0.0081	
	01/31/11		0.024	0.190		0.011	0.023			1.7			440	0.52			0.00270		0.200	< 0.0010		0.0081	
	05/24/11		0.021	0.059		0.013	0.017			1.7			410	0.43			0.00130		0.150	< 0.0002		0.0031	
	08/29/11		0.020	0.030	< 0.0005	0.013	0.029	< 0.0001	210	1.5	0.86	< 2	380	0.41	330		0.00095	0.58	0.050	< 0.0002	290	0.0030	31
	11/22/11		0.020	0.090	< 0.0005	0.012	0.024	< 0.0001	240	1.7	0.87	< 2	420	0.44	350		0.00170	0.55	0.110	0.0003	310	0.0042	28
	02/27/12		0.020	< 0.005	< 0.0005	0.012	0.020	< 0.0001	220	1.4	0.79	< 2			380		0.00059	0.57	< 0.020	< 0.0002	280	0.0003	27
	05/22/12		0.019	0.080	< 0.0005	0.011	0.031	< 0.0001	210	1.5	0.81	< 2			330		0.00084	0.53	0.091	< 0.0002	290	0.0041	28
	08/27/12		NA	0.051	< 0.0005	0.011	0.031	< 0.0001	200	1.6	0.90	< 2			360		0.00089	0.53	0.085	< 0.0002	270	0.0093	32
	11/19/12		NA	0.014	< 0.0005	0.012	0.020	< 0.0001	230	1.5	0.82	< 2			350		0.00090	0.65	< 0.020	< 0.0002	261	0.0010	28
	02/25/13		NA	0.023	< 0.0005	0.012	0.025	< 0.0001	260	1.6	0.91	< 2	423	0.48	360		0.00150	0.53	0.027	0.0002	298	0.0017	26
	05/20/13		NA	0.030	< 0.0005	0.011	0.022	< 0.0001	220	1.5	0.91	< 2	426	0.26	380		0.00100	0.56	0.032	< 0.0002	306	0.0024	30
	08/12/13		NA	0.059	< 0.0005	0.009	0.026	< 0.0001	200	1.4	0.90	< 2	416	0.34	360		0.00280	0.62	0.110	< 0.0002	289	0.0093	31
	12/02/13		NA	0.009	< 0.0005	0.013	0.020	< 0.0001	150	1.6	0.76	40	411	0.30	340		0.00088	0.52	< 0.020	< 0.0002	285	0.0021	30
	02/24/14		NA	0.011	< 0.0005	0.012	0.018	< 0.0001	240	1.6	0.80	3	426	0.39	330		0.00180	0.50	0.021	< 0.0002	302	0.0019	28
	05/27/14		NA	0.011	< 0.0005	0.009	0.022	< 0.0001	200	1.8	0.90	140	441	0.52	370		0.00210	0.44	0.052	< 0.0002	304	0.0011	30
	08/26/14		NA	0.036	< 0.0005	0.011	0.026	< 0.0001	230	1.4	0.95	< 2	425	0.35	350		0.00099	0.42	0.033	< 0.0002	301	0.0039	30
	11/19/14		NA	0.070	< 0.0005	0.009	0.026	< 0.0001	210	1.3	0.85	< 2	392	0.27	330		0.00120	0.44	0.130	< 0.0002	241	0.0025	27
	03/24/15		NA	0.012	< 0.0005	0.012	0.023	< 0.0001	260	1.7	0.82	18	421	0.53	360		0.00220	0.46	< 0.020	< 0.0002	286	0.0010	29
	06/09/15		NA	0.027	< 0.0010	0.009	0.029	< 0.0002	180	1.5	0.99	< 2	384	0.46	340		0.00130	0.46	< 0.0400	0.0019	244	0.0019	27
	08/17/15		NA	0.045	< 0.0005	0.012	0.032	< 0.0001	240	1.6	0.80	< 2	395	0.26	310		0.00090	0.53	0.0590	< 0.0002	284	0.0120	30
	11/16/15		NA	0.033	< 0.0005	0.025	0.021	< 0.0001	200	1.8	0.68	170	396	0.43	310		0.00160	0.63	0.0830	< 0.0002	257	0.0030	43
	02/22/16		NA	0.060	< 0.0005	0.011	0.029	< 0.0001	260	1.4	0.71	210	439	0.29	330		0.00088	0.33	0.0680	< 0.0002	269	0.0030	27
	06/27/16		NA	0.035	< 0.0005	0.012	0.028	< 0.0001	190	1.7	0.82	< 2	354	0.19	340		< 0.00013	0.13	0.0430	< 0.0002	301	0.0013	35
	08/01/16		NA	ND		ND	0.010	0.036	ND	230	1.4	0.82	ND	368	0.24	320		0.00100	0.68	0.1500	ND	261	0.0054	25
	11/01/16		NA	ND		ND	0.009	0.030	ND	240	1.6	0.83	ND	386	0.30	350		0.00140	ND	0.0880	ND	288	0.0019	32
	02/01/17		NA	ND		ND	0.011	0.035	ND	260	1.5	0.76	ND	362	0.60	320		0.00130	0.58	0.0380	ND	265	0.0024	29
	05/01/17		NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	361	0.28	NA		NA	NA	NA	NA	NA	NA	NA
	08/28/17			0.069	< 0.0000	0.009	0.046	< 0.00003	230	1.7	0.70	4	354	0.40	270		0.00150	< 0.20	0.0750	< 0.00003	243	0.0047	29
	11/20/17			0.082	< 0.0001	0.011	0.029	< 0.0002	220	1.5	0.72	< 1	351	0.30	260		0.00110	< 0.20	0.0400	< 0.0001	249	0.0017	31
	02/20/18			0.006	< 0.0000	0.010	0.028	< 0.00003	220	1.6	0.77	< 1	370	0.40	280		0.00050	< 0.20	< 0.0009	< 0.00003	254	0.0012	29
	06/25/18			0.009	ND		0.011	0.025	ND	190	1.6	0.80	ND	344	0.27	220		0.00110	ND	ND	ND	254	0.0006	32
	08/27/18			0.023	< 0.00005		0.010	0.024	< 0.00003	160	1.7	0.77	< 1	361	0.45	270		0.00120	< 0.20	0.0200	< 0.00003	259	0.0032	37
	11/26/18			0.013	< 0.00005		0.011	0.024	< 0.00003	170	1.6	0.80	21	355	0.28	360		0.00200	< 0.40	< 0.0009	< 0.00003	257	0.0013	33
	02/19/19			0.014	< 0.00005		0.012	0.026	< 0.00003	230	1.6	0.73	29	420	0.32	270		0.00110	< 0.20	< 0.0009	< 0.00003	269	0.0023	32
	05/20/19			0.016	< 0.00005		0.014	0.028	< 0.00003	240	1.5	0.79	< 1	410	0.86	320		0.00150	< 0.20	< 0.0009	< 0.00003	279	0.0020	32
	08/19/19			0.016	< 0.0005		0.011	0.031	< 0.0001	220	1.5	0.77	< 2	334	0.29	340		< 0.00050	< 0.20	< 0.0200	< 0.0002	263	0.0013	29
	11/18/19			0.021	< 0.0005		0.011	0.019	< 0.0001	220	1.5	0.82	< 2	383	0.34	380		0.00070	< 0.40	< 0.0210	< 0.0002	271	0.0013	33
	02/24/20	0.026		0.022	< 0.0005		0.014	0.029	< 0.0001	250	1.7	0.90	< 2	408	0.43	390		0.00160	< 0.18	0.0260	< 0.0002	293	0.0090	33
	05/18/20	0.025		0.015	< 0.0005		0.014	0.019	< 0.0001	200	1.7	0.91	14	423	0.37	300		0.00120	< 0.18	< 0.0200	< 0.0002	312	0.0012	34
	08/24/20	0.021		0.007	< 0.0005		0.012	0.020	< 0.0001	150	1.6	0.83	11	377	0.34	360		0.00120	< 0.09	< 0.0200	< 0.0002	275	0.0006	33
	11/23/20	0.024		0.025	< 0.0005		0.013	0.019	< 0.0001	180	1.7	0.78	< 5	452	0.32	340		0.00120	< 0.18	0.0320	< 0.0002	305	0.0018	33
	02/09/21	0.019		0.053	< 0.0005		0.012	0.029	< 0.0001	270	1.4	0.72	< 5	373	0.38	310		0.00180	< 0.18	0.0860	< 0.0002	259	0.0057	27
	04/12/21	0.019		0.020	< 0.0005		0.011	0.019	< 0.0001	260	1.6	0.81	< 5	381	0.38	380		0.00150	< 0.18	< 0.0200	< 0.0002	280	0.0013	29
	08/16/21	0.019		0.020	0.0008		0.011	0.035	< 0.0001	220	1.7	0.87	< 5	402	0.28	360		0.00540	< 0.18	0.0750	0.0004	270	0.0630	30
	10/06/21	0.018		0.120	< 0.0005		0.011	0.025	< 0.0001	210	1.6	0.76	< 5	416	0.39	370		0.00110	< 0.18	0.1300	< 0.0002	281	0.0066	33
	01/19/22	0.027		0.115	< 0.0013		0.010	0.021	< 0.0013	246	1.6	0.76	NA	431	0.28	338		0.03040	0.53	< 0.1000	< 0.0013	240	0.0050	30
	04/19/22	0.021		0.088	< 0.0033		0.010	0.027	< 0.0013	220	1.5	0.52	NA	372	0.23	290		0.00316	1.49	< 0.1000	0.0014	191	0.0250	21
	07/20/22	0.018		0.050	< 0.0013		0.011	0.018	< 0.0013	186	1.3	0.62	NA	417	0.25	311		0.00130	NA	< 0.1000	0.0013	218	< 0.0013	28
	10/17/22	0.020		0.008	< 0.0004		0.010	< 0.020	< 0.0004	167	NA	0.71	6.750	398	NA	326		0.00500	0.44	< 0.1000	0.0003	257	< 0.0050	33
	01/24/23	0.018		0.035	< 0.0012		0.011	< 0.060	< 0.0012	192	NA	0.68	< 2.000	369	NA	309		0.01500	0.46	< 0.0500	0.0009	243	< 0.0150	27
	04/24/23	0.018		0.159	< 0.0040		0.011	< 0.200	< 0.0040	146	NA	0.76	24.200	412	NA	283		0.02500	0.44	< 0.2330	0.0015	266	< 0.0500	30
	Median	**0.020**	**0.020**	**0.029**	**< 0.00050**		**0.012**	**0.026**	**< 0.00010**	**220**	**1.6**	**0.80**	**< 2**	**410**	**0.39**	**338**		**0.00120**	**0.44**	**0.05**	**< 0.00020**	**270**	**0.0025**	**30**
	Maximum	**0.027**	**0.024**	**0.190**	**< 0.00400**		**0.030**	**0.200**	**< 0.00400**	**270**	**1.8**	**0.99**	**210**	**480**	**5.90**	**390**		**0.03040**	**1.49**	**0.2330**	**0.00190**	**312**	**0.0630**	**43**
	Minimum	**0.018**	**0.017**	**< 0.005**	**< 0.00005**		**0.007**	**0.017**	**< 0.00003**	**146**	**1.3**	**0.52**	**< 1**	**334**	**0.19**	**220**		**< 0.00013**	**0.09**	**< 0.0009**	**< 0.00003**	**191**	**0.0003**	**21**

Location	Date	Silica mg/L	Sodium mg/L	Sulfate mg/L	Thallium mg/L	Zinc Dissolved mg/L	BOD mg/L	COD mg/L	Apparent Color ACU	Turbidity NTU	Phenol mg/L	Total Petroleum Hydrocarbons mg/L	Total Chlorine mg/L	Conductance mmhos/cm	Fecal Coliform MPN/100 mL	Fecal Strep. MPN/100 mL	Total Coliform MPN/100 mL	Salmonella MPN/100 mL	VOC # detects	SOC # detects	Pesticides # detects	Herbicides # detects
Monson Channel	10/25/00[e]									0.13				4.42								
	01/18/01									0.37				5.18	20							
	04/25/01									1.20				5.03	545							
	07/30/01									2.26				5.01	20							
	10/24/01									2.27				5.01	230							
	01/23/02									2.95				5.80	20							
	04/24/02									0.96				5.65	660							
	07/24/02									3.10				4.74	15						0	0
	10/23/02									1.20				3.96	2,220						0	0
	01/22/03									4.56				4.97	185						0	0
	04/23/03									0.72				1.27	260						0	0
	07/23/03									0.42				4.92	8,600						0	0
	10/22/03									1.15				5.00	2,300						0	0
	01/21/04									0.29				4.97	< 200						0	0
	04/21/04									0.40				5.14	740						0	0
	07/21/04									1.49				5.06	< 400							
	10/27/04									0.90				4.91	700							
	01/26/05									17.90				4.72	< 200							
	04/19/05									0.37				5.11	< 200							
	07/20/05									0.85				5.01	13,100				3	0	1	0
	10/26/05									1.02				4.88	9,200				0	1	0	0
	01/19/06									0.77				5.09	< 200				0	0	0	0
	04/18/06									0.77				5.03	< 200				0	0	0	1
	07/27/06									13.90				4.98	6,400				2	0	0	0
	10/25/06									1.35				5.01	7,800				3	1	0	0
	01/23/07	47								0.63				4.93	< 400				4	0	0	2
	04/18/07	39								0.44				4.98	< 100				4	0	1	0
	07/18/07	48								1.46				4.75	3,800							
	10/24/07	50								1.19				4.76	< 1,000							
	01/22/08	43								1.67				4.77	1,360							
	04/23/08	42								0.66				4.83	< 400							
	07/23/08	46								3.45				4.58	860				2	1	1	0
	10/22/08	68								NA				4.82	1,150				2	0	1	1
	01/28/09	46								1.00				4.49	< 667				3	0	1	0
	04/29/09	39								NA				4.65	< 500				2	0	0	0
	07/27/09	46								1.16				4.64	6,200				0	0	0	0
	10/20/09	50								4.42				4.61	2,050				1	1	0	0
	01/26/10	51								1.20				4.51	< 4,000				0	0	0	0
	04/20/10	43								0.60				4.54	< 200				0	0	0	0
	07/20/10	49				< 0.0050				2.69	< 0.005			4.95	680							
	10/26/10	54				< 0.0050				1.30	< 0.005			4.65	713							
	01/31/11	47				< 0.0250				2.40	< 0.005			6.20	< 1,000							
	05/24/11	43				< 0.0050				0.33	< 0.001			4.64	174							
	08/29/11	44	350	2,100	< 0.0002	0.0052				21.40	< 0.001			4.30	940	1,040						
	11/22/11	44	380	2,100	< 0.0002	0.0060				0.76	< 0.001			4.34	50	2,700			3	4	1	1
	02/27/12		380	2,300	< 0.0002	< 0.0050				0.71	< 0.001			4.59	170	117			4	4	1	1
	05/22/12		390	2,204	< 0.0002	< 0.0050				7.25	< 0.001			4.35	317	510			1	6	1	1
	08/27/12		380	2,400	< 0.0002	< 0.0050				13.20	< 0.001			4.49	8,800	350			1	1	0	0
	11/19/12		320	2,300	< 0.0002	< 0.0050				0.72	< 0.001			4.39	200	197			1	0	0	0
	02/25/13	44	360	2,300	< 0.0002	0.0630				0.45	< 0.001			4.43	58	< 50			0	0	0	0
	05/20/13	31	410	2,400	< 0.0002	< 0.0050				0.08	< 0.001			4.74	460	267			0	1	0	0
	08/12/13	46	380	2,300	< 0.0002	< 0.0050				2.06	< 0.001			4.59	1,220	163			1	1	0	0
	12/02/13	49	400	2,100	< 0.0002	< 0.0050				0.55	< 0.001			4.42	88	< 2			1	0	0	0
	02/24/14	46	400	2,200	< 0.0002	< 0.0050				1.17	< 0.001			3.03	< 67	< 13			0	1	0	0
	05/27/14	48	420	2,600	< 0.0002	< 0.0050				0.99	< 0.001			4.40	235	< 50			1	0	0	0
	08/26/14	50	390	2,300	< 0.0002	< 0.0050				2.62	< 0.001			4.38	3,500	< 40			0	0	0	0
	11/19/14	45	340	2,100	< 0.0002	< 0.0050				3.75	< 0.001			4.01	1,560	380			1	0	0	0
	03/24/15	43	380	2,500	< 0.0002	< 0.0050				1.42	< 0.001			4.49	58	200			2	0	0	0
	06/09/15	39	350	2,200	< 0.0004	< 0.0100				0.96	< 0.001			4.47	217	253			2	1	1	0
	08/17/15	56	350	2,100	< 0.0002	0.0090				6.22	< 0.001			4.37	22,000	600			2	0	0	0
	11/16/15	61	370	2,300	< 0.0002	< 0.0050				4.15	< 0.001			4.09	720	820			0	0	0	0
	02/22/16	36	330	2,100	< 0.0002	< 0.0050				4.51	< 0.001			4.32	440	660			1	0	0	0
	06/27/16	50	370	2,300	< 0.0002	0.0050				NA	< 0.001			4.31	NA	NA			1	0	0	0
	08/01/16	44	300	2,100	ND	ND				2.12				4.31	260	690			2		0	0
	11/01/16	48	330	2,100	ND	ND				2.24				4.24	66	240			0		0	0
	02/01/17	38	310	1,900	ND	0.0060				0.98				4.27	202	5000			2		0	0
	05/01/17	43	NA	NA	NA	NA				1.85				4.25	307	710			0		0	0
	08/28/17	45	320	1,500	< 0.00001	0.0052				6.45	< 0.0002			3.86	11,200				2	2	0	1
	11/20/17	45	320	1,700	< 0.00003	< 0.0019				1.61	< 0.0002			4.22	120				2	0	0	0
	02/20/18	43	330	1,600	< 0.00001	< 0.0009				0.77	< 0.002			4.34	92				1	0	0	0
	06/25/18	41	330	1,000	ND	ND				3.60				4.30	620				2	0	0	1
	08/27/18	45	340	1,900	< 0.00001	< 0.0009				1.22	< 0.0002			4.49	3,800				1	0	0	0
	11/26/18	45	320	2,200	< 0.00001	< 0.0009				2.41	< 0.0002			4.42	175				1	0	1	0
	02/19/19	47	330	1,600	< 0.00001	0.0056				1.00	< 0.0002			4.44	77				0	0	0	0
	05/20/19	44	350	1,900	< 0.00001	< 0.0009				0.61	< 0.0002			4.42	770				1	0	0	0
	08/19/19	45	310	1,700	< 0.0002	< 0.0050				1.54	< 0.001			4.16	540				0	1	0	0
	11/18/19	47	330	2,300	< 0.0002	< 0.0050				1.09	< 0.001			4.44	176				0	0	0	0
	02/24/20	51	340	2,600	< 0.0002	0.0070				1.30	< 0.001			4.64	590				2	1	0	0
	05/18/20	48	380	1,900	< 0.0002	< 0.0050				1.82	< 0.001			4.64	< 20				0	0	0	0
	08/24/20	49	330	1,900	< 0.0002	< 0.0050				1.10	< 0.001			4.47	440				4	0	0	0
	11/23/20	52	360	2,200	< 0.0002	< 0.0100				2.58	< 0.001			4.27	80				1	0	0	0
	02/09/21	44	330	2,000	< 0.0002	< 0.0100				2.40	< 0.001			4.00	860				3	1	1	1
	04/12/21	42	340	2,400	< 0.0002	< 0.0100				1.06	< 0.001			4.66	280				1	0	0	0
	08/16/21	42	340	2,200	< 0.0002	0.0100				281.00	< 0.0003			4.47	55,000				3	0	2	0
	10/06/21	45	340	2,200	< 0.0002	< 0.0100				0.98	< 0.0002			4.45	4,700				0	0	0	0
	01/19/22	44	345	407	< 0.0013	0.0148				NA	NA			4.14	197				1	1	0	0
	04/19/22	36	307	1,680	< 0.0013	0.0897				NA	NA			3.89	4,700				0	1	0	0
	07/20/22	39	304	2,070	< 0.0013	0.0147				1.000	NA			4.07	300				0	0	0	0
	10/17/22	42	304	2,090	< 0.0002	< 0.0050				6.000	0.0100			4.27	6,400				0	0	0	0
	01/24/23	39	299	1,800	< 0.0006	< 0.0150				5.030	NA			3.97	420				0	0	0	0
	04/24/23	40	323	1,700	< 0.0020	0.0250				7.320	NA			4.26	228				0	0	0	0
	Median	**45**	**340**	**2,100**	**< 0.00020**	**< 0.0050**				**1.21**	**< 0.0010**			**4.49**	**440**	**267**			**1**	**0**	**0**	**0**
	Maximum	**68**	**420**	**2,600**	**< 0.00200**	**0.0897**				**281.00**	**< 0.0100**			**6.20**	**55,000**	**5,000**			**4**	**6**	**2**	**2**
	Minimum	**31**	**299**	**407**	**< 0.00001**	**< 0.0009**				**0.08**	**< 0.0002**			**1.27**	**15**	**< 2**			**0**	**0**	**0**	**0**

Location	Date	Q cfs	Temp Deg C	Oil & Grease mg/L	TSS mg/L	TDS mg/L	pH [f]	Surfactants[d] (MBAS) mg/L	Ortho-Phosphate mg/L	Total Phosphate-Phosphorous mg/L	NO3-N[a] mg/L	NO2-N mg/L	NH3-N mg/L	TKN mg/L	Total Nitrogen mg/L	Copper mg/L	Chromium mg/L	Lead mg/L	Mercury mg/L	Cadmium mg/L	Zinc mg/L	Silver mg/L	Nickel mg/L	Selenium[b] mg/L
Burns Street Channel	07/27/06[c]		26.6			4,500	8.44		0.0040	0.017	6.55	< 0.08	< 0.080	0.260		0.00130	0.03000	< 0.00050			0.0031		0.00190	0.013
	10/25/06		22.0			5,400	8.59		< 0.0100	0.026	0.08	< 0.08	< 0.080	0.460		0.00090	0.01600	< 0.00050			0.0027		0.01000	0.010
	01/23/07		18.2			3,800	8.37		0.0030	< 0.010	6.55	< 0.08	< 0.080	0.410		< 0.00200	0.01300	< 0.00050			0.0024		< 0.00500	0.011
	04/18/07		21.7			3,700	8.17		0.0170	0.015	8.35	< 0.01	< 0.010	< 0.100		< 0.00100	0.00780	< 0.00020			< 0.0050		< 0.00080	0.010
	07/18/07		28.5			3,300	8.21		0.0150	0.012	7.68	< 0.10	< 0.100	0.160		0.01100	0.01300	< 0.00020			< 0.0050		< 0.00080	0.011
	10/27/07		25.9			4,900	8.31		0.0160	0.016	6.32	< 0.10	0.110	0.480		ND	0.01500	ND			ND		ND	0.012
	01/22/08		20.4			4,300	8.44		0.0070	0.018	6.32	< 0.10	0.120	< 0.100		< 0.00100	0.02400	< 0.00040			< 0.0100		0.00670	0.013
	04/23/08		23.2			4,200	8.24		0.0080	0.020	6.54	< 0.10	< 0.100	< 0.100		0.00130	0.01800	0.00020			< 0.5000		0.00090	0.011
	07/23/08		31.7			4,100	8.45		0.0090	0.032	5.42	< 0.10	< 0.100	0.870		0.00110	0.01400	< 0.00020			< 0.0050		0.00300	0.011
	10/22/08		18.6			4,400	8.21		0.0620	0.070	6.10	< 0.10	< 0.100	< 0.100		0.00080	0.02000	< 0.00020			< 0.0050		0.00400	0.010
	01/28/09		14.0			4,000	8.21		0.0160	0.015	7.00	< 0.10	< 0.100	< 0.050		0.00120	0.01600	< 0.00010			< 0.0001		0.00190	0.013
	04/29/09		12.3			4,300	8.62		0.0100	0.026	5.87	< 0.15	< 0.100	0.190		0.00120	0.01700	< 0.00020			0.0056		< 0.00080	0.014
	07/27/09		30.5			3,800	8.57		0.0120	0.023	5.30	< 0.03	< 0.045	0.430		0.00160	0.01900	0.00290			0.0054		0.00190	0.013
	10/20/09		14.9			3,800	8.24		0.0200	0.019	6.80	< 0.03	< 0.045	< 0.007		0.00080	0.00880	< 0.00002			< 0.0003		0.00110	0.012
	01/26/10		15.5			3,900	8.47		0.0180	< 0.001	6.36	< 0.03	< 0.045	< 0.007		0.00070	0.00940	< 0.00002			< 0.0003		< 0.00001	0.013
	04/20/10		23.1			3,700	8.51		0.0100	0.013	NA	< 0.03	< 0.045	0.310		0.00080	0.01100	< 0.00002			< 0.0003		0.00560	0.008
	07/20/10		28.8			3,900	8.52	< 0.05	0.0110	0.016	5.68	< 0.03	< 0.048	< 0.074		0.00140	0.02200	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.00660	0.001
	10/26/10		17.9			4,000	8.56	< 0.05	0.0130	0.013	6.36	< 0.10	< 0.100	< 0.100		0.00110	0.02000	< 0.00040	< 0.00005	0.00010	< 0.0050	< 0.0002	0.00460	0.001
	01/31/11		14.2			3,900	8.57	< 0.05	0.0140	0.015	6.82	< 0.10	< 0.100	< 0.100		< 0.00250	0.01100	< 0.00100	< 0.00005	< 0.00050	< 0.0250	< 0.0010	0.00690	0.010
	05/24/11		25.3			4,040	8.57	NA	0.0080	0.061	5.60	< 0.10	< 0.100	0.360		0.00120	0.02400	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.00590	0.011
	08/29/11		28.5		5		8.40	NA	0.0095	0.014	5.70	< 0.10	< 0.100	< 0.100	5.7	0.00095	0.01700	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.00120	
	11/22/11		16.3		5	3,860	8.52	NA	0.0440	0.043	6.00	< 0.10	< 0.100	< 0.100	6.0	0.00052	0.01600	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	< 0.00080	0.013
	02/27/12		11.8		6	4,000	8.54	< 0.05	0.0048	0.010	6.20	< 0.10	< 0.100	< 0.100	6.2	< 0.00050	0.01500	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0004	0.00081	0.013
	05/22/12		28.8		6	4,070	8.65	NA	0.0086	0.026	5.80	< 0.10	< 0.100	< 0.100	5.8	0.00088	0.02000	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.00170	0.012
	08/27/12		29.0		< 5	4,020	8.33	NA	0.0096	0.019	6.00	< 0.10	< 0.100	< 0.100	6.0	0.00059	0.01500	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.00100	0.012
	11/19/12		21.2		< 5	3,900	8.54	NA	0.0110	0.012	7.00	< 0.10	< 0.100	< 0.100	7.0	0.00130	0.01300	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	< 0.00080	0.011
	02/25/13		18.5		< 5	3,850	8.51	NA	0.0067	< 0.010	5.90	< 0.10	< 0.100	< 0.100	5.9	0.00052	0.00980	0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	< 0.00080	0.012
	05/20/13		23.3		5	3,860	8.62	NA	0.0060	0.013	5.10	< 0.10	< 0.100	< 0.100	5.2	0.00061	0.00650	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	< 0.00080	0.011
	08/12/13		27.5		< 5	3,610	8.46	< 0.05	0.0070	0.012	5.20	< 0.10	< 0.100	< 0.100	5.2	0.00160	0.05700	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.00830	0.011
	12/02/13		15.3		< 5	3,470	8.50	< 0.05	0.0140	0.010	5.90	< 0.10	< 0.100	< 0.100	5.9	< 0.00050	0.00500	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.01300	0.009
	02/24/14		18.3		< 5	3,350	8.31	< 0.05	0.0083	< 0.010	6.30	< 0.10	< 0.100	< 0.100	5.2	< 0.00050	0.00540	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	< 0.00080	0.011
	05/27/14		27.9		< 5	3,440	8.36	0.06	0.0084	0.040	4.90	< 0.10	< 0.100	0.130	5.1	0.00520	0.00430	0.00023	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.00570	0.010
	08/26/14		24.6		87	3,310	8.35	< 0.05	0.0094	0.140	23.00	< 0.30	< 0.100	< 0.100	5.2	0.00740	0.00740	0.00270	< 0.00005	< 0.00010	0.0300	< 0.0002	0.00400	0.008
	11/19/14		14.3		< 5	3,370	7.85	< 0.05	0.0100	0.022	5.70	< 0.10	< 0.100	< 0.100	5.7	0.00092	0.00470	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	0.00490	0.009
	03/24/15		19.2		< 5	3,250	8.45	0.05	0.0095	0.015	5.20	< 0.10	< 0.100	< 0.100	5.3	0.00054	0.00410	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	< 0.00080	0.008
	06/09/15		29.0		< 5	3,400	8.55	0.07	0.0110	0.011	4.70	< 0.10	< 0.100	0.330	5.1	0.00110	0.00360	< 0.00040	< 0.00005	< 0.00020	< 0.0100	< 0.0004	0.00160	0.010
	08/17/15		30.3		10	3,320	8.40	0.07	0.0140	0.040	4.40	< 0.10	< 0.100	0.260	4.7	0.00130	0.00420	0.00030	< 0.00005	< 0.00010	< 0.0050	< 0.0002	< 0.00080	0.012
	11/16/15		14.6		8	3,330	8.60	0.06	0.0110	0.010	5.30	0.15	< 0.100	< 0.100	5.5	0.00190	0.00490	< 0.00020	< 0.00005	< 0.00010	0.0050	< 0.0002	0.00610	0.013
	02/22/16		18.0		9	3,210	8.68	0.06	0.0070	0.040	5.30	< 0.10	< 0.100	< 0.100	5.3	0.00200	0.00510	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	< 0.00080	0.015
	08/01/16				6	3,210	6.63	ND	0.0058	ND	5.40	5.50		ND		0.01400	0.00470	0.00110	ND	ND	ND	ND	ND	0.013
	11/01/16				ND	3,350	8.71	0.05	0.4400	ND	6.40	6.40		ND		0.00100	0.00440	ND	ND	ND	ND	ND	0.00570	0.013
	02/01/17				7	3,160	8.75	ND	0.0066	ND	5.20	5.30		ND		0.00080	0.00420	ND	ND	ND	ND	ND	ND	0.011
	05/01/17				NA	2,390	8.33	NA	NA	NA	NA	NA		NA		NA	NA	NA	NA	NA	NA	NA	NA	0.013
	06/27/16		NA		< 5	3,250	8.50	< 0.05	0.0060	0.030	4.70	< 0.10	< 0.100	< 0.100	4.8	< 0.00050	0.00490	< 0.00020	< 0.00005	0.00010	< 0.0050	< 0.0002	0.00080	0.020
	08/28/17		26.4		< 5	3,370	8.41	< 0.02	0.0510	0.016	5.90	< 0.08	< 0.048	< 0.050	6.0	0.00068	0.00360	< 0.00003	< 0.00002	< 0.00004	< 0.0009	< 0.0001	< 0.00005	0.009
	11/20/17		14.8		< 5	3,380	8.42	< 0.02	0.0100	0.012	6.20	< 0.01	< 0.048	< 0.050	6.2	< 0.00026	0.00480	< 0.00006	< 0.00002	< 0.00008	< 0.0019	< 0.0001	< 0.00009	0.014
	02/20/18		15.2		< 5	3,360	8.67	< 0.02	0.0650	0.012	6.90	< 0.01	< 0.048	< 0.050	6.9	0.00052	0.00430	< 0.00003	< 0.00002	< 0.00004	< 0.0009	< 0.0001	< 0.00005	0.012
	06/25/18		30.2		5	3,290	8.60	< 0.02	0.0330	0.071	5.30	ND		1.100		0.70000	0.00520	ND	ND	ND	0.0160	ND	ND	0.012
	08/27/18		27.9		< 5	3,270	8.61	< 0.02	0.0430	0.020	5.60	< 0.01	< 0.048	< 0.050	5.6	0.00070	0.00420	< 0.00003	< 0.00002	< 0.00004	0.0053	< 0.0001	< 0.00005	0.009
	11/26/18		14.7		< 5	3,360	8.03	< 0.02	0.0910	0.011	6.00	< 0.01	< 0.048	< 0.050	6.0	0.00070	0.00460	0.00037	< 0.00002	< 0.00004	< 0.0009	< 0.0001	< 0.00005	0.012
	02/19/19		9.7		< 5	3,270	8.46	< 0.02	0.0820	< 0.001	6.00	< 0.01	< 0.048	< 0.050	3.1	0.00062	0.00450	< 0.00003	< 0.00002	< 0.00004	< 0.0009	< 0.0001	< 0.00005	0.011
	05/20/19		23.6		7	3,490	8.87	< 0.02	0.0370	0.012	6.10	< 0.01	< 0.048	0.068	6.8	0.00083	0.00550	< 0.00003	0.00008	< 0.00004	< 0.0009	< 0.0001	0.00100	0.012
	08/19/19		26.3		< 5	3,140	8.19	< 0.05	0.0330	0.013	6.10	< 0.10	< 0.100	< 0.100	6.2	0.00089	0.00610	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	< 0.00080	0.012
	11/18/19		13.0		< 5	3,320	8.04	< 0.05	0.0360	< 0.010	6.70	< 0.10	< 0.100	< 0.100	6.7	0.00055	0.00650	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	< 0.00080	0.013
	02/24/20		15.9		< 5	3,300	8.05	< 0.05	0.0290	< 0.010	6.30	< 0.10	< 0.100	< 0.100	6.4	0.00089	0.00480	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	< 0.00080	0.013
	05/18/20		20.6		< 5	3,000	8.32	< 0.05	0.0190	< 0.010	5.50	< 0.10	< 0.100	< 0.100	5.5	0.00093	0.00500	< 0.00020	< 0.00005	< 0.00010	0.0050	< 0.0002	< 0.00080	0.012
	08/24/20		25.0		10	3,450	8.06	< 0.05	0.0460	< 0.010	6.80	0.11	< 0.100	< 0.100	7.1	0.00096	0.00500	< 0.00020	< 0.00005	< 0.00010	< 0.0050	< 0.0002	< 0.00080	0.012
	11/23/20		31.0		< 5	3,360	8.49	< 0.05	0.0320	< 0.010	7.10	< 0.10	< 0.100	< 0.100	7.0	0.00064	0.00600	< 0.00020	< 0.00005	< 0.00020	< 0.0100	< 0.0002	< 0.00200	0.012
	02/09/21		9.6		< 5	3,260	8.04	< 0.05	< 0.0100	< 0.010	6.80	< 0.10	< 0.100	< 0.100	6.9	0.00084	0.00540	< 0.00020	< 0.00005	< 0.00020	< 0.0100	< 0.0002	< 0.00200	0.008
	04/12/21		21.9		10	3,290	8.78	< 0.05	0.0180	< 0.010	6.10	< 0.10	< 0.100	< 0.100	5.6	0.00064	0.00480	< 0.00020	< 0.00005	< 0.00020	< 0.0100	< 0.0002	< 0.00200	0.011
	08/16/21		26.1		< 5	3,320	8.21	< 0.05	0.0170	< 0.010	5.70	0.20	< 0.047	< 0.100	5.4	0.00150	0.00350	< 0.00020	< 0.00005	< 0.00020	< 0.0100	< 0.0002	< 0.00200	0.011
	10/06/21		19.2		< 5	3,280	8.38	< 0.05	0.0360	0.010	6.10	< 0.10	< 0.047	< 0.100	6.1	0.00064	0.00430	< 0.00020	< 0.00005	< 0.00020	< 0.0100	< 0.0002	< 0.00200	0.011
	01/19/22		22.3		< 10	3,060	8.47	< 0.07	< 0.0500	0.137	5.71	< 0.10	< 0.047	1.230	6.9	0.00304	0.00444	< 0.00125	< 0.00032	< 0.00125	0.0086	< 0.0013	0.01540	0.011
	04/19/22		25.2		< 10	3,480	8.50	0.37	< 0.0500	0.504	5.71	< 0.10	0.121	1.430	7.2	0.00208	0.00538	< 0.00125	< 0.00032	< 0.00125	0.0059	< 0.0013	0.01140	NA
	07/20/22		29.9		9	3,550	8.37	0.08	< 0.0500	0.314	4.11	< 0.10	0.272	1.150	5.3	0.00226	0.00396	< 0.00125	< 0.00032	< 0.00125	0.0074	< 0.0013	0.01020	NA
	10/17/22		26.5		< 6	3,120	8.74	NA	0.0042	0.021	5.46	< 0.10	NA	NA	6.1	0.00500	0.00470	< 0.00030	NA	< 0.00050	< 0.0050	< 0.0050	< 0.00500	0.011
	01/24/23		13.6		< 6	3,180	8.40	NA	< 0.0136	0.087	5.21	< 0.10	< 0.100	0.333	5.8	< 0.01500	< 0.00900	< 0.00090	< 0.00032	< 0.00150	0.0074	< 0.0150	< 0.01500	0.008
	04/24/23		25.2		< 6	3,260	8.46	NA	0.0048	0.051	4.71	< 0.10	NA	NA	4.9	< 0.05000	< 0.03000	< 0.00300	NA	< 0.00500	< 0.0500	< 0.0500	< 0.05000	< 0.010
	Median		**22.0**		**< 5**	**3,400**	**8.46**	**< 0.05**	**0.012**	**0.015**	**5.95**	**< 0.10**	**< 0.100**	**< 0.100**	**5.8**	**0.00096**	**0.00610**	**< 0.00020**	**< 0.00005**	**< 0.00010**	**< 0.0050**	**< 0.0002**	**0.00170**	**0.011**
	Maximum		**31.7**		**87**	**5,400**	**8.87**	**0.37**	**0.440**	**0.504**	**23.00**	**6.40**	**0.272**	**1.430**	**7.2**	**0.70000**	**0.05700**	**0.00300**	**0.00032**	**< 0.00500**	**< 0.5000**	**< 0.0500**	**0.05000**	**0.020**
	Minimum		**9.6**		**< 5**	**2,390**	**6.63**	**< 0.02**	**0.003**	**< 0.001**	**0.08**	**< 0.01**	**< 0.010**	**< 0.007**	**3.1**	**< 0.00026**	**0.00350**	**< 0.00002**	**< 0.00002**	**< 0.00004**	**< 0.0001**	**< 0.0001**	**< 0.00001**	**0.001**

Location	Date	Selenium Dissolved mg/L	Selenium (SDSU)[c] mg/L	Aluminum mg/L	Antimony mg/L	Arsenic mg/L	Barium mg/L	Beryllium mg/L	Bicarbonate Alkalinity as HCO3 mg/L	Boron mg/L	Bromide mg/L	Carbonate Alkalinity as CaCO3 mg/L	Calcium mg/L	Chlorate mg/L	Chloride mg/L	Cyanide mg/L	Copper Dissolved mg/L	Fluoride mg/L	Iron mg/L	Lead Dissolved mg/L	Magnesium mg/L	Manganese mg/L	Potassium mg/L
Burns Street Channel	07/27/06[c]					0.0500								1.10									
	10/25/06					0.0430								0.64									
	01/23/07					0.0380							390	0.99									
	04/18/07					0.0330							390	0.41									
	07/18/07					0.0370							420	0.38									
	10/27/07					0.0400							410	0.75									
	01/22/08					0.0340							410	0.59									
	04/23/08					0.0370							450	0.56									
	07/23/08					0.0450							380	0.80									
	10/22/08		0.0114			0.0540							380	1.10									
	01/28/09		0.0112			0.0480							380	0.90									
	04/29/09		0.0113			0.0440							340	0.84									
	07/27/09		NA			0.0444							370	0.83									
	10/20/09		0.0106			0.0490							340	1.10									
	01/26/10		0.0095			0.0500							350	0.89									
	04/20/10		0.0104			0.0300							340	1.00									
	07/20/10		0.0121	0.0140		0.0510	0.037			2.60			350	1.10			0.00110		< 0.001	< 0.0002		0.0020	
	10/26/10		0.0129	0.0270		0.0330	0.038			2.20			390	0.87			0.00120		< 0.001	< 0.0004		0.0074	
	01/31/11		0.0106	< 0.0001		0.0430	0.035			2.40			380	0.98			< 0.00250		< 0.001	< 0.0010		< 0.0001	
	05/24/11		0.0108	0.0220		0.0490	0.027			2.70			350	1.10			0.00110		0.074	< 0.0002		0.0024	
	08/29/11		0.0107	0.0100	< 0.0005	0.0550	0.035	< 0.0001	160	2.40	1.20	< 2	350	0.96	750		0.00096	1.30	< 0.020	< 0.0002	190	0.0018	38
	11/22/11		0.0107	0.0100	< 0.0005	0.0500	0.034	< 0.0001	140	2.40	1.20	< 2	360	1.20	770		< 0.00050	1.10	< 0.020	< 0.0002	200	0.0015	35
	02/27/12		0.0113	0.0100	< 0.0005	0.0520	0.031	< 0.0001	170	2.30	1.20	< 2			770		< 0.00050	1.10	< 0.020	< 0.0002	200	0.0009	36
	05/22/12		0.0101	0.0500	< 0.0005	0.0500	0.037	< 0.0001	140	2.40	1.30	< 2			810		< 0.00050	1.10	0.055	< 0.0002	190	0.0040	37
	08/27/12		NA	< 0.0050	< 0.0005	0.0480	0.048	< 0.0001	160	2.60	1.20	< 2			800		< 0.00050	1.10	< 0.020	< 0.0002	200	0.0039	40
	11/19/12		NA	0.0080	< 0.0005	0.0500	0.050	< 0.0001	170	2.20	1.20	15			750		0.00094	1.30	< 0.020	< 0.0002	176	0.0017	36
	02/25/13		NA	0.0100	< 0.0005	0.0560	0.056	< 0.0001	120	2.20	1.20	18	349	1.50	670		0.00060	1.10	< 0.020	< 0.0002	189	0.0011	34
	05/20/13		NA	0.0140	< 0.0005	0.0580	0.058	< 0.0001	140	2.10	1.20	16	315	2.10	720		0.00090	1.10	< 0.020	< 0.0002	176	0.0034	33
	08/12/13		NA	0.0110	< 0.0005	0.0410	0.033	< 0.0001	150	2.00	1.00	< 2	308	0.76	660		0.15000	1.10	0.045	< 0.0002	168	0.0013	34
	12/02/13		NA	0.0060	< 0.0005	0.0520	0.030	< 0.0001	200	2.10	0.91	< 2	319	1.20	620		< 0.00050	1.00	< 0.020	< 0.0002	173	0.0018	35
	02/24/14		NA	0.0100	< 0.0005	0.0530	0.030	< 0.0001	180	2.00	0.86	< 2	307	1.40	580		< 0.00050	1.10	< 0.020	< 0.0002	166	0.0010	31
	05/27/14		NA	0.0360	< 0.0005	0.0340	0.033	< 0.0001	150	2.40	1.00	< 2	319	1.60	600		0.00220	1.20	0.071	< 0.0002	172	0.0033	34
	08/26/14		NA	2.7000	< 0.0005	0.0550	0.087	< 0.0001	180	1.90	0.88	< 2	332	1.60	620		0.00052	0.98	2.100	< 0.0002	179	0.1100	36
	11/19/14		NA	0.0110	< 0.0005	0.0410	0.031	< 0.0001	170	2.00	0.96	< 2	308	1.10	630		0.00098	0.98	0.037	< 0.0002	159	0.0021	33
	03/24/15		NA	0.0100	< 0.0005	0.0500	0.035	< 0.0001	170	2.00	0.98	18	307	2.60	620		< 0.00050	0.95	< 0.020	< 0.0002	157	0.0008	31
	06/09/15		NA	0.0210	< 0.0010	0.0460	0.036	< 0.0002	130	2.00	1.10	6	304	2.50	570		< 0.00100	1.00	< 0.040	< 0.0004	155	0.0019	31
	08/17/15		NA	0.1600	< 0.0005	0.0430	0.047	< 0.0001	120	2.30	1.10	6	292	1.30	540		0.00079	1.00	0.120	< 0.0002	161	0.0280	32
	11/16/15		NA	0.0350	< 0.0005	0.0370	0.034	< 0.0001	150	2.20	0.95	130	294	2.60	560		0.00160	0.89	0.080	< 0.0002	157	0.0035	33
	02/22/16		NA	0.0650	< 0.0005	0.0530	0.036	< 0.0001	110	2.00	0.74	90	294	2.60	580		0.00120	1.00	0.066	< 0.0002	146	0.0040	33
	08/01/16		NA	ND	ND	0.0510	0.034	ND	150	1.90	0.96	ND	263	1.70	570		ND	1.10	ND	ND	151	0.0017	27
	11/01/16		NA	ND	ND	0.0360	0.032	ND	200	2.10	0.91	ND	301	1.40	560		0.00090	ND	0.031	ND	174	0.0015	36
	02/01/17		NA	ND	ND	0.0440	0.031	ND	130	1.90	0.87	ND	288	1.90	460		0.00080	ND	ND	ND	168	0.0011	36
	05/01/17		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	216	7.20	NA		NA	NA	NA	NA	NA	NA	NA
	06/27/16		NA	0.0240	< 0.0005	0.0540	0.039	< 0.0001	140	2.30	0.99	< 2	244	2.50	580		< 0.00013	0.50	< 0.020	< 0.0002	152	0.0024	34
	08/28/17			0.0150	< 0.0000	0.0480	0.039	< 0.00003	200	2.30	0.94	< 1	327	1.60	420		0.00065	< 0.20	< 0.001	< 0.0000	177	0.0054	40
	11/20/17			0.0130	< 0.0001	0.0450	0.034	< 0.0002	180	2.10	0.87	< 1	308	1.90	410		< 0.00026	< 0.20	< 0.002	< 0.0001	174	0.0008	41
	02/20/18			0.0110	< 0.0000	0.0440	0.033	< 0.00003	160	2.10	0.93	12	326	2.20	390		< 0.00130	< 0.20	< 0.001	< 0.00003	180	0.0010	40
	06/25/18			0.0060	ND	0.0460	0.031	ND	55	2.20	0.93	34	252	3.00	450		0.23000	ND	ND	ND	146	0.0017	38
	08/27/18			0.0120	< 0.00005	0.0460	0.032	< 0.00003	110	2.20	1.70	33	280	3.3	400		0.00059	< 0.20	< 0.001	< 0.00003	161	0.0015	41
	11/26/18			0.0077	< 0.00005	0.0470	0.030	< 0.00003	140	2.10	1.60	31	283	2.6	580		0.00058	< 0.40	< 0.001	< 0.00003	163	0.0009	39
	02/19/19			0.0068	< 0.00005	0.0460	0.034	< 0.00003	170	2.00	0.75	25	315	2.8	440		0.00082	< 0.40	< 0.001	< 0.00003	159	0.0012	37
	05/20/19			0.0059	< 0.00005	0.0440	0.033	< 0.00003	100	2.10	0.90	< 1	336	1.6	450		0.00075	< 0.40	< 0.001	< 0.00003	176	0.0011	39
	08/19/19			0.0140	< 0.0005	0.0470	0.034	< 0.0001	190	2.00	0.97	< 2	260	3.4	600		0.00062	< 0.40	< 0.020	< 0.0002	154	0.0022	32
	11/18/19			0.0120	< 0.0005	0.0460	0.032	< 0.0001	200	2.00	1.10	< 2	303	2.1	600		< 0.00050	< 0.40	< 0.020	< 0.0002	176	0.0014	40
	02/24/20	0.013		0.0071	< 0.0005	0.0410	0.033	< 0.0001	200	2.10	0.92	< 2	317	2.7	580		0.00068	< 0.18	< 0.020	< 0.0002	173	0.0035	38
	05/18/20	0.011		0.0130	< 0.0005	0.0410	0.043	< 0.0001	180	1.90	0.81	5.2	278	2.6	410		0.00120	< 0.18	< 0.020	< 0.0002	157	0.0026	33
	08/24/20	0.013		0.0090	< 0.0005	0.0540	0.037	0.0001	200	2.30	1.00	< 5.0	291	4.3	500		0.00077	< 0.09	< 0.020	< 0.0002	161	0.0031	38
	11/23/20	0.013		< 0.0200	< 0.0005	0.0500	0.031	< 0.0001	180	2.30	0.93	< 5.0	323	3.2	580		< 0.00050	< 0.09	< 0.020	< 0.0002	174	0.0012	34
	02/09/21	0.012		< 0.0200	< 0.0005	0.0480	0.033	< 0.0001	220	2.20	0.95	< 5.0	317	3.7	580		0.00068	1.10	< 0.020	< 0.0002	178	0.0021	37
	04/12/21	0.011		< 0.0200	< 0.0005	0.0440	0.029	< 0.0001	140	2.00	1.00	< 5.0	299	4.0	620		0.00065	1.00	< 0.020	< 0.0002	165	0.0010	30
	08/16/21	0.011		< 0.0200	< 0.0005	0.0470	0.035	< 0.0001	220	2.10	1.20	< 5.0	313	3.7	590		0.00150	< 0.09	0.020	0.0004	172	0.0038	32
	10/06/21	0.011		< 0.0200	< 0.0005	0.0480	0.033	< 0.0001	220	2.10	0.84	< 5.0	334	3.3	570		0.00058	< 0.09	< 0.020	< 0.0002	181	0.0032	38
	01/19/22	0.010		0.0653	< 0.0013	0.0367	0.032	< 0.0013	120	2.05	0.91	NA	311	3.3	569		0.00247	1.07	< 0.100	< 0.0013	147	0.0067	34
	04/19/22	0.010		0.0539	< 0.0013	0.0440	0.030	< 0.0013	90	2.42	0.85	NA	338	4.8	588		0.00199	0.92	< 0.100	< 0.0013	165	0.0049	36
	07/20/22	0.012		0.3800	< 0.0013	0.0327	0.036	< 0.0013	74	1.78	0.75	NA	326	2.6	549		0.02890	N/A	0.124	< 0.0013	145	0.0106	31
	10/17/22	0.011		0.0147	< 0.0004	0.0440	0.030	< 0.0004	33	NA	0.91	37.9	275	NA	543		< 0.00500	1.07	< 0.100	< 0.0003	154	< 0.0050	38
	01/24/23	0.009		< 0.0150	< 0.0012	0.0380	< 0.060	< 0.0012	151	NA	0.78	< 2.0	335	NA	463		< 0.01500	1.11	< 0.050	< 0.0009	178	< 0.0150	38
	04/24/23	0.007		< 0.0500	< 0.0040	0.0330	< 0.200	< 0.0040	144	NA	0.77	10.1	352	NA	389		< 0.02500	1.10	< 0.100	< 0.0015	187	< 0.0500	38
	Median	**0.011**	**0.0108**	**0.0140**	**< 0.00050**	**0.0460**	**0.034**	**< 0.00010**	**151**	**2.10**	**0.95**	**< 5**	**321**	**1.60**	**580**		**0.00081**	**1.00**	**< 0.020**	**< 0.00020**	**172**	**0.0021**	**36**
	Maximum	**0.013**	**0.0129**	**2.7000**	**< 0.00400**	**0.0580**	**0.200**	**< 0.00400**	**220**	**2.70**	**1.70**	**130**	**450**	**7.20**	**810**		**0.23000**	**1.30**	**2.100**	**< 0.00150**	**200**	**0.1100**	**41**
	Minimum	**0.007**	**0.0095**	**< 0.0001**	**< 0.00005**	**0.0300**	**0.027**	**< 0.00003**	**33**	**1.78**	**0.74**	**< 1**	**216**	**0.38**	**389**		**< 0.00013**	**< 0.09**	**< 0.001**	**< 0.00003**	**145**	**< 0.0001**	**27**

Location	Date	Silica mg/L	Sodium mg/L	Sulfate mg/L	Thallium mg/L	Zinc Dissolved mg/L	BOD mg/L	COD mg/L	Apparent Color ACU	Turbidity NTU	Phenol mg/L	Total Petroleum Hydrocarbons mg/L	Total Chlorine mg/L	Conductance mmhos/cm	Fecal Coliform MPN/100 mL	Fecal Strep. MPN/100 mL	Total Coliform MPN/100 mL	Salmonella MPN/100 mL	VOC # detects	SOC # detects	Pesticides # detects	Herbicides # detects
Burns Street Channel	07/27/06ᶜ									1.14				5.72	880				1	0	1	0
	10/25/06									0.66				5.49	420				4	0	0	0
	01/23/07	61								1.02				5.18	< 200				3	0	0	2
	04/18/07	54								0.33				4.98	< 100				3	0	1	0
	07/18/07	59								0.50				5.14	4,700							
	10/27/07	63								0.42				4.97	< 1,000							
	01/22/08	59								1.60				3.15	< 400							
	04/23/08	70								4.31				5.36	< 200							
	07/23/08	56								2.69				5.14	410				3	0	1	0
	10/22/08	69								NA				6.15	< 2,000				2	0	1	0
	01/28/09	68								5.00				5.12	< 400				3	0	2	0
	04/29/09	53								NA				5.31	1,150				2	0	1	0
	07/27/09	62								0.98				5.23	< 4,700				3	0	1	0
	10/20/09	66								0.71				4.88	< 500				0	0	0	0
	01/26/10	67								0.43				4.84	< 400				0	0	1	0
	04/20/10	61								0.93				4.68	< 200				1	0	0	0
	07/20/10	62				< 0.0050				2.89	< 0.005			5.41	3,100				14	3	1	2
	10/26/10	70				< 0.0050				0.55	< 0.005			5.07	1,100				3	3	1	0
	01/31/11	65				< 0.0250				1.53	< 0.005			5.50	6,400				7	5	0	0
	05/24/11	58				< 0.0050				2.29	< 0.001			5.16	270				9	4	0	2
	08/29/11	63	550	1,800	< 0.0002	< 0.0050				1.87	< 0.001			4.84	6,900	2,100			3	5	1	1
	11/22/11	66	570	1,600	< 0.0002	< 0.0050				0.46	< 0.001			4.85	86	134			4	4	1	1
	02/27/12		640	1,800	< 0.0002	< 0.0050				3.83	< 0.001			5.37	87	94			3	4	1	1
	05/22/12		640	1,700	< 0.0002	< 0.0050				4.24	< 0.001			5.26	850	103			3	4	1	1
	08/27/12		680	1,800	< 0.0002	< 0.0050				1.20	< 0.001			5.03	1,280	290			1	1	0	0
	11/19/12		560	1,700	< 0.0002	< 0.0050				1.01	< 0.001			4.94	< 200	< 80			2	1	2	0
	02/25/13	63	540	1,600	< 0.0002	< 0.0050				0.51	< 0.001			4.55	< 50	< 50			1	0	1	0
	05/20/13	66	620	1,700	< 0.0002	< 0.0050				1.37	< 0.001			4.88	390	< 100			0	1	0	0
	08/12/13	73	560	1,500	< 0.0002	0.0190				0.71	< 0.001			4.63	3,300	72			1	1	0	0
	12/02/13	76	530	1,600	< 0.0002	< 0.0050				0.61	< 0.001			4.35	< 40	< 40			3	2	0	0
	02/24/14	68	530	1,600	< 0.0002	< 0.0050				0.39	< 0.001			4.45	42	66			2	0	0	0
	05/27/14	67	550	1,700	< 0.0002	< 0.0050				1.56	< 0.001			4.84	1,360	107			3	0	0	0
	08/26/14	100	540	1,700	< 0.0002	< 0.0050				64.40	< 0.001			4.35	12,800	820			3	1	0	0
	11/19/14	75	540	1,600	< 0.0002	< 0.0050				0.38	< 0.001			4.43	< 400	< 200			1	0	1	0
	03/24/15	65	480	1,700	< 0.0002	< 0.0050				0.35	< 0.001			4.23	90	112			2	0	1	0
	06/09/15	62	460	1,600	< 0.0004	< 0.0100				0.65	< 0.001			4.30	287	< 100			2	0	1	0
	08/17/15	72	510	1,900	< 0.0002	< 0.0050				5.26	< 0.001			4.34	8,000	390			1	1	2	0
	11/16/15	74	500	1,500	< 0.0002	< 0.0050				0.54	< 0.001			4.36	480	217			1	1	0	0
	02/22/16	56	460	1,500	< 0.0002	< 0.0050				2.43	< 0.001			4.19	< 67	< 67			2	1	2	0
	08/01/16	62	430	1,500	ND	ND				1.68				4.41	230	163			2		1	0
	11/01/16	67	420	1,600	ND	ND				0.46				4.14	112	310			1		1	0
	02/01/17	58	410	1,300	ND	ND				0.67				4.11	320	130			1		1	0
	05/01/17	45	NA	NA	NA	NA				6.14				3.27	4,700	2200			0		0	0
	06/27/16	69	510	1,600	< 0.0002	< 0.0050				NA	< 0.001			4.25	NA	NA			1	0	0	0
	08/28/17	75	460	1,200	< 0.00001	< 0.0009				1.36	< 0.0002			4.02	3,700				4	0	1	0
	11/20/17	66	440	1,200	< 0.00003	< 0.0019				0.42	< 0.0002			4.42	340				3	0	1	0
	02/20/18	69	450	1,300	< 0.00001	< 0.0009				1.41	< 0.0002			4.39	240				1	0	0	0
	06/25/18	62								2.60				3.99	5,040				3	0	1	0
	08/27/18	69	450	1,400	< 0.00001	< 0.0009				2.47	< 0.0002			4.38	19,200				2	0	0	0
	11/26/18	68	440	1,600	< 0.00001	< 0.0009				1.09	< 0.0002			4.40	1,220				0	0	0	0
	02/19/19	65	420	1,300	< 0.00001	< 0.0009				0.31	< 0.0002			4.40	< 20				0	0	1	0
	05/20/19	59	470	1,400	< 0.00001	< 0.0009				0.78	< 0.0002			4.54	880				2	0	0	0
	08/19/19	63	440	1,500	< 0.0002	< 0.0050				1.45	< 0.001			4.19	11,200				0	0	0	0
	11/18/19	70	450	1,700	< 0.0002	< 0.0050				1.26	< 0.001			4.41	< 20				1	1	0	0
	02/24/20	67	410	1,800	< 0.0002	< 0.0050				0.89	< 0.001			4.30	104				2	0	0	0
	05/18/20	57	420	1,100	< 0.0002	< 0.0050				1.43	< 0.001			3.96	1,400				0	0	0	0
	08/24/20	67	480	1,200	< 0.0002	< 0.0050				4.59	< 0.001			3.81	3,400				2	0	0	0
	11/23/20	57	500	1,600	< 0.0002	< 0.0100				1.20	< 0.001			4.54	1,340				1	0	0	0
	02/09/21	68	480	1,500	< 0.0002	< 0.0100				0.60	< 0.001			4.36	172				1	0	1	0
	04/12/21	57	460	1,600	< 0.0002	< 0.0100				0.57	< 0.001			4.49	< 20				1	0	0	0
	08/16/21	72	460	1,600	< 0.0002	< 0.0100				2.18	< 0.0002			4.34	3,900				0	0	0	0
	10/06/21	68	470	1,500	< 0.0002	< 0.0100				1.96	< 0.0002			4.36	7,500				1	1	0	0
	01/19/22	58	459	1,670	< 0.0013	0.0086				NA	NA			3.56	166				2	1	0	0
	04/19/22	60	551	1,570	< 0.0013	0.0086				NA	NA			4.52	135				0	1	0	0
	07/20/22	55	481	1,570	< 0.0013	< 0.0180				5.00	NA			3.35	582				0	0	0	0
	10/17/22	61	490	1,440	< 0.0002	< 0.0050				4.00	< 0.001			4.21	1,633				0	0	0	0
	01/24/23	59	389	1,570	< 0.0006	< 0.0150				1.82	NA			4.42	< 20				0	0	0	0
	04/24/23	59	361	1,460	< 0.0020	< 0.0250				7.22	NA			4.43	223				0	0	0	0
	Median	**65**	**480**	**1,600**	**< 0.00020**	**< 0.0050**				**1.20**	**< 0.0010**			**4.44**	**410**	**112**			**2**	**0**	**0**	**0**
	Maximum	**100**	**680**	**1,900**	**< 0.00200**	**< 0.0250**				**64.40**	**< 0.0050**			**6.15**	**19,200**	**2,200**			**14**	**5**	**2**	**2**
	Minimum	**45**	**361**	**1,100**	**< 0.00001**	**< 0.0009**				**0.31**	**< 0.0002**			**3.15**	**< 20**	**< 40**			**0**	**0**	**0**	**0**

Location	Date	Q cfs	Temp Deg C	Oil & Grease mg/L	TSS mg/L	TDS mg/L
Western Tributary at Cheyenne	08/27/91	0.7	25.9	< 3	4	930
	04/06/92	1.0				1,350
	09/13/92	1.7	26.2	< 3	6	3,420
	03/07/93	4.4	29.1			1,370
	08/23/93	0.9	29.0	< 3	21	1,085
	04/03/94	1.6	8.6			1,260
	08/28/94	6.0	22.4	< 3	18	735
	03/26/95	5.7	10.1			1,340
	08/28/95	2.0	21.9	< 3	4	1,225
	09/10/96	0.9	27.3	< 3	22	1,515
	09/24/97	1.5	20.3	< 3	9	1,195
	No Sample Taken after 1997 Dry Weather Monitoring Program					
	Median	**1.6**	**24.1**	**< 3**	**9**	**1,260**
	Maximum	**6.0**	**29.1**	**< 3**	**22**	**3,420**
	Minimum	**0.7**	**8.6**	**< 3**	**4**	**735**

Location	Date	pH [f]	Surfactants (MBAS) mg/L	Ortho-Phosphate mg/L	Total Phosphate-Phosphorous mg/L	NO3-N mg/L	NO2-N mg/L	NH3-N mg/L
Western Tributary at Cheyenne	08/27/91	8.5	0.07	0.46	0.20	0.72		< 0.05
	04/06/92	8.6				2.50		
	09/13/92	8.3	< 0.05	< 0.05	< 0.05	1.80		< 0.05
	03/07/93	8.6				2.70		
	08/23/93	8.4	0.25	< 0.05	< 0.05	0.38		0.13
	04/03/94	8.6				1.30		
	08/28/94	8.3	0.06	< 0.05	< 0.05	0.50		< 0.05
	03/26/95	8.3				2.40		
	08/28/95	7.8	0.07	< 0.05	< 0.05	< 0.40		< 0.05
	09/10/96	8.4	< 0.05	< 0.05	< 0.05	1.10		< 0.05
	09/24/97	8.5	0.13	0.01	< 0.01	2.60		< 0.05
		No Sample Taken after 1997 Dry Weather Monitoring Program						
	Median	**8.4**	**0.07**	**0.05**	**0.05**	**1.30**		**< 0.05**
	Maximum	**8.6**	**0.25**	**0.46**	**0.20**	**2.70**		**0.13**
	Minimum	**7.8**	**< 0.05**	**0.01**	**< 0.01**	**0.38**		**< 0.05**

Location	Date	TKN mg/L	Total Nitrogen mg/L	Copper mg/L	Chromium mg/L	Lead mg/L	Mercury mg/L	Cadmium mg/L
Western Tributary at Cheyenne	08/27/91	1.10	1.8	< 0.01	< 0.01	< 0.002	< 0.0002	< 0.005
	04/06/92			< 0.01				
	09/13/92	< 1.00	1.8-2.8	< 0.01	< 0.01	< 0.002	< 0.0002	< 0.005
	03/07/93			< 0.01				
	08/23/93	< 1.00	1.4	< 0.01	< 0.01	< 0.002	< 0.0002	< 0.005
	04/03/94			< 0.01				
	08/28/94	1.50	2.1	< 0.01	< 0.01	< 0.002	< 0.0002	< 0.005
	03/26/95			< 0.01				
	08/28/95	1.00	1.4	< 0.01	< 0.01	< 0.002	< 0.0002	< 0.005
	09/10/96	< 1.00	2.1	< 0.01		< 0.001		
	09/24/97	1.20	3.8	< 0.01		< 0.100		
		No Sample Taken after 1997 Dry Weather Monitoring Program						
	Median	**< 1.00**	**1.9**	**< 0.01**	**< 0.01**	**< 0.002**	**< 0.0002**	**< 0.005**
	Maximum	**1.50**	**3.8**	**< 0.01**	**< 0.01**	**< 0.100**	**< 0.0002**	**< 0.005**
	Minimum	**< 1.00**	**1.4**	**< 0.01**	**< 0.01**	**< 0.001**	**< 0.0002**	**< 0.005**

Location	Date	Zinc mg/L	Silver mg/L	Nickel mg/L	Selenium[b] mg/L	Arsenic mg/L	Boron mg/L	Cyanide mg/L
Western Tributary at Cheyenne	08/27/91	0.022	< 0.01	< 0.04		< 0.005	0.46	0.006
	04/06/92						0.54	< 0.005
	09/13/92	< 0.020	< 0.01	< 0.04		0.024	0.41	< 0.005
	03/07/93						0.54	< 0.005
	08/23/93	0.049	< 0.01	< 0.02	< 0.005	< 0.005	0.44	< 0.005
	04/03/94						0.44	0.010
	08/28/94	0.113	< 0.01	< 0.01	< 0.005	< 0.005	0.25	< 0.005
	03/26/95						0.51	0.006
	08/28/95	< 0.020	< 0.01	< 0.01	< 0.005	< 0.005	0.59	< 0.005
	09/10/96	< 0.020					0.45	< 0.005
	09/24/97	< 0.020					0.67	< 0.005
		No Sample Taken after 1997 Dry Weather Monitoring Program						
	Median	**< 0.020**	**< 0.01**	**< 0.02**	**< 0.005**	**< 0.005**	**0.46**	**< 0.005**
	Maximum	**0.113**	**< 0.01**	**< 0.04**	**< 0.005**	**0.024**	**0.67**	**0.010**
	Minimum	**< 0.020**	**< 0.01**	**< 0.01**	**< 0.005**	**< 0.005**	**0.25**	**< 0.005**

Location	Date	Copper Dissolved mg/L	Lead Dissolved mg/L	Zinc Dissolved mg/L	BOD mg/L	COD mg/L	Apparent Color ACU	Turbidity NTU
Western Tributary at Cheyenne	08/27/91				< 6	16	20	1.2
	04/06/92							
	09/13/92				< 6	14	18	0.8
	03/07/93							
	08/23/93				< 6	16	25	9.7
	04/03/94							
	08/28/94				< 6	22	23	6.0
	03/26/95							
	08/28/95				< 6	23	20	0.9
	09/10/96				< 6	< 10	16	6.1
	09/24/97				< 6	< 10	20	4.3
		No Sample Taken after 1997 Dry Weather Monitoring Program						
	Median				**< 6**	**16**	**20**	**4.3**
	Maximum				**< 6**	**23**	**25**	**9.7**
	Minimum				**< 6**	**< 10**	**16**	**0.8**

Location	Date	Phenol mg/L	Total Petroleum Hydrocarbons mg/L	Total Chlorine mg/L	Conductance mmhos	Fecal Coliform MPN/100 mL	Fecal Strep. MPN/100 mL	Total Coliform MPN/100 mL
Western Tributary at Cheyenne	08/27/91	< 0.01		0.05	1.50	12,500	< 16	
	04/06/92	< 0.01		0.20		30		500
	09/13/92	< 0.01		0.10	1.23	700	1,050	
	03/07/93	0.20		< 0.10	15.68	70		1,100
	08/23/93	0.20		0.10	1.92	950,024	5,700	
	04/03/94	< 0.01		< 0.10	19.86	55		4,650
	08/28/94	< 0.01		< 0.01	1.12	2,650	8,100	
	03/26/95	< 0.01		< 0.10	1.81	1,300	170	9,000
	08/28/95	< 0.01		0.28	1.78	1,700	2,550	
	09/10/96	< 0.01	< 1.0	0.10	1.72	1,750	305	
	09/24/97	< 0.01	< 1.0	0.26	0.03	1,950	1,400	
		No Sample Taken after 1997 Dry Weather Monitoring Program						
	Median	**< 0.01**	**< 1.0**	**0.10**	**1.75**	**1,700**	**1,225**	**2,875**
	Maximum	**0.20**	**< 1.0**	**0.28**	**19.86**	**950,024**	**8,100**	**9,000**
	Minimum	**< 0.01**	**< 1.0**	**< 0.01**	**0.03**	**30**	**< 16**	**500**

Location	Date	Salmonella MPN/100 mL	VOC # detects	SOC # detects	Pesticides # detects	Herbicides # detects
Western Tributary at Cheyenne	08/27/91					
	04/06/92					
	09/13/92					
	03/07/93					
	08/23/93					
	04/03/94					
	08/28/94	7.0				
	03/26/95					
	08/28/95	3.6				
	09/10/96	< 2.2			0	0
	09/24/97	3.7			0	0
	No Sample Taken after 1997 Dry Weather Monitoring Program					
	Median	**3.7**			**0**	**0**
	Maximum	**7.0**			**0**	**0**
	Minimum	**< 2.2**			**0**	**0**

Location	Date	Q cfs	Temp Deg C	Oil & Grease mg/L	TSS mg/L	TDS mg/L	pH [f]	Surfactants (MBAS) mg/L
Flamingo at Swenson	06/24/91	0.7	23.5		4	2,500	7.4	< 0.05
	07/14/91	0.8	25.6	< 3	9	2,700	7.8	0.07
	08/26/91	0.7	25.5	< 3	8	2,575	7.8	< 0.05
	09/13/92	3.6	26.2	< 3	5	2,730	8.3	0.11
	08/23/93	1.5	26.2	< 3	12	2,540	8.1	0.07
	04/03/94	2.6				2,705	8.0	
	08/28/94	4.0	28.6	< 3	40	2,645	8.1	0.07
	03/26/95	3.7	21.0			2,800	8.1	
	08/28/95	2.0	27.7	< 3	7	2,635	8.3	0.06
	09/10/96	2.6	30.4	< 3	12	2,470	8.4	0.08
	09/24/97	9.4	27.2	< 3	16	1,835	8.4	0.13
		No Sample Taken after 1997 Dry Weather Monitoring Program						
	Median	**2.6**	**26.2**	**< 3**	**9**	**2,635**	**8.1**	**0.07**
	Maximum	**9.4**	**30.4**	**< 3**	**40**	**2,800**	**8.4**	**0.13**
	Minimum	**0.7**	**21.0**	**< 3**	**4**	**1,835**	**7.4**	**< 0.05**

Location	Date	Ortho-Phosphate mg/L	Total Phosphate-Phosphorous mg/L	NO3-N mg/L	NO2-N mg/L	NH3-N mg/L	TKN mg/L	Total Nitrogen mg/L	Copper mg/L	Chromium mg/L
Flamingo at Swenson	06/24/91	< 0.05		9.20		< 0.05	9.35	18.5	< 0.01	< 0.010
	07/14/91	0.05	0.08	10.00		< 0.05	5.00	14.7	0.01	< 0.010
	08/26/91	< 0.05	< 0.05	8.50		< 0.05	< 1.00	9.0	< 0.01	0.014
	09/13/92	< 0.05	< 0.05	6.65		< 0.05	< 1.00	6.7-7.7	< 0.01	< 0.010
	08/23/93	< 0.05	< 0.05	4.35		0.12	< 1.00	5.4	< 0.01	< 0.010
	04/03/94			8.20					< 0.01	
	08/28/94	0.05	< 0.05	8.90		< 0.05	1.00	10.4	< 0.01	< 0.010
	03/26/95			8.90					< 0.01	
	08/28/95	< 0.05	< 0.05	6.80		< 0.05	< 1.00	7.8	< 0.01	< 0.010
	09/10/96	0.07	0.09	2.90		0.08	1.30	4.2	< 0.01	
	09/24/97	< 0.01	< 0.01	4.30		< 0.05	0.50	< 5.3	< 0.01	
		No Sample Taken after 1997 Dry Weather Monitoring Program								
	Median	**< 0.05**	**< 0.05**	**8.20**		**< 0.05**	**< 1.00**	**8.4**	**< 0.01**	**< 0.010**
	Maximum	**0.07**	**0.09**	**10.00**		**0.12**	**9.35**	**18.5**	**0.01**	**0.014**
	Minimum	**< 0.01**	**< 0.01**	**2.90**		**< 0.05**	**0.50**	**4.2**	**< 0.01**	**< 0.010**

Location	Date	Lead mg/L	Mercury mg/L	Cadmium mg/L	Zinc mg/L	Silver mg/L	Nickel mg/L	Selenium[b] mg/L	Arsenic mg/L	Boron mg/L
Flamingo at Swenson	06/24/91		< 0.0002	< 0.005	0.025	< 0.01	< 0.04			0.60
	07/14/91	< 0.002	< 0.0002	< 0.005	< 0.020	< 0.01	< 0.04		< 0.005	0.61
	08/26/91	< 0.002	< 0.0002	< 0.005	0.033	< 0.01	< 0.04		0.006	0.70
	09/13/92	< 0.010	< 0.0002	< 0.005	< 0.020	< 0.01	< 0.04		< 0.005	0.80
	08/23/93	< 0.002	< 0.0002	< 0.005	< 0.020	< 0.01	< 0.02	< 0.015	0.004	0.70
	04/03/94									0.64
	08/28/94	0.015	< 0.0002	< 0.005	0.015	< 0.01	< 0.01	0.010	< 0.010	0.76
	03/26/95									0.76
	08/28/95	< 0.002	< 0.0002	< 0.005	< 0.020	< 0.01	< 0.01	0.008	< 0.005	0.75
	09/10/96	< 0.001			< 0.020					0.58
	09/24/97	< 0.100			0.021					0.68
		No Sample Taken after 1997 Dry Weather Monitoring Program								
	Median	**< 0.002**	**< 0.0002**	**< 0.005**	**< 0.020**	**< 0.01**	**< 0.04**	**0.010**	**< 0.005**	**0.7**
	Maximum	**< 0.100**	**< 0.0002**	**< 0.005**	**0.033**	**< 0.01**	**< 0.04**	**< 0.015**	**< 0.010**	**0.8**
	Minimum	**< 0.001**	**< 0.0002**	**< 0.005**	**0.015**	**< 0.01**	**< 0.01**	**0.008**	**0.004**	**0.6**

Location	Date	Cyanide mg/L	Copper Dissolved mg/L	Lead Dissolved mg/L	Zinc Dissolved mg/L	BOD mg/L	COD mg/L	Apparent Color ACU	Turbidity NTU	Phenol mg/L	Total Petroleum Hydrocarbons mg/L
Flamingo at Swenson	06/24/91	< 0.005						10.0	0.7	< 0.005	
	07/14/91	0.006				< 6	15	13.0	1.2	0.025	
	08/26/91	< 0.005				< 6	11	10.0	0.9	< 0.010	
	09/13/92	< 0.005				< 6	13	10.0	0.4	< 0.010	
	08/23/93	< 0.005				< 6	16	18.0	3.6	0.100	
	04/03/94	0.005								< 0.010	
	08/28/94	< 0.005				< 6	23	13.0	12.6	< 0.010	
	03/26/95	< 0.005								< 0.010	
	08/28/95	0.006				< 6	14	12.5	0.6	< 0.010	
	09/10/96	< 0.005				< 6	10	18.0	2.7	< 0.010	< 1.0
	09/24/97	< 0.005				< 6	< 10	7.5	1.7	< 0.010	< 1.0
		No Sample Taken after 1997 Dry Weather Monitoring Program									
	Median	**< 0.005**				**< 6**	**13**	**12.5**	**1.2**	**< 0.010**	**< 1.0**
	Maximum	**0.006**				**< 6**	**23**	**18.0**	**12.6**	**0.100**	**< 1.0**
	Minimum	**< 0.005**				**< 6**	**< 10**	**7.5**	**0.4**	**< 0.005**	**< 1.0**

Location	Date	Total Chlorine mg/L	Conductance mmhos	Fecal Coliform MPN/100 mL	Fecal Strep. MPN/100 mL	Total Coliform MPN/100 mL	Salmonella MPN/100 mL	VOC # detects	SOC # detects	Pesticides # detects	Herbicides # detects
Flamingo at Swenson	06/24/91	0.03	2.70	< 16	< 16						
	07/14/91	0.09	3.50	< 16	< 16						
	08/26/91	0.08	3.20	9,000	< 16						
	09/13/92	0.10	3.42	500	200						
	08/23/93	< 0.10	1.90	300,250	1,875	500					
	04/03/94	< 0.10	14.59	190		9,500					
	08/28/94	< 0.01	3.19	2,690	1,300		< 2.0				
	03/26/95	< 0.10	2.91	500	350	5,000					
	08/28/95	0.03	2.92	2,900	1,250		< 2.2				
	09/10/96	0.05	2.65	4,700	335		2.0			0	0
	09/24/97	0.25	0.06	900	230		< 2.2			0	0
		No Sample Taken after 1997 Dry Weather Monitoring Program									
	Median	**0.09**	**2.92**	**900**	**283**	**5,000**	**2.1**			**0**	**0**
	Maximum	**0.25**	**14.59**	**300,250**	**1,875**	**9,500**	**< 2.2**			**0**	**0**
	Minimum	**< 0.01**	**0.06**	**< 16**	**< 16**	**500**	**< 2.0**			**0**	**0**

Location	Date	Q cfs	Temp Deg C	Oil & Grease mg/L	TSS mg/L	TDS mg/L	pH [f]	Surfactants (MBAS) mg/L	Ortho-Phosphate mg/L	Total Phosphate-Phosphorous mg/L
Duck Creek at Russell or Patrick or Sunset	06/23/91	0.8	22.0	< 3	20	6,700	8.2	< 0.05	< 0.050	< 0.010
	08/26/91									
	09/13/92	9.8	24.7	< 3	7	3,370	8.3	< 0.05	< 0.050	< 0.050
	08/23/93	3.3	24.2	< 3	15	5,710	8.2	0.06	< 0.050	< 0.050
	04/03/94	4.4				5,865	8.2			
	08/28/94	2.0	22.3	< 3	31	5,375	8.0	< 0.05	< 0.050	< 0.050
	03/26/95	3.4	19.1			6,210	7.9			
	08/28/95	3.0	23.1	< 3	15	5,815	8.2	< 0.05	0.055	< 0.050
	09/10/96	2.2	27.9	< 3	14	4,490	8.1	< 0.05	< 0.050	< 0.050
	09/24/97	4.1	24.4	< 3	27	4,185	8.1	0.09	0.010	0.050
	09/24/98	6.6		< 3	17	3,510				< 0.020
	11/04/99	5.1		< 3	11	3,540				< 0.020
	11/05/99	5.1		< 3	26	2,620				< 0.020
	10/03/00	3.3		5	< 10	4,920				0.020
	10/04/00	3.3		< 3	13	4,920				0.020
	10/17/00[e]									
	12/18/00	2.5		< 3	< 10	4,780				7.700
	01/18/01		9.0			5,060	8.2		0.013	0.116
	04/25/01		21.0			5,140	8.3			0.020
	07/30/01	5.3	25.9			5,160	8.1			0.020
	10/24/01	6.6	18.7			5,050	8.5		0.030	0.020
	01/23/02	6.5								
	04/24/02	5.1								
	07/24/02	5.5	26.8			5,020	8.1		0.021	
	10/23/02	6.2	20.9			5,140	8.2		0.020	0.025
	01/22/03		10.4			5,150	7.9	0.06	0.037	0.051
	04/23/03		4.6		29	5,000	7.9		0.023	
	07/23/03		25.7			5,220	7.9		0.008	
	10/22/03									
	01/21/04		10.0			NA	NS		NA	NA
	04/21/04		15.0			NA	NS		NA	NA
		No Sample Taken after 2004 Dry Weather Monitoring Program								
	Median	**4.4**	**22.0**	**< 3**	**15**	**5,055**	**8.1**	**< 0.05**	**0.034**	**< 0.025**
	Maximum	**9.8**	**27.9**	**< 5**	**31**	**6,700**	**8.5**	**0.09**	**0.055**	**7.700**
	Minimum	**0.8**	**4.6**	**< 3**	**7**	**2,620**	**7.9**	**< 0.05**	**0.008**	**< 0.010**

Location	Date	NO3-N mg/L	NO2-N mg/L	NH3-N mg/L	TKN mg/L	Total Nitrogen mg/L	Copper mg/L	Chromium mg/L	Lead mg/L	Mercury mg/L
Duck Creek at Russell or Patrick or Sunset	06/23/91	4.20		< 0.05	< 1.00	5.2	< 0.010	< 0.0100	< 0.002	< 0.0002
	08/26/91									
	09/13/92	1.70		< 0.05	< 1.00	1.7-2.7	< 0.010	< 0.0100	< 0.010	< 0.0002
	08/23/93	3.20		< 0.05	< 1.00	4.2	< 0.010	< 0.0100	< 0.002	< 0.0002
	04/03/94	3.90					< 0.010			
	08/28/94	8.90		< 0.05	1.00	9.9	< 0.010	0.0130	< 0.002	< 0.0002
	03/26/95	11.00					< 0.010			
	08/28/95	9.70		< 0.05	< 1.00	10.7	< 0.010	< 0.0100	< 0.002	< 0.0002
	09/10/96	8.70		< 0.05	< 1.00	9.2	< 0.010		< 0.001	
	09/24/97	8.90		< 0.05	1.30	10.2	< 0.010		< 0.100	
	09/24/98	7.80	< 0.10	< 0.05	0.70	8.5	0.010		< 0.100	
	11/04/99	6.41	< 0.20	< 0.05	< 0.20	6.4	< 0.010		< 0.100	
	11/05/99	6.26	< 0.20	< 0.05	0.41	6.7	< 0.010		< 0.100	
	10/03/00	9.20	< 2.00	< 0.05	1.70	10.9	< 0.010		< 0.100	
	10/04/00	8.52	< 2.00	0.08	< 0.20	8.5	< 0.010		< 0.100	
	10/17/00[e]									
	12/18/00	10.30	< 0.50	< 0.05	0.70	11.0	< 0.010		< 0.100	
	01/18/01	6.10	< 0.08	< 0.08	0.30	6.1	0.013	0.0026	0.001	
	04/25/01	4.69	< 0.08	< 0.08	0.20	4.7	0.017	0.0020		
	07/30/01	4.24	< 0.08	< 0.08		4.2	0.014	0.0018		
	10/24/01	5.43	< 0.08	< 0.08		5.4	0.012			
	01/23/02									
	04/24/02									
	07/24/02	3.89	< 0.08	< 0.08	0.90	3.9				
	10/23/02	5.39	< 0.08	0.26	0.70	5.7	0.003	0.0028		
	01/22/03	5.77	< 0.08	< 0.08		5.8	0.007	0.0018		
	04/23/03	5.28	< 0.08	< 0.08		5.3	0.008	0.0012		
	07/23/03	4.90		< 0.05	0.81	5.7	0.003	0.0011	< 0.002	
	10/22/03									
	01/21/04	NA	NA	NA	NA		NA	NA	NA	
	04/21/04	NA	NA	NA	NA		NA	NA	NA	
		No Sample Taken after 2004 Dry Weather Monitoring Program								
	Median	**5.94**	**< 0.08**	**< 0.05**	**< 0.86**	**6.1**	**< 0.010**	**0.0027**	**< 0.010**	**< 0.0002**
	Maximum	**11.00**	**< 2.00**	**0.26**	**1.70**	**11.0**	**0.017**	**0.0130**	**0.100**	**< 0.0002**
	Minimum	**1.70**	**< 0.08**	**< 0.05**	**< 0.20**	**3.9**	**0.003**	**0.0011**	**< 0.001**	**< 0.0002**

Location	Date	Cadmium mg/L	Zinc mg/L	Silver mg/L	Nickel mg/L	Selenium mg/L	Arsenic mg/L	Boron mg/L	Cyanide mg/L	Copper Dissolved mg/L
Duck Creek at Russell or Patrick or Sunset	06/23/91	< 0.005	0.030	< 0.010	< 0.040		0.044	3.40	< 0.005	
	08/26/91									
	09/13/92	< 0.005	< 0.020	< 0.010	< 0.040		0.026	1.70	< 0.005	
	08/23/93	< 0.005	0.026	< 0.010	< 0.020	0.021	0.051	3.00	< 0.005	
	04/03/94							2.70	0.007	
	08/28/94	< 0.005	< 0.020	0.011	0.010	0.046	0.041	2.90	0.008	
	03/26/95							3.00	< 0.005	
	08/28/95	< 0.005	0.024	< 0.010	< 0.010	0.046	0.030	3.20	0.005	
	09/10/96		< 0.020					3.00	< 0.005	
	09/24/97		< 0.020					2.70	< 0.005	
	09/24/98		< 0.020					2.60		0.0180
	11/04/99		< 0.020					2.50		< 0.0100
	11/05/99		< 0.020					2.50		< 0.0100
	10/03/00		< 0.020					2.80		0.0100
	10/04/00		< 0.020					2.80		< 0.0100
	10/17/00[e]									
	12/18/00		< 0.020					2.50		< 0.0100
	01/18/01		0.022		0.028		0.051			
	04/25/01		0.019		0.022		0.052			
	07/30/01		0.013		0.022		0.054			
	10/24/01						0.041			
	01/23/02									
	04/24/02									
	07/24/02				0.030	0.024	0.043			
	10/23/02		0.006	< 0.010	0.021	0.023	0.055			
	01/22/03		0.008		0.014	0.023	0.050			
	04/23/03		0.006	< 0.010	0.011	0.022	0.046			
	07/23/03		< 0.020		0.013	< 0.005	0.051			
	10/22/03									
	01/21/04		NA		NA	NA	NA			
	04/21/04		NA		NA	NA	NA			
		No Sample Taken after 2004 Dry Weather Monitoring Program								
	Median	**< 0.005**	**< 0.020**	**< 0.010**	**0.021**	**0.023**	**0.048**	**2.80**	**< 0.005**	**0.0100**
	Maximum	**< 0.005**	**0.030**	**< 0.011**	**0.030**	**0.046**	**0.055**	**3.40**	**0.008**	**0.0180**
	Minimum	**< 0.005**	**< 0.006**	**< 0.010**	**< 0.010**	**< 0.005**	**0.026**	**1.70**	**< 0.005**	**< 0.0100**

Location	Date	Lead Dissolved mg/L	Zinc Dissolved mg/L	BOD mg/L	COD mg/L	Apparent Color ACU	Turbidity NTU	Phenol mg/L	Total Petroleum Hydrocarbons mg/L	Total Chlorine mg/L
Duck Creek at Russell or Patrick or Sunset	06/23/91			< 6	24	13	3.9	< 0.01		0.04
	08/26/91									
	09/13/92			< 6	17	15	1.2	< 0.01		< 0.10
	08/23/93			< 6	16	13	1.8	0.15		< 0.10
	04/03/94							< 0.01		< 0.10
	08/28/94			< 6	23	15	0.9	< 0.01		0.01
	03/26/95							< 0.01		< 0.10
	08/28/95			< 6	14	5	0.7	< 0.01		0.16
	09/10/96			< 6	11	13	2.3	< 0.01	< 1.0	0.08
	09/24/97			< 6	19	8	2.8	< 0.01	< 1.0	0.24
	09/24/98	< 0.10	< 0.02							
	11/04/99	< 0.10	< 0.02							
	11/05/99	< 0.10	< 0.02							
	10/03/00	0.10	0.02							
	10/04/00	< 0.10	< 0.02							
	10/17/00[e]									
	12/18/00	< 0.10	< 0.02							
	01/18/01						13.8			
	04/25/01						2.4			
	07/30/01						1.4			
	10/24/01						0.5			
	01/23/02									
	04/24/02									
	07/24/02						1.3			
	10/23/02						1.0			
	01/22/03						5.7			
	04/23/03						12.7			
	07/23/03						1.8			
	10/22/03									
	01/21/04						NS			
	04/21/04						10.2			
		No Sample Taken after 2004 Dry Weather Monitoring Program								
	Median	**< 0.10**	**< 0.02**	**< 6.0**	**17**	**13**	**1.8**	**< 0.01**	**< 1.0**	**< 0.10**
	Maximum	**< 0.10**	**< 0.02**	**< 6.0**	**24**	**15**	**13.8**	**0.15**	**< 1.0**	**0.24**
	Minimum	**< 0.10**	**< 0.02**	**< 6.0**	**11**	**5**	**0.5**	**< 0.01**	**< 1.0**	**< 0.01**

Location	Date	Conductance mmhos	Fecal Coliform MPN/100 mL	Fecal Strep. MPN/100 mL	Total Coliform MPN/100 mL	Salmonella MPN/100 mL	VOC # detects	SOC # detects	Pesticides # detects	Herbicides # detects
Duck Creek at Russell or Patrick or Sunset	06/23/91	7.60	< 16	< 16						
	08/26/91		1,400							
	09/13/92	7.10	800	3,300						
	08/23/93		235	2,600						
	04/03/94		125		1,500					
	08/28/94	6.90	550	1,300		5.0				
	03/26/95	6.30	2,400	1,700	5,000					
	08/28/95	6.32	260	950		7.0				
	09/10/96	6.30	650	1,250		< 2.2			0	0
	09/24/97	0.05	665	1,350		< 2.2			0	1
	09/24/98		210	1,000		< 2.2	0	0	0	0
	11/04/99		50	240			0	0	0	0
	11/05/99		110	80			0	0	0	0
	10/03/00		50	210			0	0	0	0
	10/04/00		500	5,000			0	0	0	0
	10/17/00[e]		280	300						
	12/18/00		50	300			1	1	0	0
	01/18/01	6.12	93							
	04/25/01	6.02								
	07/30/01	6.07	233							
	10/24/01	6.01	337,503							
	01/23/02									
	04/24/02									
	07/24/02	5.82	1,440						0	0
	10/23/02	6.08	2,850						0	0
	01/22/03	5.79	80						0	0
	04/23/03	6.13							0	0
	07/23/03	6.00	5,100						0	0
	10/22/03									
	01/21/04	NS	NS							
	04/21/04	5.86	NS							
		No Sample Taken after 2004 Dry Weather Monitoring Program								
	Median	**6.08**	**270**	**1,000**	**3,250**	**2.2**	**0**	**0**	**0**	**0**
	Maximum	**7.60**	**337,503**	**5,000**	**5,000**	**7.0**	**1**	**1**	**0**	**1**
	Minimum	**0.05**	**< 16**	**< 16**	**1,500**	**< 2.2**	**0**	**0**	**0**	**0**

Historic Dry Weather Data

Location	Date	Q cfs	Temp Deg C	Oil & Grease mg/L	TSS mg/L	TDS mg/L	pH [f]	Surfactants (MBAS) mg/L	Ortho-Phosphate mg/L	Total Phosphate-Phosphorous mg/L	NO3-N mg/L
Las Vegas Creek	07/14/91	1.1	27.0	< 3	10	1,450	8.7	0.08	0.460	0.360	0.85
	08/27/91	0.8	23.3	< 3	4	1,420	8.7	0.13	0.130	0.150	1.30
	04/06/92	0.8				2,110	8.3				4.80
	09/13/92	2.1	28.1	< 3	8	1,640	8.5	0.05	0.110	0.080	2.10
	03/07/93	14.8	23.4			1,660	8.5				3.80
	08/23/93	3.2	26.1	< 3	13	1,275	8.6	0.22	< 0.050	0.060	1.50
	04/03/94	1.1	15.8			2,030	8.1				1.80
	08/28/94	1.0	23.9	< 3	61	1,540	8.3	0.07	0.130	0.100	< 0.50
	03/26/95	0.9	16.2			1,790	8.4				3.00
	08/28/95	3.0	25.4	< 3	< 4	1,435	8.5	0.08	0.070	0.090	0.75
	09/10/96	2.9	27.4	< 3	9	1,565	8.7	0.07	0.060	0.090	1.00
	09/24/97	1.4	25.2	< 3	27	1,385	8.2	0.13	0.100	0.080	1.30
	09/24/98	8.0		< 3	179	1,430				0.060	1.90
	11/04/99	2.0		< 3	6	1,100				0.040	1.86
	11/05/99	4.3		< 3	12	660				0.080	1.54
	10/03/00	2.2		< 3	< 10	1,870				0.160	3.65
	10/04/00	2.2		< 3	66	1,960				0.150	2.91
	10/17/00[e]										
	12/18/00	1.1		< 3	< 10	2,070				0.040	3.58
	01/18/01		10.5			3,210	8.4		0.023	0.031	4.71
	04/25/01		23.7			3,200	8.4			0.010	3.64
	07/30/01	2.2	29.0			3,200	8.6			0.030	1.97
	10/24/01	3.1	18.1			3,230	9.2		0.030	0.060	2.26
	01/23/02	2.9									
	04/24/02	3.4									
	07/24/02	3.3	29.2			2,800	8.7	0.06	0.018	0.018	2.46
	10/23/02	2.7	13.9			3,130	8.3	0.05	0.021	0.025	3.45
	01/22/03		10.7			2,990	8.4		0.032	0.051	3.29
	04/23/03		19.0			3,210	8.6		0.013	0.013	3.17
	07/23/03		26.7			2,940	8.1		0.007	0.090	1.90
	10/22/03		16.4			2,930	8.0		0.008	0.030	3.30
	01/21/04		7.2			3,050	8.3		0.015	< 0.020	4.20
	04/21/04		15.5			3,490	8.1		0.010	0.010	3.30
		No Sample Taken after 2004 Dry Weather Monitoring Program									
	Median	**2.2**	**23.4**	**< 3**	**10**	**1,995**	**8.4**	**0.07**	**0.031**	**0.060**	**2.36**
	Maximum	**14.8**	**29.2**	**< 3**	**179**	**3,490**	**9.2**	**0.22**	**0.460**	**0.360**	**4.80**
	Minimum	**0.8**	**7.2**	**< 3**	**4**	**660**	**8.0**	**0.05**	**0.007**	**0.010**	**< 0.50**

Historic Dry Weather Data

Location	Date	NO2-N mg/L	NH3-N mg/L	TKN mg/L	Total Nitrogen mg/L	Copper mg/L	Chromium mg/L	Lead mg/L	Mercury mg/L	Cadmium mg/L
Las Vegas Creek	07/14/91		< 0.05	1.70	2.5	< 0.010	< 0.0100	0.00500	< 0.0002	< 0.005
	08/27/91		< 0.05	< 1.00	1.5	< 0.010	< 0.0100	0.00200	< 0.0002	< 0.005
	04/06/92					< 0.010				
	09/13/92		0.51	< 1.00	2.1-3.1	0.010	< 0.0100	< 0.01000	< 0.0002	< 0.005
	03/07/93					< 0.010				
	08/23/93		0.07	< 1.00	2.5	< 0.010	< 0.0100	< 0.00200	< 0.0002	< 0.005
	04/03/94					< 0.010				
	08/28/94		0.49	3.00	3.5	< 0.010	< 0.0100	0.00300	< 0.0002	< 0.005
	03/26/95					< 0.010				
	08/28/95		< 0.05	1.10	1.9	< 0.010	< 0.0100	< 0.00200	< 0.0002	< 0.005
	09/10/96		< 0.05	< 1.00	1.5	< 0.010		< 0.00100		
	09/24/97		0.10	1.80	3.1	0.016		< 0.10000		
	09/24/98	< 0.10	< 0.05	0.50	2.4	< 0.010		< 0.10000		
	11/04/99	< 0.20	< 0.05	< 0.20	1.9	< 0.010		< 0.10000		
	11/05/99	< 0.20	< 0.05	0.28	1.8	< 0.010		< 0.10000		
	10/03/00	< 2.00	< 0.05	0.49	4.1	< 0.010		< 0.10000		
	10/04/00	< 2.00	< 0.05	0.43	3.3	0.016		< 0.10000		
	10/17/00[e]									
	12/18/00	< 0.50	< 0.05	0.51	4.1	< 0.010		< 0.10000		
	01/18/01	< 0.08	< 0.08	0.40	4.7	0.010	0.0032	0.00069		
	04/25/01	0.12	< 0.08	0.50	3.8	0.014	0.0025			
	07/30/01	0.18	< 0.08		2.2	0.010	0.0019			
	10/24/01	< 0.08	< 0.08		2.3	0.012	0.0020	0.00110		
	01/23/02									
	04/24/02									
	07/24/02	< 0.08	< 0.08	2.60	2.5	0.004	0.0024	0.00060		
	10/23/02	< 0.08	0.17	1.20	3.6	0.003	0.0027	0.00066		
	01/22/03	< 0.08	< 0.08		3.3	0.005	0.0018			
	04/23/03	< 0.08	< 0.08		3.2	0.004	0.0011			
	07/23/03		0.04	0.92	2.8		0.0130	0.00096		
	10/22/03	< 0.08	< 0.05	0.74	4.0		0.0040	0.00110		
	01/21/04	< 0.08	< 0.05	0.59	4.8		< 0.0020	< 0.00100		
	04/21/04	< 0.08	< 0.05	0.48	3.8		< 0.0020	< 0.00100		
		No Sample Taken after 2004 Dry Weather Monitoring Program								
	Median	**< 0.08**	**< 0.05**	**0.83**	**3.1**	**< 0.010**	**0.0030**	**< 0.00200**	**< 0.0002**	**< 0.005**
	Maximum	**< 2.00**	**0.51**	**3.00**	**4.8**	**0.016**	**0.0130**	**< 0.10000**	**< 0.0002**	**< 0.005**
	Minimum	**< 0.08**	**0.04**	**< 0.20**	**1.5**	**0.003**	**0.0011**	**0.00060**	**< 0.0002**	**< 0.005**

Historic Dry Weather Data

Location	Date	Zinc mg/L	Silver mg/L	Nickel mg/L	Selenium mg/L	Arsenic mg/L	Boron mg/L	Cyanide mg/L	Copper Dissolved mg/L
Las Vegas Creek	07/14/91	0.0230	< 0.01	< 0.040		< 0.005	0.61	< 0.005	
	08/27/91	0.0290	< 0.01	< 0.040		< 0.005	0.65	0.005	
	04/06/92						0.76	< 0.005	
	09/13/92	0.0220	< 0.01	< 0.040		< 0.005	0.91	< 0.005	
	03/07/93						0.58	< 0.005	
	08/23/93	0.0930	< 0.01	< 0.020	< 0.015	< 0.005	0.46	< 0.005	
	04/03/94						0.61	< 0.005	
	08/28/94	0.0350	< 0.01	< 0.010	< 0.005	< 0.005	0.53	< 0.005	
	03/26/95						0.65	< 0.005	
	08/28/95	0.0240	< 0.01	< 0.010	< 0.005	< 0.005	0.59	< 0.005	
	09/10/96	0.0270					0.41	< 0.005	
	09/24/97	0.0300					0.53	< 0.005	
	09/24/98	0.0490					0.40		< 0.0100
	11/04/99	< 0.0200					0.46		< 0.0100
	11/05/99	0.0210					0.39		< 0.0100
	10/03/00	0.0240					0.62		< 0.0100
	10/04/00	0.0270					0.65		< 0.0100
	10/17/00[e]								
	12/18/00	< 0.0200					0.63		< 0.0100
	01/18/01	0.0190		0.013		0.004			
	04/25/01	0.0210		0.010		0.007			
	07/30/01	0.0130		0.011		0.006			
	10/24/01	0.0260		0.008		0.007			
	01/23/02								
	04/24/02								
	07/24/02	0.0120		0.011	0.010				
	10/23/02	0.0120		0.011	0.016	0.006			
	01/22/03	0.0130		0.007	0.011	0.005			
	04/23/03	0.0057		0.006	0.011	0.005			
	07/23/03	0.0230		0.007	< 0.005	0.006			
	10/22/03	0.0150		0.014	< 0.005	0.007			
	01/21/04	< 0.0200		< 0.010	< 0.005	0.007			
	04/21/04	< 0.0200		< 0.010	< 0.005	0.008			
		No Sample Taken after 2004 Dry Weather Monitoring Program							
	Median	**0.0215**	**< 0.01**	**0.011**	**< 0.005**	**< 0.005**	**0.60**	**< 0.005**	**< 0.0100**
	Maximum	**0.0930**	**< 0.01**	**0.040**	**0.016**	**0.008**	**0.91**	**< 0.005**	**< 0.0100**
	Minimum	**0.0057**	**< 0.01**	**0.006**	**< 0.005**	**0.004**	**0.39**	**< 0.005**	**< 0.0100**

Historic Dry Weather Data

Location	Date	Lead Dissolved mg/L	Zinc Dissolved mg/L	BOD mg/L	COD mg/L	Apparent Color ACU	Turbidity NTU	Phenol mg/L	Total Petroleum Hydrocarbons mg/L
Las Vegas Creek	07/14/91			6	35	35	2.3	< 0.01	
	08/27/91			< 6	19	30	0.7	< 0.01	
	04/06/92							< 0.01	
	09/13/92			< 6	22	23	2.7	< 0.01	
	03/07/93							0.10	
	08/23/93			< 6	22	25	2.1	0.10	
	04/03/94							< 0.01	
	08/28/94			< 6	41	28	12.4	< 0.01	
	03/26/95							< 0.01	
	08/28/95			< 6	29	25	1.3	< 0.01	
	09/10/96			< 6	17	21	4.4	< 0.01	< 1.1
	09/24/97			< 6	14	20	7.1	< 0.01	< 1.0
	09/24/98	< 0.1	< 0.020						
	11/04/99	< 0.1	< 0.020						
	11/05/99	< 0.1	< 0.020						
	10/03/00	< 0.1	0.024						
	10/04/00	< 0.1	< 0.020						
	10/17/00[e]								
	12/18/00	< 0.1	< 0.020						
	01/18/01						7.9		
	04/25/01						2.3		
	07/30/01						5.0		
	10/24/01						1.3		
	01/23/02								
	04/24/02								
	07/24/02						1.8		
	10/23/02						2.1		
	01/22/03						2.4		
	04/23/03						1.6		
	07/23/03						2.7		
	10/22/03						12.0		
	01/21/04						2.2		
	04/21/04						1.1		
		No Sample Taken after 2004 Dry Weather Monitoring Program							
	Median	**< 0.1**	**< 0.020**	**< 6**	**22**	**25**	**2.3**	**< 0.01**	**< 1.1**
	Maximum	**< 0.1**	**0.024**	**6**	**41**	**35**	**12.4**	**0.10**	**< 1.1**
	Minimum	**< 0.1**	**< 0.020**	**< 6**	**14**	**20**	**0.7**	**< 0.01**	**< 1.0**

Historic Dry Weather Data

Location	Date	Total Chlorine mg/L	Conductance (mmhos)	Fecal Coliform MPN/100 mL	Fecal Strep. MPN/100 mL	Total Coliform MPN/100 mL	Salmonella MPN/100 mL	VOC # detects	SOC # detects	Pesticides # detects	Herbicides # detects
Las Vegas Creek	07/14/91	0.07	2.10	< 16	< 16						
	08/27/91	0.11	2.10	800	< 16						
	04/06/92	0.25		1,300		13,000					
	09/13/92	< 0.10	3.18	4,650	1,650						
	03/07/93	0.10	7.16	70		1,300					
	08/23/93	< 0.10		6,650	1,550						
	04/03/94	< 0.10	9.32	425		10,500					
	08/28/94	< 0.01	2.16	2,300	3,150		5.0				
	03/26/95	0.10	0.68	230	170	5,000					
	08/28/95	0.08	1.97	1,550	3,150		4.1				
	09/10/96	0.08	1.92	6,650	1,500		< 2.2			0	0
	09/24/97	0.15	0.05	155,500	27,500		3.7			0	0
	09/24/98			3,200	1,800		< 2.2	1	0	0	0
	11/04/99			110	2,300			0	0	0	0
	11/05/99			170	1,700			1	0	0	0
	10/03/00			3,000	3,000			0	0	0	0
	10/04/00			300	9,000			0	0	0	0
	10/17/00[e]			2,400	5,000						
	12/18/00			28	900			0	0	0	0
	01/18/01		3.81	507							
	04/25/01		9.74	107							
	07/30/01		9.78	2,700							
	10/24/01		2.28	1,667							
	01/23/02										
	04/24/02										
	07/24/02		3.31	2,180						0	0
	10/23/02		3.74	1,200						0	0
	01/22/03		3.40	260						0	0
	04/23/03		3.88	240						0	0
	07/23/03		3.59	83,000						0	0
	10/22/03		3.50	94,000						0	0
	01/21/04		3.58	< 200						0	0
	04/21/04		3.98	547						0	0
		No Sample Taken after 2004 Dry Weather Monitoring Program									
	Median	**0.10**	**3.45**	**1,200**	**1,750**	**7,750**	**3.7**	**0**	**0**	**0**	**0**
	Maximum	**0.25**	**9.78**	**155,500**	**27,500**	**13,000**	**5.0**	**1**	**0**	**0**	**0**
	Minimum	**< 0.01**	**0.05**	**< 16**	**< 16**	**1300**	**< 2.2**	**0**	**0**	**0**	**0**

Location	Date	Q cfs	Temp Deg C	Oil & Grease mg/L	TSS mg/L	TDS mg/L	pH [f]	Surfactants (MBAS) mg/L	Ortho-Phosphate mg/L	Total Phosphate-Phosphorous mg/L	NO3-N[a] mg/L	NO2-N mg/L
Meadows Detention Basin	10/25/00[e]		14.2			1,380	8.20		0.100	0.130	1.28	< 0.08
	01/18/00		1.0			1,870	8.44		0.030	0.030	4.38	< 0.08
	04/25/01		15.0			1,280	8.29			0.050	1.37	0.18
	07/30/01		24.0			1,220	9.00			0.230	0.70	< 0.08
	10/24/01		20.1			1,640	8.32		0.020	0.020	4.40	< 0.08
	01/23/02		5.5			1,730	9.01		0.010	0.010	4.30	< 0.08
	04/24/02		17.5			650	8.30		0.280	0.550	< 0.08	< 0.08
	07/24/02		29.6			930	9.33		0.090	0.220	< 0.08	< 0.08
	10/23/02		22.8			1,450	9.27		0.050	0.080	2.38	< 0.08
	01/22/03		8.8			1,770	8.41		0.030	0.060	3.94	< 0.08
	04/23/03		15.5			1,620	8.32		0.040		2.90	< 0.08
	07/23/03		28.0			1,280	7.90		0.008	0.080	1.70	
	10/22/03		17.3			1,290	8.09		0.115	0.310	3.40	< 0.08
	01/21/04		7.5			1,920	8.27		0.007	0.050	5.00	< 0.08
	04/21/04		14.2			1,960	7.46		0.007	0.030	5.10	< 0.08
	07/21/04		26.1			1,350	8.52		NS	NS	NS	NS
	10/27/04		16.6			1,490	8.09		NS	NS	3.40	< 0.08
	01/26/05		14.7			820	7.64		0.080	0.560	3.70	0.53
	04/19/05		15.1			2,040	8.14		0.004	< 0.010	6.20	< 0.08
	07/20/05		6.6			1,540	8.81		0.005	0.050	2.00	< 0.08
	10/26/05		10.4			1,630	8.20		0.610	0.050	< 0.08	< 0.08
	01/19/06		6.4			2,000	8.26		< 0.010		5.42	0.14
	04/18/06		22.9			1,700	8.77		0.005		6.00	< 0.08
	07/27/06		25.1			1,300	8.44		0.036	0.089	1.11	0.12
	10/25/06		25.5			500	8.09		NA	0.047	0.90	ND
	01/23/07		0.4			2,000	8.30		0.003	< 0.010	5.19	ND
	04/18/07		8.4			1,600	8.21		0.044	0.064	2.94	< 0.10
	07/18/07		23.1			1,100	8.67		0.007	0.038	0.58	< 0.10
	10/24/07		14.7			900	8.25		0.063	0.065	1.17	< 0.10
	01/22/08		4.0			2,000	8.22		0.003	< 0.010	4.52	< 0.10
	04/23/08		11.4			1,700	7.47		0.002	0.025	1.87	2.00
	07/23/08		21.8			1,200	8.66		0.023	0.052	0.28	< 0.10
	10/22/08		8.2			1,700	12.05		0.006	0.028	0.01	0.11
	01/28/09		1.2			1,900	14.98		0.010	0.019	3.39	0.10
	04/29/09		14.3			2,000	12.34		0.004	0.033	1.85	< 0.15
	07/27/09		26.7			1,500	8.65		0.023	0.066	< 0.10	< 0.03
	10/20/09		11.3			2,000	6.47		0.007	0.040	6.70	< 0.03
	01/26/10		3.3			1,800	8.41		0.005	0.032	4.32	< 0.03
	04/20/10		19.3			1,500	8.04		< 0.002	0.026	NA	0.14
	07/20/10		24.4			1,600	8.21		< 0.002	0.020	3.86	0.26
	10/26/10		9.1			1,900	7.53		0.019	0.041	4.32	0.69
	01/31/11		8.2			2,100	8.29		0.018	0.003	8.18	0.18
		No Sample Taken after January 2011 Dry Weather Monitoring Program										
	Median		**14.7**			**1,610**	**8.30**		**0.010**	**0.047**	**3.17**	**< 0.08**
	Maximum		**29.6**			**2,100**	**14.98**		**0.610**	**0.560**	**8.18**	**2.00**
	Minimum		**0.4**			**500**	**6.47**		**< 0.002**	**0.003**	**0.01**	**< 0.03**

Location	Date	NH3-N mg/L	TKN mg/L	Total Nitrogen mg/L	Copper mg/L	Chromium mg/L	Lead mg/L	Mercury mg/L	Cadmium mg/L	Zinc mg/L	Silver mg/L	Nickel mg/L	Selenium mg/L
Meadows Detention Basin	10/25/00[e]	0.16	0.60	1.88	0.005	< 0.0020	0.00050			0.021		0.007	0.005
	01/18/00	< 0.08	0.50	4.88	0.005	0.0029	< 0.00100			0.011		0.008	< 0.005
	04/25/01	0.30	1.30	2.67	0.007	0.0024	0.00070			0.029		0.006	< 0.005
	07/30/01	< 0.08		0.70	0.008	0.0018	0.00240			0.024		0.007	< 0.005
	10/24/01	< 0.08		4.40	0.010	< 0.0020	0.00160			0.029		0.006	< 0.005
	01/23/02	< 0.08		4.30	0.006	0.0029	0.00120			0.021		0.009	0.007
	04/24/02	1.24	4.40	4.40	0.008	0.0021	0.00060			0.019		0.005	0.002
	07/24/02	< 0.08	2.90	2.90	0.007	0.0023	0.00070			0.023		0.006	0.003
	10/23/02	0.18	1.20	3.58	0.004	0.0025	< 0.00100			0.012		0.007	0.005
	01/22/03	< 0.08		3.94	0.006	0.0013	< 0.00100			0.015		0.006	0.006
	04/23/03	< 0.08		2.90	0.010	< 0.0020	0.00070			0.013		< 0.001	0.055
	07/23/03	0.03	1.50	3.20	0.024	0.0034	0.00150			0.023		0.006	
	10/22/03	< 0.08	0.82	4.22	0.089	0.0011	0.00083			0.041		0.007	
	01/21/04	< 0.08	1.20	6.20	0.004	< 0.0020	0.00130			0.330		0.007	
	04/21/04	< 0.08	1.20	6.30	< 0.002	< 0.0020	< 0.00100			< 0.020		< 0.010	
	07/21/04	NS	NS		0.012	0.0010	< 0.00050			0.028		0.006	0.007
	10/27/04	NS	NS		< 0.002	< 0.0010	< 0.00050			0.037		< 0.005	NA
	01/26/05	1.10	6.30		0.043	0.0071	0.01100			0.210		< 0.005	0.003
	04/19/05	< 0.08	0.71		0.003	0.0031	< 0.00050			0.012		0.009	0.009
	07/20/05	< 0.08	1.50		0.010	< 0.0010	< 0.00050			0.055		< 0.005	0.006
	10/26/05	0.03	2.00		0.005	< 0.0010	< 0.00050			0.019		< 0.005	0.006
	01/19/06				0.003	0.8000	< 0.00050			0.010		0.007	0.008
	04/18/06				0.009	1.0000	0.00052			0.029		0.009	0.007
	07/27/06	0.15	1.10		0.006	0.0005	0.00030			0.012		0.001	0.004
	10/25/06	< 0.08	< 0.20		0.001	0.0007	< 0.00050			0.045		0.002	0.001
	01/23/07	< 0.08	1.00		0.002	0.0006	< 0.00050			0.005		0.001	0.008
	04/18/07	< 0.10	1.50		0.005	0.0007	0.00030			0.020		0.001	0.006
	07/18/07	0.13	1.30		0.006	0.0011	0.00030			0.008		ND	0.004
	10/24/07	< 0.10	0.36		0.001	ND	ND			0.140		0.001	0.003
	01/22/08	0.29	< 0.10		0.002	0.0008	< 0.00002			< 0.005		0.003	0.008
	04/23/08	< 0.10	0.87		0.004	0.0004	< 0.00002			< 0.001		0.001	0.006
	07/23/08	0.12	0.66		0.006	0.0006	< 0.00002			0.012		0.002	0.004
	10/22/08	< 0.10	0.87		0.011	0.0009	0.00005			0.033		0.003	0.005
	01/28/09	0.12	0.42		0.005	< 0.0010	< 0.00010			0.027		< 0.004	0.006
	04/29/09	< 0.10	0.70		0.005	< 0.0002	< 0.00002			0.012		< 0.001	0.006
	07/27/09	< 0.05	1.30		0.010	0.0010	0.00089			0.053		0.001	0.007
	10/20/09	< 0.05	1.30		0.005	0.0010	0.00031			0.015		0.002	0.008
	01/26/10	< 0.05	0.57		0.004	0.0009	0.00033			0.013		0.001	0.008
	04/20/10	< 0.05	0.74		0.004	0.0005	0.00030			0.018		0.003	0.005
	07/20/10	0.19	1.10		0.004	0.0047	0.00026	< 0.00005	< 0.0001	0.005	< 0.0002	0.004	0.006
	10/26/10	0.14	0.71		0.007	0.0330	< 0.00040	< 0.00005	< 0.0001	0.005	< 0.0002	0.006	0.007
	01/31/11	< 0.10	0.18		0.004	0.0098	< 0.00100	< 0.00005	< 0.0005	< 0.025	< 0.0010	0.006	0.010
		No Sample Taken after January 2011 Dry Weather Monitoring Program											
	Median	**< 0.08**	**1.00**	**3.94**	**0.005**	**0.0013**	**< 0.00050**	**< 0.00005**	**< 0.0001**	**0.020**	**< 0.0002**	**0.005**	**0.006**
	Maximum	**1.24**	**6.30**	**6.30**	**0.089**	**1.0000**	**0.01100**	**< 0.00005**	**< 0.0005**	**0.330**	**< 0.0010**	**0.010**	**0.055**
	Minimum	**0.03**	**< 0.10**	**0.70**	**0.001**	**< 0.0002**	**< 0.00002**	**< 0.00005**	**< 0.0001**	**< 0.001**	**< 0.0002**	**< 0.001**	**0.001**

Location	Date	Selenium (SDSU) mg/L	Arsenic mg/L	Boron mg/L	Cyanide mg/L	Copper Dissolved mg/L	Lead Dissolved mg/L	Zinc Dissolved mg/L	BOD mg/L	COD mg/L	Apparent Color ACU	Turbidity NTU	Phenol mg/L
Meadows Detention Basin	10/25/00[e]		< 0.005									1.52	
	01/18/00		0.002									0.50	
	04/25/01		0.004									3.45	
	07/30/01		0.004									8.02	
	10/24/01		0.005									8.35	
	01/23/02		< 0.005									3.53	
	04/24/02		0.006									7.30	
	07/24/02		0.003									4.05	
	10/23/02		0.004									2.08	
	01/22/03		0.003									0.75	
	04/23/03		0.003									0.83	
	07/23/03		0.003									2.62	
	10/22/03		0.003									1.69	
	01/21/04		0.005									1.13	
	04/21/04		< 0.005									0.77	
	07/21/04		0.003									2.15	
	10/27/04		< 0.001									2.40	
	01/26/05		< 0.001									68.50	
	04/19/05		0.003									0.90	
	07/20/05		< 0.001									3.22	
	10/26/05		0.034									9.51	
	01/19/06		< 0.001									0.83	
	04/18/06		0.057									12.40	
	07/27/06		0.004									2.66	
	10/25/06		0.005									3.41	
	01/23/07		0.003									0.74	
	04/18/07		0.003									1.66	
	07/18/07		0.004									3.91	
	10/24/07		0.002									0.20	
	01/22/08		0.002									0.42	
	04/23/08		0.002									1.59	
	07/23/08		0.004									0.91	
	10/22/08	0.006	0.003									2.18	
	01/28/09	0.007	0.002									0.41	
	04/29/09	0.006	0.002									1.64	
	07/27/09	NA	0.005									2.30	
	10/20/09	0.007	0.003									1.37	
	01/26/10	0.007	0.003									1.02	
	04/20/10	0.006	0.003									3.24	
	07/20/10	0.006	0.004	5.4		0.0039	< 0.00020	< 0.0053				24.00	
	10/26/10	0.007	0.001	2.3		0.0063	< 0.00040	< 0.0053				1.37	
	01/31/11	0.008	< 0.0020	0.5		0.0031	< 0.00100	< 0.0250				1.96	
		No Sample Taken after January 2011 Dry Weather Monitoring Program											
	Median	**0.007**	**0.003**	**2.3**		**0.004**	**< 0.00040**	**< 0.0053**				**2.02**	
	Maximum	**0.008**	**0.057**	**5.4**		**0.006**	**< 0.00100**	**< 0.0250**				**68.50**	
	Minimum	**0.006**	**< 0.001**	**0.5**		**0.003**	**< 0.00020**	**< 0.0053**				**0.20**	

Location	Date	Total Petroleum Hydrocarbons mg/L	Total Chlorine mg/L	Conductance (mmhos)	Fecal Coliform MPN/100 mL	Fecal Strep MPN/100 mL	Total Coliform MPN/100 mL	Salmonella MPN/100 mL	VOC # detects	SOC # detects	Pesticides # detects	Herbicides # detects
Meadows Detention Basin	10/25/00[e]			1.93								
	01/18/00			2.49	95							
	04/25/01			1.85	1,490							
	07/30/01			1.53	1,300							
	10/24/01			2.20	665							
	01/23/02			2.33	50							
	04/24/02			1.04	190							
	07/24/02			1.37	16,500						0	0
	10/23/02			1.63	5,300						0	0
	01/22/03			2.37	10						0	0
	04/23/03			2.18	< 400						0	0
	07/23/03			1.85	64,000						0	1
	10/22/03			1.83	2,200						0	0
	01/21/04			2.51	387						0	0
	04/21/04			2.58	600						0	0
	07/21/04			1.77	18,100							
	10/27/04			2.14	NA							
	01/26/05			0.57	413							
	04/19/05			2.70	< 200							
	07/20/05			2.07	1,580				5	1	1	0
	10/26/05			2.26	5,400				4	1	0	0
	01/19/06			2.61	< 200				0	0	0	0
	04/18/06			2.29	1,360				2	1	0	0
	07/27/06			1.81	80,000				0	1	0	1
	10/25/06			3.64	4,200				3	0	0	0
	01/23/07			2.61	< 667				4	0	0	2
	04/18/07			2.36	1,360				4	0	1	0
	07/18/07			1.80	29,800							
	10/24/07			1.24	< 50							
	01/22/08			2.59	< 100							
	04/23/08			2.34	220							
	07/23/08			1.72	13,500				2	1	1	0
	10/22/08			2.39	1,180				3	0	1	0
	01/28/09			2.61	< 400				4	0	1	0
	04/29/09			2.46	< 100				9	0	1	0
	07/27/09			2.18	6,700				4	1	2	0
	10/20/09			2.82	10,500				3	2	1	0
	01/26/10			2.42	38,000				2	1	0	0
	04/20/10			2.25	< 200				2	1	2	0
	07/20/10			2.33	27,000							
	10/26/10			2.58	5,900							
	01/31/11			3.10	< 1,000							
		No Sample Taken after January 2011 Dry Weather Monitoring Program										
	Median			**2.28**	**1240**				**3**	**1**	**0**	**0**
	Maximum			**3.64**	**80,000**				**9**	**2**	**2**	**2**
	Minimum			**0.57**	**10**				**0**	**0**	**0**	**0**



Appendix B

B-1: Historic Wet Weather Data

Notes for Wet Weather Monitoring Data, 1992-2023

Refer to these notes for all set of databases

1) In computing median values, concentrations below detection limits were assumed to equal the detection limit.
2) In computing average values, concentrations less than the detection limit were assumed to be 1/2 the detection limit.
3) NA = Not Available
4) Total Nitrogen = TKN + NO_3 + NO_2. If TKN, NO_3, or NO_2 are below the detection limit, the concentration was assumed to be equal to the detection limit.
5) Insitu pH used for 3/25/94 Western Trib.
6) Phenol values are Lab measurements when both lab and in-situ measurements are available.

(a) VOC detected is Acetone
(b) VOC detected is 2-Butanone
(c) Pesticide detected is Atrazine
(d) VOC detected is Chloroform
(e) VOC detected is Trichloromethane
(f) Herbicide detected is MCCP
(g) SOC detected is Butylbenzylphthalate
(h) SOC detected is Caffeine
(i) SOC detected is Di-(2-Ethylhexyl)adipate
(j) SOC detected is Di-n-Butylphthalate
(k) SOC detected is Phenanthrene
(l) SOC detected is Pyrene
(m) SOC detected is Simazine
(n) SOC detected is Dimethylphthalate
(o) SOC detected is Diethylphthalate
(p) SOC detected is Alachlor
(q) SOC detected is Benzopyrene
(s) SOC detected is Metolalchlor
(t) SOC detected is Propachlor
(u) SOC detected is Benzo(g,h,I)Perylene
(v) SOC detected is Benzo(k)Fluoranthene
(w) Denotes grab sample taken from bottle X
(x) SOC detected is Di(2-Ethylhexyl)phthalate
(y) Denotes grab sample taken from flow stream while bottle X is filling
(z) SOC detected is Heptachlor
(aa) SOC detected is Lindane
(bb) SOC detected is Metribuzin
(cc) VOC detected is Chlorodibromomethane
(dd) VOC detected is Bromodichloromethane
(ee) VOC detected is Total THM
(ff) VOCs detected is Carbon Disulfide
(gg) Pesticides detected is Glyoxal

1992-2023
Wet Weather Data

(hh) Herbicide detected is 2,4-D
(ii) Pesticide detected is Chlorpyrifos (Dursban)
(jj) Pesticide detected is Metachlor
(kk) Pesticide detected is Malathion
(ll) Pesticide detected is Prometon
(nn) SOC detected is Fluoranthene
(oo) Pesticide detected is Dieldrin
(pp) VOC detected is Benzenaldehyde
(qq) VOC detected is Acetaldehyde
(ss) VOC detected is Butanal
(tt) VOC detected is Decanol
(uu) Herbicide detected is 2,4-DB
(vv) VOC detected is Formaldehyde
(ww) Pesticide detected is Diazinone
(xx) Pesticide detected is Dicamba
(yy) VOC detected is p-Dichloropropane
(zz) SOC detected is Methyl Glyoxal
(aaa) VOC detected is Octanal
(bbb) VOC detected is Propanal
(ccc) Herbicide detected is Pentachlorophenol
(ddd) VOC detected is Toluene
(eee) VOC detected is Dichloroacetonitrile
(fff) VOC detected is Dibromochloromethane
(ggg) VOC detected is Pentanal
(hhh) VOC Heptanal
(iii) VOC Hexanal
(jjj) VOC Dibromochloropropane
(kkk) Pesticide Duiron
(lll) Herbicide 2,4,5-T
(mmm) SOC Benzoic Acid
(nnn) VOC Naphthalene
(ooo) SOC Dimethylphenol
(ppp) VOC 2-methylphenol
(qqq) VOC 4-methylphenol
(rrr) Herbicide Picloram
(sss) SOC Benzene
(ttt) Pesticide Alpha-bhc
(uuu) Pesticide Beta-bhc
(vvv) Pesticide delta-bhc
(www) SOC Methyl isobutyl ketone
(xxx) Herbicide Bentazon
(yyy) VOC Cyclohexanone
(zzz) VOC Benzyl alcohol
(aaaa) Phenol
(bbbb) Benezene
(cccc) Herbicide Benzoic Acid
(dddd) Pesticide Methyl Glyoxal
(eeee) VOC Nonanal

1992-2023
Wet Weather Data

Location	Date	Q cfs	Temp Deg. C	Oil & Grease mg/L	TSS mg/L	TDS mg/L	Specific Conductance umho/cm	Lab pH units	Surfactants MBAS mg/L	Ortho-Phosphate mg/L	Total Phosphorous mg/L	NO3-N mg/L	NO-2 mg/L	NH3-N mg/L	TKN mg/L	Total Nitrogen mg/L
Las Vegas Wash @ The Club at Sunrise (Formerly known as Desert Rose Golf Course) (USGS)	04/02/97		12.6	< 3	480	1,060	1,549	7.1	0.63	0.55	0.91	3.30		1.30	8.50	11.80
	07/28/97		26.6	1,180	400	1,200	1,092	7.6	1.34	0.04	0.52	2.10		0.80	3.90	6.00
	02/04/98			< 3	2,590	980		7.7	0.60	0.17	1.97	0.63		0.70	7.30	7.93
	02/24/98		12.0		5,580	540		7.9	< 0.50	0.09	1.46	1.00		0.20	< 1.00	2.00
	04/24/99	112		4	1,240	1,000					0.93	2.80		0.50	7.45	10.25
	04/30/99	550		< 3	1,870	440					1.83	1.90		0.78	8.73	10.63
	02/21/00			5	1,910	100					2.10	0.64		0.18	3.20	3.84
	10/23/00	312		5	1,390	2,430					1.20	3.48		0.60	7.40	10.88
	02/26/01	400		< 3	2,940	1,250					1.70	2.64		0.40	4.90	7.54
	11/24/01	75		15	630	1,590					0.86	2.00		1.61	7.80	9.80
	09/11/02	83		< 3	110	1,300	1,570	7.1	2.18		0.49	3.90	< 2.50	1.13	5.40	11.80
	02/12/03	400		5	5,980	1,180	819	7.7	< 0.05	0.13	2.40	1.50	< 0.20		4.70	6.40
	02/25/03	775		8							0.44			0.38	3.00	3.00
	07/19/03				500	1,330			0.72			0.63	1.20		7.70	9.53
	02/21/04				340	660	274	7.5	0.48		0.42	1.80	< 0.20		2.90	4.90
	11/09/04			< 5		1,500	1,730	6.7	< 0.05		0.77	165	< 0.10		2.50	167.60
	01/04/05			< 5	1,730	290	428	7.9	< 0.05	0.22	1.20	0.70	< 0.10			0.80
	07/24/05			< 5	1,160	390	535	7.6	0.12	0.04	0.77	1.50	6.50		4.10	12.10
	10/05/06					298	446		0.09	0.19	0.75	1.10	< 0.20		2.00	3.30
	01/05/08				1,520	536	846	7.6	0.81	0.56	3.30	1.90	< 0.20		12.00	14.10
	08/07/08			7	5,810	1,450	1,890	7.4	0.19		3.90	< 5.00	< 5.00		26.00	36.00
	11/26/08			4	1,200	1,320	1,800	7.9	0.09	0.51	1.80	2.80	< 0.50		9.90	13.20
	12/17/08			7	26	294	439	7.4	0.19	0.41	0.41	0.76	0.10		2.00	2.86
	02/07/09			5	18	726	1,020	7.6	0.07	0.25	1.80	1.60	< 0.20		8.60	10.40
	07/22/09			14	500	1,300	1,700	7.4	0.74		1.60	< 0.50	< 0.25		14.00	14.75
	01/20/10			5	3,400	610	870	7.7	0.23	1.50	2.10	1.70	< 0.13		7.90	9.73
	02/06/10			6	620	230	340	7.9	0.09	0.09	0.59	0.82	0.09		2.50	3.41
	04/22/10			3	1,000	840			0.46	0.05	0.80	1.70			4.10	5.80
	10/17/10			< 5	230	1,100	1,500	7.3	1.00	0.05	0.67	< 0.25	< 0.25		7.40	7.90
	12/20/10			< 5	1,700	1,300	1,900	7.9	0.46	1.20	1.80	2.70	< 0.13		6.80	9.63
	12/22/10			< 5	1,600	130		8.2	0.09	0.37	0.74	0.54		0.09	1.60	2.14
	03/21/11			< 5	750	2,500	3,000	7.5	0.45	0.05	0.82	3.20	< 0.13		6.00	9.33
	09/11/11			< 5	7,600	1,100	1,300	7.4	< 0.05	< 0.01	3.00	1.40	1.10		9.30	11.80
	10/03/11			< 5	4,700	700	970	7.5	0.07	0.04	1.40	1.30	< 0.25		9.40	10.95
	03/17/12			5	1,600	1,100	1,500	7.4	< 0.16	0.19	1.20	< 0.25	0.51		7.30	8.06
	07/23/12			< 5	970	870	1,200	7.6	< 0.05	0.15	1.20	1.50	0.49		0.85	2.84
	07/31/12			< 5	1,400	440	600	7.8	< 0.05	0.05	0.90	1.20	< 0.25		< 0.20	1.65
	08/12/12			< 5	110	660	920	7.3	0.60	0.19	0.52	< 0.25	1.10		3.80	5.15
	08/18/12			< 5	4,500	470	NA	7.5	< 0.05	0.10	2.00	1.80	0.11		4.50	6.41
	08/30/12			< 5	4,100	920	NA	7.7	< 0.05	0.03	3.10	2.00	< 0.13		7.50	9.63
	01/26/13			< 5	1,900	360	NA	7.6	< 0.05	0.50	1.50	0.90	< 0.25		4.70	5.85
	07/19/13			< 5	8,350	590	763	7.5	0.63	0.16	0.64	< 0.10	< 0.10	0.65	22.10	21.50
	08/18/13			12	1,840	590	657	7.6	1.20	0.05	0.74	0.14	< 0.10	0.25	19.70	20.00
	08/25/13			< 5	4,090	NA	NA	7.9	NA	0.09	1.47	1.25	< 0.10	0.45	6.25	7.60
	11/21/13			< 5	555	105	698	7.9	0.76	0.21	1.32	1.30	< 0.10	1.55	2.08	3.63
	08/04/14	Samples not Taken due to Las Vegas Channel Improvements, Sloan Channel to Bonanza Road and Flamingo Wash below Nellis Boulevard Improvement Project														
	08/20/14															
	09/08/14															
	01/11/15			9	305	445	661	7.8	0.46	0.48	0.57	1.77	< 0.10	0.77	1.54	0.77
	01/30/15			6	165	265	NA	7.8	0.56	0.15	0.17	1.19	< 0.10	0.36	0.67	1.96
	03/02/15			5	175	375	567	7.3	0.50	0.11	0.33	1.25	< 0.10	0.36	0.91	0.55
	07/06/15			6	564	416	578	7.1	0.37	0.15	0.55	< 0.10	0.26	0.18	1.47	1.29
	10/05/15			< 5	7,450	450	NA	6.9	0.24	0.11	2.18	3.41	< 0.10	0.81	28.00	NA
	04/09/16			< 5	850	235	215	7.3	0.24	0.10	0.34	0.74	< 0.10	0.35	2.49	2.14
	04/28/16			6	1,360	525	NA	7.6	0.42	0.26	2.93	1.10	< 0.10	< 0.10	2.91	NA
	05/06/16			< 5	410	510	NA	7.4	0.10	0.24	1.37	1.52	< 0.10	0.55	3.81	NA
	08/04/16			5	360	165	NA	7.8	0.29	0.37	0.83	1.73	< 0.10	0.57	3.27	2.70
	08/23/16			< 5	4,340	455	NA	7.4	0.23	N/A	N/A	1.69	< 0.10	0.37	5.61	5.24
	12/22/16			< 5	310	1,820	NA	7.7	0.64	0.24	0.57	1.34	< 0.10	0.64	3.54	2.90
	01/20/17			< 5	522	230		8.6	0.89	0.25	0.60	0.57	< 0.10	0.25	2.04	
	02/18/17			< 5	248	1,260		6.8	0.21	0.14	0.39	10.20	< 0.10	< 0.10	< 1.00	
	07/17/17			6.6	444	765	N/A	7.06	1.40	0.10	0.93	0.14	< 0.10	0.38	5.22	4.84
	07/25/17			2.4	2,740	340	~	7.71	0.48	0.50	1.78	1.06	< 0.10	0.14	2.79	2.65
	01/09/18			7.1	665	255	~	7.87	< 0.07	0.24	0.91	1.01	< 0.10	1.28	2.43	1.15
	07/15/18			< 5.0	185	365	NA	7.20	< 0.10	< 0.05	0.45	1.36	< 0.10	0.62	2.80	2.18
	01/14/19			6.4	455	220	NA	7.26	0.60	0.09	3.58	0.61	< 0.10	1.10	2.68	1.58
	02/14/19			9.3	440	115	NA	7.59	0.30	< 0.05	0.47	0.40	< 0.10	0.48	3.11	2.63
	11/20/19			< 5.0	120	625	NA	7.40	0.85	0.38	1.66	1.56	< 0.10	0.99	6.10	5.11
	11/28/19			< 5.0	410	180	NA	5.92	0.28	0.48	0.58	0.58	< 0.10	0.90	2.30	1.40
	03/11/20			< 5.0	204	160	NA	7.83	0.36	0.25	0.42	0.41	< 0.10	0.34	1.55	1.21
	07/25/21		NA	< 5.0	2,800	485	NA	7.20	0.25	0.06	2.36	6.19	< 0.20	1.25	6.15	4.90
	07/25/22		NA	10.3	825	456	NA	7.41	1.53	0.18	1.57	< 0.10	< 0.10	1.74	6.99	5.25
	08/11/22		NA	7.3	860	230	NA	7.78	0.91	0.35	1.42	1.55	< 0.10	1.41	5.99	4.58
	06/16/23		22.3	3.6	560	250	NA	7.60	0.81	0.94	1.42	1.27	0.11	1.44	6.12	4.68
	Median	**356**	**17**	**< 5**	**855**	**536**	**870**	**7.57**	**0.36**	**0.17**	**0.93**	**1.32**	**< 0.10**	**0.57**	**4.60**	**5.25**
	Maximum	**775**	**27**	**1,180**	**8,350**	**2,500**	**3,000**	**8.57**	**2.18**	**1.50**	**3.90**	**165**	**6.50**	**1.74**	**28.0**	**168**
	Minimum	**75**	**12**	**< 2.4**	**18**	**100**	**215**	**5.92**	**< 0.05**	**< 0.01**	**0.17**	**< 0.10**	**0.089**	**0.09**	**< 0.20**	**0.55**

Location	Date	Copper mg/L	Dissolved Copper mg/L	Chromium mg/L	Lead mg/L	Dissolved Lead mg/L	Mercury mg/L	Cadmium mg/L	Zinc mg/L	Dissolved Zinc mg/L	Silver mg/L	Nickel mg/L	Selenium mg/L	Dissolved Selenium mg/L
Las Vegas Wash @ The Club at Sunrise (Formerly known as Desert Rose Golf Course) (USGS)	04/02/97	0.024			< 0.100				0.18					
	07/28/97	0.023			< 0.100				0.15					
	02/04/98	0.065			0.180				0.55					
	02/24/98	< 0.010			0.180				0.32					
	04/24/99	< 0.010	< 0.010		< 0.100	< 0.1000			0.28	< 0.02				
	04/30/99	0.130	< 0.010		< 0.100	< 0.1000			0.54	< 0.02				
	02/21/00	0.012	< 0.010		< 0.100	< 0.1000			0.83	< 0.02				
	10/23/00	0.090	< 0.010		< 0.100	< 0.1000			0.54	0.03				
	02/26/01	0.055	< 0.010		0.029	0.0006			0.28	0.04				
	11/24/01	0.012	< 0.010		< 0.100	< 0.1000			0.07	0.04				
	09/11/02	0.098	0.110	< 0.0100	0.010	< 0.1000	< 0.0002	0.0069	0.18	0.22	< 0.0005	0.019		
	02/12/03	0.110	< 0.010	0.0150	0.096	< 0.1000	< 0.0002	0.0028	0.39	< 0.02	< 0.0005	0.045	< 0.0500	
	02/25/03	0.390		0.0094	0.014			0.0006	0.19			0.012		
	07/19/03	0.075	0.020		0.020	< 0.1000			0.25	0.05				
	02/21/04	0.027	< 0.010	< 0.0100	0.077	< 0.0200	< 0.0002	< 0.0005	0.89	0.40	0.0006	< 0.050	< 0.0250	
	11/09/04	0.029		0.0180	0.031		< 0.0002	< 0.0006	0.36		< 0.0005	0.024	< 0.0500	
	01/04/05	0.019	< 0.010	< 0.0001	0.047	< 0.0200	< 0.0002	< 0.0050	2.70	0.04	< 0.0050	< 0.050	< 0.0500	
	07/24/05	0.110	0.022	0.0230	0.046	0.0460	< 0.0002	0.0008	4.60	0.38	< 0.0050	0.035	< 0.0100	
	10/05/06	0.690	0.013	15.000	0.016	< 0.0005	< 0.0002	< 0.0005	0.73	0.02		0.017		
	01/05/08	0.100	0.024	0.0170	0.017	< 0.0005	< 0.0002	0.0005	0.59	0.09	< 0.0005	0.012	< 0.0050	
	08/07/08	0.190		0.0470	0.071		< 0.0002	0.0016	0.74		0.0011	0.043	0.0160	
	11/26/08	0.120	0.018	0.0290	0.059	0.0006	< 0.0002	0.0013	0.13	0.03	< 0.0005	0.039	0.0110	
	12/17/08	0.050	0.008	0.0070	0.019	< 0.0005	< 0.0002	0.0005	0.24	0.24	< 0.0005	0.008	< 0.0050	
	02/07/09	0.094	0.004	0.0310	0.049	< 0.0005	< 0.0002	0.0016	0.70	< 0.02	< 0.0005	0.029	0.0070	
	07/22/09	0.087	0.004	0.0310	0.022	< 0.0005	< 0.0002	0.0008	0.39	0.03	< 0.0005	0.017	0.0055	
	01/20/10	0.100	0.006	0.0270	0.043	< 0.0005	< 0.0002	0.0011	0.41	< 0.02	< 0.0050	0.031	0.0063	
	02/06/10	0.038	0.006	0.0130	0.021	< 0.0005	< 0.0002	0.0005	0.18	< 0.02	< 0.0050	0.014	< 0.0050	
	04/22/10	0.088	0.013		0.012	< 0.0005			0.13	< 0.02				
	10/17/10	0.071	0.006	0.0057	0.009	< 0.0005	< 0.0002	< 0.0005	0.18	< 0.02	< 0.0005	0.012	0.0058	
	12/20/10	0.084	0.004	0.0310	0.050	< 0.0005	< 0.0002	0.0008	0.34	< 0.02	< 0.0005	0.040	0.0069	
	12/22/10	0.009	0.002		0.006	< 0.0005			0.04	< 0.02				
	03/21/11	0.048	0.002	0.0170	0.017	< 0.0005	< 0.0002	0.0006	0.19	< 0.02	< 0.0005	0.026	0.0150	
	09/11/11	0.220	< 0.002	0.1200	0.130	< 0.0005	0.0003	0.0038	0.92	< 0.02	< 0.0025	0.140	0.0110	
	10/03/11	0.092	0.005	0.0510	0.049	< 0.0005	< 0.0002	0.0011	0.30	< 0.02	< 0.0005	0.050	< 0.0100	
	03/17/12	0.060	0.004	0.0140	0.019	0.0006	< 0.0002	0.0007	0.22	0.03	< 0.0005	0.018	0.0064	
	07/23/12	0.082	0.008	0.0240	0.030	< 0.0005	< 0.0002	0.0008	0.26	< 0.02	< 0.0005	0.028	< 0.0050	
	07/31/12	0.033	0.008	0.0250	0.018	< 0.0005	< 0.0002	0.0006	0.11	< 0.02	< 0.0005	0.026	< 0.0050	
	08/12/12	0.025	0.009	0.0033	0.004	< 0.0005	< 0.0002	< 0.0005	0.07	0.03	< 0.0005	0.007	< 0.0050	
	08/18/12	0.060	0.005	NA	0.045	< 0.0005	NA	NA	0.21	< 0.02	NA	NA	< 0.0050	
	08/30/12	0.062	0.006	NA	0.056	< 0.0005	NA	NA	0.27	< 0.02	NA	NA	< 0.0050	
	01/26/13	0.042	< 0.002	NA	0.023	< 0.0005	NA	NA	0.18	< 0.02	NA	NA	< 0.0050	
	07/19/13	0.137	0.002	0.0684	0.089	< 0.0005	< 0.0002	0.0027	0.56	0.01	< 0.0005	0.054	< 0.0050	
	08/18/13	0.098	0.011	0.0382	0.040	< 0.0005	< 0.0002	0.0012	0.33	0.01	< 0.0005	0.031	0.0036	
	08/25/13	0.084	0.005	NA	0.055	< 0.0010	NA	NA	0.30	0.00	NA	NA	0.0137	
	11/21/13	0.079	0.002	0.0309	0.031	< 0.0005	< 0.0002	0.0014	0.29	0.01	< 0.0005	0.025	0.0030	
	08/04/14	Samples not Taken due to Las Vegas Channel Improvements, Sloan Channel to Bonanza Road and Flamingo Wash below Nellis Boulevard Improvement Project												
	08/20/14													
	09/08/14													
	01/11/15	0.043	0.022	0.0060	0.007	< 0.0005	0.0014	0.0009	0.11	0.05	< 0.0005	0.011	0.0030	
	01/30/15	0.031	0.014	NA	0.007	< 0.0005	NA	NA	0.10	0.05	NA	NA	< 0.0050	
	03/02/15	0.043	0.018	0.0060	0.007	< 0.0005	< 0.0002	< 0.0005	0.10	0.06	< 0.0005	0.008	0.0030	
	07/06/15	0.106	0.021	0.0070	0.029	0.0020	0.0011	< 0.0005	0.61	0.09	< 0.0005	0.015	0.0020	
	10/05/15	0.017	0.017	NA	0.004	0.0030	0.0015	NA	0.02	0.04	NA	NA	< 0.0050	
	04/09/16	0.029	0.017	0.0040	0.013	< 0.0005	< 0.0002	0.0009	0.06	< 0.001	< 0.0005	0.009	< 0.0050	
	04/28/16	0.033	0.010	NA	0.023	< 0.0005	< 0.0002	NA	0.13	0.05	NA	NA	< 0.0050	
	05/06/16	0.027	0.016	NA	0.012	< 0.0005	< 0.0002	NA	0.09	0.04	NA	NA	0.0030	
	08/04/16	0.033	0.028	0.0015	< 0.001	< 0.0005	0.0002	< 0.0005	0.04	0.01	< 0.0005	0.004	0.0011	
	08/23/16	0.005	0.004	0.0034	0.002	< 0.0005	< 0.0002	0.0015	0.04	0.03	< 0.0005	0.024	0.0026	
	12/22/16	0.051	0.022	0.0041	0.006	0.0005	< 0.0002	0.0005	0.11	0.11	< 0.0005	0.006	0.0012	
	01/20/17	0.023	0.009		0.009	0.0005			0.10	0.05			0.0015	
	02/18/17	0.012	0.007		0.004	< 0.0005			0.04	0.03			0.0041	
	07/17/17	0.026	0.013	NA	0.006	< 0.0005	< 0.0002	NA	0.13	0.02	NA	NA	0.0039	
	07/25/17	0.011	0.008	0.0199	0.001	< 0.0005	< 0.0003	< 0.00100	0.01	0.00	< 0.0010	0.023	0.0024	
	01/09/18	0.031	0.007	0.0058	0.015	0.0010	< 0.0002	< 0.00107	0.17	0.05	< 0.0010	0.014	0.0021	
	07/15/18	0.032	0.013	0.0050	0.008	0.0025	< 0.0002	< 0.00100	0.11	0.07	< 0.0005	0.0075	0.0018	
	01/14/19	0.037	0.007	0.0174	0.014	< 0.0005	< 0.0002	< 0.00100	0.14	0.04	< 0.0010	0.0194	0.0012	
	02/14/19	0.035	0.005	0.0118	0.014	0.0007	< 0.0002	< 0.00100	0.14	0.01	< 0.0010	0.0194	< 0.0010	
	11/20/19	0.088	0.009	0.0190	0.025	< 0.0020	< 0.0003	< 0.00200	0.37	0.07	< 0.0020	0.0540	< 0.0100	< 0.0100
	11/28/19	0.016	0.005	0.0031	0.007	< 0.0010	< 0.0003	< 0.00100	0.12	0.02	< 0.00100	0.0052	0.0013	< 0.0010
	03/11/20	0.035	0.006	0.0096	0.008	< 0.0005	< 0.0002	< 0.00100	0.12	0.02	< 0.00050	0.0120	< 0.0010	< 0.0005
	07/25/21	0.048	0.005	0.0278	0.034	< 0.0005	< 0.0003	0.00152	0.22	0.02	0.00148	0.0319	< 0.0020	< 0.0013
	07/25/22	0.039	0.006	0.0117	0.015	< 0.0012	< 0.0003	< 0.00125	0.16	0.10	< 0.00120	0.0159	< 0.0025	< 0.0025
	08/11/22	0.032	0.004	0.0102	0.024	< 0.0012	0.0051	< 0.00125	0.16	0.03	< 0.00120	0.0126	< 0.0012	< 0.0012
	06/16/23	0.038	0.006	0.0116	0.012	< 0.0010	< 0.0003	< 0.00100	0.24	0.05	< 0.00100	0.0101	< 0.0010	< 0.0010
	Median	**0.043**	**0.009**	**0.0140**	**0.022**	**< 0.0005**	**< 0.0002**	**< 0.0010**	**0.19**	**< 0.0248**	**< 0.0005**	**0.0194**	**< 0.0050**	**< 0.0011**
	Maximum	**0.690**	**0.110**	**15.000**	**0.180**	**< 0.1000**	**0.0051**	**0.0069**	**4.60**	**0.40**	**< 0.0050**	**0.1400**	**< 0.0500**	**< 0.0025**
	Minimum	**0.005**	**< 0.002**	**< 0.0001**	**< 0.0005**	**< 0.0005**	**< 0.00016**	**< 0.0005**	**0.01**	**< 0.001**	**< 0.0005**	**0.0038**	**< 0.0010**	**< 0.0005**

Location	Date	Arsenic mg/L	Boron mg/L	Total Alkalinity as CaCO3 mg/L	Aluminum mg/L	Antimony mg/L	Barium mg/L	Beryllium mg/L	Bicarbonate Alkalinity as HCO3 mg/L	Bromide mg/L	Bromate mg/L	CO2 Free Calculated mg/L	Carbonate mg/L	Calcium mg/L	Chlorate mg/L	Chloride mg/L	Chlorite mg/L
Las Vegas Wash @ The Club at Sunrise (Formerly known as Desert Rose Golf Course) (USGS)	04/02/97		0.52														
	07/28/97		0.57														
	02/04/98		0.37	F													
	02/24/98		0.21														
	04/24/99		0.55														
	04/30/99		0.36														
	02/21/00		0.25														
	10/23/00		0.57														
	02/26/01		0.24														
	11/24/01		0.70														
	09/11/02	0.006	0.41	118	2.7	0.006	0.11	< 0.001	114	0.32	< 0.005	22.9	0.12	200	0.270	160	< 0.05
	02/12/03	0.034	< 0.05	106	3.1	0.005	0.41	< 0.001	129	0.11	< 0.005	5.2	0.42	89	0.031	43	< 0.04
	02/25/03	0.006	0.22														
	07/19/03		0.33	138	6.2	0.005	0.19	< 0.001	168	0.29	< 0.005	13.4	0.27	200	0.220	150	< 0.10
	02/21/04	0.005	0.24	105	2.5	0.003	0.08	< 0.001	128	0.07	< 0.005	8.2	0.27	120	0.170	80	< 0.04
	11/09/04	0.008	0.11	69	< 5.0	< 0.001	0.32	0.001	85	0.05	< 0.005	33.7	0.03	280	0.075	18	< 0.01
	01/04/05	< 0.020	0.10	55	< 2.5	< 0.100	0.41	< 0.010	67	0.03	< 0.005	1.7	0.35	410	0.035	13	< 0.01
	07/24/05	0.010	0.16	74	< 2.5	0.003	0.45	< 0.001	91	0.06	< 0.005	3.7	0.24	370	0.069	23	0.06
	10/05/06	0.006	0.12	87	7.9	0.002	0.17			0.06	< 0.005			170	0.116	21	< 0.01
	01/05/08	0.008	0.27	69	8.1	0.005	0.18	< 0.001	84	0.10	< 0.005	3.5	< 2.00	300	0.199	62	< 0.01
	08/07/08	0.023	0.57	153	24.8	0.004	0.69	0.001	187	0.27	< 0.005	12.0	< 2.00	510	0.567	140	< 0.01
	11/26/08	0.019	0.62	155	< 2.0	0.005	0.42	< 0.001	189	0.24	< 0.005	3.9	< 2.00	370	0.077	140	< 0.01
	12/17/08	0.004	0.10	141	2.4	0.002	0.12	< 0.001	172	0.05	< 0.005	11.0	< 2.00	150	0.115	23	< 0.01
	02/07/09	< 0.020	0.34	94	20.5	0.003	0.44	< 0.001	115	0.15	< 0.005	4.7	< 2.00	390	0.024	63	0.02
	07/22/09	0.018	0.46	150	15.7	0.005	0.45	< 0.002	183	0.23	< 0.005	12.0	< 2.00	420	0.370	130	< 0.05
	01/20/10	0.014	0.24	98	13.0	0.003	0.44	< 0.001	120	0.12	< 0.005	3.5	< 2.00	330	< 0.020	48	< 0.01
	02/06/10	0.007	0.11	92	7.6	0.002	0.21	< 0.001	112	0.05	< 0.005	2.3	< 2.00	150	0.019	15	< 0.01
	04/22/10																
	10/17/10	0.006	0.43	140	2.2	0.016	0.10	< 0.001	180	0.20	< 0.005	14.0	< 2.00	150	0.260	130	< 0.02
	12/20/10	0.016	0.37	130	2.9	< 0.001	0.37	< 0.001	160	0.24	< 0.005	3.5	< 2.00	370	0.280	200	< 0.01
	12/22/10																
	03/21/11	0.014	0.84	180	8.1	0.006	0.22	< 0.001	220	0.53	< 0.005	12.0	< 2.00	350	0.280	240	< 0.01
	09/11/11	0.046	0.44	100	56.0	< 0.005	1.80	0.003	130	0.15	< 0.005	7.2	< 2.00	1,400	< 0.010	70	< 0.01
	10/03/11	0.018	0.27	99	28.0	0.002	0.60	0.001	120	0.11	< 0.005	6.6	< 2.00	470	0.050	45	< 0.01
	03/17/12	0.010	0.41	140	7.0	0.004	0.18	< 0.001	170	0.27	< 0.005	< 2.0	< 2.00	190	< 0.020	100	0.01
	07/23/12	0.018	0.27	94	18.0	0.002	0.34	< 0.001	110	0.12	< 0.005	< 2.0	< 2.00	360	0.550	94	< 0.01
	07/31/12	0.015	0.19	190	15.0	< 0.001	0.23	< 0.001	230	0.09	< 0.005	< 2.0	< 2.00	260	0.110	30	< 0.01
	08/12/12	0.006	0.28	82	0.9	0.004	0.08	< 0.001	100	0.17	< 0.005	< 2.0		79	0.083	56	< 0.01
	08/18/12	NA	0.23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/30/12	NA	0.29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	01/26/13	NA	0.15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	07/19/13	0.030	0.34	110	43.1	0.003	0.90	0.003	134	< 0.01	< 0.100	NA	< 10.00	886	< 0.100	54	< 0.10
	08/18/13	0.019	0.26	305	25.5	0.004	0.50	0.001	372	< 0.01	< 0.100	NA	< 10.00	425	< 0.100	34	< 0.10
	08/25/13	NA	0.21	NA	NA	NA	NA	NA	NA	< 0.01	NA	NA	NA	NA	NA	NA	NA
	11/21/13	0.012	0.18	155	17.7	0.005	0.36	0.001	189	< 0.01	< 0.005	NA	< 10.00	326	0.050	266	< 0.10
	08/04/14	Samples not Taken due to Las Vegas Channel Improvements, Sloan Channel to Bonanza Road and Flamingo Wash below Nellis Boulevard Improvement Project															
	08/20/14																
	09/08/14																
	01/11/15	0.003	0.28	65	3.2	0.004	0.08	< 0.001	79	< 0.01	< 0.005	NA	< 2.00	82	< 0.010	45	< 0.01
	01/30/15	NA	0.14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	03/02/15	0.004	0.21	123	2.0	0.003	0.07	< 0.001	150	0.06	< 0.005	NA	< 2.00	69	< 0.010	41	< 0.01
	07/06/15	0.004	0.17	203	1.9	0.008	0.25	< 0.001	248	< 0.01	< 0.005	NA	< 2.00	145	< 0.010	38	< 0.01
	10/05/15	NA	0.19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	04/09/16	0.003	0.09	198	1.6	0.005	0.13	< 0.0010	242	< 0.01	< 0.005		< 2.00	226	< 0.010	7	< 0.01
	04/28/16	NA	0.22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	05/06/16	NA	0.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/04/16	0.001	0.11	60	0.011	0.002	0.08	< 0.0010	73	< 0.01	< 0.005	NA	< 2.00	NA	< 0.010	20	< 0.01
	08/23/16	0.010	0.12	65	0.3	0.005	0.21	< 0.0010	79	< 0.01	NA	NA	< 2.00	NA	NA	36	NA
	12/22/16	0.003	0.14	75	0.7	0.003	0.06	< 0.001	92	0.03	NA	NA	< 2.00	NA	NA	25	NA
	01/20/17		0.10														
	02/18/17		0.34														
	07/17/17	NA	0.21	125	NA	NA	NA	NA	153	NA	NA		< 5.00	NA	NA	NA	NA
	07/25/17	0.0086	0.09	75	0.07	0.0019	0.14	< 0.0010	92	0.03	~		< 2.00	~	~	26	~
	01/09/18	0.0047	0.16	90	1.11	0.0047	0.09	< 0.0010	110	0.02	~		< 5.00	~	~	17	~
	07/15/18	0.0025	0.18	85	0.48	0.0058	0.08	< 0.0010	104	0.03	NA	NA	< 2.00	NA	NA	21	NA
	01/14/19	0.0037	0.13	62	7.58	0.0036	0.12	< 0.0010	76	0.13	NA	NA	< 5.00	NA	NA	13	NA
	02/14/19	0.0033	0.09	78	4.55	0.0036	0.17	< 0.0010	95	< 0.01	NA	NA	< 5.00	NA	NA	< 10	NA
	11/20/19	0.0080	0.17	84	2.71	0.0040	0.25	< 0.0020	84	< 0.05	NA	NA	< 5.00	NA	NA	24	NA
	11/28/19	0.0036	< 0.05	60	2.70	0.0024	0.08	< 0.0010	60	< 0.05	NA	NA	< 5.00	NA	NA	6	NA
	03/11/20	0.0041	0.02	51	5.52	0.0043	0.10	< 0.0010	51	0.02	NA	NA	< 5.00	NA	NA	6	NA
	07/25/21	0.0094	0.20	960	5.18	0.0020	0.51	< 0.0020	960	0.05	NA	NA	< 5.00	NA	NA	20	NA
	07/25/22	0.0071	0.18	102	10.10	0.0041	0.47	< 0.0012	102	0.07	NA	NA	< 5.00	NA	NA	28	NA
	08/11/22	0.0041	0.09	130	12.80	0.0036	0.34	< 0.0012	130	0.03	NA	NA	< 5.00	NA	NA	10	NA
	06/16/23	0.0058	0.11	204	5.47	0.0044	0.15	< 0.0010	204	0.03	NA	NA	< 5.00	NA	NA	13	NA
	Median	**0.0076**	**0.2130**	**101**	**5.00**	**0.0040**	**0.210**	**< 0.0010**	**120**	**0.054**	**< 0.005**	**4.93**	**< 2.000**	**290**	**0.077**	**35.5**	**< 0.01**
	Maximum	**0.0460**	**0.8400**	**960**	**56.0**	**0.1000**	**1.800**	**< 0.0100**	**960.0**	**0.530**	**< 0.10**	**33.7**	**< 10.00**	**1,400**	**0.57**	**266**	**< 0.10**
	Minimum	**0.0014**	**< 0.0200**	**51.0**	**0.0113**	**< 0.0010**	**0.058**	**< 0.0010**	**51.0**	**< 0.005**	**< 0.005**	**1.68**	**< 0.028**	**69.400**	**< 0.010**	**5.86**	**< 0.01**

Location	Date	Diuron mg/L	Diquat mg/L	Paraquat mg/L	Endothall mg/L	Fluoride mg/L	Glyphosate mg/L	Hardness as CaCo3 mg/L	Hydroxide as OH mg/L	Iron mg/L	Langelier Index 25 degree None	Magnesium mg/L	Manganese mg/L	Potassium mg/L	Reactive Silica mg/L
Las Vegas Wash @ The Club at Sunrise (Formerly known as Desert Rose Golf Course) (USGS)	04/02/97														
	07/28/97														
	02/04/98														
	02/24/98														
	04/24/99														
	04/30/99														
	02/21/00														
	10/23/00														
	02/26/01														
	11/24/01														
	09/11/02				< 0.020	0.810	0.020		0.002	4	0.11	71	0.14	18.0	20
	02/12/03		< 0.0004	< 0.002	< 0.005	0.550	0.010	839	0.009	2	0.32	30	0.79	9.6	11
	02/25/03														
	07/19/03				< 0.020	0.620	0.014	775	0.004	7	0.48	67	0.23	15.0	
	02/21/04					0.530		481	0.005	3	0.25	44	0.08	12.0	14
	11/09/04					0.260	< 0.006	1,060	0.001	57	-0.29	87	0.49	23.0	
	01/04/05	< 0.0010	< 0.0004	< 0.002	< 0.005	0.220	< 0.006	1,440	0.010	24	0.89	100	0.58	11.0	160
	07/24/05	0.0087	< 0.0004	< 0.002	< 0.020	0.260	0.010	1,310	0.007	17	0.68	96	0.43	11.0	10
	10/05/06						0.007	610		9		44	0.22	7.6	12
	01/05/08					0.076	0.008	1,100	13.000	13	0.60	82	0.22	14.0	9
	08/07/08	0.0011	< 0.0040	< 0.002	< 0.020	0.480	0.020	2,060	< 2.000	34	0.90	190	1.00	28.0	18
	11/26/08	< 0.0010	< 0.0040	< 0.002	< 0.020	0.530	0.029	1,500	< 2.000	19	1.30	140	0.55	33.0	14
	12/17/08	< 0.0010	< 0.0040	< 0.002	< 0.020	0.230	0.008	552	< 2.000	9	0.40	43	0.16	7.2	5
	02/07/09	< 0.0080	< 0.0040	< 0.002	< 0.020	0.470	0.062	1,430	< 2.000	23	0.80	110	0.73	19.0	12
	07/22/09	< 0.0040	< 0.0016	< 0.008	< 0.020	0.540	0.075	1,600	< 2.000	20	0.83	140	0.51	27.0	15
	01/20/10	< 0.0010	< 0.0004	< 0.002	< 0.020	0.260	0.018	1,100	< 2.000	10	0.88	79	0.53	13.0	88
	02/06/10	< 0.0010	< 0.0004	< 0.002	< 0.005	0.180	< 0.006	570	< 2.000	8	0.69	44	0.23	6.3	81
	04/22/10														
	10/17/10	< 0.0010	< 0.0004	< 0.002	< 0.009	0.390	0.240	690	< 2.000	3	0.31	77	0.12	18.0	30
	12/20/10	< 0.0010	< 0.0004	< 0.002	< 0.009	0.280	< 0.006	1,500	< 2.000	30	1.20	140	0.95	24.0	110
	12/22/10														
	03/21/11	< 0.0020	< 0.0004	< 0.002	< 0.005	0.490	0.011	1,700	< 2.000	11	0.93	200	0.41	35.0	29
	09/11/11	< 0.0010	< 0.0004	< 0.002	< 0.020	0.330	0.024	5,600	< 2.000	100	1.30	490	2.40	46.0	150
	10/03/11	< 0.0010	< 0.0004	< 0.002	< 0.020	0.220	0.008	1,900	< 2.000	30	0.78	170	0.79	20.0	120
	03/17/12	< 0.0010	< 0.0004	< 0.002	< 0.020	0.410	0.070	890	< 2.000	9	0.45	100	0.38	23.0	75
	07/23/12					0.320	0.055	1,200	< 2.000	22	0.73	82	0.58	21.0	99
	07/31/12					0.280	< 0.006	970	< 2.000	20	1.10	75	0.40	15.0	150
	08/12/12					0.270	0.014	390	< 2.000	1	-0.24	47	0.08	12.0	13
	08/18/12					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/30/12					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	01/26/13					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	07/19/13					< 0.100	NA	2,793	< 2.000	41	NA	141	2.06	34.7	119
	08/18/13					0.130	NA	1,530	< 2.000	23	NA	114	0.66	18.3	108
	08/25/13					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/21/13					0.410	NA	1,155	< 2.000	17	NA	83	0.60	13.3	87
	08/04/14	Samples not Taken due to Las Vegas Channel Improvements, Sloan Channel to Bonanza Road and Flamingo Wash below Nellis Boulevard Improvement Project													
	08/20/14														
	09/08/14														
	01/11/15					0.420	NA	362	< 2.000	4	NA	38	0.10	15.6	22
	01/30/15					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	03/02/15					< 0.100	NA	320	< 2.000	2	NA	36	0	10	21
	07/06/15					0.340	NA	500	< 2.000	2	NA	34	0.27	66.5	12
	10/05/15					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	04/09/16					0.220		707	< 2.000	1	NA	35	0.23	4.8	6
	04/28/16					NA		NA	NA	NA	NA	NA	NA	NA	NA
	05/06/16					NA	N	NA	NA	NA	NA	NA	NA	NA	NA
	08/04/16					0.186	NA	101	< 2.000	0.305	NA	6	0.03	NA	NA
	08/23/16					0.315	NA	1,410	< 2.000	0.764	NA	44	0.53	NA	NA
	12/22/16					0.699	NA	243	< 2.000	0.689	NA	18	0.10	NA	NA
	01/20/17														
	02/18/17														
	07/17/17					NA	~	NA	< 5.000	NA	~	NA	NA	NA	NA
	07/25/17					0.136	~	653	< 2.000	0.02	~	18.5	0.21	~	~
	01/09/18					0.458	~	438	< 5.000	1.47	~	28.7	0.20	~	~
	07/15/18					0.362	NA	231	< 2.000	0.76	NA	16.2	0.06	NA	NA
	01/14/19					0.201	NA	392	< 5.000	6.68	NA	27.4	0.19	NA	NA
	02/14/19					0.162	NA	344	< 5.000	5.70	NA	25	0.14	NA	NA
	11/20/19					1.080	NA	622	< 5.000	3.01	NA	37.1	0.32	NA	NA
	11/28/19					< 0.100	NA	295	< 5.000	1.91	NA	19.2	0.09	NA	NA
	03/11/20					0.324	NA	203	< 5.000	0.71	NA	13.3	0.10	NA	NA
	07/25/21					0.464	NA	1,600	< 5.000	29.30	NA	100	0.50	NA	NA
	07/25/22					0.406	NA	629	< 5.000	9.24	NA	43.1	0.17	NA	NA
	08/11/22					0.178	NA	606	< 5.000	11.60	NA	41.1	0.19	NA	NA
	06/16/23					0.265	NA	390	< 5.000	5.14	NA	26.8	0.15	NA	NA
	Median	**< 0.001**	**< 0.0004**	**< 0.0020**	**< 0.0200**	**0.318**	**0.0125**	**741**	**< 2.000**	**8.500**	**0.71**	**47**	**0.230**	**16.80**	**22**
	Maximum	**< 0.009**	**< 0.004**	**< 0.008**	**< 0.020**	**1.080**	**0.240**	**5,600**	**13.00**	**100.0**	**1.30**	**490**	**2.400**	**66.5**	**160**
	Minimum	**< 0.001**	**< 0.0004**	**< 0.002**	**< 0.005**	**0.076**	**< 0.006**	**101**	**0.001**	**0.018**	**-0.290**	**6.2**	**0.030**	**4.8**	**5**

Location	Date	Sodium mg/L	Sulfate mg/L	Thallium mg/L	Organic Carbon mg/L	Cyanide mg/L	BOD mg/L	COD mg/L	Color ACU	Turbidity NTU	Phenol mg/L	Petroleum Hydrocarbons	TPH (diesel) MPN/100 mL	TPH (gasoline) MPN/100 mL	Total Chlorine mg/L
Las Vegas Wash @ The Club at Sunrise (Formerly known as Desert Rose Golf Course) (USGS)	04/02/97					0.015	77	290	150	230	0.010	4			
	07/28/97					0.007	35	240	180	220	< 0.010	< 1			< 0.10
	02/04/98					< 0.005	74	260	25	1,660	0.013				
	02/24/98					< 0.005	10	90	10	1,050	< 0.010	< 1			
	04/24/99														
	04/30/99														
	02/21/00														
	10/23/00														
	02/26/01														
	11/24/01														
	09/11/02	130	460	< 0.0010	116										
	02/12/03	43	230	< 0.0010	36										
	02/25/03														
	07/19/03	98	420	< 0.0010	66										
	02/21/04	64	280	< 0.0100											
	11/09/04	20	180	< 0.0010											
	01/04/05	15	130	< 0.0010	6										
	07/24/05	29	140	< 0.0010	34										
	10/05/06	23	110	< 0.0010	21										
	01/05/08	55	220	< 0.0010	55										
	08/07/08	120	660	< 0.0010	68										
	11/26/08	120	440	< 0.0010	54										
	12/17/08	439	97	< 0.0010	28										
	02/07/09	1,020	300	< 0.0010	26										
	07/22/09	110	530	< 0.0020	99										
	01/20/10	49	270	< 0.0010	28										
	02/06/10	16	64	< 0.0010	16										
	04/22/10														
	10/17/10	100	490	< 0.0010	66					28					
	12/20/10	150	580	< 0.0010	18					1,200					
	12/22/10									760					
	03/21/11	220	1,300	< 0.0010	38					210					
	09/11/11	75	500	< 0.0050	54					5,200					
	10/03/11	48	350	< 0.0010	29					1,100					
	03/17/12	95	520	< 0.0010	68					560	< 0.005				
	07/23/12	64	380	< 0.0010						700					
	07/31/12	34	150	< 0.0010						780					
	08/12/12	58	290	< 0.0010						43					
	08/18/12	NA	NA	NA			25			2,300					
	08/30/12	NA	NA	NA			18			2,600					
	01/26/13	NA	NA	NA			30			860					
	07/19/13	46	323	0.0012	47	< 0.050	36	189		193	0.810				
	08/18/13	38	162	< 0.0010	47	< 0.050	40	990		790	0.360				
	08/25/13	NA	NA	NA			< 2	566		368	NA				
	11/21/13	31	395	< 0.0010	46	< 0.050	47	160		746	0.360				
	08/04/14	Samples not Taken due to Las Vegas Channel Improvements, Sloan Channel to Bonanza Road and Flamingo Wash below Nellis Boulevard Improvement Project													
	08/20/14														
	09/08/14														
	01/11/15	39	185	< 0.0010	32	< 0.050	41	98		136	0.250				
	01/30/15	NA	NA	NA	NA	NA	22	76		147					
	03/02/15	116	167	< 0.0010	24	< 0.050	16	146		198	0.120				
	07/06/15	70	114	< 0.0010	37	< 0.050	41	275		340	0.460				
	10/05/15	NA	NA	NA	NA	NA	26	306		485	NA				
	04/09/16	11	44	< 0.0010	16	< 0.050	58	127		1,152	0.440				
	04/28/16	NA	NA	NA	NA	NA	263	243		939	NA				
	05/06/16	NA	NA	NA	NA	NA	17	232		628	NA				
	08/04/16	11	63	< 0.0010	41	< 0.050	179	103		340	0.170				
	08/23/16	30	173	< 0.0010	45	< 0.050	< 2	73		401	0.121				
	12/22/16	20	103	< 0.0010	51	< 0.050	75	522		292	0.358				
	01/20/17						15	< 39		164					
	02/18/17						29	< 39		271					
	07/17/17	NA	NA	NA	NA		42.3	130		355.0					
	07/25/17	27	111	< 0.001	131	< 0.050	23.8	< 39		2,190.0	0.38				
	01/09/18	18	55	< 0.001	64	< 0.050	44.5	269		326.0	0.13				
	07/15/18	22	76	< 0.001	39	< 0.050	< 2	95.9		160.0	0.13				
	01/14/19	11	39	< 0.001	44	< 0.010	93.0	178.0		328.0	0.07				
	02/14/19	11	21	< 0.001	15	< 0.005	< 2	45.0		278.0	0.13				
	11/20/19	21.3	72	< 0.001	64	< 0.005	54.8	282.0		495.0	0.44				
	11/28/19	6.5	20	< 0.001	15	< 0.010	5.7	98.6		62.9	0.12				
	03/11/20	6.8	19	< 0.001	16	< 0.005	25.5	76.1		169.0	0.75				
	07/25/21	23.5	99	< 0.001	56	< 0.050	35.7	102.0		1,060	< 0.05				
	07/25/22	26.2	113	< 0.001	59	< 0.050	52.8	202.0		526	0.08				
	08/11/22	9.2	40	< 0.001	22	< 0.050	27.8	256.0		666	1.29				
	06/16/23	12.9	48	< 0.001	103	< 0.050	34.7	231.0		353	0.12				
	Median	**38.2**	**167**	**< 0.001**	**43**	**< 0.050**	**34.70**	**169**	**87.5**	**401.0**	**0.13**	**< 1**			**< 0.1**
	Maximum	**1,020**	**1,300**	**< 0.010**	**131**	**< 0.050**	**263**	**990**	**180**	**5,200**	**1.290**	**4**			**< 0.1**
	Minimum	**6.5**	**19**	**< 0.001**	**6.42**	**< 0.005**	**< 2.0**	**< 38.6**	**10**	**28**	**< 0.005**	**< 1**			**< 0.1**

Location	Date	Fecal Coliform MPN/100 mL	Fecal* Coliform MPN/100 mL	Fecal** Coliform MPN/100 mL	Fecal Strep. MPN/100 mL	Fecal* Strep. MPN/100 mL	Fecal** Strep. MPN/100 mL	*E. Coli* MPN/100mL	Salmonella MPN/100 mL	VOC # of detects		Pesticides # of detects		SOC # of detects		Herbicides # of detects	
Las Vegas Wash @ The Club at Sunrise (Formerly known as Desert Rose Golf Course) (USGS)	04/02/97	7,500			90,000				< 2.0			1				4	
	07/28/97	1,600,000			1,600,000				< 2.2								
	02/04/98	8,000			28,000				< 2.2			2				1	
	02/24/98	2,400			8,000				< 2.2			1				1	
	04/24/99									1	a	0				1	hh
	04/30/99									2	a,ff	0				1	hh
	02/21/00									1	a					0	
	10/23/00											0				0	
	02/26/01	2,200			220,000					1	a	0				0	
	11/24/01									1	a	0				0	
	09/11/02	300,000			500,000												
	02/12/03	500,000			22,000					1	a	0		4	g,j,o,x	0	
	02/25/03	30,000			30,000					0		0					
	07/19/03									1		0		0		0	
	02/21/04	1,600			33,000					1	a	0		0		0	
	11/09/04	16,000			5,000					0							
	01/04/05	500			28,000					3	d,dd,ee	0		2	g,k	0	
	07/24/05	1,600,000			170,000					2	a,k	0		0		2	hh,uu
	10/05/06	300,000			50,000					14		1	c,m,ii,jj,kk,ll	0		1	
	01/05/08	3,000			28,000					14		0		1		0	
	08/07/08									7		2		1		1	
	11/26/08	130			900					5		0		2		2	
	12/17/08	14,000			90,000					6		0		7		1	
	02/07/09	17,000			9,000					10		2		2		1	
	07/22/09	160,000,000			700,000					0		1		1		0	
	01/20/10	28,000			8,000					6		0		2		0	
	02/06/10	70,000			90,000					6		0		1		0	
	04/22/10	> 16,000			30,000					0		0		0		0	
	10/17/10	16,000,000			600,000					11	a,b,pp,qq,rr,ss,	1	gg	3	h,j,o	1	ccc
	12/20/10				50,000					5	d,ee,qq,vv,bbb	0		0		0	
	12/22/10	300,000			< 16,000												
	03/21/11	< 16,000			170					5	a, d, vv, qq, bbb	1	gg	1	o		
	09/11/11	2,100,000			900,000					7	a,b,qq,pp,tt,vv,zz	1	gg	0		0	
	10/03/11	330,000			70,000					10	a,b,e,pp,qq,vv,aaa,bbb	0		0		0	
	03/17/12	50,000			3,300,000					11	a,b,d,ff,gg,ss,vv,zz,aaa,bbb,ggg	0		0		0	
	07/23/12	2,200,000			230,000					6	b, ff, pp, qq, vv, bbb	2	gg, zz	1	x	1	lll
	07/31/12	790,000			NA					10	a, b, ff, qq, ss, vv, bbb, ggg, hhh, iii	1	gg	1	j	0	
	08/12/12	1,700,000			NA					8	a, b, ff, pp, qq, ss, vv, bbb	1	gg	2	h, j	0	
	08/18/12	130,000			540,000						NA		NA		NA		NA
	08/30/12	1,700,000			35,000						NA		NA		NA		NA
	01/26/13	17,000			260,000						NA		NA		NA		NA
	07/19/13	> 241,960			72,700					9	a, b, qq, vv, ddd, nnn, ooo, ppp, qqq	2	gg, zz	5	h,j,o,x, aaaa	1	mmm
	08/18/13	> 241,960			2,160					7	a, b, qq, vv, hhh, yyy, bbbb	2	gg, zz	2	h, aaaa	1	mmm
	08/25/13	> 241,960			200						NA		NA		NA		NA
	11/21/13	5,040			24,066					9	a, b, pp, qq, vv, bbb, ggg, hhh, iii,	5	gg, zz, ttt, uuu, vvv	6	h, j, o, x, www, aaaa	3	hh, rrr, xxx
	08/04/14	Samples not Taken due to Las Vegas Channel Improvements, Sloan Channel to Bonanza Road and Flamingo Wash below Nellis Boulevard Improvement Project															
	08/20/14																
	09/08/14																
	01/11/15	3,830			6,270					8	a, b, bbb, qq, vv, qqq, yyy, eeee	2	gg, dddd	6	h, i, j, o, www, aaaa	1	hh
	01/30/15	2,210			6,510					0		0		0		0	
	03/02/15	860			20,140					7	a, b, qq, ss, vv, bbb, iii	2	gg, dddd	6	h, j, n, o, x, www	3	hh, rrr, cccc
	07/06/15	> 241,960			92,080					4	a,b,qq,vv	1	gg	4	ssss, www, h,zz	1	hh
	10/05/15	120,330			113,700												
	04/09/16	123,400			16,160					6	a, b, zzz, qq, ss, bbb			2	o, h	1	hh
	04/28/16	92,080			6,630												
	05/06/16	298,700			8,200					6		2		2		1	
	08/04/16	198,630			15,531					2		0		1		1	
	08/23/16	1,299,700			30,000					3		0		1		1	
	12/22/16	59,600			29,800					1		0		2		2	
	01/20/17	241,960			< 1												
	02/18/17	23,600			530												
	07/17/17	> 2,419,600			12,030						NA		NA		NA		NA
	07/25/17	1,080			5,200					2	~	0	~	2	~	1	~
	01/09/18	7,710			2,590					2	~	0	~	5	~	0	~
	07/15/18	> 241,960			23,820					2		0		3		0	
	01/14/19	5,120			> 2,420					1		0		3		1	
	02/14/19	2,420			5,910					2		0		4		0	
	11/20/19	24,196			19,863					1		1		4		1	
	11/28/19	> 2,420			> 2,420					1		1		1		1	
	03/11/20	5,475			10,462					2		1		0		1	
	07/25/21	> 48,392			48,392					2		0		2		2	
	07/25/22	> 24,196			375					0		0		2		0	
	08/11/22	58,100			15,200					2		0		0		0	
	06/16/23	435,200			6,100			172,000		0		0		3		1	
	Median	**58,100**			**23,943**			**172,000**	< **2.2**	**2**		**0**		**2**		**1**	
	Maximum	**160,000,000**			**3,300,000**			**172,000**	< **2.2**	**14**		**5**		**7**		**4**	
	Minimum	**130**			< **1**			**172,000**	< **2.0**	**0**		**0**		**0**		**0**	

Location	Date	Q cfs	Temp Deg. C	Oil & Grease mg/L	TSS mg/L	TDS mg/L	Specific Conductance umho/cm	Lab pH units	Surfactants (MBAS) mg/L	Ortho-Phosphate mg/L	Total Phosphorous mg/L	NO3-N mg/L	NO-2 mg/L	NH3-N mg/L
Lake Las Vegas & Rainbow Gardens *LLV Ends 2009-2010 RG Starts 2010-2012	02/12/03	560			11,100	1,160	1,650	7.50	< 0.05	3.00	4.30	5.0	0.520	
	12/28/04			< 5.0	1,970	1,120	1,560	7.60	0.05	0.49	2.30	4.7	0.490	
	02/11/05			< 5.0	1,360	910	1,290	7.60	0.09	0.67	0.67	4.6	< 0.050	
	10/25/05				2,480	590				0.58	2.40		1.900	
	10/14/06				3,600	1,250	1,720	7.30	< 0.05	0.13	1.30	3.4	0.620	
	04/16/07				78	1,730	2,460	8.30	< 0.05	0.15	0.15	14.0	< 1.000	
	07/24/07			1.7	178	1,420	1,930	7.40	0.62	0.13	0.13	8.4	< 0.500	
	08/01/07			< 5.0	74	1,430	1,900	8.00	< 0.05	0.14	0.14	12.0	< 1.000	
	08/27/07			2.9	3,140	732	1,030	7.50	0.11	1.40	2.20	2.8	< 0.500	
	09/22/07			2.1	1,440	574	838	7.60	< 0.05	1.30	1.90	2.9	< 0.200	
	01/27/08			< 5.0	98	1,620	2,260	7.50	< 0.05	0.26	0.26	45.0	< 0.001	
	08/07/08			1.4	6,540	2,560	2,820	7.50	0.04	2.60	2.60	7.4	< 0.500	
	11/26/08			4.9	1,020	1,150	1,720	7.40	0.16	0.47	0.77	7.6	< 0.500	
	02/07/09			1.9	206	1,050	1,450	7.60	0.09	0.39	0.42	6.7	< 0.100	
	01/20/10			5.3	540	910	1,400	7.30	< 0.05	0.59	0.59	8.8	< 0.130	
	01/27/10			< 5.0	430	1,400	2,000	7.00	0.12	0.30	0.31	12.0	< 0.130	
	02/06/10			< 4.8	240	1,500	2,100	7.10	0.09	0.27	0.39	13.0	< 0.130	
	02/22/10			< 4.8	120	1,500				0.06	0.20	13.0		
	12/20/10			< 5.0	180	1,100	1,800	7.10	0.16	0.12	0.27	11.0	< 0.050	
	12/22/10			< 5.0	4,000	460		7.80	0.76	1.60	1.90	1.8		0.06
	07/03/11			< 5.0	3,800	2,200	2,600	7.40	< 0.05	0.14	2.70	4.2	1.500	
	09/13/11			< 5.0	630	1,000	1,400	7.60	0.07	0.08	0.84	3.7	< 0.250	
	10/03/11			< 5.0	420	1,200	1,800	7.60	0.13	0.10	0.52	8.0	< 0.250	
	07/16/12			< 4.9	150	980	1,400	7.40	0.09	0.09	0.57	7.6	< 0.250	
	07/31/12			5.2	150	1,400	NA	8.10	0.48	0.09	0.24	11.0	< 0.250	
	08/22/12			< 4.8	2,800	1,200	1,600	7.70	< 0.05	0.10	3.40	2.6	< 0.250	
	09/11/12			< 4.9	12,000	1,000	1,300	7.70	0.26	0.10	1.80	3.4	< 0.250	
	10/11/12			< 4.9	1,200	1,200	NA	7.60	< 0.05	0.05	1.20	8.9	< 0.130	
	01/26/13			5.1	370	1,300	NA	7.90	0.12	0.46	0.50	9.2	< 0.130	
	07/19/13			5.1	2,585	1,175	1,723	7.45	0.26	< 0.01	1.10	3.0	< 0.100	0.37
	08/18/13			5.1	153	1,330	1,784	8.01	< 0.20	0.10	0.51	7.0	< 0.100	< 0.10
	08/25/13			5.1	1,003	NA	NA	7.81	NA	0.11	0.74	6.6	< 0.100	< 0.10
	11/21/13			< 5.0	860	695	1,158	7.51	0.68	0.12	0.61	3.6	< 0.100	0.70
	08/04/14			5.7	548	1,140	1,766	7.97	0.14	0.10	0.55	10.8	< 0.100	< 0.10
	08/20/14			< 5.0	260	1,125	1,610	7.98	< 0.10	0.08	0.73	8.5	< 0.100	< 0.10
	09/08/14			6.7	850	915	1,375	7.13	0.30	0.08	1.20	7.4	< 0.100	< 0.10
	01/11/15			< 5.0	295	1,345	NA	7.84	0.18	0.37	0.48	9.9	< 0.100	0.27
	01/30/15			< 5.0	110	1,270	NA	7.90	< 0.10	0.06	0.09	10.8	< 0.100	< 0.10
	03/02/15			< 5.0	120	1,290	NA	7.80	0.11	0.07	0.07	11.0	< 0.100	0.14
	07/06/15			10.0	365	1,100	1,686	7.14	< 0.10	0.06	0.38	7.8	< 0.100	< 0.10
	10/05/15			< 5.0	725	1,260	NA	6.90	0.40	0.11	0.99	4.8	< 0.100	0.45
	01/31/16			< 5.0	45	1,260	2,010	7.86	0.32	0.09	0.48	10.3	< 0.100	0.28
	04/09/16			< 5.0	175	1,390		7.41	0.10	0.04	0.36	10.5	< 0.100	< 0.10
	04/28/16													
	08/04/16			5.0	155	980		7.66	0.26	0.24	0.36	9.4	< 0.100	0.12
	08/23/16			< 5.0	525	955		7.51	0.14	N/A	N/A	6.7	< 0.100	0.25
	12/22/16			< 5.0	92	1,090		7.73	0.24	0.12	0.20	10.3	< 0.100	0.15
	01/20/17			< 5.0	166	1,100		8.48	0.26	0.14	0.31	9.5	< 0.100	0.12
	02/18/17			9.7	492	270		7.33	0.57	0.15	0.60	1.2	< 0.100	0.28
	07/17/17			5.3	< 5.0	1,380	NA	7.56	0.23	0.10	0.16	7.4	< 0.1	< 0.10
	08/04/17			2.2	21	1,240	~	7.80	0.21	0.11	0.13	< 0.1	< 0.1	< 0.10
	01/09/18			< 5.0	775	1,020	~	7.70	< 0.069	0.15	0.97	7.2	< 0.1	0.74
	07/15/18			< 5.0	145	1,100	NA	7.57	< 0.10	< 0.05	0.28	8.65	< 0.100	0.19
	02/14/19			5.4	1,180	475	NA	7.23	0.10	0.08	0.79	2.38	< 0.100	0.60
	11/20/19			< 5.0	105	995	NA	7.35	0.55	0.24	0.77	5.79	< 0.100	0.55
	11/28/19			< 5.0	120	790	NA	7.33	0.19	0.26	0.40	5.32	< 0.100	0.80
	03/11/20			< 5.0	92	605	NA	7.49	0.37	0.23	0.31	4.47	< 0.100	0.17
	07/26/21		NA	< 5.0	2,600	1,020	NA	7.08	0.07	0.20	1.98	6.20	< 0.100	1.01
	07/25/22		NA	5.7	125	1,400	NA	7.91	0.29	< 0.05	0.35	9.78	< 0.100	0.33
	08/12/22		NA	6.8	786	690	NA	7.52	0.63	0.30	2.22	4.97	< 0.100	1.06
	06/16/23		25.3	< 5.0	268	940	NA	6.90	0.88	< 0.05	0.77	6.26	0.408	1.10
	Median	**560**	**25.3**	**< 5.0**	**395**	**1,125**	**1,720**	**7.57**	**0.120**	**0.130**	**0.56**	**7.40**	**< 0.100**	**0.18**
	Maximum	**560**	**25.3**	**10**	**12,000**	**2,560**	**2,820**	**8.48**	**0.76**	**3.0**	**4.30**	**45.0**	**1.900**	**1.10**
	Minimum	**560**	**25.3**	**1.4**	**< 5**	**270**	**838**	**6.90**	**< 0.035**	**< 0.010**	**0.074**	**< 0.10**	**< 0.001**	**0.06**

Location	Date	TKN mg/L	Total Nitrogen mg/L	Copper mg/L	Dissolved Copper mg/L	Chromium mg/L	Lead mg/L	Dissolved Lead mg/L	Mercury mg/L	Cadmium mg/L	Zinc mg/L	Dissolved Zinc mg/L
Lake Las Vegas & Rainbow Gardens *LLV Ends 2009-2010 RG Starts 2010-2012	02/12/03	9.6	15.14	0.082		0.0430	0.0920		< 0.0002	< 0.00250	0.35	
	12/28/04	5.5	10.60	< 0.010	< 0.010	0.0330	0.0500	< 0.0200	< 0.0002	< 0.00500	0.27	< 0.020
	02/11/05	2.3	6.90	0.041	< 0.010	0.0230	0.0310	< 0.0200	< 0.0002	0.61000	0.17	< 0.020
	10/25/05			0.056	0.014	0.0570		0.1090			0.21	0.109
	10/14/06	2.3		0.120	0.007	0.0700	0.1300	0.0005	< 0.0002	0.00120	0.45	< 0.005
	04/16/07	1.0		0.150	0.011	2.5000	0.0016	< 0.0005	< 0.0002	< 0.00050	0.09	0.030
	07/24/07	1.4		0.026	0.015	0.0031	0.0041	< 0.0005	< 0.0002	< 0.00050	0.08	0.025
	08/01/07	1.1		0.023	0.022	0.0025	0.0031	0.0029	< 0.0002	< 0.00050	0.06	0.054
	08/27/07	5.0		0.006	0.008	0.0240	< 0.0005	< 0.0005	< 0.0002	< 0.00050	0.17	< 0.005
	09/22/07	4.3		0.051	0.011	0.0280	0.0160	< 0.0005	< 0.0002	< 0.01000	0.17	< 0.005
	01/27/08	1.8		0.003	0.006	0.0027	0.0016	< 0.0005	< 0.0002	< 0.00050	0.05	0.027
	08/07/08	6.5		0.027	0.008	0.0140	0.0180	< 0.0005	< 0.0002	< 0.00100	0.12	< 0.005
	11/26/08	5.6		0.034	0.011	0.0067	0.0100	< 0.0005	< 0.0002	< 0.00050	0.05	0.037
	02/07/09	2.0		0.022	0.005	0.0047	0.0120	< 0.0005	< 0.0002	< 0.00052	0.21	< 0.020
	01/20/10	2.0	10.93	0.036	0.011	0.0081	0.0140	< 0.0005	< 0.0002	< 0.00050	0.11	< 0.020
	01/27/10	2.1	14.23	0.021	0.008	0.0083	0.0068	< 0.0005	< 0.0002	< 0.00050	0.07	< 0.020
	02/06/10	1.4	14.53	0.018	0.008	0.0051	0.0035	< 0.0005	< 0.0002	< 0.00050	0.06	0.024
	02/22/10	1.6	14.60	0.013	0.007	NA	0.0017	< 0.0005	NA	NA	0.06	0.030
	12/20/10	1.2	12.25	0.011	0.005	0.0038	0.0040	< 0.0005	< 0.0002	< 0.00050	0.04	< 0.020
	12/22/10	2.4	4.20	0.031	0.002	NA	0.0230	< 0.0005	NA	NA	0.12	< 0.020
	07/03/11	6.2	11.90	0.047	0.004	0.0330	0.0470	< 0.0005	< 0.0002	0.00006	0.17	< 0.020
	09/13/11	3.5	7.45	0.100	0.015	0.0190	0.0210	< 0.0005	< 0.0002	< 0.00050	0.12	< 0.020
	10/03/11	2.4	10.65	0.032	0.011	0.0092	0.0078	< 0.0005	< 0.0002	< 0.00050	0.08	< 0.020
	07/16/12	1.7	9.55	0.010	0.006	0.0033	0.0028	< 0.0005	< 0.0002	< 0.00050	0.03	< 0.020
	07/31/12	0.9	12.17	0.011	0.008	NA	0.0022	< 0.0005	NA	NA	0.04	< 0.020
	08/22/12	4.9		0.032	0.006	0.0250	0.0350	< 0.0005	< 0.0002	< 0.00050	0.10	0.026
	09/11/12	2.6		0.170	< 0.002	0.1100	0.1400	< 0.0005	< 0.0002	0.00240	0.62	< 0.020
	10/11/12	2.9		0.034	0.005	NA	0.0180	< 0.0005	NA	NA	0.14	< 0.020
	01/26/13	1.6		0.013	0.004	NA	0.0047	< 0.0005	NA	NA	0.07	< 0.020
	07/19/13	24.5	27.62	0.218	0.013	0.0542	0.0553	< 0.0005	< 0.0002	0.00176	0.43	0.013
	08/18/13	3.5	10.57	0.034	0.021	0.0041	0.0027	< 0.0005	< 0.0002	< 0.00100	0.05	0.016
	08/25/13	3.5	10.21	0.052	0.013	NA	0.0162	< 0.0010	NA	NA	0.15	0.012
	11/21/13	< 1.0	4.69	0.069	0.014	0.0207	0.0249	< 0.0005	< 0.0002	< 0.00100	0.17	0.013
	08/04/14	< 1.0	11.90	0.048	0.012	0.0137	0.0122	< 0.0005	< 0.0002	< 0.00100	0.12	0.016
	08/20/14	< 1.0	9.56	0.043	0.015	0.0085	0.0082	< 0.0005	< 0.0002	< 0.00100	0.07	0.012
	09/08/14	1.3	8.76	0.051	0.010	0.0173	0.0143	< 0.0005	< 0.0002	< 0.00100	0.13	0.012
	01/11/15	0.7	10.67	0.020	0.018	NA	0.0030	< 0.0005	NA	NA	0.06	0.050
	01/30/15	0.5	NA	0.014	0.009	NA	0.0020	< 0.0005	NA	NA	0.05	0.047
	03/02/15	1.2	NA	0.023	0.016	NA	0.0023	< 0.0005	NA	NA	0.06	0.051
	07/06/15	< 0.2	< 0.2	0.030	0.016	0.0020	0.0110	< 0.0005	0.0019	< 0.00050	0.20	0.066
	10/05/15	5.3	NA	0.019	0.016	NA	0.0150	0.0010	< 0.0002	NA	0.06	0.023
	01/31/16	1.5	1.19	0.021	0.019	0.0010	< 0.0005	< 0.0005	< 0.0002	< 0.00100	0.05	0.046
	04/09/16	1.3		0.001	0.011		0.0200	< 0.0005	< 0.0002		0.04	0.040
	04/28/16											
	08/04/16	1.9	1.82	0.032	0.033	0.0019	< 0.0005	< 0.0005	< 0.0001	< 0.00050	0.05	0.017
	08/23/16	2.2	1.97	0.022	0.013	0.0050	0.0104	< 0.0005	< 0.0002	0.00060	0.04	0.035
	12/22/16	1.5	1.38	0.025	0.021	0.0020	0.0021	< 0.0010	< 0.0002	< 0.00050	0.05	0.032
	01/20/17	1.1		0.013	0.010		0.0029	0.0005			0.04	0.033
	02/18/17	< 1.0		0.013	0.006		0.0080	< 0.0005			0.05	0.041
	07/17/17	< 1.0	< 0.10	0.029	0.022	NA	< 0.0005	< 0.0005	< 0.0003	NA	0.05	0.030
	08/04/17	1.13	1.13	0.014	0.014	0.0044	0.0010	< 0.0005	< 0.0003	< 0.00100	0.03	0.024
	01/09/18	1.49	0.75	0.020	0.006	0.0048	0.1510	0.0020	< 0.0002	< 0.00100	0.11	0.060
	07/15/18	1.68	1.49	0.008	0.004	0.0032	0.0044	0.0008	< 0.0002	< 0.00100	0.04	0.049
	02/14/19	2.39	1.79	0.027	< 0.001	0.0177	0.0199	< 0.0005	< 0.0002	0.00142	0.10	0.023
	11/20/19	4.00	3.45	0.025	0.012	0.0090	0.0070	0.0020	< 0.0003	< 0.00200	0.10	0.100
	11/28/19	2.50	1.70	0.008	0.007	0.0013	0.0026	< 0.0010	< 0.0003	< 0.0010	0.05	0.049
	03/11/20	1.57	1.40	0.023	0.003	0.0076	0.0044	0.0005	< 0.0002	< 0.0010	0.05	0.044
	07/26/21	6.79	5.78	0.037	< 0.001	0.0200	0.0467	< 0.0010	< 0.0003	< 0.0013	0.18	0.042
	07/25/22	2.89	0.01	0.006	0.002	0.0030	0.0066	< 0.0012	< 0.0003	< 0.0012	0.05	0.031
	08/12/22	9.32	0.03	0.029	0.003	0.0095	0.0203	< 0.0012	0.0008	< 0.0012	0.16	0.056
	06/16/23	5.75	4.65	0.019	< 0.001	0.0064	0.0072	< 0.0010	< 0.0003	< 0.0010	0.14	< 0.050
	Median	**2.00**	**6.90**	**0.0255**	**0.0100**	**0.0084**	**0.0080**	**< 0.0005**	**< 0.0002**	**< 0.0010**	**0.0800**	**0.0238**
	Maximum	**24.5**	**27.62**	**0.2180**	**0.0329**	**2.500**	**0.151**	**0.1090**	**0.0019**	**0.6100**	**0.62**	**0.109**
	Minimum	**< 0.20**	**< 0.01**	**0.0013**	**< 0.0010**	**0.001**	**< 0.0005**	**< 0.0005**	**< 0.0001**	**< 0.0001**	**0.029**	**< 0.005**

Location	Date	Silver mg/L	Nickel mg/L	Selenium mg/L	Dissolved Selenium mg/L	Arsenic mg/L	Boron mg/L	Alkalinity In CaCo3 mg/L	Aluminum mg/L	Antimony mg/L	Barium mg/L	Beryllium mg/L	Bicarbonate Alkalinity as HCO3 mg/L	Bromide mg/L	Bromate mg/L
Lake Las Vegas & Rainbow Gardens *LLV Ends 2009-2010 RG Starts 2010-2012	02/12/03	< 0.0025	0.0600					122	< 2.50	< 0.005	0.82	< 0.0050	149		
	12/28/04	< 0.0005	0.0560	< 0.1500		0.032	0.510	87	31.00	0.001	0.68	0.0016	106	0.15	< 0.005
	02/11/05	< 0.0005	0.0350	< 0.0100		0.017	0.330	93	15.00	0.001	0.34	< 0.0010	113	0.13	< 0.005
	10/25/05														
	10/14/06	1.0000	0.0940	< 0.0050		0.049	0.370	65	59.00	< 0.001	0.93	0.0033	79	0.09	< 0.005
	04/16/07	< 0.0005	0.0093	< 0.0050		0.009	0.700	132	0.14		0.05	< 0.0010	160	0.29	< 0.005
	07/24/07	< 0.0005	0.0100	< 0.0050		0.013	0.560	120	1.20	0.003	0.09	0.0002	150	0.18	< 0.005
	08/01/07	< 0.0005	0.0100	< 0.0050		0.009	0.580	127	0.97	< 0.001	0.08	< 0.0010	150	0.24	< 0.005
	08/27/07	< 0.0005	< 0.0050	< 0.0050		0.023	0.360	100	< 0.02	0.003	0.31	< 0.0010	120	0.07	< 0.005
	09/22/07	< 0.0100	0.0160	< 0.0010		0.017	0.260	110	12.70	< 0.020	0.22	< 0.0020	130	0.08	< 0.005
	01/27/08	< 0.0005	< 0.0050	< 0.0054		0.010	0.750	117	1.33	< 0.001	0.05	< 0.0020	140	0.26	< 0.005
	08/07/08	< 0.0005	0.0280	0.0110		0.039	0.480	257	8.84	< 0.002	0.27	< 0.0020	313	0.22	< 0.005
	11/26/08	< 0.0005	0.0150	0.0070		0.014	0.480	135	3.90	0.003	0.11	< 0.0010	165	0.19	< 0.005
	02/07/09	< 0.0005	0.0110	< 0.0050		0.015	0.410	87	2.30	0.002	0.11	< 0.0010	106	0.15	< 0.005
	01/20/10	< 0.0005	0.0140	< 0.0050		0.088	0.320	97	7.00	< 0.001	0.28	< 0.0010	120	0.14	< 0.005
	01/27/10	< 0.0005	0.0130	0.0058		0.013	0.490	120	4.60	0.003	0.15	< 0.0010	150	0.24	< 0.005
	02/06/10	< 0.0005	0.0100	< 0.0050		0.011	0.530	120	2.70	0.001	0.11	< 0.0010	120	0.23	< 0.005
	02/22/10	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/20/10	< 0.0005	0.0084	< 0.0050		0.007	0.430	130	3.50	< 0.001	0.75	< 0.0010	150	0.16	< 0.005
	12/22/10	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	07/03/11	< 0.0005	0.0440	< 0.0250		0.057	0.640	130	51.00	< 0.001	0.52	0.0011	150	0.20	< 0.005
	09/13/11	< 0.0005	0.0230	< 0.0050		0.020	0.410	91	13.00	0.002	0.25	< 0.0010	110	0.12	< 0.005
	10/03/11	< 0.0005	0.0140	< 0.0050		0.011	0.440	110	5.00	0.002	0.13	< 0.0010	130	0.17	< 0.005
	07/16/12	< 0.0005	0.0080	< 0.0050		0.009	0.360	120	2.30	< 0.001	0.09	< 0.0010	140	0.15	< 0.005
	07/31/12	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/22/12	< 0.0005	0.0380	0.0056		0.039	0.390	80	19.00	0.001	0.38	< 0.0010	98	0.10	< 0.005
	09/11/12	0.0019	0.1400	0.0075		0.099	0.380	80	69.00	< 0.001	1.60	0.0034	98	0.10	< 0.005
	10/11/12	NA	NA	< 0.0050		NA	0.460	NA	NA	NA	NA	NA	NA	NA	NA
	01/26/13	NA	NA	< 0.0050		NA	0.490	NA	NA	NA	NA	NA	NA	NA	NA
	07/19/13	< 0.0005	0.0450	< 0.0100		0.041	0.491	148	33.10	0.003	0.60	0.003	180	4.07	< 0.100
	08/18/13	< 0.0005	0.0051	0.0026		0.008	0.462	130	2.66	0.001	0.09	< 0.0010	159	< 0.10	< 0.100
	08/25/13	NA	NA	0.0077		NA	0.444	NA	NA	NA	NA	NA	NA	NA	NA
	11/21/13	< 0.0005	0.0192	0.0034		0.017	0.265	115	13.00	0.003	0.28	< 0.0010	140	< 0.01	< 0.005
	08/04/14	< 0.0005	0.0163	< 0.0010		0.012	0.413	127	9.57	0.002	0.18	< 0.0010	155	< 0.01	< 0.005
	08/20/14	< 0.0005	0.0096	0.0018		0.009	0.319	185	7.81	0.001	0.21	< 0.0010	226	< 0.01	< 0.005
	09/08/14	< 0.0005	0.0149	0.0022		0.012	0.251	346	11.60	0.003	0.18	< 0.0010	346	< 0.01	< 0.005
	01/11/15	NA	NA	0.0050		NA	0.277	NA	NA	NA	NA	NA	NA	NA	NA
	01/30/15	NA	NA	0.0040		NA	0.530	NA	NA	NA	NA	NA	NA	NA	NA
	03/02/15	NA	NA	< 0.0050		NA	0.474	NA	NA	NA	NA	NA	NA	NA	NA
	07/06/15	< 0.0005	0.0100	0.0020		0.009	0.350	213	1.08	0.003	0.15	< 0.0010	260	0.14	< 0.005
	10/05/15	NA	NA	0.0020		NA	0.560	NA	NA	NA	NA	NA	NA	NA	NA
	01/31/16	< 0.0005	0.0080	0.0030		0.005	0.190	138	2.12	0.001	0.60	< 0.0010	168	0.13	< 0.005
	04/09/16			< 0.0050			0.500								
	04/28/16														
	08/04/16	< 0.0005	0.0076	0.0029		0.005	0.347	115	0.01	0.002	0.08	< 0.0010	140	< 0.01	< 0.005
	08/23/16	< 0.0005	0.0014	0.0025		0.008	0.516	95	1.62	0.001	0.10	< 0.0010	116	< 0.01	
	12/22/16	< 0.0005	0.0067	0.0042		0.008	0.394	115	0.34	0.002	0.05	< 0.0010	140	0.13	
	01/20/17			0.0042			0.372								
	02/18/17			< 0.0010			0.052								
	07/17/17	NA	NA	0.0040		NA	0.420	130	NA	NA	NA	NA	159	NA	NA
	08/04/17	< 0.0010	0.0072	0.0040		0.009	< 0.500	130	0.19	0.001	0.06	< 0.001	159	< 0.001	~
	01/09/18	< 0.0010	0.0176	0.0030		0.031	0.398	110	1.78	0.003	0.16	< 0.001	134	< 0.20	~
	07/15/18	< 0.0005	0.0084	0.0042		0.007	0.444	110	0.45	< 0.001	0.07	< 0.0010	134	0.06	NA
	02/14/19	< 0.0010	0.0308	< 0.0010		0.011	0.267	81	8.88	0.001	0.22	< 0.0010	99	0.02	NA
	11/20/19	< 0.0020	0.0350	< 0.0100	< 0.0100	0.011	0.362	100	1.51	0.003	0.11	< 0.0020	100	0.11	NA
	11/28/19	< 0.0010	0.0052	0.00302	0.0027	0.007	0.303	98	1.69	0.002	0.04	< 0.0010	98	0.08	NA
	03/11/20	< 0.0005	0.0114	0.00185	0.0018	0.006	0.242	88	5.02	0.004	0.10	< 0.0010	88	0.14	NA
	07/26/21	< 0.0013	0.0234	< 0.00200	0.0019	0.017	0.411	420	3.78	< 0.001	0.52	< 0.0020	420	0.05	NA
	07/25/22	< 0.0012	0.0105	0.00308	0.0021	0.007	0.434	136	1.75	< 0.001	0.10	< 0.0012	136	0.17	NA
	08/12/22	< 0.0012	0.0140	< 0.0025	< 0.0020	0.007	0.258	94	13.10	0.003	0.24	< 0.0012	94	0.08	NA
	06/16/23	< 0.0010	0.0081	0.0025	0.0019	0.010	0.388	164	3.11	0.003	0.12	< 0.0010	164	0.12	NA
	Median	**< 0.0005**	**0.0130**	**< 0.0050**	**0.0019**	**0.011**	**0.411**	**119**	**3.50**	**< 0.002**	**0.160**	**< 0.0010**	**140**	**0.131**	**< 0.005**
	Maximum	**1.0000**	**0.1400**	**< 0.1500**	**0.0027**	**0.099**	**0.750**	**420**	**69**	**0.020**	**1.600**	**< 0.0050**	**420**	**4.07**	**< 0.100**
	Minimum	**< 0.0005**	**0.0014**	**< 0.0010**	**0.0018**	**0.0048**	**0.052**	**65**	**0.0096**	**< 0.001**	**0.044**	**< 0.0002**	**79.0**	**< 0.001**	**< 0.005**

Location	Date	CO2 Free Calculated mg/L	Carbonate mg/L	Calcium mg/L	Chlorate mg/L	Chloride mg/L	Chlorite mg/L	Diuron mg/L	Diquat mg/L	Paraquat mg/L	Endothall mg/L	Fluoride mg/L
Lake Las Vegas & Rainbow Gardens *LLV Ends 2009-2010 RG Starts 2010-2012	02/12/03	9.42	0.31	120		160						0.64
	12/28/04	5.33	0.27	480	0.07	140	< 0.010	0.005	< 0.0040	< 0.002	< 0.020	0.58
	02/11/05	5.68	0.29	240	0.08	120	< 0.040	0.003	< 0.0040	< 0.002	< 0.020	0.55
	10/25/05											
	10/14/06	6.50	< 2.00	510	0.05	97	< 0.010				< 0.020	0.42
	04/16/07	< 2.00	2.10	150	0.39	350	< 0.010				< 0.020	1.00
	07/24/07	9.80	< 2.00	180	0.15	230	< 0.020	0.007			< 0.020	0.80
	08/01/07	2.50	< 2.00	140	0.28	280	< 0.010	0.003			< 0.020	0.86
	08/27/07	6.20	< 2.00	450	0.06	66	< 0.010	0.161			< 0.020	0.39
	09/22/07	5.40	< 2.00	230	0.06	68	0.012				< 0.020	0.39
	01/27/08	7.30	< 2.00	160	0.11	251	0.117				< 0.020	0.79
	08/07/08	16.00	< 2.00	660	0.06	290	< 0.010	0.003	< 0.0040	< 0.002	< 0.020	0.58
	11/26/08	11.00	< 2.00	180	0.14	190	< 0.010	0.002	< 0.0040	< 0.002	< 0.020	0.62
	02/07/09	4.40	< 2.00	260	0.14	67	< 0.010	0.007	< 0.0040	< 0.002	< 0.020	0.55
	01/20/10	2.80	< 2.00	120	0.18	180	< 0.010	0.001	< 0.0004	< 0.002	< 0.020	0.51
	01/27/10	2.80	< 2.00	170	0.28	240	< 0.010	< 0.001	< 0.0004	< 0.002	< 0.009	0.70
	02/06/10	< 2.00	< 2.00	150	0.39	260	< 0.010	< 0.001	< 0.0004	< 0.002	< 0.020	0.74
	02/22/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/20/10	2.30	< 2.00	130	0.36	230	< 0.010	< 0.001	< 0.0004	< 0.002	< 0.005	0.64
	12/22/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	07/03/11	10.00	< 2.00	650	0.06	230	< 0.010	< 0.001	< 0.0004	< 0.002	< 0.005	0.69
	09/13/11	4.70	< 2.00	220	0.09	130	< 0.010	< 0.001	< 0.0004	< 0.002	< 0.020	0.36
	10/03/11	6.20	< 2.00	170	0.24	190	< 0.010	< 0.001	< 0.0004	< 0.002	< 0.020	0.70
	07/16/12	< 2.00	< 2.00	130	0.30	170	< 0.010	NA	NA	NA	NA	0.32
	07/31/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/22/12	< 2.00	< 2.00	460	0.11	93	< 0.010	0.001	NA	NA	NA	0.34
	09/11/12	< 2.00	< 2.00	900	0.05	84	< 0.010	< 0.001	NA	NA	NA	0.35
	10/11/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	01/26/13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	07/19/13	NA	< 10.00	558	< 0.1	201	< 0.100	NA	NA	NA	NA	0.86
	08/18/13	NA	< 10.00	144	< 0.1	199	< 0.100	NA	NA	NA	NA	0.60
	08/25/13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/21/13	NA	< 10	225	< 0.01	173	< 0.0100	NA	NA	NA	NA	0.34
	08/04/14	NA	< 2	210	< 0.01	266	< 0.0050	NA	NA	NA	NA	0.36
	08/20/14	NA	< 2	149	< 0.01	181	< 0.0050	NA	NA	NA	NA	0.47
	09/08/14	NA	< 2	223	< 0.01	369	< 0.0050	NA	NA	NA	NA	0.42
	01/11/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	01/30/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	03/02/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	07/06/15	NA	< 2.00	159	< 0.01	229	< 0.010	NA	NA	NA	NA	0.25
	10/05/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	01/31/16	NA	< 2.00	116	0.09	266	< 0.010					0.82
	04/09/16											
	04/28/16											
	08/04/16		< 2.00		< 0.01	203	< 0.010					0.46
	08/23/16		< 2.00			181						0.45
	12/22/16		< 2.00			264						0.76
	01/20/17											
	02/18/17											
	07/17/17		< 5.00	NA	NA	NA	NA					NA
	08/04/17		< 5.00	~	~	215	~					< 0.10
	01/09/18		< 5.00	~	~	171	~					0.71
	07/15/18	NA	< 2.00	NA	NA	202	NA	NA	NA	NA	NA	0.46
	02/14/19	NA	< 5.00	NA	NA	59	NA	NA	NA	NA	NA	0.32
	11/20/19	NA	< 5.00	NA	NA	192	NA	NA	NA	NA	NA	0.87
	11/28/19	NA	< 5.00	NA	NA	125	NA	NA	NA	NA	NA	< 0.10
	03/11/20	NA	< 5.00	NA	NA	95	NA	NA	NA	NA	NA	0.52
	07/26/21	NA	< 5.00	NA	NA	152	NA	NA	NA	NA	NA	0.55
	07/25/22	NA	< 5.00	NA	NA	259	NA	NA	NA	NA	NA	0.63
	08/12/22	NA	< 5.00	NA	NA	98	NA	NA	NA	NA	NA	0.32
	06/16/23	NA	< 5.00	NA	NA	159	NA	NA	NA	NA	NA	0.99
	Median	**5.330**	**< 2.00**	**180**	**< 0.09**	**190**	**< 0.010**	**< 0.0014**	**< 0.0004**	**< 0.002**	**< 0.020**	**0.55**
	Maximum	**16.00**	**< 10.00**	**900**	**0.390**	**369**	**0.117**	**0.161**	**< 0.004**	**< 0.002**	**0.020**	**1.00**
	Minimum	**< 2.00**	**0.27**	**116**	**0.005**	**59**	**< 0.005**	**< 0.001**	**< 0.0004**	**< 0.002**	**< 0.005**	**< 0.100**

Location	Date	Glyphosate mg/L	Hardness as CaCO3 mg/L	Hydroxide as OH mg/L	Iron mg/L	Langelier Index 25 degree None	Magnesium mg/L	Manganese mg/L	Potassium mg/L	Reactive Silica mg/L	Sodium mg/L	Sulfate mg/L	Thallium mg/L	Organic Carbon mg/L
Lake Las Vegas & Rainbow Gardens *LLV Ends 2009-2010 RG Starts 2010-2012	02/12/03		1,980	0.005	56.00	0.95	33	2.80	14		75	490	< 0.005	
	12/28/04	< 0.006	1,600	0.007	26.00	0.84	120	1.30	26	150	120	520	< 0.001	29
	02/11/05	< 0.006	908	0.007	11.00	0.59	75	0.54	16	14	110	370	< 0.001	14
	10/25/05													
	10/14/06	< 0.006	1,600	< 2.000	16.00	0.50	71	2.60	22	130	82	700	< 0.001	14
	04/16/07	< 0.006	690	< 2.000	0.31	1.20	76	0.06	28	20	290	650	< 0.001	6
	07/24/07	0.009	730	< 2.000	0.67	0.40	68	0.22	26	17	190	540	< 0.001	12
	08/01/07	< 0.006	620	< 2.000	0.40	0.90	66	0.21	22	20	240	240	< 0.001	8
	08/27/07	0.013	1,400	< 2.000	11.00	0.80	64	0.93	19	9	64	320	< 0.001	31
	09/22/07	< 0.006	830	< 2.000	12.00	0.60	61	0.64	17	15	64	210	< 0.001	21
	01/27/08	< 0.006	720	< 2.000	0.67	0.40	79	0.15	25	23	210	650	< 0.001	12
	08/07/08	0.016	2,140	< 2.000	2.10	1.40	120	1.21	37	17	210	1,100	< 0.002	29
	11/26/08	0.026	738	< 2.000	6.90	0.40	70	0.66	26	15	160	440	< 0.001	38
	02/07/09	0.011	913	< 2.000	1.40	0.60	64	0.75	19	12	130	380	< 0.001	15
	01/20/10	< 0.006	510	< 2.000	7.70	0.56	49	0.41	19	77	150	320	< 0.001	9
	01/27/10	< 0.006	740	< 2.000	5.10	0.89	74	0.27	21	61	200	530	< 0.001	8
	02/06/10	< 0.006	650	< 2.000	2.60	1.00	68	0.18	22	41	220	510	< 0.001	7
	02/22/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	12/20/10	< 0.006	560	< 2.000	3.40	0.91	56	0.15	21	37	190	410	< 0.001	8
	12/22/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	07/03/11	< 0.006	2,200	< 2.000	45.00	0.94	140	1.30	45	88	170	1,100	< 0.001	24
	09/13/11	0.012	800	< 2.000	10.00	0.52	64		21	91	100	420	< 0.001	27
	10/03/11	< 0.006	630	< 2.000	4.90	0.46	65	0.29	20	59	160	440	< 0.001	15
	07/16/12	< 0.006	530	< 2.000	2.00	0.21	48	0.01	19	34	140	370	< 0.001	
	07/31/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	08/22/12	< 0.006	1,400	< 2.000	17.00	0.93	73	1.20	24	120	98	540	< 0.001	
	09/11/12	< 0.006	3,000	< 2.000	71.00	1.20	200	3.60	37	150	83	520	< 0.002	
	10/11/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	01/26/13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	07/19/13	NA	1,999	< 2.000	33.20	NA	147	1.68	45	106	172	497	0.004	21
	08/18/13	NA	616	< 2.000	2.35	NA	62	0.16	22	33	183	369	< 0.001	8
	08/25/13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/21/13	NA	564	< 2.000	12.40	NA	64	0.56	16	72	89	273	< 0.001	27
	08/04/14	NA	835	< 2.000	8.90	NA	75	0.44	34	67	143	395	< 0.001	11
	08/20/14	NA	612	< 2.000	6.48	NA	58	0.30	29	55	129	342	< 0.001	6
	09/08/14	NA	843	< 2.000	10.70	NA	69	0.52	30	79	120	729	< 0.001	14
	01/11/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	01/30/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	03/02/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	07/06/15	NA	598	< 2.000	0.80	NA	49	0.42	32	15	293	420	< 0.001	14
	10/05/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	01/31/16		459	< 2.000	0.09		41	0.05	31	16	303	299	< 0.001	6
	04/09/16													
	04/28/16													
	08/04/16		384	< 2.000	0.14		33	0.07			303	421	< 0.001	40
	08/23/16		616	< 2.000	0.74		36	0.28			94	466	< 0.001	68
	12/22/16		437	< 2.000	0.31		39	0.14			163	599	< 0.001	36
	01/20/17													
	02/18/17													
	07/17/17		NA	< 5.000	NA		NA	NA	NA	NA	NA	NA	NA	NA
	08/04/17		520	< 5.000	0.16		43	0.07	~	~	167	457	< 0.001	42
	01/09/18		675	< 5.000	1.66		52	1.36	~	~	172	417	< 0.001	52
	07/15/18	NA	441	< 2.000	0.56	NA	40	0.12	NA	NA	207	410	< 0.001	8.22
	02/14/19	NA	628	< 2.000	12.90	NA	48	0.33	NA	NA	74	165	< 0.001	11.10
	11/20/19	NA	534	< 5.000	1.41	NA	48	0.31	NA	NA	141	394	< 0.001	41.90
	11/28/19	NA	394	< 5.000	0.72	NA	35	0.09	NA	NA	119	273	< 0.001	13.30
	03/11/20	NA	323	< 5.000	0.58	NA	29	0.16	NA	NA	84	208	< 0.001	12.50
	07/26/21	NA	957	< 5.000	24.90	NA	73	0.98	NA	NA	120	334	< 0.001	16.90
	07/25/22	NA	514	< 5.000	1.32	NA	48	0.24	NA	NA	201	440	< 0.001	8.88
	08/12/22	NA	678	< 5.000	12.00	NA	49	0.51	NA	NA	81	233	< 0.001	17.40
	06/16/23	NA	539	< 5.000	2.95	NA	48	0.32	NA	NA	133	350	< 0.001	82.70
	Median	**< 0.006**	**675**	**< 2.000**	**3.40**	**0.8**	**64**	**0.331**	**22**	**39**	**143**	**420**	**< 0.001**	**14.4**
	Maximum	**0.026**	**3,000**	**< 5.000**	**71.0**	**1.40**	**200**	**3.60**	**45**	**150**	**303**	**1,100**	**< 0.005**	**82.7**
	Minimum	**< 0.006**	**323**	**0.005**	**0.090**	**0.210**	**29.0**	**0.012**	**14**	**9**	**64**	**165**	**< 0.001**	**5.6**

Location	Date	Cyanide mg/L	BOD mg/L	COD mg/L	Color ACU	Turbidity NTU	Phenol mg/L	Petroleum Hydrocarbons	TPH (diesel) MPN/100 mL	TPH (gasoline) MPN/100 mL	Total Chlorine mg/L	Fecal Coliform MPN/100 mL	Fecal* Coliform MPN/100 mL
Lake Las Vegas & Rainbow Gardens *LLV Ends 2009-2010 RG Starts 2010-2012	02/12/03											1,600,000	
	12/28/04											7,000	
	02/11/05											50,000	
	10/25/05					2,140						220,000	
	10/14/06											220,000	
	04/16/07											23	
	07/24/07											> 1,600,000	
	08/01/07											5,000	
	08/27/07											900,000	
	09/22/07											1,600,000	
	01/27/08											11,000	
	08/07/08											24,000	
	11/26/08											900,000	
	02/07/09											22,000	
	01/20/10					320						170,000	
	01/27/10					200						3,000	
	02/06/10					48						2,200	
	02/22/10					61						2,000	
	12/20/10					100						NA	
	12/22/10											30,000	
	07/03/11					260						5,000,000	
	09/13/11					240						2,600,000	
	10/03/11					110						300,000	
	07/16/12					170						230,000	
	07/31/12		3			83						14,000	
	08/22/12					2,100						790,000	
	09/11/12					3,700						330,000	
	10/11/12		10			720						680,000	
	01/26/13		9			170						11,000	
	07/19/13	< 0.050	20	176		203	1.08					> 241,960	
	08/18/13	< 0.050	5	909		133	0.06					> 241,960	
	08/25/13	NA	4	804		906	NA					> 241,960	
	11/21/13	< 0.050	24	128		734	0.66					25,820	
	08/04/14	< 0.050	36	302		473	< 0.05					68,670	
	08/20/14	< 0.050	4	48		305	0.25					5,780	
	09/08/14	< 0.050	13	80		658	0.13					86,640	
	01/11/15	NA	26	67		183						2,130	
	01/30/15	NA	4	36		54						310	
	03/02/15	NA	< 2	34		112						2,420	
	07/06/15	< 0.050	13	42		324	0.3					173,250	
	10/05/15	NA	15	222		813	NA					209,800	
	01/31/16	< 0.050	< 2	51		25	< 0.05					81,640	
	04/09/16		< 2	72		111						155,300	
	04/28/16												
	08/04/16	< 0.050	< 2	26		157	0.089					241,960	
	08/23/16	< 0.050	< 2	89		730	0.113					980,400	
	12/22/16	< 0.050	63	108		80	0.392					40,000	
	01/20/17		9	64		308						196,630	
	02/18/17		77	184		152						20,870	
	07/17/17		27	39		3						~	
	08/04/17	< 0.050	< 2	55		10	0.101					32,550	
	01/09/18	< 0.050	42	184		512	0.101					12,500	
	07/15/18	< 0.050	< 2	19		137	0.184					> 241,960	
	02/14/19	< 0.005	9	28		605	0.128					2,099	
	11/20/19	< 0.005	44	161		190	0.283					> 24,196	
	11/28/19	< 0.010	56	62		47	0.497					> 2,420	
	03/11/20	< 0.005	< 50	48		52	0.522					19,863	
	07/26/21	< 0.050	13	232		1,000	0.05					> 48,392	
	07/25/22	< 0.050	16	40		45	0.262					> 24,196	
	08/12/22	< 0.050	19	186		564	< 0.05					648,800	
	06/16/23	< 0.050	80	182		202	0.208					2,419,600	
	Median	**< 0.050**	**13**	**72**		**195**	**0.16**					**75,155**	
	Maximum	**< 0.050**	**80**	**909**		**3,700**	**1.08**					**5,000,000**	
	Minimum	**< 0.005**	**< 2**	**19.3**		**3**	**< 0.05**					**23**	

Location	Date	Fecal** Coliform MPN/100 mL	Fecal Strep. MPN/100 mL	Fecal* Strep. MPN/100 mL	Fecal** Strep. MPN/100 mL	*E. Coli* MPN/100 mL	Salmonella MPN/100 mL	VOC # of detects		Pesticides # of detects		SOC # of detects		Herbicides # of detects	
Lake Las Vegas & Rainbow Gardens *LLV Ends 2009-2010 RG Starts 2010-2012	02/12/03		300,000												
	12/28/04		17,000					4	x,o,d,ee	0		2	o,g	1	uu
	02/11/05		50,000					3	a,d,ee	1	oo	0		0	
	10/25/05		5,000												
	10/14/06		50,000					12		0		0		1	
	04/16/07		110					5		0		1		0	
	07/24/07		500,000					9		0		2		2	
	08/01/07		16,000					5		0		1		0	
	08/27/07		110,000					4		0		0		4	
	09/22/07		110,000					3		0		1		0	
	01/27/08		17,000					7		0		1		0	
	08/07/08		30,000					9		1		0		1	
	11/26/08		160,000					10		2		2		1	
	02/07/09		16,000					5		1		1		1	
	01/20/10		9,000					5		1		0		1	
	01/27/10		2,200					5		0		0		0	
	02/06/10		1,100					11		1		0		0	
	02/22/10		300					0		0		0		0	
	12/20/10		5,000					8	d, e, cc, dd, ee, ddd, eee, fff	0		0		0	
	12/22/10		50,000												
	07/03/11		30,000												
	09/13/11		16,000					4	d,ff,vv,bbb	1	gg	2	x,i	0	
	10/03/11		> 1,600					7	d,e,dd,ee,qq,vv,bbb	0		1	x	0	
	07/16/12		13,000					8	d, e, dd, ee, qq, vv, bbb, ddd	0		2	x, j	0	
	07/31/12		16,000						NA		NA		NA		NA
	08/22/12		28,000					3	ff, qq, vv	0		1	x	1	kkk
	09/11/12		54,000					5	a, ff, qq, vv, jjj	0		0		0	
	10/11/12		170						NA		NA		NA		NA
	01/26/13		22,000						NA		NA		NA		NA
	07/19/13		11,000					7	a, b,d,qq,vv,ddd, qqq	2	gg,zz	5	h,j,o,x, aaaa	0	
	08/18/13		100					3	a,vv, yyy	2	gg,zz	3	j,x, aaaa	0	
	08/25/13		100						NA		NA		NA		NA
	11/21/13		20,924					9	a,b,d,qq,vv,bbb,ggg,iii,zzz	3	gg,zz, uuu	5	h,j,o,x, aaaa	3	hh,rrr,xxx
	08/04/14		6,830					3	a, d, qq	2	gg, dddd	3	h, j, x	0	
	08/20/14		1,080					3	a, d, vv	0		3	j, x, aaaa	0	
	09/08/14		2,560					5	a, b, d, qq, vv	2	gg, dddd	2	x, aaaa	1	hh
	01/11/15		1,105					0		0		0		0	
	01/30/15		310					0		0		0		0	
	03/02/15		1,850					0		0		0		0	
	07/06/15		11,780					4	qq, vv, b, a, d,	1	gg	3	zz, j, o	1	hh
	10/05/15		15,760						NA		NA		NA		NA
	01/31/16		14,670					2	qq, vv,	1	gg	3	o, j, zz	0	
	04/09/16		1,460					2		2		4		0	
	04/28/16														
	08/04/16		17,329					4		0		3		1	
	08/23/16		41,400					4		0		1		2	
	12/22/16		10,000					4		0		1		1	
	01/20/17		< 1												
	02/18/17		83												
	07/17/17		~						NA	NA		NA		NA	
	08/04/17		410					2	~	0		3		0	
	01/09/18		3,950					3	~	0		2		0	
	07/15/18		2,380					0		0		1		0	
	02/14/19		3,873					1		0		0		0	
	11/20/19		> 24,196					1		1		1		2	
	11/28/19		> 2,420					1		1		0		2	
	03/11/20		9,804					3		0		1		1	
	07/26/21		48,392					1		0		1		0	
	07/25/22		> 24,196					0		0		0		0	
	08/12/22		21,600					3		0		0		0	
	06/16/23		7,300			1,410,000		0		0		2		1	
	Median		**11,780**			**1,410,000**		**4**		**0**		**1**		**0**	
	Maximum		**500,000**			**1,410,000**		**12**		**3**		**5**		**4**	
	Minimum		**< 1**			**1,410,000**		**0**		**0**		**0**		**0**	

Location	Date	Q cfs	Temp Deg. C	Oil & Grease mg/L	TSS mg/L	TDS mg/L	Specific Conductance umho/cm	Lab pH units	Surfactants (MBAS) mg/L	Ortho-Phosphate mg/L	Total Phosphorous mg/L
Western Tributary at Civic Center	08/30/92		26.3	4	92	1,110		7.2	2.67	< 0.05	0.29
	10/24/92		17.3	3	66	760		7.3	1.02	0.18	0.50
	02/08/93		12.0	3	950	300		7.9	0.24	0.26	0.55
	05/14/93	839	26.4	4	110	600		7.2	1.64	0.19	0.51
	08/04/93	211	26.0	3	840	980		7.6	1.13	0.06	0.88
	02/04/94	181	8.2	6	3,720	400	465	7.5	0.44	2.34	2.10
	03/25/94	353	12.9	10	2,800	520	2,530		0.73	0.75	1.40
	07/19/94		23.6	< 3	81	400	535	7.8	1.49	0.11	0.23
	08/09/94	4	29.5	< 3	5,550	370	525	7.9	0.35	0.18	0.87
	01/24/95	624	9.7	< 3	880	5,210	187	8.0	0.24	0.06	
	05/24/95		19.7	6	125	300	488	7.5	1.35	0.08	0.32
	08/12/95	583	27.5	4	450	690	633	7.2	1.50	0.09	0.83
	03/13/96			4	510	780		7.5		0.45	0.97
	11/21/96	163	15.6	< 3	2,500	290	498	7.8	< 0.05	0.59	2.80
	07/28/97		25.7	6	890	380	588	7.7	1.84	0.11	0.30
	09/01/97			4	290	580		7.5	1.75	< 0.01	0.33
	Median	**282**	**21.7**	**4**	**675**	**550**	**525**	**7.5**	**1.13**	**0.15**	**0.55**
	Maximum	**839**	**29.5**	**10**	**5,550**	**5,210**	**2,530**	**8.0**	**2.67**	**2.34**	**2.80**
	Minimum	**4**	**8.2**	**< 3**	**66**	**290**	**187**	**7.2**	**< 0.05**	**< 0.01**	**0.23**

Location	Date	NO3-N mg/L	NO-2 mg/L	NH3-N mg/L	TKN mg/L	Total Nitrogen mg/L	Copper mg/L	Dissolved Copper mg/L	Chromium mg/L	Lead mg/L	Dissolved Lead mg/L	Mercury mg/L
Western Tributary at Civic Center	08/30/92	3.9		0.66	9.8	13.7	0.024		< 0.010	< 0.010		< 0.0002
	10/24/92	2.9		0.73	6.2	9.1	0.017		< 0.010	< 0.010		< 0.0002
	02/08/93	1.1		0.30	1.1	2.2	0.018		0.024	0.018		< 0.0002
	05/14/93	2.4		1.30	5.5	7.9	0.015		< 0.010	0.009		< 0.0002
	08/04/93	2.1		1.40	6.6	8.7	0.033		0.027	0.022		< 0.0002
	02/04/94	1.1		1.10	16.0	17.1	0.092		0.050	0.150		0.0008
	03/25/94	1.2		1.10	6.7	7.9	0.058		0.033	0.076		< 0.0002
	07/19/94	1.4		0.47	< 1.0	2.4	0.016		< 0.010	0.006		< 0.0002
	08/09/94	1.4		0.47	2.7	4.1	0.052		0.035	0.140		< 0.0002
	01/24/95	4.5		< 0.05	< 1.0	5.5	0.012		< 0.010	< 0.100		< 0.0002
	05/24/95	1.2		0.60	4.9	6.1	0.023		< 0.010	0.020		< 0.0002
	08/12/95	0.9		0.60	7.2	8.1	0.042		0.013	0.025		< 0.0002
	03/13/96	1.7		0.90	6.2	2.6	0.041					
	11/21/96	1.7		0.80	11.0	12.7	0.038			< 0.100		
	07/28/97	1.6		1.20	4.8	6.4	0.100			0.170		
	09/01/97	1.0		0.90	7.2	8.2	0.044			< 0.100		
	Median	**1.5**		**0.77**	**6.2**	**7.9**	**0.04**		**0.012**	**0.03**		**< 0.0002**
	Maximum	**4.5**		**1.40**	**16.0**	**17.1**	**0.10**		**0.050**	**0.17**		**0.0008**
	Minimum	**0.9**		**< 0.05**	**< 1.0**	**2.2**	**0.01**		**< 0.010**	**< 0.01**		**< 0.0002**

Location	Date	Cadmium mg/L	Zinc mg/L	Dissolved Zinc mg/L	Silver mg/L	Nickel mg/L	Selenium mg/L	Arsenic mg/L	Boron mg/L	Cyanide mg/L	BOD mg/L
Western Tributary at Civic Center	08/30/92	< 0.005	0.06		< 0.01	< 0.040		< 0.025	0.42	0.029	85
	10/24/92	< 0.005	0.07		< 0.01	< 0.040		< 0.025	0.25	0.009	31
	02/08/93	< 0.005	0.27		< 0.01	< 0.040	< 0.005	0.010	0.14	< 0.005	25
	05/14/93	< 0.005	0.08		< 0.01	< 0.040	< 0.005	0.005	0.27	0.010	63
	08/04/93	< 0.005	0.18		< 0.01	0.021	< 0.005	0.011	0.05	0.008	83
	02/04/94	< 0.005	0.44		< 0.01	0.023	< 0.020	0.027	0.23	< 0.005	57
	03/25/94	< 0.005	0.32		< 0.01	0.020	< 0.005	0.016	0.17	< 0.005	59
	07/19/94	< 0.005	0.05		< 0.01	0.011	< 0.005	< 0.005	0.16	0.009	110
	08/09/94	< 0.005	0.24		< 0.01	0.025	< 0.005	0.050	0.19	< 0.005	19
	01/24/95	< 0.005	0.06		< 0.01	< 0.010	< 0.005		2.40	0.007	< 6
	05/24/95	< 0.005	0.09		< 0.01	0.011	< 0.005	< 0.005	0.18	0.010	35
	08/12/95	< 0.005	0.20		< 0.01	0.020	< 0.005	0.007	0.28	0.030	77
	03/13/96		0.12						0.27	0.009	52
	11/21/96		0.24						0.19	< 0.005	45
	07/28/97		0.63						0.21	< 0.005	36
	09/01/97		0.16						0.25	0.052	38
	Median	**< 0.005**	**0.17**		**< 0.01**	**0.022**	**< 0.005**	**0.011**	**0.22**	**0.009**	**49**
	Maximum	**< 0.005**	**0.63**		**< 0.01**	**0.040**	**< 0.020**	**0.050**	**2.40**	**0.052**	**110**
	Minimum	**< 0.005**	**0.05**		**< 0.01**	**< 0.010**	**< 0.005**	**< 0.005**	**0.05**	**< 0.005**	**< 6**

Location	Date	COD mg/L	Color ACU	Turbidity NTU	Phenol mg/L	Petroleum Hydrocarbons	TPH (diesel) MPN/100 mL	TPH (gasoline) MPN/100 mL	Total Chlorine mg/L
Western Tributary at Civic Center	08/30/92	559	313	60	0.09				< 0.10
	10/24/92	210	90	45	0.04				< 0.10
	02/08/93	98	25	750	0.10				< 0.10
	05/14/93	220	200	70	0.10				< 0.10
	08/04/93	390	400	130	0.20				< 0.10
	02/04/94	475	750	950	0.10				< 0.10
	03/25/94	310	1,000	1,200	0.04				< 0.10
	07/19/94	215	150	44	0.08				0.10
	08/09/94	300	75	7	< 0.01				0.10
	01/24/95	23	10	100	0.10		< 1	< 1	< 0.01
	05/24/95	215	40	68	0.02	< 1			< 0.01
	08/12/95	345	250	11	< 0.10		< 2	< 2	< 0.01
	03/13/96	250	100	32					0.05
	11/21/96	400	80	5,600	< 0.01	< 1			< 0.01
	07/28/97	930	110	600	< 0.01	< 1			< 0.10
	09/01/97	160	128	160	0.02				
	Median	**275**	**119**	**85**	**0.08**	**< 1**	**< 2**	**< 2**	**< 0.1**
	Maximum	**930**	**1,000**	**5,600**	**0.20**	**< 1**	**< 2**	**< 2**	**0.1**
	Minimum	**23**	**10**	**7**	**< 0.01**	**< 1**	**< 1**	**< 1**	**< 0.01**

Location	Date	Fecal Coliform MPN/100 mL	Fecal* Coliform MPN/100 mL	Fecal** Coliform MPN/100 mL	Fecal Strep. MPN/100 mL	Fecal* Strep. MPN/100 mL	Fecal** Strep. MPN/100 mL	Salmonella MPN/100 mL
Western Tributary at Civic Center	08/30/92	< 160,000			> 16			
	10/24/92	130,000			300,000			
	02/08/93	30,000	5,000		22,000	30,000		
	05/14/93	5,000,000	240,000	13,000	1,700,000	160,000	50,000	
	08/04/93	30,000	110,000	500,000	160,000	500,000	700,000	
	02/04/94	3,000	500		90,000	28,000		
	03/25/94	< 2	8,000	8,000	50,000	230,000	90,000	< 2.0
	07/19/94		> 160,000	1,600,000		50,000	140,000	8.0
	08/09/94		80,000	2,300		130,000	50,000	< 2.0
	01/24/95			5,000			22,000	< 2.0
	05/24/95			> 160,000			> 160,000	2.0
	08/12/95						> 1,600	6.0
	03/13/96	5,000			11,000			< 2.2
	11/21/96	40,000			50,000			< 2.2
	07/28/97	160,000			90,000			5.1
	09/01/97	160,000			90,000			< 2.2
	Median	**40,000**	**80,000**	**13,000**	**90,000**	**130,000**	**70,000**	**< 2.2**
	Maximum	**5,000,000**	**240,000**	**1,600,000**	**1,700,000**	**500,000**	**700,000**	**8.0**
	Minimum	**< 2**	**500**	**2300**	**16**	**28,000**	**1,600**	**< 2.0**

Location	Date	VOC # of detects	Pesticides # of detects	SOC # of detects	Herbicides # of detects
Western Tributary at Civic Center	08/30/92				
	10/24/92				
	02/08/93				
	05/14/93				
	08/04/93				
	02/04/94				
	03/25/94				
	07/19/94				
	08/09/94				
	01/24/95				
	05/24/95				
	08/12/95				
	03/13/96				
	11/21/96		0		1 hh
	07/28/97		0		1
	09/01/97		0		1
	Median				
	Maximum				
	Minimum				

Location	Date	Q cfs	Temp Deg. C	Oil & Grease mg/L	TSS mg/L	TDS mg/L	Specific Conductance umho/cm	Lab pH units
Las Vegas Creek at Pecos or Lena	08/30/92	75	27.1	4	550	830		7.2
	10/24/92	204	17.5	4	500	530		7.3
	10/28/92	76	18.1	< 3	460	440		7.4
	02/08/93	454	11.1	64	300	190		7.8
	05/14/93	138	26.9	7	220	490		7.1
	08/04/93	34	30.7	< 3	560	1,070		7.1
	02/04/94	114	8.2	5	1,050	320	984	7.6
	09/19/94		22.0	5	230	880	950	7.3
	03/11/95	23	13.4	4	93	150	1,150	7.6
	05/24/95	24	26.5	12	330	270	680	7.5
	08/20/95	4	26.7	4	42	520	883	7.3
	05/24/96		17.8	15	490	500	500	7.0
	07/15/96	148	27.0	23	480	470		7.4
	02/24/98		12.0	< 3	200	100		8.0
	03/26/98		15.2	< 3	1,390	200	570	8.2
	09/22/99			4	950	100		
	02/12/03			< 3	110	130	200	7.4
	07/25/03				880	580		
	08/16/03				1,570	580		
	08/16/04			< 5	3,020	340	401	7.6
	01/03/05			5	51	120	177	7.7
	Median	**76**	**18.1**	**4**	**480**	**440**	**625**	**7.4**
	Maximum	**454**	**30.7**	**64**	**3,020**	**1,070**	**1,150**	**8.2**
	Minimum	**4**	**8.2**	**< 3**	**42**	**100**	**177**	**7.0**

Location	Date	Surfactants (MBAS) mg/L	Ortho-Phosphate mg/L	Total Phosphorous mg/L	NO3-N mg/L	NO-2 mg/L	NH3-N mg/L	TKN mg/L	Total Nitrogen mg/L
Las Vegas Creek at Pecos or Lena	08/30/92	3.10	0.06	1.10	1.80		0.42	9.5	11.3
	10/24/92	1.89	0.55	< 0.05	1.80		1.20	8.8	10.6
	10/28/92	1.12	0.18	0.51	1.40		0.33	3.7	5.1
	02/08/93	0.17	0.25	0.55	0.70		0.22	1.1	1.8
	05/14/93	1.34	0.36	1.00	0.10		2.30	6.5	6.6
	08/04/93	1.41	0.12	0.96	1.50		2.40	10.0	11.5
	02/04/94	0.83	0.87	1.50	1.30		0.92	5.3	6.6
	09/19/94	1.00	0.78	1.50	4.30		1.70	13.0	17.3
	03/11/95	0.25	0.21	0.36	0.40		0.20	1.6	2.0
	05/24/95	0.87	0.21	1.15	1.40		0.70	7.2	8.6
	08/20/95	1.55	0.20	0.55	1.10		0.30	5.0	6.1
	05/24/96	4.74	6.50	7.00	3.40		1.90	10.0	11.9
	07/15/96		0.68	0.94			1.20	8.5	8.7
	02/24/98	< 0.50	0.20	0.46	0.58		0.30	< 1.0	0.6
	03/26/98	0.73	0.54	0.85	0.56		0.23	3.2	3.8
	09/22/99			0.61	0.68		0.32	2.9	3.6
	02/12/03	0.36			0.71	< 0.10		1.9	2.6
	07/25/03				2.70	0.23		18.0	20.9
	08/16/03		0.29	2.40	1.40	0.13		10.0	11.5
	08/16/04	0.22	0.15	1.70	2.40	< 0.50		8.9	11.3
	01/03/05	0.41	0.10	0.20	0.50	< 0.10		1.0	1.5
	Median	**0.87**	**0.23**	**0.94**	**1.35**	**0.13**	**0.56**	**6.5**	**6.6**
	Maximum	**4.74**	**6.50**	**7.00**	**4.30**	**0.50**	**2.40**	**18.0**	**20.9**
	Minimum	**0.17**	**0.06**	**< 0.05**	**0.10**	**< 0.10**	**0.20**	**< 1.0**	**0.6**

Location	Date	Copper mg/L	Dissolved Copper mg/L	Chromium mg/L	Lead mg/L	Dissolved Lead mg/L	Mercury mg/L	Cadmium mg/L	Zinc mg/L	Dissolved Zinc mg/L	Silver mg/L
Las Vegas Creek at Pecos or Lena	08/30/92	0.010		0.019	0.072		< 0.0002	< 0.0050	0.32		< 0.0100
	10/24/92	0.190		0.057	0.280		0.0060	< 0.0050	0.96		< 0.0100
	10/28/92	0.055		0.019	0.071		< 0.0002	< 0.0050	0.28		< 0.0100
	02/08/93	0.019		< 0.010	0.036		< 0.0002	< 0.0050	0.29		< 0.0100
	05/14/93	0.027		< 0.010	0.026		< 0.0002	< 0.0050	0.15		< 0.0100
	08/04/93	0.078		0.021	0.078		< 0.0002	< 0.0050	0.38		< 0.0100
	02/04/94	0.047		0.018	0.057		0.0003	< 0.0050	0.23		< 0.0100
	09/19/94	0.057		0.015	0.053		< 0.0002	< 0.0050	0.30		< 0.0100
	03/11/95	< 0.010		< 0.010	0.017		< 0.0002	< 0.0050	0.08		< 0.0100
	05/24/95	0.098		0.023	0.140		< 0.0002	< 0.0050	0.59		< 0.0100
	08/20/95	0.024		< 0.010	0.008		< 0.0002	< 0.0050	0.12		< 0.0100
	05/24/96	0.070							0.43		
	07/15/96	0.091			< 0.100				0.35		
	02/24/98	0.013			< 0.100				0.07		
	03/26/98	0.012			< 0.100				0.11		
	09/22/99	0.049	< 0.010		< 0.100	< 0.10			0.29	< 0.200	
	02/12/03	0.020	< 0.010	0.004	0.008	< 0.10	< 0.0002	0.0011	0.09	< 0.200	< 0.0005
	07/25/03	0.066	< 0.010		0.043	< 0.10			0.45	0.042	
	08/16/03	0.220	< 0.010		0.120	< 0.10			1.00	0.020	
	08/16/04	0.170	< 0.010	0.004	0.099	< 0.02	0.0002	< 0.0025	0.85	0.021	< 0.0025
	01/03/05	0.020	< 0.010	0.004	0.006	< 0.02	< 0.0002	< 0.0005	0.07	< 0.020	< 0.0005
	Median	**0.049**	**< 0.010**	**0.013**	**0.072**	**< 0.10**	**< 0.0002**	**< 0.005**	**0.290**	**0.032**	**< 0.010**
	Maximum	**0.220**	**< 0.010**	**0.057**	**0.280**	**< 0.10**	**0.006**	**< 0.005**	**1.0**	**0.2**	**0.010**
	Minimum	**< 0.010**	**< 0.010**	**0.004**	**0.006**	**< 0.02**	**< 0.0002**	**< 0.001**	**0.070**	**< 0.02**	**< 0.001**

Location	Date	Nickel mg/L	Selenium mg/L	Arsenic mg/L	Boron mg/L	Cyanide mg/L	BOD mg/L	COD mg/L	Color ACU	Turbidity NTU	Phenol mg/L
Las Vegas Creek at Pecos or Lena	08/30/92	< 0.040		< 0.025	0.43	0.032	80	760	300	275	0.10
	10/24/92	< 0.040		< 0.025	0.26	0.024	69	500	120	340	0.10
	10/28/92	< 0.040		< 0.025	0.22	0.015	35	195	5	300	0.03
	02/08/93	< 0.040	< 0.005	< 0.005	0.08	< 0.005	27	230	15	180	0.10
	05/14/93	< 0.020	< 0.005	< 0.005	0.27	0.011	86	400	320	90	0.20
	08/04/93	0.020	0.017	0.015	0.30	0.011	115	690	560	65	0.10
	02/04/94	< 0.020	< 0.010	0.008	0.15	0.006	57	360	100	350	0.10
	09/19/94	0.026	< 0.005	0.008	0.40	0.016	99	720	500	20	0.06
	03/11/95	< 0.010	< 0.005	< 0.005	0.10	< 0.005	10	85	50	62	< 0.10
	05/24/95	0.016	< 0.005	0.007	0.13	0.005	34	295	30	270	0.02
	08/20/95	0.011	< 0.005	0.007	0.19	< 0.005	29	245	200		0.10
	05/24/96				0.30	0.010	265	550	175	8	0.09
	07/15/96				0.19	< 0.005	58	380	300	190	< 0.01
	02/24/98				0.06	< 0.005	17	100	15	132	< 0.01
	03/26/98				0.08	< 0.005	27	130	30	720	< 0.01
	09/22/99				0.06						
	02/12/03	< 0.005	< 0.005	< 0.002	< 0.05						
	07/25/03				0.22						
	08/16/03				0.15						
	08/16/04	0.036	< 0.025	0.015	0.14						
	01/03/05	< 0.005	< 0.010	< 0.002	0.06						
	Median	**< 0.020**	**< 0.005**	**0.008**	**0.15**	**0.006**	**57**	**360**	**120**	**185**	**< 0.10**
	Maximum	**< 0.040**	**< 0.025**	**0.025**	**0.43**	**0.032**	**265**	**760**	**560**	**720**	**0.20**
	Minimum	**< 0.005**	**< 0.005**	**< 0.002**	**< 0.05**	**< 0.005**	**10**	**85**	**5**	**8**	**< 0.01**

Location	Date	Petroleum Hydrocarbon	TPH (diesel) MPN/100 mL	TPH (gasoline) MPN/100 mL	Total Chlorine mg/L	Fecal Coliform MPN/100 mL	Fecal* Coliform MPN/100 mL	Fecal** Coliform MPN/100 mL	Fecal Strep. MPN/100 mL	Fecal* Strep. MPN/100 mL
Las Vegas Creek at Pecos or Lena	08/30/92				< 0.10	160,000			> 16	
	10/24/92				< 0.10	700,000			500,000	
	10/28/92				< 0.10	80,000			500,000	
	02/08/93				< 0.10	17,000	8,000	13,000	160,000	30,000
	05/14/93				< 0.10	5,000,000	1,700,000	300,000	6,000,000	1,300,000
	08/04/93				< 0.10	5,000,000	300,000	1,300,000	160,000	1,700,000
	02/04/94				< 0.10	2,200	2,400		35,000	1,300
	09/19/94				< 0.01			900,000		
	03/11/95		< 1	< 1	< 0.01			24,000		
	05/24/95	< 1			< 0.01			160,000		
	08/20/95		< 1	< 1	0.20			28,000		
	05/24/96					11,000			> 16,000	
	07/15/96				< 0.01	3,000,000			80,000	
	02/24/98	< 1			0.10	5,000			13,000	
	03/26/98	< 1			< 0.10	160,000			90,000	
	09/22/99					8,000			170,000	
	02/12/03					5,000			90,000	
	07/25/03					900,000			500,000	
	08/16/03					1,600,000			240,000	
	08/16/04					> 1,600,000			220,000	
	01/03/05					1,300			11,000	
	Median	**< 1**	**< 1**	**< 1**	**< 0.10**	**160,000**	**154,000**	**160,000**	**160,000**	**665,000**
	Maximum	**< 1**	**< 1**	**< 1**	**0.20**	**5,000,000**	**1,700,000**	**1,300,000**	**6,000,000**	**1,700,000**
	Minimum	**< 1**	**< 1**	**< 1**	**< 0.01**	**1,300**	**2,400**	**13,000**	**16**	**1,300**

Location	Date	Fecal** Strep. MPN/100 mL	Salmonella MPN/100 mL	VOC # of detects	Pesticides # of detects	SOC # of detects	Herbicides # of detects
Las Vegas Creek at Pecos or Lena	08/30/92						
	10/24/92						
	10/28/92						
	02/08/93	5,000					
	05/14/93	3,000,000					
	08/04/93	3,000,000					
	02/04/94						
	09/19/94	160,000	< 2				
	03/11/95	160,000	22				
	05/24/95	> 160,000	< 2				
	08/20/95	90,000	7				
	05/24/96		160		1		
	07/15/96		9		0		0
	02/24/98		< 2		0		1
	03/26/98		< 2		1		4
	09/22/99			1 e			0
	02/12/03			1 a	0	4 g,k,n,x	0
	07/25/03			1 k	4	7	2
	08/16/03			2 k,l	0	7	0
	08/16/04			1 a	0	5 x,h,o,l	3 y,uu,xx
	01/03/05			0	0	8 x,o,i, nn,g,l.k	3 hh,uu.xx
	Median	**160,000**	**5**				
	Maximum	**3,000,000**	**160**				
	Minimum	**5,000**	**< 2**				

Location	Date	Q cfs	Temp Deg. C	Oil & Grease mg/L	TSS mg/L	TDS mg/L	Specific Conductance umho/cm	Lab pH units	Surfactants (MBAS) mg/L	Ortho-Phosphate mg/L
Duck Creek at Boulder Highway	08/30/92	30	27.1	< 3	120	4,590		7.8	0.64	< 0.05
	10/24/92	73	17.7	< 3	130	4,670		7.6	0.62	0.06
	02/08/93	43	11.5	< 3	23	4,700		8.1	< 0.10	< 0.05
	08/04/93	15	27.5	< 3	150	5,150		7.3	0.54	< 0.05
	02/04/94	22	9.0	< 3	4,430	3,360	7,380	7.5	0.15	2.26
	03/25/94	22	17.3	< 3	240	3,990	17,480	7.7	0.23	0.11
	07/19/94	38	23.0	< 3	280	3,350	4,930	7.3	2.25	0.07
	01/24/95	21	9.4	3	360	230	2,520	8.0	0.30	0.11
	02/20/96			4	2,170	2,910		7.4		0.33
	07/14/96	177	29.1	3	1,270	2,450	2,900	7.1		0.65
	04/02/97		12.3	< 3	170	1,660	2,050	7.2	0.77	< 0.05
	07/22/97		24.8	375	6,540	2,960	389	7.5		0.04
	02/03/98		12.0	< 3	2,020	2,290	290	7.5	< 0.50	0.09
	09/08/98	171		< 3	5,720	1,520				
	06/02/99	10		< 3	50	1,100				
	09/22/99			< 3	210	870				
	02/16/00			< 3	1,920	1,240				
	08/30/00	108		< 3	4,360	1,300				
	07/06/01	242		< 3	8,420	1,610				
	02/12/03	489		< 3	2,580	1,270	1,580	7.4	0.23	0.08
	07/24/03				1,080	3,290				
	08/16/04			5	3,960	1,920	2,320	7.2	0.28	0.09
	09/09/04			< 5	26,300	2,040	2,080	7.7	0.22	0.04
	Median	**41**	**18**	**< 3**	**1,270**	**2,290**	**2,320**	**7.5**	**0.30**	**0.08**
	Maximum	**489**	**29**	**375**	**26,300**	**5,150**	**17,480**	**8.1**	**2.25**	**2.26**
	Minimum	**10**	**9**	**< 3**	**23**	**230**	**290**	**7.1**	**< 0.10**	**0.04**

Location	Date	Total Phosphorous mg/L	NO3-N mg/L	NO-2 mg/L	NH3-N mg/L	TKN mg/L	Total Nitrogen mg/L	Copper mg/L	Dissolved Copper mg/L
Duck Creek at Boulder Highway	08/30/92	0.12	3.5		0.06	2.6	4.5	< 0.010	
	10/24/92	0.16	3.8		0.42	3.7	7.5	< 0.010	
	02/08/93	0.06	4.6		< 0.10	< 1.0	5.6	< 0.010	
	08/04/93	0.13	4.1		0.68	3.1	7.2	< 0.010	
	02/04/94	1.30	4.5		0.69	4.3	8.8	0.044	
	03/25/94	0.20	< 2.0		0.40	3.4	5.4	0.016	
	07/19/94	0.37	4.1		2.30	5.5	9.6	0.025	
	01/24/95		1.0		0.20	1.5	2.5	0.022	
	02/20/96	1.00	3.6		1.00	8.1	9.1	0.062	
	07/14/96	5.60	2.3		1.20	11.0	13.3	0.046	
	04/02/97	0.38	3.2		1.00	5.2	8.4	0.016	
	07/22/97	0.41	< 1.0		0.60	6.8	7.8	0.140	
	02/03/98	1.34	3.8		0.60	5.2	9.0	< 0.010	
	09/08/98	1.20	2.2		0.44	13.0	2.3	0.240	0.02
	06/02/99	0.58	2.4		0.79	4.7	7.1	0.040	< 0.01
	09/22/99	0.44	1.9		0.40	2.5	4.3	< 0.010	< 0.01
	02/16/00	2.29	3.0		0.89	6.9	9.9	0.150	< 0.01
	08/30/00	3.60	1.8		0.26	4.9	6.7	0.240	< 0.01
	07/06/01	7.50	2.0		< 0.05	11.0	13.0	0.240	< 0.01
	02/12/03	2.70	1.3	< 0.5		9.7	11.0	0.094	< 0.01
	07/24/03		2.8	1.8		6.2	10.8	< 0.200	< 0.02
	08/16/04	1.70	3.6	2.6		11.0	17.2	0.280	0.53
	09/09/04	2.40	2.4	< 0.4		8.9	11.3	0.094	< 0.01
	Median	**1.00**	**2.80**	**1.15**	**0.60**	**5.20**	**8.40**	**0.04**	**< 0.01**
	Maximum	**7.50**	**4.60**	**2.60**	**2.30**	**13.00**	**17.20**	**0.28**	**0.53**
	Minimum	**0.06**	**< 1.00**	**< 0.40**	**< 0.05**	**< 1.00**	**2.33**	**< 0.01**	**< 0.01**

Location	Date	Chromium mg/L	Lead mg/L	Dissolved Lead mg/L	Mercury mg/L	Cadmium mg/L	Zinc mg/L	Dissolved Zinc mg/L	Silver mg/L
Duck Creek at Boulder Highway	08/30/92	< 0.0100	< 5.000		< 0.0002	< 0.0050	0.053		< 0.010
	10/24/92	< 0.0100	< 0.010		< 0.0002	< 0.0050	0.038		< 0.010
	02/08/93	< 0.0100	< 0.004		< 0.0002	< 0.0050	0.097		< 0.010
	08/04/93	< 0.0100	< 0.004		< 0.0002	< 0.0050	0.035		< 0.010
	02/04/94	0.0450	0.031		0.0002	< 0.0050	0.200		< 0.010
	03/25/94	0.0100	0.006		< 0.0002	< 0.0050	0.053		< 0.010
	07/19/94	0.0100	0.007		< 0.0002	< 0.0050	0.073		< 0.010
	01/24/95	< 0.0100	< 0.100		0.0002	< 0.0050	0.110		< 0.010
	02/20/96						0.160		
	07/14/96		< 0.100				0.210		
	04/02/97		< 0.100				0.083		
	07/22/97		< 0.100				0.190		
	02/03/98		0.120				0.340		
	09/08/98		0.220	< 0.100			0.730	< 0.020	
	06/02/99		< 0.100	< 0.100			0.130	< 0.020	
	09/22/99		< 0.100	< 0.100			0.079	< 0.020	
	02/16/00		< 0.100	< 0.100			0.500	< 0.020	
	08/30/00		< 0.100	< 0.100			0.910	< 0.020	
	07/06/01		0.150	< 0.100			0.850	0.029	
	02/12/03	0.0091	0.040	< 0.100	< 0.0002	0.0011	0.270	< 0.020	< 0.001
	07/24/03		0.019	< 0.200			0.140	< 0.040	
	08/16/04	0.0450	0.046	< 0.020	< 0.0002	0.0030	0.530	0.025	< 0.003
	09/09/04	0.0670	0.077	0.020	< 0.0002	0.0016	0.480	< 0.020	0.013
	Median	**< 0.0100**	**< 0.100**	**< 0.1000**	**< 0.0002**	**< 0.0050**	**0.160**	**< 0.020**	**< 0.010**
	Maximum	**0.0670**	**< 5.000**	**< 0.2000**	**0.0002**	**< 0.0050**	**0.910**	**0.040**	**0.013**
	Minimum	**0.0091**	**< 0.004**	**< 0.0200**	**< 0.0002**	**0.0011**	**0.035**	**< 0.020**	**< 0.001**

Location	Date	Nickel mg/L	Selenium mg/L	Arsenic mg/L	Boron mg/L	Cyanide mg/L	BOD mg/L	COD mg/L	Color ACU
Duck Creek at Boulder Highway	08/30/92	< 0.04		0.060	2.70	0.013	19	99	100
	10/24/92	< 0.04		0.038	2.50	0.007	21	125	225
	02/08/93	< 0.04	< 0.025	0.042	2.30	< 0.005	< 6	30	25
	08/04/93	< 0.02		0.037	3.00	< 0.005	77	230	200
	02/04/94	0.03	< 0.020	0.100	1.50	< 0.005	28	175	225
	03/25/94	< 0.01	0.019	0.046	1.80	< 0.005	15	89	60
	07/19/94	0.01	< 0.010	0.034	1.60	0.011	67	445	60
	01/24/95	< 0.01	< 0.005		0.08	0.009	12	90	30
	02/20/96				1.20	0.030	50	245	30
	07/14/96				1.60	< 0.005	110	780	200
	04/02/97				0.79	0.006	40	280	150
	07/22/97				1.60	0.022	20	170	150
	02/03/98				1.20	< 0.005	48	190	75
	09/08/98				0.72				
	06/02/99				0.77				
	09/22/99				0.46				
	02/16/00				0.77				
	08/30/00				0.56				
	07/06/01				0.79				
	02/12/03	0.03	< 0.050	0.089	0.33				
	07/24/03				1.30				
	08/16/04	0.05	< 0.025	0.063	0.70				
	09/09/04	0.12	< 0.025	0.190	0.84				
	Median	**< 0.03**	**< 0.023**	**0.053**	**1.20**	**< 0.006**	**28**	**175**	**100**
	Maximum	**0.12**	**< 0.050**	**0.190**	**3.00**	**0.030**	**110**	**780**	**225**
	Minimum	**< 0.01**	**< 0.005**	**0.034**	**0.08**	**< 0.005**	**< 6**	**30**	**25**

Location	Date	Turbidity NTU	Phenol mg/L	Petroleum Hydrocarbons	TPH (diesel) MPN/100 mL	TPH (gasoline) MPN/100 mL	Total Chlorine mg/L	Fecal Coliform MPN/100 mL	Fecal* Coliform MPN/100 mL	Fecal** Coliform MPN/100 mL
Duck Creek at Boulder Highway	08/30/92	55	0.02				< 0.10	50,000		
	10/24/92	55	0.50				< 0.10	50,000		
	02/08/93	14	0.10				< 0.10	400	800	
	08/04/93	34	0.02				< 0.10	1,700,000	1,400,000	1,300,000
	02/04/94	650	0.10				< 0.10	1,100	2,300	220
	03/25/94	70	< 0.01				< 0.10	3,000		3,000
	07/19/94	45					< 0.10	900,000	300,000	500,000
	01/24/95	120	< 0.10		< 1	< 1	< 0.01			5,000
	02/20/96	14	< 0.01	< 1				3,000		
	07/14/96	3,800	< 0.01				< 0.01	5,000,000		
	04/02/97	72	< 0.01	< 1				7,000		
	07/22/97	2,300	< 0.01	< 1			0.40	22,000		
	02/03/98	370	< 0.01	< 1			< 0.10	1,100		
	09/08/98							17,000		
	06/02/99							7,900		
	09/22/99							160,000		
	02/16/00							8,000		
	08/30/00							110,000		
	07/06/01							900,000		
	02/12/03							30,000		
	07/24/03							1,600,000		
	08/16/04							900		
	09/09/04							900,000		
	Median	**70**	**< 0.02**	**< 1**	**< 1**	**< 1**	**< 0.10**	**26,000**	**151,150**	**5,000**
	Maximum	**3800**	**0.50**	**< 1**	**< 1**	**< 1**	**0.40**	**5,000,000**	**1,400,000**	**1,300,000**
	Minimum	**14**	**< 0.01**	**< 1**	**< 1**	**< 1**	**< 0.01**	**400**	**800**	**220**

Location	Date	Fecal Strep. MPN/100 mL	Fecal* Strep. MPN/100 mL	Fecal** Strep. MPN/100 mL	Salmonella MPN/100 mL	VOC # of detects	Pesticides # of detects	SOC # of detects	Herbicides # of detects
Duck Creek at Boulder Highway	08/30/92	> 16							
	10/24/92	30,000							
	02/08/93	3,000	13,000						
	08/04/93	160,000	160,000	3,000,000					
	02/04/94	8,000	2,300	230					
	03/25/94	13,000		30,000	< 2.0				
	07/19/94	240,000	240,000	240,000	2.0				
	01/24/95			17,000	< 2.0				
	02/20/96	13,000			5.0				
	07/14/96	500,000			2.2		0		0
	04/02/97	90,000			4.0		0		3
	07/22/97	17,000			9.2		0		1
	02/03/98	50,000			< 2.2		0		1
	09/08/98	24,000			< 2.2	0	0		0
	06/02/99	130,000				1 a	0		0
	09/22/99	35,000				1 a	0		0
	02/16/00	80,000				1 a	0		0
	08/30/00	90,000				0	0		0
	07/06/01	300,000				2 a,b	0		2 f
	02/12/03	160,000				1 a	0	3 g,m,x	0
	07/24/03	80,000				1	0	7	0
	08/16/04	70,000				1 a	0	2 x,o	0 y,hh
	09/09/04	> 160,000				1 a	0	2 o,g	1 uu
	Median	**75,000**	**86,500**	**30,000**	**< 2.2**				
	Maximum	**500,000**	**240,000**	**3,000,000**	**9.2**				
	Minimum	**16**	**2,300**	**230**	**< 2.0**				

Location	Date	Q cfs	Temp Deg. C	Oil & Grease mg/L	TSS mg/L	TDS mg/L	Specific Conductance umho/cm	Lab pH units	Surfactants (MBAS) mg/L	Ortho-Phosphate mg/L	Total Phosphorous mg/L
Flamingo Wash at Nellis	10/24/92	115	18.0	< 3.0	1,710	1,270		7.4	1.51	0.18	1.20
	02/08/93	160	12.3	< 3.0	1,130	130		8.2	< 0.05	0.46	0.66
	06/05/93	41	17.7	3.9	1,420	1,520		7.5	1.84	0.44	0.82
	08/05/93	57	26.1	< 3.0	5,910	2,290		7.6	1.18	0.06	1.20
	02/04/94	45	9.0	5.3	620	1,180	2,300	7.4	0.69	0.61	0.68
	03/25/94	79	17.4	6.5	3,860	1,140	7,570	7.4	0.78	0.84	1.80
	07/19/94		24.4	7.0	6,710	1,200	1,501	7.4	3.49	0.19	2.10
	08/19/94	37	26.0	3.8	4,750	1,060	2,080	7.7	0.05	< 0.05	1.00
	01/24/95	125	9.3	4.5	1,960	600	389	7.9	0.22	0.08	
	05/24/95	30	18.3	< 3.0	255	1,160	1,302	7.5	0.71	0.06	0.32
	08/12/95	335	26.4	7.2	1,050	1,010	1,003	7.2	1.70	0.14	1.50
	01/31/96			18.0	560	1,920		7.0	1.99	0.44	1.30
	11/21/96	184	17.3	< 3.0	2,620	440	3,830	7.8	< 0.05	0.15	1.50
	09/25/97		19.7	< 3.0	324	580	710	7.3	1.75	0.57	0.66
	02/04/98		11.2	5.2	1,800	680	240	7.6	0.92	0.22	2.94
	02/24/98		12.0	< 3.0	660	380		7.8	< 0.50	0.08	0.88
	02/12/03	538		< 3.0	1,900	260	415	7.6	0.33	0.15	1.05
	04/14/03	411			3,410	505	650	7.4	< 0.05		
	07/24/03	120			2,230	790					
	08/16/03	366			19,200	810				0.34	1.00
	08/13/04			< 5.0	18,800	940	1,020	7.2	0.06	0.11	5.00
	08/16/04			< 5.0	5,760	1,040	1,210	7.3	0.59	0.09	3.20
	Median	**120**	**17.7**	**< 4**	**1,930**	**975**	**1,115**	**7.5**	**0.70**	**0.17**	**1.20**
	Maximum	**538**	**26.4**	**18**	**19,200**	**2,290**	**7,570**	**8.2**	**3.49**	**0.84**	**5.00**
	Minimum	**30**	**9.0**	**< 3**	**255**	**130**	**240**	**7.0**	**< 0.05**	**< 0.05**	**0.32**

Location	Date	NO3-N mg/L	NO-2 mg/L	NH3-N mg/L	TKN mg/L	Total Nitrogen mg/L	Copper mg/L	Dissolved Copper mg/L	Chromium mg/L	Lead mg/L
Flamingo Wash at Nellis	10/24/92	2.30		1.40	7.6	9.9	0.100		0.038	0.079
	02/08/93	0.40		0.13	< 1.0	1.4	0.020		0.031	0.019
	06/05/93	3.20		1.10	4.9	8.1	0.059		0.031	0.051
	08/05/93	4.30		1.90	6.6	10.9	0.067		0.040	0.086
	02/04/94	2.60		1.00	3.7	6.3	0.046		0.011	0.014
	03/25/94	< 0.50		0.80	7.1	7.6	0.094		0.048	0.100
	07/19/94	3.00		2.50	6.1	9.1	0.130		0.050	0.130
	08/19/94	2.00		0.82	9.1	11.1	0.094		0.043	0.125
	01/24/95	1.30		0.30	2.6	3.9	0.061		0.028	< 0.100
	05/24/95	2.10		0.40	3.1	5.2	0.027		< 0.010	0.018
	08/12/95	< 0.30		1.00	9.3	9.6	0.069		0.017	0.049
	01/31/96	5.10		2.50	13.0	18.1	0.070			0.130
	11/21/96	1.00		0.60	3.8	4.8	0.057			< 0.100
	09/25/97	0.50		0.30	2.7	3.2	0.026			< 0.100
	02/04/98	1.70		0.80	19.0	20.7	0.065			0.120
	02/24/98	0.98		0.30	2.2	3.2	0.020			< 0.100
	02/12/03	0.97	< 0.10		3.2	4.2	0.039	< 0.010	0.006	0.030
	04/14/03	1.23	0.13		7.6	9.0	0.100	< 0.010	34.000	0.047
	07/24/03	1.80	< 0.50		6.6	8.4	0.170	< 0.010		0.074
	08/16/03	2.00	< 0.20		5.4	7.4	0.320	< 0.010		0.120
	08/13/04	2.20	< 0.20		16.0	2.2	0.270	< 0.020	< 0.100	0.410
	08/16/04	2.60	0.09		11.0	14.5	0.220	< 0.010	0.066	0.220
	Median	**1.90**	**0.17**	**0.81**	**6.4**	**7.9**	**0.068**	**< 0.010**	**0.038**	**0.100**
	Maximum	**5.10**	**0.50**	**2.50**	**19.0**	**20.7**	**0.320**	**0.020**	**34.000**	**0.410**
	Minimum	**< 0.30**	**0.09**	**0.13**	**< 1.0**	**1.4**	**0.020**	**< 0.010**	**0.006**	**0.014**

Location	Date	Dissolved Lead mg/L	Mercury mg/L	Cadmium mg/L	Zinc mg/L	Dissolved Zinc mg/L	Silver mg/L	Nickel mg/L	Selenium mg/L	Arsenic mg/L
Flamingo Wash at Nellis	10/24/92		0.0002	< 0.0050	0.43		< 0.010	< 0.040		< 0.0250
	02/08/93		< 0.2000	< 0.0050	0.18		< 0.010	< 0.040	< 0.025	0.0150
	06/05/93		0.0002	< 0.0050	0.26		< 0.010	< 0.020	< 0.015	0.0160
	08/05/93		< 0.0002	< 0.0050	0.27		< 0.010	0.030		0.0270
	02/04/94		< 0.0002	< 0.0050	0.09		< 0.010	< 0.020	< 0.010	0.0080
	03/25/94		0.0004	< 0.0050	0.37		< 0.010	0.032	< 0.015	0.0310
	07/19/94		0.0004	< 0.0050	0.55		< 0.010	0.054	< 0.010	0.0320
	08/19/94		0.0002	< 0.0050	0.44		< 0.010	0.026	< 0.005	0.0310
	01/24/95		< 0.0002	< 0.0050	0.26		< 0.010	0.016	< 0.005	
	05/24/95		< 0.0002	< 0.0050	0.09		< 0.010	0.011	0.007	< 0.0050
	08/12/95		< 0.0002	< 0.0050	0.37		< 0.010	0.027	< 0.005	0.0090
	01/31/96				0.86					
	11/21/96				0.28					
	09/25/97				0.13					
	02/04/98				0.36					
	02/24/98				0.15					
	02/12/03	< 0.100	< 0.0002	0.0007	0.17	0.100	< 0.050	0.015	< 0.050	0.0120
	04/14/03	< 0.100	< 0.0002	< 0.0025	0.45	< 0.020	0.006	0.038	< 0.040	0.0140
	07/24/03	< 0.100			1.10	0.023				
	08/16/03	< 0.100			1.50	< 0.020				
	08/13/04	< 0.020	0.0003	< 0.0500	< 0.01	1.900	< 0.005	0.500	< 0.025	< 0.0120
	08/16/04	< 0.020	0.0026	0.0030	1.10	0.026	< 0.003	0.062	< 0.025	0.0270
	Median	**< 0.100**	**< 0.0002**	**< 0.0050**	**0.32**	**0.025**	**< 0.010**	**0.030**	**< 0.015**	**0.016**
	Maximum	**< 0.100**	**0.2000**	**< 0.0500**	**1.50**	**1.900**	**0.050**	**0.500**	**< 0.050**	**0.032**
	Minimum	**< 0.020**	**< 0.0002**	**0.0007**	**< 0.01**	**< 0.020**	**< 0.003**	**0.011**	**< 0.005**	**< 0.005**

Location	Date	Boron mg/L	Cyanide mg/L	BOD mg/L	COD mg/L	Color ACU	Turbidity NTU	Phenol mg/L	Petroleum Hydrocarbons	TPH (diesel) MPN/100 mL
Flamingo Wash at Nellis	10/24/92	0.49	0.008	54	555	175	750.0	0.020		
	02/08/93	0.09	< 0.005	< 6	57	15	700.0	0.100		
	06/05/93	0.58	< 0.005	56	375	320	390.0	< 0.010		
	08/05/93	0.97	0.008	85	415	320	200.0	0.020		
	02/04/94	0.41	< 0.005	37	185	100	190.0	0.100		
	03/25/94	0.37	0.008	55	395	1,000	1,400.0	0.010		
	07/19/94	0.44	0.013	22	630	150	0.2	0.130		
	08/19/94	0.35	< 0.005	40	465	150	950.0	< 0.100		
	01/24/95	0.18	< 0.005	33	155	25	510.0	0.100		< 1
	05/24/95	0.50	0.007	19	115	35	180.0	0.010	< 1.00	
	08/12/95	0.34	< 0.005	78	450	250	8.0	< 0.100		< 1
	01/31/96	0.71	0.030	116	660	230	520.0	0.020	< 1.00	
	11/21/96	0.12	< 0.005	18	220	30	3,300.0	< 0.010	< 1.00	
	09/25/97	0.30	< 0.005	42	160	60	280.0	< 0.010	1.50	
	02/04/98	0.22	< 0.005	63	570	75	2,200.0	< 0.010	< 1.00	
	02/24/98	0.13	< 0.005	13	98	15	740.0	< 0.010	< 1.00	
	02/12/03	< 0.05								
	04/14/03	0.18								
	07/24/03	0.24								
	08/16/03	0.27								
	08/13/04	0.56								
	08/16/04	0.28								
	Median	**0.32**	**< 0.005**	**41**	**385**	**125**	**515**	**0.020**	**< 1.00**	**< 1**
	Maximum	**0.97**	**0.030**	**116**	**660**	**1,000**	**3,300**	**0.130**	**1.50**	**< 1**
	Minimum	**< 0.05**	**< 0.005**	**< 6**	**57**	**15**	**0.2**	**< 0.010**	**< 1.00**	**< 1**

Location	Date	TPH (gasoline) MPN/100 mL	Total Chlorine mg/L	Fecal Coliform MPN/100 mL	Fecal* Coliform MPN/100 mL	Fecal** Coliform MPN/100 mL	Fecal Strep. MPN/100 mL	Fecal* Strep. MPN/100 mL	Fecal** Strep. MPN/100 mL	Salmonella MPN/100 mL
Flamingo Wash at Nellis	10/24/92		< 0.10	80,000			80,000			
	02/08/93		< 0.10	1,700	3,000		90,000	30,000		
	06/05/93		< 0.10	8,000	28,000	5,000	50,000	160,000	90,000	
	08/05/93		< 0.10	300,000	500,000	50,000	90,000	160,000	90,000	
	02/04/94		< 0.10	1,300	500	2,300	22,000	1,300	500	
	03/25/94		< 0.10	24,000	30,000	30,000	160,000	160,000	90,000	< 2
	07/19/94		< 0.10		1,600,000	500,000		500,000	170,000	13
	08/19/94		< 0.10	170,000	80,000	140,000	300,000	130,000	130,000	8
	01/24/95	< 1	< 0.01			3,000			22,000	8
	05/24/95		< 0.01			160,000			90,000	2
	08/12/95	< 1	< 0.01			> 160,000			> 1,600	2
	01/31/96			13,000			3,000			< 2
	11/21/96		< 0.01	240			738			< 2
	09/25/97			90,000			160,000			< 2
	02/04/98		0.10	5,000			50,000			< 2
	02/24/98		0.20	13,000			17,000			< 2
	02/12/03			7,000			17,000			
	04/14/03			130,000			70,000			
	07/24/03			1,600,000			170,000			
	08/16/03			300,000			10,000			0
	08/13/04			> 1,600,000			170,000			
	08/16/04			> 1,600,000			900,000			
	Median	**< 1**	**< 0.10**	**52,000**	**30,000**	**50,000**	**75,000**	**160,000**	**90,000**	**< 2**
	Maximum	**< 1**	**0.20**	**1,600,000**	**1,600,000**	**500,000**	**900,000**	**500,000**	**170,000**	**13**
	Minimum	**< 1**	**< 0.01**	**240**	**500**	**2300**	**738**	**1,300**	**500**	**0**

Location	Date	VOC # of detects	Pesticides # of detects	SOC # of detects	Herbicides # of detects
Flamingo Wash at Nellis	10/24/92				
	02/08/93				
	06/05/93				
	08/05/93				
	02/04/94				
	03/25/94				
	07/19/94				
	08/19/94				
	01/24/95				
	05/24/95				
	08/12/95				
	01/31/96		0		0
	11/21/96		0		0
	09/25/97		0		0
	02/04/98		2		1
	02/24/98		1		1
	02/12/03	1 a	0	9 g,h,j,o,q,s,t,u,x	0
	04/14/03	1 d		8 g,h,k,o,x,z,aa,bb	0
	07/24/03	2	0	3	0
	08/16/03	1	0	0	0
	08/13/04	2 k,l	0	2 x,o	0
	08/16/04	1 a	0	3 x,o,g	2 y,uu
	Median				
	Maximum				
	Minimum				

Location	Date	Q cfs	Temp Deg. C	Oil & Grease mg/L	TSS mg/L	TDS mg/L	Specific Conductance umho/cm	Lab pH units	Surfactants (MBAS) mg/L	Ortho-Phosphate mg/L	Total Phosphorous mg/L
C-1 Channel at Warm Springs	08/30/92	500	24.5	< 3	17,800	230		8.0	0.26	< 0.05	2.20
	02/08/93	181	11.1	< 3	3,670	140		8.3	< 0.05	1.50	3.90
	07/19/94		24.1	3	77	290	486	7.5	1.81	0.41	0.42
	09/19/94		22.7	3	120	930	888	7.6	2.60	1.20	2.70
	01/24/95	5	9.5	< 3	1,190	210	274	8.2	0.14	0.41	
	11/21/96	30	17.0	< 3	1,980	150	575	8.2	< 0.05	0.52	1.90
	08/10/97		17.5	< 3	4,800	260		8.5	0.60	0.37	1.48
	02/24/98		12.0	< 3	1,460	88		8.4	< 0.50	0.61	6.04
	02/16/00			< 3	610	62					2.15
	08/16/00	76		5	1,170	380					1.50
	02/25/03	9		< 3	187	100	139	7.7	0.19		
	09/04/03	29			3,850	440					6.80
	11/12/03	156			110	150				0.26	0.38
	11/07/04			< 5	810	80	93	8.4	0.05	1.40	1.50
	Median	**53**	**17.3**	**< 3**	**1,180**	**180**	**380**	**8.2**	**0.22**	**0.47**	**2.03**
	Maximum	**500**	**25**	**5**	**17,800**	**930**	**888**	**9**	**3**	**2**	**7**
	Minimum	**5**	**9.5**	**< 3**	**77**	**62**	**93**	**7.5**	**< 0.05**	**< 0.05**	**0.38**

Location	Date	NO3-N mg/L	NO-2 mg/L	NH3-N mg/L	TKN mg/L	Total Nitrogen mg/L	Copper mg/L	Dissolved Copper mg/L	Chromium mg/L	Lead mg/L
C-1 Channel at Warm Springs	08/30/92	1.60		0.07	8.3	9.9	0.27		0.1900	0.2200
	02/08/93	0.30		0.11	< 1.0	1.3	0.09		0.0630	0.0600
	07/19/94	0.80		0.97	2.8	3.6	0.02		< 0.0100	0.0100
	09/19/94	5.20		1.60	4.1	9.3	0.03		0.0140	0.0220
	01/24/95	0.80		0.06	< 1.0	1.8	0.04		0.0190	< 0.1000
	11/21/96	0.80		0.30	2.1	2.9	0.03			< 0.1000
	08/10/97	2.00		0.20	5.2	7.2	0.03			< 0.1000
	02/24/98	0.59		0.20	1.7	2.3	< 0.01			< 0.1000
	02/16/00	0.49		0.36	1.9	2.4	0.07	< 0.010		< 0.1000
	08/16/00	4.12		1.13	6.1	10.2	0.15	0.034		< 0.1000
	02/25/03	0.44	< 0.10		0.9	1.4	0.03	< 0.010	0.0089	0.0055
	09/04/03	1.70	< 0.10		10.0	11.5	< 0.20	< 0.010		0.0900
	11/12/03	0.61	< 0.10		2.4	3.0	0.02	0.038		0.0045
	11/07/04	0.20	< 0.10		1.4	1.6	0.04	< 0.010	0.0160	0.0170
	Median	**0.80**	**< 0.10**	**0.25**	**2.3**	**3.0**	**0.03**	**< 0.010**	**0.0160**	**< 0.1000**
	Maximum	**5**	**< 0.10**	**2**	**10**	**12**	**0.27**	**0.038**	**0.1900**	**0.2200**
	Minimum	**0.20**	**< 0.10**	**0.06**	**0.9**	**1.3**	**0.01**	**< 0.010**	**0.0089**	**0.0045**

Location	Date	Dissolved Lead mg/L	Mercury mg/L	Cadmium mg/L	Zinc mg/L	Dissolved Zinc mg/L	Silver mg/L	Nickel mg/L	Selenium mg/L	Arsenic mg/L
C-1 Channel at Warm Springs	08/30/92		0.0014	< 0.0050	0.89		< 0.0100	0.210		0.120
	02/08/93		< 0.0002	< 0.0050	0.37		< 0.0100	0.077	< 0.0250	0.021
	07/19/94		< 0.0002	< 0.0050	0.08		< 0.0100	0.017	< 0.0050	< 0.005
	09/19/94		< 0.0002	< 0.0050	0.20		< 0.0100	0.022	< 0.0050	0.008
	01/24/95		0.0002	< 0.0050	0.18		< 0.0100	0.068	< 0.0050	
	11/21/96				0.23					
	08/10/97				0.20					
	02/24/98				0.17					
	02/16/00	< 0.10			0.32	< 0.20				
	08/16/00	< 0.10			0.49	< 0.02				
	02/25/03	< 0.10	< 0.0002	< 0.0005	0.08	0.10	< 0.0005	0.007	< 0.0050	0.003
	09/04/03	< 0.10			0.45	< 0.02				
	11/12/03	< 0.02			0.08	0.08				
	11/07/04	< 0.02	< 0.0002	< 0.0005	0.15	< 0.02	< 0.0005	0.020	< 0.0100	0.006
	Median	**< 0.10**	**< 0.0002**	**< 0.0050**	**0.20**	**< 0.05**	**< 0.0100**	**0.022**	**< 0.005**	**0.007**
	Maximum	**< 0.10**	**0.0014**	**< 0.0050**	**0.89**	**< 0.20**	**< 0.0100**	**0.210**	**< 0.025**	**0.120**
	Minimum	**< 0.02**	**< 0.0002**	**< 0.0005**	**0.08**	**< 0.02**	**< 0.0005**	**0.007**	**< 0.005**	**0.003**

Location	Date	Boron mg/L	Cyanide mg/L	BOD mg/L	COD mg/L	Color ACU	Turbidity NTU	Phenol mg/L	Petroleum Hydrocarbons	TPH (diesel) MPN/100 mL
C-1 Channel at Warm Springs	08/30/92	0.27	0.015	13	88	30	8,500	0.02		
	02/08/93	0.09	< 0.005	< 6	81	30	1,900	0.10		
	07/19/94	0.10	0.006	27	190	200	26	0.08		
	09/19/94	0.23	0.009	105	560	400	18	0.02		
	01/24/95	0.06	0.007	7	60	25	380	0.10		< 1
	11/21/96	0.07	< 0.005	< 6	58	32	840	< 0.01	< 1	
	08/10/97	0.15	< 0.005	8	230	< 3	4,400	< 0.01		
	02/24/98	0.09	< 0.005	13	120	20	850	< 0.01	< 1	
	02/16/00									
	08/16/00	0.12								
	02/25/03	< 0.05								
	09/04/03	0.11								
	11/12/03	< 0.05								
	11/07/04	< 0.05								
	Median	**0.09**	**0.006**	**11**	**104**	**30**	**845**	**0.02**	**< 1**	**< 1**
	Maximum	**0.27**	**0.015**	**105**	**560**	**400**	**8,500**	**0.10**	**< 1**	**< 1**
	Minimum	**< 0.05**	**< 0.005**	**< 6**	**58**	**3**	**18**	**< 0.01**	**< 1**	**< 1**

Location	Date	TPH (gasoline) MPN/100 mL	Total Chlorine mg/L	Fecal Coliform MPN/100 mL	Fecal* Coliform MPN/100 mL	Fecal** Coliform MPN/100 mL	Fecal Strep. MPN/100 mL	Fecal* Strep. MPN/100 mL	Fecal** Strep. MPN/100 mL	Salmonella MPN/100 mL
C-1 Channel at Warm Springs	08/30/92		< 0.100	90,000			> 16			
	02/08/93		< 0.100	3,000			30,000			
	07/19/94		< 0.100		11,000	30,000		80,000	300,000	4.0
	09/19/94		< 0.010			30,000			90,000	8.0
	01/24/95	< 1	< 0.010			1,700			13,000	< 2.0
	11/21/96		< 0.010	240			1,230			< 2.2
	08/10/97		< 0.100	3,000			50,000			9.2
	02/24/98		0.100	5,000			24,000			< 2.2
	02/16/00			13,000			30,000			
	08/16/00			30,000			90,000			
	02/25/03			8,000			2,400			
	09/04/03			17,000			30,000			
	11/12/03			24,000			16,000			
	11/07/04			5,000			17,000			
	Median	**< 1**	**< 0.100**	**8,000**	**11,000**	**30,000**	**24,000**	**80,000**	**90,000**	**3.1**
	Maximum	**< 1**	**0.100**	**90,000**	**11,000**	**30,000**	**90,000**	**80,000**	**300,000**	**9.2**
	Minimum	**< 1**	**< 0.010**	**240**	**11,000**	**1,700**	**> 16**	**80,000**	**13,000**	**< 2.0**

Location	Date	VOC # of detects	Pesticides # of detects	SOC # of detects	Herbicides # of detects
C-1 Channel at Warm Springs	08/30/92				
	02/08/93				
	07/19/94				
	09/19/94				
	01/24/95				
	11/21/96		0		1 hh
	08/10/97		0		1
	02/24/98		0		2
	02/16/00	1 d	0		0
	08/16/00	1 a	1 ww		1 hh
	02/25/03	0	0	5 g,h,l,o,x	0
	09/04/03	0	0	0	0
	11/12/03	4	0	4	0
	11/07/04	0	0	1 x	0
	Median				
	Maximum				
	Minimum				

Location	Date	Q cfs	Temp Deg. C	Oil & Grease mg/L	TSS mg/L	TDS mg/L	Specific Conductance umho/cm	Lab pH units	Surfactants (MBAS) mg/L	Ortho-Phosphate mg/L	Total Phosphorous mg/L
Sloan Channel (Range Wash) at Charleston	10/24/92	32	17.8	< 3	280	100		7.9	0.21	0.41	0.4
	02/08/93	56	10.5	< 3	830	130		8.2	< 0.10	0.64	4.7
	07/19/94	24	23.4		6,540	430	611	7.3	0.61	0.09	2.1
	08/09/94	5	24.1	< 3	16,200	440	598	7.9	0.31	0.09	2.0
	08/19/94	2	23.1	< 3	4,010	390	626	8.0	< 0.05	< 0.05	0.8
	01/24/95		10.0	< 3	3,540	230	3	8.1	0.22	0.08	
	08/12/95	5	27.3	3	3,390	510	620	7.4	0.75	0.24	3.1
	11/21/96	63	16.9	< 3	5,230	240	413	8.0	< 0.05	0.51	1.7
	07/22/97		27.0	1,060	230	200	297	8.1		0.44	0.1
	08/08/97			4	1,500	240		7.9	1.53	0.08	0.5
	08/14/98	30		< 3	4,060	330					1.0
	02/16/00			< 3	1,970	200					1.7
	02/26/01			< 3	220	110					0.3
	02/12/03	99		< 3	79	110	172	7.2	0.31	0.18	0.3
	10/20/04			< 5	270	180	263	7.9	0.56	0.30	0.5
	Median	**30**	**23.1**	**< 3**	**1,970**	**230**	**413**	**7.9**	**< 0.31**	**0.21**	**0.9**
	Maximum	**99**	**27.3**	**1,060**	**16,200**	**510**	**626**	**8.2**	**1.53**	**0.64**	**4.7**
	Minimum	**2**	**10.0**	**< 3**	**79**	**100**	**3**	**7.2**	**< 0.05**	**< 0.05**	**0.1**

Location	Date	NO3-N mg/L	NO-2 mg/L	NH3-N mg/L	TKN mg/L	Total Nitrogen mg/L	Copper mg/L	Dissolved Copper mg/L	Chromium mg/L	Lead mg/L
Sloan Channel (Range Wash) at Charleston	10/24/92	0.50		0.20	1.1	1.6	0.028		0.019	0.020
	02/08/93	0.40		0.14	< 1.0	1.4	0.017		0.021	0.018
	07/19/94	2.30		1.20	1.7	4.0	0.068		0.057	0.063
	08/09/94	1.30		0.14	2.7	4.0	0.049		0.031	0.086
	08/19/94	2.00		0.37	3.1	5.1	0.040		0.035	0.037
	01/24/95	8.70		0.70	2.5	11.2	0.064		0.058	< 0.100
	08/12/95	< 0.20		0.40	8.0	8.2	0.056		0.035	0.029
	11/21/96	1.10		0.50	3.7	4.8	0.033			< 0.100
	07/22/97	0.90		1.00	2.5	3.4	0.029			< 0.100
	08/08/97	2.00		2.50	6.1	8.1	0.150			0.210
	08/14/98	2.50		0.66	5.8	8.3	0.110	0.011		< 0.100
	02/16/00	1.74		0.49	3.9	5.6	0.012	< 0.010		< 0.100
	02/26/01	0.64		0.28	1.3	1.9	0.029	< 0.010		0.011
	02/12/03	0.73	< 0.1		2.0	2.7	0.018	< 0.010	0.004	0.006
	10/20/04	0.90	< 0.1		2.6	3.5	0.028	0.013		0.010
	Median	**1.10**	**< 0.1**	**0.49**	**2.6**	**4.0**	**0.033**	**0.010**	**0.033**	**0.063**
	Maximum	**8.70**	**< 0.1**	**2.50**	**8.0**	**11.2**	**0.150**	**0.013**	**0.058**	**0.210**
	Minimum	**< 0.20**	**< 0.1**	**0.14**	**< 1.0**	**1.4**	**0.012**	**< 0.010**	**0.004**	**0.006**

Location	Date	Dissolved Lead mg/L	Mercury mg/L	Cadmium mg/L	Zinc mg/L	Dissolved Zinc mg/L	Silver mg/L	Nickel mg/L	Selenium mg/L	Arsenic mg/L
Sloan Channel (Range Wash) at Charleston	10/24/92		< 0.0002	< 0.005	0.17		< 0.010	< 0.040		< 0.025
	02/08/93		< 0.0002	< 0.005	0.11		< 0.010	< 0.040	< 0.005	0.010
	07/19/94		< 0.0002	< 0.005	0.31		< 0.010	0.046	< 0.010	0.049
	08/09/94		0.0002	< 0.005	0.17		< 0.010	0.028	< 0.005	0.061
	08/19/94		< 0.0002	< 0.005	0.15		< 0.010	0.026	0.027	0.027
	01/24/95		< 0.0002	< 0.005	0.29		< 0.010	0.044	< 0.005	
	08/12/95		< 0.0002	< 0.005	0.30		< 0.010	0.030	< 0.005	0.018
	11/21/96				0.20					
	07/22/97				0.26					
	08/08/97				0.62					
	08/14/98	< 0.1000			0.44	< 0.02				
	02/16/00	< 0.1000			0.05	< 0.02				
	02/26/01	< 0.0005			0.12	< 0.02				
	02/12/03	< 0.1000	< 0.0002	< 0.001	0.08	< 0.02	< 0.001	< 0.001	< 0.050	0.003
	10/20/04	< 0.0200	0.0002	< 0.005			< 0.001	0.009	< 0.010	0.005
	Median	**< 0.1000**	**< 0.0002**	**< 0.005**	**0.19**	**< 0.02**	**< 0.010**	**0.030**	**< 0.008**	**0.022**
	Maximum	**< 0.1000**	**0.0002**	**< 0.005**	**0.62**	**< 0.02**	**< 0.010**	**0.046**	**< 0.050**	**0.061**
	Minimum	**< 0.0005**	**< 0.0002**	**< 0.001**	**0.05**	**< 0.02**	**< 0.001**	**< 0.001**	**< 0.005**	**0.003**

Location	Date	Boron mg/L	Cyanide mg/L	BOD mg/L	COD mg/L	Color ACU	Turbidity NTU	Phenol mg/L	Petroleum Hydrocarbons	TPH (diesel) MPN/100 mL
Sloan Channel (Range Wash) at Charleston	10/24/92	0.08	0.005	12	74	10.0	0	< 0.01		
	02/08/93	0.08	< 0.005	< 6	46	15.0	600	0.20		
	07/19/94	0.24	0.007	28	135	100.0	3	0.04		
	08/09/94	0.93	< 0.005	15	295	75.0	1	< 0.01		
	08/19/94	0.24	< 0.005	10	115	150.0	1,350	< 0.01		
	01/24/95	0.11	0.010	14	97	15.0	1,100	0.10		< 1
	08/12/95	0.20	< 0.005	59	375	250.0	63	0.10		< 1
	11/21/96	0.15	< 0.005	17	140	37.0	1,600	< 0.01	< 1	
	07/22/97	0.12	< 0.005	26	130	200.0	240	< 0.01	< 1	
	08/08/97	0.18	0.330	41	310	150.0	600	0.01		
	08/14/98	0.24								
	02/16/00	0.10								
	02/26/01									
	02/12/03	< 0.05								
	10/20/04	0.10								
	Median	**0.14**	**< 0.005**	**16**	**133**	**87.5**	**420**	**< 0.01**	**< 1**	**< 1**
	Maximum	**0.93**	**0.330**	**59**	**375**	**250.0**	**1,600**	**0.20**	**< 1**	**< 1**
	Minimum	**< 0.05**	**< 0.005**	**< 6**	**46**	**10.0**	**0.170**	**< 0.01**	**< 1**	**< 1**

Location	Date	TPH (gasoline) MPN/100 mL	Total Chlorine mg/L	Fecal Coliform MPN/100 mL	Fecal* Coliform MPN/100 mL	Fecal** Coliform MPN/100 mL	Fecal Strep. MPN/100 mL	Fecal* Strep. MPN/100 mL	Fecal** Strep. MPN/100 mL	Salmonella MPN/100 mL
Sloan Channel (Range Wash) at Charleston	10/24/92		< 0.10	5,000			130,000			
	02/08/93		< 0.10	1,300		1,400	24,000		50,000	
	07/19/94		< 0.10	28,000	23,000	23,000	22,000	30,000	30,000	12.0
	08/09/94		< 0.10		170,000	30,000		70,000	23,000	< 2.0
	08/19/94		< 0.10	30,000	80,000	130,000	23,000	35,000	9,000	170.0
	01/24/95	< 1	< 0.01			3,000			17,000	4.0
	08/12/95	< 1	< 0.01			> 160,000			> 1,600	< 14.0
	11/21/96		< 0.01	240			9,300			< 2.2
	07/22/97		< 0.10	90,000			90,000			< 2.2
	08/08/97			5,000			160,000			< 2.2
	08/14/98			3,000			160,000			< 2.2
	02/16/00			11,000			30,000			
	02/26/01			5,000			50,000			
	02/12/03			5,000			80,000			
	10/20/04			17,000			30,000			
	Median	**< 1**	**< 0.10**	**5,000**	**80,000**	**26,500**	**40,000**	**35,000**	**20,000**	**< 2.2**
	Maximum	**< 1**	**< 0.10**	**90,000**	**170,000**	**160,000**	**160,000**	**70,000**	**50,000**	**170.0**
	Minimum	**< 1**	**< 0.01**	**240**	**23,000**	**1,400**	**9,300**	**30,000**	**> 1,600**	**< 2.0**

Location	Date	VOC # of detects	Pesticides # of detects	SOC # of detects	Herbicides # of detects
Sloan Channel (Range Wash) at Charleston	10/24/92				
	02/08/93				
	07/19/94				
	08/09/94				
	08/19/94				
	01/24/95				
	08/12/95				
	11/21/96		1 c,m,ii,jj,kk,ll		1 hh
	07/22/97		0		1
	08/08/97		0		0
	08/14/98	1 a	0		1 hh
	02/16/00	1 a	0		0
	02/26/01	1 a	0		0
	02/12/03	1 a	0	9 g,h,i,j,k,l,u,v,x	
	10/20/04	1 a	0	4 x,h,g,k	1 uu
	Median				
	Maximum				
	Minimum				

Location	Date	Q cfs	Temp Deg. C	Oil & Grease mg/L	TSS mg/L	TDS mg/L	Specific Conductance umho/cm	Lab pH units	Surfactants (MBAS) mg/L	Ortho-Phosphate mg/L	Total Phosphorous mg/L	NO3-N mg/L	NO-2 mg/L	NH3-N mg/L
Monson Channel	02/12/03			12.0	11,600	740	940	7.50	0.79	0.98	2.32	1.3	0.560	
	07/31/03				800	170						2.9	0.180	
	11/12/03				210	540				0.36	0.69	4.8	0.250	
	10/20/04			< 5.0	460	350	479	0.01	0.95	0.27	0.80	1.3	0.140	
	Median			**8.5**	**630**	**445**	**710**	**3.76**	**0.87**	**0.36**	**0.80**	**2.1**	**0.22**	
	Maximum			**12.0**	**11,600**	**740**	**940**	**7.50**	**0.95**	**0.98**	**2.32**	**4.8**	**0.56**	
	Minimum			**< 5.0**	**210**	**170**	**479**	**0.01**	**0.79**	**0.27**	**0.69**	**1.3**	**0.14**	
Meadows Detention Basin	02/12/03			7.0	100	110	153	7.40	0.37	0.19	0.32	0.6	< 0.100	
	07/25/03				490	310						3.3	< 0.100	
	12/11/03				94	140	150	7.80	0.29	0.20	0.84	1.8	< 0.200	
	11/07/04			< 5.0	73	120	140	7.40	0.69	1.40	0.34	0.6	< 0.100	
	01/03/05			5.0	31	47	67	7.70	0.32	0.10	0.18	0.2	< 0.100	
	Median			**5.0**	**94**	**120**	**145**	**7.55**	**0.34**	**0.20**	**0.33**	**0.6**	**< 0.100**	
	Maximum			**7.0**	**490**	**310**	**153**	**7.80**	**0.69**	**1.40**	**0.84**	**3.3**	**< 0.200**	
	Minimum			**< 5.0**	**31**	**47**	**67**	**7.40**	**0.29**	**0.10**	**0.18**	**0.2**	**< 0.100**	
Las Vegas Wash at Pabco Rd.	09/11/02	320		< 3.0	60	1,450	1,950	7.30	< 0.45		0.32	9.9	< 2.500	
	10/27/02	218		< 3.0	10	1,490	2,230	8.00			0.29	9.9		
	Median	**269**		**< 3.0**	**35**	**1,470**	**2,090**	**7.65**	**0.45**		**0.31**	**9.9**	**< 2.50**	
	Maximum	**320**		**3.0**	**60**	**1,490**	**2,230**	**8.00**	**0.45**		**0.32**	**9.9**	**< 2.50**	
	Minimum	**218**		**< 3.0**	**10**	**1,450**	**1,950**	**7.30**	**0.45**		**0.29**	**9.9**	**< 2.50**	

Location	Date	TKN mg/L	Total Nitrogen mg/L	Copper mg/L	Dissolved Copper mg/L	Chromium mg/L	Lead mg/L	Dissolved Lead mg/L	Mercury mg/L	Cadmium mg/L	Zinc mg/L	Dissolved Zinc mg/L	Silver mg/L	Nickel mg/L
Monson Channel	02/12/03	8.6	10.46	0.053	< 0.050	0.0079	0.0340	< 0.5000	< 0.0002	0.00090	0.33	< 0.100	< 0.0005	0.0150
	07/31/03	7.9	10.98	0.058	< 0.010		0.1200	< 0.1000			0.21	< 0.020		
	11/12/03	0.7	5.74	0.028	0.035		0.0092	< 0.0200			0.13	0.180		
	10/20/04	4.9	6.35	0.051	< 0.010	8.7000	0.0190	< 0.0200	< 0.0002	0.00055		0.033	< 0.0005	0.0110
	Median	**6.4**	**8.41**	**0.052**	**< 0.023**	**4.3540**	**0.0265**	**< 0.0600**	**< 0.0002**	**0.0007**	**0.21**	**< 0.067**	**< 0.0005**	**0.013**
	Maximum	**8.6**	**10.98**	**0.058**	**< 0.050**	**8.7000**	**0.1200**	**< 0.5000**	**< 0.0002**	**0.0009**	**0.33**	**0.180**	**< 0.0005**	**0.015**
	Minimum	**0.7**	**5.74**	**0.028**	**< 0.010**	**0.0079**	**0.0092**	**< 0.0200**	**< 0.0002**	**0.0006**	**0.13**	**< 0.020**	**< 0.0005**	**0.011**
Meadows Detention Basin	02/12/03	1.6	2.20	0.026	< 0.010	0.0053	0.0120	< 0.1000	< 0.0002	0.00074	0.10	< 0.020	< 0.0005	0.0051
	07/25/03	7.6	10.90	0.110	< 0.010		0.0400	< 0.1000			0.51	0.090		
	12/11/03	2.2	2.72	0.031	< 0.010	0.0006	0.0140	< 0.0200	< 0.0002	0.00053	0.15	0.150	< 0.0005	
	11/07/04	2.2	2.80	0.024	< 0.010	0.0041	0.0110	< 0.0200	< 0.0002	< 0.00050	0.14	0.041	< 0.0005	< 0.0050
	01/03/05	0.7	0.87	0.019	< 0.010	< 0.0050	0.0056	< 0.0200	< 0.0002	< 0.00250	0.07	< 0.020	< 0.0025	< 0.0250
	Median	**2.2**	**2.72**	**0.026**	**< 0.010**	**< 0.0046**	**0.0120**	**< 0.0200**	**< 0.0002**	**< 0.0006**	**0.140**	**< 0.041**	**< 0.0005**	**< 0.0051**
	Maximum	**7.6**	**10.90**	**0.110**	**< 0.010**	**0.0053**	**0.0400**	**< 0.1000**	**< 0.0002**	**0.0025**	**0.510**	**0.150**	**< 0.0025**	**< 0.0250**
	Minimum	**0.7**	**0.87**	**0.019**	**< 0.010**	**0.0006**	**0.0056**	**< 0.0200**	**< 0.0002**	**< 0.0005**	**0.070**	**< 0.020**	**< 0.0005**	**< 0.0050**
Las Vegas Wash at Pabco Rd.	09/11/02	3.2	13.10	0.015	0.017	0.0045	0.0024	< 0.1000	< 0.0002	< 0.00050	0.05	0.058	< 0.0005	0.0140
	10/27/02	1.2	11.06	0.012	0.008	0.0031	0.0006	< 0.0005	< 0.0002	< 0.00050	0.07	0.058	< 0.0005	0.0083
	Median	**2.2**	**12.08**	**0.014**	**0.013**	**0.0038**	**0.0015**	**< 0.0503**	**< 0.0002**	**< 0.00050**	**0.058**	**0.058**	**< 0.0005**	**0.0112**
	Maximum	**3.2**	**13.10**	**0.015**	**0.017**	**0.0045**	**0.0024**	**< 0.1000**	**< 0.0002**	**< 0.00050**	**0.065**	**0.058**	**< 0.0005**	**0.0140**
	Minimum	**1.2**	**11.06**	**0.012**	**0.008**	**0.0031**	**0.0006**	**< 0.0005**	**< 0.0002**	**< 0.00050**	**0.051**	**0.058**	**< 0.0005**	**0.0083**

Location	Date	Selenium mg/L	Arsenic mg/L	Boron mg/L	Fecal Coliform MPN/100 mL	Fecal Strep. MPN/100 mL	VOC # of detects		Pesticides # of detects	SOC # of detects		Herbicides # of detects	
Monson Channel	02/12/03	< 0.020	0.020	0.028	28,000	28,000	1	a	0	4	g,h,o,x	0	
	07/31/03			0.290	1,600,000	1,600,000	1		1	8		0	
	11/12/03			0.260	50,000	220,000	1		0	4		0	
	10/20/04	< 0.020	0.009	0.240	50,000	160,000	1	a	0	3	x,o,g	3	hh, uu, xx
	Median	**< 0.020**	**0.015**	**0.250**	**50,000**	**190,000**							
	Maximum	**< 0.020**	**0.020**	**0.290**	**1,600,000**	**1,600,000**							
	Minimum	**< 0.020**	**0.009**	**0.028**	**28,000**	**28,000**							
Meadows Detention Basin	02/12/03	< 0.005	0.003	< 0.050	7,000	30,000	1	a	0	5	g,h,k,p,x	0	
	07/25/03			0.130	160,000	1,600,000	1		0	8		1	
	12/11/03	< 0.005	< 0.002	0.052	2,200	17,000	0		0	2		0	
	11/07/04	< 0.010	0.002	0.069	9,000	50,000	1	a		8	x,h,o,i,j,nn,yy,k	1	uu
	01/03/05	< 0.010	< 0.002	< 0.050	11,000	9,000	0		0	7	x,h.i,nn,g,l.k	1	hh
	Median	**< 0.008**	**0.002**	**0.052**	**9,000**	**30,000**							
	Maximum	**< 0.010**	**0.003**	**0.130**	**160,000**	**1,600,000**							
	Minimum	**< 0.005**	**< 0.002**	**< 0.050**	**2,200**	**9,000**							
Las Vegas Wash at Pabco Rd.	09/11/02		0.004	0.590	**1,600,000**	**900,000**							
	10/27/02	< 0.005	0.009	0.590			4	d,cc,dd,ee	0	2	i,j	0	
	Median	**< 0.005**	**0.006**	**0.590**	**1,600,000**	**900,000**							
	Maximum	**< 0.005**	**0.009**	**0.590**	**1,600,000**	**900,000**							
	Minimum	**< 0.005**	**0.004**	**0.590**	**1,600,000**	**900,000**							



Appendix B

B-2: Storm and Wet Weather Reports

NPDES Storm Write Up and Wet Weather Sample Collection Form

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT | LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

Sample Location:	Las Vegas Wash at The Club at Sunrise		
Date:	Monday, July 25, 2022		
Samplers' Name:	Alisson Boeing, Bany Umanzor, Eric Hsu		
Sample Collection Information			
Time of 1st Sample Collected:	6:22 PM		
Time of Grab Sample Collected:	6:34 PM		
Time of 24th Sample Collected:	6:46 PM		
Sample Intervals:	1 minute		
Air Temperature (°F):	83	**Water Temperature (°F):**	-
Relative Humidity (%RH):	70	**Conductivity (mS/cm):**	-
5-minute Precipitation (inches):	-	**Discharge (cfs):**	-
Turbidity (NTU):	-	**Photos:**	Attached
Sampling Notes:	All 24 bottled samples were combined into one composite sample. The sample time on the Chain of Custody (COC) form was 6:22 PM and the sample identification name was FW-100-CS.		

Weather Conditions

(Temperature, storm location, etc.)

On Monday, July 25, 2022, thunderstorms covered part of the Las Vegas Valley. Rain depths increased through the afternoon. Rain gages reported between 0.04 – 0.98 inches before sampling. Throughout the Las Vegas Valley, temperatures were between 79°F and 84°F. Wind speeds ranged from 2 mph to 4 mph (Southwest). Relative humidity ranged between 46% and 73%.

Site Status

(Any maintenance required? Any equipment missing or damaged?)

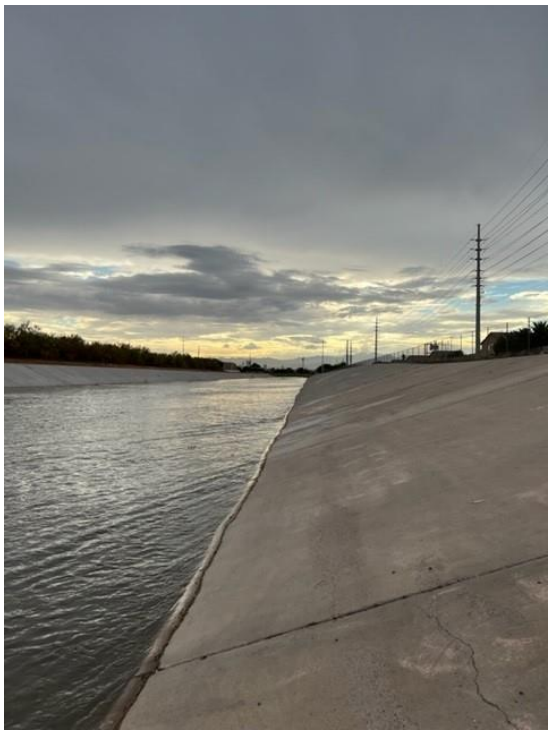
No new updates.

Additional Information

No additional information at this time.

Photos (7/25/2022, 6:22 PM)



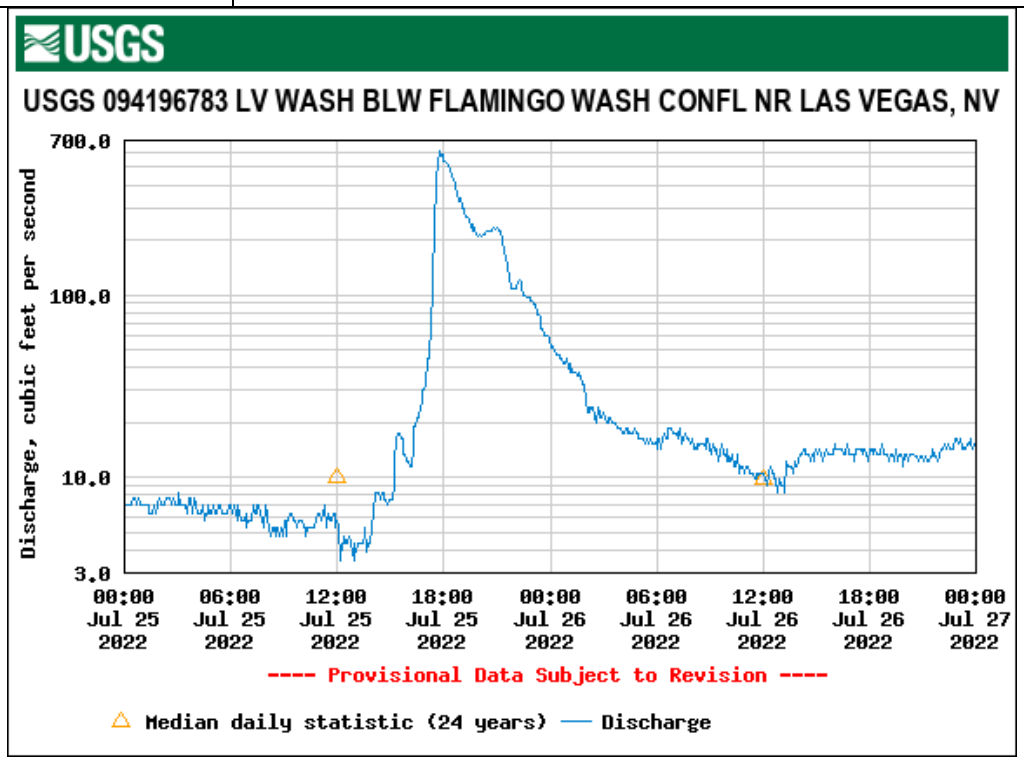


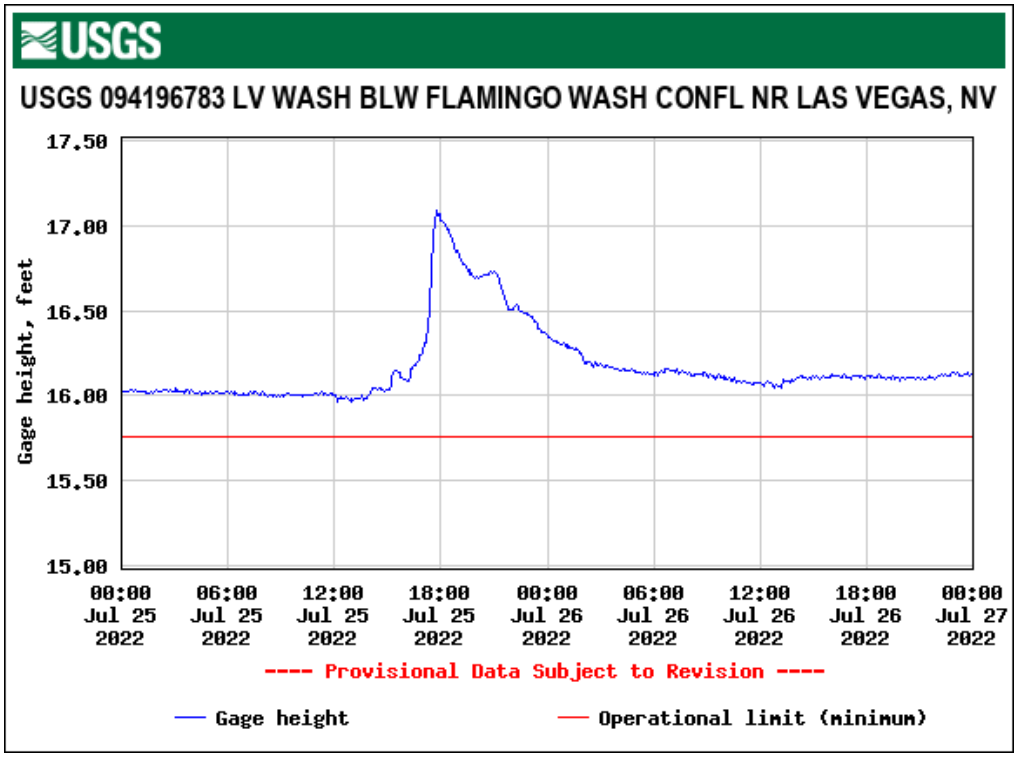


NPDES Storm Write Up and Wet Weather Sample Summary

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT| LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

Sample Location:	Las Vegas Wash at The Club at Sunrise
Date:	Monday, July 25, 2022
Samplers' Name:	Alisson Boeing, Bany Umanzor, Eric Hsu

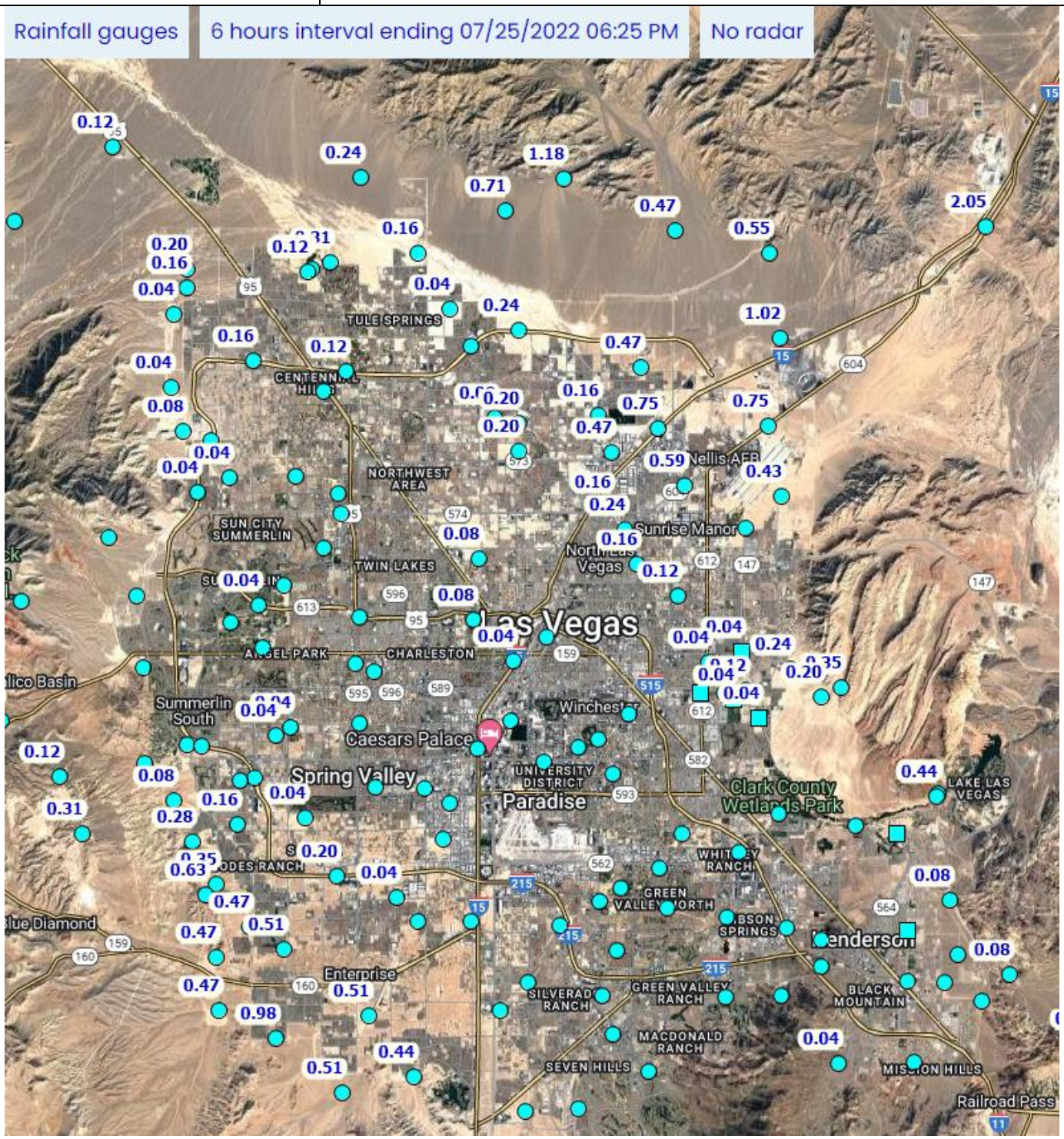




NPDES Storm Write Up and Wet Weather Sample Summary

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT| LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

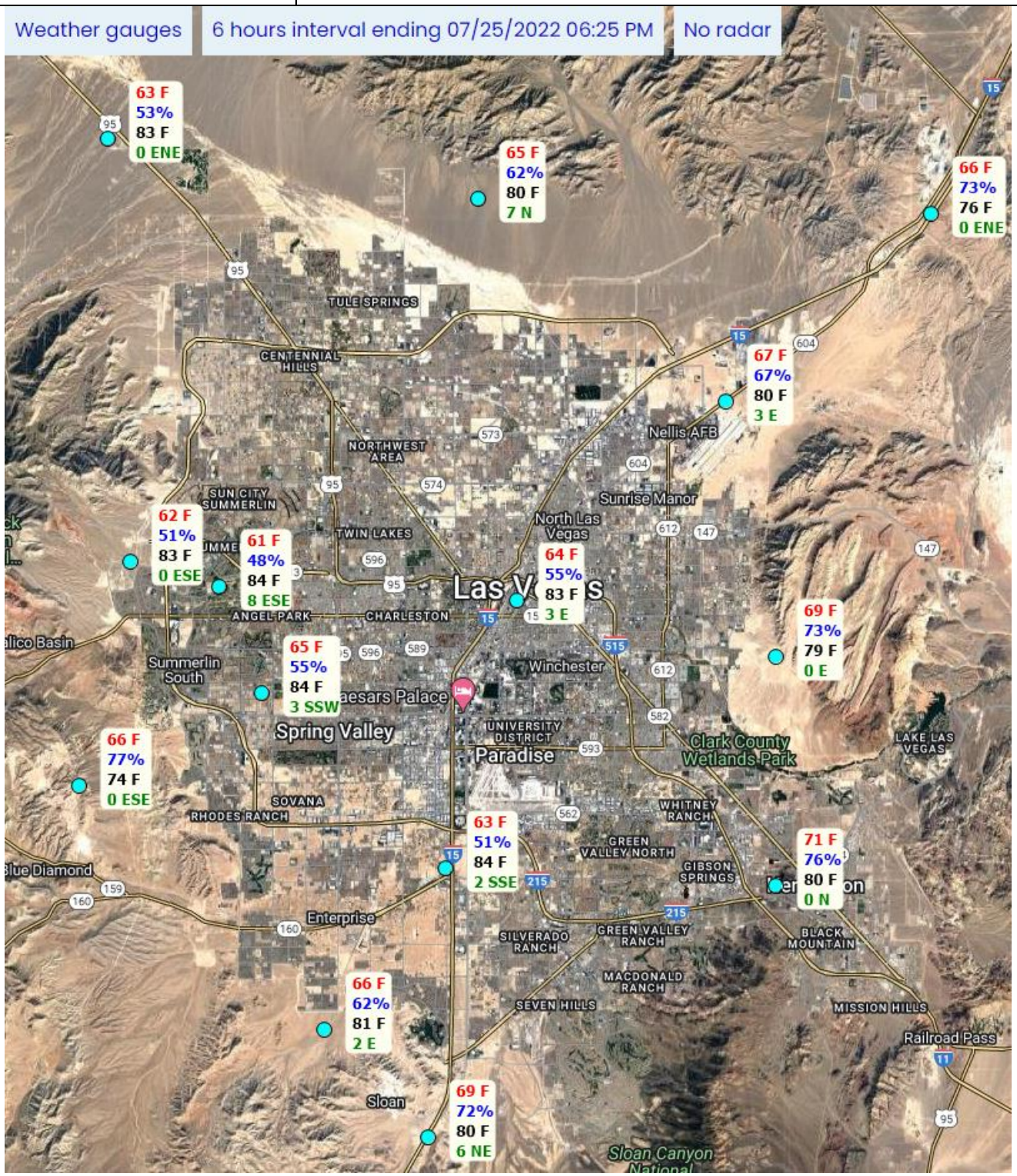
Sample Location:	Las Vegas Wash at The Club at Sunrise
Date:	Monday, July 25, 2022
Samplers' Name:	Alisson Boeing, Bany Umanzor, Eric Hsu



NPDES Storm Write Up and Wet Weather Sample Summary

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT| LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

Sample Location:	Las Vegas Wash at The Club at Sunrise
Date:	Monday, July 25, 2022
Samplers' Name:	Alisson Boeing, Bany Umanzor, Eric Hsu



NPDES Storm Write Up and Wet Weather Sample Collection Form

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT | LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

Sample Location:	Las Vegas Wash at Rainbow Gardens		
Date:	Monday, July 25, 2022		
Samplers' Name:	Emily Thornley, Thomas Hergenrader, Sailuj Shakya		
Sample Collection Information			
Time of 1st Sample Collected:	9:19 PM		
Time of Grab Sample Collected:	9:41 PM		
Time of 24th Sample Collected:	10:05 PM		
Sample Intervals:	2 minutes		
Air Temperature (°F):	79	**Water Temperature (°F):**	-
Relative Humidity (%RH):	63	**Conductivity (mS/cm):**	-
5-minute Precipitation (inches):	-	**Discharge (cfs):**	-
Turbidity (NTU):	-	**Photos:**	Attached
Sampling Notes:	All 24 bottled samples were combined into one composite sample. The sample time on the Chain of Custody (COC) form was 9:19 PM and the sample identification name was FW-100-RG.		

Weather Conditions

(Temperature, storm location, etc.)

On Monday, July 25, 2022, thunderstorms covered part of the Las Vegas Valley. Rain depths increased through the afternoon. Rain gages reported between 0.04 – 0.98 inches before sampling. Throughout the Las Vegas Valley, temperatures were between 77°F and 90°F. Wind speeds ranged from 1 mph to 2 mph (Northeast). Relative humidity ranged between 31% and 67%.

Site Status

(Any maintenance required? Any equipment missing or damaged?)

New hose to be installed at the sampling location.

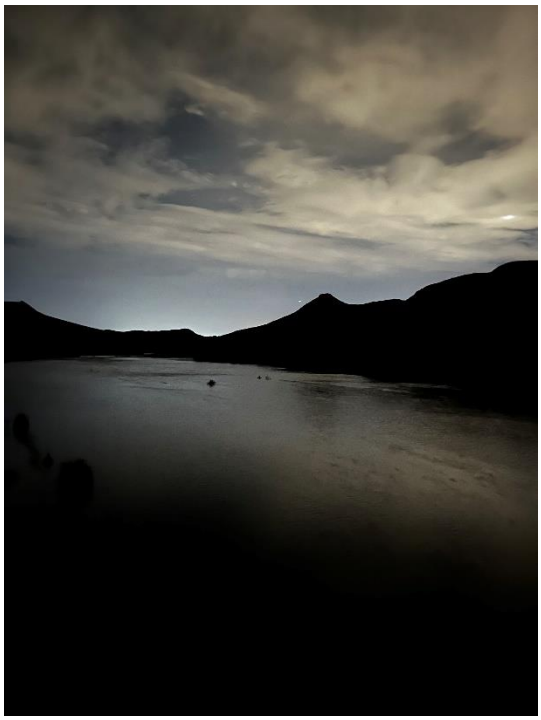
Additional Information

No additional information at this time.

Photos (7/25/2022, 9:19 PM)



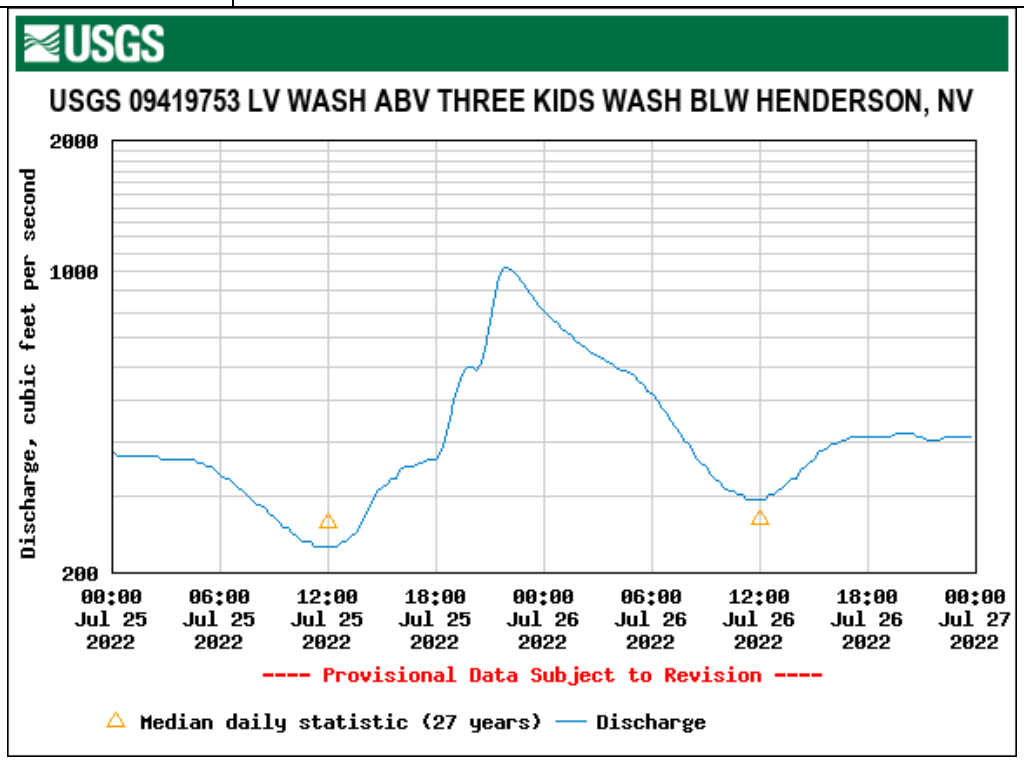


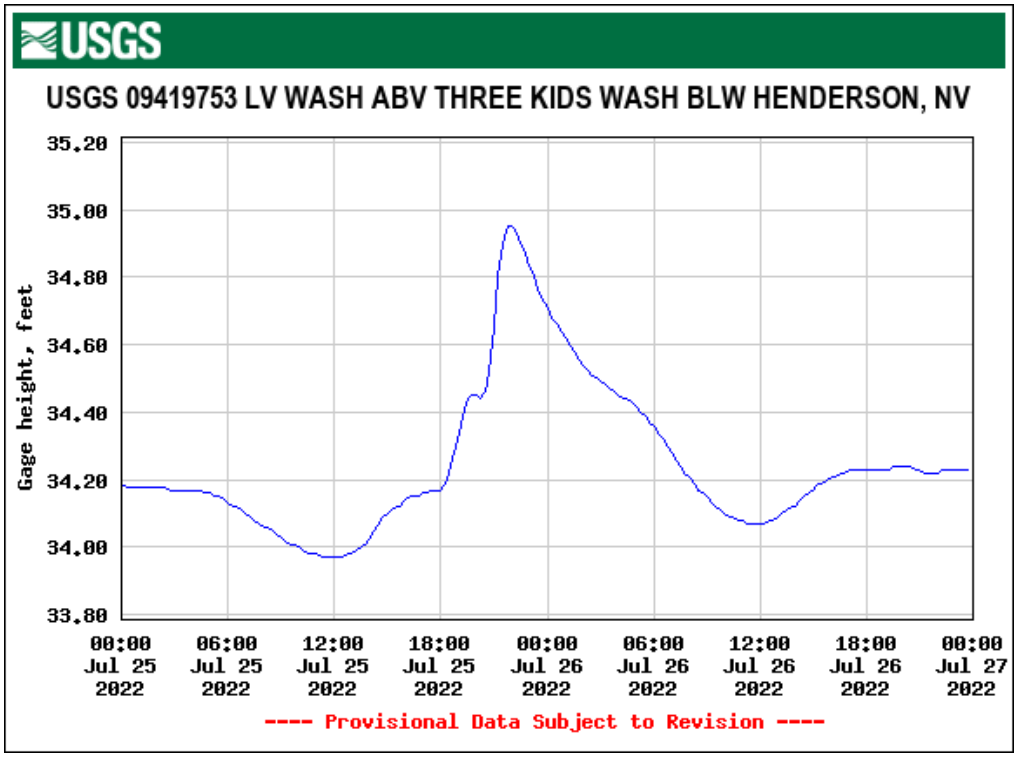


NPDES Storm Write Up and Wet Weather Sample Summary

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT| LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

Sample Location:	Las Vegas Wash at Rainbow Gardens
Date:	Monday, July 25, 2022
Samplers' Name:	Emily Thornley, Thomas Hergenrader, Sailuj Shakya

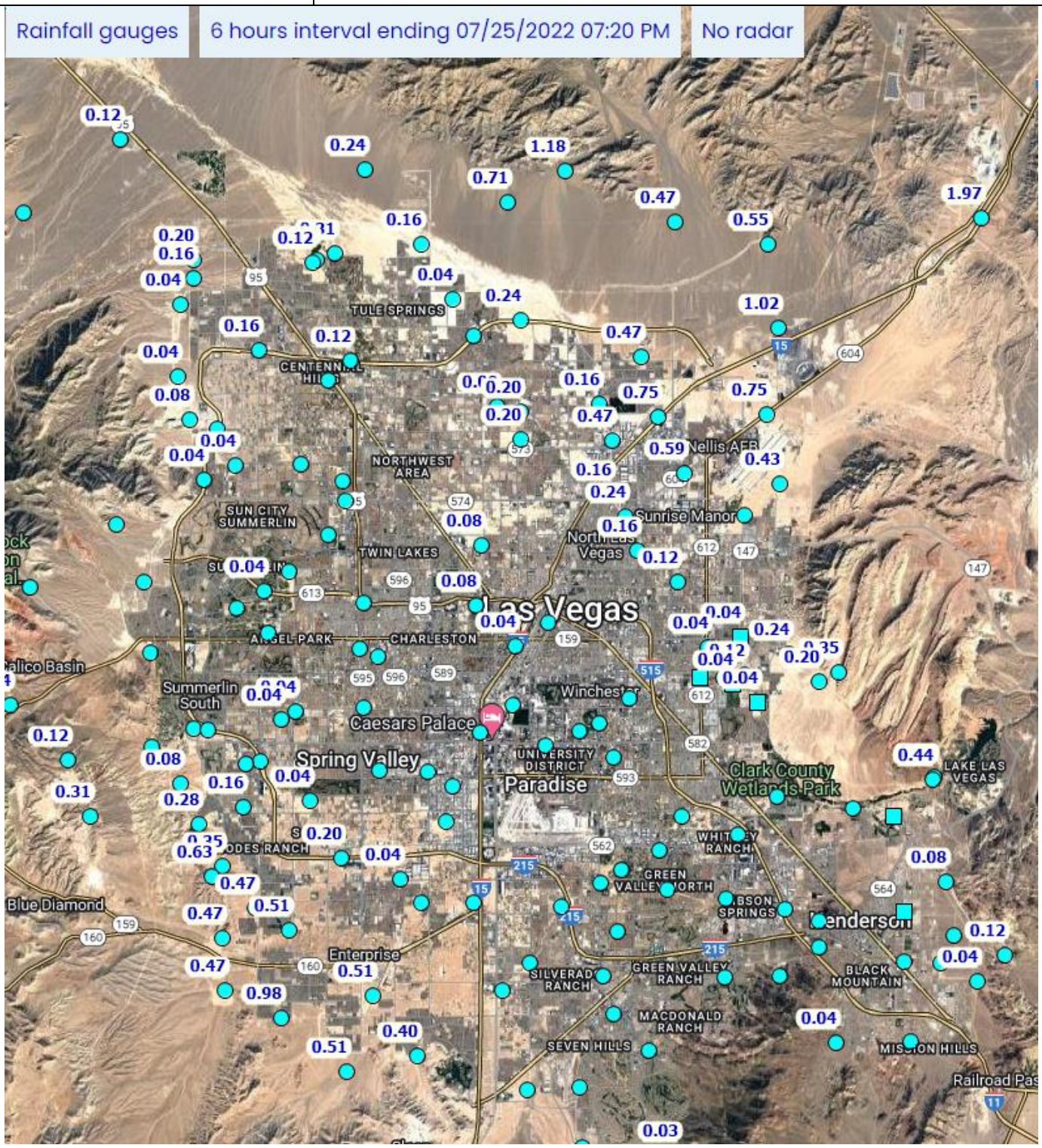




NPDES Storm Write Up and Wet Weather Sample Summary

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT| LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

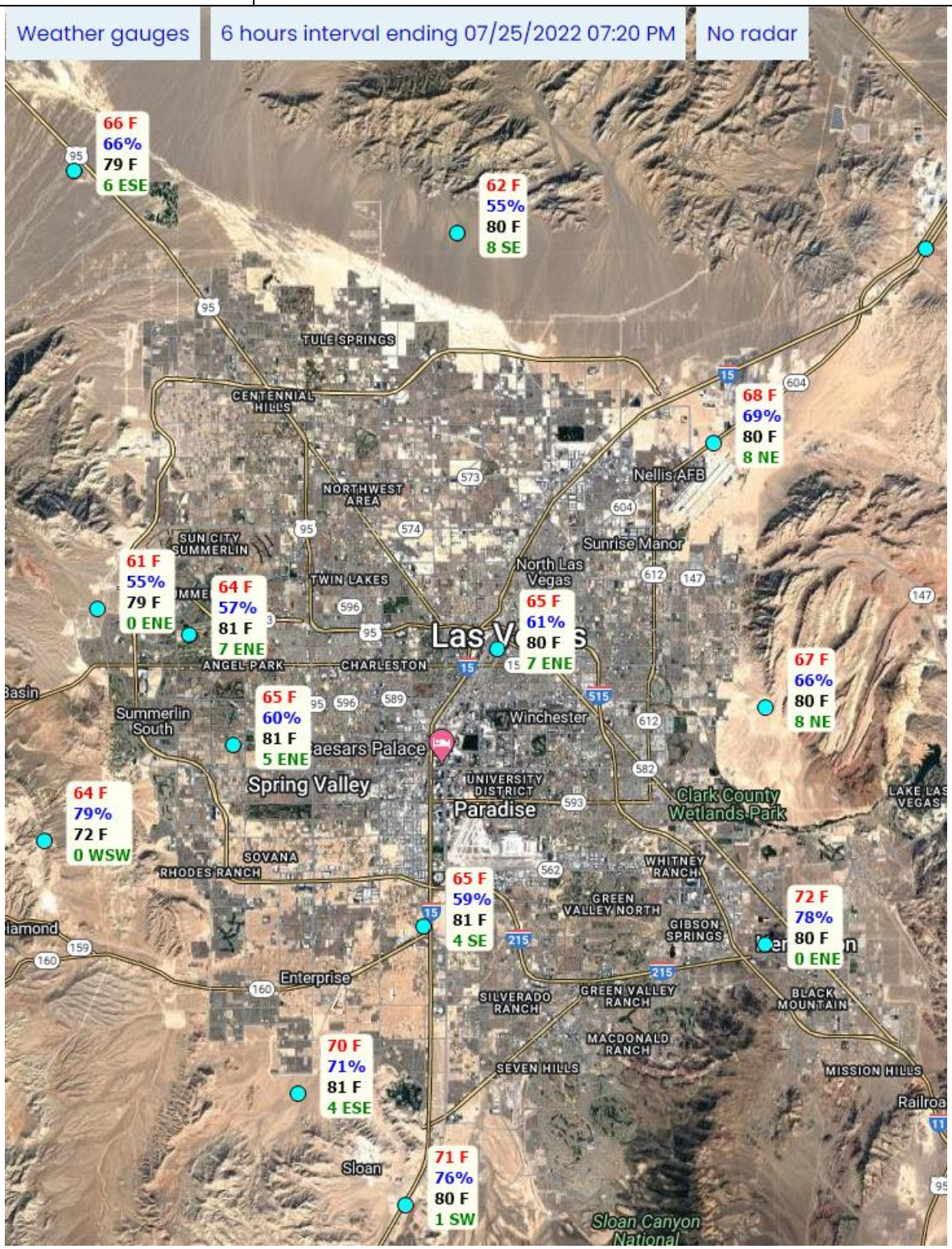
Sample Location:	Las Vegas Wash at Rainbow Gardens
Date:	Monday, July 25, 2022
Samplers' Name:	Emily Thornley, Thomas Hergenrader, Sailuj Shakya



NPDES Storm Write Up and Wet Weather Sample Summary

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT| LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

Sample Location:	Las Vegas Wash at Rainbow Gardens
Date:	Monday, July 25, 2022
Samplers' Name:	Emily Thornley, Thomas Hergenrader, Sailuj Shakya



NPDES Storm Write Up and Wet Weather Sample Collection Form

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT | LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

Sample Location:	Las Vegas Wash at The Club at Sunrise		
Date:	Thursday, August 11, 2022		
Samplers' Name:	Alisson Boeing, Bany Umanzor, Eric Hsu		
Sample Collection Information			
Time of 1st Sample Collected:	11:41 PM		
Time of Grab Sample Collected:	12:04 AM		
Time of 24th Sample Collected:	12:29 AM		
Sample Intervals:	2 minutes		
Air Temperature (°F):	86	**Water Temperature (°F):**	-
Relative Humidity (%RH):	60	**Conductivity (mS/cm):**	-
5-minute Precipitation (inches):	-	**Discharge (cfs):**	-
Turbidity (NTU):	-	**Photos:**	Attached
Sampling Notes:	All 24 bottled samples were combined into one composite sample. The sample time on the Chain of Custody (COC) form was 11:41 PM and the sample identification name was FW-200-CS.		

Weather Conditions

(Temperature, storm location, etc.)

On Thursday, August 11, 2022, thunderstorms covered the entire Las Vegas Valley. Rain depths increased through the night. Rain gages reported between 0.04 – 0.87 inches before sampling. Throughout the Las Vegas Valley, temperatures were between 76°F and 88°F. Wind speeds ranged from 5 mph to 8 mph (Northwest). Relative humidity ranged between 32% and 65%.

Site Status

(Any maintenance required? Any equipment missing or damaged?)

No new updates.

Additional Information

No additional information at this time.

Photos (8/11/2022, 11:41 PM)



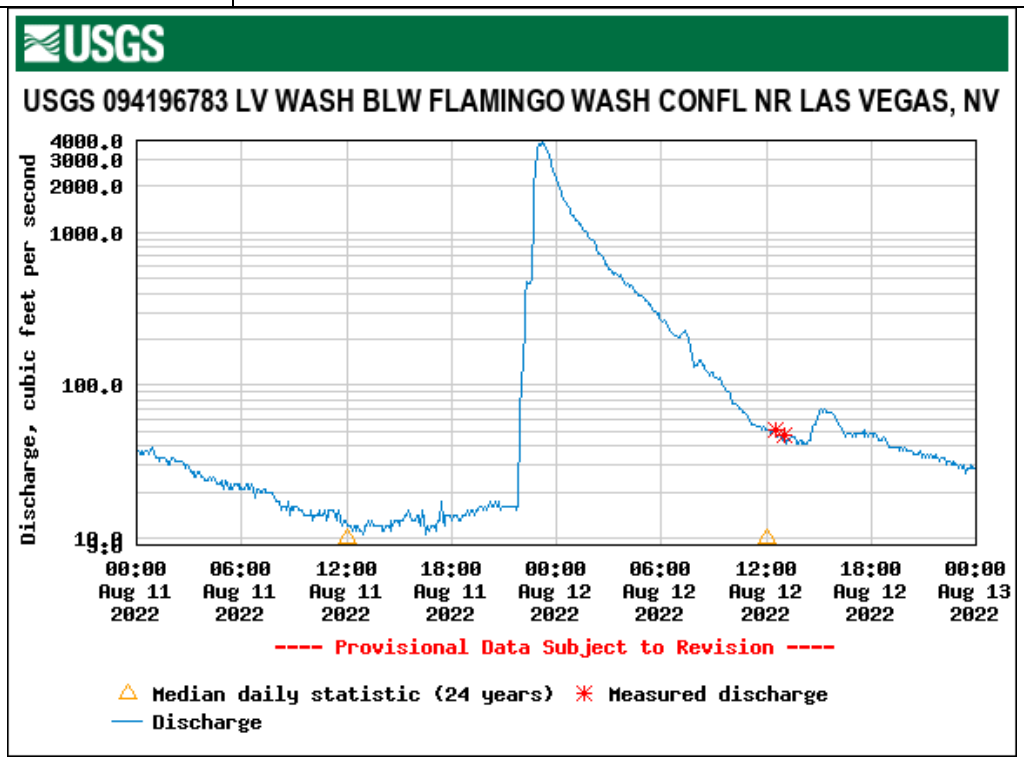


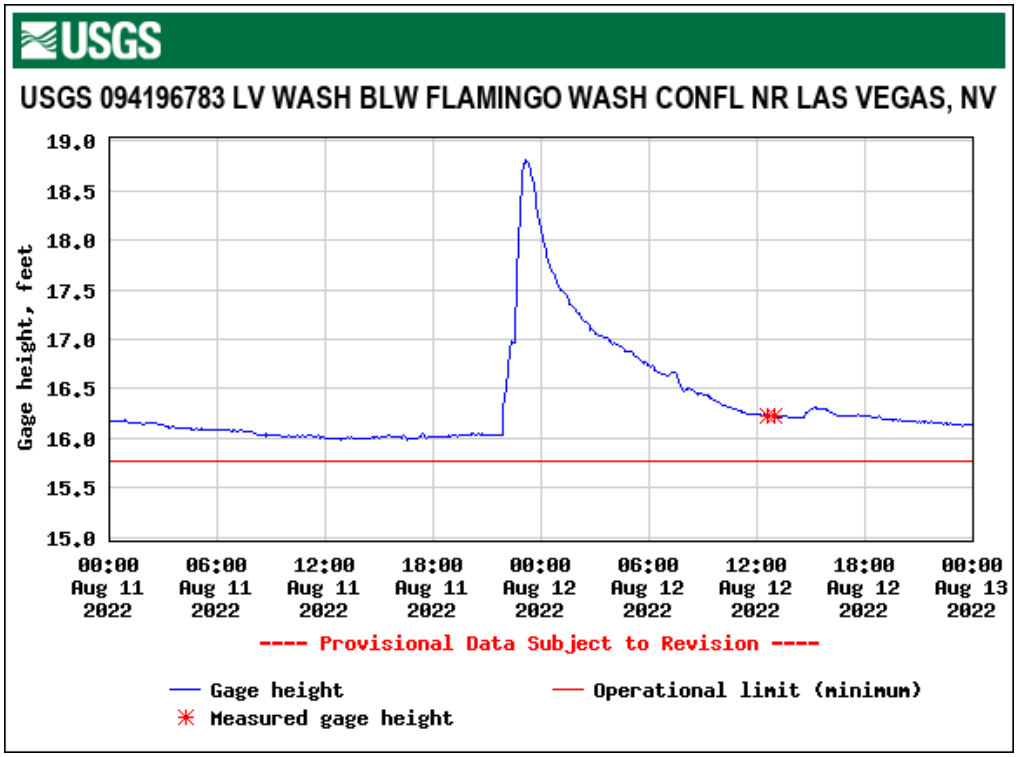


NPDES Storm Write Up and Wet Weather Sample Summary

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT| LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

Sample Location:	Las Vegas Wash at The Club at Sunrise
Date:	Thursday, August 11, 2022
Samplers' Name:	Alisson Boeing, Bany Umanzor, Eric Hsu

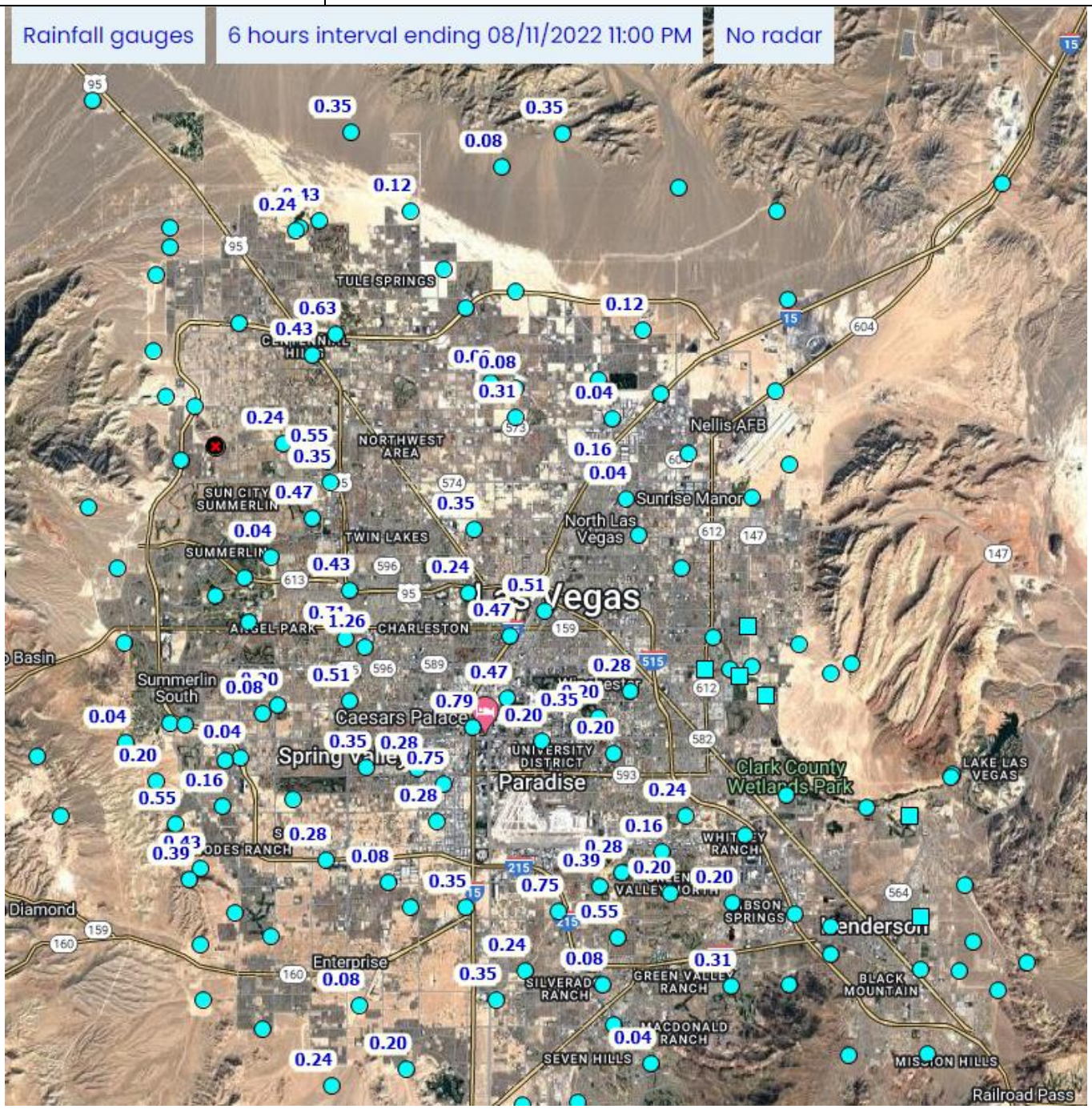




NPDES Storm Write Up and Wet Weather Sample Summary

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT| LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

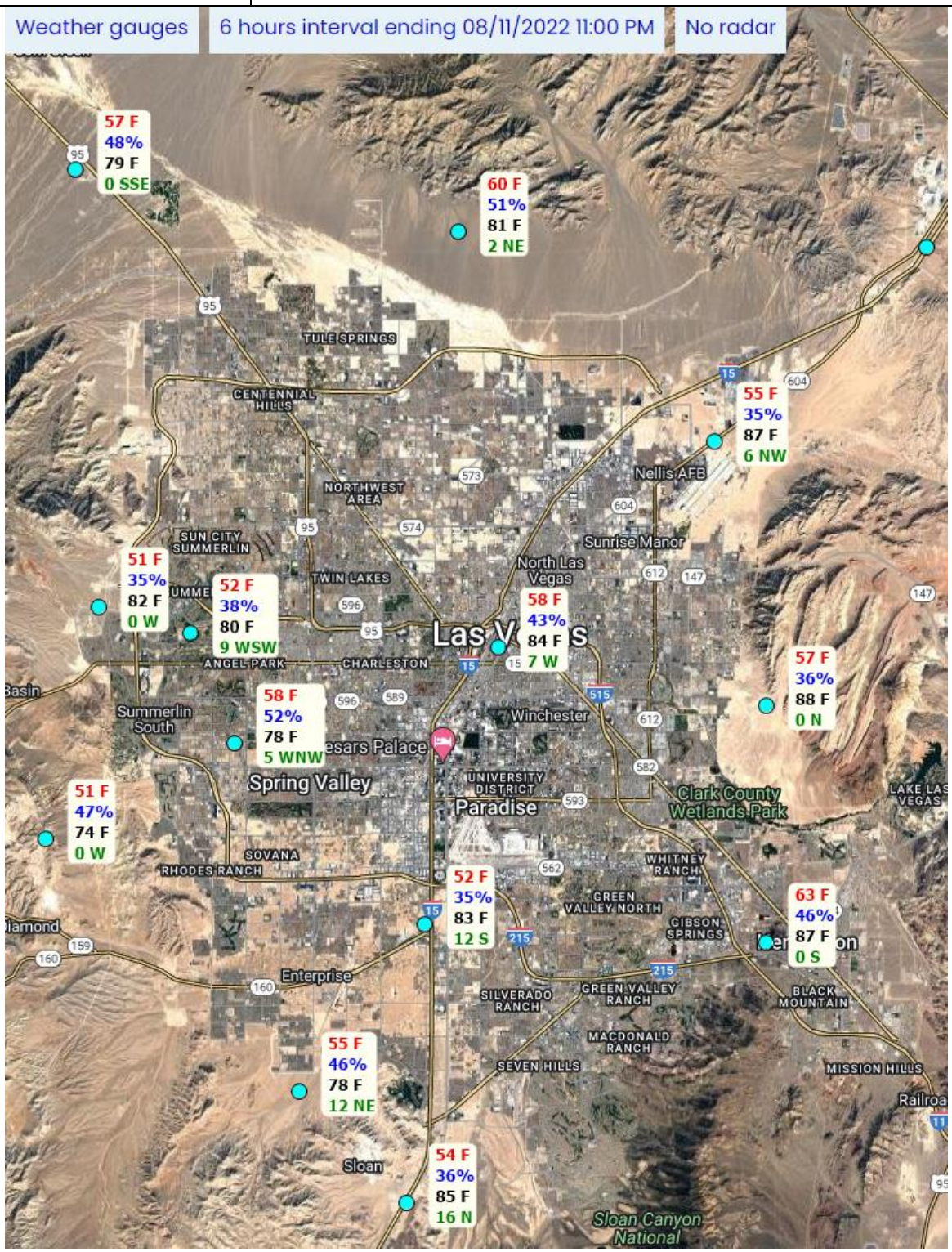
Sample Location:	Las Vegas Wash at The Club at Sunrise
Date:	Thursday, August 11, 2022
Samplers' Name:	Alisson Boeing, Bany Umanzor, Eric Hsu



NPDES Storm Write Up and Wet Weather Sample Summary

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT| LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

Sample Location:	Las Vegas Wash at The Club at Sunrise
Date:	Thursday, August 11, 2022
Samplers' Name:	Alisson Boeing, Bany Umanzor, Eric Hsu



NPDES Storm Write Up and Wet Weather Sample Collection Form

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT | LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

Sample Location:	Las Vegas Wash at Rainbow Gardens		
Date:	Friday, August 12, 2022		
Samplers' Name:	Mark Elkouz, Micheline Ghanem, Emily Thornley		
Sample Collection Information			
Time of 1st Sample Collected:	2:03 AM		
Time of Grab Sample Collected:	2:36 AM		
Time of 24th Sample Collected:	3:12 AM		
Sample Intervals:	3 minutes		
Air Temperature (°F):	82	**Water Temperature (°F):**	-
Relative Humidity (%RH):	60	**Conductivity (mS/cm):**	-
5-minute Precipitation (inches):	-	**Discharge (cfs):**	-
Turbidity (NTU):	-	**Photos:**	Attached
Sampling Notes:	All 24 bottled samples were combined into one composite sample. The sample time on the Chain of Custody (COC) form was 2:03 AM and the sample identification name was FW-200-RG.		

Weather Conditions

(Temperature, storm location, etc.)

On Thursday, August 11, 2022, thunderstorms covered the entire Las Vegas Valley. Rain depths increased through the night. Rain gages reported between 0.04 – 0.87 inches before sampling. Throughout the Las Vegas Valley, temperatures were between 76°F and 85°F. Wind speeds ranged from 2 mph to 4 mph (Northwest). Relative humidity ranged between 38% and 60%.

Site Status

(Any maintenance required? Any equipment missing or damaged?)

No new updates.

Additional Information

No additional information at this time.

Photos (8/12/2022, 2:03 AM)



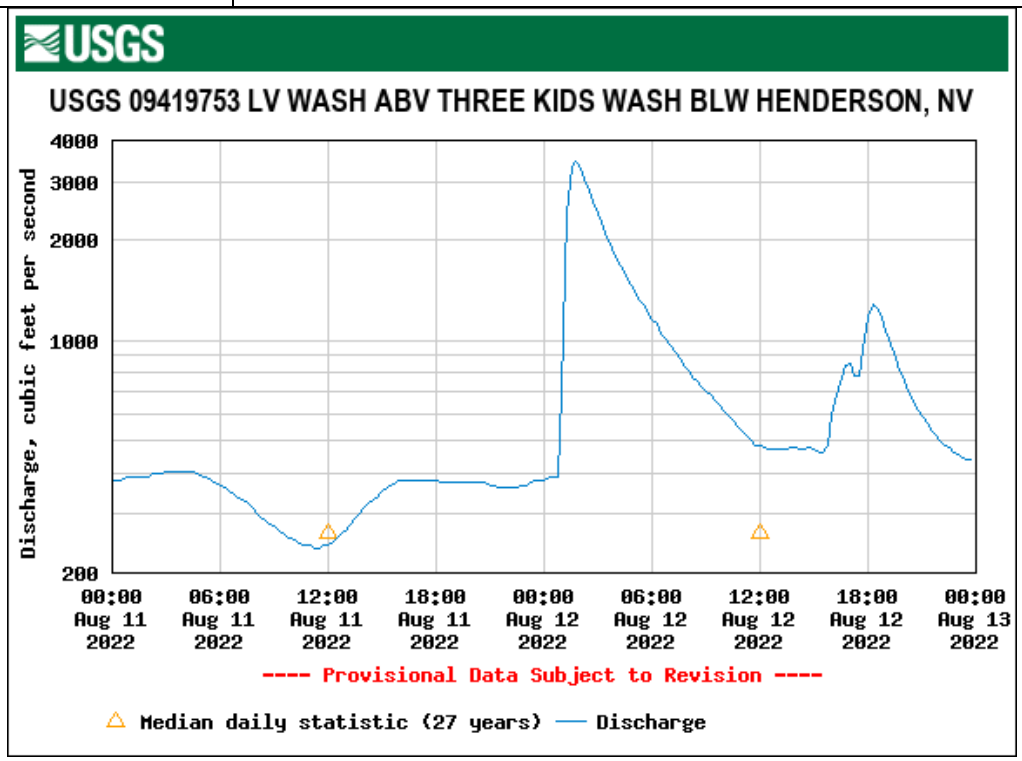


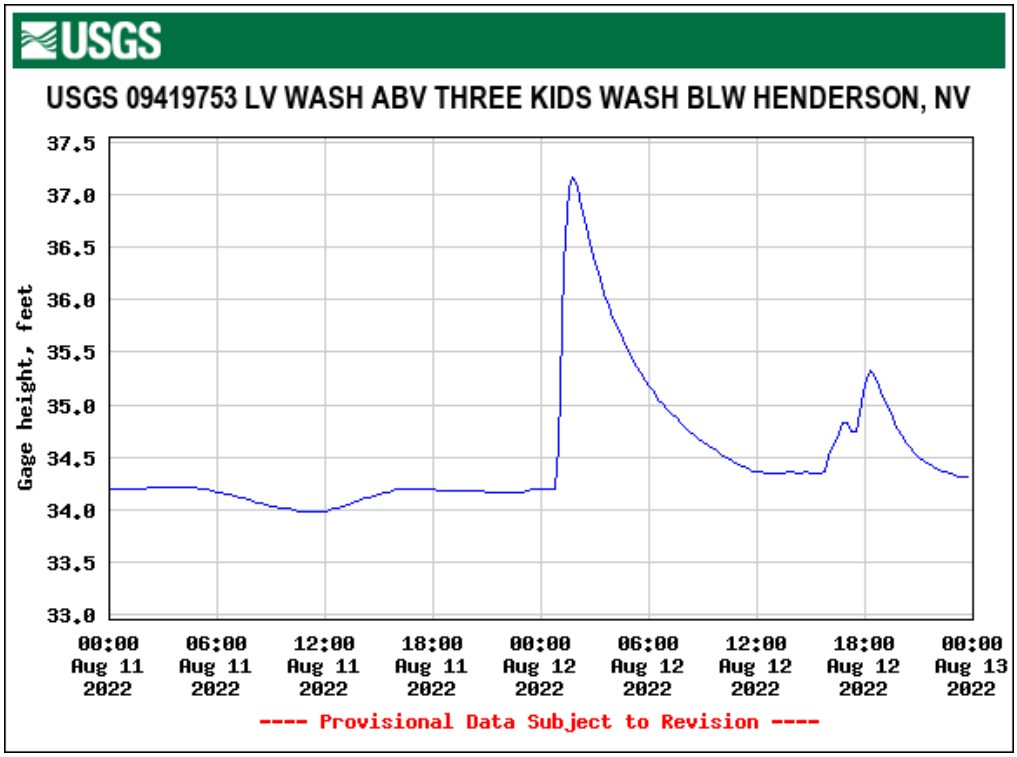


NPDES Storm Write Up and Wet Weather Sample Summary

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT| LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

Sample Location:	Las Vegas Wash at Rainbow Gardens
Date:	Friday, August 12, 2022
Samplers' Name:	Mark Elkouz, Micheline Ghanem, Emily Thornley

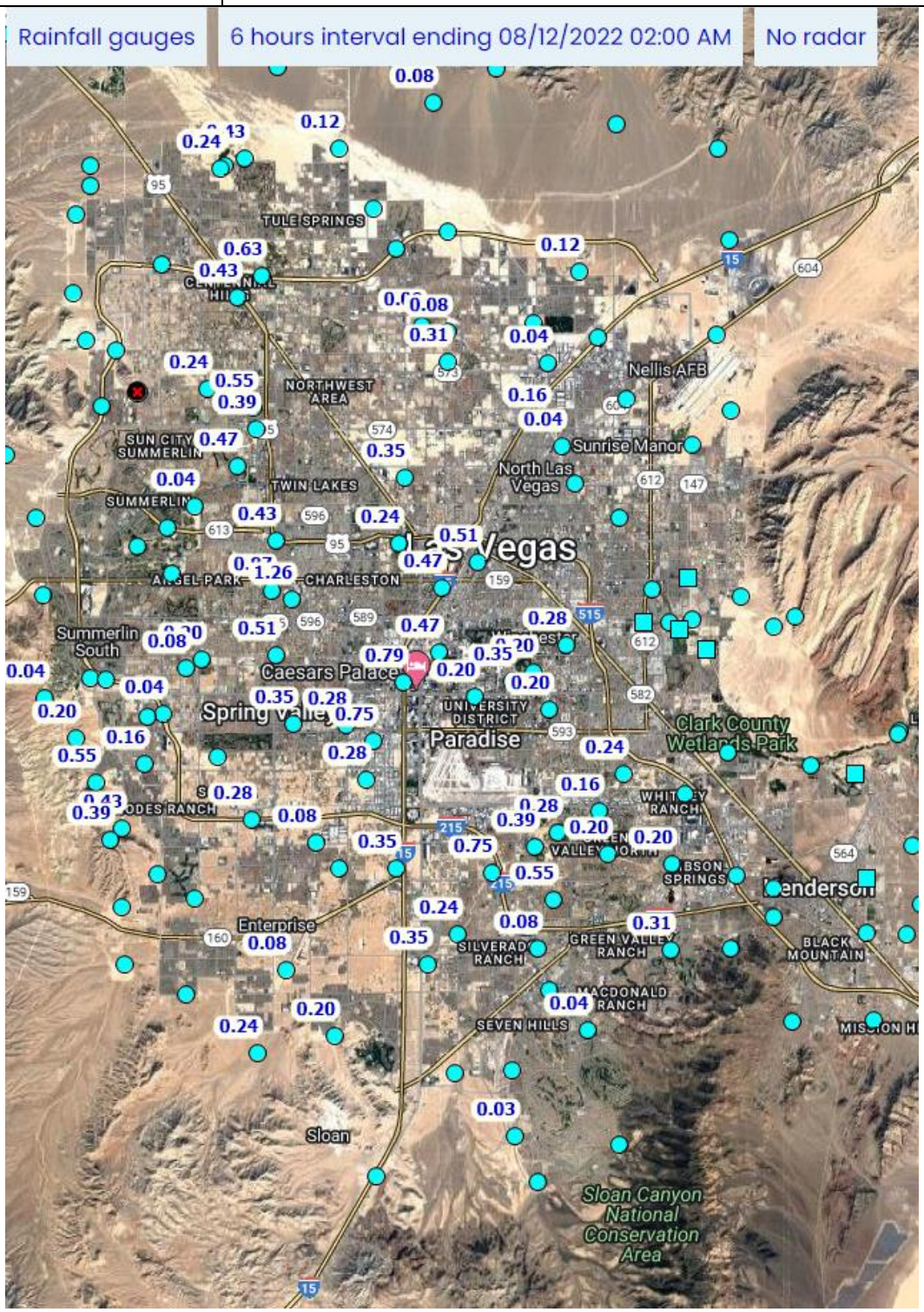




NPDES Storm Write Up and Wet Weather Sample Summary

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT| LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

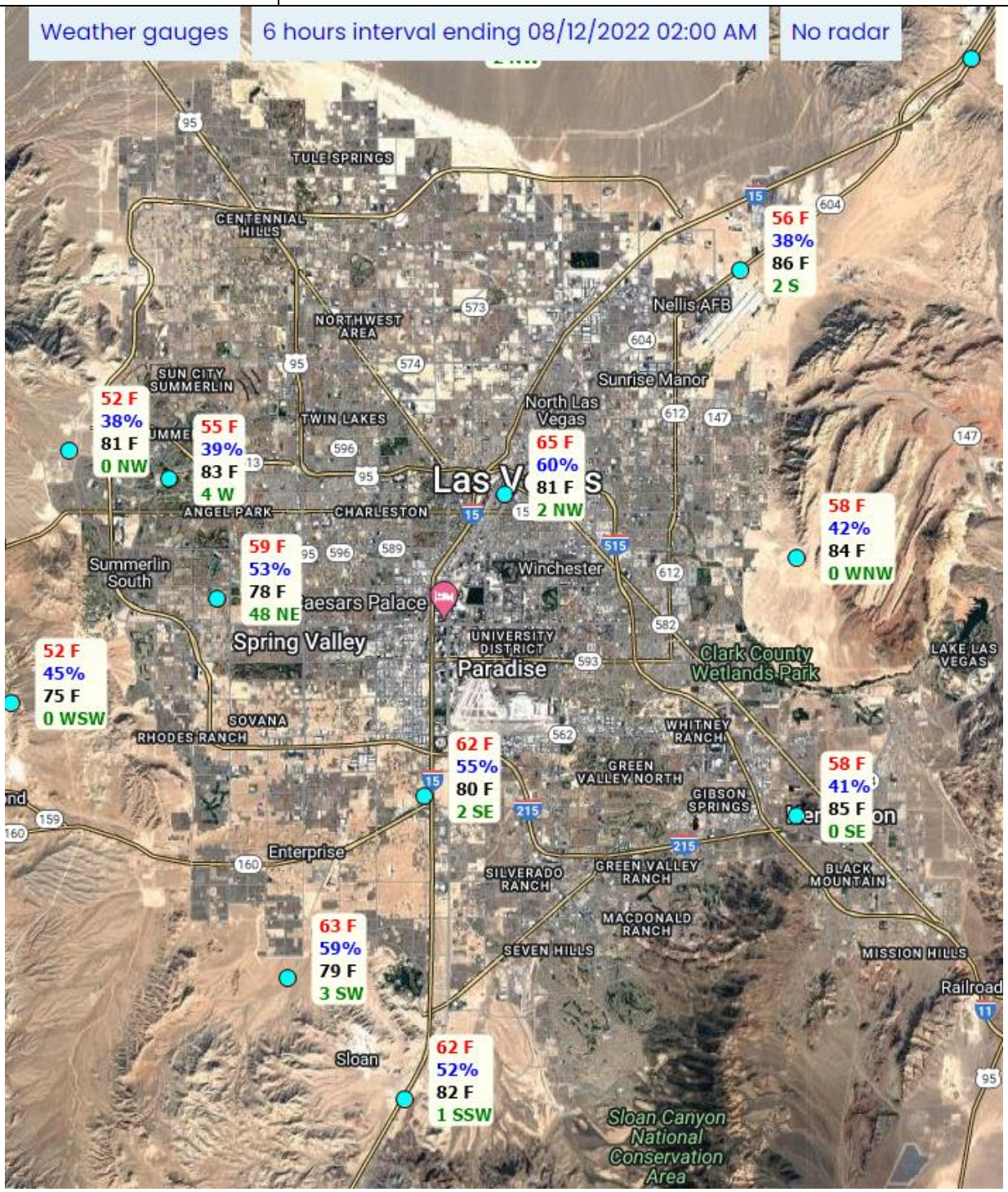
Sample Location:	Las Vegas Wash at Rainbow Gardens
Date:	Friday, August 12, 2022
Samplers' Name:	Mark Elkouz, Micheline Ghanem, Emily Thornley



NPDES Storm Write Up and Wet Weather Sample Summary

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT| LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

Sample Location:	Las Vegas Wash at Rainbow Gardens
Date:	Friday, August 12, 2022
Samplers' Name:	Mark Elkouz, Micheline Ghanem, Emily Thornley



NPDES Storm Write Up and Wet Weather Sample Collection Form

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT | LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

Sample Location:	Las Vegas Wash at The Club at Sunrise		
Date:	Friday, June 16, 2023		
Samplers' Name:	Alisson Boeing, Ginwell Agustin		
Sample Collection Information			
Time of 1st Sample Collected:	10:00 AM		
Time of Grab Sample Collected:	10:13 AM		
Time of 24th Sample Collected:	12:25 PM		
Sample Intervals:	1 minute		
Air Temperature (°F):	75	**Water Temperature (°F):**	72
Relative Humidity (%RH):	61	**Conductivity (mS/cm):**	-
5-minute Precipitation (inches):	-	**Discharge (cfs):**	-
Turbidity (NTU):	-	**Photos:**	Attached
Sampling Notes:	All 24 bottled samples were combined into one composite sample. The sample time on the Chain of Custody (COC) form was 10:00 AM and the sample identification name was FW-300-CS.		

Weather Conditions

(Temperature, storm location, etc.)

On Friday, June 16, 2023, thunderstorms covered the entire Las Vegas Valley. Rain depths increased through the morning. Rain gages reported between 0.04 – 0.43 inches before sampling. Throughout the Las Vegas Valley, temperatures were between 72°F and 77°F. Wind speeds ranged from 5 mph to 10 mph (Northwest). Relative humidity ranged between 33% and 61%.

Site Status

(Any maintenance required? Any equipment missing or damaged?)

No new updates.

Additional Information

No additional information at this time.

Photos (6/16/2023, 10:00 AM)





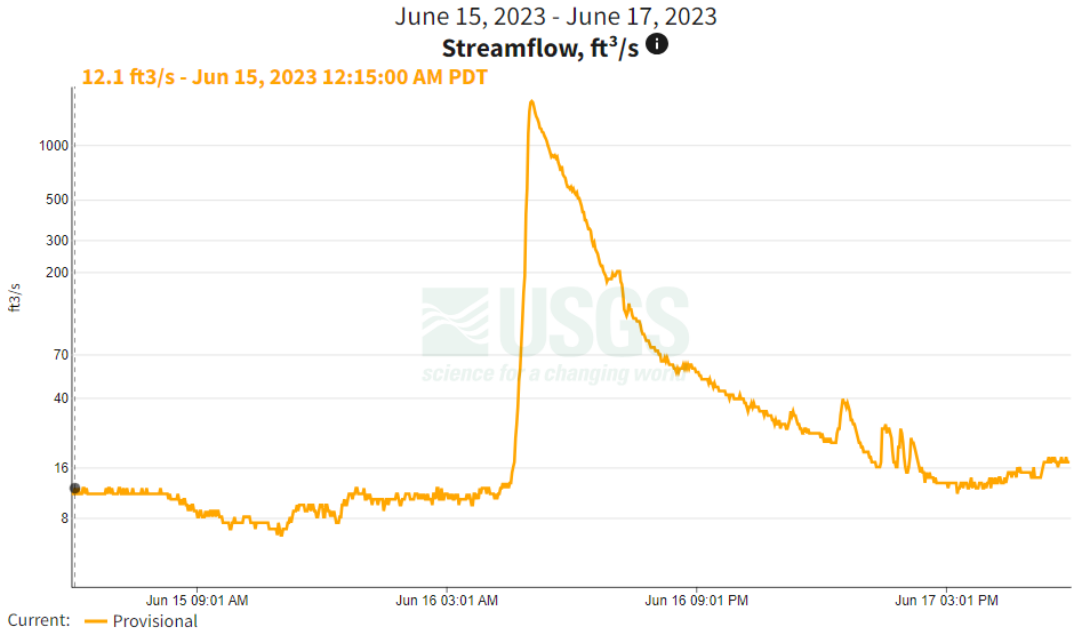


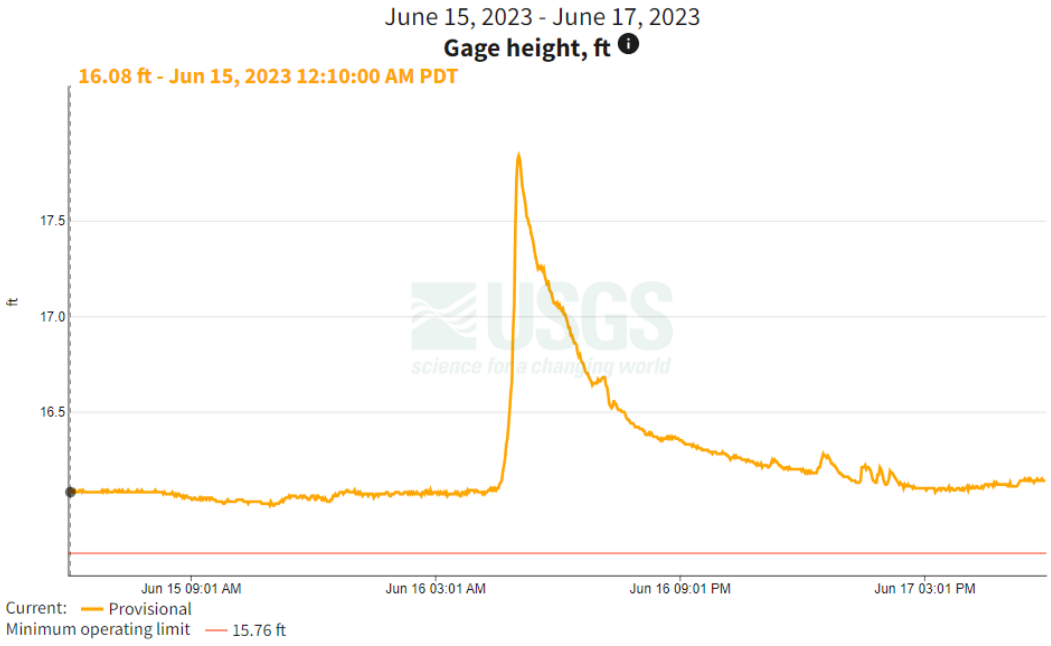


NPDES Storm Write Up and Wet Weather Sample Summary

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT| LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

Sample Location:	Las Vegas Wash at The Club at Sunrise
Date:	Friday, June 16, 2023
Samplers' Name:	Alisson Boeing, Ginwell Agustin

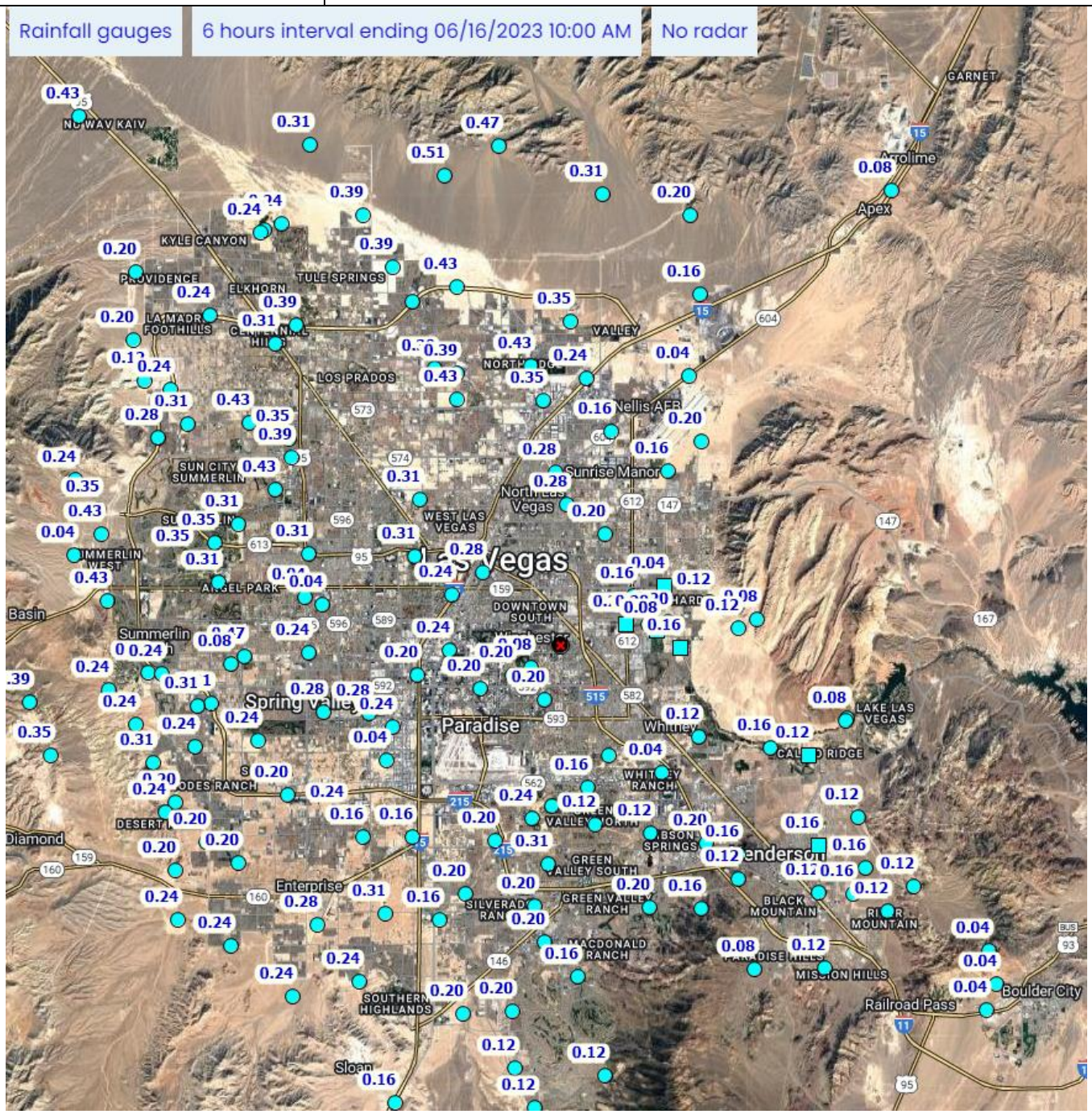




NPDES Storm Write Up and Wet Weather Sample Summary

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT| LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

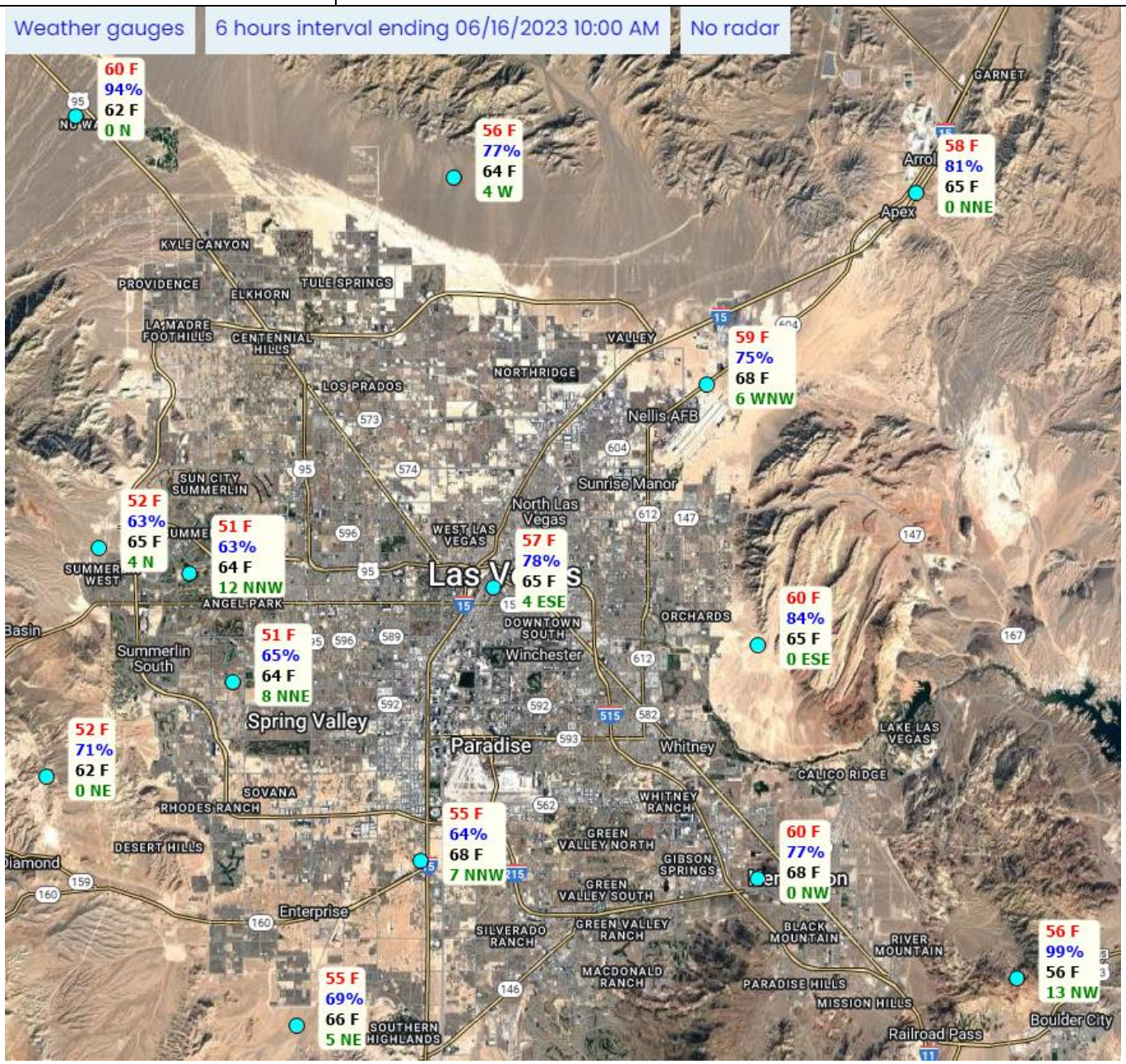
Sample Location:	Las Vegas Wash at The Club at Sunrise
Date:	Friday, June 16, 2023
Samplers' Name:	Alisson Boeing, Ginwell Agustin



NPDES Storm Write Up and Wet Weather Sample Summary

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT| LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

Sample Location:	Las Vegas Wash at The Club at Sunrise
Date:	Friday, June 16, 2023
Samplers' Name:	Alisson Boeing, Ginwell Agustin



NPDES Storm Write Up and Wet Weather Sample Collection Form

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT | LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

Sample Location:	Las Vegas Wash at Rainbow Gardens		
Date:	Friday, June 16, 2023		
Samplers' Name:	Alisson Boeing, Bany Umanzor		
Sample Collection Information			
Time of 1st Sample Collected:	1:28 PM		
Time of Grab Sample Collected:	2:06 PM		
Time of 24th Sample Collected:	2:43 PM		
Sample Intervals:	3 minutes		
Air Temperature (°F):	82	**Water Temperature (°F):**	78
Relative Humidity (%RH):	31	**Conductivity (mS/cm):**	-
5-minute Precipitation (inches):	-	**Discharge (cfs):**	-
Turbidity (NTU):	-	**Photos:**	Attached
Sampling Notes:	All 24 bottled samples were combined into one composite sample. The sample time on the Chain of Custody (COC) form was 1:28 PM and the sample identification name was FW-300-RG.		

Weather Conditions

(Temperature, storm location, etc.)

On Friday, June 16, 2023, thunderstorms covered the entire Las Vegas Valley. Rain depths increased through the morning. Rain gages reported between 0.04 – 0.43 inches before sampling. Throughout the Las Vegas Valley, temperatures were between 73°F and 84°F. Wind speeds ranged from 5 mph to 8 mph (Northeast). Relative humidity ranged between 31% and 49%.

Site Status

(Any maintenance required? Any equipment missing or damaged?)

New Padlock.

Additional Information

No additional information at this time.

Photos (6/16/2023, 1:28 PM)





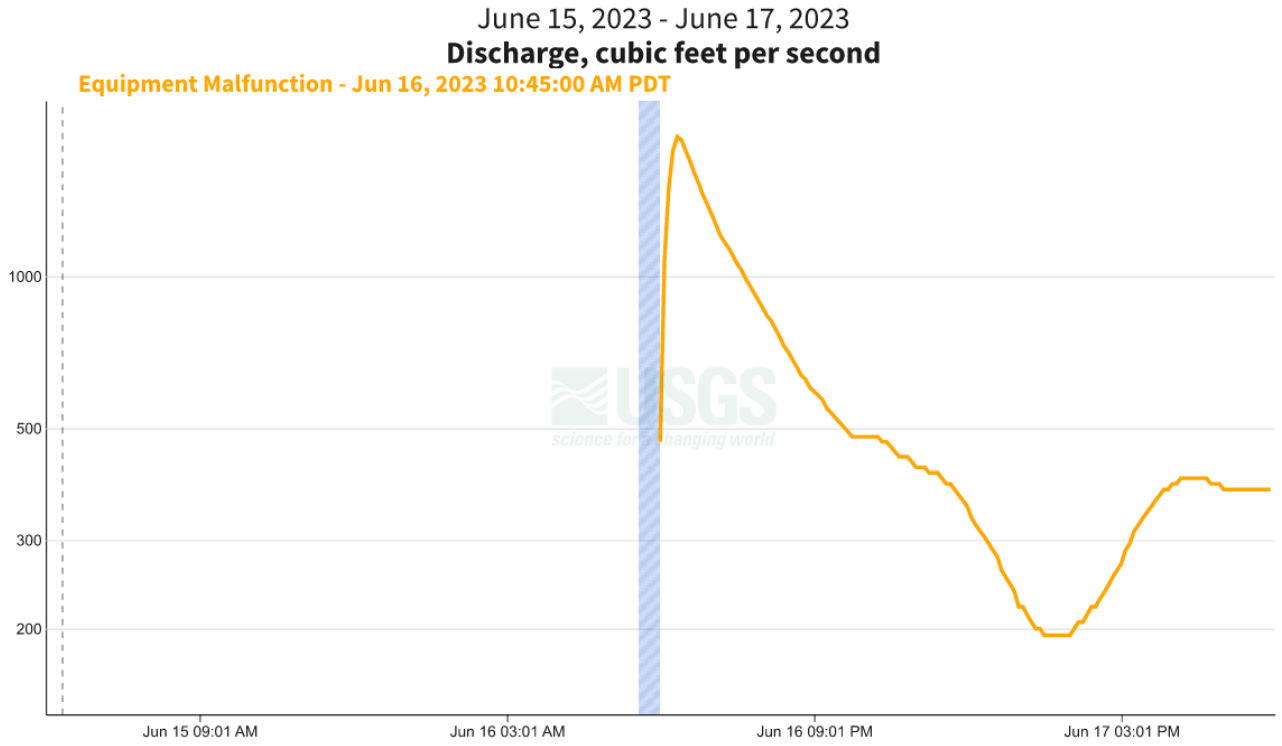


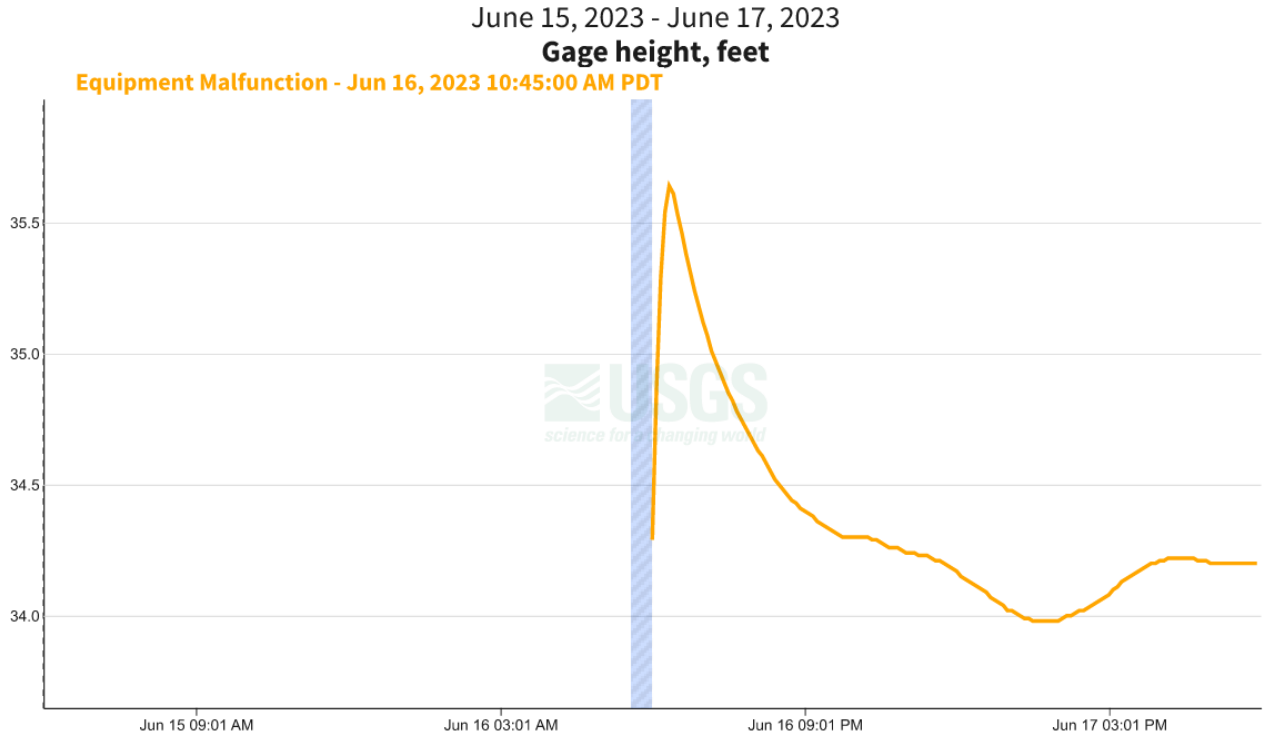


NPDES Storm Write Up and Wet Weather Sample Summary

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT| LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

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Samplers' Name:	Alisson Boeing, Bany Umanzor



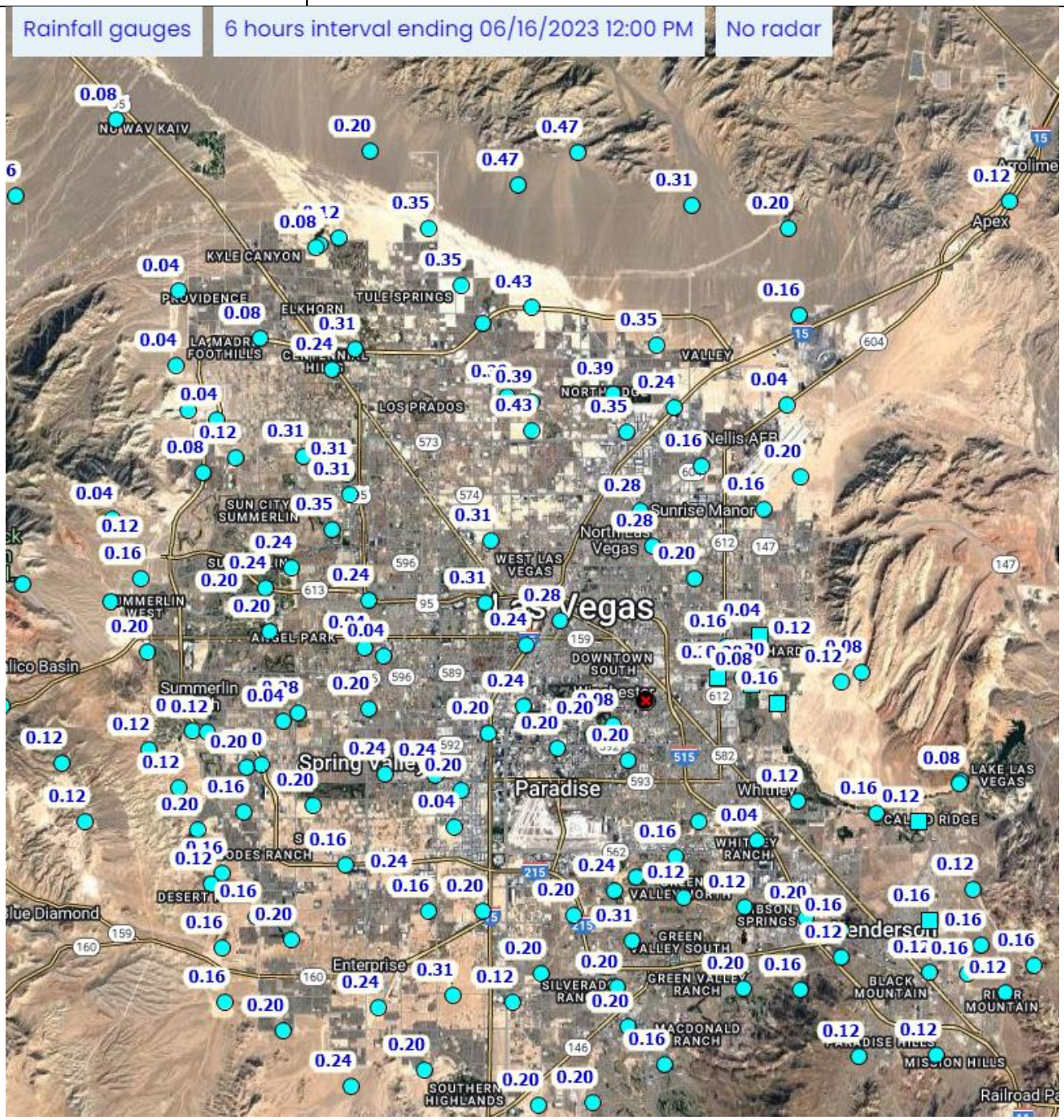


Note: Equipment Malfunction

NPDES Storm Write Up and Wet Weather Sample Summary

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT| LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

Sample Location:	Las Vegas Wash at Rainbow Gardens
Date:	Friday, June 16, 2023
Samplers' Name:	Alisson Boeing, Bany Umanzor



NPDES Storm Write Up and Wet Weather Sample Summary

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT| LAS VEGAS VALLEY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROJECT

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Date:	Friday, June 16, 2023
Samplers' Name:	Alisson Boeing, Bany Umanzor

