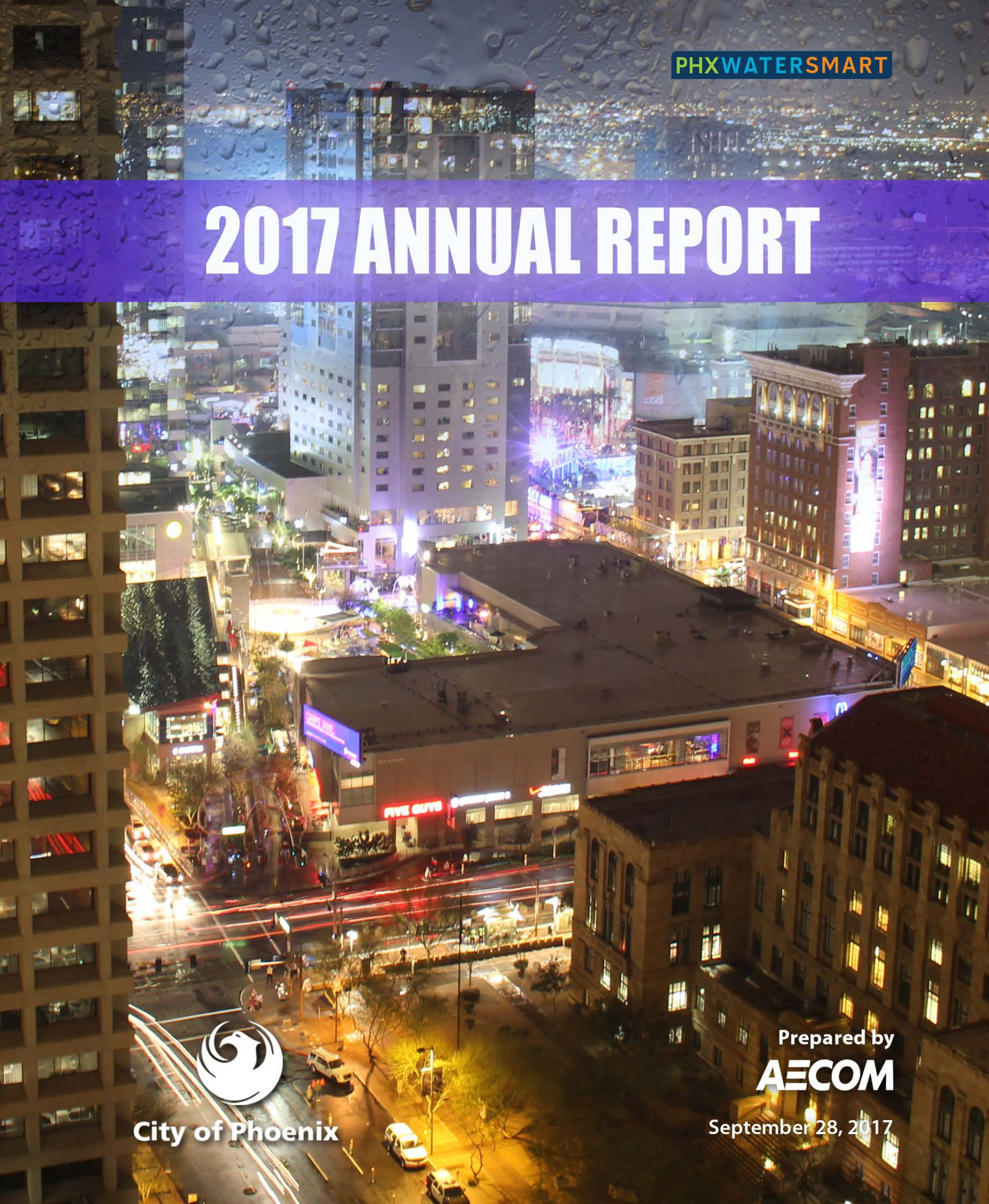
PHXWATERSMART

2017 ANNUAL REPORT



City of Phoenix

Prepared by

AECOM

September 28, 2017

City of Phoenix
WATER SERVICES DEPARTMENT
ENVIRONMENTAL SERVICES DIVISION
Quality Reliability Value

September 28, 2017

Mr. Christopher M. Henninger, Manager
Stormwater and General Permits Unit, Surface Water Section
Arizona Department of Environmental Quality
Mail Code: 5415A-1
1110 West Washington Street
Phoenix, Arizona 85007

Re: ANNUAL REPORT FOR AZPDES PERMIT NO. AZS000003, MUNICIPAL SEPARATE STORM SEWER SYSTEM

Dear Mr. Henninger:

We are pleased to submit the 2016-2017 Annual Report for the City's Municipal Separate Storm Sewer System (MS4) Permit No. AZS000003, issued on February 3, 2009. This report covers the reporting period beginning July 1, 2016 and ending on June 30, 2017. This document includes the information specified in Section 8.1.1 for All Annual Reports.

We appreciate this opportunity to provide you with information about our stormwater management program. Please direct any questions you may have regarding this report to Linda Palumbo at 602-534-2916.

Sincerely,

Kathryn Sorensen
Water Services Director

Enclosure

cc: Alexis Strauss, Region IX, Environmental Protection Agency (with attachment)
BK Brandy Kelso (Water Services Department)
Kini Knudsen (Street Transportation Department)
Alan Stephenson (Planning and Development Services Department)
Tamie Fisher (Public Works Department)
Roseanne Albright (Office of Environmental Programs)

TABLE OF CONTENTS

LIST OF ATTACHMENTS

LIST OF TABLES

ANNUAL REPORT FORM

For Phase I MS4s – Due September 30th each year

PART 1: GENERAL INFORMATION

A. Name of Permittee: City of Phoenix, Arizona

B. Permit Number: AZS000003

C. Reporting Period: July 1, 2016 – June 30, 2017

D. Name of Stormwater Mgt. Program Contact: Linda Palumbo

Title: Environmental Programs Coordinator

Mailing Address: 2474 South 22nd Avenue, Building #31

City: Phoenix Zip: 85009 Phone: (602) 534-2916

Fax Number: (602) 534-7151 Email Address: linda.palumbo@phoenix.gov

E. Name of Certifying Official: Kathryn Sorensen, PhD
(Sections 9.2 and 9.12 of the permit)

Title: Water Services Director

Mailing Address: 200 West Washington Street, 9th Floor

City: Phoenix Zip: 85003 Phone: (602) 262-6627

Fax Number: (602) 534-1090 Email Address: kathryn.sorensen@phoenix.gov

PART 2: ANNUAL REPORT CERTIFICATION

The Annual Report Form must be signed and certified by either a principal executive officer or ranking elected official; or by a "duly authorized representative" of that person in accordance with Sections 9.2 and 9.12 of the permit.

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Kathryn Sorensen 9/12/17

Signature of Certifying Official Date

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PART 3: NARRATIVE SUMMARY OF STORMWATER MANAGEMENT PROGRAM ACTIVITIES

Attach a status summary addressing each of the following in the approximate order referenced below. Briefly describe implementation, progress, and challenges in each area during the reporting year. Also, explain any significant developments or changes to the number or type of activities, frequency or schedule of activities, or the priorities or procedures for specific management practices.

A. Summarize public awareness activities including outreach

Ø **Report outreach events, topics, number of people reached, number and type of materials distributed and the Target groups.**

Stormwater Outreach

The City of Phoenix conducted a variety of stormwater-related public awareness activities throughout the 2016/17 reporting year, including outreach focused on stormwater runoff issues and residential stormwater management practices. The Water Services Department (WSD) continued to post information on social media, including Facebook and Twitter. In addition, WSD debuted and campaigned a mascot, a Sonoran-desert toad named Hopper. Major effort to use the character/mascot occurred in the Spring with a billboard campaign, two print magazines, bus stop posters, and Facebook postings. We continued to promote a short video that provides general stormwater pollution awareness https://www.youtube.com/watch?v=m8dQg6WN8yo in English and in Spanish https://www.youtube.com/watch?v=0qQXTxJ40pw. The English version of the video was viewed 723 times on YouTube and 410 times on Facebook; while the Spanish version garnered 79 views on YouTube.

Major highlights of the Hopper campaign include:

- Clear Channel Outdoor posted four varieties of pollution prevention messaging on billboards at five locations along freeways and interstates for two weeks, April 4 through April 16 (2,692,678 impressions). See attachment for more information.

- Bear Essential News ran a two-page article about the storm sewer, stormwater pollution and prevention techniques in March, and followed up with a single page article and a coloring contest in April. The top three entries received tickets to a local water park, and three runners up we provided with promotional prizes (200,000 papers distributed).

- Green Living Magazine ran a two-page article about stormwater pollution and prevention techniques in March's landscape issue and again during Earth month (95,000 reached via print and digital advertisement).

- Social Media (Facebook and Twitter) was managed internally on the City's public information pages. Messages were general in nature and used Hopper as an impetus to protect the environment. Facebook used 31 posts for a total of 26,276 impressions; and Twitter had 28 posts with 20,357 impressions. See attached example.

- Bus stop shelters around the Valley have been outfitted with a new poster that calls for the public to stop stormwater pollution; and, uses the same content as the short Hopper video linked above (48 posters installed). See attached example.

Other major accomplishments include the following events:

- Water Festivals were conducted in the Roosevelt and Bret Tarver elementary schools in coordination with Project WET (Water Education for Teachers).

- Community education at the Arizona Outdoor Expo, Chinese Cultural and Cooking Festival, Coronado Home Tour, and 7th Avenue Street Fair at Melrose.

- Twenty-two conservation workshops taught the general public methods to maintain landscape and use stormwater onsite. More than 130 people attended these events held at City libraries.

- Planning and Development sent a monsoon preparation postcard to 95 homeowner associations (HOAs) to encourage cleaning of HOA culverts, drainage grates and catch basins, to clear drainage channels and retention basins and to check drywells for proper functioning.

The City continues to actively participate in Stormwater Outreach for Regional Municipalities (STORM), which coordinates stormwater outreach throughout the Phoenix metropolitan area. STORM developed 38,000 middle school activity books, and increased audience engagements by 400%. See attachments for STORM's Annual Report.

A summary of the stormwater outreach activities for 2016/17 is included in Table 3-1.

Table 3-1
Stormwater Outreach Activities

Date(s)	Event / Activity	Audience	Message	Handouts
September 13, 2016	Pesticide Flyer	Home Owner Associations (HOAs) Distributed to 95 HOAs; estimated 10,000 people	Pollution Prevention (pesticides)	None – electronic media for distribution
September 14, 2016	Career Week - Solano	Children (5th and 6th Grade) 4 Adults 45 Children	Municipal duties in the water industry	None
October 20, 2016	Watersheds for Girls Scouts	Children (Kindergarten to 3rd Grade) 4 Adults 5 Children	Stormwater Awareness	6 books 18 Storm Drain Dan Books 10 magazines 20 pencils
October 22, 2016	Presentation at Acacia Library	Residents 15 Adults	Rain Gardens	None
October 25, 2016	Maryland Precinct Halloween Night	Children More than 200	Pollution Prevention	250 Pencils
October 27, 2016	Presentation at Arizona State University	General Public 11 Adults	Stormwater Awareness, municipal duties in the water industry	10 each: notepads, pollution solution brochures, pens, and magnets
November 16, 2016	Roosevelt District Elementary School Water Festival	Children (3rd-4th Grade) more than 800 participated 30 Adults 725 Children	Phoenix water resources, science, and conservation, including watershed management	None
November 30, 2016	Compliance Academy	Businesses 63 Adults	Phoenix stormwater program, including inspector activities, stormwater management plan preparation, and multi-sector general permit	63 Pencils
February 10, 2017	Phoenix Chinese Week	General Public, including children 15,000 attended Almost 100 interacted	Stormwater pollution prevention	70 cups 30 totes 10 magnets 20 pens 10 pencils
February 26, 2017	Coronado Home Tour	Residents 2,000 attended Almost 75 interacted	Stormwater pollution prevention	25 Storm Drain Dan books 52 cups 20 totes 50 pencils 50 pens 50 magnets
March 4, 2017	7th Avenue Street Fair @ Melrose	General Public 70 interacted	Stormwater pollution prevention, including pet waste	13 Storm Drain Dan books 3 totes 18 magnets 10 pet waste bags 8 cups 38 pens 22 pencils

March 4, 2017	SRP Water Conservation Expo	General Public 35 interacted	Watershed management	Pens, pencils, stickers
March 6, 2017	Bear Essential News Ad	Children Estimated 200,000	Stormwater Awareness	200,000 printed newspapers
March 6, 2017	Green Living Magazine Ad	General Public Adults Estimated 95,000	Stormwater Awareness	95,000, including print magazine and digital reach
March 21, 2017	Bret Tarver Elementary School Water Festival	Children (3rd-4th Grade) 360 participated	Phoenix water resources, science, and conservation, including watershed management	None
March 23, 2017	Gateway Community College Career Fair	General Public 100 Adults	Stormwater pollution prevention, and municipal duties in the water industry	5 magnets 10 pens 20 pencils
March 25, 2017	Outdoor Expo	General Public Estimated 48,000 500 Adults and Children interacted	Stormwater pollution prevention	20 pet waste bags 150 cups 30 frisbees 320 (total) of totes, toothbrushes, magnets, pencils, pens, and jar openers
April 4 – 16, 2017	Digital Billboard Ad	General Public Estimated 2,692,678	Stormwater Awareness	None
April 6, 2017	Bear Essential News Ad and Contest	Children, more than 100 participated Estimated 200,000	Stormwater Awareness	Three Hopper prize packs and 25 each stickers and pencils
April 26, 2017	Water Panel	Residents 15 Adults 3 Children	Municipal duties in the water industry	2 totes 3 cups 5 pencils
April 28, 2017	Arbor Day Booth	General Public Almost 30 interacted	Stormwater Awareness	2 totes 5 cups 15 brochures 2 frisbees
Ongoing	Website (phoenix.gov/stormwater)	General Public 3,997 views	General Stormwater Management	None

B. Summarize public involvement activities including outreach

- **Identify activities, number of people involved, number and type of materials distributed if applicable.**

Household Hazardous Waste Collection

The Public Works Department (PWD) provided Phoenix residential customers with nine (9) Household Hazardous Waste (HHW) collection events in Fiscal Year 2016/2017. Over 7100 Phoenix residential customers participated in the HHW events.

- Close to 46,000 pounds of oil based paint and related materials were collected
- 53,511 pounds of flammable liquids.
- The HHW program collected and recycled over 3,400 gallons of used oil
- Close to three (3) tons of lead acid and rechargeable batteries.
- The HHW program also collected, remixed and redistributed close to 1,700 gallons of latex paint for reuse.

Other items collected and properly disposed included: antifreeze, pesticides, herbicides, and other hazardous and toxic materials. Non-hazardous materials brought to HHW events were sorted out and disposed of as Municipal Solid Waste (MSW), such as shampoo, lotions, alkaline batteries and quart-sized latex paint.

Ø **Describe MS4 system for public reporting of spills, dumping, discharges, and related stormwater issues.**

Ø The City continues to offer a Stormwater Hotline (602-256-3190) in English and Spanish, as well as an email address (ask.water@phoenix.gov) for anyone who wishes to report a complaint concerning illicit discharges or releases to the storm drain system. The contact information is distributed with outreach materials and is available on the stormwater website (www.phoenix.gov/stormwater). The City received 227 complaints during the year from several sources including the telephone, hotline, and email.

C. Summarize Illicit Discharge, Detection and Elimination (IDDE) program activities. Include:

Ø **Illicit discharge prevention activities.**

The City discourages discharges to the storm drain system through the placement of Pollution Awareness Markers (PAMs) on existing catch basins. This year 237 PAMs were added to existing catch basins and more than 19,000 PAMs have been installed since the program started.

The City standard for managing hazardous waste and hazardous materials at municipal facilities is the Hazardous Materials Management Program (HMMP) Manual. The manual is available to City employees online through the City's intranet. HMMP procedures apply to all City departments unless stated otherwise and were developed to ensure the City operations are in compliance with federal, state, and local environmental and safety regulations. The HMMP Manual directs personnel to locate storage areas as far away as possible from washes, drains, and drywells and requires that they be protected from weather. Requirements are provided for secondary containment, security, air quality permitting, safety and spill response equipment, proper signs, and labeling. Container storage requirements such as aisle spacing, limitations on drum stacking, segregation of incompatible materials, and types and condition of containers are also provided.

The HMMP Manual contains a comprehensive stormwater management procedure, which, also serves as the facility stormwater management plan required by Phoenix City Code Chapter 32C. The procedure applies to all city facilities with the potential to impact stormwater and addresses permit applicability including the Multi-Sector General Permit (MSGP) and De Minimis General Permit (DMGP), training and inspection requirements, and BMPs for solid waste/litter control, parking lots and building washing, scrap metal and equipment, bulk material piles, vehicle and equipment washing and fueling, and maintenance of stormwater management devices.

The HMMP Manual is maintained by the Office of Environmental Programs (OEP). Each HMMP procedure is reviewed at least once every two years and revised as necessary. Revisions may be made more frequently if regulatory requirements change.

During reporting year 2016/17, five of the ten HMMP procedures were reviewed and updated, based on input from 14 operating departments and staff with stormwater expertise, including Environmental Quality Specialists and Environmental Program Coordinators. One additional HMMP for Hazardous Material Purchasing was reviewed but not updated this reporting year. OEP is in the process of completing substantial updates to the Sustainable/Environmentally Preferable Purchasing Policy, and many aspects of this policy overlap with the HHMP for Hazardous Material Purchasing. OEP will update the HMMP for Hazardous Material Purchasing after the Sustainable/Environmentally Preferable Purchasing Policy is completed.

It should be noted that in past annual reports, the City stated we had eleven HMMP procedures. During OEP review for year 2015/16 it was determined that there are only ten HMMP procedures and one internal OEP hotline call list protocol. The OEP hotline call list is reviewed and updated as needed but because it is internal to OEP only, it is not appropriate to send to other City departments for review.

Ø **Training dates and topics:**

Stormwater training covering IDDE is accomplished through training offered by various departments, including WSD, PWD, Parks and Recreation, and OEP. Municipal employee stormwater training is coordinated by the OEP P2 Program.

The Phoenix MS4 permit requires IDDE training for two major groups of employees: (1) field staff without direct stormwater program responsibilities; and (2) employees with direct stormwater program responsibilities (Stormwater Field Staff). In addition, the training is divided into three (3) frequencies:

- Annual (for select field staff with “no direct stormwater responsibility” only)
- New Employee Training (for Stormwater Field Staff – offered twice a year)
- Refresher Training (for Stormwater Field Staff – offered every two years).

Other specific training requirements include municipal, industrial, and construction site inspections, hazardous materials handling, spill management, street maintenance and repair and water/sewer maintenance and is limited to employees working in functions with the potential to impact stormwater. Affected employees are identified in the stormwater training plan in the City’s Stormwater Management Plan (SWMP). The training is offered by various departments and is divided into two frequencies:

- New Employee Training (conducted twice per year)
- Refresher Training (conducted once every two years).

Ø **Annual Training**

Stormwater Awareness Training. Awareness training covering IDDE is provided to select field staff with no direct stormwater responsibilities. Topics taken from the City MS4 stormwater permit requirements include identification of harmful/prohibited practices (illegal dumping or spills) into the City's stormwater system and proper management procedures (reporting to the Stormwater Management Section). Nine sessions were held and 348 people were trained, including 14 new City employees in PWD.

Date	Number Attended
January 19, 2017	40
February 1, 2017	40
February 14, 2017	10
February 22, 2017	22
February 24, 2017	8
February 28, 2017	16
March 1, 2017	62
March 3, 2017	39
June 8, 2017	111

In addition to the Stormwater Awareness Training listed in Part 4 of this report, on November 16, 2016, OEP held an Environmental Compliance Workshop for City project managers, planners, supervisors, and managers. This included a ½ hour presentation on stormwater which included: definition of stormwater and MS4; local, state, and federal regulatory rules and permits; overview and location of the City HMMP; and BMPs. In total, 64 City employees attended the compliance workshop, including three new City employees.

Ø **New Employee Training and Biennial Refreshers**

IDDE for Stormwater Inspection Staff. Topics covered include MS4 permit requirements, Phoenix City Code, detecting and identifying illicit discharges, De Minimis and other sources of non-stormwater discharges, outfall inspections, sampling, and field screening. One session was held and 9 people attended, including three new WSD employees.

Date	Number Attended
November 1, 2016	9

Street Repair and Road Improvement for Street Maintenance Staff. Training is provided to all field staff in the Street Maintenance Division of the Street Transportation Department (STR). Training covers IDDE awareness, pollution prevention, and BMPs to minimize discharges to storm drains. Specific topics include BMPs for hazardous material use and storage, street sweeping, painting and striping, sediment pile management, paving, vehicle maintenance and washing, handling spills, solid waste, and concrete washout areas. Fifteen sessions were held and 440 people were trained, including 42 new STR City employees.

Date	Number Attended
August 11, 2016	22
October 31, 2016	21
February 1, 2017	70
February 2, 2017	30
February 7, 2017	22
February 8, 2017	40
February 9, 2017	14
February 14, 2017	28
February 15, 2017	9
February 16, 2017	31
February 21, 2017	34
February 22, 2017	41
February 28, 2017	38
March 9, 2017	18
June 19, 2017	22

Spill Prevention and Management Practices – non-Fire Department. Training covers site-specific spill prevention and response procedures/responsibilities and spill management practices to prevent or minimize discharges to the storm sewer system and drywells. Twenty-two sessions were held and 552 people were trained. This included 15 new City employees in WSD, and nine new City employees in PRD.

Date	Number Attended
September 16, 2016	16
October 7, 2016	14
November 2, 2016	15
December 9, 2016	10
January 12, 2017	10
January 27, 2017	10

Date	Number Attended
February 10, 2017	12
February 15, 2017	8
February 24, 2017	6
March 1, 2017	16
March 2, 2017	17
March 17, 2017	13
March 23, 2017	11
March 28, 2017	13
April 18, 2017	26
April 18, 2017	65
April 19, 2017	68
April 20, 2017	50
April 20, 2017	5
April 26, 2017	74
April 27, 2017	39
May 10, 2017	54

Spill Prevention and Management Practices – Fire Department. Training is delivered through an online video and training module, which was created specifically for the Phoenix Fire Department. The training covers stormwater awareness, specific spill prevention and response procedures/responsibilities for use during emergency responses, including protection of storm drains and drywells, and BMPs for Fire Department facilities. There were 379 individual computer sessions for 379 employees. The employees completed the training during the second quarter of 2017. The rosters showing the actual Fire Department training are available upon request. Although the City training plan specifies that the training needs to be completed for “Company Officers (Fire Captains)” and “Command Officers”, the Fire Department had all field employees complete the training this year to cover the potential for employees to act in an “out of class” position. This includes an additional 1,059 employees which are not counted in Part 4 of this Annual Report.

Hazardous Material Handling. Training covers responsibilities for spill prevention and reporting, compliance with regulatory and City hazardous materials management procedures (proper handling, storage, transportation, and disposal) to prevent contamination of stormwater runoff. Refresher training was provided and sessions for new employees are included in these totals. Twenty-four sessions were held and 573 people were trained. This included 15 new City employees in WSD, and nine new City employees in PRD.

Date	**Number Attended**
September 16, 2016	16
October 7, 2016	14
October 19, 2016	18
November 2, 2016	15
December 9, 2016	10
January 12, 2017	10
January 27, 2017	10
February 10, 2017	12
February 15, 2017	8
February 21, 2017	3
February 24, 2017	6
March 1, 2017	16
March 2, 2017	17
March 17, 2017	13
March 23, 2017	11
March 28, 2017	13
April 18, 2017	26
April 18, 2017	65
April 19, 2017	68
April 20, 2017	50
April 20, 2017	5
April 26, 2017	74
April 27, 2017	39
May 10, 2017	54

Water/Sewer Maintenance. Training is provided to field staff in Water Distribution and Wastewater Collection and includes protocols to minimize discharges including those found in the WSD Stormwater Pollution Prevention Plan, Emergency Response Plan and Field Incident Response Plan. Thirteen sessions were held and 216 people were trained, including 15 new City WSD employees.

Date	Number Attended
September 16, 2016	16
September 29, 2016	14
October 7, 2016	14
November 2, 2016	18
December 9, 2016	15
January 6, 2017	27
January 12, 2017	13
January 27, 2017	17
February 10, 2017	15
February 24, 2017	17
March 17, 2017	17
April 20, 2017	15
May 19, 2017	18

Municipal Stormwater Inspections. Training topics include federal and local regulatory requirements, applicable permits and codes, stormwater BMPs, municipal facility inspection procedures, illicit discharges and De Minimis discharges. There was one new OEP employee this reporting period. Biennial inspector training was conducted this reporting period, and five people were trained by viewing he prepared slides.

Date	Number Attended
June 2017	5

Industrial Stormwater Inspections. Training is provided to all inspectors in the WSD Environmental Services Division Stormwater Section. Topics include applicable permits and codes, stormwater pollution prevention policies, structural and non-structural BMPs, and inspection and enforcement procedures. One session was held and nine people were trained, including three new WSD City employees.

Date	Number Attended
November 1, 2016	9

In addition, three stormwater inspectors and the Chief Water Quality Inspector took a two-day NPDES class covering industrial inspections and IDDE. Attendees received MS4 Compliance and Enforcement Certified Inspector credentials.

Construction Sites Plan Review and Inspection Training. The Planning and Development Department (PDD) provided on-the-job training (OJT) for stormwater plan review and inspections. Biennial training was not conducted this reporting period, and there were no new employees hired. OEP provided biennial training for inspectors that conduct inspections of municipal stormwater projects. Training included municipal ordinances related to stormwater and construction, erosion and sediment controls, and structural and non-structural BMPs. There was one new OEP employee this reporting period, and five people were trained by viewing the prepared slides. STR Department provided training to 10 inspectors during two training sessions, including three new City STR employees.

Date	Number Attended
August 11, 2016	5
June 19, 2017	5
June 2017	5

In addition, one OEP staff member attended Arizona Department of Transportation (ADOT) Erosion Control Coordinator (ECC) training, and received ECC certification on August 16 – 17, 2016.

Ø **IDDE screening program and investigations – including an overview of industrial facility inspections, identified sources, and any significant corrective or enforcement actions.**

The IDDE program continues to track illicit flows discovered in the storm drain system to identify their sources. Dry-weather flows are investigated by opening manholes and following the flow upstream. Flow changes (typically volume) are observed by the IDDE crew when the manholes are opened. Once the suspected illicit tap is determined to be nearby, the video system is then inserted in the storm drain pipe to track the flow directly to its source. By using the video system the City can then determine where the illicit connection or tap is located and then conduct the appropriate inspection. Occasionally, dye testing or a similar procedure is used to verify the source of the connection.

IDDE investigations are also initiated as a result of complaints, reported spills, or emergency response activities.

During the report period, the following non-stormwater discharges were investigated:

- Tufesa – a routine inspection found this facility to be in need of a SWMP due to lack of secondary containment and spill kits; during a follow-up visit, an illegal discharge of non-stormwater resulted in a cease and desist order being issued. As of May 23, these issues were resolved.
- Moon Valley Motor Care – a routine inspection found this facility to have an illegal connection from a wall sink, which was plumbed to the street. A Field NOV was issued on May 3. As of May 12, the issue was resolved (owner relocated the sink).
- Bulwark – illegal discharge (pesticides) – see Section E below.
- Generated Materials Recovery (GMR) – illegal discharge (non-stormwater, beverages) – see Section E below.
- A consultant under contract to the City performed dry weather inspections of interconnects to Arizona Department of Transportation (ADOT) MS4; 1) along Interstate 10 in the East-

West Tunnel, and, 2) Central Ave (I-10 to Salt River) resulting in five dry weather flows in the East-West Tunnel and two in the Central Avenue Tunnel. The City will investigate these dry weather flows in Fiscal 2018.

- Well 218 – On October 22, 2016 chlorine feed line break casue approximately 125,000 gallons of potable water with a pH above 9.7 to be released to the storm drain. The well was put out of service until the chlorine feed line break was repaired.
- SR009 – Pro-pipe televised 66-inch storm main at Central Avenue and Mariposa Street where there was an 8 inch cast iron pipe that appeared to be an illegal tap. IDDE staff investigated and it was determined that the pipe had been cut, plugged, and One Camelback garage piping had been removed.
- SR018 – Transformer fire located at 16th Street and Buckeye Road. IDDE staff inspected manhole 08-30-13 for evidence of oil in the storm main and found nothing unusual. IDDE Staff inspected outfall SR018 and there was no oil stain at the outfall nor was there any oily sheen on the water.
- IB003 – Flow was observed in manhole 37-38-35 located in the vicinity of 4722 East Bell Road. IDDE staff determined that the discharge was due to fire suppression maintenance, which is an allowable discharge. Fire hydrant testing was conducted by Cintas.
- SR008 – Business owner at 2403 South 15th Avenue complained of slow drainage, suggesting a possible obstruction in storm drain. IDDE staff televised the storm drain and found no obstruction nor an illicit connection. The owner had Pro-pipe clean his storm drains and the issue was resolved.
- Dry weather flow was observed at LC020, upon numerous visits the IDDE staff did not observe a flow from this 36-inch storm outfall. Upon further investigation, it was determined that Salt River Project (SRP) has an irrigation line terminating at South 63rd Avenue and West Baseline Road that drains to LC020 storm drain outfall.
- Flow at AC004; IDDE staff observed a City of Phoenix crew performing maintenance on a fire hydrant at 35th Avenue and Laurel Lane.
- Flow at AC002; IDDE staff found three sources of the flow: irrigation from Sunburst Farms Irrigation District, landscaping irrigation from home owners, and a leak from a faulty connection at a metering box located at 4211 West Desert Grove Avenue. COP Water Department was notified.
- Flow at SR083; IDDE staff found the source to be SRP releasing water into the Laveen Conveyance Channel to alleviate flooding conditions.
- Flow at SR003; IDDE staff determined the sources of the flow were from the SRP junction boxes located at 35th Avenue and Roosevelt Road and 35th Avenue and Sherman Road.
- Flow at SR002; IDDE staff determined the source of the flow was from the SRP junction box located on the west-side of 43rd Avenue south of Van Buren Road. This was confirmed by staff inserting a pole camera into the manhole south of the SRP junction box.
- Flow at SR006; IDDE staff determined the source to be Crooked Sky Farm irrigating their crops. Staff observed them laying out hoses in preparation to irrigate another section of the farm.
- Flow at SR010; IDDE staff identified three contributing sources of the flow: a broken swamp cooler hose causing water to run off the property 688 West Magnolia Street; a leaking Distribution valve at the southwest corner of Jackson Street and 1st Street; and, condensation from a downtown office building on 1st Street north of Madison Street.
- Flow at SR035; IDDE staff was able to identify the source of the flow, which was a direct connection with the SRP junction box located on Roeser Road just east of 7th Street.
- Flow at SR015; IDDE staff was able to identify three contributing sources of the flow: leaking distribution main in the area of 1015 East Pima Street; irrigation run-off from the Coronado

Neighborhood north of 12th St and Mc Dowell Road; and, irrigation run-off from businesses along 7th Street, south of the I-17 Freeway.

- Flow at SR004; IDDE staff located two sources of the flow; a leaking distribution line located at 638 S. 27th Avenue and landscaping sprinkler spraying into the street from Greenwood Memory Lawn Mortuary & Cemetery.
- Flow at SR029; IDDE staff was able to determine the sources of the flow; landscaping irrigation along 44th Street and the SRP junction box located 44th Street and Van Buren Road.
- Flow at SR020; IDDE staff determined the source as the SRP junction box located at the intersection of 24th Street and Roosevelt Street.
- Flow at SR027; IDDE staff was able to determine the source of the flow was within the boundaries of the Phoenix Sky Harbor Airport. Upon contacting the Aviation Department, they were able to confirm that this outfall receives condensation from the AC units at Terminal 4, as well as flows from fire suppression systems.

D. Municipal Facilities

Ø Status of identification and inventory of these facilities.

The Municipal Facility Inventory (MFI) is maintained in a facility assessment database that tracks inspection activities, compliance findings and pollution prevention recommendations. The inventory includes facilities owned and operated by City staff that store or use hazardous chemicals in containers greater than five (5) gallons, or which otherwise have the potential to pollute stormwater. Chemicals stored onsite at each facility are tracked through an online citywide Safety Data Sheet Management System. There were 313 municipal facilities on the inventory as of June 30, 2017. OEP's inspection facility assessment schedule targets 104 facilities each year.

Information maintained in the inventory includes: address, latitude and longitude, chemicals stored or used and their safety data sheets, operational status (operational or closed), Standard Industrial Classification (SIC) codes, date of last assessment, brief description of operations, facility contact, as well as other compliance-related information. The number of facilities may change based on new facilities becoming operational or existing facilities undergoing a change/cessation of operations. Such changes to the MFI are tracked through the facility assessment database.

High-Risk Facilities Identification and Prioritization:

The high-risk facility identification and prioritization was completed on June 30, 2011. The high risk identification process considered each of the following: (1) quantity of chemicals stored onsite (based on Tier II Reports), (2) potential for exposure of such chemicals to stormwater based on storage location, (3) likelihood of a spill or release to occur and discharge offsite based on structural BMPs and site drainage characteristics, (4) potential severity of impact on surface waters for a worst-case scenario release, and (5) MSGP coverage. Storage of and potential for release of other pollutants at the site were also considered as an additional risk factor.

Numeric ranking criteria are used to evaluate all city facilities that had submitted Tier II Reports. The criteria indicate which facilities are “higher risk” and also the overall risk of facilities relative to one another. Whenever these sites are physically assessed, the risk factors are reviewed and adjusted, if necessary. As of June 30, 2017 there were 44 facilities on the high-risk municipal facility inventory.

Of the 44 facilities categorized as high-risk, five facilities (service centers) were determined to be highest risk and were required to develop and implement facility-specific stormwater pollution prevention plans (SWPPP) and to conduct routine quarterly inspections by site staff and annual comprehensive stormwater inspections by OEP. For the 39 others currently classified as high-risk facilities—mainly unstaffed, remote locations associated with sanitary sewer system lift stations and odor control stations, or fire stations with double-walled (aboveground storage tank) ASTs containing diesel fuel—an increase in inspection frequency was not deemed necessary, but a comprehensive stormwater facility assessment is targeted at least once every three years.

Ø **Overview of inspection findings (i.e., number inspected, number with follow-up actions needed, significant findings).**

The OEP conducts Environmental Facility Assessments (EFAs) of City owned and operated facilities to acquire baseline information, ensure compliance with select environmental compliance requirements, including spill preparedness and response procedures, hazardous materials storage, and identification of opportunities to reduce hazardous material use and hazardous waste generation. The EFA inspection checklist includes a section on stormwater BMPs, the facility's SWMP, and a targeted review of high-risk facilities; this checklist is used to meet the Facility Assessment Measurable Goal at Appendix A Section III.B.(1) and the Municipal Facility Inspection Measurable Goal at Appendix A Section IV.C.(2).

OEP's target schedule is to conduct EFA's at 104 (of 313) facilities each year. The highest-risk facility service centers (5), which have facility specific SWPPPs, are inspected by site staff quarterly and receive an annual comprehensive stormwater inspection by OEP at least annually. Thirty-nine other high risk facilities are targeted to receive a comprehensive facility stormwater inspection once every two to three years.

In 2016/17, EFAs were completed at 143 of the facilities on the MFI. There were 102 facilities with zero corrective action findings as a result of the assessment. Forty-one facilities had a total of 88 findings; recommended corrective action items are summarized in the next section. The annual SWPPP inspections are not included in this finding count, but are addressed below. In addition, "Safety Data Sheer (SDS)" database update findings are now referred to Department and Human Resources Safety Division and are no longer specified as EFA findings. In 2016/17, 26 facilities were noted with SDS findings.

In 2016/17, 19 of the 44 high-risk facilities were assessed, including annual SWPPP inspections at all five of the highest-risk service centers with SWPPPs. The five high risk service centers are also assessed quarterly by site staff. Seven facilities, including the five service centers, had findings, six of which had some corrective actions related to stormwater which required improved stormwater BMPs. These are summarized in the following section.

Ø **Activities needed and performed in response to inspections (EFAs)**

The OEP records and tracks all activities needed as a result of an EFA until resolution. As applicable, facility status updates identifying any uncorrected findings are regularly provided to Department Directors. The text below summarizes the primary stormwater-related corrective action activities performed during 2016/17.

<u>2016/17 Corrective Actions Implemented (EFAs)</u>

- Spill response BMPs
  - Ensured spill response kits are adequately stocked and accessible
  - Installed or updated emergency contact poster in areas where hazardous materials are used or stored, including pesticide storage sign requirements
  - Ensured Departments have updated and distributed Facility Spill Response Plans.

- Structural BMPs (to minimize exposure to stormwater and prevent spills)
  - Ensured facilities only store containers of hazardous materials under weather-protective cover or inside
  - Ensured secondary containment for hazardous material containers and used oil, etc., are adequate and in good repair; repaired/cleaned existing secondary containment structures
  - Provided sediment control (e.g., straw wattles, fiber rolls) for material or soil stockpiles
  - Provided inlet protection for an unprotected storm drain inlet
  - Referred dry well drainage issues to Department Engineering at a new WSD remote facility site.

- Non-structural BMPs (practices and procedures)
  - Ensured container closure and labeling standards are followed for chemical containers and universal wastes
  - Improved housekeeping and general site, parking lot, and outdoor equipment and material storage practices, including increased parking lot sweeping frequency
  - Ensured storage amounts are kept to a minimum
  - Ensured all hazardous materials and hazardous building materials are handled properly, and waste determinations/profiles have been completed for materials.

<u>2016/17 High-Risk Facilities – Improved Stormwater Controls and Practices Implemented</u>

- Monitored maintenance of retention basins to ensure they are maintained free of trash and debris and not used for unintended purposes, such as concrete wash-out
- Ensured proper storage practices for scrap metal as required by HMMP
- Ensured proper overnight storage requirements for pesticides as required by HHMP
- Ensured vehicle repair parts with greasy/oily fluid residue (e.g., engines, cylinders) are stored under tarps or other overhead protection
- Ensured compliance with HMMP storage practices for hazardous materials—store indoors, or under other weather protections, in closed containers, with appropriate secondary containment; required repair of damaged canopy which provided weather protection for hazardous materials
- Improved housekeeping and general site, parking lot, and outdoor equipment and material storage practices, including refuse storage, solid waste bin collection areas, and increased parking lot sweeping frequency
- Ensured secondary containment structures are maintained clean and dry
- Implemented facility spill plans and/or posted spill contact info and spill response procedures, including pesticide storage sign requirements

- Implemented cleanup of small fluid releases from equipment and vehicle drips, and ensured that drip pans or other methods are used to control small fluid releases
- Ensured all containers are labeled and with proper secondary containment
- Inspected spill kits and verified spill kits are available in needed areas
- Ensured vehicle washing areas are well maintained, including clean-up of sediments and maintenance of sewer interceptors
- Verified there are no illicit discharges to the MS4 from routine facility practices
- Ensured all hazardous materials are handled properly, and hazardous waste determinations have been completed
- Followed-up on facility Spill Prevention, Control and Countermeasure Plans, and ensured all are up-to-date and certified.

<u>2016/17 Other Stormwater-Related Improvement Projects</u>

<u>The following projects were identified in response to OEP inspection findings:</u>

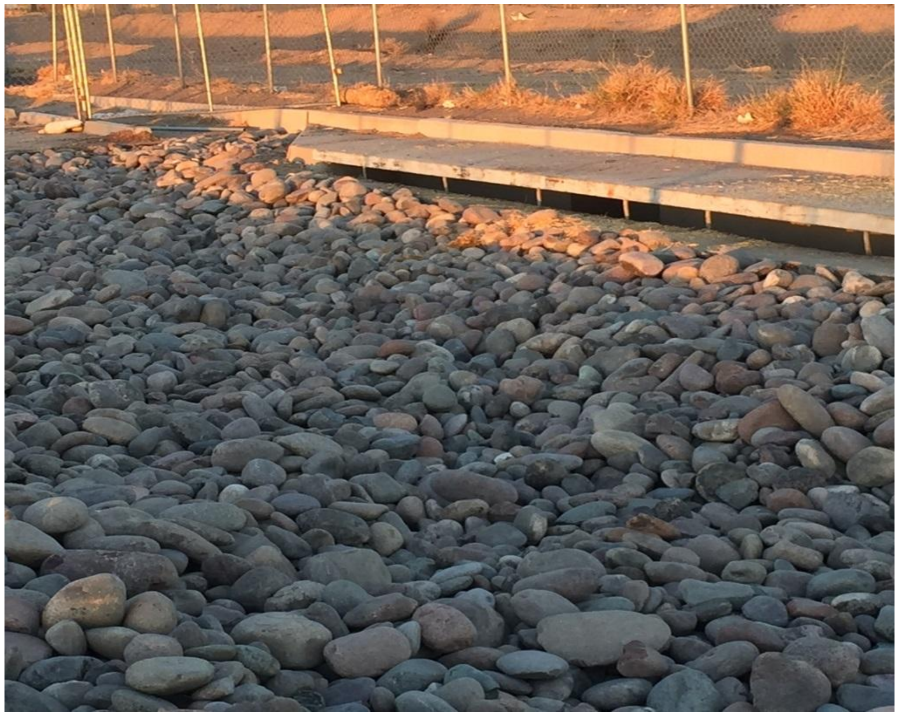
- Glenrosa Covered Storage – Following the fourth quarter of 2016 annual OEP SWPPP inspection, it was noted that the Glenrosa Service Center, PWD Fleet Management Division was in need of additional covered storage. Funding for design and construction was encumbered in the second quarter of 2017. Additional internal soft costs will occur in Fiscal Year 2017/18. The covered storage will allow site staff to store greasy/oily vehicle parts and other potentially leaking material in a location that is not exposed to stormwater.
- Okemah Bulk Material Storage Bins – Following the fourth quarter 2015 and 2016 annual OEP SWPPP inspections, it was noted that the Okemah Service Center, STR Department was in need of modifications to the bulk material storage bins, and additional bins. Funding was approved to build two new bulk material storage bins to contain concrete debris and spoils. This will also allow one of the existing bins to be used for excess storage. Funding for design and construction costs were encumbered in the second quarter of 2017. Additional internal soft costs will occur in Fiscal Year 2017/18.

In addition to improvements made in response to inspection findings, the following stormwater capital improvement projects also had activity in 2016/17:

- The Public Works Department, Solid Waste Disposal Management Division completed and funded improvements to the SR 85 Landfill, including:
  - Repairs of the final cover system of Cell 1 Phase 1 Closure.
  - Connection of a runoff diversion swale to existing swales on the landfill cap.
  - A gabion down drain structure to discharge runoff collected from the landfill cap into an existing ditch.
  - A discharge structure constructed on existing grade located at the southeast corner of Cell 1 Phase 4 that will discharge water collected from the Cell 1 landfill cap and discharge it into the existing perimeter stormwater control channel for the site.
  - Asphalt millings placement, road crossings, sediment controls and revegetation.

- Four areas were repaired at the Rio Salado Habitat Restoration Area in the first half of 2017. The erosion was the result of multiple storms that caused significant movement of earth material that eventually plugged existing spillways. The Parks and Recreation Department identified funds to make necessary repairs to existing issues, and developed an ongoing maintenance program to minimize the erosion issues in the future.

- The existing southwest catch basin/storm drain inlet was improved at the Salt River Service Center in the second half of 2016 by PWD, by removing existing pavement and replacing with rip-rap/rocks and filter fabric. The construction contractor also verified the drainage along the existing curb.



- Erosion repair was completed at several of the Glenrosa Service Center retention basins by PWD. This work consisted of stabilizing soil where stormwater may enter the retention basins to prevent future erosion, and repairing small areas of erosion.

Ø **Identification and tracking of municipal owned and operated facilities subject to permitting under the MSGP.**

Table 3-2 contains a listing of the eleven (11) City-owned and operated facilities subject to permitting under the MSGP, based on their industry sector and/or SIC code.

Table 3-2
City Owned/Operated Facilities Subject to MSGP

Department	Facility	Address	POC	Authorization #	Comments
Public Works	Skunk Creek Landfill	3165 W Happy Valley Rd Phoenix, AZ 85027	Environmental Quality Specialist Joy Bell 602-256-5605	AZMSG-61708	
	27th Avenue Solid Waste Management Facility	3060 S 27th Ave Phoenix, AZ 85009		AZMSG-62581	
	SR 85	28361 W Patterson Rd Buckeye, AZ 85326		AZMSG-14391	
	North Gateway Transfer Station	30205 N Black Canyon Hwy, Phoenix, AZ 85085		AZMSG-61710	
Aviation	Sky Harbor International Airport	3400 E Sky Harbor Blvd, Ste 3300 Phoenix, AZ 85034	Environmental Quality Specialist Lisa Farinas 602-273-2787	AZMSG-66063	
	Deer Valley Airport	702 W Deer Valley Rd Phoenix, AZ 85027		AZMSG-66017	
	Phoenix/Goodyear Airport	1658 S Litchfield Rd Goodyear, AZ 85338		AZMSG-61934	
Water Services	91st Avenue Wastewater Treatment Plant	5616 S 91st Ave Tolleson, AZ 85353	Environmental Quality Specialist Doug Taylor 602-534-5081	AZMSG-61871	
	23rd Avenue Waste-water Treatment Plant	2470 S 22nd Ave Phoenix, AZ 85009		AZMSG-61896	
	Cave Creek Water Reclamation Plant	22841 N Cave Creek Rd Phoenix, AZ 85024		AZMSG-61713	
City Clerk	Customer Service Center (Print Shop)	2640 S 22nd Ave Phoenix, AZ	Environmental Quality Specialist Hilary Hartline 602-534-1778	AZRNED-670	No Exposure Certification September 2015

Note: The City previously submitted Sector L Closure Certifications for 15 city properties located on closed landfill sites (three of which were previously owned/operated by the City), which are not covered under the MSGP.

Ø **Status of all inventories, maps, and map studies required by the permit to be developed including completion dates.**

The stormwater GIS database conversion project has been completed. The Stormwater GIS team is reviewing the data in each quarter section and adding new infrastructure. The data is being shared as a web service that is hosted on the Enterprise ArcGIS Server and shared for all city staff to access.

The field inventory of stormwater infrastructure in the Ahwatukee area of Phoenix (located south of South Mountain Park and west of Interstate 10) has been completed and the GIS data has been updated.

The City considers the storm drains to be protected critical infrastructure. As such, the City has not provided a copy of the GIS maps as an attachment. However, the maps are available for review by ADEQ upon request.

Ø **For the Outfall inspection program, describe the status of:**

- o Staff training
  Outfall inspection training is described in Section H.
- o Outfall inventory
  The outfall inventory is described in Section H.

- o Inspection tracking system
  The outfall inspection tracking system is described in Section H.
- o Overview of Inspection and screening procedures, and any significant findings
  Inspection and screening procedures and findings are discussed in Section H.

E. Industrial Facilities

Ø Status of identification and inventory of these facilities.

In April 2017, WSD migrated to a new database application for tracking facilities and inspections. As part of the data migration, WSD has been reviewing and updating the facility inventory.

The City currently manages an inventory of more than 6,800 facilities, which includes approximately 2,100 industrial (potential MSGP) facilities as well as commercial businesses, such as restaurants and auto service stations. Inspectors also focus on facilities that submit federal Toxic Release Inventory reports, facilities that generate Resource Conservation and Recovery Act (RCRA) hazardous waste, treatment storage and disposal facilities (TSDFs), and non-municipal solid waste facilities throughout the City.

Because lead and copper have been identified in wet-weather samples in quantities exceeding surface surface water quality standards (SWQS), facilities that use or store lead or copper have been identified for priority inspections.

In addition to the industrial inspections, the City has incorporated a stormwater assessment into many of the inspections conducted by the Commercial Section. Stormwater assessments are conducted at commercial businesses including restaurants, car washes, and service stations. When significant stormwater issues are noted, the Commercial Inspector forwards the information to the Stormwater Section for follow-up. Stormwater screenings are also conducted by IPP inspectors when they do their annual inspection for permit compliance. Facilities are referred to the stormwater section for follow-up when necessary.

Ø An overview of inspection findings and note significant findings.

In reporting year 2016/17, the City conducted 567 industrial and commecial stormwater inspections, 1,179 commercial stormwater assessments, and 171 IPP screening. A total of 97 informal (i.e., level one action, or inspection with requirements) and 13 formal enforcement letters were issued for stormwater-related violations.

The most common violation identified continues to be a failure to develop a SWMP or SWPPP, as required by City code. For those facilities that have the potential to release pollutants to the MS4, the City ordinance requires that each facility develop and implement a SWMP containing facility-specific BMPs. Most stormwater issues noted during commercial (e.g., restaurant) inspections involved housekeeping related issues that were easily corrected (e.g., spills around tallow bins and open dumpsters).

Ø Corrective and enforcement actions needed and taken in response to inspections.

Informal enforcement actions included 97 inspection letters where requirements were made. Formal enforcement actions included NOVs (9), Field NOVs (2), and Show Cause meeting notices (2). Most enforcement actions were resolved quickly, with over 99 percent of all industrial inspections closed within one year of the initial inspection.

As stated above, the Stormwater Management Section issued two ‘Show Cause’ meeting notices, and had one carry over from 2015/16 (AAMCO). A ‘Show Cause’ meeting is typically the last step in the enforcement process, when previous efforts to bring the facility into compliance are unsuccesful. The facility is asked to enter into a settlement agreement and penalties may be assessed. The following facilities had corrective or enforcement action related to the storm drain system:

GMR – On February 22, 2017, a follow-up inspection at the facility located at 2500 West Coronado Avenue identified a non-stormwater discharge into the MS4. GMR attended a Show Cause meeting in April, was fined $2,800 and was required to make structural changes to reduce or eliminate non-stormwater flows off the property.

Bulwark Exterminating – On August 26, 2016, WSD responded to a complaint regarding an employee of Bulwark Exterminating washing pesticides into the street. The inspector observed a green stain from the driveway, down the street, into a small retention basin. OEPs contractor was contacted to clean-up the site. A Show Cause meeting was held on November 2016. Bulwark was required to develop and implement a SWMP and reimburse the city $1,788.07 for cleanup costs.

Emergency Pumping – On April 17, 2016, the Emergency Plumbing and Pumping Company discharged untreated septic waste into a private storm drain feature at 9000 West McDowell Road. Since the discharge did not impact the City’s MS4, enforcement was pursued under the sanitary sewer ordinance (Phoenix City Code Chapter 28). An NOV was issued to cease and desist from this type of activity, and a Show Cause meeting was held to determine punitive action; the company was assessed a monetary penalty of $25,000 and had 15 days to clean the private storm drain. The company did not comply with the agreement reached during the Show Cause meeting; therefore, a Civil Citation was issued. The case went to municipal court in December, and the Judge fined the company $52,500. As published in AZFamily.com on July 2, 2017 the truck driver was indicted with one count of unlawful discharge and one count of criminal damage by a state grand jury. View news release in Attachments.

AAMCO Transmissions – On May 27, 2016, AAMCO at 12036 North Cave Creek Road discharged the contents of a sand/oil interceptor into a City of Phoenix storm drain that discharges into Tenth Street Wash. An NOV was issued to cease and desist from this type of activity, clean the storm drain and outfall area, and to write a new SWMP. AAMCO entered into a Stormwater Settlement Agreement in July 2016 and remitted fines in the amount of $5,000 and provided cleanup of the affected wash (~$3,000).

F. Construction Program Activities

The City of Phoenix Stormwater Policies and Standards Manual requires retention areas for buildings to account for drainage collected from the roof tops, parking lots, and other drainage areas. When the PDD reviews grading plans, staff ensure that the site retention volume is adequate to prevent runoff for the required storm event. If inspectors find that the plans are not being followed, they may stop work on the project. If the problem continues, court-ordered injunctions may be served or civil penalties assessed.

Chapter 32A, the City’s Grading and Drainage Ordinance, establishes minimum requirements for regulating grading and drainage and establishes implementation and enforcement procedures. Grading and Drainage Permits are issued to applicants who fulfill the application requirements, including the submittal of a SWMP, when applicable. Activities regulated by the Grading and Drainage Ordinance are subject to inspection and enforcement action.

Enforcement steps begin with a verbal warning, and may lead to a written warning, halting project inspections on the building, and/or a civil citation. The PDD Civil and Site Inspection team includes 20 members tasked with enforcing the ordinance.

Staff from PDD hold pre-construction meetings with private developers to discuss many issues, including on-site retention of stormwater, controlling erosion, and the installation of other BMPs. Communications with developers occur during periodic observations by inspection staff and during formal inspections.

An overview of the PDD process for stormwater related submittals is provided below:

- The customer submits grading/drainage and stormwater plans for review
- PDD provides red lines on plans
- The customer addresses the red lines
- Plans are approved for construction by PDD
- The customer applies for required permits
- Permits are created by PDD, including Civil Grading & Drainage and Civil Stormwater
- PDD office staff obtain a copy of the Arizona Pollutant Discharge Elimination System (AZPDES) Construction General Permit authorization number before the customer can purchase permits
- The customer schedules a Pre-Construction Meeting prior to beginning work
- BMPs are implemented by the customer prior to the start of construction
- Inspector verifies that track out and BMPs are properly maintained during each inspection
- The customer submits an Notice of Termination (NOT) when the project is completed
- Warranty inspection is performed by PDD, one-year after completion.

Ø **Status of inventory/plan review of these facilities.**

The PDD database contains a comprehensive inventory of developments for which permits have been issued, plans have been reviewed, and inspections have been conducted. The permits are categorized in the database according to the type of work requested to be performed. In reporting year 2016/17, 481 Construction/Grading Plans were reviewed.

Ø **An overview of Inspection findings and significant findings.**

Inspection findings are documented in the PDD database. During reporting year 2016/17, a total of 533 construction sites were inspected for stormwater. There were 45 permits with noted deficiencies where corrective action was requested at least one time, along with three that required multiple requests to achieve compliance. The counts specific to the three types of deficiencies listed below are:

- 5 – Stormwater controls missing, not per plan, or started work without notification
- 18 – Track out control not working
- 22 – Failure to maintain stormwater controls

Some linear and utility municipal construction projects are not subject to PDD's stormwater permitting process and are inspected by either OEP or WSD staff to ensure BMPs and compliance with the local stormwater ordinance. There were 23 documented deficiencies at 11 of the 16 municipal projects inspected, including administrative violations, insufficient or failing inlet protection, housekeeping and signage at concrete washouts, refuse/litter control/storage and missing or insufficient sediment or erosion controls, such as around perimeter of material stockpiles not actively being worked, and observed trackout.

- **Corrective and enforcement actions needed and taken in response to inspections.**

Most documented deficiencies were corrected by the next day. One written notice was issued. No other escalated enforcement was required to bring projects into compliance (i.e., suspension of work), and most violations were corrected upon first request. For municipal projects, inspection reports showing the specific deficiencies are sent to project managers who work with the contractor to correct the problem and send follow-up documentation that deficiencies have been corrected. For the 11 municipal projects with findings in 2016/17, deficiencies were corrected promptly and additional enforcement steps were not necessary. One municipal project that was inspected three days before the end of the reporting year was pending resolution of administrative findings.

PDD requires that the developer provide a “letter of explanation” when they cannot obtain a NOT at the end of the project. These are forwarded to ADEQ twice a year. In reporting year 2016/17, PDD had zero projects that could not obtain a NOT.

<u>Staff Training</u>: The PDD Municipal Stormwater Inspection Training for Construction Inspectors trains plan review and inspection staff on administrative procedures (Notice of Intent and SWPPP), compliance, and appropriate BMPs to reduce pollution from construction activities.

Details on training dates and number of attendees are included in Section C.

G. Post Construction Controls

- **Summary of any new post-construction controls for municipal projects.**

22nd Avenue Service Center – The 22nd Avenue Service Center is classified as a high-risk facility that discharges stormwater directly to the MS4. Funding from Fiscal Year 2016 was provided by OEP and PWD to locate and design a stormwater pretreatment device to prevent oil and grease from entering the MS4 at three existing storm drain inlets, and to provide a drainage design report for the site. After the design phase is complete, it is anticipated that this project will transition to a capital improvement project, possibly in Fiscal Year 2018 or 2019, depending on funding availability. In Fiscal Year 2016/17, OEP provided additional funding to expand the scope of this project after detailed City inter-departmental staff review. The expanded scope includes additional device options/requirements (including examination of filter inserts at the storm drain inlets, baffle chamber tanks and hydrodynamic separators). The expanded scope also changes the placement for one of the treatment devices from an interior storm drain catch basin to a storm drain catch basin that leads to 22nd Avenue to capture more potential pollutants. In addition, City staff at the 22nd Avenue Service Center has improved internal processes at the facility, including vehicle storage locations and re-use of repair vehicle parts to minimize discharge of pollutants to the MS4.

- **An overview of the City’s post-construction inspection program.**

PDD inspectors conduct a one-year warranty inspection on each construction project within their jurisdiction. This inspection provides an opportunity to identify corrective action to be implemented by the developer or responsible sub-contractor for a variety of items, including stormwater and grading and drainage controls.

For municipal projects not subject to PDD's stormwater permit program, OEP or WSD staff conducts post-construction stormwater inspections within one year of the project completion.

During reporting year 2016/17, post-construction stormwater inspections were conducted by PDD at 84 private construction projects and by OEP or WSD at 15 municipal construction projects.

Ø **Corrective and enforcement actions needed and taken in response to post-construction inspections.**

The PDD database contains directives for items identified for follow-up during the warranty inspection.

Ø **Summary of any new or revised post-construction requirements related to permits the City issues.**

No new or revised post-construction requirements were identified by PDD personnel. In addition, the municipal post-construction inspections had only one finding, which was BMP removal from a project site.

H. Outfall inspection program; describe the status of

Ø **Staff training.**

Stormwater staff members are trained on sampling procedures and techniques when they are assigned to the Outfall Inspection rotation, typically within the first year of employment. As part of this, they are required to familiarize themselves with the applicable Code of Federal Regulations at 40 CFR 122 and 40 CFR 136 and the Standard Operating Procedures (SOPs) concerning sampling and Quality Assurance/Quality Control (QA/QC). Refresher training is provided informally throughout the year and formally at least once every two years.

Details on training dates and number of attendees are included in Section C.

Ø **Outfall inventory.**

The City maintains a database to document stormwater outfalls. At the time of this report, the inventory includes approximately 899 total outfalls with 517 of these designated as "Major" outfalls according to Environmental Protection Agency (EPA) guidelines. Thirteen outfalls are designated as "priority," either due to observed flow within the past five years, or because they received an illicit discharge in the past five years. The City no longer has outfalls that discharge to an impaired water, because the Salt River, from the 23rd Avenue Wastewater Treatment Plant to the Gila River has been delisted. Other priority outfalls have been removed because we found (and eliminated) the source of an illicit discharge. The outfall inventory is included as an attachment to this report.

Ø **Inspection tracking system.**

Each outfall inspection is conducted by a trained team of inspectors who use a form specifically designed to capture the data as they are observed. Once the inspection is completed and the inspectors return to the office, all data are entered into a database. Entered data include the documentation and tracking of all (both major and minor) outfall inspections. All items required in 40 CFR 122 are found on the form including both visual and field screening activities.

Ø **Inspection and screening procedures and significant findings.**

The inspection crew visits each "priority" outfall annually and the remaining major outfalls at least once every five years. The inspection begins with an overall visual observation of the outfall structure and surrounding area. Visual items are noted such as residue, staining, dead animals, and differences in plant life near the outfall. If a flow (greater than 0.03 gallons per minute) is observed, a sample is collected for the field screening activity. Field screening includes pH, temperature, total chlorine, sulfide, ammonia, phenol, detergent, lead, and copper. All observations are recorded on a standard inspection checklist.

In reporting year 2016/17, staff inspected major outfalls along the Arizona Canal Diversion Channel, Cave Creek Wash, Charter Oak, New River, North Mountain, Skunk Creek, Indian Bend Wash, Laveen Channel, Central Arizona Project, Tenth Street Wash, Emile Zola Wash, and the Salt River. All priority outfalls were inspected, regardless of location.

Fourteen outfalls had two days of consecutive dry-weather flow, which triggered the field screening process at those locations. Fourteen IDDE investigations were initiated based upon the results of those field screening activities and flow amounts.

I. Description of any new or revised ordinances, rules or policies related to stormwater management or control, if applicable.

Ø **Complete Streets Design Manual and Policy –** Per City Ordinance adopted by City Council, during 2014/15, a Complete Streets Advisory Board, consisting of community stakeholders appointed by each Council District and the Mayor's office worked to accomplish several goals, including development of a draft Complete Streets Design Manual. The draft Design Manual includes a chapter providing guidance on use of green infrastructure and low-impact development principles in the right of way for stormwater management. The guidance was primarily adopted from, with permission, Watershed Management Group's *Green Infrastructure for Southwestern Neighborhoods (2012).* Other design principles in the manual include improvement of pedestrian and bicycle safety and access and incorporation of street amenities like street furniture and shade accommodation. The Complete Streets Policy was approved by the Phoenix City Council on June 28, 2017 (attached). The Complete Streets design guidelines and performance measures are still in development. Green infrastructure and low impact development continues to be a component of the design guidelines for City projects within the right-of-way.

J. Fiscal Expenditures; provide a brief report on expenditures related to implementation of the City's stormwater program for the previous fiscal year.

The City collects a stormwater fee to defray the costs of operating the stormwater management program.

Stormwater program charges from STR, WSD, and OEP are paid out of the Stormwater Fund. The fee does not cover the costs for most maintenance of the drainage system or infrastructure improvements, nor does it cover ancillary stormwater activities, such as street sweeping or the HHW program. Stormwater program costs for PDD are funded by construction permit fees.

<u>Water Services Department</u>
WSD coordinates the City's Stormwater Program. In addition to overall program administration, WSD conducts stormwater outreach, complaint investigations, outfall inspections and IDDE investigations, industrial inspections, wet-weather monitoring, and reporting. Expenditures totaled $1.8M in reporting year 2016/17.

Street Transportation Department

STR conducts storm drain maintenance and inspections, wash maintenance, and is responsible for the stormwater GIS. The stormwater budget for STR was $2,593,280 in reporting year 2016/17. The budget included more than $1,958,750 for wash maintenance and approximately $634,530 for the stormwater GIS.

Office of Environmental Programs

OEP conducts environmental assessments of municipal facilities and operations and oversees the stormwater training plan. OEP also advises city departments on regulatory compliance issues. OEP also conducts stormwater inspections for those municipal construction and post-construction projects that did not go through the PDD permit process. The stormwater operating expenditures for OEP was $132,627 in reporting year 2016/17. An additional $173,421 was spent on capital improvement program projects.

Planning and Development Department

PDD conducts grading and drainage plan reviews and inspections. PDD costs are covered by construction permit fees, and their budget may vary significantly depending on the number of permitted construction projects. The grading and draining budget for PDD in reporting year 2016/17 was over $1.25M with stormwater expenditures at $316,175.

Table 3-3
Stormwater Management Program Fiscal Expenditures

City of Phoenix Department	Reporting Year 2016/17 Actual	Reporting Year 2017/18 Projected
Water Services Department		
Stormwater Program Support	$1,842,748	$2,181,283
Street Transportation Department		
Wash Maintenance	$1,931,584	$2,242,892
Geographic Information System	$532,716	$702,900
Planning and Development Department		
Grading and Drainage – Plan Review	$894,915	$1,140,000
Grading & Drainage – Inspections	$357,612	$457,000
Office of Environmental Programs		
Stormwater Program Support	$132,627	$148,765
Capital Improvement Projects	$173,421	$250,000

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PART 4: SUMMARY OF STORMWATER MANAGEMENT PROGRAM ACTIVITIES (NUMERIC)

Provide a summary of stormwater management practices and activities performed each year as indicated in the Table below.

	REPORTING YEAR (July 1-June 30)						
STORMWATER MANAGEMENT PRACTICE OR ACTIVITY	**2010/2011**	**2011/2012**	**2012/2013**	**2013/2014**	**2014/2015**	**2015/2016**	**2016/2017**
Illicit Discharge Detection & Elimination Program							
1. Municipal Employee Training							
Number of training sessions (on non-stormwater discharges and the IDDE program)	**41**	**37**	**34**	**20**	**9**	**17**	**10**
Number of employees attending training	**610**	**754**	**726**	**515**	**302**	**527**	**357**
2. Spill Prevention							
Number of municipal facilities identified with hazardous materials	**337**	**326**	**307**	**303**	**301**	**298**	**313**
Number of spills at municipal facilities with hazardous materials, that occurred in outside areas	**0**	**0**	**2**	**2**	**1**	**1**	**13**
Number of Facility Assessments completed* *(*identify any issues found requiring follow-up in narrative and summarize new practices to minimize exposure*)	**123**	**98**	**120**	**107**	**112**	**111**	**143**
Date of last review of HMMP* (*Identify committee participant with stormwater expertise in narrative)	**06/2011**	**06/2012**	**06/2013**	**06/2014**	**05/2015**	**05/2016**	**06/2017**
3. Outfall Inspections							
Total Number inspected* *(*attach or forward electronic copy of inventory or map of major out falls and priority outfalls*)	**201**	**185**	**202**	**170**	**214**	**307**	**251**
Number of 'Priority Outfalls' identified to date* *(*summarize findings and follow-up actions in narrative)*	**39**	**38**	**38**	**31**	**27**	**31**	**13**
Number of 'Priority outfalls' inspected* *(*summarize findings and follow-up actions in narrative*)	**39**	**38**	**38**	**31**	**27**	**30**	**13**
Number of dry weather flows detected	**11**	**14**	**18**	**10**	**15**	**24**	**14**
Number of dry weather flows investigated	**11**	**11**	**18**	**10**	**15**	**24**	**14**
Number of major outfalls sampled	**11**	**14**	**18**	**10**	**15**	**24**	**14**
Number of illicit discharges identified	**5**	**7**	**4**	**1**	**6**	**7**	**5**
Number of illicit discharges eliminated	**3**	**3**[b]	**3**[b]	**1**	**2**	**7**	**5**
Amount of storm drain inspected (length)	**0.5 miles**	**0.17 miles**	**0.61 miles**	**.076**[d]	**3.8 miles**	**4.04 miles**	**5.76**
Number of storm drain cross connection investigations	**0**	**0**	**0**	**0**	**1**	**1**	**0**
Number of illicit connections detected	**0**	**3**	**0**	**1**	**1**	**1**	**1**

	REPORTING YEAR (July 1-June 30)						
STORMWATER MANAGEMENT PRACTICE OR ACTIVITY	**2010/2011**	**2011/2012**	**2012/2013**	**2013/2014**	**2014/2015**	**2015/2016**	**2016/2017**
Number of illicit connections eliminated	**0**	**1**	**2**	**1**	**0**	**1**	**1**
Number of corrective or enforcement actions initiated within 60 days of identification	**N/A**	**2**	**1**	**1**	**1**	**2**	**5**
Percent of cases resolved within 1 calendar year of original Level One action*	**N/A**	**N/A**[c]	**100**	**90%**	**100%**	**100%**	**80%**
Number of illicit discharge reports received from public	**294**	**224**	**236**	**213**	**195**	**186**	**188**
Percent of illicit discharge reports responded to	**93%**	**100%**	**99%**	**100%**	**100%**	**98%**	**100%**
Percent of responses initiated within 15 days of receipt	**100%**	**100%**	**100%**	**100%**	**98%**	**100%**	**100%**
Municipal Facilities							
1. Employee Training							
Number of training events* *(*dates and topics to be included in narrative)*	**59**	**86**	**77**	**48**	**484**	**37**	**61**
Number of staff trained	**1833**	**1509**	**2416**	**1208**	**1354**	**753**	**1989**
2. Inventory/Map/Database of MS4 Owned & Operated Facilities							
Total number of facilities on inventory	**337**	**326**	**307**	**303**	**301**	**298**	**313**
Date identification of "high risk" facilities completed	**06/30/2011**	**06/30/2011**	**6/30/2011**	**6/30/2011**	**6/30/2011**	**6/30/2011**	**6/30/2011**
Date prioritization of municipal facilities completed	**06/30/2011**	**06/30/2011**	**6/30/2011**	**6/30/2011**	**6/30/2011**	**6/30/2011**	**6/30/2011**
3. Inspections							
Miles of MS4 drainage system prioritized for inspection	**0**[a]	**0**[a]	**0**[a]	**0**[a]	**0**[a]	**0**[a]	**0**[a]
Miles visually inspected	**0.5**	**0.17**	**0.61** (city) **12.66** (contractor)	**9.55**	**14.08**	**10.06**	**18.72**
Number of 'high risk' municipal facilities inspected	**0**	**23**	**38**	**12**	**24**	**18**	**19**
Number of 'high risk' municipal facilities found needing improved stormwater controls	**0**	**4**	**11**	**6**	**8**	**5**	**6**
4. System Maintenance							
Linear miles of drainage system cleaned each year* (*City to maintain records documenting specific street cleaning events)	**152,396**	**150,087**	**116,413**	**176,970**	**146,315**	**191,318**	**205,299**
Record amount of waste collected from street and lot sweeping (reported in tons)	**13,553**	**12,970**	**14,198**	**12,386**	**16,120**	**18,509**	**14,628**
Total number of catch basins	**16,000**	**16,000**	**18,641**	**18,943**	**19,648**	**20,644**	**21,015**
Number of catch basins cleaned	**8,213**	**7,894**	**4,613**	**5,674**	**10,552**	**6,682**	**4,441**

STORMWATER MANAGEMENT PRACTICE OR ACTIVITY	REPORTING YEAR (July 1-June 30)						
	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017
Industrial Sites Not Owned by the MS4							
Number of training events for MS4 staff	**1**	**3**	**2**	**2**	**1**	**2**	**1**
Number of municipal staff trained	**22**	**41**	**12**	**46**	**13**	**45**	**9**
Number of industrial facilities on Part V.B. Inventory inspected	**393**	**638**	**686**	**540**	**780**	**636**	**567**
Number of corrective or enforcement actions initiated on industrial facilities	**210**	**232**	**285**	**281**	**171**	**101**	**97**
Percent of cases resolved within 1 calendar year of original Level One action	**86%**	**95%**	**>95%**	**95%**	**99%**	**99%**	**99%**
Construction Program Activities							
Number of training events for MS4 staff* (*include topics in narrative summary)	**3**	**2**	**1**	**2**	**7**	**3**	**3**
Number of municipal staff trained	**59**	**36**	**4**	**20**	**28**	**41**	**15**
Number of construction/grading plans submitted for review	**95**	**90**	**153**	**164**	**335**	**634**	**481**
Number of construction/grading plans reviewed	**95**	**90**	**153**	**164**	**335**	**634**	**481**
Number of construction sites inspected	**322** **26** **(municipal)**	**320** **22** **(municipal)**	**334** **14** **(municipal)**	**344** **19** **(municipal)**	**353** **10** **(municipal)**	**390** **9** **(municipal)**	**533** **16** **(municipal)**
Number of corrective or enforcement actions initiated on construction facilities* (*identify the type of actions in narrative summary)	**19** **7** **(municipal)**	**44** **8** **(municipal)**	**36** **17** **(municipal)**	**34** **9** **(municipal)**	**118** **12** **(municipal)**	**83** **19** **(municipal)**	**51** **23** **(municipal)**
Post Construction Program Activities							
Number of post-construction inspections completed	**126** **23** **(municipal)**	**96** **28** **(municipal)**	**82** **12** **(municipal)**	**91** **14** **(municipal)**	**130** **6** **(municipal)**	**121** **3** **(municipal)**	**176** **15** **(municipal)**
Number of corrective or enforcement actions initiated for post-construction activities * (*identify the type of actions in narrative summary)	**0** **1** **(municipal)**	**0** **0** **(municipal)**	**0** **4** **(municipal)**	**0** **2** **(municipal)**	**0** **0** **(municipal)**	**0** **0** **(municipal)**	**0** **1** **(municipal)**

(a) The City does not measure linear miles of drainage system prioritized for inspection. Rather, these areas are listed by location. The lists are included in the SWMP and updated annually.
(b) Some of the illicit discharges investigated were found to be allowable under City Code and thus not eliminated.
(c) Not applicable for 2011-2012. The cases have not been open for a full year from the initial corrective action date.
(d) 400 feet of televised line was inspected under contract by Pro Pipe. The City did not have the ability to televise storm drain lines due to inoperative camera equipment.

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PART 5: EVALUATION OF THE STORMWATER MANAGEMENT PROGRAM

In accordance with Section 5.4 of the permit, provide an evaluation of the progress and success of the stormwater management program each year, including an assessment of the effectiveness of stormwater management practices in reducing the discharge of pollutants to and from the municipal storm sewer system.

Program Management

The Stormwater Working Group (Working Group), which includes representatives from WSD, STR, OEP, PDD, PWD, and Law, continues to meet on a monthly basis. The Working Group discusses ongoing issues, such as IDDE investigations, municipal stormwater projects, the GIS database, and stormwater training. An Executive Committee composed of Management from the five key departments meets quarterly to discuss the stormwater budget and any ongoing issues that require management decisions.

Monthly Working Group and quarterly Executive Committee meetings are an efficient and effective way to communicate program requirements. It is anticipated that this meeting structure will greatly benefit the City of Phoenix during the Phase I MS4 General Permit stakeholder process.

Public Education and Outreach

WSD has developed a new division that is focused on community education and outreach (CEO). Staff from other WSD divisions support CEO, which continues to include stormwater messaging to school-aged children and citizens at City-sponsored or attended events. The City continues to utilize multi-media efforts, such as billboards, print advertisement, mailers, and surveys, as well as actively participating in AZSTORM on a monthly basis. The Stormwater Management Section has expanded the number of public outreach events attended and works cooperatively with other City departments and divisions within WSD to distribute stormwater program materials during other outreach events.

This report year more than 1,000 storm drain awareness surveys were completed. A majority of the respondents answered the 16-question survey online via Survey Monkey distributed via NextDoor. Social media – Facebook and Twitter – as well as live-event participation returned approximately 20% of the surveys. The City purchased a subscription to Survey Monkey to allow for tracking analytics over time and help determine whether awareness is increasing.

In summary:

Approximately 50% of those surveyed incorrectly answered that water that flows into a storm drain ends up in a water treatment plant or sewer system, and only 30% responded that it goes to a wash or river;

80% believe there is a problem in the Valley with pollution entering storm drains;

Nearly all responses deny that they dispose of household chemicals, pesticides, automotive fluids, yard waste, and pet waste in storm drains;

80% of respondents do not have young children;

While most indicate that they would seek information on these topics by going to the City or internet, more than 35% were not sure where to go when observing someone dumping pollutants into the storm drain;

Demographic questions were added to the survey (rather than gathered separately) to assist in narrowing down information on the audience. These questions are:

What is your gender: Female (62%), Male (38%), Other (<1%)

What is your age group: Under 25 (<1%), 25-35 (9%), 35-55 (34%), 56+ (56%)

What is your zip code: 59 zip codes were represented; with the highest number of responses from 85254, 85022, 85032, 85028, 85020, and 85013; these zip codes represent the northern, northeastern, and central parts of Phoenix.

Last, we added a question about how they heard about us, which may be used in the future to direct our method of contact:

87% indicated NextDoor; 9% said email; a few said Facebook and Other, with minimal hits coming from events and print advertisement. Unfortunately, this result cannot be verified due to an error during in the survey distribution.

The surveyor intended to collect responses from different social media platforms via separate collector controls within Survey Monkey; however, upon deployment, only one collector address was used across all platforms. Therefore, we have biased responses (some say they heard about the survey on Green Living, or Clear Channel Outdoor, which were not possible avenues). Additionally, the question may be reworded, one to confirm that the survey taker in fact took the survey on a given platform, or two, asks the survey taker where they learned about impacts to storm drains. It is anticipated next annual survey (April 2018) will result in a wider distribution pattern among the social media platforms due to the advantages of using Survey Monkey in targeting audiences. The survey responses are included in the attachments section of this annual report.

Pollutant Load

Annual and seasonal pollutant load estimates have been calculated for pollutants identified in Section 7.4 of the City's AZPDES Permit. Total pollutant load estimates for all watershed basins within the Phoenix MS4 are presented in Part 11 of this report.

As included in the 2013 MS4 Permit renewal application, City GIS staff acquired County land-use spatial data and combined them with sub-watershed boundaries developed by the Flood Control District of Maricopa County (FCDMC 2013). These sub-watershed boundaries are very similar to the Watershed Boundary Dataset 10-digit Hydrologic Unit Code (HUC), with exceptions made for local flood control and other man-made diversions (for example, White Tanks A Basin). Clipping these data to the City permit boundaries produced a watershed-based land-use map that was used to define 12 new areas, now sub-watersheds, used in the pollutant load estimate. Data from reporting years 2012/13, 2013/14, 2014/15, and 2015/16 are presented for comparison to the reporting year 2016/17 pollutant load analysis.

Pollutant load analysis does not offer much insight to BMP effectiveness as there appears to be a direct correlation between pollutant loading and quantity of flow, not necessarily program implementation measures.

PART 6: STORMWATER MANAGEMENT PROGRAM MODIFICATIONS

In accordance with Section 5.5 of the permit, provide a description of modifications, if applicable, to the stormwater management program each year as follows:

1. **<u>Addition of New BMPs:</u> Summarize the development and implementation of any new stormwater management practices or pollution controls each year.**

   No BMPs were added during this reporting year.

2. **<u>Addition of Temporary BMPs</u>: Specify the occasions when these controls were initiated and terminated, and the perceived success of these temporary BMPs.**

   No temporary BMPs were added this reporting year.

3. **<u>Increase of Existing BMPs:</u> Summarize modifications to existing stormwater management practices that increase the number of activities, increase the frequency of activities, or other increases in the level of implementation.**

   No existing BMPs were increased during this reporting year.

4. **<u>Replacement of Existing BMPs</u>: Briefly summarize any replacements made with prior approval of ADEQ per section 5.5(4) of the permit.**

   No existing BMPs were replaced this reporting year.

<u>Programmatic Changes</u>

Environmental Services Division migrated to a new database application, which came online in April 2017. The transition included moving data from an access database to a proprietary system that was in use by other sections within the division. The project required months of testing functionality and process control to ensure that reports would provide necessary results to include in regulatory compliance reports, such as this annual report. Though the data has been migrated, and the new application is being utilized, work on the reports is ongoing.

Note: Modifications to reduce number of stormwater management practices or activities, frequencies, time frames, level of implementation, or any other program standard specified in Appendix A of the permit requires permit modification (refer to Section 5.6 of the permit).

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PART 7: MONITORING LOCATIONS

For the year one Annual Report**,** provide a brief description of each stormwater monitoring location (outfall), including the following information. For subsequent Annual Reports, advise if any of the information has changed or is updated.

No changes to the stormwater monitoring locations were made in reporting year 2016/17. However, new sampling equipment was installed at two locations (SR045 and SC046) in 2015/16, and the remaining five sites were outfitted with new equipment in this fiscal year. Although new equipment was implemented at IB008, an equipment failure occurred after the first summer rainfall, and persisted throughout the year. Although samples were collected, flow validation is based on an estimate due to sampling equipment malfunction. The sampling unit was repaired by the manufacturer in April and is ready for Summer 2017 sampling. No rain events occurred during June 2017.

The monitoring sites are described on the following pages. The information for each site corresponds to the requirements in Part 7 of Appendix B of the Permit. Latitude and longitude coordinates have been revised for some outfalls. Land-use data and catchment area information are approximate values based on a review of the available data and best engineering judgment. Maps of the drainage areas are included as an attachment to this report.

Note: Modifications to monitoring locations shall not be implemented without permit modification.

Name and Description of Receiving Water

Arizona Canal Diversion Channel (ACDC)

Outfall Identification Number

AC033

Address/Physical Location of the Site

Dunlap and 7th Avenue just south of Hatcher

Latitude/Longitude

33° 34' 8.016 "

-112° 4' 58.348"

Discharge Structure

60-inch box outlet

Size (acres) of Drainage Area

1084 acres

Land Uses

Industrial	0.5%
Commercial	9.9%
Open Land	17.9%
Institutional	4.2%
Residential	49.8%
Heavy Residential	2.1%
Pavement	13.1%
Miscellaneous	2.5%

Type of Monitoring Equipment

Automated composite sampler (Isco Environmental model 6712), an Isco rain gauge, and an Isco flow meter for depth and flow measurement. Installed solar panels to augment battery performance.

Name and Description of Receiving Water

Indian Bend Wash

Outfall Identification Number

IB008

Address/Physical Location of the Site

12499 North 40th Street

Latitude/Longitude

33° 35' 58.218 "

-111° 59' 44.292"

Discharge Structure

66-inch round inlet pipe (original) discharging to two 30-inch outlet pipes

48-inch round inlet pipe (new in 2005) discharging to one 48-inch outlet pipe

Size (acres) of Drainage Area

804.5 acres

Land Uses

Industrial	0.6%
Commercial	5.3%
Open Land	1.8%
Institutional	6.0%
Residential	63.0%
Heavy Residential	3.3%
Utilities	0.7%
Pavement	13.1%
Miscellaneous	6.2%

Type of Monitoring Equipment

Automated composite sampler (Isco Environmental model 6712), an Isco rain gauge, and an Isco flow meter for depth and flow measurement. Installed solar panels to augment battery performance.

Name and Description of Receiving Water

Salt River

Outfall Identification Number

SR003

Address/Physical Location of the Site

3501 West Elwood Street

Latitude/Longitude

33° 24' 43.025"

-112° 8' 5.004"

Discharge Structure

75-inch round pipe

Size (acres) of Drainage Area

1886 acres

Land Uses

Industrial	7.5%
Commercial	16.1%
Transportation	1.0%
Open Land	9.8%
Institutional	18.1%
Residential	26.1%
Heavy Residential	2.6%
Utilities	0.5%
Pavement	9.1%
Miscellaneous	9.3%

Type of Monitoring Equipment

Automated composite sampler (Isco Environmental model 6712), an Isco rain gauge, and an Isco flow meter for depth and flow measurement. Installed solar panels to augment battery performance.

Name and Description of Receiving Water

Salt River

Outfall Identification Number

SR030

Address/Physical Location of the Site

27th Avenue at the Salt River (south bank)

Latitude/Longitude

33° 24' 31.447"

-112° 06' 59.142"

Discharge Structure

108-inch round pipe

Size (acres) of Drainage Area

1620 acres

Land Uses

Industrial	9.58%
Commercial	22.33%
Open Land	21.72%
Institutional	2.03%
Residential	30.28%
Heavy Residential	0.24%
Pavement	6.33%
Miscellaneous	7.47%

Type of Monitoring Equipment

Automated composite sampler (Isco Environmental model 6712), an Isco rain gauge, and an Isco flow meter for depth and flow measurement. Installed solar panels to augment battery performance. Relocated sampler to upland location, out of flow path.

Name and Description of Receiving Water

Salt River

Outfall Identification Number

SR045

Address/Physical Location of the Site

2401 South 40th Street

Latitude/Longitude

33° 25' 34.082"

-111° 59' 44. 274"

Discharge Structure

54-inch round pipe

Size (acres) of Drainage Area

879.7 acres

Land Uses

Industrial	42.6%
Commercial	30.5%
Transportation	3.0%
Open Land	8.4%
Institutional	10.5%
Residential	0.2%
Heavy Residential	0.0%
Utilities	0.9%
Pavement	7.2%
Miscellaneous	7.2%

Type of Monitoring Equipment

Automated composite sampler (Isco Environmental model 6712), an Isco rain gauge, and an Isco flow meter for depth and flow measurement. Installed solar panels to augment battery performance.

Name and Description of Receiving Water

Salt River

Outfall Identification Number

SR049

Address/Physical Location of the Site

5400 South 67th Avenue

Latitude/Longitude

33° 24' 0.510"

-112° 12' 15.095"

Discharge Structure

96-inch round pipe

Size (acres) of Drainage Area

4761.9 acres

Land Uses

Industrial	24.3%
Commercial	11.1%
Transportation	0.6%
Open Land	20.8%
Institutional	3.2%
Residential	20.9%
Heavy Residential	1.0%
Utilities	0.6%
Pavement	6.4%
Miscellaneous	11.2%

Type of Monitoring Equipment

Automated composite sampler (Isco Environmental model 6712), an Isco rain gauge, and an Isco flow meter for depth and flow measurement. Installed solar panels to augment battery performance.

Name and Description of Receiving Water

Skunk Creek Wash (Tributary to New River)

Outfall Identification Number

SC046

Address/Physical Location of the Site

35206 North 27th Avenue

Latitude/Longitude

33° 48' 11.171"

-112° 7' 7.380"

Discharge Structure

Three 36-inch round pipes

Size (acres) of Drainage Area

46 acres

Land Uses

Industrial	0.0%
Commercial	0.0%
Transportation	0.0%
Open Land	2.8%
Residential	86.9%
Heavy Residential	0.0%
Pavement	10.4%

Type of Monitoring Equipment

Automated composite sampler (Isco Environmental model 6712), an Isco rain gauge, and an Isco flow meter for depth and flow measurement. Installed solar panels to augment battery performance.

PART 8: STORM EVENT RECORDS

For each outfall identified in Part 7.0, Table 1.0 of the permit, summarize all measurable storm events (greater than 0.1-inch rainfall) occurring in the drainage area of each outfall within the winter and summer wet seasons, respectively, until samples have been collected for the outfall. Include the date of each event, the amount of precipitation (inches) for each event, and whether a sample was collected, or if not collected, information on the conditions that prevented sampling. (Note: If unable to collect stormwater samples due to adverse climatic conditions, provide, in lieu of sampling data, a description of the conditions that prevented sampling. Adverse climatic conditions which may prevent the collection of samples include weather conditions that create dangerous conditions for personnel, such as local flooding, high winds, electrical storms, etc.).

In accordance with 40 CFR Part 122.21(g) (7), the City AZPDES Permit Section 7.3.1 defines a representative storm as rainfall in the amount of 0.2 inches or more. The section further directs that “Stormwater samples shall be collected from discharges resulting from a storm event producing 0.2 inches or more of rainfall and at least 72 hours after the previously measured storm event (greater than 0.1-inch rainfall).” The definition of a representative storm event was modified in the 2009 permit so that more stormwater monitoring data might be collected during the new 5-year permit term.

The U.S. Geological Survey (USGS) conducts outfall monitoring under an intergovernmental agreement with the City of Phoenix. There were representative storm events at five of the seven outfalls during the Summer wet season and at all seven outfalls during the Winter wet season. Rainfall totals and sample collection information by outfall are provided in Table 8-1 in this section.

Storm events during which stormwater samples were collected are discussed by season below:

Summer Wet Season Sampling Summary

July 29, 2016: Grab and composite samples were collected from SR003 and SR045.

August 5, 2016: Grab and composite samples were collected from IB008. This event resulted in damage to the sensor and affected velocity and volume data.

August 22 and 23, 2016: Grab and composite samples were collected from AC033 and SC046.

Inadequate rainfall and flow precluded sampling at SR030 and SR049. On August 2, there was a representative event recorded at SR049, yet, the sampler failed to collect sample.

Winter Wet Season Sampling Summary

November 3, 2016: Grab and composite samples were collected from SC046, AC033, SR003, SR045, and SR 049.

November 27, 2017: Grab and composite samples were collected from SR030.

December 21-22, 2016: Grab and composite samples were collected from IB008. However, velocity and volume data are approximated due to a malfunctioning sensor.

All reported data were validated by the USGS to ensure that the data quality objectives of the AZPDES program have been met. The data validation was reviewed by AECOM to determine whether the data and associated quality assurance and quality control (QAQC) information appear to be complete. Based on the QAQC presented, the analytical results appear to be generally usable for their intended purpose.

The following procedures were used in validating the data:

- Analytical methods used in the monitoring program were reviewed to assess the appropriateness of sample collection, transport methods, and holding times.
- Original laboratory reports and the corresponding chain of custody forms were reviewed to determine if quality assurance/quality control requirements were met. Evaluation criteria including holding times, duplicate results, field blank results, method blank results, matrix spike results, equipment calibration information, and sample collection and transport information (to the extent practical.)

Table 8-1
Storm Event Data for Reporting Year 2016/17

	Date	Outfall IB008	Rainfall inches	Outfall SR049	Rainfall inches	Outfall SR045	Rainfall inches	Outfall SR003	Rainfall inches	Outfall SR030	Rainfall inches	Outfall AC033	Rainfall inches	Outfall SC046	Rainfall inches
Summer 2016 (July 1 – October 31)	7/29	-	-	NR	0.08	SC	0.58	SC	0.39	NR	0.18			-	-
	8/2	-	-	EM	0.4	-	-	-	-	-	-	NR	0.16	EM	0.68
	8/5	SC	0.71	72-hr	0.59	-	-	-		-	-	72-hr	0.97	72-hr	0.57
	8/9	-	-	-	-	-	-	-	-	NR	0.15	-	-	-	-
	8/20	-	-	-	-	-	-	-	-	NR	0.10	-	-	-	-
	8/22	-		-	-	-	-	-		-	-	SC	0.29		
	8/23	-		-	-	-	-	-	-	-	-	-		SC	0.25
	9/22	-	-	NR	0.16	-	-	-	-	-	-	-	-	-	-
	10/2	-		NR	0.13	-		-		NR	0.12	-	-	-	

SC – Sample Collected; NR – Not Representative; 72-hr – Site on 72-hour Hold; EM – Equipment Malfunction

Table 8-1 continued
Storm Event Data for Reporting Year 2016/17

	Date	Outfall IB008	Rainfall inches	Outfall SR049	Rainfall inches	Outfall SR045	Rainfall inches	Outfall SR003	Rainfall inches	Outfall SR030	Rainfall inches	Outfall AC033	Rainfall inches	Outfall SC046	Rainfall inches
Winter 2016/17 (November 1 – May 31)	11/3	EM	NA	SC	0.30	SC	0.38	SC	0.31	EM	0.24	SC	0.28	SC	0.33
	11/21	NR	0.16	-	-	-	-	-	-	-	-	-	-	-	-
	11/27	EM	0.32	-	-	-	-	-	-	SC	0.22	-	-	-	-
	12/21-22	SC	0.44	-	-	-	-	-	-	-	-	-	-	-	-

SC – Sample Collected; NR – Not Representative; 72-hr – Site on 72-hour Hold; EM – Equipment Malfunction; NA – Not Available

PART 9: SUMMARY OF MONITORING DATA (BY LOCATION)

Use a separate table for each outfall monitoring location. Provide the outfall identification number, the receiving water designated uses, and the lowest surface water quality standards applicable to the receiving water. Enter the analytical results for the stormwater samples collected for each season of the reporting period for each year. Enter subsequent monitoring data for each location on the same form. Include, as an attachment, the laboratory reports for stormwater samples.

OUTFALL ID: IB008 **RECEIVING WATER: Indian Bend Wash** **DESIGNATED USES: PBC and A&We**	Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16		Summer 2016		Winter 2016/17	
SAMPLING DATE(S):	**SWQS**	**8/21/12**	**SWQS**	**12/14/12**	**SWQS**	**7/19/13**	**SWQS**	**11/22/13**	**SWQS**	**8/2/14**	**SWQS**	**12/4/14**	**SWQS**	**6/29/15**	**SWQS**	**1/04/16**	**SWQS**	**8/5/16**	**SWQS**	**12/22/16**
MONITORING PARAMETERS [1, 2]																				
Conventional Parameters																				
Flow [3] (cfs)	NS	8.73	NS	4.62	NS	1.223	NS	12.34	NS	9.4	NS	0.212	NS	5.341	NS	2.296	NS	19.830	NS	59.094
pH	6.5-9	7.72	6.5-9	7.75	6.5-9	7.18	6.5-9	8.38	6.5-9	7.46	6.5-9	7.49	6.5-9	7.3	6.5-9	7.51	6.5-9	7.14	6.5-9	6.83
Temperature (ºC)	Varies	29.0	Varies	16.5	Varies	31.0	Varies	15.5	Varies	30.5	Varies	17.0	Varies	29.0	Varies	14.1	Varies	25.0	Varies	16.5
Hardness (mg/L)	400	47	400	33.8	400	224	400	60.8	400	39.9	400	16.6	400	91.2	400	25.1	400	27.6	400	27.3
Total Dissolved Solids (TDS) (mg/L) [2]	NS	136	NS	110	NS	674	NS	182	NS	92	NS	56	NS	274	NS	60	NS	86	NS	60
Total Suspended Solids (TSS) (mg/L) [2]	NS	280	NS	180	NS	279	NS	192	NS	212	NS	71.0	NS	252	NS	76.0	NS	458	NS	55
Biochemical Oxygen Demand (BOD) (mg/L) [2]	NS	29	NS	24	NS	123	NS	41	NS	17	NS	7	NS	67	NS	10	NS	23	NS	7
Chemical Oxygen Demand (COD) (mg/L) [2]	NS	220	NS	140	NS	600	NS	250	NS	110	NS	<50	NS	300	NS	90	NS	190	NS	<50

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Inorganics																				
Cyanide, total (µg/L) [2]	84	<5.0	84	<5	84	<50	84	<5	84	<5	84	<5	84	<5	84	<5	84	<5	84	<5
Nutrients (mg/L) [2]																				
Nitrate + Nitrite as N	NS	1.1	NS	0.9	NS	6.9	NS	1.3	NS	1.4	NS	0.4	NS	2.1	NS	0.5	NS	1.1	NS	0.4
Ammonia as N	NS	1.2	NS	1.2	NS	3.7	NS	1.7	NS	1.7	NS	0.61	NS	2.7	NS	0.45	NS	1.5	NS	0.35

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Total Kjeldahl Nitrogen (TKN)	NS	6.6	NS	3.9	NS	15	NS	4.5	NS	3.1	NS	1.4	NS	7.7	NS	1.4	NS	4.7	NS	1.3
Total Phosphorus as P	NS	1.4	NS	0.70	NS	0.83	NS	0.64	NS	0.44	NS	0.35	NS	0.82	NS	0.44	NS	3.3	NS	0.24
Ortho-Phosphorus as P	NS	0.2	NS	0.2	NS	0.9	NS	0.3	NS	0.1	NS	0.1	NS	0.3	NS	0.1	NS	0.2	NS	0.1
Microbiological																				
Escherichia coli (*E. coli*) (CFU/100 mg or MPN/100 mL) [2]	575	**1,119.9**	575	**2,419.6**	575	**>2,419.6**	575	**>2,419.6**	575	**>2,419.6**	575	**>2,419.6**	575	**2,419.6**	575	**2,650.0**	575	**1,986.3**	575	**2,419.6**
Total Metals (µg/L) [2]																				
Antimony	747 T	2 T 1.3 D	747 T	1.5 T 0.7 D	747 T	3.7 T 1.9 D	747 T	1.7 T 0.8 D	747 T	1.5 T 1.1 D	747 T	1.2 T 0.4 D	747 T	2 T <5 D	747 T	1.4 T <5.0 D	747 T	2.3 T >5 D	747 T	0.69T <5 D
Arsenic	280 T 440 D	3.9 T 1.5 D	280 T 440 D	2.7 T 0.9 D	280 T 440 D	5.9 T 2.8 D	280 T 440 D	2.0 T 1.0 D	280 T 440 D	2.5 T 1.2 D	280 T 440 D	1.6 T 0.5 D	280 T 440 D	3.3 T <5 D	280 T 440 D	2.0 T <5.0 D	280 T 440 D	6.2 T <5 D	280 T 440 D	1.7 T <5 D
Barium	98,000 T	132 T 22 D	98,000 T	84 T 14 D	98,000 T	225 T 90 D	98,000 T	86 T 26 D	98,000 T	55 T 22 D	98,000 T	40 T 8 D	98,000 T	106 T 50 D	98,000 T	58 T 12 D	98,000 T	176 T 19 D	98,000 T	42 T 12 D
Beryllium	1,867 T	0.39 T <0.15 D	1,867 T	0.28 T <0.15 D	1,867 T	0.46 T <0.15 D	1,867 T	<0.15 T <0.06 D	1,867 T	0.15 T <0.06 D	1,867 T	0.12 T <0.06 D	1,867 T	0.22 T <5 D	1,867 T	0.10 T <5.0 D	1,867 T	0.53 T <5 D	1,867 T	<0.25 T <5 D
Cadmium	700 T 10.94 D	0.5 T <0.25 D	700 T 7.93 D	1.0 T 0.3 D	700 T 49.92 D	0.6 T <0.25 D	700 T 14.05 D	0.3 T <0.10 D	700 T 9.33 D	<0.30 T <0.12 D	700 T 3.67 D	<0.12 T <0.12 D	700 T 20.85 D	0.2 T <5 D	700 T 5.93 D	0.2 T <5.0	700 T 15.98 D	0.3 T <0.25 D	700 T 15.79 D	<0.25 T <0.25 D
Chromium	NS	11.6 T <2.0 D	NS	7.2 T <2.00 D	NS	20.1 T 3.3 D	NS	5.9 T 1.0 D	NS	5 T 1 D	NS	3.7 T 0.4 D	NS	6.8 T <5 D	NS	5.1 T <5.0 D	NS	17.2 T <5 D	NS	3.8 T <5 D
Copper	1,300 T 11.42 D	84.9 T **12.1 D**	1,300 T 8.37	40.3 T **11.8 D**	1,300 T 49.73 D	147 T **75.5 D**	1,300 T 14.55 D	51.2 T **20.8 D**	1,300 T 9.79 D	25.2 T **13.7 D**	1,300 T 4.28 D	16.0 T **5.8** D	1,300 T 21.32 D	62.5 T **40.6 D**	1,300 T 6.32 D	40.0 T **14.8 D**	1,300 T 2.98 D	61.3 T **12.8 D**	1,300 T 6.85 D	12 T 5.5 D
Lead	15 T 59.38 D	**42.5 T** 0.8 D	15 T 41.11D	12.9 T 0.5 D	15 T 323.97 D	**27.8 T** 2.4 D	15 T 78.97 D	11.0 T 0.5 D	15 T 49.48 D	7.3 T 0.7 D	15 T 18.45 D	7.6 T 0.3 D	15 T 123.27 D	10.4 T < 5 D	15 T 29.43 D	10.7 T <5.0 D	15 T 32.75 D	**24.3 T** 0.7 D	15 T 32.35 D	5.2 T <0.55 D
Mercury	280 T 5 D	0.05 T <0.040 D	280 T 5 D	<0.040 T <0.040 D	280 T 5 D	0.06 T 0.037 D	280 T 5 D	<0.020 T <0.020D	280 T 5 D	<0.092 T <0.2 D	280 T 5 D	<0.092 T <0.092 D	280 T 5 D	<0.2 T <0.2 D	280 T 5 D	<0.062 T <0.2 D	280 T 5 D	<0.068 T <0.068 D	280 T 5 D	<0.068 T <0.2D
Nickel	28,000 T 2,195 D	16.2 T 4.5 D	28,000 T 1,661 D	7.9 T 2.3 D	28,000 T 8,227 D	34.0 T 18.0 D	28,000 T 2,729.4 D	10.0 T 4.6 D	28,000 T 1,911 D	5.7 T 2.7 D	28,000 T 910.2 D	3.5 T 0.7 D	28,000 T 3,846 D	11.7 T 6.3 D	28,000 T 1,291 D	5.1 T <5.0 D	28,000 T 1,399 D	16.6 T <5 D	280,000 T 1,386 D	3.6 T <5 D
Selenium	33 T	0.63 T 0.7 D	33 T	0.65 T 0.6 D	33 T	1.5 T 1.3 D	33 T	<0.60 T 0.3 D	33 T	0.64 T 0.4 D	33 T	0.25 T 0.1 D	33 T	0.99 T <5 D	33 T	<0.40 T <5.0 D	33T	1.6 T <5 D	33T	0.51 T <5 D
Silver	4,667 T 0.88 D	0.3 T <0.15 D	4,667 T 0.496 D	<0.15 T <0.15 D	4,667 T 12.88 D	0.4 T <0.15 D	4,667 T 1.364 D	<0.15 T <0.15 D	4,667 T 0.667D	<0.20 T <0.20 D	4,667 T 0.146 D	<0.08 T <0.08 D	4,667 T 2.75 D	<0.25 T *<5 D*	4,667 T 0.30 D	<0.25 T *<5.0 D*	4,667 T 0.35 D	<0.45 T <5 D	4,667 T 0.34 D	<0.45 T *<5 D*
Thallium	75 T	<0.20 T&D	75 T	<0.20 T <0.20 D	75 T	<0.20 T <0.20 D	75 T	<0.20 T <0.08 D	75 T	0.12 T <0.04 D	75 T	0.07 T <0.04 D	75 T	0.4 T <5 D	75 T	<0.15 T <5.0 D	75 T	0.26 T <5 D	75 T	0.34 T <5 D
Zinc	280,000 T 587 D	336 T 25.6 D	280,000 T 443.8 D	148 T 16.2 D	280,000 T 2,202 D	362 T 109 D	280,000 T 729.8 D	211 T 61.6 D	280,000 T 510.9 D	77 T 19.2 D	280,000 T 242.8 D	63.3 T 8.4 D	280,000 T 1,029 D	209 T 70 D	280,000 T 345 D	141 T 12.0 D	280,000 T 374 D	261 T 15.4 D	280,000 T 370 D	42.5 T <8

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Organic Toxic Pollutants																				
Total Petroleum Hydrocarbons (TPH) (mg/L) [2]	NS	<10	NS	<10	NS	<11	NS	<11	NS	<10	NS	<12	NS	<11	NS	<5.7	NS	<5.6	NS	<4.5
Total Oil and Grease (mg/L) [2]	NS	<10	NS	5.3	NS	<5.6	NS	<5.7	NS	<5.0	NS	<6.0	NS	<5.6	NS	<5.7	NS	<5.6	NS	<4.5
VOCs, Semi-VOCs, & Pesticides (µg/L) [2]																				
Acrolein	467	<0.293	467	<0.20	467	<2.0	467	<0.20	467	<2.00	467	<0.40	467	<3.90	467	<0.78	467	<0.41	467	<0.41
Acrylonitrile	37,333	<0.226	37,333	<0.16	37,333	<1.6	37,333	<0.16	37,333	<0.70	37,333	<0.14	37,333	<2.65	37,333	<0.53	37,333	<0.42	37,333	<0.42
Benzene	3,733	<0.75	3,733	<0.75	3,733	<1.20	3,733	<0.24	3,733	<1.20	3,733	<0.13	3,733	<0.65	3,733	<0.46	3,733	<0.29	3,733	<0.29
Bromoform	18,667	<2.15	18,667	<2.15	18,667	<2.35	18,667	<0.47	18,667	<2.35	18,667	<0.28	18,667	<1.40	18,667	<0.68	18,667	<0.33	18,667	<0.33
Carbon tetrachloride	1,307	<1.65	1,307	<1.65	1,307	<1.30	1,307	<0.26	1,307	<1.30	1,307	<0.23	1,307	<1.15	1,307	<0.31	1,307	<0.20	1,307	<0.20
Chlorobenzene	18,667	<1.40	18,667	<1.40	18,667	<0.80	18,667	<0.16	18,667	<0.80	18,667	<0.13	18,667	<0.65	18,667	<0.50	18,667	<0.33	18,667	<0.33
Chlorodibromomethane	18,667	<1.30	18,667	<1.30	18,667	<0.90	18,667	<0.18	18,667	<0.90	18,667	<0.24	18,667	<1.20	18,667	<0.61	18,667	<0.32	18,667	<0.32
Chloroethane (ethyl chloride)	NS	<1.35	NS	<1.35	NS	<1.10	NS	<0.22	NS	<1.10	NS	<0.19	NS	<0.95	NS	<0.40	NS	<0.33	NS	<0.33
2-chloroethylvinyl ether	NS	<0.22	NS	<0.184	NS	<2.2	NS	<0.22	NS	<0.95	NS	<0.19	NS	<2.65	NS	<0.53	NS	<0.43	NS	<0.43
Chloroform	9,333	<1.05	9,333	<1.05	9,333	<1.15	9,333	<0.23	9,333	<1.15	9,333	<0.14	9,333	<0.70	9,333	<0.49	9,333	<0.32	9,333	<0.32
Dichlorobromomethane	18,667	<0.75	18,667	<0.75	18,667	<1.15	18,667	<0.23	18,667	<1.15	18,667	<0.15	18,667	<0.75	18,667	<0.49	18,667	<0.29	18,667	<0.29
1,1-dichloroethane	NS	<0.65	NS	<0.65	NS	<1.30	NS	<0.26	NS	<1.30	NS	<0.19	NS	<0.95	NS	<0.42	NS	<0.29	NS	<0.29
1,2-dichloroethane	186,667	<0.80	186,667	<0.80	186,667	<1.25	186,667	<0.25	186,667	<1.25	186,667	<0.11	186,667	<0.55	186,667	<0.51	186,667	<0.35	186,667	<0.35
1,1-dichloroethylene	46,667	<1.85	46,667	<1.85	46,667	<1.40	46,667	<0.28	46,667	<1.40	46,667	<0.27	46,667	<1.35	46,667	<0.34	46,667	<0.19	46,667	<0.19
1,2-dichloropropane	84,000	<0.75	84,000	<0.75	84,000	<1.25	84,000	<0.25	84,000	<1.25	84,000	<0.18	84,000	<0.90	84,000	<0.49	84,000	<0.32	84,000	<0.32
1,3-dichloropropylene[8]	28,000	cis<0.50 trans<0.75	28,000	cis<0.50 trans<0.75	28,000	cis <1.20 trans <1.10	28,000	cis <0.24 trans <0.22	28,000	cis <1.20 trans <1.10	28,000	cis <0.13 trans <0.13	28,000	cis <0.65 trans <0.65	28,000	cis <0.51 trans <0.50	28,000	<0.28	28,000	<0.28
Ethylbenzene	93,333	<1.45	93,333	<1.45	93,333	<0.65	93,333	<0.13	93,333	<0.65	93,333	<0.15	93,333	<0.75	93,333	<0.46	93,333	<0.29	93,333	<0.29
Methyl bromide	1,307	<0.95	1,307	<0.95	1,307	<0.95	1,307	<0.19	1,307	<0.95	1,307	<0.18	1,307	<0.90	1,307	<0.46	1,307	<0.28	1,307	<0.28
Methyl chloride	NS	<1.85	NS	<1.85	NS	<1.40	NS	<0.28	NS	<01.40	NS	<0.23	NS	<1.15	NS	<0.46	NS	<0.28	NS	<0.28
Methylene chloride	56,000	<1.40	56,000	1.8	56,000	<1.00	56,000	<0.20	56,000	<1.00	56,000	<0.20	56,000	<1.00	56,000	<0.81	56,000	<0.31	56,000	<0.31
1,1,2,2-tetrachloroethane	93,333	<2.45	93,333	<2.45	93,333	<2.00	93,333	<0.40	93,333	<2.00	93,333	<0.35	93,333	<1.75	93,333	<0.80	93,333	<0.33	93,333	<0.33
Tetrachloroethylene	9,333	<1.15	9,333	<1.15	9,333	<1.05	9,333	<0.21	9,333	<1.05	9,333	<0.13	9,333	<0.65	9,333	<0.35	9,333	<0.23	9,333	<0.23
Toluene	373,333	<0.60	373,333	<0.60	373,333	<0.95	373,333	<0.19	373,333	<0.95	373,333	<0.11	373,333	<0.55	373,333	<0.43	373,333	<0.28	373,333	<0.28
1,2-trans-dichloroethylene	18,667	<0.85	18,667	<0.85	18,667	<1.25	18,667	<0.25	18,667	<1.25	18,667	<0.18	18,667	<0.90	18,667	<0.38	18,667	<0.24	18,667	<0.24
1,1,1-trichloroethane	$1.867 \times 10^{+6}$	<1.15	$1.867 \times 10^{+6}$	<1.15	$1.867 \times 10^{+6}$	<1.00	$1.867 \times 10^{+6}$	<0.20	$1.867 \times 10^{+6}$	<1.00	$1.867 \times 10^{+6}$	<0.14	$1.867 \times 10^{+6}$	<0.70	$1.867 \times 10^{+6}$	<0.34	$1.867 \times 10^{+6}$	<0.23	$1.867 \times 10^{+6}$	<0.23
1,1,2-trichloroethane	3,733	<1.20	3,733	<1.20	3,733	<0.75	3,733	<0.15	3,733	<0.75	3,733	<0.13	3,733	<0.65	3,733	<0.60	3,733	<0.29	3,733	<0.29
Trichloroethylene	280	<1.20	280	<1.20	280	<0.75	280	<0.15	280	<0.75	280	<0.22	280	<1.10	280	<0.48	280	<0.28	280	0.28

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IB008	Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16		Summer 2016		Winter 2016/17	
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1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene	NS	<5.0 <5.0	NS	<5.0 <5.0	NS	<5.0 <5.0	NS	<1.0 <1.0	NS	<5.0 <5.0	NS	<1.0 <1.0	NS	<5.0 <5.0	NS	<1.0 <1.0	NS	<1.0 <1.0	NS	<1.0 <1.0
Vinyl chloride	2,800	<2.50	2,800	<2.50	2,800	<1.00	2,800	<0.20	2,800	<1.00	2,800	<0.22	2,800	<1.10	2,800	<0.35	2,800	<0.24	2,800	<0.24
Xylenes, Total	186,667	<2.90	186,667	<2.90	186,667	<1.50	186,667	<0.30	186,667	<1.50	186,667	<0.13	186,667	<0.65	186,667	<0.52	186,667	<0.32	186,667	<0.32
Acid Compounds (µg/L) [2]																				
2-chlorophenol	4,667	<57.0	4,667	<22.8	4,667	<214.5	4,667	<90.1	4,667	<29.6	4,667	<1.48	4,667	<3.13	4,667	<3.10	4,667	<2.92	4,667	<2.92
2,4-dichlorophenol	2,800	<61.0	2,800	<24.4	2,800	<211.0	2,800	<88.6	2,800	<33.0	2,800	<1.65	2,800	<2.84	2,800	<2.81	2,800	<3.21	2,800	<3.21
2,4-dimethylphenol	18,667	<73.0	18,667	<29.2	18,667	<114.0	18,667	<47.9	18,667	<44.0	18,667	<2.20	18,667	<2.67	18,667	<2.64	18,667	<1.32	18,667	<1.32
4,6-dinitro-o-cresol	3,733	<69.0	3,733	<27.6	3,733	<149.0	3,733	<62.6	3,733	<24.4	3,733	<1.22	3,733	<1.50	3,733	<1.49	3,733	<2.27	3,733	<2.27
2,4-dinitrophenol	1,867	<69.5	1,867	<27.8	1,867	<129.5	1,867	<54.4	1,867	<22.6	1,867	<1.13	1,867	<2.23	1,867	<2.21	1,867	<2.64	1,867	<2.64
2-nitrophenol	NS	<139.0	NS	<55.6	NS	<205.5	NS	<86.3	NS	<31.4	NS	<1.57	NS	<2.87	NS	<2.84	NS	<2.61	NS	<2.61
4-nitrophenol	NS	<408.0	NS	<163.2	NS	<233.5	NS	<98.1	NS	<22.8	NS	<1.14	NS	<3.01	NS	<2.98	NS	<2.03	NS	<2.03
p-chloro-m-cresol	48,000	<93.0	48,000	<37.2	48,000	<220.5	48,000	<92.6	48,000	<33.0	48,000	<1.65	48,000	<1.89	48,000	<1.87	48,000	<3.10	48,000	<3.10
Pentachlorophenol	75.855	*<103.5*	78.211	<41.4	44.084	*<168.0*	147.244	<70.6	58.434	<27.8	60.177	<1.39	46.695	<1.48	61.40	<1.47	61.40	<3.44	61.40	<3.44
Phenol	180,000	<59.5	180,000	<23.8	180,000	<177.5	180,000	<74.6	180,000	<26.8	180,000	<1.34	180,000	<2.32	180,000	<2.30	180,000	2.8	180,000	<1.84
2,4,6-trichlorophenol	130	*<140.0*	130	<56.0	130	*<239.5*	130	<100.6	130	<37.8	130	<1.89	130	<2.63	130	<2.60	130	<3.28	130	<3.28
Bases/Neutrals (µg/L) [2]																				
Acenaphthene	56,000	<85.0	56,000	<34.0	56,000	<67.0	56,000	<28.1	56,000	<20.6	56,000	<1.03	56,000	<0.35	56,000	<0.35	56,000	<1.02	56,000	<1.02
Acenaphthylene	NS	<63.5	NS	<25.4	NS	<86.5	NS	<36.3	NS	<20.0	NS	<1.00	NS	<1.24	NS	<1.23	NS	<6.10	NS	<6.10
Anthracene	280,000	<44.5	280,000	<17.8	280,000	<86.5	280,000	<36.3	280,000	<57.6	280,000	<2.88	280,000	<0.44	280,000	<0.44	280,000	<1.96	280,000	<1.96
Benzo(a)anthracene	0.2	*<78.5*	0.2	*<31.4*	0.2	*<86.5*	0.2	*<36.3*	0.2	*<21.6*	0.2	*<1.08*	0.2	*<0.38*	0.2	*<0.38*	0.2	*<1.57*	0.2	*<1.57*
Benzo(a)pyrene	0.2	*<96.5*	0.2	*<38.6*	0.2	*<93.5*	0.2	*<39.3*	0.2	*<75.4*	0.2	*<3.77*	0.2	*<1.42*	0.2	*<1.41*	0.2	*<3.12*	0.2	*<3.12*
Benzo(b)fluoranthene	NS	<169.5	NS	<67.8	NS	<121.5	NS	<51.0	NS	<29.2	NS	<1.46	NS	<1.07	NS	<1.06	NS	<1.28	NS	<1.28
Benzo(g,h,i)perylene	NS	<70.5	NS	<28.2	NS	<86.5	NS	<36.3	NS	<25.8	NS	<1.29	NS	<0.73	NS	<0.72	NS	<2.83	NS	<2.83
Benzo(k)fluoranthene	1.9	*<57.5*	1.9	*<23.0*	1.9	*<70.0*	1.9	*<29.4*	1.9	*<20.8*	1.9	<1.04	1.9	<0.35	1.9	<0.35	1.9	<1.76	1.9	<1.76
Chrysene	19	*<44.5*	19	<17.8	19	*<74.0*	19	*<31.1*	19	*<28.2*	19	<1.41	19	<0.46	19	<0.46	19	<1.08	19	<1.08
Dibenz(a,h)anthracene	1.9	*<202.5*	1.9	*<81.0*	1.9	*<99.0*	1.9	*<41.6*	1.9	*<24.8*	1.9	<1.24	1.9	<0.47	1.9	<0.47	1.9	<1.93	1.9	<1.93
1,2-dichlorobenzene	5,900	<108.5	5,900	<43.4	5,900	<13.5	5,900	<5.7	5,900	<35.2	5,900	<1.76	5,900	<1.05	5,900	<1.04	5,900	<0.58	5,900	<0.58
1,3-dichlorobenzene	NS	<121.0	NS	<48.4	NS	<56.5	NS	<23.7	NS	<34.8	NS	<1.74	NS	<0.47	NS	<0.47	NS	<0.52	NS	<0.52
1,4-dichlorobenzene	6,500	<106.5	6,500	<42.6	6,500	<52.5	6,500	<22.0	6,500	<31.2	6,500	<1.56	6,500	<1.29	6,500	<1.28	6,500	<0.50	6,500	<0.50
3,3-dichlorobenzidine	3	*<369.0*	3	*<147.6*	3	*<1363.5*	3	*<572.7*	3	*<121.2*	3	*<6.06*	3	*<11.72*	3	*<11.60*	3	*<23.45*	3	*<23.45*
Diethyl phthalate	746,667	<74.0	746,667	<29.6	746,667	<95.0	746,667	<39.9	746,667	<47.4	746,667	<2.37	746,667	<0.36	746,667	<0.36	746,667	<1.07	746,667	<1.07
Dimethyl phthalate	NS	<60.5	NS	<24.2	NS	<89.5	NS	<37.6	NS	<48.4	NS	<2.42	NS	<0.47	NS	<0.47	NS	<0.58	NS	<0.58
Di-n-butyl phthalate	1,100	<114.5	1,100	<45.8	1,100	<111.5	1,100	<46.8	1,100	<37.0	1,100	<1.85	1,100	<0.31	1,100	<0.31	1,100	<1.37	1,100	<1.37

NOTES:
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Italicized text indicated a laboratory detection limit higher that the WQS.

Footnotes
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2 Analytical results shall be reported in the units specified for each category or parameter.
3 Report the average flow rate for the sampling period (no more than 6 hours).
4 Standard for total PCBs of 11 µg/L A&We and 19 µg/L PBC.
5 The sample was lost during extraction at the laboratory due to the glassware breaking.
6 There were no representative storm events (>0.20 inches) that occurred or no representative events without a measurable rain event in the previous 72 hours.
7 A representative event occurred on 8/2; however, the sampler malfunctioned. Then next event was on 8/5 but due to the 72-hour rule, no sample was taken. Another measurable event on 9/22 did not result in a qualifying rain event. No samples were taken at this outfall during Summer 2016.
8 Prior to FY2016, the lab was reporting cis and trans for 1-3-dichloropropylene; this report year, an upgrade has resulted in providing the result as a total.
9 Data flagged due to contamination in the lab reagent blank; therefore, these are not true detections or exceedances.

IB008	Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16		Summer 2016		Winter 2016/17	
SAMPLING DATE(S):	**SWQS**	**8/21/12**	**SWQS**	**12/14/12**	**SWQS**	**7/19/13**	**SWQS**	**11/22/13**	**SWQS**	**8/2/14**	**SWQS**	**12/2/14**	**SWQS**	**6/29/15**	**SWQS**	**1/04/16**	**SWQS**	**8/5/16**	**SWQS**	**12/22/16**
2,4-dinitrotoluene	1,867	<65.5	1,867	<26.2	1,867	<102.5	1,867	<43.0	1,867	<42.4	1,867	<2.12	1,867	<0.26	1,867	<0.26	1,867	<1.30	1,867	<1.30
2,6-dinitrotoluene	3,733	<93.5	3,733	<37.4	3,733	<126.0	3,733	<52.9	3,733	<22.4	3,733	<1.12	3,733	<0.38	3,733	<0.38	3,733	<1.39	3,733	<1.39
Di-n-octyl phthalate	373,333	<206.5	373,333	<82.6	373,333	<144.0	373,333	<60.5	373,333	<22.0	373,333	<1.10	373,333	<1.29	373,333	<1.28	373,333	<1.67	373,333	<1.67
1,2-diphenylhydrazine (as azobenzene)	NS	<53.5	NS	<21.4	NS	<116.5	NS	<48.9	NS	<134.0	NS	<6.70	NS	<1.07	NS	<1.06	NS	<7.46	NS	<7.46
Fluoranthene	37,333	<33.5	37,333	<13.4	37,333	<89.5	37,333	<37.6	37,333	<27.0	37,333	<1.35	37,333	<0.27	37,333	<0.27	37,333	<1.06	37,333	<1.06
Fluorene	37,333	<84.0	37,333	<33.6	37,333	<77.0	37,333	<32.3	37,333	<96.2	37,333	<4.81	37,333	<0.29	37,333	<0.29	37,333	<0.51	37,333	<0.51
Hexachlorobenzene	747	<65.0	747	<26.0	747	<69.5	747	<29.2	747	<24.6	747	<1.23	747	<0.34	747	<0.34	747	<0.47	747	<0.47
Hexachlorobutadiene	187	<68.5	187	<27.4	187	<16.5	187	<6.9	187	<36.4	187	<1.82	187	<1.69	187	<1.67	187	<0.41	187	<0.41
Hexachlorocyclopentadiene	11,200	<66.0	11,200	<26.4	11,200	<113.5	11,200	<47.7	11,200	<24.6	11,200	<1.23	11,200	<1.55	11,200	<1.53	11,200	<2.16	11,200	<2.16
Hexachloroethane	850	<70.0	850	<28.0	850	<20.0	850	<8.4	850	<32.4	850	<1.62	850	<1.24	850	<1.23	850	<0.54	850	<0.54
Indeno(1,2,3-cd)pyrene	1.9	*<166.5*	1.9	*<66.6*	1.9	*<101.5*	1.9	*<42.6*	1.9	*<27.8*	1.9	<1.39	1.9	<0.63	1.9	<0.62	1.9	*<2.38*	1.9	*<2.38*
Isophorone	186,667	<95.0	186,667	<38.0	186,667	<70.5	186,667	<29.6	186,667	<42.8	186,667	<2.14	186,667	<0.37	186,667	<0.37	186,667	<0.51	186,667	<0.51
Naphthalene	18,667	<71.0	18,667	<28.4	18,667	<60.0	18,667	<25.2	18,667	<36.6	18,667	<1.83	18,667	<0.36	18,667	<0.36	18,667	<0.49	18,667	<0.49
Nitrobenzene	467	<65.5	467	<26.2	467	<61.5	467	<25.8	467	<42.0	467	<2.10	467	<1.27	467	<1.26	467	<0.44	467	<0.44
N-nitrosodimethylamine	0.03	*<82.0*	0.03	*<32.8*	0.03	*<60.0*	0.03	*<25.2*	0.03	*<20.0*	0.03	*<1.00*	0.03	*<1.14*	0.03	*<1.13*	0.03	*<0.54*	0.03	*<0.54*
N-nitrosodi-n-propylamine	88,667	<94.0	88,667	<37.6	88,667	<75.5	88,667	<31.7	88,667	<23.0	88,667	<1.15	88,667	<1.18	88,667	<1.17	88,667	<1.02	88,667	<1.02
N-nitrosodiphenylamine	290	<50.0	290	<20.0	290	<152.0	290	<63.8	290	<71.4	290	<3.57	290	<1.16	290	<1.15	290	<1.67	290	<1.67
Phenanthrene	NS	<38.0	NS	<15.2	NS	<81.5	NS	<34.2	NS	<27.8	NS	<1.39	NS	<0.31	NS	<0.31	NS	<0.49	NS	<0.49
Pyrene	28,000	<116.5	28,000	<46.6	28,000	<82.0	28,000	<34.4	28,000	<77.2	28,000	<3.86	28,000	<0.68	28,000	<0.67	28,000	<3.21	28,000	<3.21
1,2,4-trichlorobenzene	9,333	<133.0	9,333	<53.2	9,333	<16.0	9,333	<6.7	9,333	<33.8	9,333	<1.69	9,333	<1.05	9,333	<1.04	9,333	<0.55	9,333	<0.55
Pesticides (µg/L) [2]																				
Aldrin	4.5	<0.058	4.5	<0.046	4.5	<0.047	4.5	0.043	4.5	<0.027	4.5	<0.027	4.5	<0.012	4.5	0.078	4.5	<0.019	4.5	<0.019
Alpha-BHC	1,600	<0.044	1,600	<0.038	1,600	<0.039	1,600	<0.017	1,600	<0.021	1,600	<0.021	1,600	<0.058	1,600	<0.058	1,600	<0.010	1,600	<0.010
Beta-BHC	560	<0.048	560	<0.095	560	<0.098	560	<0.092	560	<0.072	560	<0.072	560	<0.063	560	<0.063	560	<0.049	560	<0.049
Gamma-BHC	11	<0.055	11	<0.033	11	<0.034	11	<0.023	11	<0.034	11	<0.034	11	<0.058	11	<0.058	11	<0.019	11	<0.019
Delta-BHC	1,600	<0.035	1,600	<0.032	1,600	<0.033	1,600	<0.018	1,600	<0.021	1,600	<0.021	1,600	<0.066	1,600	<0.066	1,600	<0.035	1,600	<0.035
Chlordane	3.2	<0.29	3.2	<0.16	3.2	<0.16	3.2	<0.020	3.2	<0.14	3.2	<0.14	3.2	<0.36	3.2	<0.36	3.2	<0.61	3.2	<0.61
4,4'-DDT	1.1	<0.052	1.1	<0.029	1.1	<0.030	1.1	<0.016	1.1	<0.025	1.1	<0.025	1.1	<0.017	1.1	<0.017	1.1	<0.011	1.1	<0.011
4,4'-DDE	1.1	<0.036	1.1	<0.034	1.1	<0.035	1.1	<0.018	1.1	<0.010	1.1	<0.010	1.1	<0.013	1.1	<0.013	1.1	<0.020	1.1	<0.020
4,4'-DDD	1.1	<0.031	1.1	<0.023	1.1	<0.024	1.1	<0.014	1.1	<0.031	1.1	<0.031	1.1	<0.021	1.1	<0.021	1.1	<0.021	1.1	<0.021
Dieldrin	4	<0.045	4	0.033	4	<0.029	4	<0.022	4	<0.030	4	<0.030	4	<0.060	4	<0.060	4	<0.019	4	<0.019
Alpha-endosulfan	3 T	<0.048	3 T	<0.034	3 T	0.090	3 T	<0.018	3 T	0.054	3 T	0.061	3 T	<0.072	3 T	<0.072	3 T	0.083	3 T	0.061
Beta-endosulfan	3 T	<0.054	3 T	<0.034	3 T	<0.035	3 T	<0.013	3 T	<0.032	3 T	<0.032	3 T	<0.019	3 T	<0.019	3 T	<0.021	3 T	<0.021

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Endosulfan sulfate	3	<0.030	3	<0,.025	3	<0.026	3	<0.014	3	<0.008	3	<0.008	3	<0.016	3	<0.016	3	<0.022	3	<0.022
Endrin	0.7	<0.036	0.7	<0.035	0.7	<0.036	0.7	<0.016	0.7	<0.017	0.7	<0.017	0.7	<0.023	0.7	<0.023	0.7	<0.042	0.7	<0.042
Endrin aldehyde	0.7	<0.014	0.7	<0.038	0.7	<0.039	0.7	<0.023	0.7	<0.032	0.7	<0.032	0.7	<0.026	0.7	<0.026	0.7	<0.024	0.7	<0.024
Heptachlor	0.9	<0.045	0.9	<0.035	0.9	<0.036	0.9	<0.018	0.9	<0.027	0.9	<0.027	0.9	<0.035	0.9	<0.035	0.9	<0.023	0.9	<0.023
Heptachlor epoxide	0.9	<0.045	0.9	<0.032	0.9	<0.033	0.9	<0.020	0.9	<0.008	0.9	<0.008	0.9	<0.062	0.9	<0.062	0.9	<0.020	0.9	<0.020
PCB-1242	[4]	<0.34	[4]	<0.41	[4]	<0.42	[4]	<0.55	[4]	<0.37	[4]	<0.37	[4]	<0.14	[4]	<0.14	[4]	<0.72	[4]	<0.72
PCB-1254	[4]	<0.34	[4]	<0.20	[4]	<0.21	[4]	<0.28	[4]	<0.23	[4]	<0.23	[4]	<0.20	[4]	<0.20	[4]	<0.22	[4]	<0.22
PCB-1221	[4]	<0.55	[4]	<0.68	[4]	<0.70	[4]	<0.85	[4]	<0.22	[4]	<0.22	[4]	<0.64	[4]	<0.64	[4]	<0.46	[4]	<0.46
PCB-1232	[4]	<0.77	[4]	<0.66	[4]	<0.68	[4]	<0.34	[4]	<0.55	[4]	<0.55	[4]	<0.37	[4]	<0.37	[4]	<0.90	[4]	<0.90
PCB-1248	[4]	<0.30	[4]	<0.78	[4]	<0.80	[4]	<0.27	[4]	<0.19	[4]	<0.19	[4]	<0.22	[4]	<0.22	[4]	<0.24	[4]	<0.24
PCB-1260	[4]	<0.34	[4]	<0.21	[4]	<0.22	[4]	<0.23	[4]	<0.32	[4]	<0.32	[4]	<0.59	[4]	<0.59	[4]	<0.26	[4]	<0.26
PCB-1016	[4]	<0.37	[4]	<0.36	[4]	<0.37	[4]	<0.33	[4]	<0.18	[4]	<0.18	[4]	<0.55	[4]	<0.55	[4]	<0.29	[4]	<0.29
Toxaphene	11	<0.79	11	<0.53	11	<0.55	11	<0.34	11	<0.22	11	<0.22	11	<0.60	11	<0.60	11	<0.48	11	<0.48

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OUTFALL ID: SC046

RECEIVING WATER: Skunk Creek Wash

DESIGNATED USES: A&We, PBC

	Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16		Summer 2016		Winter 2016/17	
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MONITORING PARAMETERS [1, 2]																				
Conventional Parameters																				
Flow [3] (cfs)	NS	2.081	NS	0.69	NS	0.996	NS	0.16	NS	0.245	NS	0.088	NS	4.852	NS	3.363	NS	6.367	NS	2.519
pH	6.5-9	7.4	6.5-9	7.60	6.5-9	8.00	6.5-9	8.01	6.5-9	7.06	6.5-9	7.26	6.5-9	7.51	6.5-9	6.87	6.5-9	6.96	6.5-9	7.54
Temperature (ºC)	Varies	30.0	Varies	14.5	Varies	27.5	Varies	14.5	Varies	28.5	Varies	16.0	Varies	20.5	Varies	19.2	Varies	25.5	Varies	19.5
Hardness (mg/L)	400	<16.6	400	18.2	400	23.7	400	17.4	400	176	400	24.6	400	23.8	400	43.0	400	29.6	400	35.3
Total Dissolved Solids (TDS) (mg/L) [2]	NS	180	NS	36	NS	88	NS	48	NS	534	NS	56	NS	118	NS	178	NS	50	NS	96
Total Suspended Solids (TSS) (mg/L) [2]	NS	204	NS	38.0	NS	291	NS	57.2	NS	72	NS	14.7	NS	2,490	NS	133	NS	77	NS	226
Biochemical Oxygen Demand (BOD) (mg/L) [2]	NS	56	NS	8	NS	21	NS	8	NS	167	NS	8	NS	15	NS	100	NS	16	NS	29
Chemical Oxygen Demand (COD) (mg/L) [2]	NS	280	NS	<50	NS	150	NS	<50	NS	620	NS	<50	NS	310	NS	300	NS	90	NS	190

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Inorganics																				
Cyanide, total (µg/L) [2]	84	<5	84	<5	84	<5	84	<5	84	<5	84	<5	84	<5	84	<5	84	<5	84	<5
Nutrients (mg/L) [2]																				
Nitrate + Nitrite as N	NS	1.0	NS	1.9	NS	1.2	NS	0.5	NS	<0.1	NS	0.6	NS	1.1	NS	0.7	NS	0.7	NS	0.8
Ammonia as N	NS	1.5	NS	0.32	NS	1.3	NS	0.30	NS	3.7	NS	0.29	NS	0.50	NS	1.2	NS	0.77	NS	0.96
Total Kjeldahl Nitrogen (TKN)	NS	5.1	NS	1.3	NS	3.1	NS	0.98	NS	17	NS	0.75	NS	5.6	NS	10	NS	1.8	NS	3.1
Total Phosphorus as P	NS	0.58	NS	0.32	NS	0.90	NS	0.26	NS	1.5	NS	0.19	NS	5.3	NS	0.86	NS	.34	NS	0.42
Ortho-Phosphorus as P	NS	0.6	NS	<0.1	NS	0.2	NS	0.1	NS	0.5	NS	<0.1	NS	0.2	NS	0.7	NS	0.2	NS	0.2
Microbiological																				
Escherichia coli (*E. coli*) (CFU/100 mg or MPN) [2]	575	**>2,419.6**	575	**>2,419.6**	575	61.6	575	**>2,419.6**	575	**>2,419.6**	575	**1,413.6**	575	**1,046.2**	575	**1,732.9**	575	27.5	575	**1,986.3**

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Total Metals (µg/L) [2]																				
Antimony	747 T	0.85 T 0.4 D	747 T	<0.25 T 0.2 D	747 T	0.71 T 0.3 D	747 T	0.27 T 0.2 D	747 T	2.8 T 1 D	747 T	0.24 T 0.2 D	747 T	0.38 T <5.0 D	747 T	0.70 T <5.0 D	747 T	0.3 T <5 D	747 T	1.1 T <5 D
Arsenic	280 T 440 D	4.0 T 1.5 D	280 T 440 D	0.95 T 0.6 D	280 T 440 D	3.2 T 0.8 D	280 T 440 D	<1.0 T 0.5 T	280 T 440 D	4.4 T 3.6 D	280 T 440 D	1.0 T 0.6 D	280 T 440 D	13.4 T <5.0 D	280 T 440 D	1.9 T <5.0 D	280 T 440 D	2.2 T <5 D	280 T 440 D	3.3 T <5 D
Barium	98,000 T	96 T 25 D	98,000 T	25 T 6 D	98,000 T	119 T 12 D	98,000 T	21 T 5 T	98,000 T	113 T 94 D	98,000 T	12 T 7 D	98,000 T	831 T 14 D	98,000 T	64 T 19 D	98,000 T	34 T 13 D	98,000 T	113 T 14 D
Beryllium	1,867 T	0.33 T <0.15 D	1,867 T	<0.15 T <0.06 D	1,867 T	0.36 T <0.06 D	1,867 T	<0.15 T <0.06 D	1,867 T	<0.15 T <0.06 D	1,867 T	<0.06 T <0.06 D	1,867 T	3.5 T <5.0 D	1,867 T	0.15 T <5.0 D	1,867 T	<0.25 T <5 D	1,867 T	0.33 T <5 D
Cadmium	700 T 3.97 D	<0.25 T <0.25 D	700 T 4.34 D	<0.25 T <0.10 D	700 T 5.61 D	<0.25 T <0.10 D	700 T 4.15 D	<0.25 T <0.10 D	700 T 39.50 D	<0.30 T <0.12 D	700 T 5.82 D	0.2 T <0.12 D	700 T 5.63 D	1.2 T <5.0 D	700 T 10.03 D	<0.15 T <5.0 D	700 T 17.24 D	<0.25 T <5 D	700 T 20.87 D	<0.25 T <0.25 D
Chromium	NS	8.9 T <2.00 D	NS	<2.00 T <0.80 D	NS	9.4 T <0.80 D	NS	<2.00 T <0.80 D	NS	3.2 T 1 D	NS	1.2 T <0.36 D	NS	36.4 T <5.0 D	NS	6.0 T <5.0 D	NS	2.6 T <5 D	NS	9.2 T <5 D
Copper	1,300 T 4.28 D	32.7 T **15.8 D**	1,300 T 4.67 D	9.3 T 2.9 D	1,300 T 5.99 D	35.7 T **7.1 D**	1,300 T 4.48 D	14.0 T **5.6 D**	1,300 T 39.62 D	33.3 T 24.1 D	1,300 T 6.20 D	6.6 T 5.2 D	1,300 T 6.01 D	88.5 T **8.9 D**	1,300 T 10.50 D	33.5 T **32.1 D**	1,300 T 7.39 D	11.3 T **21.3 D**	1,300 T 8.72 D	39.8 T **10 D**
Lead	15 T 18.45 D	7.7 T <0.45 D	15 T 20.47 D	2.3 T <0.18 D	15 T 27.59 D	9.4 T 0.2 D	15 T 19.45 D	1.8 T <0.18 D	15 T 250.76 D	4.1 T 1.7 D	15 T 27.77 D	0.7 T 0.1 D	15 T 27.72 D	**140 T** <5.0 D	15 T 53.78 D	14.1 T <5.0 D	15 T 35.42 D	3.1 T <5 D	15 T 43.15 D	11 T <0.55 D
Mercury	280 T 5 D	0.05 T <0.040 D	280 T 5 D	<0.040 T&D	280 T 5 D	0.09 T 0.047 D	280 T 5 D	<0.020 T <0.020 D	280 T 5 D	<0.092 T <0.2 D	280 T 5 D	<0.092 T <0.092 D	280 T 5 D	0.12 T <0.2 D	280 T 5 D	<0.062 T <0.2 D	280 T 5 D	<0.068 T <0.2 D	280 T 5 D	<0.068 T <0.2 D
Nickel	28,000 T 910 D	12.2 T 4.3 D	28,000 T 984 D	1.9 T 0.6 D	28,000 T 1,229.8 D	11.3 T 1.4 D	28,000 T 947.4 D	2.0 T 0.7 D	28,000 T 6,708 D	7.5 T 6.1 D	28,000 T 1,269.4 D	1.2 T 0.7 D	28,000 T 1,234.2 D	42.9 T <5.0 D	28,000 T 2,036 D	6.4 T <5.0 D	28,000 T 14.85 D	3.1 T <5 D	280,000 T 1723 D	10.8 T <5 D
Selenium	33 T	<0.60 T <0.60 D	33 T	<0.60 T <0.24 D	33 T	<0.60 T 0.3 D	33 T	<0.60 T <0.24 D	33 T	1 T 0.7 D	33 T	0.19 T 0.1 D	33 T	2.2 T <5.0 D	33 T	0.45 T <5.0 D	33T	2.5 T <5 D	33T	<0.4 T <5 D
Silver	4,667 T 0.15 D	<0.15 T <0.15 D	4,667 T 0.17 D	<0.15 T <0.15 D	4,667 T 0.274 D	<0.15 T <0.15 D	4,667 T 0.158 D	<0.15 T <0.15 D	4,667 T 8.51 D	<0.20 T <0.20 D	4,667 T 0.292 D	0.2 T <0.08 D	4,667 T 0.28 D	0.4 T *<5.0 D*	4,667 T 0.75 D	<0.25 T *<5.0 D*	4,667 T 0.40 D	<0.45 T *<5 D*	4,667 T 0.54 D	<0.45 T *<5 D*
Thallium	75 T	0.52 T <0.20 D	75 T	<0.20 T <0.08 D	75 T	<0.20 T <0.08 D	75 T	<0.20 T <0.08 D	75 T	<0.10 T <0.04 D	75 T	<0.04 T <0.04 D	75 T	0.46 T <5.0 D	75 T	0.19 T <5.0 D	75 T	<0.2 T <5 D	75 T	<0.2 T <5 D
Zinc	280,000 T 243 D	151 T 59.0 D	280,000 T 262 D	52.8 T 14.1 D	280,000 T 328.4 D	193 T 31.7 D	280,000 T 252.8 D	50.1 T 17.1 D	280,000 T 1,795 D	174 T 128 D	280,000 T 339.2 D	30.5 T 17.6 D	280,000 T 329.6 D	566 T 7.3 D	280,000 T 544 D	178 T 93.6 D	280,000 T 396.4 D	73.5 T <50 D	280,000 T 460.2 D	176 T 33.8 D
Organic Toxic Pollutants																				
Total Petroleum Hydrocarbons (TPH) (mg/L) [2]	NS	<10	NS	<10	NS	<11	NS	<11	NS	<10	NS	<10	NS	<5.4	NS	<5.9	NS	<5.7	NS	<4.5
Total Oil and Grease (mg/L) [2]	NS	<5	NS	<5.0	NS	<5.4	NS	<5.7	NS	<5.0	NS	<5.0	NS	<5.4	NS	<5.9	NS	<5.7	NS	<4.5
VOCs, Semi-VOCs, & Pesticides (µg/L) [2]																				
Acrolein	467	<0.293	467	<0.293	467	<0.20	467	<0.20	467	<2.00	467	<0.40	467	<0.78	467	<0.41	467	<0.41	467	<0.41
Acrylonitrile	37,333	<0.226	37,333	<0.226	37,333	<0.16	37,333	<0.16	37,333	<0.70	37,333	<0.14	37,333	<0.53	37,333	<0.42	37,333	<0.42	37,333	<0.42
Benzene	3,733	<1.5	3,733	<0.15	3,733	<1.20	3,733	<0.24	3,733	<1.20	3,733	<0.13	3,733	<2.30	3,733	<2.30	3,733	<0.29	3,733	<0.29
Bromoform	18,667	<4.3	18,667	<0.43	18,667	<2.35	18,667	<0.47	18,667	<2.35	18,667	<0.28	18,667	<3.40	18,667	<3.40	18,667	<0.33	18,667	<0.33
Carbon tetrachloride	1,307	<3.3	1,307	<0.33	1,307	<1.30	1,307	<0.26	1,307	<1.30	1,307	<0.23	1,307	<1.55	1,307	<1.55	1,307	<0.20	1,307	<0.20

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Chlorobenzene	18,667	<2.8	18,667	<0.28	18,667	<0.80	18,667	<0.16	18,667	<0.80	18,667	<0.13	18,667	<2.50	18,667	<2.50	18,667	<0.33	18,667	<0.33
Chlorodibromomethane	18,667	<2.6	18,667	<0.26	18,667	<0.90	18,667	<0.18	18,667	<0.90	18,667	<0.24	18,667	<3.05	18,667	<3.05	18,667	<0.32	18,667	<0.32
Chloroethane (ethyl chloride)	NS	<2.7	NS	<0.27	NS	<1.10	NS	<0.22	NS	<1.10	NS	<0.19	NS	<2.00	NS	<2.00	NS	<0.33	NS	<0.33
2-chloroethylvinyl ether	NS	<0.22	NS	<0.22	NS	<0.22	NS	<0.22	NS	<0.95	NS	<0.19	NS	<0.53	NS	<0.43	NS	<0.43	NS	<0.43
Chloroform	9,333	<2.1	9,333	<0.21	9,333	<1.15	9,333	<0.23	9,333	<1.15	9,333	<0.14	9,333	<2.45	9,333	<2.45	9,333	<0.32	9,333	<0.32
Dichlorobromomethane	18,667	<1.5	18,667	<0.15	18,667	<1.15	18,667	<0.23	18,667	<1.15	18,667	<0.15	18,667	<2.45	18,667	<2.45	18,667	<0.29	18,667	<0.29
1,1-dichloroethane	NS	<1.3	NS	<0.13	NS	<1.30	NS	<0.26	NS	<1.30	NS	<0.19	NS	<2.10	NS	<2.10	NS	<0.29	NS	<0.29
1,2-dichloroethane	186,667	<1.6	186,667	<0.16	186,667	<1.25	186,667	<0.25	186,667	<1.25	186,667	<0.11	186,667	<2.55	186,667	<2.55	186,667	<0.35	186,667	<0.35
1,1-dichloroethylene	46,667	<3.7	46,667	<0.37	46,667	<1.40	46,667	<0.28	46,667	<1.40	46,667	<0.27	46,667	<1.70	46,667	<1.70	46,667	<0.19	46,667	<0.19
1,2-dichloropropane	84,000	<1.5	84,000	<0.15	84,000	<1.25	84,000	<0.25	84,000	<1.25	84,000	<0.18	84,000	<2.45	84,000	<2.45	84,000	<0.32	84,000	<0.32
1,3-dichloropropylene[8]	28,000	<1.0	28,000	<0.10	28,000	<1.20	28,000	<0.24	28,000	<1.20	28,000	<0.13	28,000	cis <2.55 trans <2.50	28,000	cis <2.55 trans <2.50	28,000	<0.28	28,000	<0.28
Ethylbenzene	93,333	<2.9	93,333	<0.29	93,333	<0.65	93,333	<0.13	93,333	<0.65	93,333	<0.15	93,333	<2.30	93,333	<2.30	93,333	<0.29	93,333	<0.29
Methyl bromide	1,307	<1.9	1,307	<0.19	1,307	<0.95	1,307	<0.19	1,307	<0.95	1,307	<0.18	1,307	<2.30	1,307	<2.30	1,307	<0.28	1,307	<0.28
Methyl chloride	NS	<3.7	NS	<0.37	NS	<1.40	NS	<0.28	NS	<1.40	NS	<0.23	NS	<2.30	NS	<2.30	NS	<0.28	NS	<0.28
Methylene chloride	56,000	<2.8	56,000	<0.28	56,000	<1.00	56,000	<0.20	56,000	<1.00	56,000	<0.20	56,000	<4.05	56,000	<4.05	56,000	<0.31	56,000	<0.31
1,1,2,2-tetrachloroethane	93,333	<4.9	93,333	<0.49	93,333	<2.00	93,333	<0.40	93,333	<2.00	93,333	<0.35	93,333	<4.00	93,333	<4.00	93,333	<0.33	93,333	<0.33
Tetrachloroethylene	9,333	<2.3	9,333	<0.23	9,333	<1.05	9,333	<0.21	9,333	<1.05	9,333	<0.13	9,333	<1.75	9,333	<1.75	9,333	<0.23	9,333	<0.23
Toluene	373,333	<1.2	373,333	<0.12	373,333	<0.95	373,333	<0.19	373,333	<0.95	373,333	<0.11	373,333	<2.15	373,333	<2.15	373,333	<0.28	373,333	<0.28
1,2-trans-dichloroethylene	18,667	<1.7	18,667	<0.17	18,667	<1.25	18,667	<0.25	18,667	<1.25	18,667	<0.18	18,667	<1.90	18,667	<1.90	18,667	<0.24	18,667	<0.24
1,1,1-trichloroethane	1.867x 10^{+6}	<2.3	1.867x 10^{+6}	<0.23	1.867x 10^{+6}	<1.00	1.867x 10^{+6}	<0.20	1.867x 10^{+6}	<1.00	1.867x 10^{+6}	<0.14	1.867x 10^{+6}	<1.70	1.867x 10^{+6}	<1.70	1.867x 10^{+6}	<0.23	1.867x 10^{+6}	<0.23
1,1,2-trichloroethane	3,733	<2.4	3,733	<0.24	3,733	<0.75	3,733	<0.15	3,733	<0.75	3,733	<0.13	3,733	<3.00	3,733	<3.00	3,733	<0.29	3,733	<0.29
Trichloroethylene	280	<2.4	280	<0.24	280	<0.75	280	<0.15	280	<0.75	280	<0.22	280	<2.40	280	<2.40	280	<0.28	280	<0.28
1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene	NS	<10 <10	NS	<1.0 <1.0	NS	<5.0 <5.0	NS	<1.0 <1.0	NS	<5.0 <5.0	NS	<1.0 <1.0	NS	<5.0 <5.0	NS	<5.0 <5.0	NS	<1.0 <1.0	NS	<1.0 <1.0
Vinyl chloride	2,800	<5.0	2,800	<0.50	2,800	<1.00	2,800	<0.20	2,800	<1.00	2,800	<0.22	2,800	<1.75	2,800	<1.75	2,800	<0.24	2,800	<0.24
Xylenes, Total	186,667	<5.8	186,667	<0.58	186,667	<1.50	186,667	<0.30	186,667	<1.50	186,667	<0.13	186,667	<2.60	186,667	<2.60	186,667	<0.32	186,667	<0.32
Acid Compounds (µg/L) [2]																				
2-chlorophenol	4,667	<25.1	4,667	<1.14	4,667	<85.8	4,667	<42.9	4,667	<14.8	4,667	<1.48	4,667	<3.10	4,667	<3.26	4,667	<2.92	4,667	<2.92
2,4-dichlorophenol	2,800	<26.8	2,800	<1.22	2,800	<84.4	2,800	<42.2	2,800	<16.5	2,800	<1.65	2,800	<2.81	2,800	<2.95	2,800	<3.21	2,800	<3.21
2,4-dimethylphenol	18,667	<32.1	18,667	<1.46	18,667	<45.6	18,667	<22.8	18,667	<22.0	18,667	<2.20	18,667	<2.64	18,667	<2.77	18,667	<1.32	18,667	<1.32
4,6-dinitro-o-cresol	3,733	<30.4	3,733	<1.38	3,733	<59.6	3,733	<29.8	3,733	<12.2	3,733	<1.22	3,733	<1.49	3,733	<1.56	3,733	<2.27	3,733	<2.27
2,4-dinitrophenol	1,867	<30.6	1,867	<1.39	1,867	<51.8	1,867	<25.9	1,867	<11.3	1,867	<1.13	1,867	<2.21	1,867	<2.32	1,867	<2.64	1,867	<2.64
2-nitrophenol	NS	<61.2	NS	<2.78	NS	<82.2	NS	<41.1	NS	<15.7	NS	<1.57	NS	<2.84	NS	<2.98	NS	<2.61	NS	<2.61
4-nitrophenol	NS	<179.5	NS	<8.16	NS	<93.4	NS	<46.7	NS	<11.4	NS	<1.14	NS	<2.98	NS	<3.13	NS	<2.03	NS	<2.03
p-chloro-m-cresol	48,000	<40.9	48,000	<1.86	48,000	<88.2	48,000	<44.1	48,000	<16.5	48,000	<1.65	48,000	<1.87	48,000	<1.96	48,000	<3.10	48,000	<3.10

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SC046	Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16		Summer 2016		Winter 2016/17	
SAMPLING DATE(S):	**SWQS**	**7/21/12**	**SWQS**	**1/26/13**	**SWQS**	**8/24/13**	**SWQS**	**11/22/13**	**SWQS**	**8/2/14**	**SWQS**	**12/4/14**	**SWQS**	**10/6/15**	**SWQS**	**4/8/16**	**SWQS**	**8/23/16**	**SWQS**	**11/3/16**
Pentachlorophenol	54.95	<45.5	67.18	<2.07	100.424	<67.2	101.486	<33.6	39.092	<13.9	47.794	<1.39	61.40	<1.47	32.29	<1.54	35.31	<3.44	63.25	<3.44
Phenol	180,000	<26.2	180,000	<1.19	180,000	<71.0	180,000	<35.5	180,000	<13.4	180,000	<1.34	180,000	<2.30	180,000	<2.42	180,000	<1.84	180,000	<1.84
2,4,6-trichlorophenol	130	<61.6	130	<2.80	130	<95.8	130	<47.9	130	<18.9	130	<1.89	130	<2.60	130	<2.73	130	<3.28	130	<3.28
Bases/Neutrals (µg/L) [2]																				
Acenaphthene	56,000	<37.4	56,000	<1.70	56,000	<26.8	56,000	<13.4	56,000	<10.3	56,000	<1.03	56,000	<0.35	56,000	<0.37	56,000	<1.02	56,000	<1.02
Acenaphthylene	NS	<27.9	NS	<1.27	NS	<34.6	NS	<17.3	NS	<10.0	NS	<1.00	NS	<1.23	NS	<1.29	NS	<6.10	NS	<6.10
Anthracene	280,000	<19.6	280,000	<0.89	280,000	<34.6	280,000	<17.3	280,000	<28.8	280,000	<2.88	280,000	<0.44	280,000	<0.46	280,000	<1.96	280,000	<1.96
Benz(a)anthracene	0.2	*<34.5*	0.2	*<1.57*	0.2	*<34.6*	0.2	*<17.3*	0.2	*<10.8*	0.2	*<1.08*	0.2	*<0.38*	0.2	*<0.40*	0.2	*<1.57*	0.2	*<1.57*
Benzo(a)pyrene	0.2	*<42.5*	0.2	*<1.93*	0.2	*<37.4*	0.2	*<18.7*	0.2	*<37.7*	0.2	*<3.77*	0.2	*<1.41*	0.2	*<1.48*	0.2	*<3.12*	0.2	*<3.12*
Benzo(b)fluoranthene	NS	<74.6	NS	<3.39	NS	<48.6	NS	<24.3	NS	<14.6	NS	<1.46	NS	<1.06	NS	<1.11	NS	<1.28	NS	<1.28
Benzo(g,h,i)perylene	NS	<31.0	NS	<1.41	NS	<34.6	NS	<17.3	NS	<12.9	NS	<1.29	NS	<0.72	NS	<0.76	NS	<2.83	NS	<2.83
Benzo(k)fluoranthene	1.9	*<25.3*	1.9	<1.15	1.9	*<28.0*	1.9	*<14.0*	1.9	*<10.4*	1.9	<1.04	1.9	<0.35	1.9	<0.37	1.9	<1.76	1.9	<1.76
Chrysene	19	*<19.6*	19	<0.89	19	*<29.6*	19	<14.8	19	<14.1	19	<1.41	19	<0.46	19	<0.48	19	<1.08	19	<1.08
Dibenz(a,h)anthracene	1.9	*<89.1*	1.9	*<4.05*	1.9	*<39.6*	1.9	*<19.8*	1.9	*<12.4*	1.9	<1.24	1.9	<0.47	1.9	<0.49	1.9	<1.93	1.9	<1.93
1,2-dichlorobenzene	5,900	<47.7	5,900	<2.17	5,900	<5.4	5,900	<2.7	5,900	<17.6	5,900	<1.76	5,900	<1.04	5,900	<1.09	5,900	<0.58	5,900	<0.58
1,3-dichlorobenzene	NS	<53.2	NS	<2.42	NS	<22.6	NS	<11.3	NS	<17.4	NS	<1.74	NS	<0.47	NS	<0.49	NS	<0.52	NS	<0.52
1,4-dichlorobenzene	6,500	<46.9	6,500	<2.13	6,500	<21.0	6,500	<10.5	6,500	<15.6	6,500	<1.56	6,500	<1.28	6,500	<1.34	6,500	<0.50	6,500	<0.50
3,3-dichlorobenzidine	3	*<162.4*	3	*<7.38*	3	*<545.4*	3	*<272.7*	3	*<60.6*	3	*<6.06*	3	*<11.60*	3	*<12.18*	3	*<23.45*	3	*<23.45*
Diethyl phthalate	746,667	<32.6	746,667	<1.48	746,667	<38.0	746,667	<19.0	746,667	<23.7	746,667	<2.37	746,667	<0.36	746,667	<0.38	746,667	<1.07	746,667	<1.07
Dimethyl phthalate	NS	<26.6	NS	<1.21	NS	<35.8	NS	<17.9	NS	<24.2	NS	<2.42	NS	<0.47	NS	<0.49	NS	<0.58	NS	<0.58
Di-n-butyl phthalate	1,100	<50.4	1,100	<2.29	1,100	<44.6	1,100	<22.3	1,100	<18.5	1,100	<1.85	1,100	<0.31	1,100	<0.33	1,100	<1.37	1,100	<1.37
2,4-dinitrotoluene	1,867	<28.8	1,867	<1.31	1,867	<41.0	1,867	<20.5	1,867	<21.2	1,867	<2.12	1,867	<0.26	1,867	<0.27	1,867	<1.30	1,867	<1.30
2,6-dinitrotoluene	3,733	<41.1	3,733	<1.87	3,733	<50.4	3,733	<25.2	3,733	<11.2	3,733	<1.12	3,733	<0.38	3,733	<0.40	3,733	<1.39	3,733	<1.39
Di-n-octyl phthalate	373,333	<90.9	373,333	<4.13	373,333	<57.6	373,333	<28.8	373,333	<11.0	373,333	<1.10	373,333	<1.28	373,333	<1.34	373,333	<1.67	373,333	<1.67
1,2-diphenylhydrazine (as azobenzene)	NS	<23.5	NS	<1.07	NS	<46.6	NS	<23.3	NS	<67.0	NS	<6.70	NS	<1.06	NS	<1.11	NS	<7.46	NS	<7.46
Fluoranthene	37,333	<14.7	37,333	<0.67	37,333	<35.8	37,333	<17.9	37,333	<13.5	37,333	<1.35	37,333	<0.27	37,333	<0.28	37,333	<1.06	37,333	<1.06
Fluorene	37,333	<37.0	37,333	<1.68	37,333	<30.8	37,333	<15.4	37,333	<48.1	37,333	<4.81	37,333	<0.29	37,333	<0.30	37,333	<0.51	37,333	<0.51
Hexachlorobenzene	747	<28.6	747	<1.30	747	<27.8	747	<13.9	747	<12.3	747	<1.23	747	<0.34	747	<0.36	747	<0.47	747	<0.47
Hexachlorobutadiene	187	<30.1	187	<1.37	187	<6.6	187	<3.3	187	<18.2	187	<1.82	187	<1.67	187	<1.75	187	<0.41	187	<0.41
Hexachlorocyclopentadiene	11,200	<29.0	11,200	<1.32	11,200	<45.4	11,200	<22.7	11,200	<12.3	11,200	<1.23	11,200	<1.53	11,200	<1.61	11,200	<2.16	11,200	<2.16
Hexachloroethane	850	<30.8	850	<1.40	850	<8.0	850	<4.0	850	<16.2	850	<1.62	850	<1.23	850	<1.29	850	<0.54	850	<0.54
Indeno(1,2,3-cd)pyrene	1.9	*<73.3*	1.9	*<3.33*	1.9	*<40.6*	1.9	*<20.3*	1.9	*<13.9*	1.9	<1.39	1.9	<0.62	1.9	<0.65	1.9	<2.38	1.9	<2.38
Isophorone	186,667	<41.8	186,667	<1.90	186,667	<28.2	186,667	<14.1	186,667	<21.4	186,667	<2.14	186,667	<0.37	186,667	<0.39	186,667	<0.51	186,667	<0.51
Naphthalene	18,667	<31.2	18,667	<1.42	18,667	<24.0	18,667	<12.0	18,667	<18.3	18,667	<1.83	18,667	<0.36	18,667	<0.38	18,667	<0.49	18,667	<0.49
Nitrobenzene	467	<28.8	467	<1.31	467	<24.6	467	<12.3	467	<21.0	467	<2.10	467	<1.26	467	<1.32	467	<0.44	467	<0.44
N-nitrosodimethylamine	0.03	*<36.1*	0.03	*<1.64*	0.03	*<24.0*	0.03	*<12.0*	0.03	*<10.0*	0.03	*<1.00*	0.03	*<1.13*	0.03	*<1.19*	0.03	*<0.54*	0.03	*<0.54*

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N-nitrosodi-n-propylamine	88,667	<41.4	88,667	<1.88	88,667	<30.2	88,667	<15.1	88,667	<11.5	88,667	<1.15	88,667	<1.17	88,667	<1.23	88,667	<1.02	88,667	<1.02
N-nitrosodiphenylamine	290	<22.0	290	<1.00	290	<60.8	290	<30.4	290	<35.7	290	<3.57	290	<1.15	290	<1.21	290	<1.67	290	<1.67
Phenanthrene	NS	<16.7	NS	<0.76	NS	<32.6	NS	<16.3	NS	<13.9	NS	<1.39	NS	<0.31	NS	<0.33	NS	<0.49	NS	<0.49
Pyrene	28,000	<51.3	28,000	<2.33	28,000	<32.8	28,000	<16.4	28,000	<38.6	28,000	<3.86	28,000	<0.67	28,000	<0.70	28,000	<3.21	28,000	<3.21
1,2,4-trichlorobenzene	9,333	<58.5	9,333	<2.66	9,333	<6.4	9,333	<3.2	9,333	<16.9	9,333	<1.69	9,333	<1.04	9,333	<1.09	9,333	<0.55	9,333	<0.55
Pesticides (µg/L) [2]																				
Aldrin	4.5	<0.058	4.5	<0.046	4.5	<0.046	4.5	<0.015	4.5	<0.027	4.5	<0.027	4.5	0.060	4.5	<0.012	4.5	<0.019	4.5	<0.019
Alpha-BHC	1,600	<0.044	1,600	<0.038	1,600	<0.038	1,600	<0.016	1,600	<0.021	1,600	<0.021	1,600	<0.058	1,600	<0.058	1,600	<0.010	1,600	<0.010
Beta-BHC	560	<0.048	560	<0.095	560	<0.095	560	<0.090	560	<0.072	560	<0.072	560	<0.063	560	<0.063	560	<0.049	560	<0.049
Gamma-BHC	11	<0.055	11	<0.033	11	<0.033	11	<0.022	11	<0.034	11	<0.034	11	<0.058	11	<0.058	11	<0.019	11	<0.019
Delta-BHC	1,600	<0.035	1,600	<0.032	1,600	<0.032	1,600	0.041	1,600	<0.021	1,600	<0.021	1,600	<0.066	1,600	<0.066	1,600	<0.035	1,600	<0.035
Chlordane	3.2	<0.29	3.2	<0.16	3.2	<0.16	3.2	<0.19	3.2	<0.14	3.2	<0.14	3.2	<0.36	3.2	<0.36	3.2	<0.61	3.2	<0.61
4,4'-DDT	1.1	<0.052	1.1	0.070	1.1	<0.029	1.1	<0.015	1.1	<0.025	1.1	<0.025	1.1	<0.017	1.1	<0.017	1.1	<0.011	1.1	<0.011
4,4'-DDE	1.1	<0.036	1.1	<0.034	1.1	<0.034	1.1	<0.017	1.1	<0.010	1.1	<0.010	1.1	<0.013	1.1	<0.013	1.1	<0.020	1.1	<0.020
4,4'-DDD	1.1	<0.031	1.1	<0.023	1.1	<0.023	1.1	<0.013	1.1	<0.031	1.1	<0.031	1.1	<0.021	1.1	<0.021	1.1	<0.021	1.1	<0.021
Dieldrin	4	<0.045	4	<0.028	4	<0.028	4	<0.021	4	<0.030	4	<0.030	4	<0.060	4	<0.060	4	<0.019	4	<0.019
Alpha-endosulfan	3 T	<0.048	3 T	<0.034	3 T	<0.034	3 T	<0.017	3 T	<0.018	3 T	0.019	3 T	<0.072	3 T	<0.072	3 T	0.037	3 T	<0.018
Beta-endosulfan	3 T	<0.054	3 T	<0.034	3 T	<0.034	3 T	<0.012	3 T	<0.032	3 T	<0.032	3 T	<0.019	3 T	<0.019	3 T	<0.021	3 T	<0.021
Endosulfan sulfate	3	<0.030	3	<0.025	3	<0.025	3	<0.013	3	<0.008	3	<0.008	3	<0.016	3	<0.016	3	<0.022	3	<0.022
Endrin	0.7	<0.036	0.7	<0.035	0.7	<0.035	0.7	<0.015	0.7	<0.017	0.7	<0.017	0.7	<0.023	0.7	<0.023	0.7	<0.042	0.7	<0.042
Endrin aldehyde	0.7	<0.014	0.7	<0.038	0.7	<0.038	0.7	<0.022	0.7	<0.032	0.7	<0.032	0.7	<0.026	0.7	<0.026	0.7	<0.024	0.7	<0.024
Heptachlor	0.9	<0.045	0.9	<0.035	0.9	<0.035	0.9	<0.017	0.9	<0.027	0.9	<0.027	0.9	<0.035	0.9	<0.035	0.9	<0.023	0.9	<0.023
Heptachlor epoxide	0.9	<0.045	0.9	<0.032	0.9	<0.032	0.9	<0.019	0.9	<0.008	0.9	<0.008	0.9	<0.062	0.9	<0.062	0.9	<0.020	0.9	<0.020
PCB-1242	[4]	<0.34	[4]	<0.41	[4]	<0.41	[4]	<0.53	[4]	<0.37	[4]	<0.37	[4]	<0.14	[4]	<0.14	[4]	<0.72	[4]	<0.72
PCB-1254	[4]	<0.34	[4]	<0.20	[4]	<0.20	[4]	<0.28	[4]	<0.23	[4]	<0.23	[4]	<0.20	[4]	<0.20	[4]	<0.22	[4]	<0.22
PCB-1221	[4]	<0.55	[4]	<0.68	[4]	<0.68	[4]	<0.83	[4]	<0.22	[4]	<0.22	[4]	<0.64	[4]	<0.64	[4]	<0.46	[4]	<0.46
PCB-1232	[4]	<0.77	[4]	<0.66	[4]	<0.66	[4]	<0.33	[4]	<0.55	[4]	<0.55	[4]	<0.37	[4]	<0.37	[4]	<0.90	[4]	<0.90
PCB-1248	[4]	<0.30	[4]	<0.78	[4]	<0.78	[4]	<0.27	[4]	<0.19	[4]	<0.19	[4]	<0.22	[4]	<0.22	[4]	<0.24	[4]	<0.24
PCB-1260	[4]	<0.34	[4]	<0.21	[4]	<0.21	[4]	<0.22	[4]	<0.32	[4]	<0.32	[4]	<0.59	[4]	<0.59	[4]	<0.26	[4]	<0.26
PCB-1016	[4]	<0.37	[4]	<0.36	[4]	<0.36	[4]	<0.32	[4]	<0.18	[4]	<0.18	[4]	<0.55	[4]	<0.55	[4]	<0.29	[4]	<0.29
Toxaphene	11	<0.79	11	<0.53	11	<0.53	11	<0.33	11	<0.22	11	<0.22	11	<0.60	11	<0.60	11	<0.48	11	<0.48

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OUTFALL ID: AC033 RECEIVING WATER: Arizona Canal Diversion Canal DESIGNATED USES: AgI, AgL	MONITORING SEASONS Summer: June 1 – October 31 Winter: November 1 – May 31																					
	Winter 2011/12		Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16		Summer 2016		Winter 2016/17	
SAMPLING DATE(S):	**SWQS**	**11/5/11**	**SWQS**	**8/21/12**	**SWQS**	**12/14/12**	**SWQS**	**07/20/13**	**SWQS**	**11/22/13**	**SWQS**	**8/12/14**	**SWQS**	**12/4/14**	**SWQS**	**10/6/15**	**SWQS**	**1/4/16**	**SWQS**	**8/22/16**	**SWQS**	**11/3/16**
MONITORING PARAMETERS [1, 2]																						
Conventional Parameters																						
Flow [3] (cfs)	NS	1.629	NS	2.95	NS	0.76	NS	4.788	NS	2.00	NS	2.7	NS	0.364	NS	3.01	NS	1.466	NS	1.548	NS	0.582
pH	4.5-9.0	8.46	4.5-9.0	7.54	4.5-9.0	7.83	4.5-9.0	8.36	4.5-9.0	8.11	4.5-9.0	8.52	4.5-9.0	7.45	4.5-9.0	7.39	4.5-9.0	7.73	4.5-9.0	7.53	4.5-9.0	7.32
Temperature (ºC)	Varies	13.0	Varies	28.5	Varies	14.0	Varies	28.5	Varies	16.5	Varies	24.8	Varies	17.0	Varies	24.0	Varies	14.0	Varies	31.0	Varies	22.0
Hardness (mg/L)	400	34.9	400	23.4	400	25.7	400	56.6	400	25.7	400	33.9	400	19.4	400	34.0	400	16.9	400	49.8	400	46.3
Total Dissolved Solids (TDS) (mg/L) [2]	NS	110	NS	60	NS	92	NS	182	NS	72	NS	104	NS	42	NS	88	NS	46	NS	120	NS	144
Total Suspended Solids (TSS) (mg/L) [2]	NS	546	NS	76.0	NS	296	NS	573	NS	242	NS	352	NS	210	NS	182	NS	108	NS	305	NS	182
Biochemical Oxygen Demand (BOD) (mg/L) [2]	NS	22	NS	12	NS	19	NS	54	NS	18	NS	20	NS	12	NS	13	NS	10	NS	16	NS	50
Chemical Oxygen Demand (COD) (mg/L) [2]	NS	190	NS	100	NS	210	NS	370	NS	140	NS	180	NS	140	NS	140	NS	120	NS	160	NS	350

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Inorganics																						
Cyanide, total (µg/L) [2]	200 T	<5.0	200 T	<5	200 T	<5	200 T	<50	200 T	<5	200 T	<5	200 T	<5	200 T	<5	200 T	<5	200 T	<5	200 T	<5
Nutrients (mg/L) [2]																						
Nitrate + Nitrite as N	NS	0.6	NS	0.5	NS	0.6	NS	1.7	NS	0.6	NS	1.2	NS	0.5	NS	0.8	NS	0.5	NS	2.1	NS	1.2
Ammonia as N	NS	0.84	NS	0.83	NS	1.2	NS	1.9	NS	0.86	NS	1.4	NS	0.85	NS	0.58	NS	0.52	NS	1.5	NS	2
Total Kjeldahl Nitrogen (TKN)	NS	3.1	NS	1.9	NS	3.6	NS	7.2	NS	2.2	NS	3.2	NS	2.0	NS	2.2	NS	1.3	NS	4.5	NS	5.3
Total Phosphorus as P	NS	2.6	NS	0.38	NS	0.74	NS	0.48	NS	0.80	NS	1.0	NS	0.38	NS	0.67	NS	0.48	NS	1.3	NS	0.66
Ortho-Phosphorus as P	NS	0.2	NS	0.2	NS	0.2	NS	0.5	NS	0.2	NS	0.2	NS	0.1	NS	0.1	NS	0.1	NS	0.3	NS	0.3
Microbiological																						
Escherichia coli (*E. coli*) (CFU/100 mg or MPN/100 mL) [2]	NS	>2,419.6	NS	1,553.1	NS	>2,419.6	NS	2419.6	NS	>2,419.6	NS	727.0	NS	>2,419.6	NS	9,590	NS	1,610.0	NS	6,500	NS	57,940
Total Metals (µg/L) [2]																						
Antimony	NS	1.3 T 0.5 D	NS	0.84 T 0.5 D	NS	1.8 T 0.6 D	NS	1.9 T 0.9 D	NS	1.1 T 0.5 D	NS	1.6 T 1.0 D	NS	2.3 T 0.6 D	NS	2.1 T <5.0 D	NS	1.6 T <5.0 D	NS	1.7 T <5 D	NS	3.7 T <5 D
Arsenic	200 T	4.3 T 1.2 D	200 T	2.1 T 0.9 D	200 T	4.0 T 0.8 D	200 T	7.4 T 1.4 D	200 T	2.5 T 0.7 D	200 T	4.1 T 1.4 D	200 T	2.6 T 0.6 D	200 T	3.7 T <5.0 D	200 T	2.1 T <5.0 D	200 T	5.4 T <5 D	200 T	3 T <5 D
Barium	NS	145 T 16 D	NS	43 T 12 D	NS	125 T 12 D	NS	283 T 39 D	NS	91 T 11 D	NS	126 T 20 D	NS	104 T 11 D	NS	92 T 18 D	NS	61 T 10 D	NS	176 T 28 D	NS	136 T 29 D

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Beryllium	NS	0.39 T <0.06 D	NS	<0.15 T <0.15 D	NS	0.38 T <0.15 D	NS	0.73 T <0.15 D	NS	0.22 T <0.06 D	NS	0.29 T <0.15 D	NS	0.22 T <0.06	NS	0.15 T <5.0 D	NS	<0.10 T <5.0 D	NS	0.49 T <5 D	NS	<0.25 T <5 D
Cadmium	50 T	0.40 T <0.10 D	50 T	<0.25 T <0.25 D	50 T	0.4 T <0.25 D	50 T	0.7 T <0.25 D	50 T	0.4 T <0.10 D	50 T	0.4 T <0.30 D	50 T	0.3 T <0.12 D	50 T	0.2 T 5.7 D	50 T	0.2 T <5.0 D	50 T	0.5 T <5 D	50 T	0.3 T <0.25 D
Chromium	NS CrIII CrVI 1,000 T	12.7 T <1.80 D	NS CrIII CrVI 1,000 T	4.3 T <2.00 D	NS CrIII CrVI 1,000 T	12.6 T <2.00 D	NS CrIII CrVI 1,000 T	27.5 T <2.00 D	NS CrIII CrVI 1,000 T	8.1 T <0.80 D	NS CrIII CrVI 1,000 T	14.0 T 0.9 D	NS CrIII CrVI 1,000 T	9.0 T 0.8 D	NS CrIII CrVI 1,000 T	8.7 T <5.0 D	NS CrIII CrVI 1,000 T	5.3 T <5.0 D	NS CrIII CrVI 1,000 T	16.9 T <5 D	NS CrIII CrVI 1,000 T	9 T <5 D
Copper	500 T	47.3 T 9.5 D	500 T	20.0 T 8.0 D	500 T	51.9 T 8.4 D	500 T	97.0 T 26.9 D	500 T	32.7 T 10.1 D	500 T	49.6 T 13.6 D	500 T	40.2 T 8.0 D	500 T	39.7 T 11.9 D	500 T	28.7 T 10.2 D	500 T	62.2 T 17.9 D	500 T	55.7 T 24.6 D
Lead	100 T	29.7 T 0.4 D	100 T	10.2 T 0.5 D	100 T	33.2 T 0.6 D	100 T	71.1 T 3.1 D	100 T	15.3 T 0.4 D	100 T	37.5 T 1.1 D	100 T	25.2 T 0.7 D	100 T	19.7 T <5.0 D	100 T	13.3 T <5.0 D	100 T	43.4 T <5 D	100 T	15.7 T 0.8 D
Mercury	10 T	<0.092 T&D	10 T	<0.040 T <0.040 D	10 T	<0.040 T <0.040 D	10 T	0.03 T 0.024 D	10 T	<0.020 T <0.020 D	10 T	<0.092 T <0.2 D	10 T	<0.092 T <0.092 D	10 T	<0.062 T <0.2 D	10 T	<0.062 T <0.2 D	10 T	<0.068 T <0.2 D	10 T	<0.068 T <0.2 D
Nickel	NS	15.6 T 2.1 D	NS	5.6 T 2.3 D	NS	14.0 T 2.3 D	NS	29.2 T 6.4 D	NS	9.2 T 1.9 D	NS	13.4 T 2.3 D	NS	9.2 T 1.2 D	NS	9.0 T <5.0 D	NS	4.8 T <5.0 D	NS	15.8 T <5 D	NS	11.1 T <5 D
Selenium	20 T	0.87 T <0.34 D	20 T	<0.60 T <0.60 D	20 T	0.6 T <0.60 D	20 T	<0.60 T <0.60 D	20 T	<0.60 T <0.24 D	20 T	0.3 T <0.25 D	20 T	0.29 T 0.1 D	20 T	0.67 T <5.0 D	20 T	<0.40 T <5.0 D	20 T	1 T <5 D	20 T	<0.4 T <5 D
Silver	NS	0.2 T <0.20 D	NS	<0.15 T <0.15 D	NS	0.2 T <0.15 D	NS	0.3 T <0.15 D	NS	<0.15 T <0.15 D	NS	<0.20 T <0.20 D	NS	0.1 T <0.08 D	NS	<0.25 T <5.0 D	NS	<0.25 T <5.0 D	NS	<0.45 T <5 D	NS	<0.45 T <5 D
Thallium	NS	<0.20 T <0.08 D	NS	<0.20 T <0.20 D	NS	<0.20 T <0.20 D	NS	0.34 T <0.20 D	NS	<0.20 T <0.08 D	NS	<0.10 T <0.10 D	NS	0.08 T <0.04 D	NS	<0.15 T <5.0 D	NS	<0.15 T <5.0 D	NS	0.45 T <5 D	NS	<0.2 T <5 D
Zinc	10,000 T	244 T 10.7 D	10,000 T	105 T 27.9 D	10,000 T	272 T 26.0 D	10,000 T	424 T 80.6 D	10,000 T	170 T 32.1 D	10,000 T	197 T 19.8 D	10,000 T	195 T 15.0 D	10,000 T	180 T 26.6 D	10,000 T	173 T 18.0 D	10,000 T	232 T <50 D	10,000 T	284 T 96.8 D
Organic Toxic Pollutants																						
Total Petroleum Hydrocarbons (TPH) (mg/L) [2]	NS	<10	NS	<10	NS	<10	NS	<11	NS	<11	NS	<10.0	NS	<10	NS	<5.6	NS	<5.7	NS	<6.1	NS	<4.5
Total Oil and Grease (mg/L) [2]	NS	<5	NS	<10	NS	<5.0	NS	<5.5	NS	6.0	NS	<5.0	NS	<5.0	NS	<5.6	NS	<5.7	NS	<6.1	NS	<4.5
VOCs, Semi-VOCs, & Pesticides (µg/L) [2]																						
Acrolein	NS	<0.37	NS	<0.293	NS	<0.293	NS	1.1	NS	<0.20	NS	4.1	NS	<0.40	NS	<0.78	NS	<0.78	NS	<0.41	NS	0.74
Acrylonitrile	NS	<0.17	NS	<0.226	NS	<0.226	NS	<0.16	NS	<0.16	NS	<0.70	NS	<0.14	NS	<0.53	NS	<0.53	NS	<0.42	NS	<0.42
Benzene	NS	<0.20	NS	<0.75	NS	<0.75	NS	<1.20	NS	<1.20	NS	<0.65	NS	<0.13	NS	<2.30	NS	<0.46	NS	<0.29	NS	<0.29
Bromoform	NS	<0.25	NS	<2.15	NS	<2.15	NS	<2.35	NS	<2.35	NS	<1.40	NS	<0.28	NS	<3.40	NS	<0.68	NS	<0.33	NS	<0.33
Carbon tetrachloride	NS	<0.31	NS	<1.65	NS	<1.65	NS	<1.30	NS	<1.30	NS	<1.15	NS	<0.23	NS	<1.55	NS	<0.31	NS	<0.20	NS	<0.20
Chlorobenzene	NS	<0.25	NS	<1.40	NS	<1.40	NS	<0.80	NS	<0.80	NS	<0.65	NS	<0.13	NS	<2.50	NS	<0.50	NS	<0.33	NS	<0.33
Chlorodibromomethane	NS	<0.21	NS	<1.30	NS	<1.30	NS	<0.90	NS	<0.90	NS	<1.20	NS	<0.24	NS	<3.05	NS	<0.61	NS	<0.32	NS	<0.32
Chloroethane (ethyl chloride)	NS	<0.14	NS	<1.35	NS	<1.35	NS	<1.10	NS	<1.10	NS	<0.95	NS	<0.19	NS	<2.00	NS	<0.40	NS	<0.33	NS	<0.33
2-chloroethylvinyl ether	NS	<0.174	NS	<0.22	NS	<0.22	NS	<0.22	NS	<0.22	NS	<0.95	NS	<0.19	NS	<0.53	NS	<0.53	NS	<0.43	NS	<0.43
Chloroform	NS	<0.40	NS	<1.05	NS	<1.05	NS	<1.15	NS	<1.15	NS	<0.70	NS	<0.14	NS	<2.45	NS	<0.49	NS	<0.32	NS	<0.32
Dichlorobromomethane	NS	<0.23	NS	<0.75	NS	<0.75	NS	<1.15	NS	<1.15	NS	<0.75	NS	<0.15	NS	<2.45	NS	<0.49	NS	<0.29	NS	<0.29

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1,1-dichloroethane	NS	<0.18	NS	<0.65	NS	<0.65	NS	<1.30	NS	<1.30	NS	<0.95	NS	<0.19	NS	<2.10	NS	<0.42	NS	<0.29	NS	<0.29
1,2-dichloroethane	NS	<0.20	NS	<0.80	NS	<0.80	NS	<1.25	NS	<1.25	NS	<0.55	NS	<0.11	NS	<2.55	NS	<0.51	NS	<0.35	NS	<0.35
1,1-dichloroethylene	NS	<0.23	NS	<1.85	NS	<1.85	NS	<1.40	NS	<1.40	NS	<1.35	NS	<0.27	NS	<1.70	NS	<0.34	NS	<0.19	NS	<0.19
1,2-dichloropropane	NS	<0.22	NS	<0.75	NS	<0.75	NS	<1.25	NS	<1.25	NS	<0.90	NS	<0.18	NS	<2.45	NS	<0.49	NS	<0.32	NS	<0.32
1,3-dichloropropylene[8]	NS	<0.19	NS	<0.50	NS	<0.75	NS	<1.10	NS	<1.10	NS	<0.65	NS	<0.13	NS	cis <2.55 trans <2.50	NS	cis <0.51 trans <0.50	NS	<0.28	NS	<0.28
Ethylbenzene	NS	<0.27	NS	<1.45	NS	<1.45	NS	<0.65	NS	<0.65	NS	<0.75	NS	<0.15	NS	<2.30	NS	<0.46	NS	<0.29	NS	<0.29
Methyl bromide	NS	<0.14	NS	<0.95	NS	<0.95	NS	<0.95	NS	<0.95	NS	<0.90	NS	<0.18	NS	<2.30	NS	<0.46	NS	<0.28	NS	<0.28
Methyl chloride	NS	<0.20	NS	<1.85	NS	<1.85	NS	<1.40	NS	<1.40	NS	<1.15	NS	<0.23	NS	<2.30	NS	<0.46	NS	<0.28	NS	<0.28
Methylene chloride	NS	<0.45	NS	<1.40	NS	1.5	NS	<1.00	NS	<1.00	NS	<1.00	NS	<0.20	NS	<4.05	NS	<0.81	NS	<0.31	NS	<0.31
1,1,2,2-tetrachloroethane	NS	<0.11	NS	<2.45	NS	<2.45	NS	<2.00	NS	<2.00	NS	<1.75	NS	<0.35	NS	<4.00	NS	<0.80	NS	<0.33	NS	<0.33
Tetrachloroethylene	NS	<0.26	NS	<1.15	NS	<1.15	NS	<1.05	NS	<1.05	NS	<0.65	NS	<0.13	NS	<1.75	NS	<0.35	NS	<0.23	NS	<0.23
Toluene	NS	<0.23	NS	<0.60	NS	<0.60	NS	<0.95	NS	<0.95	NS	<0.55	NS	<0.11	NS	<2.15	NS	<0.43	NS	0.42	NS	<0.28
1,2-trans-dichloroethylene	NS	<0.14	NS	<0.85	NS	<0.85	NS	<1.25	NS	<1.25	NS	<0.90	NS	<0.18	NS	<1.90	NS	<0.38	NS	<0.24	NS	<0.24
1,1,1-trichloroethane	1,000	<0.28	1,000	<1.15	1,000	<1.15	1,000	<1.00	1,000	<1.00	1,000	<0.70	1,000	<0.14	1,000	<1.70	1,000	<0.34	1,000	<0.23	1,000	<0.23
1,1,2-trichloroethane	NS	<0.22	NS	<1.20	NS	<1.20	NS	<0.75	NS	<0.75	NS	<0.65	NS	<0.13	NS	<3.00	NS	<0.60	NS	<0.29	NS	<0.29
Trichloroethylene	NS	<0.35	NS	<1.20	NS	<1.20	NS	<0.75	NS	<0.75	NS	<1.10	NS	<0.22	NS	<2.40	NS	<0.48	NS	<0.28	NS	<0.28
1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene	NS	<1.0 <1.0	NS	<5.0 <5.0	NS	<5.0 <5.0	NS	<5.0 <5.0	NS	<5.0 <5.0	NS	<10.0 <5.0	NS	<1.0 <1.0	NS	<5.0 <5.0	NS	<1.0 <1.0	NS	<1.0 <1.0	NS	<1.0 <1.0
Vinyl chloride	NS	<0.19	NS	<2.50	NS	<2.50	NS	<1.00	NS	<1.00	NS	<1.10	NS	<0.22	NS	<1.75	NS	<0.35	NS	<0.24	NS	<0.24
Xylenes, Total	NS	<0.51	NS	<2.90	NS	<2.90	NS	<1.50	NS	<1.50	NS	<1.25	NS	<0.13	NS	<2.60	NS	<0.52	NS	<0.32	NS	<0.32
Acid Compounds (µg/L) [2]																						
2-chlorophenol	NS	<110.5	NS	<23.9	NS	<57.0	NS	<223.1	NS	<90.9	NS	<1.48	NS	<1.48	NS	<3.10	NS	<3.10	NS	<2.92	NS	<2.92
2,4-dichlorophenol	NS	<121.0	NS	<25.6	NS	<61.0	NS	<219.4	NS	<89.5	NS	<1.65	NS	<1.65	NS	<2.81	NS	<2.81	NS	<3.21	NS	<3.21
2,4-dimethylphenol	NS	<86.0	NS	<30.7	NS	<73.0	NS	<118.6	NS	<48.3	NS	<2.20	NS	<2.20	NS	<2.64	NS	<2.64	NS	<1.32	NS	<1.32
4,6-dinitro-o-cresol	NS	<109.0	NS	<29.0	NS	<69.0	NS	<155.0	NS	<63.2	NS	<1.22	NS	<1.22	NS	<1.49	NS	<1.49	NS	<2.27	NS	<2.27
2,4-dinitrophenol	NS	<50.0	NS	<29.2	NS	<69.5	NS	<134.7	NS	<54.9	NS	<1.13	NS	<1.13	NS	<2.21	NS	<2.21	NS	<2.64	NS	<2.64
2-nitrophenol	NS	<115.5	NS	<58.4	NS	<139.0	NS	<213.7	NS	<87.1	NS	<1.57	NS	<1.57	NS	<2.84	NS	<2.84	NS	<2.61	NS	<2.61
4-nitrophenol	NS	<398.5	NS	<171.4	NS	<408.0	NS	<242.8	NS	<99.0	NS	5.2	NS	2.1	NS	<2.98	NS	<2.98	NS	<2.03	NS	<2.03
p-chloro-m-cresol	NS	<98.0	NS	<39.1	NS	<93.0	NS	<229.3	NS	<93.5	NS	<1.65	NS	<1.65	NS	<1.87	NS	<1.87	NS	<3.10	NS	<3.10
Pentachlorophenol	NS	<218.5	NS	<43.5	NS	<103.5	NS	<174.7	NS	<71.2	NS	<1.39	NS	<1.39	NS	<1.47	NS	<1.47	NS	<3.44	NS	<3.44
Phenol	NS	<100.0	NS	<25.0	NS	<59.5	NS	<184.6	NS	<75.3	NS	1.4	NS	<1.34	NS	<2.30	NS	<2.30	NS	<1.84	NS	1.9
2,4,6-trichlorophenol	NS	<259.0	NS	<58.8	NS	<140.0	NS	<249.1	NS	<101.5	NS	<1.89	NS	<1.89	NS	<2.60	NS	<2.60	NS	<3.28	NS	<3.28

NOTES:
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Bold text indicates a sample result greater than the WQS.
Italicized text indicated a laboratory detection limit higher that the WQS.

Footnotes
1 The Permittee shall report on any additional parameters that were monitored for seasonal stormwater sampling as required by Section 6.0 of this permit (Special Conditions).
2 Analytical results shall be reported in the units specified for each category or parameter.
3 Report the average flow rate for the sampling period (no more than 6 hours).
4 Standard for total PCBs of 11 µg/L A&We and 19 µg/L PBC.
5 The sample was lost during extraction at the laboratory due to the glassware breaking.
6 There were no representative storm events (>0.20 inches) that occurred or no representative events without a measurable rain event in the previous 72 hours.
7 A representative event occurred on 8/2; however, the sampler malfunctioned. Then next event was on 8/5 but due to the 72-hour rule, no sample was taken. Another measurable event on 9/22 did not result in a qualifying rain event. No samples were taken at this outfall during Summer 2016.
8 Prior to FY2016, the lab was reporting cis and trans for 1-3-dichloropropylene; this report year, an upgrade has resulted in providing the result as a total.
9 Data flagged due to contamination in the lab reagent blank; therefore, these are not true detections or exceedances.

AC033	Winter 2011/12		Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16		Summer 2016		Winter 2016/17	
SAMPLING DATE(S):	**SWQS**	**11/5/11**	**SWQS**	**8/21/12**	**SWQS**	**12/14/12**	**SWQS**	**07/20/13**	**SWQS**	**11/22/13**	**SWQS**	**8/12/14**	**SWQS**	**12/4/14**	**SWQS**	**10/6/15**	**SWQS**	**1/4/16**	**SWQS**	**8/22/16**	**SWQS**	**11/3/16**
Bases/Neutrals (µg/L) [2]																						
Acenaphthene	NS	<65.5	NS	<35.7	NS	<85.0	NS	<69.7	NS	<28.4	NS	<1.03	NS	<1.03	NS	<0.35	NS	<0.35	NS	<1.02	NS	<1.02
Acenaphthylene	NS	<77.0	NS	<26.7	NS	<63.5	NS	<90.0	NS	<36.7	NS	<1.00	NS	<1.00	NS	<1.23	NS	<1.23	NS	<6.10	NS	<6.10
Anthracene	NS	<82.0	NS	<18.7	NS	<44.5	NS	<90.0	NS	<36.7	NS	<2.88	NS	<2.88	NS	<0.44	NS	<0.44	NS	<1.96	NS	<1.96
Benz(a)anthracene	NS	<132.5	NS	<33.0	NS	<78.5	NS	<90.0	NS	<36.7	NS	<1.08	NS	<1.08	NS	<0.38	NS	<0.38	NS	<1.57	NS	<1.57
Benzo(a)pyrene	NS	<223.5	NS	<40.5	NS	<96.5	NS	<97.2	NS	<39.6	NS	<3.77	NS	<3.77	NS	<1.41	NS	<1.41	NS	<3.12	NS	<3.12
Benzo(b)fluoranthene	NS	<196.0	NS	<71.2	NS	<169.5	NS	<126.4	NS	<51.5	NS	<1.46	NS	<1.46	NS	<1.06	NS	<1.06	NS	<1.28	NS	<1.28
Benzo(g,h,i)perylene	NS	<170.0	NS	<29.6	NS	<70.5	NS	<90.0	NS	<36.7	NS	<1.29	NS	<1.29	NS	<0.72	NS	<0.72	NS	<2.83	NS	<2.83
Benzo(k)fluoranthene	NS	<150.0	NS	<24.2	NS	<57.5	NS	<72.8	NS	<29.7	NS	<1.04	NS	<1.04	NS	<0.35	NS	<0.35	NS	<1.76	NS	<1.76
Chrysene	NS	<128.0	NS	<18.7	NS	<44.5	NS	<77.0	NS	<31.4	NS	<1.41	NS	<1.41	NS	<0.46	NS	<0.46	NS	<1.08	NS	<1.08
Dibenzo(a,h)anthracene	NS	<203.0	NS	<85.0	NS	<202.5	NS	<103.0	NS	<42.0	NS	<1.24	NS	<1.24	NS	<0.47	NS	<0.47	NS	<1.93	NS	<1.93
1,2-dichlorobenzene	NS	<63.5	NS	<45.6	NS	<108.5	NS	<14.0	NS	<5.7	NS	<1.76	NS	<1.76	NS	<1.04	NS	<1.04	NS	<0.58	NS	<0.58
1,3-dichlorobenzene	NS	<59.5	NS	<50.8	NS	<121.0	NS	<58.8	NS	<24.0	NS	<1.74	NS	<1.74	NS	<0.47	NS	<0.47	NS	<0.52	NS	<0.52
1,4-dichlorobenzene	NS	<71.0	NS	<44.7	NS	<106.5	NS	<54.6	NS	<22.3	NS	<1.56	NS	<1.56	NS	<1.28	NS	<1.28	NS	<0.50	NS	<0.50
3,3-dichlorobenzidine	NS	<590.0	NS	<155.0	NS	<369.0	NS	<1418.0	NS	<578.1	NS	<6.06	NS	<6.06	NS	<11.60	NS	<11.60	NS	<23.45	NS	<23.45
Diethyl phthalate	NS	<96.0	NS	<31.1	NS	<74.0	NS	<98.8	NS	<40.3	NS	<2.37	NS	<2.37	NS	0.4	NS	0.4	NS	<1.07	NS	<1.07
Dimethyl phthalate	NS	<84.5	NS	<25.4	NS	<60.5	NS	<93.1	NS	<37.9	NS	<2.42	NS	<2.42	NS	<0.47	NS	<0.47	NS	<0.58	NS	<0.58
Di-n-butyl phthalate	NS	<213.0	NS	<48.1	NS	<114.5	NS	<116.0	NS	<47.3	NS	<1.85	NS	<1.85	NS	<0.31	NS	<0.31	NS	<1.37	NS	<1.37
2,4-dinitrotoluene	NS	<134.5	NS	<27.5	NS	<65.5	NS	<106.6	NS	<43.5	NS	<2.12	NS	<2.12	NS	<0.26	NS	<0.26	NS	<1.30	NS	<1.30
2,6-dinitrotoluene	NS	<194.0	NS	<39.3	NS	<93.5	NS	<131.0	NS	<53.4	NS	<1.12	NS	<1.12	NS	<0.38	NS	<0.38	NS	<1.39	NS	<1.39
Di-n-octyl phthalate	NS	<393.0	NS	<86.7	NS	<206.5	NS	<149.8	NS	<61.1	NS	<1.10	NS	<1.10	NS	<1.28	NS	<1.28	NS	<1.67	NS	<1.67
1,2-diphenylhydrazine (as azobenzene)	NS	<72.0	NS	<22.5	NS	<53.5	NS	<121.2	NS	<49.4	NS	<6.70	NS	<6.70	NS	<1.06	NS	<1.06	NS	<7.46	NS	<7.46
Fluoranthene	NS	<122.5	NS	<14.1	NS	<33.5	NS	<93.1	NS	<37.9	NS	<1.35	NS	<1.35	NS	<0.27	NS	<0.27	NS	<1.06	NS	<1.06
Fluorene	NS	<65.5	NS	<35.3	NS	<84.0	NS	<80.1	NS	<32.6	NS	<4.81	NS	<4.81	NS	<0.29	NS	<0.29	NS	<0.51	NS	<0.51
Hexachlorobenzene	NS	<75.0	NS	<27.3	NS	<65.0	NS	<72.3	NS	<29.5	NS	<1.23	NS	<1.23	NS	<0.34	NS	<0.34	NS	<0.47	NS	<0.47
Hexachlorobutadiene	NS	<92.0	NS	<28.8	NS	<68.5	NS	<17.2	NS	<7.0	NS	<1.82	NS	<1.82	NS	<1.67	NS	<1.67	NS	<0.41	NS	<0.41
Hexachlorocyclopentadiene	NS	<187.0	NS	<27.7	NS	<66.0	NS	<118.0	NS	<48.1	NS	<1.23	NS	<1.23	NS	<1.53	NS	<1.53	NS	<2.16	NS	<2.16
Hexachloroethane	NS	<67.0	NS	<29.4	NS	<70.0	NS	<20.8	NS	<8.5	NS	<1.62	NS	<1.62	NS	<1.23	NS	<1.23	NS	<0.54	NS	<0.54
Indeno(1,2,3-cd)pyrene	NS	<209.5	NS	<69.9	NS	<166.5	NS	<105.6	NS	<43.0	NS	<1.39	NS	<1.39	NS	<0.62	NS	<0.62	NS	<2.38	NS	**3.9**[9]
Isophorone	NS	<86.5	NS	<39.9	NS	<95.0	NS	<73.3	NS	<29.9	NS	<2.14	NS	<2.14	NS	<0.37	NS	<0.37	NS	<0.51	NS	<0.51
Naphthalene	NS	<51.5	NS	<29.8	NS	<71.0	NS	<62.4	NS	<25.4	NS	<1.83	NS	<1.83	NS	<0.36	NS	<0.36	NS	<0.49	NS	<0.49
Nitrobenzene	NS	<119.0	NS	<27.5	NS	<65.5	NS	<64.0	NS	<26.1	NS	<2.10	NS	<2.10	NS	<1.26	NS	<1.26	NS	<0.44	NS	<0.44
N-nitrosodimethylamine	NS	<51.5	NS	<34.4	NS	<82.0	NS	<62.4	NS	<25.4	NS	<1.00	NS	<1.00	NS	<1.13	NS	<1.13	NS	<0.54	NS	<0.54
N-nitrosodi-n-propylamine	NS	<132.5	NS	<39.5	NS	<94.0	NS	<78.5	NS	<32.0	NS	<1.15	NS	<1.15	NS	<1.17	NS	<1.17	NS	<1.02	NS	<1.02
N-nitrosodiphenylamine	NS	<82.0	NS	<21.0	NS	<50.0	NS	<158.1	NS	<64.4	NS	<3.57	NS	<3.57	NS	<1.15	NS	<1.15	NS	<1.67	NS	<1.67
Phenanthrene	NS	<64.0	NS	<16.0	NS	<38.0	NS	<84.8	NS	<34.6	NS	<1.39	NS	<1.39	NS	<0.31	NS	<0.31	NS	<0.49	NS	<0.49
Pyrene	NS	<122.5	NS	<48.9	NS	<116.5	NS	<85.3	NS	<34.8	NS	<3.86	NS	<3.86	NS	<0.67	NS	<0.67	NS	<3.21	NS	<3.21

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AC033	Winter 2011/12		Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16		Summer 2016		Winter 2016/17	
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1,2,4-trichlorobenzene	NS	<71.0	NS	<55.9	NS	<133.0	NS	<16.6	NS	<6.8	NS	<1.69	NS	<1.69	NS	<1.04	NS	<1.04	NS	<0.55	NS	<0.55
Pesticides (µg/L) [2]																						
Aldrin	0.003	*<0.013*	0.003	*<0.058*	0.003	**0.082**	0.003	*<0.048*	0.003	**0.028**	0.003	*<0.027*	0.003	*<0.027*	0.003	*<0.012*	0.003	*<0.012*	0.003	**0.077**	0.003	*<0.019*
Alpha-BHC	NS	<0.016	NS	<0.044	NS	<0.038	NS	<0.040	NS	<0.017	NS	<0.021	NS	<0.021	NS	<0.058	NS	<0.058	NS	<0.010	NS	<0.010
Beta-BHC	NS	0.264	NS	<0.048	NS	<0.095	NS	<0.099	NS	<0.094	NS	<0.072	NS	<0.072	NS	0.078	NS	<0.063	NS	<0.049	NS	<0.049
Gamma-BHC	NS	0.062	NS	<0.055	NS	<0.033	NS	0.074	NS	<0.024	NS	<0.034	NS	<0.034	NS	<0.058	NS	<0.058	NS	<0.019	NS	<0.019
Delta-BHC	NS	0.016	NS	<0.035	NS	<0.032	NS	<0.033	NS	<0.018	NS	<0.021	NS	<0.021	NS	<0.066	NS	<0.066	NS	<0.035	NS	<0.035
Chlordane	NS	<0.35	NS	<0.29	NS	<0.16	NS	<0.17	NS	<0.20	NS	<0.14	NS	<0.14	NS	<0.36	NS	<0.36	NS	<0.61	NS	<0.61
4,4'-DDT	0.001	*<0.020*	0.001	*<0.052*	0.001	*<0.029*	0.001	*<0.030*	0.001	*<0.016*	0.001	*<0.025*	0.001	*<0.025*	0.001	*<0.017*	0.001	*<0.017*	0.001	*<0.011*	0.001	*<0.011*
4,4'-DDE	0.001	*<0.011*	0.001	*<0.036*	0.001	*<0.034*	0.001	*<0.035*	0.001	*<0.018*	0.001	*<0.010*	0.001	*<0.010*	0.001	*<0.013*	0.001	*<0.013*	0.001	*<0.020*	0.001	*<0.020*
4,4'-DDD	0.001	*<0.017*	0.001	*<0.031*	0.001	*<0.023*	0.001	*<0.024*	0.001	*<0.014*	0.001	*<0.031*	0.001	*<0.031*	0.001	*<0.021*	0.001	*<0.021*	0.001	*<0.021*	0.001	*<0.021*
Dieldrin	0.003	*<0.024*	0.003	*<0.045*	0.003	*<0.028*	0.003	*<0.029*	0.003	*<0.022*	0.003	*<0.030*	0.003	*<0.030*	0.003	*<0.060*	0.003	*<0.060*	0.003	**0.035**	0.003	*<0.019*
Alpha-endosulfan	NS	<0.010	NS	<0.048	NS	<0.034	NS	<0.035	NS	0.084	NS	0.072	NS	<0.018	NS	<0.072	NS	<0.072	NS	0.089	NS	<0.018
Beta-endosulfan	NS	<0.021	NS	<0.054	NS	<0.034	NS	<0.035	NS	<0.013	NS	<0.032	NS	<0.032	NS	<0.019	NS	<0.019	NS	<0.021	NS	<0.021
Endosulfan sulfate	NS	<0.015	NS	<0.030	NS	<0.025	NS	<0.026	NS	<0.014	NS	<0.008	NS	<0.008	NS	<0.016	NS	<0.016	NS	<0.022	NS	<0.022
Endrin	0.004	*<0.019*	0.004	*<0.036*	0.004	*<0.035*	0.004	*<0.036*	0.004	*<0.016*	0.004	*<0.017*	0.004	*<0.017*	0.004	*<0.023*	0.004	*<0.023*	0.004	*<0.042*	0.004	*<0.042*
Endrin aldehyde	NS	<0.015	NS	<0.014	NS	<0.038	NS	<0.040	NS	<0.024	NS	<0.032	NS	<0.032	NS	<0.026	NS	<0.026	NS	<0.024	NS	<0.024
Heptachlor	NS	<0.012	NS	<0.045	NS	<0.035	NS	0.092	NS	<0.018	NS	<0.027	NS	<0.027	NS	<0.035	NS	<0.035	NS	<0.023	NS	<0.023
Heptachlor epoxide	NS	<0.010	NS	<0.045	NS	<0.032	NS	<0.033	NS	<0.020	NS	<0.008	NS	<0.008	NS	<0.062	NS	<0.062	NS	<0.020	NS	<0.020
PCB-1242	0.001	*<0.40*	0.001	*<0.34*	0.001	*<0.41*	0.001	*<0.43*	0.001	<0.56	0.001	*<0.37*	0.001	*<0.37*	0.001	*<0.14*	0.001	*<0.14*	0.001	*<0.72*	0.001	*<0.72*
PCB-1254	0.001	*<0.22*	0.001	*<0.34*	0.001	*<0.20*	0.001	*<0.21*	0.001	<0.29	0.001	*<0.23*	0.001	*<0.23*	0.001	*<0.20*	0.001	*<0.20*	0.001	*<0.22*	0.001	*<0.22*
PCB-1221	0.001	*<0.34*	0.001	*<0.55*	0.001	*<0.68*	0.001	*<0.71*	0.001	<0.87	0.001	*<0.22*	0.001	*<0.22*	0.001	*<0.64*	0.001	*<0.64*	0.001	*<0.46*	0.001	*<0.46*
PCB-1232	0.001	*<0.41*	0.001	*<0.77*	0.001	*<0.66*	0.001	*<0.69*	0.001	<0.34	0.001	*<0.55*	0.001	*<0.55*	0.001	*<0.37*	0.001	*<0.37*	0.001	*<0.90*	0.001	*<0.90*
PCB-1248	0.001	*<0.21*	0.001	*<0.30*	0.001	*<0.78*	0.001	*<0.81*	0.001	<0.28	0.001	*<0.19*	0.001	*<0.19*	0.001	*<0.22*	0.001	*<0.22*	0.001	*<0.24*	0.001	*<0.24*
PCB-1260	0.001	*<0.19*	0.001	*<0.34*	0.001	*<0.21*	0.001	*<0.22*	0.001	<0.24	0.001	*<0.32*	0.001	*<0.32*	0.001	*<0.59*	0.001	*<0.59*	0.001	*<0.26*	0.001	*<0.26*
PCB-1016	0.001	*<0.26*	0.001	*<0.37*	0.001	*<0.36*	0.001	*<0.37*	0.001	<0.33	0.001	*<0.18*	0.001	*<0.18*	0.001	*<0.55*	0.001	*<0.55*	0.001	*<0.29*	0.001	*<0.29*
Toxaphene	0.005	*<0.33*	0.005	*<0.79*	0.005	*<0.53*	0.005	*<0.55*	0.005	<0.34	0.005	*<0.22*	0.005	*<0.22*	0.005	*<0.60*	0.005	*<0.60*	0.005	*<0.48*	0.005	*<0.48*

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OUTFALL ID: SR003 RECEIVING WATER: Salt River DESIGNATED USES: A&Wedw, PBC, FC, AgI, AgL	MONITORING SEASONS Summer: June 1 – October 31 Winter: November 1 – May 31																					
	Winter 2011/12		Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16		Summer 2016		Winter 2016/17	
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MONITORING PARAMETERS [1, 2]																						
Conventional Parameters																						
Flow [3] (cfs)	NS	0.505	NS	1.806	NS	0.55	NS	2.93	NS	2.23	NS	1.162	NS	1.116	NS	5.167	NS	2.656	NS	2.377	NS	6.224
pH	6.5-9	8.17	6.5-9	7.55	6.5-9	8.48	6.5-9	7.78	6.5-9	8.54	6.5-9	7.67	6.5-9	8.47	6.5-9	7.63	6.5-9	7.94	6.5-9	7.62	6.5-9	6.96
Temperature (ºC)	Varies	10.5	Varies	29.8	Varies	20.0	Varies	27.5	Varies	20.0	Varies	29.5	Varies	19.5	Varies	30.8	Varies	15.5	Varies	30.5	Varies	21.5
Hardness (mg/L)	400	48.4	400	51.5	400	47.8	400	39.1	400	74.0	400	38.9	400	32.5	400	46.0	400	41.4	400	63.5	400	69.9
Total Dissolved Solids (TDS) (mg/L) [2]	NS	154	NS	178	NS	210	NS	130	NS	186	NS	130	NS	112	NS	172	NS	124	NS	260	NS	212
Total Suspended Solids (TSS) (mg/L) [2]	NS	27.5	NS	568	NS	142	NS	178	NS	84.0	NS	314	NS	1,600	NS	684	NS	196	NS	212	NS	192
Biochemical Oxygen Demand (BOD) (mg/L) [2]	NS	15	NS	45	NS	34	NS	27	NS	10	NS	18	NS	36	NS	30	NS	21	NS	43	NS	33
Chemical Oxygen Demand (COD) (mg/L) [2]	NS	77	NS	360	NS	190	NS	160	NS	74	NS	200	NS	400	NS	330	NS	200	NS	240	NS	250

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Inorganics																						
Cyanide, total (µg/L) [2]	41 T	<5.0	41 T	<5	41 T	<5	41 T	*<50*	41 T	<5	41 T	<5	41 T	<5	41 T	<5	41 T	<5	41T	<5	41T	<5
Nutrients (mg/L) [2]																						
Nitrate + Nitrite as N	NS	0.8	NS	1.5	NS	1.2	NS	1.6	NS	0.9	NS	0.9	NS	0.7	NS	0.7	NS	0.6	NS	2	NS	1.4
Ammonia as N	6.089	1.0	18.45	1.7	3.34	2.1	12.56	1.2	2.98	0.47	10.18	0.98	2.28	1.1	16.2	1.6	9.42	0.78	16.5	2.3	37.3	1.3
Total Kjeldahl Nitrogen (TKN)	NS	2.4	NS	5.4	NS	5.0	NS	4.0	NS	1.2	NS	2.8	NS	4.2	NS	4.3	NS	2.5	NS	7.3	NS	3.7
Total Phosphorus as P	NS	0.51	NS	0.62	NS	0.65	NS	0.79	NS	0.40	NS	1.1	NS	0.37	NS	1.8	NS	0.98	NS	1.4	NS	0.69
Ortho-Phosphorus as P	NS	0.2	NS	0.2	NS	0.3	NS	0.4	NS	0.1	NS	0.1	NS	0.2	NS	<0.1	NS	0.1	NS	0.4	NS	0.3
Microbiological																						
Escherichia coli (*E. coli*) (CFU/100 mg or MPN/100 mL) [2]	575	**>2,419.6**	575	**>2,419.6**	575	**>2,419.6**	575	**>2,419.6**	575	**2,419.6**	575	**>2419.6**	575	**>2,419.6**	575	**10,710**	575	**8,130.0**	575	**1,986.3**	575	**5,940**

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Total Metals (μg/L) [2]																						
Antimony	640 T 1,000 D	0.91 T 0.7 D	640 T 1,000 D	2.5 T <0.25 D	640 T 1,000 D	2.2 T 1.3 D	640 T 1,000 D	1.6 T 0.8 D	640 T 1,000 D	1.2 T 0.6 D	640 T 1,000 D	1.8 T 1.0 D	640 T 1,000 D	1.4 T 1.0 D	640 T 1,000 D	2.9 T <5.0 D	640 T 1,000 D	2.6 T <5.0 D	640 T 1,000 D	2.7 T <5 D	640 T 1,000 D	6 T <5 D
Arsenic	80 T 340 D	2.7 T 1.3 D	80 T 340 D	7.9 T 0.4 D	80 T 340 D	4.0 T 1.4 D	80 T 340 D	4.6 T 1.4 D	80 T 340 D	3.6 T 2.8 D	80 T 340 D	3.8 T 1.4 D	80 T 340 D	12.2 T 1.2 D	80 T 340 D	8.8 T <5.0 D	80 T 340 D	4.8 T <5.0 D	80 T 340 D	8.4 T <5 D	80 T 340 D	4.9 T <5 D
Barium	98,000 T	46 T 20 D	98,000 T	266 T 6 D	98,000 T	113 T 20 D	98,000 T	119 T 22 D	98,000 T	67 T 26 D	98,000 T	136 T 21 D	98,000 T	538 T 14 D	98,000 T	293 T 25 D	98,000 T	161 T 18 D	98,000 T	275 T 35 D	98,000 T	187 T 34 D
Beryllium	84 T	<0.15 T <0.06 D	84 T	0.77 T <0.15 D	84 T	0.34 T <0.15 D	84 T	0.48 T <0.15 D	84 T	<0.15 <0.06 D	84 T	0.3 T <0.15 D	84 T	1.7 T <0.06 D	84 T	0.95 T <5.0 D	84 T	0.32 T <5.0 D	84 T	0.87 T <5 D	84 T	0.38 T <5 D
Cadmium	50 T 3.88 D	<0.25 T <0.10 D	50 T 4.13 D	1.4 T <0.25 D	50 T 3.97 D	0.5 T <0.25 D	50 T 3.158 D	0.6 T <0.25 D	50 T 5.87 D	<0.3 T <0.10 D	50 T 3.14 D	0.8 T <0.30 D	50 T 2.64 D	2.7 T <0.12 D	50 T 3.70 D	1.2 T *<5.0 D*	50 T 3.33 D	1.2 T *<5.0 D*	50 T 2.61 D	1.4 T <0.25 D	50 T 2.89 D	1 T <0.25 D
Chromium	1,000 T	4.8 T <1.80 D	1,000 T	27.8 T <2.00 D	1,000 T	12.1 T <2.00 D	1,000 T	14.5 T <2.00 D	1,000 T	5.2 T 1.1 D	1,000 T	11.6 T 1.1 D	1,000 T	45.6 T 0.8 D	1,000 T	31.4 T <5.0 D	1,000 T	14.4 T <5.0 D	1,000 T	30.5 T <5 D	1,000 T	16.1 T <5 D
Copper	500 T 6.78 D	19.9 T **12.0 D**	500 T 7.20 D	126 T 2.5 D	500 T 6.93 D	60.1 T **18.5 D**	500 T 5.54 D	49.1 T **16.8 D**	500 T 10.12 D	25.1 T 6.8 D	500 T 5.52 D	78.3 T **9.6 D**	500 T 4.66 D	219 T **10.6 D**	500 T 6.47 D	147 T **16.6 D**	500 T 5.85 D	95.2 T **17.3 D**	500 T 8.76 D	180 T **28.6 D**	500 T 9.59 D	139 T **34.8 D**
Lead	15 T 29.07 D	9.5 T 0.5 D	15 T 31.15 D	**74.2 T** <0.45 D	15 T 29.81 D	**26.1 T** 0.8 D	15 T 22.93 D	**34.4 T** 1.5 D	15 T 46.46 D	14.4 T 0.6 D	15 T 22.79 D	**49.6 T** 1.4 D	15 T 18.64 D	**110 T** 0.6 D	15 T 27.47 D	**64.4 T** 1.0 D	15 T 24.43 D	**44.1 T** <5.0 D	15 T 39.26 D	**79 T** 1.8 D	15 T 43.64 D	**58.4 T** 1 D
Mercury	10 T 2.4 D	<0.092 T&D	10 T 2.4 D	0.09 T <0.040 D	10 T 2.4 D	<0.040 T <0.040 D	10 T 2.4 D	0.02 T 0.023 D	10 T 2.4 D	<0.020 T <0.020 D	10 T 2.4 D	<0.092 T <0.2 D	10 T 2.4 D	<0.092 T <0.092 D	10 T 2.4 D	0.08 T <0.2 D	10 T 2.4 D	0.08 T <0.2 D	10 T 2.4 D	0.191 T <0.068 D	10 T 2.4 D	0.101 T <0.2 D
Nickel	511 T 254 D	6.1 T 2.4 D	511 T 267 D	36.1 T 0.8 D	511 T 258 D	15.6 T 3.6 D	511 T 211.5 D	18.8 T 3.3 D	511 T 363 D	6.1 T 1.3 D	511 T 210.6 D	16.4 T 2.5 D	511 T 181 D	60.6 D 2.2 D	511 T 243 D	36.8 T 3.4 D	511 T 222 D	18.9 T <5.0 D	511 T 318.87 D	38 T 5 D	511 T 345.85 D	19.6 T <5 D
Selenium	20 T	<0.85 T <0.34 D	20 T	0.98 T <0.60 D	20 T	0.86 T <0.60 D	20 T	<0.60 T <0.60 D	20 T	<0.60 T 0.7 D	20 T	<0.25 T <0.25 D	20 T	0.79 T 0.3 D	20 T	<0.40 T <5.0 D	20 T	<0.40 T <5.0 D	20 T	<0.4 T <5 D	20 T	0.64 T <5 D
Silver	4,667 T 0.92 D	<0.20 T&D	4,667 T 1.03 D	0.5 T <0.15 D	4,667 T 0.96 D	0.2 T <0.15 D	4,667 T 0.643 D	0.2 T <0.15 D	4,667 T 1.92 D	<0.15 T <0.15 D	4,667 T 0.637 D	<0.20 T <0.20 D	4,667 T 0.465 D	0.5 T <0.08 D	4,667 T 0.85 D	0.4 T *<5.0 D*	4,667 T 0.70 D	<0.25 T *<5.0 D*	4,667 T 1.47 D	0.5 T *<5 D*	4,667 T 1.74 D	<0.45 T *<5 D*
Thallium	1 T 700 D	<0.20 T <0.08 D	1 T 700 D	0.33 T <0.20 D	1 T 700 D	<0.20 T <0.20 D	1 T 700 D	<0.20 T <0.20 D	1 T 700 D	<0.2 T <0.08 D	1 T 700 D	0.13 T <0.10 D	1 T 700 D	0.61 T <0.04 D	1 T 700 D	0.22 T <5.0 D	1 T 700 D	<0.15 T <5.0 D	1 T 700 D	0.5 T <5 D	1 T 700 D	<0.2 T <5 D
Zinc	5,106 T 63.3 D	87.0 T 19.9 D	5,106 T 66.8 D	644 T 8.3 D	5,106 T 64.6 D	277 T 38.2 D	5,106 T 52.9 D	213 T 27.4 D	5,106 T 90.8 D	120 T 18.6 D	5,106 T 52.7 D	391 T 30.4 D	5,106 T 45.2 D	919 T 12.9 D	5,106 T 60.7 D	688 T 29.5 D	5,106 T 55.5 D	395 T 27.4 D	5,106 T 79.75 D	858 T **79.8 D**	5,106 T 86.51 D	538 T 62 D
Organic Toxic Pollutants																						
Total Petroleum Hydrocarbons (TPH) (mg/L) [2]	NS	<10	NS	<5	NS	<10	NS	<11	NS	<11	NS	<13	NS	<10	NS	<12	NS	<5.4	NS	<5.7	NS	<4.4
Total Oil and Grease (mg/L) [2]	NS	<5	NS	<5	NS	14	NS	<5.5	NS	<5.6	NS	<6.3	NS	5.4	NS	<5.8	NS	<5.4	NS	<5.7	NS	<4.4
VOCs, Semi-VOCs, & Pesticides (μg/L) [2]																						
Acrolein	1.9	<0.37	1.9	*<2.93*	1.9	<1.465	1.9	<0.20	1.9	<0.20	1.9	<2.00	1.9	<0.40	1.9	<0.78	1.9	<0.78	1.9	<0.41	1.9	1.3
Acrylonitrile	0.2	<0.17	0.2	*<2.26*	0.2	*<1.130*	0.2	<0.16	0.2	<0.16	0.2	<0.70	0.2	<0.14	0.2	*<0.53*	0.2	*<0.53*	0.2	*<0.42*	0.2	*<0.42*
Benzene	114	<0.20	114	<4.0	114	<0.75	114	<1.20	114	<0.24	114	<0.65	114	<0.13	114	<0.46	114	<0.46	114	<0.46	114	<0.29
Bromoform	133	<0.25	133	<5.0	133	<2.15	133	<2.35	133	<0.47	133	<1.40	133	<0.28	133	<0.68	133	<0.68	133	<0.68	133	<0.33

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Carbon tetrachloride	2	<0.31	2	*<6.2*	2	<1.65	2	<1.30	2	<0.26	2	<1.15	2	<0.23	2	<0.31	2	<0.31	2	<0.31	2	<0.20
Chlorobenzene	1,553	<0.25	1,553	<5.0	1,553	<1.40	1,553	<0.80	1,553	<0.16	1,553	<0.65	1,553	<0.13	1,553	<0.50	1,553	<0.50	1,553	<0.50	1,553	<0.33
Chlorodibromomethane	13	<0.21	13	<4.2	13	<1.30	13	<0.90	13	<0.18	13	<1.20	13	<0.24	13	<0.61	13	<0.61	13	<0.61	13	<0.32
Chloroethane (ethyl chloride)	NS	<0.14	NS	<2.8	NS	<1.35	NS	<1.10	NS	<0.22	NS	<0.95	NS	<0.19	NS	<0.40	NS	<0.40	NS	<0.40	NS	<0.33
2-chloroethylvinyl ether	180,000	<0.174	180,000	<2.2	180,000	<0.22	180,000	<0.22	180,000	<0.22	180,000	<0.95	180,000	<0.19	180,000	<0.53	180,000	<0.53	180,000	<0.43	180,000	<0.43
Chloroform	2,133	<0.40	2,133	<8.0	2,133	<1.05	2,133	<1.15	2,133	<0.23	2,133	0.72	2,133	<0.14	2,133	<0.49	2,133	<0.49	2,133	<0.49	2,133	<0.32
Dichlorobromomethane	17	<0.23	17	<4.6	17	<0.75	17	<1.15	17	<0.23	17	<0.75	17	<0.15	17	<0.49	17	<0.49	17	<0.49	17	<0.29
1,1-dichloroethane	NS	<0.18	NS	<3.6	NS	<0.65	NS	<1.30	NS	<0.26	NS	<0.95	NS	<0.19	NS	<0.42	NS	<0.42	NS	<0.42	NS	<0.29
1,2-dichloroethane	37	<0.20	37	<4.0	37	<0.80	37	<1.25	37	<0.25	37	<0.55	37	<0.11	37	<0.51	37	<0.51	37	<0.51	37	<0.35
1,1-dichloroethylene	7,143	<0.23	7,143	<4.6	7,143	<1.85	7,143	<1.40	7,143	<0.28	7,143	<1.35	7,143	<0.27	7,143	<0.34	7,143	<0.34	7,143	<0.34	7,143	<0.19
1,2-dichloropropane	17,518	<0.22	17,518	<4.4	17,518	<0.75	17,518	<1.25	17,518	<0.25	17,518	<0.90	17,518	<0.18	17,518	<0.49	17,518	<0.49	17,518	<0.49	17,518	<0.32
1,3-dichloropropylene[8]	42	<0.19	42	cis<3.8 trans<3.8	42	cis<0.50 trans<0.75	42	cis<1.20 trans<1.10	42	cis<0.24 trans<0.22	42	<0.65	42	<0.13	42	cis <0.51 trans <0.50	42	cis <0.51 trans <0.50	42	<0.51	42	<0.28
Ethylbenzene	2,133	<0.27	2,133	<5.4	2,133	<1.45	2,133	<0.65	2,133	<0.13	2,133	<0.75	2,133	<0.15	2,133	<0.46	2,133	<0.46	2,133	<0.46	2,133	<0.29
Methyl bromide	299	<0.14	299	<2.8	299	<0.95	299	<0.95	299	<0.19	299	<0.90	299	<0.18	299	<0.46	299	<0.46	299	<0.46	299	<0.28
Methyl chloride	270,000	<0.20	270,000	<4.0	270,000	<1.85	270,000	<1.40	270,000	<0.28	270,000	<1.15	270,000	<0.23	270,000	<0.46	270,000	<0.46	270,000	<0.46	270,000	<0.28
Methylene chloride	593	<0.45	593	14	593	1.8	593	<1.00	593	<0.20	593	<1.00	593	<0.20	593	<0.81	593	<0.81	593	<0.81	593	<0.31
1,1,2,2-tetrachloroethane	4	<0.11	4	<2.2	4	<2.45	4	<2.00	4	<0.40	4	<1.75	4	<0.35	4	<0.80	4	<0.80	4	<0.80	4	<0.33
Tetrachloroethylene	261	<0.26	261	<5.2	261	<1.15	261	<1.05	261	<0.21	261	<0.65	261	<0.13	261	<0.35	261	<0.35	261	<0.35	261	<0.23
Toluene	8,700	<0.23	8,700	<4.6	8,700	<0.60	8,700	<0.95	8,700	<0.19	8,700	<0.55	8,700	<0.11	8,700	<0.43	8,700	<0.43	8,700	<0.43	8,700	<0.28
1,2-trans-dichloroethylene	10,127	<0.14	10,127	<2.8	10,127	<0.85	10,127	<1.25	10,127	<0.25	10,127	<0.90	10,127	<0.18	10,127	<0.38	10,127	<0.38	10,127	<0.38	10,127	<0.24
1,1,1-trichloroethane	1,000	<0.28	1,000	<5.6	1,000	<1.15	1,000	<1.00	1,000	<0.20	1,000	<0.70	1,000	<0.14	1,000	<0.34	1,000	<0.34	1,000	<0.34	1,000	<0.23
1,1,2-trichloroethane	16	<0.22	16	<4.4	16	<1.20	16	<0.75	16	<0.15	16	<0.65	16	<0.13	16	<0.60	16	<0.60	16	<0.60	16	<0.29
Trichloroethylene	29	<0.35	29	<7.0	29	<1.20	29	<0.75	29	<0.15	29	<1.10	29	<0.22	29	<0.48	29	<0.48	29	<0.48	29	<0.28
1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene	NS	<1.0	NS	<20 <20	NS	<5.0 <5.0	NS	<5.0 <5.0	NS	<1.0 <1.0	NS	<10.00 <5.00	NS	<1.0 <1.0	NS	<1.0 <1.0	NS	<1.0 <1.0	NS	<1.0 <1.0	NS	<1.0 <1.0
Vinyl chloride	5	<0.19	5	<3.8	5	<2.50	5	<1.00	5	<0.20	5	<1.10	5	<0.22	5	<0.35	5	<0.35	5	<0.35	5	<0.24
Xylenes, Total	186,667	<0.51	186,667	<10.2	186,667	<2.90	186,667	<1.50	186,667	<0.30	186,667	<1.25	186,667	<0.13	186,667	<0.52	186,667	<0.52	186,667	<0.52	186,667	<0.32
Acid Compounds (µg/L) [2]																						
2-chlorophenol	30	<11.05	30	*<57.0*	30	<22.8	30	*<89.2*	30	*<43.3*	30	<1.48	30	<1.48	30	<3.10	30	<3.10	30	<2.92	30	<2.92
2,4-dichlorophenol	59	<12.10	59	*<61.0*	59	<24.4	59	*<87.8*	59	<42.6	59	<1.65	59	<1.65	59	<2.81	59	<2.81	59	<3.21	59	<3.21
2,4-dimethylphenol	171	<8.60	171	<73.0	171	<29.2	171	<47.4	171	<23.0	171	<2.20	171	<2.20	171	<2.64	171	<2.64	171	<1.32	171	<1.32
4,6-dinitro-o-cresol	310	<10.90	310	<69.0	310	<27.6	310	<62.0	310	<30.1	310	<1.22	310	<1.22	310	<1.49	310	<1.49	310	<2.27	310	<2.27
2,4-dinitrophenol	110	<5.00	110	<69.5	110	<27.8	110	<53.9	110	<26.2	110	<1.13	110	<1.13	110	<2.21	110	<2.21	110	<2.64	110	<2.64
2-nitrophenol	NS	<11.55	NS	<139.0	NS	<55.6	NS	<85.5	NS	<41.5	NS	<1.57	NS	<1.57	NS	<2.84	NS	<2.84	NS	<2.61	NS	<2.61
4-nitrophenol	4,100	<39.85	4,100	<408.0	4,100	<163.2	4,100	<97.1	4,100	<47.2	4,100	3.0	4,100	3.7	4,100	<2.98	4,100	3.6	4,100	<2.03	4,100	<2.03

NOTES:
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D = Dissolved

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Italicized text indicated a laboratory detection limit higher that the WQS.

Footnotes

1 The Permittee shall report on any additional parameters that were monitored for seasonal stormwater sampling as required by Section 6.0 of this permit (Special Conditions).
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8 Prior to FY2016, the lab was reporting cis and trans for 1-3-dichloropropylene; this report year, an upgrade has resulted in providing the result as a total.
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SR003	Winter 2011/12		Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16		Summer 2016		Winter 2016/17	
SAMPLING DATE(S):	**SWQS**	**11/5/11**	**SWQS**	**7/12/12**	**SWQS**	**12/14/12**	**SWQS**	**7/21/13**	**SWQS**	**11/23/13**	**SWQS**	**8/12/14**	**SWQS**	**12/4/14**	**SWQS**	**7/31/15**	**SWQS**	**1/4/16**	**SWQS**	**7/29/16**	**SWQS**	**11/3/16**
p-chloro-m-cresol	15	<9.80	15	*<93.0*	15	*<37.2*	15	*<91.7*	15	*<44.5*	15	<1.65	15	<1.65	15	<1.87	15	<1.87	15	<3.10	15	<3.10
Pentachlorophenol	29.427	<21.85	15.79	*<103.5*	40.17	*<41.4*	19.879	*<69.9*	42.688	<33.9	17.803	<1.39	39.781	<1.39	17.10	6.7	23.36	<1.47	16.91	<3.44	8.71	<3.44
Phenol	37	<10.00	37	*<59.5*	37	<23.8	37	*<73.8*	37	<35.9	37	1.6	37	<1.34	37	<2.30	37	<2.30	37	3.7	37	2.1
2,4,6-trichlorophenol	2	*<25.90*	2	*<140.0*	2	*<56.0*	2	*<99.6*	2	*<48.4*	2	<1.89	2	<1.89	2	*<2.60*	2	*<2.60*	2	*<3.28*	2	*<3.28*
Bases/Neutrals (µg/L) [2]																						
Acenaphthene	198	<6.55	198	<85.0	198	<34.0	198	<27.9	198	<13.5	198	<1.03	198	<1.03	198	<0.35	198	<0.35	198	<1.02	198	<1.02
Acenaphthylene	NS	<7.70	NS	<63.5	NS	<25.4	NS	<36.0	NS	<17.5	NS	<1.00	NS	<1.00	NS	<1.23	NS	<1.23	NS	<6.10	NS	<6.10
Anthracene	74	<8.20	74	<44.5	74	<17.8	74	<36.0	74	<17.5	74	<2.88	74	<2.88	74	<0.44	74	<0.44	74	<1.96	74	<1.96
Benz(a)anthracene	0.02	*<13.25*	0.02	*<78.5*	0.02	*<31.4*	0.02	*<36.0*	0.02	*<17.5*	0.02	*<1.08*	0.02	*<1.08*	0.02	*<0.38*	0.02	*<0.38*	0.02	*<1.57*	0.02	*<1.57*
Benzo(a)pyrene	0.02	*<22.35*	0.02	*<96.5*	0.02	*<38.6*	0.02	*<38.9*	0.02	*<18.9*	0.02	*<3.77*	0.02	*<3.77*	0.02	*<1.41*	0.02	*<1.41*	0.02	*<3.12*	0.02	*<3.12*
Benzo(b)fluoranthene	0.02	*<19.60*	0.02	*<169.5*	0.02	*<67.8*	0.02	*<50.5*	0.02	*<24.5*	0.02	*<1.46*	0.02	*<1.46*	0.02	*<1.06*	0.02	*<1.06*	0.02	*<1.28*	0.02	*<1.28*
Benzo(g,h,i)perylene	NS	<17.00	NS	<70.5	NS	<28.2	NS	<36.0	NS	<17.5	NS	<1.29	NS	<1.29	NS	<0.72	NS	<0.72	NS	<2.83	NS	<2.83
Benzo(k)fluoranthene	0.02	*<15.00*	0.02	*<57.5*	0.02	*<23.0*	0.02	*<29.1*	0.02	*<14.1*	0.02	*<1.04*	0.02	*<1.04*	0.02	*<0.35*	0.02	*<0.35*	0.02	*<1.76*	0.02	*<1.76*
Chrysene	0.02	*<12.80*	0.02	*<44.5*	0.02	*<17.8*	0.02	*<30.8*	0.02	*<14.9*	0.02	*<1.41*	0.02	*<1.41*	0.02	*<0.46*	0.02	*<0.46*	0.02	*<1.08*	0.02	*<1.08*
Dibenz(a,h)anthracene	0.02	*<20.30*	0.02	*<202.5*	0.02	*<81.0*	0.02	*<41.2*	0.02	*<20.0*	0.02	*<1.24*	0.02	*<1.24*	0.02	*<0.47*	0.02	*<0.47*	0.02	*<1.93*	0.02	*<1.93*
1,2-dichlorobenzene	205	<6.35	205	<108.5	205	<43.4	205	<5.6	205	<2.7	205	<1.76	205	<1.76	205	<1.04	205	<1.04	205	<0.58	205	<0.58
1,3-dichlorobenzene	2,500	<5.95	2,500	<121.0	2,500	<48.4	2,500	<23.5	2,500	<11.4	2,500	<1.74	2,500	<1.74	2,500	<0.47	2,500	<0.47	2,500	<0.52	2,500	<0.52
1,4-dichlorobenzene	2,000	<7.10	2,000	<106.5	2,000	<42.6	2,000	<21.8	2,000	<10.6	2,000	<1.56	2,000	<1.56	2,000	<1.28	2,000	<1.28	2,000	<0.50	2,000	<0.50
3,3-dichlorobenzidine	0.03	*<59.00*	0.03	*<369.0*	0.03	*<147.6*	0.03	*<567.2*	0.03	*<275.4*	0.03	*<6.06*	0.03	*<6.06*	0.03	*<11.60*	0.03	*<11.60*	0.03	*<23.45*	0.03	*<23.45*
Diethyl phthalate	8,767	<9.60	8,767	<74.0	8,767	<29.6	8,767	<39.5	8,767	<19.2	8,767	<2.37	8,767	<2.37	8,767	0.4	8,767	<0.36	8,767	1.1	8,767	<1.07
Dimethyl phthalate	17,000	<8.45	17,000	<60.5	17,000	<24.2	17,000	<37.2	17,000	<18.1	17,000	<2.42	17,000	<2.42	17,000	<0.47	17,000	<0.47	17,000	<0.58	17,000	<0.58
Di-n-butyl phthalate	470	<21.30	470	<114.5	470	<45.8	470	<46.4	470	<22.5	470	<1.85	470	<1.85	470	<0.31	470	<0.31	470	<1.37	470	<1.37
2,4-dinitrotoluene	421	<13.45	421	<65.5	421	<26.2	421	<42.6	421	<20.7	421	<2.12	421	<2.12	421	<0.26	421	<0.26	421	<1.30	421	<1.30
2,6-dinitrotoluene	3,733	<19.40	3,733	<93.5	3,733	<37.4	3,733	<52.4	3,733	<25.5	3,733	<1.12	3,733	<1.12	3,733	<0.38	3,733	<0.38	3,733	<1.39	3,733	<1.39
Di-n-octyl phthalate	373,333	<39.30	373,333	<206.5	373,333	<82.6	373,333	<59.9	373,333	<29.1	373,333	<1.10	373,333	<1.10	373,333	<1.28	373,333	<1.28	373,333	<1.67	373,333	<1.67
1,2-diphenylhydrazine (as azobenzene)	NS	<7.20	NS	<53.5	NS	<21.4	NS	<48.5	NS	<23.5	NS	<6.70	NS	<6.70	NS	<1.06	NS	<1.06	NS	<7.46	NS	<7.46
Fluoranthene	28	<12.25	28	*<33.5*	28	<13.4	28	*<37.2*	28	<18.1	28	<1.35	28	<1.35	28	0.3	28	<0.27	28	<1.06	28	<1.06
Fluorene	1,067	<6.55	1,067	<84.0	1,067	<33.6	1,067	<32.0	1,067	<15.6	1,067	<4.81	1,067	<4.81	1,067	<0.29	1,067	<0.29	1,067	<0.51	1,067	<0.51
Hexachlorobenzene	0.0003	*<7.50*	0.0003	*<65.0*	0.0003	*<26.0*	0.0003	*<28.9*	0.0003	*<14.0*	0.0003	*<1.23*	0.0003	*<1.23*	0.0003	*<0.34*	0.0003	*<0.34*	0.0003	*<0.47*	0.0003	*<0.47*
Hexachlorobutadiene	18	*<9.20*	18	*<68.5*	18	*<27.4*	18	<6.9	18	<3.3	18	<1.82	18	<1.82	18	<1.67	18	<1.67	18	<0.41	18	<0.41
Hexachlorocyclopentadiene	3.5	*<18.70*	3.5	*<66.0*	3.5	*<26.4*	3.5	*<47.2*	3.5	*<22.9*	3.5	<1.23	3.5	<1.23	3.5	<1.53	3.5	<1.53	3.5	<2.16	3.5	<2.16
Hexachloroethane	3.3	*<6.70*	3.3	*<70.0*	3.3	*<28.0*	3.3	*<8.3*	3.3	*<4.0*	3.3	<1.62	3.3	<1.62	3.3	<1.23	3.3	<1.23	3.3	<0.54	3.3	<0.54
Indeno(1,2,3-cd)pyrene	0.2	*<20.95*	0.2	*<166.5*	0.2	*<66.6*	0.2	*<42.2*	0.2	*<20.5*	0.2	*<1.39*	0.2	*<1.39*	0.2	*<0.62*	0.2	*<0.62*	0.2	*<2.38*	0.2	**3.8** [9]
Isophorone	961	<8.65	961	<95.0	961	<38.0	961	<29.3	961	<14.2	961	<2.14	961	<2.14	961	<0.37	961	<0.37	961	<0.51	961	<0.51
Naphthalene	1,524	<5.15	1,524	<71.0	1,524	<28.4	1,524	<25.0	1,524	<12.1	1,524	<1.83	1,524	<1.83	1,524	<0.36	1,524	0.6	1,524	<0.49	1,524	<0.49
Nitrobenzene	138	<11.90	138	<65.5	138	<26.2	138	<25.6	138	<12.4	138	<2.10	138	<2.10	138	<1.26	138	<1.26	138	<0.44	138	<0.44

NOTES:
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SR003	Winter 2011/12		Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16		Summer 2016		Winter 2016/17	
SAMPLING DATE(S):	**SWQS**	**11/5/11**	**SWQS**	**7/12/12**	**SWQS**	**12/14/12**	**SWQS**	**7/21/13**	**SWQS**	**11/23/13**	**SWQS**	**8/12/14**	**SWQS**	**12/4/14**	**SWQS**	**7/31/15**	**SWQS**	**1/4/16**	**SWQS**	**7/29/16**	**SWQS**	**11/3/16**
N-nitrosodimethylamine	0.03	*<5.15*	0.03	*<82.0*	0.03	*<32.8*	0.03	*<25.0*	0.03	*<12.1*	0.03	*<1.00*	0.03	*<1.00*	0.03	*<1.13*	0.03	*<1.13*	0.03	*<0.54*	0.03	*<0.54*
N-nitrosodi-n-propylamine	0.5	*<13.25*	0.5	*<94.0*	0.5	*<37.6*	0.5	*<31.4*	0.5	*<15.3*	0.5	*<1.15*	0.5	*<1.15*	0.5	*<1.17*	0.5	*<1.17*	0.5	*<1.02*	0.5	*<1.02*
N-nitrosodiphenylamine	6	*<8.20*	6	*<50.0*	6	*<20.0*	6	*<63.2*	6	*<30.7*	6	<3.57	6	<3.57	6	<1.15	6	<1.15	6	<1.67	6	<1.67
Phenanthrene	30	<6.40	30	*<38.0*	30	<15.2	30	*<33.9*	30	<16.5	30	<1.39	30	<1.39	30	<0.31	30	<0.31	30	<0.49	30	<0.49
Pyrene	800	<12.25	800	<116.5	800	<46.6	800	<34.1	800	<16.6	800	<3.86	800	<3.86	800	<0.67	800	<0.67	800	<3.21	800	<3.21
1,2,4-trichlorobenzene	70	<7.10	70	*<133.0*	70	<53.2	70	<6.7	70	<3.2	70	<1.69	70	<1.69	70	<1.04	70	<1.04	70	<0.55	70	<0.55
Pesticides (µg/L) [2]										NOT RUN[5]												
Aldrin	0.00005	*<0.013*	0.00005	*<0.058*	0.00005	*<0.046*	0.00005	*<0.046*	0.00005	-	0.00005	*<0.027*	0.00005	*<0.027*	0.00005	*<0.012*	0.00005	*<0.012*	0.00005	*<0.019*	0.00005	*<0.019*
Alpha-BHC	0.005	*<0.016*	0.005	*<0.044*	0.005	*<0.038*	0.005	*<0.038*	0.005	-	0.005	*<0.021*	0.005	*<0.021*	0.005	*<0.058*	0.005	*<0.058*	0.005	*<0.010*	0.005	*<0.010*
Beta-BHC	0.02	**0.183**	0.02	*<0.048*	0.02	*<0.095*	0.02	*<0.095*	0.02	**-**	0.02	*<0.072*	0.02	*<0.072*	0.02	*<0.063*	0.02	*<0.063*	0.02	*<0.049*	0.02	*<0.049*
Gamma-BHC	1	<0.014	1	<0.055	1	<0.033	1	<0.033	1	-	1	<0.034	1	*<0.034*	1	<0.058	1	<0.058	1	<0.019	1	<0.019
Delta-BHC	1,600	<0.016	1,600	<0.035	1,600	<0.032	1,600	<0.032	1,600	-	1,600	<0.021	1,600	<0.021	1,600	<0.066	1,600	<0.066	1,600	<0.035	1,600	<0.035
Chlordane	0.0008	*<0.35*	0.0008	*<0.29*	0.0008	*<0.16*	0.0008	*<0.16*	0.0008	-	0.0008	*<0.14*	0.0008	*<0.14*	0.0008	*<0.36*	0.0008	*<0.36*	0.0008	*<0.61*	0.0008	*<0.61*
4,4'-DDT	0.0002	*<0.020*	0.0002	*<0.052*	0.0002	*<0.029*	0.0002	*<0.029*	0.0002	-	0.0002	*<0.025*	0.0002	*<0.025*	0.0002	*<0.017*	0.0002	*<0.017*	0.0002	*<0.011*	0.0002	*<0.011*
4,4'-DDE	0.0002	*<0.011*	0.0002	*<0.036*	0.0002	*<0.034*	0.0002	*<0.034*	0.0002	-	0.0002	*<0.010*	0.0002	*<0.010*	0.0002	*<0.013*	0.0002	*<0.013*	0.0002	*<0.020*	0.0002	*<0.020*
4,4'-DDD	0.0002	*<0.017*	0.0002	*<0.031*	0.0002	*<0.023*	0.0002	*<0.023*	0.0002	-	0.0002	*<0.031*	0.0002	*<0.031*	0.0002	*<0.021*	0.0002	*<0.021*	0.0002	*<0.021*	0.0002	*<0.021*
Dieldrin	0.00005	*<0.024*	0.00005	*<0.045*	0.00005	*<0.028*	0.00005	*<0.028*	0.00005	-	0.00005	*<0.030*	0.00005	*<0.030*	0.00005	*<0.060*	0.00005	*<0.060*	0.00005	*<0.019*	0.00005	*<0.019*
Alpha-endosulfan	0.2	<0.010	0.2	<0.048	0.2	<0.034	0.2	<0.034	0.2	-	0.2	<0.018	0.2	<0.018	0.2	<0.072	0.2	<0.072	0.2	<0.018	0.2	<0.018
Beta-endosulfan	0.2	<0.021	0.2	<0.054	0.2	<0.034	0.2	<0.034	0.2	-	0.2	<0.032	0.2	<0.032	0.2	<0.019	0.2	<0.019	0.2	<0.021	0.2	<0.021
Endosulfan sulfate	0.2	<0.015	0.2	<0.030	0.2	<0.025	0.2	<0.025	0.2	-	0.2	<0.008	0.2	0.078	0.2	<0.016	0.2	0.051	0.2	<0.022	0.2	<0.022
Endrin	0.004	*<0.019*	0.004	*<0.036*	0.004	*<0.035*	0.004	*<0.035*	0.004	-	0.004	*<0.017*	0.004	*<0.017*	0.004	*<0.023*	0.004	*<0.023*	0.004	*<0.042*	0.004	*<0.042*
Endrin aldehyde	0.09	<0.015	0.09	<0.014	0.09	<0.038	0.09	<0.038	0.09	-	0.09	<0.032	0.09	<0.032	0.09	<0.026	0.09	<0.026	0.09	<0.024	0.09	<0.024
Heptachlor	0.00008	*<0.012*	0.00008	*<0.045*	0.00008	**0.099**	0.00008	*<0.035*	0.00008	-	0.00008	*<0.027*	0.00008	**0.063**	0.00008	*<0.035*	0.00008	**0.059**	0.00008	**0.073**	0.00008	*<0.023*
Heptachlor epoxide	0.00004	*<0.010*	0.00004	*<0.045*	0.00004	*<0.032*	0.00004	*<0.032*	0.00004	-	0.00004	*<0.008*	0.00004	*<0.008*	0.00004	*<0.062*	0.00004	*<0.062*	0.00004	*<0.020*	0.00004	*<0.020*
PCB-1242	[4]	<0.40	[4]	<0.34	[4]	<0.41	[4]	<0.41	[4]	-	[4]	<0.37	[4]	<0.37	[4]	<0.14	[4]	<0.14	[4]	<0.72	[4]	<0.72
PCB-1254	[4]	<0.22	[4]	<0.34	[4]	<0.20	[4]	<0.20	[4]	-	[4]	<0.23	[4]	<0.23	[4]	<0.20	[4]	<0.20	[4]	<0.22	[4]	<0.22
PCB-1221	[4]	<0.34	[4]	<0.55	[4]	<0.68	[4]	<0.68	[4]	-	[4]	<0.22	[4]	<0.22	[4]	<0.64	[4]	<0.64	[4]	<0.46	[4]	<0.46
PCB-1232	[4]	<0.41	[4]	<0.77	[4]	<0.66	[4]	<0.66	[4]	-	[4]	<0.55	[4]	<0.55	[4]	<0.37	[4]	<0.37	[4]	<0.90	[4]	<0.90
PCB-1248	[4]	<0.21	[4]	<0.30	[4]	<0.78	[4]	<0.78	[4]	-	[4]	<0.19	[4]	<0.19	[4]	<0.22	[4]	<0.22	[4]	<0.24	[4]	<0.24
PCB-1260	[4]	<0.19	[4]	<0.34	[4]	<0.21	[4]	<0.21	[4]	-	[4]	<0.32	[4]	<0.32	[4]	<0.59	[4]	<0.59	[4]	<0.26	[4]	<0.26
PCB-1016	[4]	<0.26	[4]	<0.37	[4]	<0.36	[4]	<0.36	[4]	-	[4]	<0.18	[4]	<0.18	[4]	<0.55	[4]	<0.55	[4]	<0.29	[4]	<0.29
Toxaphene	0.0003	*<0.33*	0.0003	*<0.79*	0.0003	*<0.53*	0.0003	*<0.53*	0.0003	-	0.0003	*<0.22*	0.0003	*<0.22*	0.0003	*<0.60*	0.0003	*<0.60*	0.0003	<0.48	0.0003	*<0.48*

NOTES:

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Bold text indicates a sample result greater than the WQS.
Italicized text indicated a laboratory detection limit higher that the WQS.

Footnotes

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8 Prior to FY2016, the lab was reporting cis and trans for 1-3-dichloropropylene; this report year, an upgrade has resulted in providing the result as a total.
9 Data flagged due to contamination in the lab reagent blank; therefore, these are not true detections or exceedances.

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OUTFALL ID: SR030 **RECEIVING WATER: Salt River** **DESIGNATED USES: A&Wedw, PBC, FC, AgI, and AgL**	**MONITORING SEASONS** Summer: June 1 – October 31 Winter: November 1 – May 31																					
	Winter 2011/12		Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16		Summer 2016[6]		Winter 2016/17	
SAMPLING DATE(S):	**SWQS**	**12/12/11**	**SWQS**	**7/12/12**	**SWQS**	**12/14/12**	**SWQS**	**7/21/13**	**SWQS**	**11/22/13**	**SWQS**	**8/12/14**	**SWQS**	**12/4/14**	**SWQS**	**7/31/15**	**SWQS**	**1/31/16**	**-**	**-**	**SWQS**	**11/27/16**
MONITORING PARAMETERS [1, 2]																						
Conventional Parameters																						
Flow [3] (cfs)	NS	3.956	NS	14.79	NS	1.62	NS	40.52	NS	7.51	NS	69.2	NS	3.094	NS	30.58	NS	6.438	-	-	NS	0.387
pH	6.5-9	7.60	6.5-9	7.90	6.5-9	8.33	6.5-9	8.14	6.5-9	8.49	6.5-9	8.17	6.5-9	8.15	6.5-9	7.9	6.5-9	8.09	-	-	6.5-9	7.96
Temperature (ºC)	Varies	15.5	Varies	27.2	Varies	17.0	Varies	26.5	Varies	18.5	Varies	26.2	Varies	19.0	Varies	30.5	Varies	13.5	-	-	Varies	17.0
Hardness (mg/L)	400	32.1	400	42.1	400	49.5	400	33.1	400	64.3	400	85.5	400	31.0	400	64.5	400	33.1	-	-	400	38
Total Dissolved Solids (TDS) (mg/L) [2]	NS	112	NS	132	NS	206	NS	120	NS	204	NS	332	NS	96	NS	240	NS	114	-	-	NS	112
Total Suspended Solids (TSS) (mg/L) [2]	NS	464	NS	618	NS	440	NS	392	NS	355	NS	251	NS	296	NS	124	NS	712	-	-	NS	145
Biochemical Oxygen Demand (BOD) (mg/L) [2]	NS	25	NS	18	NS	35	NS	17	NS	53	NS	9	NS	14	NS	38	NS	20	-	-	NS	16
Chemical Oxygen Demand (COD) (mg/L) [2]	NS	220	NS	230	NS	310	NS	140	NS	340	NS	94	NS	160	NS	220	NS	250	-	-	NS	110

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SR030	Winter 2011/12		Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16		Summer 2016[6]		Winter 2016/17	
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Inorganics																						
Cyanide, total (µg/L) [2]	41 T	<5.0	41 T	<5	41 T	<5	41 T	*<50*	41 T	<5	41 T	<5	41 T	<5	41 T	<5	41 T	<5	-	-	41 T	<5
Nutrients (mg/L) [2]																						
Nitrate + Nitrite as N	NS	0.8	NS	1.2	NS	1.4	NS	1.2	NS	2.1	NS	1.0	NS	0.8	NS	1.3	NS	1.5	-	-	NS	1
Ammonia as N	17.0	0.74	10.1	1.3	4.46	1.6	6.46	1.2	3.27	2.3	4.07	0.56	4.24	0.76	10.1	1.8	7.09	0.87	-	-	9.2	0.69
Total Kjeldahl Nitrogen (TKN)	NS	2.9	NS	4.0	NS	5.3	NS	4.2	NS	6.3	NS	1.7	NS	2.3	NS	4.2	NS	3.8	-	-	NS	2.6
Total Phosphorus as P	NS	1.4	NS	0.92	NS	0.79	NS	0.46	NS	1.4	NS	0.83	NS	0.39	NS	0.77	NS	1.8	-	-	NS	0.16
Ortho-Phosphorus as P	NS	0.2	NS	0.3	NS	0.3	NS	0.4	NS	0.3	NS	0.1	NS	0.2	NS	<0.1	NS	0.2	-	-	NS	0.2
Microbiological																						
Escherichia coli (*E. coli*) (CFU/100 mg or MPN/100 mL) [2]	575	**>2,419.6**	575	**>2,419.6**	575	**>2,419.6**	575	**>2419.6**	575	**2419.6**	575	**>2,419.6**	575	**>2,419.6**	575	**1,553.1**	575	**4,320.0**	-	-	575	**9,320**
Total Metals (µg/L) [2]																						
Antimony	640 T 1,000 D	2.2 T 0.9 D	640 T 1,000 D	1.4 T 0.9 D	640 T 1,000 D	2.5 T 1.0 D	640 T 1,000 D	1.2 T 0.4 D	640 T 1,000 D	2.4 T 1.2 D	640 T 1,000 D	<25 T&D	640 T 1,000 D	<25 T&D	640 T 1,000 D	3.9 T <5.0 D	640 T 1,000 D	1.9 T <5.0 D	-	-	640 T 1,000 D	2 T <5 D
Arsenic	80 T 340 D	5.3 T 1.2 D	80 T 340 D	6.8 T 1.8 D	80 T 340 D	5.3 T 1.7 D	80 T 340 D	8.0 T 1.2 D	80 T 340 D	4.9 T 1.5 D	80 T 340 D	35 T <10 D	80 T 340 D	<10 T&D	80 T 340 D	4.2 T <5.0 D	80 T 340 D	7.8 T <5.0 D	-	-	80 T 340 D	3.2 T <5 D
Barium	98,000 T	164 T 12 D	98,000 T	194 T 18 D	98,000 T	175 T 20 D	98,000 T	236 T 14 D	98,000 T	160 T 28 D	98,000 T	670 T 13 D	98,000 T	206 T 38 D	98,000 T	110 T 33 D	98,000 T	256 T 16 D	-	-	98,000 T	69 T 16 D

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Beryllium	84 T	0.6 T <0.06 D	84 T 3.39 D	0.7 T <0.15 D	84 T 3.17 D	0.57 T <0.15 D	84 T	0.94 T <0.15 D	84 T	0.45 T <0.06 D	84 T	2.2 T <2.0 D	84 T	<2 T&D	84 T	0.29 T <5.0 D	84 T	0.95 T <5.0 D	-	-	84 T	0.25 T <5 D
Cadmium	50 T 2.61 D	0.8 T <0.10 D	50 T	0.7 T <0.25 D	50 T 3.97 D	0.8 T <0.25 D	50 T 2.68 D	0.8 T <0.25 D	50 T 5.12 D	0.5 T <0.10 D	50 T 30.23 D	4.6 T <3.0 D	50 T 13.10 D	<3 T&D	50 T 5.14 D	0.5 T <5.0 D	50 T 2.68 D	0.7 T *<5.0 D*	-	-	50 T 1.49 D	0.3 T <0.25 D
Chromium	1,000 T	16 T <1.80 D	1,000 T	18.8 T <2.00 D	1,000 T	14.3 T 2.8 D	1,000 T	23.9 T <2.00 D	1,000 T	13.7 T 1.5 D	1,000 T	57 T <10 D	1,000 T	17.8 T <10 D	1,000 T	11.6 T <5.0 D	1,000 T	24.8 T <5.0 D	-	-	1,000 T	28.1 T <5 D
Copper	500 T 4.60 D	70.9 T **15.6 D**	500 T 5.94 D	66.1 T **13.1 D**	500 T 6.93 D	75.0 T **20.2 D**	500 T 4.74 D	65.8 T **10.6 D**	500 T 8.87 D	75.2 T **30.9 D**	500 T 49.62 D	210 T 10 D	500 T 22.03 D	75 T 14 D	500 T 8.89 D	58.6 T **33.5 D**	500 T 4.74 D	79.2 T **14.0 D**	-	-	500 T 5.40 D	26.6 T **10.3 D**
Lead	15 T 18.38 D	**41.1 T** 0.7 D	15 T 24.89 D	**49.0 T** 0.5 D	15 T 29.81 D	**41.4 T** 0.7 D	15 T 19.03 D	**60.8 T** 1.1 D	15 T 39.80 D	**27.6 T** 0.9 D	15 T 280.85 D	**110 T** <10 D	15 T 113.78 D	**71 T** <10 D	15 T 39.94 D	**38.6 T** 2.4 D	15 T 19.02 D	**45.0 T** <5.0 D	-	-	15 T 22.20 D	11.9 T <0.55 D
Mercury	10 T 2.4 D	<0.092 T&D	10 T 2.4 D	0.09 T <0.040 D	10 T 2.4 D	<0.040 T <0.040 D	10 T 2.4 D	0.04 T <0.020 D	10 T 2.4 D	<0.020 T <0.020 D	10 T 2.4 D	<0.2 T&D	10 T 2.4 D	<0.20 T <0.20 D	10 T 2.4 D	0.08 T <0.2 D	10 T 2.4 D	<0.062 T <0.2 D	-	-	10 T 2.4 D	<0.068 T <0.2 D
Nickel	511 T 179.4 D	20.3 T 2.1 D	511 T 225.4 D	25.1 T 2.3 D	511 T 258 D	19.6 T 3.5 D	511 T 183.5 D	30.6 T 2.1 D	511 T 322.2 D	18.9 T 4.6 D	511 T 1,513 D	110 T <10 D	511 T 730 D	23 T <10 D	511 T 323 D	12.1 T 4.6 D	511 T 184 D	31.4 T <5.0 D	-	-	511 T 205.52 D	9 T <5
Selenium	20 T	<0.85 T <0.34 D	20 T	0.85 T <0.60 D	20 T	0.65 T <0.60 D	20 T	<0.60 T <0.60 D	20 T	0.66 T 0.4 D	20 T	<2.0 T&D	20 T	<2.00 T <2.00 D	20 T	0.41 T <5.0 D	20 T	0.62 T <5.0 D	-	-	20 T	0.62 T <5 D
Silver	4,667 T 0.45 D	0.3 T <0.2 D	4,667 T 0.723 D	0.3 T <0.15 D	4,667 T 0.96 D	0.2 T <0.15 D	4,667 T 0.482 D	0.2 T <0.15 D	4,667 T 1.502 D	0.2 T <0.15 D	4,667 T 34.91 D	<5 T&D	4,667 T 7.93 D	<5 T&D	4,667 T 1.51 D	<0.25 T *<5.0 D*	4,667 T 0.48 D	0.3 T *<5.0 D*	-	-	4,667 T 0.61 D	<0.45 T *<5 D*
Thallium	1 T 700 D	0.21 T <0.08 D	1 T 700 D	0.20 T <0.20 D	1 T 700 D	<0.20 T <0.20 D	1 T 700 D	0.20 T <0.20 D	1 T 700 D	<0.20 T <0.08 D	1 T 700 D	0.9 T <0.5 D	1 T 700 D	<0.5 T&D	1 T 700 D	0.26 T <5.0 D	1 T 700 D	0.37 T <5.0 D	-	-	1 T 700 D	<0.2 T <5 D
Zinc	5,106 T 44.72 D	351 T 14.2 D	5,106 T 56.31 D	385 T 10.8 D	5,106 T 64.55 D	374 T 19.2 D	5,106 T 45.92 D	452 T 13.7 D	5,106 T 80.6 D	302 T 31.4 D	5,106 T 379.3 D	770 T <50 D	5,106 T 182.8 D	397 T <50 D	5,106 T 80.8 D	195 T 38.0 D	5,106 T 45.9 D	390 T 11.0 D	-	-	5,106 T 51.62 D	106 T 11.1 D
Organic Toxic Pollutants																						
Total Petroleum Hydrocarbons (TPH) (mg/L) [2]	NS	<10	NS	<5	NS	<10	NS	<11	NS	<11	NS	<10	NS	<10	NS	<12	NS	<5.8	-	-	NS	<4.2
Total Oil and Grease (mg/L) [2]	NS	5	NS	<5	NS	8.4	NS	<5.7	NS	6.4	NS	<5.0	NS	<5.0	NS	11	NS	<5.8	-	-	NS	<4.2
VOCs, Semi-VOCs, & Pesticides (µg/L) [2]																						
Acrolein	1.9	<0.37	1.9	*<2.93*	1.9	<1.465	1.9	<0.20	1.9	<0.20	1.9	*<2.00*	1.9	<0.40	1.9	<0.78	1.9	<0.41	-	-	1.9	0.44
Acrylonitrile	0.2	<0.17	0.2	*<2.26*	0.2	*<1.130*	0.2	<0.16	0.2	<0.16	0.2	*<0.70*	0.2	<0.14	0.2	*<0.53*	0.2	*<0.42*	-	-	0.2	*<0.42*
Benzene	114	<0.20	114	<4.0	114	<0.75	114	<1.20	114	<0.24	114	<0.65	114	<0.13	114	<0.46	114	<0.46	-	-	114	<0.29
Bromoform	133	<0.25	133	<5.0	133	<2.15	133	<2.35	133	<0.47	133	<1.40	133	<0.28	133	<0.68	133	<0.68	-	-	133	<0.33
Carbon tetrachloride	2	<0.31	2	*<6.2*	2	<1.65	2	<1.30	2	<0.26	2	<1.15	2	<0.23	2	<0.31	2	<0.31	-	-	2	<0.20
Chlorobenzene	1,553	<0.25	1,553	<5.0	1,553	<1.40	1,553	<0.80	1,553	<0.16	1,553	<0.65	1,553	<0.13	1,553	<0.50	1,553	<0.50	-	-	1,553	<0.33
Chlorodibromomethane	13	<0.21	13	<4.2	13	<1.30	13	<0.90	13	<0.18	13	2.6	13	<0.24	13	<0.61	13	<0.61	-	-	13	<0.32
Chloroethane (ethyl chloride)	NS	<0.14	NS	<2.8	NS	<1.35	NS	<1.10	NS	<0.22	NS	<0.95	NS	<0.19	NS	<0.40	NS	<0.40	-	-	NS	<0.33
2-chloroethylvinyl ether	180,000	<0.174	180,000	<2.2	180,000	<0.22	180,000	<0.22	180,000	<0.22	180,000	<0.95	180,000	<0.19	180,000	<0.53	180,000	<0.43	-	-	180,000	<0.43
Chloroform	2,133	<0.40	2,133	<8.0	2,133	<1.05	2,133	<1.15	2,133	<0.23	2,133	0.92	2,133	<0.14	2,133	<0.49	2,133	<0.49	-	-	2,133	<0.32
Dichlorobromomethane	17	<0.23	17	<4.6	17	<0.75	17	<1.15	17	<0.23	17	2.2	17	<0.15	17	<0.49	17	<0.49	-	-	17	<0.29
1,1-dichloroethane	NS	<0.18	NS	<3.6	NS	<0.65	NS	<1.30	NS	<0.26	NS	<0.95	NS	<0.19	NS	<0.42	NS	<0.42	-	-	NS	<0.29
1,2-dichloroethane	37	<0.20	37	<4.0	37	<0.80	37	<1.25	37	<0.25	37	<0.55	37	<0.11	37	<0.51	37	<0.51	-	-	37	<0.35

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8 Prior to FY2016, the lab was reporting cis and trans for 1-3-dichloropropylene; this report year, an upgrade has resulted in providing the result as a total.
9 Data flagged due to contamination in the lab reagent blank; therefore, these are not true detections or exceedances.

SR030	Winter 2011/12		Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16		Summer 2016[6]		Winter 2016/17	
SAMPLING DATE(S):	**SWQS**	**12/12/11**	**SWQS**	**7/12/12**	**SWQS**	**12/14/12**	**SWQS**	**7/21/13**	**SWQS**	**11/22/13**	**SWQS**	**8/12/14**	**SWQS**	**12/4/14**	**SWQS**	**7/31/15**	**SWQS**	**1/31/16**	**-**	**-**	**SWQS**	**11/27/16**
1,1-dichloroethylene	7,143	<0.23	7,143	<4.6	7,143	<1.85	7,143	<1.40	7,143	<0.28	7,143	<1.35	7,143	<0.27	7,143	<0.34	7,143	<0.34	-	-	7,143	<0.19
1,2-dichloropropane	17,518	<0.22	17,518	<4.4	17,518	<0.75	17,518	<1.25	17,518	<0.25	17,518	<0.90	17,518	<0.18	17,518	<0.49	17,518	<0.49	-	-	17,518	<0.32
1,3-dichloropropylene[8]	42	<0.19	42	cis<3.8 trans<3.8	42	cis<0.50 trans<0.75	42	cis<1.20 trans<1.10	42	cis<0.24 trans<0.22	42	<0.65	42	<0.13	42	cis <0.51 trans <0.50	42	cis <0.51 trans <0.50	-	-	42	<0.28
Ethylbenzene	2,133	<0.27	2,133	<5.4	2,133	<1.45	2,133	<0.65	2,133	<0.13	2,133	<0.75	2,133	<0.15	2,133	<0.46	2,133	<0.46	-	-	2,133	<0.29
Methyl bromide	299	<0.14	299	<2.8	299	<0.95	299	<0.95	299	<0.19	299	<0.90	299	<0.18	299	<0.46	299	<0.46	-	-	299	<0.28
Methyl chloride	270,000	<0.20	270,000	<4.0	270,000	<1.85	270,000	<1.40	270,000	<0.28	270,000	<1.15	270,000	<0.23	270,000	<0.46	270,000	<0.46	-	-	270,000	<0.28
Methylene chloride	593	<0.45	593	10	593	1.8	593	<1.00	593	<0.20	593	<1.00	593	<0.20	593	<0.81	593	<0.81	-	-	593	<0.31
1,1,2,2-tetrachloroethane	4	<0.11	4	<2.2	4	<2.45	4	<2.00	4	<0.40	4	<1.75	4	<0.35	4	<0.80	4	<0.80	-	-	4	<0.33
Tetrachloroethylene	261	<0.26	261	<5.2	261	<1.15	261	<1.05	261	<0.21	261	<0.65	261	<0.13	261	<0.35	261	<0.35	-	-	261	<0.23
Toluene	8,700	<0.23	8,700	<4.6	8,700	<0.60	8,700	<0.95	8,700	<0.19	8,700	<0.55	8,700	<0.11	8,700	<0.43	8,700	<0.43	-	-	8,700	<0.28
1,2-trans-dichloroethylene	10,127	<0.14	10,127	<2.8	10,127	<0.85	10,127	<1.25	10,127	<0.25	10,127	<0.90	10,127	<0.18	10,127	<0.38	10,127	<0.38	-	-	10,127	<0.24
1,1,1-trichloroethane	1,000	<0.28	1,000	<5.6	1,000	<1.15	1,000	<1.00	1,000	<0.20	1,000	<0.70	1,000	<0.14	1,000	<0.34	1,000	<0.34	-	-	1,000	<0.23
1,1,2-trichloroethane	16	<0.22	16	<4.4	16	<1.20	16	<0.75	16	<0.15	16	<0.65	16	<0.13	16	<0.60	16	<0.60	-	-	16	<0.29
Trichloroethylene	29	<0.35	29	<7.0	29	<1.20	29	<0.75	29	<0.15	29	<1.10	29	<0.22	29	<0.48	29	<0.48	-	-	29	<0.28
1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene	NS	<1.0	NS	<20 <20	NS	<5.0 <5.0	NS	<5.0 <5.0	NS	<1.0 <1.0	NS	<10.0 <5.0	NS	<1.0 <1.0	NS	<1.0 <1.0	NS	<1.0 <1.0	-	-	NS	<1.0 <1.0
Vinyl chloride	5	<0.19	5	<3.8	5	<2.50	5	<1.00	5	<0.20	5	<1.10	5	<0.22	5	<0.35	5	<0.35	-	-	5	<0.24
Xylenes, Total	186,667	<0.51	186,667	<10.2	186,667	<2.90	186,667	<1.50	186,667	<0.30	186,667	<1.25	186,667	<0.13	186,667	<0.52	186,667	<0.52	-	-	186,667	<0.32
Acid Compounds (µg/L) [2]																						
2-chlorophenol	30	*<44.2*	30	<24.2	30	<22.8	30	*<214.5*	30	*<45.5*	30	<1.48	30	<1.48	30	<3.10	30	<3.10	-	-	30	<2.92
2,4-dichlorophenol	59	*<48.4*	59	<25.9	59	<24.4	59	*<211.0*	59	<44.7	59	<1.65	59	<1.65	59	<2.81	59	<2.81	-	-	59	<3.21
2,4-dimethylphenol	171	<34.4	171	<31.0	171	<29.2	171	<114.0	171	<24.2	171	<2.20	171	<2.20	171	<2.64	171	<2.64	-	-	171	<1.32
4,6-dinitro-o-cresol	310	<43.6	310	<29.3	310	<27.6	310	<149.0	310	<31.6	310	<1.22	310	<1.22	310	<1.49	310	<1.49	-	-	310	<2.27
2,4-dinitrophenol	110	<20.0	110	<29.5	110	<27.8	110	*<129.5*	110	<27.5	110	<1.13	110	<1.13	110	<2.21	110	<2.21	-	-	110	<2.64
2-nitrophenol	NS	<46.2	NS	<58.9	NS	<55.6	NS	<205.5	NS	<43.6	NS	<1.57	NS	<1.57	NS	<2.84	NS	<2.84	-	-	NS	<2.61
4-nitrophenol	4,100	<159.4	4,100	<173.0	4,100	<163.2	4,100	<233.5	4,100	<49.5	4,100	<1.14	4,100	2.6	4,100	<2.98	4,100	<2.98	-	-	4,100	<2.03
p-chloro-m-cresol	15	*<39.2*	15	*<39.4*	15	*<37.2*	15	*<220.5*	15	*<46.7*	15	<1.65	15	<1.65	15	<1.87	15	<1.87	-	-	15	<3.10
Pentachlorophenol	16.577	*<87.4*	22.410	*<43.9*	34.561	*<41.4*	28.558	<168.0	40.564	<35.6	29.427	<1.39	28.848	<1.39	22.410	7.4	27.137	<1.47	-	-	23.80	<3.44
Phenol	37	*<40.0*	37	<25.2	37	<23.8	37	*<177.5*	37	*<37.6*	37	<1.34	37	<1.34	37	<2.30	37	<2.30	-	-	37	2.2
2,4,6-trichlorophenol	2	*<103.6*	2	*<59.4*	2	*<56.0*	2	*<239.5*	2	*<50.8*	2	<1.89	2	<1.89	2	*<2.60*	2	*<2.60*	-	-	2	<3.28
Bases/Neutrals (µg/L) [2]																						
Acenaphthene	198	<26.2	198	<36.0	198	<34.0	198	<67.0	198	<14.2	198	<1.03	198	<1.03	198	<0.35	198	<0.35	-	-	198	<1.02
Acenaphthylene	NS	<30.8	NS	<26.9	NS	<25.4	NS	<86.5	NS	<18.3	NS	<1.00	NS	<1.00	NS	<1.23	NS	<1.23	-	-	NS	<6.10
Anthracene	74	<32.8	74	<18.9	74	<17.8	74	*<86.5*	74	<18.3	74	<2.88	74	<2.88	74	<0.44	74	<0.44	-	-	74	<1.96
Benz(a)anthracene	0.02	*<53.0*	0.02	*<33.3*	0.02	*<31.4*	0.02	*<86.5*	0.02	*<18.3*	0.02	*<1.08*	0.02	*<1.08*	0.02	*<0.38*	0.02	*<0.38*	-	-	0.02	*<1.57*
Benzo(a)pyrene	0.02	*<89.4*	0.02	*<40.9*	0.02	*<38.6*	0.02	*<93.5*	0.02	*<19.8*	0.02	*<3.77*	0.02	*<3.77*	0.02	*<1.41*	0.02	*<1.41*	-	-	0.02	*<3.12*
Benzo(b)fluoranthene	0.02	*<78.4*	0.02	*<71.9*	0.02	*<67.8*	0.02	*<121.5*	0.02	*<25.8*	0.02	*<1.46*	0.02	*<1.46*	0.02	*<1.06*	0.02	*<1.06*	-	-	0.02	*<1.28*

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Benzo(g,h,i)perylene	NS	<68.0	NS	<29.9	NS	<28.2	NS	<86.5	NS	<18.3	NS	<1.29	NS	<1.29	NS	<0.72	NS	<0.72	-	-	NS	<2.83
Benzo(k)fluoranthene	0.02	*<60.0*	0.02	*<24.4*	0.02	*<23.0*	0.02	*<70.0*	0.02	*<14.8*	0.02	*<1.04*	0.02	*<1.04*	0.02	*<0.35*	0.02	*<0.35*	-	-	0.02	*<1.76*
Chrysene	0.02	*<51.2*	0.02	*<18.9*	0.02	*<17.8*	0.02	*<74.0*	0.02	*<15.7*	0.02	*<1.41*	0.02	*<1.41*	0.02	*<0.46*	0.02	*<0.46*	-	-	0.02	*<1.08*
Dibenz(a,h)anthracene	0.02	*<81.2*	0.02	*<85.9*	0.02	*<81.0*	0.02	*<99.0*	0.02	*<21.0*	0.02	*<1.24*	0.02	*<1.24*	0.02	*<0.47*	0.02	*<0.47*	-	-	0.02	*<1.93*
1,2-dichlorobenzene	205	<25.4	205	<46.0	205	<43.4	205	<13.5	205	<2.9	205	<1.76	205	<1.76	205	<1.04	205	<1.04	-	-	205	<0.58
1,3-dichlorobenzene	2,500	<23.8	2,500	<51.3	2,500	<48.4	2,500	<56.5	2,500	<12.0	2,500	<1.74	2,500	<1.74	2,500	<0.47	2,500	<0.47	-	-	2,500	<0.52
1,4-dichlorobenzene	2,000	<28.4	2,000	<45.2	2,000	<42.6	2,000	<52.5	2,000	<11.1	2,000	<1.56	2,000	<1.56	2,000	<1.28	2,000	<1.28	-	-	2,000	<0.50
3,3-dichlorobenzidine	0.03	*<236.0*	0.03	*<156.5*	0.03	*<147.6*	0.03	*<1363.5*	0.03	*<289.1*	0.03	*<6.06*	0.03	*<6.06*	0.03	*<11.60*	0.03	*<11.60*	-	-	0.03	*<23.45*
Diethyl phthalate	8,767	<38.4	8,767	<31.4	8,767	<29.6	8,767	<95.0	8,767	<20.1	8,767	<2.37	8,767	<2.37	8,767	0.6	8,767	0.5	-	-	8,767	<1.07
Dimethyl phthalate	17,000	<33.8	17,000	<25.7	17,000	<24.2	17,000	<89.5	17,000	<19.0	17,000	<2.42	17,000	<2.42	17,000	<0.47	17,000	<0.47	-	-	17,000	<0.58
Di-n-butyl phthalate	470	<85.2	470	<48.5	470	<45.8	470	<111.5	470	<23.6	470	<1.85	470	<1.85	470	<0.31	470	<0.31	-	-	470	<1.37
2,4-dinitrotoluene	421	<53.8	421	<27.8	421	<26.2	421	<102.5	421	<21.7	421	<2.12	421	<2.12	421	<0.26	421	<0.26	-	-	421	<1.30
2,6-dinitrotoluene	3,733	<77.6	3,733	<39.6	3,733	<37.4	3,733	<126.0	3,733	<26.7	3,733	<1.12	3,733	<1.12	3,733	<0.38	3,733	<0.38	-	-	3,733	<1.39
Di-n-octyl phthalate	373,333	<157.2	373,333	<87.6	373,333	<82.6	373,333	<144.0	373,333	<30.5	373,333	<1.10	373,333	<1.10	373,333	<1.28	373,333	<1.28			373,333	<1.67
1,2-diphenylhydrazine (as azobenzene)	NS	<28.8	NS	<22.7	NS	<21.4	NS	<116.5	NS	<24.7	NS	<6.70	NS	<6.70	NS	<1.06	NS	<1.06	-	-	NS	<7.46
Fluoranthene	28	*<49.0*	28	<14.2	28	<13.4	28	*<89.5*	28	<19.0	28	<1.35	28	<1.35	28	<0.27	28	<0.27	-	-	28	<1.06
Fluorene	1,067	<26.2	1,067	<35.6	1,067	<33.6	1,067	<77.0	1,067	<16.3	1,067	<4.81	1,067	<4.81	1,067	<0.29	1,067	<0.29	-	-	1,067	<0.51
Hexachlorobenzene	0.0003	*<30.0*	0.0003	*<27.6*	0.0003	*<26.0*	0.0003	*<69.5*	0.0003	*<14.7*	0.0003	*<1.23*	0.0003	*<1.23*	0.0003	*<0.34*	0.0003	*<0.34*	-	-	0.0003	*<0.47*
Hexachlorobutadiene	18	*<36.8*	18	*<29.0*	18	*<27.4*	18	<16.5	18	<3.5	18	<1.82	18	<1.82	18	<1.67	18	<1.67	-	-	18	<0.41
Hexachlorocyclopentadiene	3.5	*<74.8*	3.5	*<28.0*	3.5	*<26.4*	3.5	*<113.5*	3.5	*<24.1*	3.5	<1.23	3.5	<1.23	3.5	<1.53	3.5	<1.53	-	-	3.5	<2.16
Hexachloroethane	3.3	*<26.8*	3.3	*<29.7*	3.3	*<28.0*	3.3	*<20.0*	3.3	*<4.2*	3.3	<1.62	3.3	<1.62	3.3	<1.23	3.3	<1.23	-	-	3.3	<0.54
Indeno(1,2,3-cd)pyrene	0.2	*<83.8*	0.2	*<70.6*	0.2	*<66.6*	0.2	*<101.5*	0.2	*<21.5*	0.2	*<1.39*	0.2	*<1.39*	0.2	*<0.62*	0.2	*<0.62*	-	-	0.2	**4.8**[9]
Isophorone	961	<34.6	961	<40.3	961	<38.0	961	<70.5	961	<14.9	961	<2.14	961	<2.14	961	<0.37	961	<0.37	-	-	961	<0.51
Naphthalene	1,524	<20.6	1,524	<30.1	1,524	<28.4	1,524	<60.0	1,524	<12.7	1,524	<1.83	1,524	<1.83	1,524	<0.36	1,524	<0.36	-	-	1,524	<0.49
Nitrobenzene	138	<47.6	138	<27.8	138	<26.2	138	<61.5	138	<13.0	138	<2.10	138	<2.10	138	<1.26	138	<1.26	-	-	138	<0.44
N-nitrosodimethylamine	0.03	*<20.6*	0.03	*<34.8*	0.03	*<32.8*	0.03	*<60.0*	0.03	*<12.7*	0.03	*<1.00*	0.03	*<1.00*	0.03	*<1.13*	0.03	*<1.13*	-	-	0.03	*<0.54*
N-nitrosodi-n-propylamine	0.5	*<53.0*	0.5	*<39.9*	0.5	*<37.6*	0.5	*<75.5*	0.5	*<16.0*	0.5	*<1.15*	0.5	*<1.15*	0.5	*<1.17*	0.5	*<1.17*	-	-	0.5	*<1.02*
N-nitrosodiphenylamine	6	*<32.8*	6	*<21.2*	6	*<20.0*	6	*<152.0*	6	<32.2	6	<3.57	6	<3.57	6	<1.15	6	<1.15	-	-	6	<1.67
Phenanthrene	30	<25.6	30	<16.1	30	<15.2	30	*<81.5*	30	<17.3	30	<1.39	30	<1.39	30	<0.31	30	<0.31	-	-	30	<0.49
Pyrene	800	<49.0	800	<49.4	800	<46.6	800	<82.0	800	<17.4	800	<3.86	800	<3.86	800	<0.67	800	<0.67	-	-	800	<3.21
1,2,4-trichlorobenzene	70	<28.4	70	<56.4	70	<53.2	70	<16.0	70	<3.4	70	<1.69	70	<1.69	70	<1.04	70	<1.04	-	-	70	<0.55
Pesticides (µg/L) [2]																						
Aldrin	0.00005	*<0.013*	0.00005	*<0.058*	0.00005	*<0.046*	0.00005	*<0.046*	0.00005	*<0.016*	0.00005	*<0.027*	0.00005	*<0.027*	0.00005	*<0.012*	0.00005	*<0.012*	-	-	0.00005	*<0.019*
Alpha-BHC	0.005	*<0.016*	0.005	*<0.044*	0.005	*<0.038*	0.005	*<0.038*	0.005	*<0.017*	0.005	*<0.021*	0.005	*<0.021*	0.005	*<0.058*	0.005	*<0.058*	-	-	0.005	*<0.010*
Beta-BHC	0.02	*<0.085*	0.02	*<0.048*	0.02	*<0.095*	0.02	*<0.095*	0.02	*<0.092*	0.02	*<0.072*	0.02	*<0.072*	0.02	*<0.063*	0.02	*<0.063*	-	-	0.02	*<0.049*
Gamma-BHC	1	<0.014	1	<0.055	1	<0.033	1	<0.033	1	<0.023	1	<0.034	1	<0.034	1	<0.058	1	<0.058	-	-	1	<0.019
Delta-BHC	1,600	<0.016	1,600	<0.035	1,600	<0.032	1,600	<0.032	1,600	<0.018	1,600	<0.021	1,600	<0.021	1,600	<0.066	1,600	<0.066	-	-	1,600	<0.035

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SR030	Winter 2011/12		Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16		Summer 2016[6]		Winter 2016/17	
SAMPLING DATE(S):	**SWQS**	**12/12/11**	**SWQS**	**7/12/12**	**SWQS**	**12/14/12**	**SWQS**	**7/21/13**	**SWQS**	**11/22/13**	**SWQS**	**8/12/14**	**SWQS**	**12/4/14**	**SWQS**	**7/31/15**	**SWQS**	**1/31/16**	**-**	**-**	**SWQS**	**11/27/16**
Chlordane	0.0008	*<0.35*	0.0008	*<0.29*	0.0008	*<0.16*	0.0008	*<0.16*	0.0008	*<0.020*	0.0008	*<0.14*	0.0008	*<0.14*	0.0008	*<0.36*	0.0008	*<0.36*	-	-	0.0008	*<0.61*
4,4'-DDT	0.0002	*<0.020*	0.0002	*<0.052*	0.0002	*<0.029*	0.0002	*<0.029*	0.0002	*<0.016*	0.0002	*<0.025*	0.0002	*<0.025*	0.0002	*<0.017*	0.0002	*<0.017*	-	-	0.0002	*<0.011*
4,4'-DDE	0.0002	*<0.011*	0.0002	**0.068**	0.0002	**0.041**	0.0002	**0.037**	0.0002	*<0.018*	0.0002	*<0.010*	0.0002	**0.027**	0.0002	*<0.013*	0.0002	*<0.013*	-	-	0.0002	<0.020
4,4'-DDD	0.0002	*<0.017*	0.0002	*<0.031*	0.0002	*<0.023*	0.0002	*<0.023*	0.0002	*<0.014*	0.0002	*<0.031*	0.0002	*<0.031*	0.0002	*<0.021*	0.0002	*<0.021*	-	-	0.0002	*<0.021*
Dieldrin	0.00005	*<0.024*	0.00005	*<0.045*	0.00005	*<0.028*	0.00005	*<0.028*	0.00005	*<0.022*	0.00005	*<0.030*	0.00005	*<0.030*	0.00005	*<0.060*	0.00005	*<0.060*	-	-	0.00005	*<0.019*
Alpha-endosulfan	0.2	<0.010	0.2	<0.048	0.2	<0.034	0.2	<0.034	0.2	<0.018	0.2	<0.018	0.2	<0.018	0.2	<0.072	0.2	<0.072	-	-	0.2	<0.018
Beta-endosulfan	0.2	<0.021	0.2	<0.054	0.2	<0.034	0.2	<0.034	0.2	<0.013	0.2	<0.032	0.2	<0.032	0.2	<0.019	0.2	<0.019	-	-	0.2	<0.021
Endosulfan sulfate	0.2	<0.015	0.2	<0.030	0.2	<0.025	0.2	<0.025	0.2	<0.014	0.2	<0.008	0.2	0.028	0.2	<0.016	0.2	<0.016	-	-	0.2	<0.022
Endrin	0.004	*<0.019*	0.004	*<0.036*	0.004	*<0.035*	0.004	*<0.035*	0.004	*<0.016*	0.004	*<0.017*	0.004	*<0.017*	0.004	*<0.023*	0.004	*<0.023*			0.004	*<0.042*
Endrin aldehyde	0.09	*<0.015*	0.09	<0.014	0.09	<0.038	0.09	<0.038	0.09	<0.023	0.09	<0.032	0.09	<0.032	0.09	<0.026	0.09	<0.026	-	-	0.09	<0.024
Heptachlor	0.00008	*<0.012*	0.00008	*<0.045*	0.00008	*<0.035*	0.00008	*<0.035*	0.00008	*<0.018*	0.00008	*<0.027*	0.00008	*<0.027*	0.00008	*<0.035*	0.00008	*<0.035*	-	-	0.00008	**0.04**
Heptachlor epoxide	0.00004	*<0.010*	0.00004	*<0.045*	0.00004	*<0.032*	0.00004	*<0.032*	0.00004	*<0.020*	0.00004	*<0.008*	0.00004	*<0.008*	0.00004	*<0.062*	0.00004	*<0.062*	-	-	0.00004	*<0.020*
PCB-1242	[4]	<0.40	[4]	<0.34	[4]	<0.41	[4]	<0.41	[4]	<0.55	[4]	<0.37	[4]	<0.37	[4]	<0.14	[4]	<0.14	-	-	[4]	<0.72
PCB-1254	[4]	<0.22	[4]	<0.34	[4]	<0.20	[4]	<0.20	[4]	<0.28	[4]	<0.23	[4]	<0.23	[4]	<0.20	[4]	<0.20	-	-	[4]	<0.22
PCB-1221	[4]	<0.34	[4]	<0.55	[4]	<0.68	[4]	<0.68	[4]	<0.85	[4]	<0.22	[4]	<0.22	[4]	<0.64	[4]	<0.64	-	-	[4]	<0.46
PCB-1232	[4]	<0.41	[4]	<0.77	[4]	<0.66	[4]	<0.66	[4]	<0.34	[4]	<0.55	[4]	<0.55	[4]	<0.37	[4]	<0.37	-	-	[4]	<0.90
PCB-1248	[4]	<0.21	[4]	<0.30	[4]	<0.78	[4]	<0.78	[4]	<0.27	[4]	<0.19	[4]	<0.19	[4]	<0.22	[4]	<0.22	-	-	[4]	<0.24
PCB-1260	[4]	<0.19	[4]	<0.34	[4]	<0.21	[4]	<0.21	[4]	<0.23	[4]	<0.32	[4]	<0.32	[4]	<0.59	[4]	<0.59	-	-	[4]	<0.26
PCB-1016	[4]	<0.26	[4]	<0.37	[4]	<0.36	[4]	<0.36	[4]	<0.33	[4]	<0.18	[4]	<0.18	[4]	<0.55	[4]	<0.55	-	-	[4]	<0.29
Toxaphene	0.0003	*<0.33*	0.0003	*<0.79*	0.0003	*<0.53*	0.0003	*<0.53*	0.0003	*<0.34*	0.0003	*<0.22*	0.0003	*<0.22*	0.0003	*<0.60*	0.0003	*<0.60*	-	-	0.0003	*<0.48*

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OUTFALL ID: SR045 **RECEIVING WATER: Salt River** **DESIGNATED USES: A&We, PBC**	**MONITORING SEASONS** Summer: June 1 – October 31 Winter: November 1 – May 31																					
	Winter 2011/12		Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16[6]		Summer 2016		Winter 2016/17	
SAMPLING DATE(S):	**SWQS**	**11/5/11**	**SWQS**	**7/12/12**	**SWQS**	**12/14/12**	**SWQS**	**7/21/13**	**SWQS**	**11/22/13**	**SWQS**	**8/12/14**	**SWQS**	**12/4/14**	**SWQS**	**7/31/15**	**-**	**-**	**SWQS**	**7/29/16**	**SWQS**	**11/3/16**
MONITORING PARAMETERS [1, 2]																						
Conventional Parameters																						
Flow [3] (cfs)	NS	1.048	NS	0.967	NS	0.67	NS	8.88	NS	1.01	NS	0.725	NS	1.371	NS	1.898	-	-	NS	7.105	NS	1.251
pH	6.5-9	7.92	6.5-9	7.35	6.5-9	7.45	6.5-9	8.24	6.5-9	8.30	6.5-9	7.94	6.5-9	7.73	6.5-9	7.62	-	-	6.5-9	7.09	6.5-9	**6.34**
Temperature (ºC)	Varies	16.5	Varies	31.6	Varies	20.5	Varies	28.0	Varies	19.5	Varies	30.1	Varies	19.0	Varies	30.5	-	-	Varies	30.0	Varies	21.0
Hardness (mg/L)	400	43.0	400	105	400	72.1	400	40.1	400	31.2	400	96.1	400	42.2	400	42.4	-	-	400	45.4	400	87.8
Total Dissolved Solids (TDS) (mg/L) [2]	NS	178	NS	394	NS	266	NS	98	NS	82	NS	340	NS	124	NS	126	-	-	NS	166	NS	302
Total Suspended Solids (TSS) (mg/L) [2]	NS	474	NS	360	NS	332	NS	60.0	NS	420	NS	192	NS	1070	NS	126	-	-	NS	80	NS	162
Biochemical Oxygen Demand (BOD) (mg/L) [2]	NS	33	NS	86	NS	127	NS	13	NS	56	NS	45	NS	175	NS	25	-	-	NS	35	NS	127
Chemical Oxygen Demand (COD) (mg/L) [2]	NS	270	NS	480	NS	540	NS	100	NS	540	NS	280	NS	950	NS	160	-	-	NS	150	NS	410

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SR045	Winter 2011/12		Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16[6]		Summer 2016		Winter 2016/17	
SAMPLING DATE(S):	**SWQS**	**11/5/11**	**SWQS**	**7/12/12**	**SWQS**	**12/14/12**	**SWQS**	**7/21/13**	**SWQS**	**11/22/13**	**SWQS**	**8/12/14**	**SWQS**	**12/4/14**	**SWQS**	**7/31/15**	**-**	**-**	**SWQS**	**7/29/16**	**SWQS**	**11/3/16**
Inorganics																						
Cyanide, total (µg/L) [2]	84	<5.0	84	<5	84	5	84	<50	84	<5	84	<5	84	<5	84	<5	-	-	84	<5	84	<5
Nutrients (mg/L) [2]																						
Nitrate + Nitrite as N	NS	1.1	NS	3.0	NS	1.7	NS	0.8	NS	0.6	NS	1.7	NS	0.5	NS	1.2	-	-	NS	1.4	NS	1.4
Ammonia as N	NS	0.83	NS	2.5	NS	1.5	NS	0.64	NS	0.42	NS	1.4	NS	0.51	NS	1.4	-	-	NS	1.3	NS	1.1
Total Kjeldahl Nitrogen (TKN)	NS	3.2	NS	8.4	NS	7.6	NS	3.3	NS	6.9	NS	4.5	NS	14	NS	2.9	-	-	NS	3.9	NS	6.8
Total Phosphorus as P	NS	1.1	NS	0.74	NS	0.70	NS	0.41	NS	1.5	NS	0.91	NS	0.58	NS	0.55	-	-	NS	1.3	NS	0.89
Ortho-Phosphorus as P	NS	0.2	NS	0.5	NS	0.3	NS	<0.1	NS	0.2	NS	0.2	NS	0.1	NS	<0.1	-	-	NS	0.2	NS	0.3
Microbiological																						
Escherichia coli (*E. coli*) (CFU/100 mg or MPN/100 mL) [2]	575	**>2,419.6**	575	378.4	575	**1,986.3**	575	**2419.6**	575	**>2419.6**	575	**>2,419.6**	575	**>2,419.6**	575	**34,480**	-	-	575	**5,040**	575	**2,419.6**

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SR045	Winter 2011/12		Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16[6]		Summer 2016		Winter 2016/17	
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Total Metals (µg/L) [2]																						
Antimony	747 T	2.3 T 1.0 D	747 T	3.4 T 3.0 D	747 T	3.2 T 1.3 D	747 T	1.8 T 0.9 D	747 T	2.6 T 0.6 D	747 T	3.5 T 3.1 D	747 T	4.8 T 1.0 D	747 T	3.2 T <5.0 D	-	-	747 T	1.8 T <5 D	747 T	3.7 T <5 D
Arsenic	280 T 440 D	3.6 T 1.1 D	280 T 440 D	8.5 T 3.5 D	280 T 440 D	5.5 T 1.7 D	280 T 440 D	2.6 T 1.0 D	280 T 440 D	8.1 T 1.1 D	280 T 440 D	5.0 T 3.2 D	280 T 440 D	10.5 T 1.2 D	280 T 440 D	3.5 T <5.0 D	-	-	280 T 440 D	2.5 T <5 D	280 T 440 D	3.8 T <5 D
Barium	98,000 T	150 T 14 D	98,000 T	205 T 44 D	98,000 T	173 T 20 D	98,000 T	86 T 22 D	98,000 T	344 T 8 D	98,000 T	98 T 39 D	98,000 T	599 T 11 D	98,000 T	120 T 19 D	-	-	98,000 T	62 T 18 D	98,000 T	160 T 25 D
Beryllium	1,867 T	0.2 T <0.06 D	1,867 T	0.61 T <0.15 D	1,867 T	0.32 T <0.15 D	1,867 T	0.22 T <0.15 D	1,867 T	0.53 T <0.06 D	1,867 T	<0.15 T <0.15 D	1,867 T	0.75 T <0.06 D	1,867 T	0.21 T <5.0 D	-	-	1,867 T	<0.25 T <5 D	1,867 T	<0.25 T <5 D
Cadmium	700 T 10.03 D	0.7 T <0.10 D	700 T 23.91 D	0.7 T <0.25 D	700 T 16.59 D	1.0 T <0.25 D	700 T 9.37 D	0.4 T <0.25 D	700 T 7.34 D	2.1 T <0.10 D	700 T 21.94 D	<0.30 T <0.30 D	700 T 9.85 D	2.2 T <0.12 D	700 T 9.89 D	0.4 T <5.0 D	-	-	700 T 27.43 D	0.3 T <0.25 D	700 T 56.09 D	0.4 T <0.25
Chromium	NS	15.7 T <1.80 D	NS	18.6 T 3.2 D	NS	12.6 T 2.5 D	NS	7.3 T <2.00 D	NS	23.8 T 0.8 D	NS	7.7 T 2.5 D	NS	34.6 T 1.9 D	NS	10.4 T <5.0 D	-	-	NS	6.5 T <5 D	NS	10.4 T <5 D
Copper	1,300 T 10.50 D	89.2 T **21.9 D**	1,300 T 24.36 D	133 T **59.7 D**	1,300 T 17.09 D	124 T **40.8 D**	1,300 T 9.83 D	72.0 T **23.8 D**	1,300 T 7.77 D	206 T **12.2 D**	1,300 T 22.40 D	60.6 T **32.7 D**	1,300 T 10.32 D	263 T **16.7 D**	1,300 T 10.36 D	66.6 T **21.6 D**	-	-	1,300 T 11.05 D	44.4 T **30.9 D**	1,300 T 20.58 D	76.2 T **38.4 D**
Lead	15 T 53.78 D	**37.4 T** 0.9 D	15 T 143.73 D	**31.5 T** 2.0 D	15 T 95.29 D	**31.4 T** 0.8 D	15 T 49.76 D	**21.4 T** 1.2 D	15 T 37.58 D	**75.3 T** 0.6 D	15 T 130.52 D	14.3 T 1.4 D	15 T 52.67 D	**97.9 T** 0.6 D	15 T 52.95 D	**19.4 T** <0.8 D	-	-	15 T 57.13 D	10.9 T 0.9 D	15 T 118.26 D	**17.3 T** 0.9 D
Mercury	280 T 5 D	<0.092 T&D	280 T 5 D	0.09 T <0.040 D	280 T 5 D	0.06 T <0.040 D	280 T 5 D	0.02 T <0.020 D	280 T 5 D	0.20 T 0.026 D	280 T 5 D	<0.092 T <0.2 D	280 T 5 D	0.30 T <0.092 D	280 T 5 D	0.08 T <0.2 D	-	-	280 T 5 D	0.094 T <0.068 D	280 T 5 D	0.095 T <0.2 D
Nickel	28,000 T 2,036 D	13.6 T 3.5 D	28,000 T 4,334 D	30.0 T 11.0 D	28,000 T 3,153 D	16.7 T 5.4 D	28,000 T 1,919 D	10.3 T 3.5 D	28,000 T 1,552 D	32.3 T 1.7 D	28,000 T 4021 D	14.6 T 8.4 D	28,000 T 2004 D	37.9 T 2.1 D	28,000 T 2,012 D	11.2 T 2.7 D	-	-	28,000 T 2,132 D	7.9 T <5 D	28,000 T 3725 D	13.4 T 6.9 D
Selenium	33 T	<0.85 T <0.34 D	33 T	1.5 T 1.2 D	33 T	1.1 T 0.7 D	33 T	<0.60 T <0.60 D	33 T	0.69 T <0.24 D	33 T	0.76 T 0.5 D	33 T	0.87 T 0.4 D	33 T	0.51 T <5.0 D	-	-	33 T	0.96 T <5 D	33 T	0.87 T <5 D
Silver	4,667 T 0.75 D	<0.2 T&D	4,667 T 3.50 D	0.2 T <0.15 D	4,667 T 1.834 D	0.3 T 0.3 D	4,667 T 0.672 D	0.2 T <0.15 D	4,667 T 0.434 D	0.5 T <0.15 D	4,667 T 3.005 D	<0.20 T <0.20 D	4,667 T 0.726 D	0.8 T <0.08 D	4,667 T 0.73 D	0.3 T *<5.0 D*	-	-	4,667 T 0.83 D	<0.45 T *<5 D*	4,667 T 2.57 D	<0.45 T *<5 D*
Thallium	75 T	<0.20 T <0.08 D	75 T	<0.20 T <0.20 D	75 T	<0.20 T <0.20 D	75 T	<0.20 T <0.20 D	75 T	<0.20 T <0.08 D	75 T	<0.10 T <0.10 D	75 T	0.25 T <0.04 D	75 T	<0.15 T <5.0 D	-	-	75 T	0.32 T <5 D	75 T	<0.2 T <5 D
Zinc	280,000 T 544 D	384 T 60.0 D	280,000 T 1,159 D	381 T 118 D	280,000 T 843 D	469 T 60.6 D	280,000 T 513 D	207 T 63.2 D	280,000 T 414 D	1020 T 23.0 D	280,000 T 1075 D	192 T 66.4 D	280,000 T 535.2 D	1,410 T 32.8 D	280,000 T 537 D	288 T 50.9 D	-	-	280,000 T 570 D	202 T 58.2 D	280,000 T 996 D	274 T 82.4 D
Organic Toxic Pollutants																	-	-				
Total Petroleum Hydrocarbons (TPH) (mg/L) [2]	NS	<10	NS	<5	NS	<10	NS	<11	NS	15	NS	<10	NS	<10	NS	<11	-	-	NS	<5.7	NS	<4.3
Total Oil and Grease (mg/L) [2]	NS	<5	NS	<5	NS	29	NS	<5.7	NS	42	NS	<5.0	NS	6.0	NS	5.8	-	-	NS	<5.7	NS	<4.3
VOCs, Semi-VOCs, & Pesticides (µg/L) [2]																	-	-				
Acrolein	467	<0.37	467	<2.93	467	7.5	467	<0.20	467	<0.20	467	2.7	467	<0,40	467	<0.78	-	-	467	<0.41	467	1.3
Acrylonitrile	37,333	<0.17	37,333	<2.26	37,333	<1.130	37,333	<0.16	37,333	<0.16	37,333	<0.70	37,333	<0.14	37,333	<0.53	-	-	37,333	<0.42	37,333	<0.42
Benzene	3,733	<0.20	3,733	<2.0	3,733	<0.75	3,733	<0.15	3,733	<1.20	3,733	<0.65	3,733	<0.13	3,733	<0.46	-	-	3,733	<0.46	3,733	<0.29
Bromoform	18,667	<0.25	18,667	<2.5	18,667	<2.15	18,667	<0.43	18,667	<2.35	18,667	<1.40	18,667	<0.28	18,667	<0.68	-	-	18,667	<0.68	18,667	<0.33
Carbon tetrachloride	1,307	<0.31	1,307	<3.1	1,307	<1.65	1,307	<0.33	1,307	<1.30	1,307	<1.15	1,307	<0.23	1,307	<0.31	-	-	1,307	<0.31	1,307	<0.20

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9 Data flagged due to contamination in the lab reagent blank; therefore, these are not true detections or exceedances.

SR045	Winter 2011/12		Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16[6]		Summer 2016		Winter 2016/17	
SAMPLING DATE(S):	**SWQS**	**11/5/11**	**SWQS**	**7/12/12**	**SWQS**	**12/14/12**	**SWQS**	**7/21/13**	**SWQS**	**11/22/13**	**SWQS**	**8/12/14**	**SWQS**	**12/4/14**	**SWQS**	**7/31/15**	**-**	**-**	**SWQS**	**7/29/16**	**SWQS**	**11/3/16**
Chlorobenzene	18,667	<0.25	18,667	<2.5	18,667	<1.40	18,667	<0.28	18,667	<0.80	18,667	<0.65	18,667	<0.13	18,667	<0.50	-	-	18,667	<0.50	18,667	<0.33
Chlorodibromomethane	18,667	<0.21	18,667	<2.1	18,667	<1.30	18,667	<0.26	18,667	<0.90	18,667	<1.20	18,667	<0.24	18,667	<0.61	-	-	18,667	<0.61	18,667	<0.32
Chloroethane (ethyl chloride)	NS	<0.14	NS	<1.4	NS	<1.35	NS	<0.27	NS	<1.10	NS	<0.95	NS	<0.19	NS	<0.40	-	-	NS	<0.40	NS	<0.33
2-chloroethylvinyl ether	NS	<0.174	NS	<2.2	NS	<0.22	NS	<0.22	NS	<0.22	NS	<0.95	NS	<0.19	NS	<0.53	-	-	NS	<0.43	NS	<0.43
Chloroform	9,333	<0.40	9,333	<4.0	9,333	<1.05	9,333	<0.21	9,333	<1.15	9,333	<0.70	9,333	<0.14	9,333	<0.49	-	-	9,333	<0.49	9,333	<0.32
Dichlorobromomethane	18,667	<0.23	18,667	<2.3	18,667	<0.75	18,667	<0.15	18,667	<1.15	18,667	<0.75	18,667	<0.15	18,667	<0.49	-	-	18,667	<0.49	18,667	<0.29
1,1-dichloroethane	NS	<0.18	NS	<1.8	NS	<0.65	NS	<0.13	NS	<1.30	NS	<0.95	NS	<0.19	NS	<0.42	-	-	NS	<0.42	NS	<0.29
1,2-dichloroethane	186,667	<0.20	186,667	<2.0	186,667	<0.80	186,667	<0.16	186,667	<1.25	186,667	<0.55	186,667	<0.11	186,667	<0.51	-	-	186,667	<0.51	186,667	<0.35
1,1-dichloroethylene	46,667	<0.23	46,667	<2.3	46,667	<1.85	46,667	<0.37	46,667	<1.40	46,667	<1.35	46,667	<0.27	46,667	<0.34	-	-	46,667	<0.34	46,667	<0.19
1,2-dichloropropane	84,000	<0.22	84,000	<2.2	84,000	<0.75	84,000	<0.15	84,000	<1.25	84,000	<0.90	84,000	<0.18	84,000	<0.49	-	-	84,000	<0.49	84,000	<0.32
1,3-dichloropropylene[8]	28,000	<0.19	28,000	cis<1.9 trans<1.9	28,000	cis<0.50 trans<0.75	28,000	cis<0.10 trans<0.15	28,000	cis<1.20 trans<1.10	28,000	<0.65	28,000	<0.13	28,000	cis <0.51 trans <0.50	-	-	28,000	cis <0.51 trans <0.50	28,000	<0.28
Ethylbenzene	93,333	<0.27	93,333	<2.7	93,333	<1.45	93,333	<0.29	93,333	<0.65	93,333	<0.75	93,333	<0.15	93,333	<0.46	-	-	93,333	<0.46	93,333	<0.29
Methyl bromide	1,307	<0.14	1,307	<1.4	1,307	<0.95	1,307	<0.19	1,307	<0.95	1,307	<0.90	1,307	<0.18	1,307	<0.46	-	-	1,307	<0.46	1,307	<0.28
Methyl chloride	NS	<0.20	NS	<2.0	NS	<1.85	NS	<0.37	NS	<1.40	NS	<1.15	NS	<0.23	NS	<0.46	-	-	NS	<0.46	NS	<0.28
Methylene chloride	56,000	<0.45	56,000	<4.5	56,000	1.6	56,000	<0.28	56,000	<1.00	56,000	<1.00	56,000	<0.20	56,000	<0.81	-	-	56,000	<0.81	56,000	<0.31
1,1,2,2-tetrachloroethane	93,333	<0.11	93,333	<1.1	93,333	<2.45	93,333	<0.49	93,333	<2.00	93,333	<1.75	93,333	<0.35	93,333	<0.80	-	-	93,333	<0.80	93,333	<0.33
Tetrachloroethylene	9,333	<0.26	9,333	<2.6	9,333	<1.15	9,333	<0.23	9,333	<1.05	9,333	<0.65	9,333	<0.13	9,333	<0.35	-	-	9,333	<0.35	9,333	<0.23
Toluene	373,333	<0.23	373,333	<2.3	373,333	<0.60	373,333	<0.12	373,333	<0.95	373,333	<0.55	373,333	<0.11	373,333	<0.43	-	-	373,333	<0.43	373,333	<0.28
1,2-trans-dichloroethylene	18,667	<0.14	18,667	<1.4	18,667	<0.85	18,667	<0.17	18,667	<1.25	18,667	<0.90	18,667	<0.18	18,667	<0.38	-	-	18,667	<0.38	18,667	<0.24
1,1,1-trichloroethane	1,866,66 7	<0.28	1,866,667	<2.8	1,866,667	<1.15	1,866,667	<0.23	1,866,667	<1.00	1,866,667	<0.70	1,866,667	<0.14	1,866,667	<0.34	-	-	1,866,667	<0.34	1,866,667	<0.23
1,1,2-trichloroethane	3,733	<0.22	3,733	<2.2	3,733	<1.20	3,733	<0.24	3,733	<0.75	3,733	<0.65	3,733	<0.13	3,733	<0.60	-	-	3,733	<0.60	3,733	<0.29
Trichloroethylene	280	<0.35	280	<3.5	280	<1.20	280	<0.24	280	<0.75	280	<1.10	280	<0.22	280	<0.48	-	-	280	<0.48	280	<0.28
1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene	NS	<1.0	NS	<10 <10	NS	<5.0 <5.0	NS	<1.0 <1.0	NS	<5.0 <5.0	NS	<10.00 <5.00	NS	<1.0 <1.0	NS	<1.0 <1.0	-	-	NS	<1.0 <1.0	NS	<1.0 <1.0
Vinyl chloride	2,800	<0.19	2,800	<1.9	2,800	<2.50	2,800	<0.50	2,800	<1.00	2,800	<1.10	2,800	<0.22	2,800	<0.35	-	-	2,800	<0.35	2,800	<0.24
Xylenes, Total	186,667	<0.51	186,667	<5.1	186,667	<2.90	186,667	<0.58	186,667	<1.50	186,667	<1.25	186,667	<0.13	186,667	<0.52	-	-	186,667	<0.52	186,667	<0.32
Acid Compounds (µg/L) [2]																						
2-chlorophenol	4,667	<46.4	4,667	<24.6	4,667	<57.0	4,667	<85.8	4,667	<214.5	4,667	<1.48	4,667	<1.48	4,667	<3.10	-	-	4,667	<2.92	4,667	<2.92
2,4-dichlorophenol	2,800	<50.8	2,800	<26.4	2,800	<61.0	2,800	<84.4	2,800	<211.0	2,800	<1.65	2,800	<1.65	2,800	<2.81	-	-	2,800	<3.21	2,800	<3.21
2,4-dimethylphenol	18,667	<36.1	18,667	<31.5	18,667	<73.0	18,667	<45.6	18,667	<114.0	18,667	<2.20	18,667	<2.20	18,667	<2.64	-	-	18,667	<1.32	18,667	<1.32
4,6-dinitro-o-cresol	3,733	<45.8	3,733	<29.8	3,733	<69.0	3,733	<59.6	3,733	<149.0	3,733	<1.22	3,733	<1.22	3,733	<1.49	-	-	3,733	<2.27	3,733	<2.27
2,4-dinitrophenol	1,867	<21.0	1,867	<30.0	1,867	<69.5	1,867	<51.8	1,867	<129.5	1,867	<1.13	1,867	<1.13	1,867	<2.21	-	-	1,867	<2.64	1,867	<2.64
2-nitrophenol	NS	<48.5	NS	<60.0	NS	<139.0	NS	<82.2	NS	<205.5	NS	<1.57	NS	<1.57	NS	<2.84	-	-	NS	<2.61	NS	<2.61
4-nitrophenol	NS	<167.4	NS	<176.3	NS	<408.0	NS	<93.4	NS	<233.5	NS	<1.14	NS	3.1	NS	<2.98	-	-	NS	<2.03	NS	<2.03
p-chloro-m-cresol	48,000	<41.2	48,000	<40.2	48,000	<93.0	48,000	<88.2	48,000	<220.5	48,000	<1.65	48,000	<1.65	48,000	<1.87	-	-	48,000	<3.10	48,000	<3.10
Pentachlorophenol	92.74	<91.8	52.32	<44.7	57.85	*<103.5*	127.97	<67.2	135.76	*<168.0*	94.663	<1.39	76.64	<1.39	68.60	6.6	-	-	40.24	3.8	18.94	<3.44

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Phenol	180,000	<42.0	180,000	<25.7	180,000	<59.5	180,000	<71.0	180,000	<177.5	180,000	2.8	180,000	1.9	180,000	<2.30	-	-	180,000	2.7	180,000	2.4
2,4,6-trichlorophenol	130	<108.8	130	<60.5	130	*<140.0*	130	<95.8	130	*<239.5*	130	<1.89	130	<1.89	130	<2.60	-	-	130	<3.28	130	<3.28
Bases/Neutrals (µg/L) [2]																						
Acenaphthene	56,000	<27.5	56,000	<36.7	56,000	<85.0	56,000	<26.8	56,000	<67.0	56,000	<1.03	56,000	<1.03	56,000	<0.35	-	-	56,000	<1.02	56,000	<1.02
Acenaphthylene	NS	<32.3	NS	<27.4	NS	<63.5	NS	<34.6	NS	<86.5	NS	<1.00	NS	<1.00	NS	<1.23	-	-	NS	<6.10	NS	<6.10
Anthracene	280,000	<34.4	280,000	<19.2	280,000	<44.5	280,000	<34.6	280,000	<86.5	280,000	<2.88	280,000	<2.88	280,000	<0.44	-	-	280,000	<1.96	280,000	<1.96
Benz(a)anthracene	0.2	*<55.6*	0.2	*<33.9*	0.2	*<78.5*	0.2	*<34.6*	0.2	*<86.5*	0.2	*<1.08*	0.2	*<1.08*	0.2	*<0.38*	-	-	0.2	*<1.57*	0.2	*<1.57*
Benzo(a)pyrene	0.2	*<93.9*	0.2	*<41.7*	0.2	*<96.5*	0.2	*<37.4*	0.2	*<93.5*	0.2	*<3.77*	0.2	*<3.77*	0.2	*<1.41*	-	-	0.2	*<3.12*	0.2	*<3.12*
Benzo(b)fluoranthene	1.9	*<82.3*	1.9	*<73.2*	1.9	*<169.5*	1.9	*<48.6*	1.9	*<121.5*	1.9	<1.46	1.9	<1.46	1.9	<1.06	-	-	1.9	<1.28	1.9	<1.28
Benzo(g,h,i)perylene	NS	<71.4	NS	<30.5	NS	<70.5	NS	<34.6	NS	<86.5	NS	<1.29	NS	<1.29	NS	<0.72	-	-	NS	<2.83	NS	<2.83
Benzo(k)fluoranthene	1.9	*<63.0*	1.9	*<24.8*	1.9	*<57.5*	1.9	*<28.0*	1.9	*<70.0*	1.9	<1.04	1.9	<1.04	1.9	<0.35	-	-	1.9	<1.76	1.9	<1.76
Chrysene	19	*<53.8*	19	*<19.2*	19	*<44.5*	19	*<29.6*	19	*<74.0*	19	<1.41	19	<1.41	19	<0.46	-	-	19	<1.08	19	<1.08
Dibenz(a,h)anthracene	1.9	*<85.3*	1.9	*<87.5*	1.9	*<202.5*	1.9	*<39.6*	1.9	*<99.0*	1.9	<1.24	1.9	<1.24	1.9	<0.47	-	-	1.9	<1.93	1.9	<1.93
1,2-dichlorobenzene	5,900	<26.7	5,900	<46.9	5,900	<108.5	5,900	<5.4	5,900	<13.5	5,900	<1.76	5,900	<1.76	5,900	<1.04	-	-	5,900	<0.58	5,900	<0.58
1,3-dichlorobenzene	NS	<25.0	NS	<52.3	NS	<121.0	NS	<22.6	NS	<56.5	NS	<1.74	NS	<1.74	NS	<0.47	-	-	NS	<0.52	NS	<0.52
1,4-dichlorobenzene	6,500	<29.8	6,500	<46.0	6,500	<106.5	6,500	<21.0	6,500	<52.5	6,500	<1.56	6,500	<1.56	6,500	<1.28	-	-	6,500	<0.50	6,500	<0.50
3,3-dichlorobenzidine	3	*<247.8*	3	*<159.4*	3	*<369.0*	3	*<545.4*	3	*<1363.5*	3	*<6.06*	3	*<6.06*	3	*<11.60*	-	-	3	*<23.45*	3	*<23.45*
Diethyl phthalate	746,667	<40.3	746,667	<32.0	746,667	<74.0	746,667	<38.0	746,667	<95.0	746,667	<2.37	746,667	<2.37	746,667	0.7	-	-	746,667	<1.07	746,667	<1.07
Dimethyl phthalate	NS	<35.5	NS	<26.1	NS	<60.5	NS	<35.8	NS	<89.5	NS	<2.42	NS	<2.42	NS	<0.47	-	-	NS	<0.58	NS	<0.58
Di-n-butyl phthalate	1,100	<89.5	1,100	<49.5	1,100	<114.5	1,100	<44.6	1,100	<111.5	1,100	<1.85	1,100	<1.85	1,100	<0.31	-	-	1,100	<1.37	1,100	<1.37
2,4-dinitrotoluene	1,867	<56.5	1,867	<28.3	1,867	<65.5	1,867	<41.0	1,867	<102.5	1,867	<2.12	1,867	<2.12	1,867	<0.26	-	-	1,867	<1.30	1,867	<1.30
2,6-dinitrotoluene	3,733	<81.5	3,733	<40.4	3,733	<93.5	3,733	<50.4	3,733	<126.0	3,733	<1.12	3,733	<1.12	3,733	<0.38	-	-	3,733	<1.39	3,733	<1.39
Di-n-octyl phthalate	373,333	<165.1	373,333	<89.2	373,333	<206.5	373,333	<57.6	373,333	<144.0	373,333	<1.10	373,333	<1.10	373,333	<1.28	-	-	373,333	<1.67	373,333	<1.67
1,2-diphenylhydrazine (as azobenzene)	NS	<30.2	NS	<23.1	NS	<53.5	NS	<46.6	NS	<116.5	NS	<6.70	NS	<6.70	NS	<1.06	-	-	NS	<7.46	NS	<7.46
Fluoranthene	37,333	<51.4	37,333	<14.5	37,333	<33.5	37,333	<35.8	37,333	<89.5	37,333	<1.35	37,333	<1.35	37,333	<0.27	-	-	37,333	<1.06	37,333	<1.06
Fluorene	37,333	<27.5	37,333	<36.3	37,333	<84.0	37,333	<30.8	37,333	<77.0	37,333	<4.81	37,333	<4.81	37,333	<0.29	-	-	37,333	<0.51	37,333	<0.51
Hexachlorobenzene	747	<31.5	747	<28.1	747	<65.0	747	<27.8	747	<69.5	747	<1.23	747	<1.23	747	<0.34	-	-	747	<0.47	747	<0.47
Hexachlorobutadiene	187	<38.6	187	<29.6	187	<68.5	187	<6.6	187	<16.5	187	<1.82	187	<1.82	187	<1.67	-	-	187	<0.41	187	<0.41
Hexachlorocyclopentadiene	11,200	<78.5	11,200	<28.5	11,200	<66.0	11,200	<45.4	11,200	<113.5	11,200	<1.23	11,200	<1.23	11,200	<1.53	-	-	11,200	<2.16	11,200	<2.16
Hexachloroethane	850	<28.1	850	<30.2	850	<70.0	850	<8.0	850	<20.0	850	<1.62	850	<1.62	850	<1.23	-	-	850	<0.54	850	<0.54
Indeno(1,2,3-cd)pyrene	1.9	*<88.0*	1.9	*<71.9*	1.9	*<166.5*	1.9	*<40.6*	1.9	*<101.5*	1.9	<1.39	1.9	<1.39	1.9	<0.62	-	-	1.9	<2.38	1.9	**3.8**[9]
Isophorone	186,667	<36.3	186,667	<41.0	186,667	<95.0	186,667	<28.2	186,667	<70.5	186,667	<2.14	186,667	<2.14	186,667	<0.37	-	-	186,667	<0.51	186,667	<0.51
Naphthalene	18,667	<21.6	18,667	<30.7	18,667	<71.0	18,667	<24.0	18,667	<60.0	18,667	<1.83	18,667	<1.83	18,667	<0.36	-	-	18,667	<0.49	18,667	<0.49
Nitrobenzene	467	<50.0	467	<28.3	467	<65.5	467	<24.6	467	<61.5	467	<2.10	467	<2.10	467	<1.26	-	-	467	<0.44	467	<0.44
N-nitrosodimethylamine	0.03	*<21.6*	0.03	*<35.4*	0.03	*<82.0*	0.03	*<24.0*	0.03	*<60.0*	0.03	*<1.00*	0.03	*<1.00*	0.03	*<1.13*	-	-	0.03	*<0.54*	0.03	*<0.54*
N-nitrosodi-n-propylamine	86,667	<55.6	86,667	<40.6	86,667	<94.0	86,667	<30.2	86,667	<75.5	86,667	<1.15	86,667	<1.15	86,667	<1.17	-	-	86,667	<1.02	86,667	<1.02
N-nitrosodiphenylamine	290	<34.4	290	<21.6	290	<50.0	290	<60.8	290	<152.0	290	<3.57	290	<3.57	290	<1.15	-	-	290	<1.67	290	<1.67

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SR045	Winter 2011/12		Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16[6]		Summer 2016		Winter 2016/17	
SAMPLING DATE(S):	**SWQS**	**11/5/11**	**SWQS**	**7/12/12**	**SWQS**	**12/14/12**	**SWQS**	**7/21/13**	**SWQS**	**11/22/13**	**SWQS**	**8/12/14**	**SWQS**	**12/4/14**	**SWQS**	**7/31/15**	**-**	**-**	**SWQS**	**7/29/16**	**SWQS**	**11/3/16**
Phenanthrene	NS	<26.9	NS	<16.4	NS	<38.0	NS	<32.6	NS	<81.5	NS	<1.39	NS	<1.39	NS	<0.31	-	-	NS	<0.49	NS	<0.49
Pyrene	28,000	<51.4	28,000	<50.3	28,000	<116.5	28,000	<32.8	28,000	<82.0	28,000	<3.86	28,000	<3.86	28,000	<0.67	-	-	28,000	<3.21	28,000	<3.21
1,2,4-trichlorobenzene	9,333	<29.8	9,333	<57.5	9,333	<133.0	9,333	<6.4	9,333	<16.0	9,333	<1.69	9,333	<1.69	9,333	<1.04	-	-	9,333	<0.55	9,333	<0.55
Pesticides (µg/L) [2]																						
Aldrin	4.5	<0.014	4.5	<0.058	4.5	<0.046	4.5	<0.048	4.5	<0.015	4.5	<0.027	4.5	<0.027	4.5	<0.012	-	-	4.5	<0.019	4.5	<0.019
Alpha-BHC	1,600	<0.017	1,600	<0.044	1,600	<0.038	1,600	<0.040	1,600	<0.016	1,600	<0.021	1,600	<0.021	1,600	<0.058	-	-	1,600	<0.010	1,600	<0.010
Beta-BHC	560	0.388	560	<0.048	560	<0.095	560	<0.100	560	<0.088	560	<0.072	560	<0.072	560	<0.063	-	-	560	<0.049	560	<0.049
Gamma-BHC	11	0.175	11	<0.055	11	<0.033	11	0.052	11	<0.022	11	<0.034	11	<0.034	11	<0.058	-	-	11	<0.019	11	<0.019
Delta-BHC	1,600	0.018	1,600	<0.035	1,600	<0.032	1,600	<0.034	1,600	<0.017	1,600	<0.021	1,600	<0.021	1,600	<0.066	-	-	1,600	<0.035	1,600	<0.035
Chlordane	3.2	<0.38	3.2	<0.29	3.2	<0.16	3.2	<0.17	3.2	<0.19	3.2	<0.14	3.2	<0.14	3.2	<0.36	-	-	3.2	<0.61	3.2	<0.61
4,4'-DDT	1.1	<0.022	1.1	<0.052	1.1	<0.029	1.1	<0.030	1.1	<0.015	1.1	<0.025	1.1	<0.025	1.1	<0.017	-	-	1.1	<0.011	1.1	<0.011
4,4'-DDE	1.1	<0.012	1.1	<0.036	1.1	<0.034	1.1	<0.036	1.1	<0.017	1.1	<0.010	1.1	<0.010	1.1	<0.013	-	-	1.1	<0.020	1.1	<0.020
4,4'-DDD	1.1	<0.019	1.1	<0.031	1.1	<0.023	1.1	<0.024	1.1	<0.013	1.1	<0.031	1.1	<0.031	1.1	<0.021	-	-	1.1	<0.021	1.1	<0.021
Dieldrin	4	<0.026	4	<0.045	4	<0.028	4	<0.029	4	0.070	4	<0.030	4	<0.030	4	<0.060	-	-	4	<0.019	4	<0.019
Alpha-endosulfan	3 T	<0.011	3 T	<0.048	3 T	<0.034	3 T	0.089	3 T	<0.017	3 T	<0.018	3 T	<0.018	3 T	<0.072	-	-	3 T	<0.018	3 T	<0.018
Beta-endosulfan	3 T	<0.023	3 T	<0.054	3 T	<0.034	3 T	<0.036	3 T	<0.012	3 T	<0.032	3 T	<0.032	3 T	<0.019	-	-	3 T	<0.021	3 T	<0.021
Endosulfan sulfate	3	<0.016	3	<0.030	3	<0.025	3	<0.026	3	<0.013	3	<0.008	3	<0.008	3	0.028	-	-	3	<0.022	3	<0.022
Endrin	0.7	<0.021	0.7	<0.036	0.7	<0.035	0.7	<0.037	0.7	<0.015	0.7	<0.017	0.7	<0.017	0.7	<0.023	-	-	0.7	<0.042	0.7	<0.042
Endrin aldehyde	0.7	<0.016	0.7	<0.014	0.7	<0.038	0.7	<0.040	0.7	<0.022	0.7	<0.032	0.7	<0.032	0.7	<0.026	-	-	0.7	<0.024	0.7	<0.024
Heptachlor	0.9	<0.013	0.9	<0.045	0.9	<0.035	0.9	<0.037	0.9	<0.017	0.9	<0.027	0.9	0.045	0.9	<0.035	-	-	0.9	<0.023	0.9	<0.023
Heptachlor epoxide	0.9	<0.011	0.9	<0.045	0.9	<0.032	0.9	<0.034	0.9	<0.019	0.9	<0.008	0.9	<0.008	0.9	<0.062	-	-	0.9	<0.020	0.9	<0.020
PCB-1242	[4]	<0.44	[4]	<0.34	[4]	<0.41	[4]	<0.43	[4]	<0.52	[4]	<0.37	[4]	<0.37	[4]	<0.14	-	-	[4]	<0.72	[4]	<0.72
PCB-1254	[4]	<0.24	[4]	<0.34	[4]	<0.20	[4]	<0.21	[4]	<0.27	[4]	<0.23	[4]	<0.23	[4]	<0.20	-	-	[4]	<0.22	[4]	<0.22
PCB-1221	[4]	<0.37	[4]	<0.55	[4]	<0.68	[4]	<0.71	[4]	<0.81	[4]	<0.22	[4]	<0.22	[4]	<0.64	-	-	[4]	<0.46	[4]	<0.46
PCB-1232	[4]	<0.45	[4]	<0.77	[4]	<0.66	[4]	<0.69	[4]	<0.32	[4]	<0.55	[4]	<0.55	[4]	<0.37	-	-	[4]	<0.90	[4]	<0.90
PCB-1248	[4]	<0.23	[4]	<0.30	[4]	<0.78	[4]	<0.82	[4]	<0.26	[4]	<0.19	[4]	<0.19	[4]	<0.22	-	-	[4]	<0.24	[4]	<0.24
PCB-1260	[4]	<0.21	[4]	<0.34	[4]	<0.21	[4]	<0.22	[4]	<0.22	[4]	<0.32	[4]	<0.32	[4]	<0.59	-	-	[4]	<0.26	[4]	<0.26
PCB-1016	[4]	<0.28	[4]	<0.37	[4]	<0.36	[4]	<0.38	[4]	<0.31	[4]	<0.18	[4]	<0.18	[4]	<0.55	-	-	[4]	<0.29	[4]	<0.29
Toxaphene	11	<0.36	11	<0.79	11	<0.53	11	<0.56	11	<0.32	11	<0.22	11	<0.22	11	<0.60	-	-	11	<0.48	11	<0.48

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OUTFALL ID: SR049 **RECEIVING WATER: Salt River** **DESIGNATED USES: A&Wedw, PBC, FC, AgI, and AgL**	**MONITORING SEASONS** Summer: June 1 – October 31 Winter: November 1 – May 31																					
	Winter 2011/12		Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16		Summer 2016[7]		Winter 2016/17	
SAMPLING DATE(S):	**SWQS**	**11/5/11**	**SWQS**	**8/17/12**	**SWQS**	**12/14/12**	**SWQS**	**7/21/13**	**SWQS**	**11/22/13**	**SWQS**	**8/1/14**	**SWQS**	**12/4/14**	**SWQS**	**7/31/15**	**SWQS**	**1/4/16**	**-**	**-**	**SWQS**	**11/3/16**
MONITORING PARAMETERS [1, 2]																						
Conventional Parameters																						
Flow [3] (cfs)	NS	9.025	NS	5.83	NS	3.56	NS	18.84	NS	13.48	NS	10.791	NS	10.166	NS	24.5	NS	22.997	-	-	NS	55.936
pH	6.5-9	8.04	6.5-9	7.48	6.5-9	7.45	6.5-9	8.03	6.5-9	8.54	6.5-9	7.64	6.5-9	8.01	6.5-9	7.5	6.5-9	7.73	-	-	6.5-9	7.16
Temperature (ºC)	Varies	10.8	Varies	28.0	Varies	20.0	Varies	28.6	Varies	17.0	Varies	28.5	Varies	18.0	Varies	30.8	Varies	16.5	-	-	Varies	21.5
Hardness (mg/L)	400	48.5	400	63.2	400	103	400	39.9	400	32.8	400	74.8	400	142	400	66.8	400	48.9	-	-	400	171
Total Dissolved Solids (TDS) (mg/L) [2]	NS	182	NS	228	NS	402	NS	134	NS	100	NS	290	NS	362	NS	270	NS	146	-	-	NS	486
Total Suspended Solids (TSS) (mg/L) [2]	NS	354	NS	170	NS	226	NS	440	NS	420	NS	508	NS	200	NS	2,290	NS	420	-	-	NS	256
Biochemical Oxygen Demand (BOD) (mg/L) [2]	NS	32	NS	32	NS	69	NS	35	NS	22	NS	66	NS	33	NS	61	NS	25	-	-	NS	35
Chemical Oxygen Demand (COD) (mg/L) [2]	NS	220	NS	280	NS	430	NS	270	NS	200	NS	440	NS	210	NS	750	NS	280	-	-	NS	260

SR049	Winter 2011/12		Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16		Summer 2016[7]		Winter 2016/17	
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Inorganics																						
Cyanide, total (µg/L) [2]	41 T	<5.0	41 T	<5	41 T	<5	41 T	<50	41 T	<5	41 T	<5	41 T	<5	41 T	<5	41 T	<5	-	-	41 T	<5
Nutrients (mg/L) [2]																						
Nitrate + Nitrite as N	NS	1.2	NS	1.6	NS	3.2	NS	1.2	NS	0.8	NS	2.8	NS	1.9	NS	1.3	NS	1.0	-	-	NS	1.5
Ammonia as N	7.82	1.6	20.52	1.5	21.45	4.1	5.33	1.3	1.99	1.1	10.7	2.8	5.52	1.4	19.9	2.5	13.7	1.2	-	-	30.9	2
Total Kjeldahl Nitrogen (TKN)	NS	4.5	NS	5.1	NS	11	NS	5.3	NS	3.8	NS	8.0	NS	4.7	NS	5.2	NS	3.9	-	-	NS	5.3
Total Phosphorus as P	NS	1.5	NS	0.92	NS	0.80	NS	0.46	NS	1.5	NS	2.1	NS	0.35	NS	3.5	NS	1.4	-	-	NS	0.6
Ortho-Phosphorus as P	NS	0.3	NS	0.3	NS	0.4	NS	0.3	NS	0.2	NS	0.6	NS	0.1	NS	<0.1	NS	0.2	-	-	NS	0.3
Microbiological																						
Escherichia coli (*E. coli*) (CFU/100 mg or MPN/100 mL) [2]	575	**>2,419.6**	575	**2,419.6**	575	**1,553.1**	575	**>2,419.6**	575	**>2,419.6**	575	**>2,419.6**	575	**>2,419.6**	575	**8,570**	575	**5,040.0**	-	**-**	575	**48,840**

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Total Metals (µg/L) [2]																						
Antimony	640 T 1,000 D	2.2 T 1.0 D	640 T 1,000 D	2.0 T 1.4 D	640 T 1,000 D	3.3 T 1.5 D	640 T 1,000 D	1.8 T 0.7 D	640 T 1,000 D	1.8 T 0.3 D	640 T 1,000 D	4.3 T 1.9 D	640 T 1,000 D	2.7 T 1.6 D	640 T 1,000 D	2.6 T <5.0 D	640 T 1,000 D	3.0 T <5.0 D	-	-	640 T 1,000 D	3.6 T <5 D
Arsenic	80 T 340 D	5.7 T 1.5 D	80 T 340 D	5.2 T 2.3 D	80 T 340 D	5.8 T 2.2 D	80 T 340 D	6.5 T 1.4 D	80 T 340 D	4.2 T 0.6 D	80 T 340 D	7.7 T 2.3 D	80 T 340 D	4.4 T 2.0 D	80 T 340 D	16.6 T <5.0 D	80 T 340 D	6.0 T <5.0 D	-	-	80 T 340 D	5.4 T <5 D
Barium	98,000 T	193 T 26 D	98,000 T	146 T 33 D	98,000 T	230 T 48 D	98,000 T	241 T 25 D	98,000 T	157 T 8 D	98,000 T	251 T 44 D	98,000 T	160 T 56 D	98,000 T	572 T 43 D	98,000 T	244 T 27 D	-	-	98,000 T	187 T 83 D
Beryllium	84 T	0.56 T <0.06 D	84 T	0.41 T <0.15 D	84 T	0.59 T <0.15 D	84 T	0.79 T <0.15 D	84 T	0.4 T <0.06 D	84 T	0.74 T <0.06 D	84 T	0.3 T <0.06 D	84 T	2.1 T <5.0 D	84 T	0.53 T <5.0 D	-	-	84 T	0.35 T <5 D
Cadmium	50 T 3.89 D	0.7 T <0.10 D	50 T 5.08 D	0.7 T <0.25 D	50 T 8.10 D	1.1 T <0.25 D	50 T 3.22 D	1.0 T <0.25 T	50 T 2.66 D	0.9 T <0.10 D	50 T 5.93 D	0.9 T <0.12 D	50 T 11.07 D	0.4 T <0.12 D	50 T 5.31 D	2.4 T <5.0 D	50 T 3.92 D	1.1 T *<5.0 D*	-	-	50 T 7.62 D	0.4 T <0.25 D
Chromium	1,000 T	20.8 T <1.80 D	1,000 T	13.9 T <2.00 D	1,000 T	17.3 T <2.00 D	1,000 T	26.3 T <2.00 D	1,000 T	14.4 T <0.80 D	1,000 T	27.3 T 2.2 D	1,000 T	11.2 T 1.4 D	1,000 T	67.0 T <5.0 D	1,000 T	20.1 T <5.0 D	-	-	1,000 T	12.8 T <5 D
Copper	500 T 6.80 D	94.8 T **12.7 D**	500 T 8.80 D	91.1 T **16.8 D**	500 T 13.82 D	152 T **45.2 D**	500 T 5.66 D	149 T **11.8 D**	500 T 4.70 D	79.1 T **5.5 D**	500 T 10.22 D	127 T **18.4 D**	500 T 18.70	75.6 T **19.8 D**	500 T 9.19 D	268 T **17.2 D**	500 T 6.85 D	137 T **10.5 D**	-	-	500 T 22.28 D	66.8 T 9.3 D
Lead	15 T 29.14 D	**28.6 T** 0.6 D	15 T 39.46 D	**22.9 T** 0.9 D	15 T 66.69 D	**38.9 T** 0.8 D	15 T 23.45 D	**48.2 T** 2.3 D	15 T 18.83 D	**39.5 T** 0.3 D	15 T 47.01 D	**35.4 T** 2.0 D	15 T 94.40	**16.0 T** 0.5 D	15 T 41,51 D	**93.5 T** 2.1 D	15 T 29.40 D	**38.4 T** <5.0 D	-	-	15 T 115.22 D	14 T 0.7 D
Mercury	10 T 2.4 D	<0.092 T&D	10 T 2.4 D	<0.040 T <0.040 D	10 T 2.4 D	<0.040 T <0.040 D	10 T 2.4 D	0.06 T <0.020 D	10 T 2.4 D	0.04 T <0.020 D	10 T 2.4 D	0.13 T <0.2 D	10 T 2.4 D	<0.092 T <0.092 D	10 T 2.4 D	0.11 T <0.2 D	10 T 2.4 D	0.08 T <0.2 D	-	-	10 T 2.4 D	<0.068 T <0.2 D
Nickel	511 T 254 D	27.9 T 4.4 D	511 T 320 D	19.3 T 5.6 D	511 T 480 D	26.4 T 8.6 D	511 T 215.5 D	34.8 T 4.4 D	511 T 182.2 D	18.5 T 1.1 D	511 T 366.2 D	34.6 T 7.2 D	511 T 630	16.0 T 4.3 D	511 T 333 D	86.7 T 8.1 D	511 T 256 D	27.8 T <5.0 D	-	-	511 T 737.19 D	16.7 T <5 D
Selenium	20 T	1.1 T <0.34 D	20 T	<0.60 T <0.60 D	20 T	1.3 T 0.8 D	20 T	<0.60 T <0.60 D	20 T	<0.60 T <0.24 D	20 T	1.1 T 0.7 D	20 T	0.78 T 0.6 D	20 T	1.2 T <5.0 D	20 T	0.59 T <5.0 D	-	-	20 T	0.44 T <5 D
Silver	4,667 T 0.93 D	<0.20 T&D	4,667 T 1.48 D	0.2 T <0.15 D	4,667 T 3.38 D	0.5 T <0.15 D	4,667 T 0.667 D	0.3 T <0.15 D	4,667 T 0.474 D	0.2 T <0.15 D	4,667 T 1.952 D	0.2 T <0.20 D	4,667 T 5.88	0.1 T <0.08 D	4,667 T 1.61 D	0.4 T *<5.0 D*	4,667 T 0.94 D	<0.25 T *<5.0 D*	-	-	4,667 T 8.09 D	<0.45 T <5 D
Thallium	1 T 700 D	<0.20 T <0.08 D	1 T 700 D	<0.20 T <0.20 D	1 T 700 D	<0.20 T <0.20 D	1 T 700 D	<0.20 T <0.20 D	1 T 700 D	0.29 T <0.08 D	1 T 700 D	0.37 T <0.04 D	1 T 700 D	0.30 T <0.04 D	1 T 700 D	0.41 T <5.0 D	1 T 700 D	0.15 T <5.0 D	-	-	1 T 700 D	<0.2 T <5 D
Zinc	5,106 T 63.45 D	374 T 29.8 D	5,106 T 80.08 D	297 T 37.2 D	5,106 T 120.2 D	528 T 99.2 D	5,106 T 53.79 D	458 T 39.5 D	5,106 T 45.56 D	349 T 11.6 D	5,106 T 91.6 D	502 T 51.4 D	5,106 T 157.7	180 T 25.6 D	5,106 T 83.3 D	1,510 T 70.8 D	5,106 T 63.9 D	740 T 21.2 D	-	-	180 T 184.62 D	**259 T** 34.9 D
Organic Toxic Pollutants																						
Total Petroleum Hydrocarbons (TPH) (mg/L) [2]	NS	<10	NS	<10	NS	<10	NS	<11	NS	<11	NS	<10	NS	<10	NS	<10	NS	<6	-	-	NS	<4.6
Total Oil and Grease (mg/L) [2]	NS	<5	NS	<10	NS	8.1	NS	<5.7	NS	<5.7	NS	7.0	NS	7.6	NS	<5.1	NS	<6	-	-	NS	<4.6
VOCs, Semi-VOCs, & Pesticides (µg/L) [2]																						
Acrolein	1.9	<0.37	1.9	<1.465	1.9	<1.465	1.9	<0.20	1.9	<0.20	1.9	*<2.00*	1.9	<0.40	1.9	<0.78	1.9	<0.78	-	-	1.9	<0.41
Acrylonitrile	0.2	<0.17	0.2	*<1.130*	0.2	*<1.130*	0.2	<0.16	0.2	<0.16	0.2	*<0.70*	0.2	<0.14	0.2	*<0.53*	0.2	*<0.53*	-	-	0.2	*<0.42*
Benzene	114	<0.20	114	<0.75	114	<0.75	114	<1.20	114	<0.24	114	<1.20	114	<0.13	114	<0.46	114	<0.46	-	-	114	<0.29
Bromoform	133	<0.25	133	<2.15	133	<2.15	133	<2.35	133	<0.47	133	<2.35	133	<0.28	133	<0.68	133	<0.68	-	-	133	<0.33
Carbon tetrachloride	2	<0.31	2	<1.65	2	<1.65	2	<1.30	2	<0.26	2	<1.30	2	<0.23	2	<0.31	2	<0.31	-	-	2	<0.20
Chlorobenzene	1,553	<0.25	1,553	<1.40	1,553	<1.40	1,553	<0.80	1,553	<0.16	1,553	<0.80	1,553	<0.13	1,553	<0.50	1,553	<0.50	-	-	1,553	<0.33

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Chlorodibromomethane	13	<0.21	13	<1.30	13	<1.30	13	<0.90	13	<0.18	13	<0.90	13	<0.24	13	<0.61	13	<0.61	-	-	13	<0.32
Chloroethane (ethyl chloride)	NS	<0.14	NS	<1.35	NS	<1.35	NS	<1.10	NS	<0.22	NS	<1.10	NS	<0.19	NS	<0.40	NS	<0.40	-	-	NS	<0.33
2-chloroethylvinyl ether	180,000	<0.174	180,000	<1.10	180,000	<0.22	180,000	<0.22	180,000	<0.22	180,000	<0.95	180,000	<0.19	180,000	<0.53	180,000	<0.53	-	-	180,000	<0.43
Chloroform	2,133	<0.40	2,133	<1.05	2,133	<1.05	2,133	<1.15	2,133	<0.23	2,133	<1.15	2,133	<0.14	2,133	<0.49	2,133	<0.49	-	-	2,133	<0.32
Dichlorobromomethane	17	<0.23	17	<0.75	17	<0.75	17	<1.15	17	<0.23	17	<1.15	17	<0.15	17	<0.49	17	<0.49	-	-	17	<0.29
1,1-dichloroethane	NS	<0.18	NS	<0.65	NS	<0.65	NS	<1.30	NS	<0.26	NS	<1.30	NS	<0.19	NS	<0.42	NS	<0.42	-	-	NS	<0.29
1,2-dichloroethane	37	<0.20	37	<0.80	37	<0.80	37	<1.25	37	<0.25	37	<1.25	37	<0.11	37	<0.51	37	<0.51	-	-	37	<0.35
1,1-dichloroethylene	7,143	<0.23	7,143	<1.85	7,143	<1.85	7,143	<1.40	7,143	<0.28	7,143	<1.40	7,143	<0.27	7,143	<0.34	7,143	<0.34	-	-	7,143	<0.19
1,2-dichloropropane	17,518	<0.22	17,518	<0.75	17,518	<0.75	17,518	<1.25	17,518	<0.25	17,518	<1.25	17,518	<0.18	17,518	<0.49	17,518	<0.49	-	-	17,518	<0.32
1,3-dichloropropylene[8]	42	<0.19	42	cis<0.50 trans<0.75	42	cis<0.50 trans<0.75	42	cis<1.20 trans<1.10	42	cis<0.24 trans<0.22	42	cis <1.20 trans <1.10	42	<0.13	42	cis <0.51 trans <0.50	42	cis <0.51 trans <0.50	-	-	42	cis <0.28 trans <0.28
Ethylbenzene	2,133	<0.27	2,133	<1.45	2,133	<1.45	2,133	<0.65	2,133	<0.13	2,133	<0.65	2,133	<0.15	2,133	<0.46	2,133	<0.46	-	-	2,133	<0.29
Methyl bromide	299	<0.14	299	<0.95	299	<0.95	299	<0.95	299	<0.19	299	<0.95	299	<0.18	299	<0.46	299	<0.46	-	-	299	<0.28
Methyl chloride	270,000	<0.20	270,000	<1.85	270,000	<1.85	270,000	<1.40	270,000	<0.28	270,000	<1.40	270,000	<0.23	270,000	<0.46	270,000	<0.46	-	-	270,000	<0.28
Methylene chloride	593	<0.45	593	<1.40	593	1.6	593	<1.00	593	<0.20	593	<1.00	593	<0.20	593	<0.81	593	<0.81	-	-	593	<0.31
1,1,2,2-tetrachloroethane	4	<0.11	4	<2.45	4	<2.45	4	<2.00	4	<0.40	4	<2.00	4	<0.35	4	<0.80	4	<0.80	-	-	4	<0.33
Tetrachloroethylene	261	<0.26	261	<1.15	261	<1.15	261	<1.05	261	<0.21	261	<1.05	261	<0.13	261	<0.35	261	<0.35	-	-	261	<0.23
Toluene	8,700	<0.23	8,700	<0.60	8,700	<0.60	8,700	<0.95	8,700	<0.19	8,700	<0.95	8,700	0.16	8,700	<0.43	8,700	<0.43	-	-	8,700	0.43
1,2-trans-dichloroethylene	10,127	<0.14	10,127	<0.85	10,127	<0.85	10,127	<1.25	10,127	<0.25	10,127	<1.25	10,127	<0.18	10,127	<0.38	10,127	<0.38	-	-	10,127	<0.24
1,1,1-trichloroethane	1,000	<0.28	1,000	<1.15	1,000	<1.15	1,000	<1.00	1,000	<0.20	1,000	<1.00	1,000	<0.14	1,000	<0.34	1,000	<0.34	-	-	1,000	<0.23
1,1,2-trichloroethane	16	<0.22	16	<1.20	16	<1.20	16	<0.75	16	<0.15	16	<0.75	16	<0.13	16	<0.60	16	<0.60	-	-	16	<0.29
Trichloroethylene	29	<0.35	29	<1.20	29	<1.20	29	<0.75	29	<0.15	29	<0.75	29	<0.22	29	<0.48	29	<0.48	-	-	29	<0.28
1,2,4-Trimethylbenzene 1,3,5- Trimethylbenzene	NS	<1.0 <1.0	NS	<5.0 <5.0	NS	<5.0 <5.0	NS	<5.0 <5.0	NS	<1.0 <1.0	NS	<5.0 <5.0	NS	<1.0 <1.0	NS	<1.0 <1.0	NS	<1.0 <1.0	-	-	NS	<1.0 <1.0
Vinyl chloride	5	<0.19	5	<2.50	5	<2.50	5	<1.00	5	<0.20	5	<1.00	5	<0.22	5	<0.35	5	<0.35	-	-	5	<0.24
Xylenes, Total	186,667	<0.51	186,667	<2.90	186,667	<2.90	186,667	<1.50	186,667	<0.30	186,667	<1.50	186,667	<0.13	186,667	<0.52	186,667	<0.52	-	-	186,667	<0.32
Acid Compounds (µg/L) [2]																						
2-chlorophenol	30	*<44.2*	30	<22.8	30	*<57.0*	30	*<220.9*	30	*<220.9*	30	*<74.0*	30	<1.48	30	<3.10	30	<3.10	-	-	30	<2.92
2,4-dichlorophenol	59	*<48.4*	59	<24.4	59	*<61.0*	59	*<217.3*	59	*<217.3*	59	*<82.5*	59	<1.65	59	<2.81	59	<2.81	-	-	59	<3.21
2,4-dimethylphenol	171	<34.4	171	<29.2	171	<73.0	171	<117.4	171	<117.4	171	<110.0	171	<2.20	171	<2.64	171	<2.64	-	-	171	<1.32
4,6-dinitro-o-cresol	310	<43.6	310	<27.6	310	<69.0	310	<153.5	310	<153.5	310	<61.0	310	<1.22	310	<1.49	310	<1.49	-	-	310	<2.27
2,4-dinitrophenol	110	<20.0	110	<27.8	110	<69.5	110	*<133.4*	110	*<133.4*	110	<56.6	110	<1.13	110	<2.21	110	<2.21	-	-	110	<2.64
2-nitrophenol	NS	<46.2	NS	<55.6	NS	<139.0	NS	<211.7	NS	<211.7	NS	<78.5	NS	<1.57	NS	<2.84	NS	<2.84	-	-	NS	<2.61
4-nitrophenol	4,100	<159.4	4,100	<163.2	4,100	<408.0	4,100	<240.5	4,100	<240.5	4,100	<57.0	4,100	<1.14	4,100	<2.98	4,100	3.6	-	-	4,100	<2.03
p-chloro-m-cresol	15	*<39.2*	15	*<37.2*	15	*<93.0*	15	*<227.1*	15	*<227.1*	15	*<82.5*	15	<1.65	15	<1.87	15	<1.87	-	-	15	<3.10
Pentachlorophenol	25.83	*<87.4*	14.71	*<41.4*	14.28	*<103.5*	25.56	*<173.0*	42.69	<173.0	17.278	*<69.5*	25.041	<1.39	14.992	7.5	18.91	<1.47	-	-	10.65	<3.44
Phenol	37	*<40.0*	37	<23.8	37	*<59.5*	37	*<182.8*	37	<182.8	37	*<67.0*	37	2.1	37	<2.30	37	<2.30	-	-	37	<1.84
2,4,6-trichlorophenol	2	*<103.6*	2	*<56.0*	2	*<140.0*	2	*<246.7*	2	<246.7	2	*<94.5*	2	<1.89	2	*<2.60*	2	*<2.60*	-	-	2	*<3.28*

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Bases/Neutrals (µg/L)[2]																						
Acenaphthene	198	<26.2	198	<34.0	198	<85.0	198	<69.0	198	<69.0	198	<51.5	198	<1.03	198	<0.35	198	<0.35	-	-	198	<1.02
Acenaphthylene	NS	<30.8	NS	<25.4	NS	<63.5	NS	<89.1	NS	<89.1	NS	<50.0	NS	<1.00	NS	<1.23	NS	<1.23	-	-	NS	<6.10
Anthracene	74	<32.8	74	<17.8	74	<44.5	74	*<89.1*	74	*<89.1*	74	*<144.0*	74	<2.88	74	<0.44	74	<0.44	-	-	74	<1.96
Benz(a)anthracene	0.02	*<53.0*	0.02	*<31.4*	0.02	*<78.5*	0.02	*<89.1*	0.02	*<89.1*	0.02	*<54.0*	0.02	*<1.08*	0.02	*<0.38*	0.02	*<0.38*	-	-	0.02	*<1.57*
Benzo(a)pyrene	0.02	*<89.4*	0.02	*<38.6*	0.02	*<96.5*	0.02	*<96.3*	0.02	*<96.3*	0.02	*<188.5*	0.02	*<3.77*	0.02	*<1.41*	0.02	*<1.41*	-	-	0.02	*<3.12*
Benzo(b)fluoranthene	0.02	*<78.4*	0.02	*<67.8*	0.02	*<169.5*	0.02	*<125.1*	0.02	<125.1	0.02	*<73.0*	0.02	*<1.46*	0.02	*<1.06*	0.02	*<1.06*	-	-	0.02	*<1.28*
Benzo(g,h,i)perylene	NS	<68.0	NS	<28.2	NS	<70.5	NS	<89.1	NS	<89.1	NS	<64.5	NS	<1.29	NS	<0.72	NS	<0.72	-	-	NS	<2.83
Benzo(k)fluoranthene	0.02	*<60.0*	0.02	*<23.0*	0.02	*<57.5*	0.02	*<72.1*	0.02	*<72.1*	0.02	*<52.0*	0.02	*<1.04*	0.02	*<0.35*	0.02	*<0.35*	-	-	0.02	*<1.76*
Chrysene	0.02	*<51.2*	0.02	*<17.8*	0.02	*<44.5*	0.02	*<76.2*	0.02	*<76.2*	0.02	*<70.5*	0.02	*<1.41*	0.02	*<0.46*	0.02	*<0.46*	-	-	0.02	*<1.08*
Dibenzo(a,h)anthracene	0.02	*<81.2*	0.02	*<81.0*	0.02	*<202.5*	0.02	*<102.0*	0.02	*<102.0*	0.02	*<62.0*	0.02	*<1.24*	0.02	*<0.47*	0.02	*<0.47*	-	-	0.02	*<1.93*
1,2-dichlorobenzene	205	<25.4	205	<43.4	205	<108.5	205	<13.9	205	<13.9	205	<88.0	205	<1.76	205	<1.04	205	<1.04	-	-	205	<0.58
1,3-dichlorobenzene	2,500	<23.8	2,500	<48.4	2,500	<121.0	2,500	<58.2	2,500	<58.2	2,500	<87.0	2,500	<1.74	2,500	<0.47	2,500	<0.47	-	-	2,500	<0.52
1,4-dichlorobenzene	2,000	<28.4	2,000	<42.6	2,000	<106.5	2,000	<54.1	2,000	<54.1	2,000	<78.0	2,000	<1.56	2,000	<1.28	2,000	<1.28	-	-	2,000	<0.50
3,3-dichlorobenzidine	0.03	*<236.0*	0.03	*<147.6*	0.03	*<369.0*	0.03	*<1404.4*	0.03	*<1404.4*	0.03	*<303.0*	0.03	*<6.06*	0.03	*<11.60*	0.03	*<11.60*	-	-	0.03	*<23.45*
Diethyl phthalate	8,767	<38.4	8,767	<29.6	8,767	<74.0	8,767	<97.8	8,767	<97.8	8,767	<118.5	8,767	<2.37	8,767	<0.36	8,767	<0.36	-	-	8,767	<1.07
Dimethyl phthalate	17,000	<33.8	17,000	<24.2	17,000	<60.5	17,000	<92.2	17,000	<92.2	17,000	<121.0	17,000	<2.42	17,000	<0.47	17,000	<0.47	-	-	17,000	<0.58
Di-n-butyl phthalate	470	<85.2	470	<45.8	470	<114.5	470	<114.8	470	<114.8	470	<92.5	470	<1.85	470	<0.31	470	<0.31	-	-	470	<1.37
2,4-dinitrotoluene	421	<53.8	421	<26.2	421	<65.5	421	<105.6	421	<105.6	421	<106.0	421	<2.12	421	<0.26	421	<0.26	-	-	421	<1.30
2,6-dinitrotoluene	3,733	<77.6	3,733	<37.4	3,733	<93.5	3,733	<129.8	3,733	<129.8	3,733	<56.0	3,733	<1.12	3,733	<0.38	3,733	<0.38	-	-	3,733	<1.39
Di-n-octyl phthalate	373,333	<157.2	373,333	<82.6	373,333	<206.5	373,333	<148.3	373,333	<148.3	373,333	<55.0	373,333	<1.10	373,333	<1.28	373,333	<1.28	-	-	373,333	<1.67
1,2-diphenylhydrazine (as azobenzene)	NS	<28.8	NS	<21.4	NS	<53.5	NS	<120.0	NS	<120.0	NS	<335.0	NS	<6.70	NS	<1.06	NS	<1.06	-	-	NS	<7.46
Fluoranthene	28	*<49.0*	28	<13.4	28	*<33.5*	28	*<92.2*	28	*<92.2*	28	*<67.5*	28	<1.35	28	<0.27	28	<0.27	-	-	28	<1.06
Fluorene	1,067	<26.2	1,067	<33.6	1,067	<84.0	1,067	<79.3	1,067	<79.3	1,067	<240.5	1,067	<4.81	1,067	<0.29	1,067	<0.29	-	-	1,067	<0.51
Hexachlorobenzene	0.0003	*<30.0*	0.0003	*<26.0*	0.0003	*<65.0*	0.0003	*<71.6*	0.0003	*<71.6*	0.0003	*<61.5*	0.0003	*<1.23*	0.0003	*<0.34*	0.0003	*<0.34*	-	-	0.0003	*<0.47*
Hexachlorobutadiene	18	*<36.8*	18	*<27.4*	18	*<68.5*	18	<17.0	18	<17.0	18	*<91.0*	18	<1.82	18	<1.67	18	<1.67	-	-	18	<0.41
Hexachlorocyclopentadiene	3.5	*<74.8*	3.5	*<26.4*	3.5	*<66.0*	3.5	*<116.9*	3.5	*<116.9*	3.5	*<61.5*	3.5	<1.23	3.5	<1.53	3.5	<1.53	-	-	3.5	<2.16
Hexachloroethane	3.3	*<26.8*	3.3	*<28.0*	3.3	*<70.0*	3.3	*<20.6*	3.3	*<20.6*	3.3	*<81.0*	3.3	<1.62	3.3	<1.23	3.3	<1.23	-	-	3.3	<0.54
Indeno(1,2,3-cd)pyrene	0.2	*<83.8*	0.2	*<66.6*	0.2	*<166.5*	0.2	*<104.5*	0.2	*<104.5*	0.2	*<69.5*	0.2	*<1.39*	0.2	*<0.62*	0.2	*<0.62*	-	-	0.2	**4.1[9]**
Isophorone	961	<34.6	961	<38.0	961	<95.0	961	*<72.6*	961	<72.6	961	<107.0	961	<2.14	961	<0.37	961	<0.37	-	-	961	<0.51
Naphthalene	1,524	<20.6	1,524	<28.4	1,524	<71.0	1,524	<61.8	1,524	<61.8	1,524	<91.5	1,524	<1.83	1,524	<0.36	1,524	<0.36	-	-	1,524	<0.49
Nitrobenzene	138	<47.6	138	<26.2	138	<65.5	138	<63.3	138	<63.3	138	<105.0	138	<2.10	138	<1.26	138	<1.26	-	-	138	<0.44
N-nitrosodimethylamine	0.03	*<20.6*	0.03	*<32.8*	0.03	*<82.0*	0.03	*<61.8*	0.03	*<61.8*	0.03	*<50.0*	0.03	*<1.00*	0.03	*<1.13*	0.03	*<1.13*	-	-	0.03	*<0.54*
N-nitrosodi-n-propylamine	0.5	*<53.0*	0.5	*<37.6*	0.5	*<94.0*	0.5	*<77.8*	0.5	*<77.8*	0.5	*<57.5*	0.5	*<1.15*	0.5	*<1.17*	0.5	*<1.17*	-	-	0.5	*<1.02*
N-nitrosodiphenylamine	6	*<32.8*	6	*<20.0*	6	*<50.0*	6	*<156.6*	6	*<156.6*	6	*<178.5*	6	<3.57	6	<1.15	6	<1.15	-	-	6	<1.67

NOTES:
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T = Total
D = Dissolved
Bold text indicates a sample result greater than the WQS.
Italicized text indicated a laboratory detection limit higher that the WQS.

Footnotes
1 The Permittee shall report on any additional parameters that were monitored for seasonal stormwater sampling as required by Section 6.0 of this permit (Special Conditions).
2 Analytical results shall be reported in the units specified for each category or parameter.
3 Report the average flow rate for the sampling period (no more than 6 hours).
4 Standard for total PCBs of 11 µg/L A&We and 19 µg/L PBC.
5 The sample was lost during extraction at the laboratory due to the glassware breaking.
6 There were no representative storm events (>0.20 inches) that occurred or no representative events without a measurable rain event in the previous 72 hours.
7 A representative event occurred on 8/2; however, the sampler malfunctioned. Then next event was on 8/5 but due to the 72-hour rule, no sample was taken. Another measurable event on 9/22 did not result in a qualifying rain event. No samples were taken at this outfall during Summer 2016.
8 Prior to FY2016, the lab was reporting cis and trans for 1-3-dichloropropylene; this report year, an upgrade has resulted in providing the result as a total.
9 Data flagged due to contamination in the lab reagent blank; therefore, these are not true detections or exceedances.

SR049	Winter 2011/12		Summer 2012		Winter 2012/13		Summer 2013		Winter 2013/14		Summer 2014		Winter 2014/15		Summer 2015		Winter 2015/16		Summer 2016[7]		Winter 2016/17	
SAMPLING DATE(S):	**SWQS**	**11/5/11**	**SWQS**	**8/17/12**	**SWQS**	**12/14/12**	**SWQS**	**7/21/13**	**SWQS**	**11/22/13**	**SWQS**	**8/1/14**	**SWQS**	**12/4/14**	**SWQS**	**7/31/15**	**SWQS**	**1/4/16**	**-**	**-**	**SWQS**	**11/3/16**
Phenanthrene	30	<25.6	30	<15.2	30	*<38.0*	30	<83.9	30	*<83.9*	30	*<69.5*	30	<1.39	30	<0.31	30	<0.31	-	-	30	<0.49
Pyrene	800	<49.0	800	<46.6	800	<116.5	800	<84.5	800	<84.5	800	<193.0	800	<3.86	800	<0.67	800	<0.67	-	-	800	<3.21
1,2,4-trichlorobenzene	70	<28.4	70	<53.2	70	*<133.0*	70	<16.5	70	<16.5	70	*<84.5*	70	<1.69	70	<1.04	70	<1.04	-	-	70	<0.55
Pesticides (µg/L) [2]																						
Aldrin	0.00005	*<0.013*	0.00005	*<0.058*	0.00005	*<0.046*	0.00005	*<0.046*	0.00005	*<0.016*	0.00005	*<0.027*	0.00005	*<0.027*	0.00005	*<0.012*	0.00005	*<0.012*	-	-	0.00005	*<0.019*
Alpha-BHC	0.005	*<0.016*	0.005	*<0.044*	0.005	*<0.038*	0.005	*<0.038*	0.005	*<0.017*	0.005	*<0.021*	0.005	*<0.021*	0.005	*<0.058*	0.005	*<0.058*	-	-	0.005	*<0.010*
Beta-BHC	0.02	**0.413**	0.02	*<0.048*	0.02	*<0.095*	0.02	*<0.095*	0.02	<0.093	0.02	*<0.072*	0.02	*<0.072*	0.02	*<0.063*	0.02	*<0.063*	-	-	0.02	*<0.049*
Gamma-BHC	1	0.120	1	<0.055	1	<0.033	1	0.062	1	<0.023	1	<0.034	1	<0.034	1	<0.058	1	<0.058	-	-	1	<0.019
Delta-BHC	1,600	0.025	1,600	<0.035	1,600	<0.032	1,600	<0.032	1,600	<0.018	1,600	<0.021	1,600	<0.021	1,600	<0.066	1,600	<0.066	-	-	1,600	<0.035
Chlordane	0.0008	*<0.35*	0.0008	*<0.29*	0.0008	*<0.16*	0.0008	*<0.16*	0.0008	*<0.20*	0.0008	*<0.14*	0.0008	*<0.14*	0.0008	*<0.36*	0.0008	*<0.36*	-	-	0.0008	*<0.61*
4,4'-DDT	0.0002	*<0.020*	0.0002	*<0.052*	0.0002	*<0.029*	0.0002	*<0.029*	0.0002	*<0.016*	0.0002	*<0.025*	0.0002	*<0.025*	0.0002	*<0.017*	0.0002	*<0.017*	-	-	0.0002	*<0.011*
4,4'-DDE	0.0002	*<0.011*	0.0002	*<0.036*	0.0002	*<0.034*	0.0002	*<0.034*	0.0002	*<0.018*	0.0002	*<0.010*	0.0002	*<0.010*	0.0002	*0.033*	0.0002	*<0.013*	-	-	0.0002	*<0.020*
4,4'-DDD	0.0002	*<0.017*	0.0002	*<0.031*	0.0002	*<0.023*	0.0002	*<0.023*	0.0002	*<0.014*	0.0002	*<0.031*	0.0002	*<0.031*	0.0002	*<0.021*	0.0002	*<0.021*	-	-	0.0002	*<0.021*
Dieldrin	0.00005	**0.080**	0.00005	*<0.045*	0.00005	*<0.028*	0.00005	*<0.028*	0.00005	*<0.022*	0.00005	*<0.030*	0.00005	*<0.030*	0.00005	*<0.060*	0.00005	*<0.060*	-	-	0.00005	*<0.019*
Alpha-endosulfan	0.2	<0.010	0.2	<0.048	0.2	<0.034	0.2	<0.034	0.2	<0.018	0.2	<0.018	0.2	<0.018	0.2	<0.072	0.2	<0.072	-	-	0.2	<0.018
Beta-endosulfan	0.2	<0.021	0.2	<0.054	0.2	<0.034	0.2	<0.034	0.2	<0.013	0.2	<0.032	0.2	<0.032	0.2	<0.019	0.2	<0.019	-	-	0.2	<0.021
Endosulfan sulfate	0.2	<0.015	0.2	<0.030	0.2	<0.025	0.2	<0.025	0.2	<0.014	0.2	<0.008	0.2	0.071	0.2	<0.016	0.2	0.080	-	-	0.2	<0.022
Endrin	0.004	*<0.019*	0.004	*<0.036*	0.004	*<0.035*	0.004	*<0.035*	0.004	*<0.016*	0.004	*<0.017*	0.004	*<0.017*	0.004	*<0.023*	0.004	*<0.023*	-	-	0.004	*<0.042*
Endrin aldehyde	0.09	<0.015	0.09	<0.014	0.09	<0.038	0.09	<0.038	0.09	*<0.023*	0.09	<0.032	0.09	*<0.032*	0.09	<0.026	0.09	<0.026	-	-	0.09	*<0.024*
Heptachlor	0.00008	*<0.012*	0.00008	*<0.045*	0.00008	**0.087**	0.00008	*<0.035*	0.00008	*<0.018*	0.00008	*<0.027*	0.00008	***0.063***	0.00008	*<0.035*	0.00008	*<0.035*	-	-	0.00008	*<0.023*
Heptachlor epoxide	0.00004	*<0.010*	0.00004	*<0.045*	0.00004	*<0.032*	0.00004	*<0.032*	0.00004	*<0.020*	0.00004	*<0.008*	0.00004	*<0.008*	0.00004	*<0.062*	0.00004	*<0.062*	-	-	0.00004	*<0.020*
PCB-1242	[4]	<0.40	[4]	<0.34	[4]	<0.41	[4]	<0.41	[4]	<0.55	[4]	<0.37	[4]	<0.37	[4]	<0.14	[4]	<0.14	-	-	[4]	<0.72
PCB-1254	[4]	<0.22	[4]	<0.34	[4]	<0.20	[4]	<0.20	[4]	<0.29	[4]	<0.23	[4]	<0.23	[4]	<0.20	[4]	<0.20	-	-	[4]	<0.22
PCB-1221	[4]	<0.34	[4]	<0.55	[4]	<0.68	[4]	<0.68	[4]	<0.86	[4]	<0.22	[4]	<0.22	[4]	<0.64	[4]	<0.64	-	-	[4]	<0.46
PCB-1232	[4]	<0.41	[4]	<0.77	[4]	<0.66	[4]	<0.66	[4]	<0.34	[4]	<0.55	[4]	<0.55	[4]	<0.37	[4]	<0.37	-	-	[4]	<0.90
PCB-1248	[4]	<0.21	[4]	<0.30	[4]	<0.78	[4]	<0.78	[4]	<0.28	[4]	<0.19	[4]	<0.19	[4]	<0.22	[4]	<0.22	-	-	[4]	<0.24
PCB-1260	[4]	<0.19	[4]	<0.34	[4]	<0.21	[4]	<0.21	[4]	<0.23	[4]	<0.32	[4]	<0.32	[4]	<0.59	[4]	<0.59	-	-	[4]	<0.26
PCB-1016	[4]	<0.26	[4]	<0.37	[4]	<0.36	[4]	<0.36	[4]	<0.33	[4]	<0.18	[4]	<0.18	[4]	<0.55	[4]	<0.55	-	-	[4]	<0.29
Toxaphene	0.0003	*<0.33*	0.0003	*<0.79*	0.0003	*<0.53*	0.0003	*<0.53*	0.0003	*<0.34*	0.0003	*<0.22*	0.0003	*<0.22*	0.0003	*<0.60*	0.0003	*<0.60*	-	-	0.0003	*<0.48*

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Footnotes
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7 A representative event occurred on 8/2; however, the sampler malfunctioned. Then next event was on 8/5 but due to the 72-hour rule, no sample was taken. Another measurable event on 9/22 did not result in a qualifying rain event. No samples were taken at this outfall during Summer 2016.
8 Prior to FY2016, the lab was reporting cis and trans for 1-3-dichloropropylene; this report year, an upgrade has resulted in providing the result as a total.
9 Data flagged due to contamination in the lab reagent blank; therefore, these are not true detections or exceedances.

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PART 10: ASSESSMENT OF MONITORING DATA

A. Stormwater Quality: Provide an evaluation of the sampling results for each outfall monitoring location, including an assessment of any improvements or degradation of stormwater quality from each drainage area. In the year 4, Annual Report, discuss possible explanations for stormwater quality trends, including the implementation of stormwater management practices to reduce the discharge of pollutants to and from the storm sewer system.

Escherichia Coli (*E. coli*) has been detected at concentrations greater than the applicable SWQS at six monitored outfalls throughout the permit term. One outfall, AC033, does not have an applicable SWQS for *E. coli*. Total lead has been observed in elevated concentrations at all monitored outfalls, and dissolved copper has been observed in elevated concentrations at all but one monitored outfall. These metals are common transportation-related stormwater pollutants. Zinc was reported at elevated levels at two sites during the reporting year (see below). A few of the monitored outfalls occasionally have elevated detections of pesticides including 4,4' DDE, heptachlor, and Aldrin. The City has undertaken a project to investigate the actuality of heptachlor in runoff, and potential sources (see additional discussion below). The pesticides detected in stormwater runoff have been banned from use in the United States for several decades and are likely present due to historical application of these chemicals. A discussion of the historical exceedances by outfall is provided below. (Note: the data in the tables in Part 9 of this report begin in 2011/12, so exceedances that occurred early in the permit term included below are no longer present in Part 9.)

AC033

The designated uses for the receiving water for this outfall, the ACDC, include agricultural irrigation (AgI) and agricultural livestock watering (AgL). The primary land uses are open land and residential. Aldrin has been detected at concentrations greater than the applicable SWQS in samples collected in 2012, 2013, and 2016. Total lead (2010 and 2011) and dieldrin (2011 and 2016) have also been reported above their applicable standards at this outfall.

IB008

Stormwater runoff from this outfall discharges to the Indian Bend Wash. Applicable designated uses are aquatic and wildlife ephemeral (A&We) and partial body contact (PBC). The dominant land use category in this area is residential. In addition to *E. coli* exceedances, elevated levels of dissolved copper and total lead have been detected. Endrin Aldehyde was detected once (2009).

SR003

The receiving water for SR003 is the Salt River. Designated uses include aquatic and wildlife effluent dependent water (A&Wedw), PBC, Fish Consumption (FC), AgI and AgL. Land use for this outfall is divided amongst residential, institutional, industrial, commercial, and open land. Elevated concentrations of dissolved copper, total lead, and pesticides, including heptachlor have been observed in this outfall, in addition to *E. coli*. This year, dissolved zinc was reported at the SWQS for this outfall. The SWQS based on hardness is calculated at 79.75 mg/L and the summer lab result is 79.8 mg/L. This is such a close number that it is unclear how much could be attributed to rounding errors. This is the first occurrence of dissolved zinc at this outfall; thus, investigation is not necessary until greater than one occurrence is documented.

SR030

This outfall discharges to the Salt River. Designated uses for this segment of the Salt River are the same as those listed for SR003. Primary land use categories are open land and residential, with some areas of industrial/commercial use. Total lead, dissolved copper, and elevated *E. coli* and 4,4'-DDE (last exceedance in 2014), ammonia (2010) and hardness (2009 and 2010) concentrations have been observed in this area. This year, heptachlor was above the SWQS for this outfall. This is the first occurrence of heptachlor at this outfall; thus, investigation is not necessary until greater than one occurrence is documented. That said, the City has included this detection in the heptachlor investigation project discussed below.

SR045

This outfall discharges stormwater to the Salt River. The designated uses for this segment of the Salt River are A&We and PBC. In addition to *E. coli* exceedances, elevated concentrations of total lead and dissolved copper have been reported for this outfall during the permit term. The properties in this area are primarily commercial and light industrial. This year, pH was found to be slightly low in the winter sample. This is the first occurrence of low pH at this outfall; thus, investigation is not necessary until greater than one occurrence is documented.

SR049

The receiving water for this outfall is the Salt River. The applicable designated uses are A&Wedw, PBC, FC, AgI and AgL. Elevated concentrations of dissolved copper, total lead, and pesticides, including heptachlor (2012 and 2014), high pH (2010), and dissolved zinc 2009) have been observed at this outfall, in addition to *E. coli*. Inspectors noted that this catchment area includes several agricultural properties, (used for grazing by horses, cows, goats, and sheep), along with newer residential areas and light industrial properties. This year, total zinc was reported above the SWQS at this outfall. This is the first occurrence of total zinc at this outfall; thus, investigation is not necessary until greater than one occurrence is documented.

SC046

Skunk Creek Wash is the receiving water for this outfall, with designated uses of A&We and PBC. This area is primarily residential with some open land. SWQS exceedances for this outfall are limited to *E. coli*, dissolved copper, and total lead.

B. Water Quality Standards (SWQS): Compare the sampling results for each outfall monitoring location with the applicable SWQS for the receiving water.

The applicable SWQS for each monitoring station are dependent upon the designated uses for the specific receiving water. Table 10-1 includes the designated uses for each monitoring location:

Table 10-1
Designated Uses for Monitoring Locations

Outfall	Receiving Water	Designated Uses
AC033	ACDC	AgI, AgL
IB008	Indian Bend Wash	A&We, PBC
SR003	Salt River at 35th Avenue	A&Wedw, PBC, FC, AgI, and AgL
SR030	Salt River at 27th Avenue	A&Wedw, PBC, FC, AgI, and AgL
SR045	Salt River at 40th Street	A&We, PBC
SR049	Salt River at 67th Avenue	A&Wedw, PBC, FC, AgI, and AgL
SC046	Skunk Creek Wash	A&We, PBC

AgI = Agricultural Irrigation
AgL = Agricultural Livestock Watering
A&We = Aquatic and Wildlife, Ephemeral
A&Wedw =Aquatic and Wildlife, Effluent Dependent Water (acute)
PBC = Partial Body Contact
FC = Fish Consumption

The analytical results reported were compared to the lowest applicable standard, as documented in Part 9.

C. Exceeding a SWQS: Note any exceedance of a surface water quality standard (as measured at the outfall) during the reporting year, including, at a minimum, the following information:

1. Sampling dates: See Table 10-2
2. Monitoring location (outfall identification number): See Table 10-2
3. Receiving water and surface water quality standard exceeded: See Table 10-2
4. Outfall monitoring results (laboratory reports): See Table 10-2 and Part 13

Table 10-2
Analytical Results Exceeding SWQS for Reporting Year 2016/17

Outfall	Sample Date	Parameter	Designated Use Exceeded	SWQS	Result	Units
AC033	08/22/2016	Aldrin	AgI and AgL	0.003	0.077	ug/L
AC033	08/22/2016	Dieldrin	AgI and AgL	0.003	0.035	ug/L
IB008	08/05/2016	Copper (D)	A&We	2.98	12.8	mg/L
	08/05/2016	E. coli	PBC	575	1986.3	MPN/100mL
	08/05/2016	Lead (T)	PBC	15	24.3	mg/L
	12/22/2016	E. coli	PBC	575	2419.6	MPN/100mL
SC046	08/23/2016	Copper (D)	A&We	7.39	21.3	mg/L
	11/03/2016	Copper (D)	A&We	8.72	10	ug/L
	11/03/2016	E. coli	PBC	575	1986.3	MPN/100mL
SR003	07/29/2016	Zinc (D)	A&Wedw	79.75	79.8	mg/L
	07/29/2016	Copper (D)	A&Wedw	8.76	28.6	mg/L
	07/29/2016	E. coli	PBC	575	1986.3	MPN/100mL
	07/29/2016	Lead (T)	PBC	15	79.0	mg/L
	11/03/2016	Copper (D)	A&Wedw	8.76	34.8	ug/L
	11/03/2016	E. coli	PBC	575	5940	MPN/100mL
	11/03/2016	Lead (T)	PBC	15	58.4	ug/L
SR030	11/27/2016	Copper (D)	A&Wedw	8.76	10.3	ug/L
	11/27/2016	E. coli	PBC	575	9320	MPN/100mL
	11/27/2016	Heptachlor	FC	0.00008	0.04	ug/L
SR045	07/29/2016	Copper (D)	A&We	11.05	30.9	mg/L
	07/29/2016	E. coli	PBC	575	5040	MPN/100mL
	11/03/2016	pH	AW	6.5-9	6.34	SU
	11/03/2016	Copper (D)	A&We	20.58	38.4	ug/L
	11/03/2016	E. coli	PBC	575	2419.6	MPN/100mL
	11/03/2016	Lead (T)	PBC	15	17.3	ug/L
SR049	11/03/2016	E. coli	PBC	575	48840	MPN/100mL
	11/03/2016	Zinc (T)	A&Wedw	180	259	mg/L
ug/L-micrograms per liter; mg/L-milligrams per liter; MPN-most probable number; mL-milliliter; D-dissolved; T-total; SU-standard units						

5. A description of the circumstances that may have caused or contributed to the exceedance of an applicable surface water quality standard:

Six monitoring stations showed elevated *E. coli* levels. These exceedances seem to be independent of predominant land uses. One potential source of *E. coli* in stormwater is pet waste. However, other wildlife sources, including birds and bats, should also be considered.

Dissolved copper was elevated at six outfalls. Copper is a common component in pesticides, fungicides, and insecticides. This includes algaecides commonly used in pools, spas, and fountains. Copper is also used in automotive parts such as brake pads, brake linings, and moving engine parts. Consequently, sources of elevated copper could include automotive repair shops, roadway run-off, and pool backwashing.

All monitoring stations showed elevated lead levels. Lead is used in automotive parts, including tires and batteries. Lead-based paint is sometimes used on buildings and road stripping, and lead was a common additive in gasoline until the 1970's and early 1980's. Therefore, sources of elevated lead could include automotive repair shops, lead tire weights, roadway runoff, and lead-containing sediment deposited in the past from automotive exhaust.

Heptachlor has been detected in four of the City's outfalls, all associated with the Salt River. Levels are elevated downstream of the airport, where the designated use of fish consumption is applied. Stormwater runoff has exceeded the fish consumption designated use, 0.00008 ug/L, at SR030, SR003, and SR049. Heptachlor, an organochlorine compound (and a component of technical grade chlordane), was widely used as an insecticide prior to 1974 when it was banned in most countries. It remains available for use, when registered with the Arizona Department of Agriculture for fire ant control in pad mounted transformers, cable television boxes, and telephone cable boxes located underground. In response to an ADEQ inquiry last January (2017), the City undertook an investigation to 1) verify the parameter is in fact heptachlor, and 2) find potential sources. Preliminary findings conclude that *false positive results are the likely cause of the heptachlor detections.* Refer to the Heptachlor Investigation Report in the attachments for additional information.

Elevated zinc was present for the first time in each of two, westernmost outfalls (SR003, dissolved and SR049, total). Zinc is a metal that is commonly associated with transport and commuter vehicles, metal recycling facilities, galvanized roofs, and motor oils. Tire breakdown and rubber are also contributors of this pollutant to stormwater runoff. Locally, there is increasing use of rubberized asphalt in all transportation corridors that could also contribute. Transportation departments routinely apply asphalt (comprised of oil) and rubber pavement overlays, as a preservation practice as well as noise and ride mitigation. The overlay material consists of recycled tires, which are ground up and mixed with asphalt. The rubbery material promotes adhesion of the subsurface concrete and asphalt, provides a smooth ride, and quiets the tire noise associated with traditional pavement.

Aldrin/Dieldrin were detected in one outfall (AC033) during summer runoff. These insecticides are closely related, light tan to brown solid – or powder – form substances used from the 1950's to the 1970's, and banned in 1975. Because these substances are banned and historic occurrence has been reported in December 2012 and November 2014 (both Aldrin), and no prior occurrence of dieldrin, two possible explanations are offered: 1) use of individually owned product, or 2) inconclusive lab results.

Four outfalls returned hits of ideno(1,2,3-cd)pyrene. These hits were disclosed in Part 9, where they occurred (AC033, SR003, SR030, and SR045) and documented as flagged data. It was determined these results were associated with a contaminated laboratory reagent blank.

6. If a pollutant is noted at levels above the SWQS at a particular outfall, more than 1X (‘reoccurs’), describe actions taken to determine the source(s) of the pollutant per Sections 4.3 and 4.4 of the permit. Also state any proposed follow-up actions or additional and/or revised management practices or pollution controls to prevent the discharge from causing or contributing to an exceedance of a surface water quality standard in the future:

The City follows an internal Standard Operating Procedure (COP #6004) “Stormwater Quality Evaluation and Action Plan,” to identify the source of pollutants. The purpose of the procedure is to ensure compliance with Sections 4.2, 4.4, and 8.3 of the MS4 Permit. The procedure discusses how a SWQS exceedance is identified, assigns the responsibility for attempting to identify potential sources of the pollutant(s) of concern and evaluating existing BMPs that may require revision to address the issue(s), provides a schedule for implementation, and outlines the requirements for reporting the occurrence to ADEQ.

This fiscal year, the City identified recurring exceedances of *E. coli* at six monitoring stations. The city identified recurring exceedances for total lead at three of the seven monitoring stations. The city also identified five monitoring stations with recurring exceedances of dissolved copper this year. Heptachlor recurred at SR003 and is included in the heptachlor investigation project. Dieldrin was identified for a second time at AC033, where Aldrin was also detected above the SWQS for the third time.

The first step in evaluating each exceedance was to research potential sources of these pollutants in stormwater. A summary of these findings is discussed in Part 10, Section C.5. Water Quality Inspectors were provided with a summary of the potential sources, along with information on the catchment area for each outfall in question. The inspectors then drove through each catchment area, looking for any obvious causes of the exceedances. In most situations, the inspectors were unable to confirm a specific source of the elevated levels. A summary of their findings is included below:

SC046

Samples at this outfall contained pollutants in exceedance of the SWQS for *E. coli* and dissolved copper.

E. coli
It was observed that many residents in the area use the wilderness corridor for recreation including walking pets. Pet and wildlife excrement were observed during the canvassing of this area.

Dissolved copper
During the investigation, vehicles were observed being driven in the area and many vehicles were parked in driveways. Additionally, many houses had landscaped yards, which also may contribute copper to runoff. Runoff from a nearby hill passes through the drainage basin and naturally occurring copper could be present in the eroding soils.

IB008

Samples at this outfall contained pollutants in exceedance of the SWQS for *E. coli,* total lead, and dissolved copper.

E. coli

A large portion of this area is residential, which includes privately and publicly owned parks and basins suitable for pet exercise. Additionally, nearly 330 acres in the center of the neighborhood include clustered horse farms and older homes with septic tanks.

Total lead

Total lead was attributable to vehicular traffic associated with parking lots in shopping centers and auto repair service stations.

Dissolved copper

Staff noted two plant nurseries in the area where multiple fields may be subject to the application of pesticides and herbicides, which contain and can contribute to the presence of dissolved copper in runoff. High volumes of vehicular traffic, and possible brake pad disintegration, are likely to contribute to the excess levels of this pollutant.

AC033

Aldrin and Dieldrin

Aldrin/Dieldrin could possibly be released during soil disruption associated with several home remodels in the area. Due to the second exceedance of dieldrin at this outfall, and a third of aldrin, the City will perform a quality assurance review of the results.

SR003

Samples at this outfall contained pollutants in exceedance of the SWQS for *E. coli*, total lead, dissolved copper, and heptachlor.

E. coli

A possible source of e-coli may be goats that are kept on a palm tree orchard located on southwest corner of Buckeye and 35th Avenue (irrigated property).

Lead and Copper

Nothing was discovered during the investigation that could positively identify sources of the noted exceedances. The lead and copper exceedances may be the result of the heavy amount of automotive traffic within this area. There are several large industrial businesses near the monitoring site SR003. They are located along 35th Avenue and include a couple of wood pallet manufacturing facilities, a mulch facility, a metal recycling facility, and a cement pipe and brick manufacturer.

Heptachlor

The City is investigating elevated levels of heptachlor (see attached report), and preliminary results indicate false positive detections. A possible source of heptachlor (the APS power generation station located at the northwest corner of 43th Avenue and Buckeye Road) was investigated in August 2016. The facility was contacted in August 2016 and it was confirmed that they do not use heptachlor onsite.

SR030

Samples at this outfall contained pollutants in exceedance of the SWQS for *E. coli*, total lead, and dissolved copper.

E.coli
Along the west side of 27th Avenue is horse property, and there are several parks that are likely used for pet exercise.

Lead and Copper
It is possible that the many auto body shops along Broadway are contributing copper to runoff.

SR045

Samples at this outfall contained pollutants in exceedance of the SWQS for total lead, dissolved copper, and *E. coli*.

E.coli
Based on the reconnaissance investigation, animal feces, runoff from adjacent transfer station and homeless activity would all contribute to the elevated levels of E. coli in runoff.

Lead and Copper
The area includes numerous sources, such as wood, oil or coal combustion, refuse incineration, fertilizers, automobile exhaust, repair shops, industrial metal coating operations, brake pads, and junkyards.

SR049

Samples at this outfall contained pollutants in exceedance of the SWQS for *E. coli*, total lead, and dissolved copper.

E. coli
There is a cattle feed lot and several residences with livestock in the vicinity of 67th Avenue and Broadway Road; additional possible sources include observations of wildlife and pet wastes.

Lead and Copper
Two industrial properties were noted that will be assessed for potential contributions of these parameters.

7. A schedule for implementing the proposed follow-up, stormwater or non-stormwater management practices or pollution controls:

As described above, city inspectors conducted thorough visual reconnaissance of each catchment area, searching for potential sources of the elevated levels. No obvious cause of the elevated constituents was identified.

The potential sources for these pollutants are varied. *E. coli* can come from a variety of sources, including pet waste and bird droppings. Though the city cannot control wild birds, the PWD does enforce pet waste requirements. Phoenix City Code, Chapter 27, Section 27-12 requires all animal owners and custodians to immediately clean up and properly dispose of animal waste left on any public street, alley, gutter, sidewalk, right-of-way, or park. Staff hangs notices on doorknobs to educate the public regarding the need to clean up and properly dispose of pet wastes. The door hangers or similarly worded placards are posted at public facilities such as parks, libraries, and other locations. Pet waste bags are also provided at city parks.

Lead and copper can come from a variety of residential, commercial, and industrial sources. Therefore, the City has decided to use these chemical constituents as one criterion to prioritize industrial facility inspections. Thirty-six facilities were identified through EPA Tier II reports as using or storing large quantities of copper and/or lead on site. In addition, approximately 1,600 facilities were identified through an SIC code search as potentially using these chemicals. These facilities, along with permit-required facilities, make up the 'high priority' industrial facility inventory. Inspections of these facilities are ongoing, and will continue throughout the permit term.

The City hired a consultant to assist with an investigation of elevated heptachlor levels. Past data was reviewed and preliminary findings indicate that most of the detections cannot be confirmed, indicating possible false positive results. Additional samples will be evaluated in September 2017. See the attached Technical Memorandum for additional information.

The City will continue to evaluate reduction strategies for these pollutants. However, metals such as lead and copper can come from automotive sources such as dust from brake pads, rubber tires, lead tire weights, and engine exhaust. Since these sources are ubiquitous, they may be best controlled at the state or national level.

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PART 11: ESTIMATE OF ANNUAL POLLUTANT LOADINGS

Provide an estimate of the pollutant loadings each year from the municipal storm sewer system to waters of the U.S. for each constituent listed in Section 7.4 of the permit detected by stormwater monitoring within the permit term. Pollutant loadings and event mean concentrations may be estimated from sampling data collected at the representative monitoring locations, taking into consideration land uses and drainage areas for the outfall. Include a description of the procedures for estimating pollutant loads and concentrations, including any modeling, data analysis, and calculation methods. Compare the pollutant loadings estimated each year to previous estimates of pollutant loadings.

Seasonal and annual pollutant load estimates were developed for all of the City's twelve stormwater basins for reporting year 2016/17 (Table 11-1). Winter, summer, and total annual loads were computed for all water quality parameters where sufficient validated data was available. As in past years, results from the City's monitoring data were used to correlate pollutant concentrations with land uses for twelve stormwater basins in Phoenix. Where data were insufficient to perform this evaluation, information from past annual reports was used. The "Simple Method" as described in USEPA's guidance documents was used in performing this analysis[1].

Table 11-1 Seasonal and Total Annual Pollutant Load

Constituent	Summer Pollutant Load (Pounds)	Winter Pollutant Load (Pounds)	Total Annual Pollutant Load (Pounds)
BOD_5	804,909	1,567,692	2,372,602
COD	3,935,355	7,643,059	11,578,413
TDS	4,446,882	8,542,032	12,988,914
Nitrogen, NO2 + NO3, Total	74,351	148,353	222,705
Nitrogen, Organic, Total Kjeldahl	110,928	198,692	309,620
Phosphorous, Total	14,571	27,768	42,339
Arsenic, Total	18,205	38,832	57,037
Antimony, Total	68	124	192
Barium, Total	3,948	7,109	11,057
Beryllium, Total	17	35	52.2
Cadmium, Total	111	198	309
Chromium, Total	605	1,207	1,812
Copper, Total	1,474	2,675	4,149
Lead, Total	852	1,622	2,474
Mercury, Total	20	41	60.7
Nickel, Total	690	1,347	2,037
Selenium, Total	117	242	359
Silver, Total	0	0	0
Thallium, Total	Insufficient Data, Not Calculated		
Zinc, Total	5,607	8,867	14,475

1 Guidance Manual for the Preparation of Part 2 of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer System, November 1992.

The following methodology was used in developing pollutant loads:

In the Part 1 MS4 NPDES Permit Application, the City was divided into 13 stormwater sub-watersheds, based upon outfall locations that impacted specific water conveyance structures or tributaries of the Salt River. This division of the permit area was followed until the last AZPDES permit renewal application in 2013. Through annexation, the City had acquired by this time substantial new undeveloped land, primarily in the north. In order to integrate this new land into the load calculation and to provide a consistent basis for analysis, a watershed-based approach was developed.

City GIS staff acquired County land-use spatial data and combined them with sub-watershed boundaries developed by the Maricopa County Flood Control District (MCFCD 2013). These sub-watershed boundaries are very similar to the Watershed Boundary Dataset 10-digit Hydrologic Unit Code (HUC), with exceptions made for local flood control and other man-made diversions (for example, White Tanks A Basin). Clipping these data to the City permit boundaries produced a watershed-based land-use map that was used to define 12 new areas, now sub-watersheds, used in the pollutant load estimate.

For the purposes of this model, four land-uses were defined from the data: Industrial, Commercial, Residential, and Open Space. The Part 1 application demonstrated that, on a city-wide scale, these four land-use type provide the strongest distinction in stormwater composition.

The Part 1 application also developed pollutant-specific, rainfall-event-normalized, stormwater loading factors for each of the four land-use categories. These factors, called *event-mean concentrations* or EMCs, represent the concentration of each pollutant of concern in the runoff from the four land-use types. The concentration is normalized to the amount of rainfall in the sampling event to accommodate the dynamic nature of runoff chemistry.

Rainfall runoff was generated from data collected by the fifty-seven Maricopa County Flood Control District (MCFCD) ALERT meteorological stations. Stations were located on GIS projections and rainfall records assigned to each of the twelve sub-watersheds. Monthly rainfall amounts were used for the summer and winter total amounts for the permit year.

Rainfall was translated to runoff as part of the load calculation, using (Schuler 1987),

$$R = P_j\,(P)(R_v)(A)$$

where, P = rainfall depth (inches)

P_j = fraction of events that produce runoff (0.9)

R_v = runoff coefficient

A = sub-watershed area (acres)

Sub-watershed areas were measured from GIS projections. Runoff coefficients that were utilized for each land use are as follows (developed specially for Phoenix under the 2001 Permit Renewal Application effort):

Industrial: 0.053

Commercial: 0.745

Residential: 0.236

Open Space: 0.04

The current AZPDES permit indicates that, if possible, annual monitoring data be used to generate concentration factors in the load model. As in past years, EMCs were taken from the COP Part 1 NPDES MS4 characterization data. These values were compared to USGS monitoring results (Table 11-2) from representative storms.

As in the previous year, several elemental pollutants of concern were not found in Phoenix stormwater at levels above method detection limits. This result, along with the lack of historic stormwater data for thallium means that an EMC could not be calculated at this time for this pollutant of concern and no load was estimated. The silver EMC has always been zero, based on eighteen years of data. Based upon research conducted by the City that supported the permit renewal application, both thallium and silver occur infrequently in stormwater samples regionally and are poorly represented in the historical record for Phoenix stormwater at levels above the detection level. For this reason, a statistically representative event mean concentration of thallium could not be calculated for each of the four land-use categories and the silver EMC has a calculated value of zero. In recent reports, the method detection limits for thallium are lower; however, there are still very few reportable data for thallium and poor representation of individual land uses persists. Accordingly, no load for thallium was estimated. This matter can be re-examined in the future as more data are collected using the method detection levels of the next permit.

EMCs were determined for each land-use type and pollutant of concern, as possible (Table 11-2). For each of the twelve stormwater sub-watersheds, EMCs were weighted by the percentage of land-use type, or

$$
\begin{aligned}
EMC_{k,\,j} = {} & (EMC_{j,\,\text{industrial}} * \%\ area_{k,\,\text{industrial}}) + \\
& (EMC_{j,\,\text{commercial}} * \%\ area_{k,\,\text{commercial}}) + \\
& (EMC_{j,\,\text{residential}} * \%\ area_{k,\,\text{residential}}) + \\
& (EMC_{j,\,\text{open space}} * \%\ area_{k,\,\text{open space}})
\end{aligned}
$$

where, $EMC_{k,\,j}$ = event mean concentration for the kth sub-watershed and the jth pollutant

Thus each sub-watershed has a unique EMC for each pollutant, dependent upon land use.

For each of the twelve stormwater sub-watersheds, total runoff was calculated for the summer and winter seasons. These volumes were multiplied by the EMCs and the seasonal load was calculated (Tables 11-3 through 11-14). Seasonal loads were added to give the annual load per pollutant per sub-watershed. Summation over the twelve stormwater sub-watersheds produced the estimated annual load to the Salt River for each pollutant over the permit year.

Table 11-2 Land-Use Based Event Mean Concentrations

Pollutants	2016-17 data (ave all sites)[1]	EMC_O	EMC_R	EMC_I	EMC_C
BOD_5 (mg/L)	35.9	31.0	12.0	55.3	0.00
COD High Level (mg/L)	224	130	42.3	68.8	148
Residue, Total at 105 Deg.C (TDS)	175	120	111	123	84.0
Nitrogen NO_2 + NO_3, Total, (mg/L as N)	1.25	3.12	1.24	1.14	0.70
Nitrogen Organic, Total Kjeldahl (mg/L as N)	4.18	0.11	5.19	7.24	1.67
Phosphorous, Total, (mg/L as P)	0.98	0.41	0.26	0.78	0.30
Arsenic, Total, (µg/L as As)	4.24	2.40	5.24	7.77	2.95
Antimony Total (µg/L as Sb)	2.47	0.64	1.96	4.81	2.12
Barium Total (µg/L as Ba)	134	20.0	170	311	35.6
Beryllium, Total Recoverable, (µg/L as Be)	0.47	1.10	0.00	0.00	0.00
Cadmium, Total Recoverable, (µg/L as Cd)	0.56	0.00	3.38	3.68	6.63
Chromium, Total Recoverable, (µg/L as Cr)	13.9	24.3	12.3	3.68	5.71
Copper, Total Recoverable, (µg/L as Cu)	66.5	29.0	23.3	204	15.0
Lead, Total Recoverable, (µg/L as Pb)	25.4	19.9	25.2	29.7	12.5
Mercury, Total Recoverable, (µg/L as Hg)	0.12	1.08	0.20	0.084	0.036
Nickel, Total Recoverable, (µg/L as Ni)	14.2	23.4	13.4	15.4	12.1
Selenium Total Recoverable, (µg/L as Se)	1.02	7.13	0.086	1.20	0.39
Silver, Total Recoverable, (µg/L as Ag)	0.55	0.00	0.00	0.00	0.00
Thallium Total Recoverable, (µg/L as Th)	0.37	Insufficient Data, Not Calculated			
Zinc, Total Recoverable, (µg/L as Zn)	284	96.0	109	346	135

NOTES: 1. Censored non-detects included in mean as per USACOE 2008, Manual 1110-1-4014, ENVIRONMENTAL STATISTICS
2. Event mean concentrations from 2001 MS4 application, as modified by monitoring data to date. See text. O = open space land use, R = residential land use, I = industrial land use, C = commercial land use

Table 11-3: Lower Arizona Canal Diversion Channel Watershed Pollutant Loadings

Total area, acres: 94,321 Residential: 41.14% Industrial: 13.58% Undeveloped: 19.67% Commercial: 25.60%

Total Summer (June-Oct) Runoff, cubic feet: 260,408,392 Total Winter (Nov-May) Runoff, cubic feet: 372,937,019

Constituent	Land Use weighted concentrations	Summer Pollutant Load (pounds)	Winter Pollutant Load (pounds)	Total Annual Pollutant Load (pounds)
BOD_5 (mg/L)	18.6	301,571	431,887	733,458
COD High Level (mg/L)	90.2	1,466,327	2,099,962	3,566,289
Residue, Total at 105 Deg.C (TDS)	107	1,746,546	2,501,269	4,247,815
Nitrogen $NO_2 + NO_3$, Total, (mg/L as N)	1.46	23,703	33,946	57,649
Nitrogen Organic, Total Kjeldahl (mg/L as N)	3.57	58,022	83,095	141,117
Phosphorous, Total, (mg/L as P)	0.37	6,021	8,623	14,644
Arsenic, Total, (mg/L as As)	4.44	72	103.3	175
Antimony Total (mg/l as Sb)	2.13	34.6	49.6	84.2
Barium Total (mg/l as Ba)	125	2,038	2,919	4,957
Beryllium, Total Recoverable, (mg/L as Be)	0.22	3.52	5.04	8.56
Cadmium, Total Recoverable, (mg/L as Cd)	3.59	58.3	83.5	142
Chromium, Total Recoverable, (mg/L as Cr)	11.8	192	275	467
Copper, Total Recoverable, (mg/L as Cu)	46.8	760	1,089	1,849
Lead, Total Recoverable, (mg/L as Pb)	21.5	350	501	851
Mercury, Total Recoverable, (mg/L as Hg)	0.31	5.11	7.31	12.4
Nickel, Total Recoverable, (mg/L as Ni)	15.3	249	356	605
Selenium Total Recoverable, (mg/L as Se)	1.70	27.7	39.6	67.3
Silver, Total Recoverable, (mg/L as Ag)	0.00	0.00	0.00	0.00
Thallium Total Recoverable, (mg/L as Th)	Insufficient Data, Not Calculated			
Zinc, Total Recoverable, (mg/L as Zn)	145	2,359	3,379	5,738

Table 11-4: Upper Arizona Canal Diversion Channel Watershed Pollutant Loadings

Total area, acres: 63,903 Residential: 46.30% Industrial: 3.90% Undeveloped: 31.91% Commercial: 17.88%

Total Summer (June-Oct) Runoff, cubic feet: 126,716,428 Total Winter (Nov-May) Runoff, cubic feet: 277,276,932

Constituent	Land Use weighted concentrations	Summer Pollutant Load (pounds)	Winter Pollutant Load (pounds)	Total Annual Pollutant Load (pounds)
BOD_5 (mg/L)	17.6	139,286	304,781	444,066
COD High Level (mg/L)	90.2	713,557	1,561,384	2,274,941
Residue, Total at 105 Deg.C (TDS)	109	866,186	1,895,361	2,761,547
Nitrogen $NO_2 + NO_3$, Total, (mg/L as N)	1.74	13,760	30,110	43,870
Nitrogen Organic, Total Kjeldahl (mg/L as N)	3.02	23,901	52,300	76,201
Phosphorous, Total, (mg/L as P)	0.34	2,652	5,804	8,457
Arsenic, Total, (mg/L as As)	4.02	31.8	69.6	101
Antimony Total (mg/l as Sb)	1.68	13.3	29.1	42.4
Barium Total (mg/l as Ba)	104	821	1,795	2,616
Beryllium, Total Recoverable, (mg/L as Be)	0.35	2.78	6.08	8.85
Cadmium, Total Recoverable, (mg/L as Cd)	2.89	22.9	50.1	72.9
Chromium, Total Recoverable, (mg/L as Cr)	14.6	116	253	369
Copper, Total Recoverable, (mg/L as Cu)	30.6	242	531	773
Lead, Total Recoverable, (mg/L as Pb)	21.4	169	371	540
Mercury, Total Recoverable, (mg/L as Hg)	0.45	3.52	7.71	11.2
Nickel, Total Recoverable, (mg/L as Ni)	16.4	130	285	415
Selenium Total Recoverable, (mg/L as Se)	2.43	19.2	42.1	61.4
Silver, Total Recoverable, (mg/L as Ag)	0.00	0.00	0.00	0.00
Thallium Total Recoverable, (µg/L as Th)	Insufficient Data, Not Calculated			
Zinc, Total Recoverable, (mg/L as Zn)	119	938	2,053	2,992

Table 11-5: South Mountain Watershed Basin Pollutant Loadings

Total area, acres: 61,998	Residential: 27.30%	Industrial: 4.37%	Undeveloped 52.98%	Commercial: 15.35%
Total Summer (June-Oct) Runoff, cubic feet: 77,278,473	Total Winter (Nov-May) Runoff, cubic feet: 153,020,595			
Constituent	**Land Use weighted concentrations**	**Summer Pollutant Load (pounds)**	**Winter Pollutant Load (pounds)**	**Total Annual Pollutant Load (pounds)**
BOD_5 (mg/L)	22.1	106,713	211,304	318,017
COD High Level (mg/L)	106	512,025	1,013,871	1,525,897
Residue, Total at 105 Deg.C (TDS)	112	540,964	1,071,174	1,612,139
Nitrogen NO_2 + NO_3, Total, (mg/L as N)	2.15	10,367	20,527	30,894
Nitrogen Organic, Total Kjeldahl (mg/L as N)	2.05	9,891	19,585	29,475
Phosphorous, Total, (mg/L as P)	0.37	1,777	3,519	5,296
Arsenic, Total, (mg/L as As)	3.49	16.9	33.4	50.2
Antimony Total (mg/l as Sb)	1.41	6.8	13.48	20.3
Barium Total (mg/l as Ba)	76.2	367	728	1,095
Beryllium, Total Recoverable, (mg/L as Be)	0.58	2.81	5.57	8.38
Cadmium, Total Recoverable, (mg/L as Cd)	2.10	10.1	20.1	30.2
Chromium, Total Recoverable, (mg/L as Cr)	17.3	83	165.0	248
Copper, Total Recoverable, (mg/L as Cu)	32.9	159	314	473
Lead, Total Recoverable, (mg/L as Pb)	20.6	100	197	297
Mercury, Total Recoverable, (mg/L as Hg)	0.63	3.06	6.06	9.12
Nickel, Total Recoverable, (mg/L as Ni)	18.6	90	177.6	267
Selenium Total Recoverable, (mg/L as Se)	3.92	18.9	37.4	56.3
Silver, Total Recoverable, (mg/L as Ag)	0.00	0.00	0.00	0.00
Thallium Total Recoverable, (mg/L as Th)	Insufficient Data, Not Calculated			
Zinc, Total Recoverable, (mg/L as Zn)	116	561	1,112	1,673

Table 11-6: Upper Indian Bend Wash Watershed Pollutant Loadings

Total area, acres: 17,187 | Residential: 12.38% | Industrial: 2.10% | Undeveloped: 70.78% | Commercial: 14.73%

Total Summer (June-Oct) Runoff, cubic feet: 30,338,572 | Total Winter (Nov-May) Runoff, cubic feet: 50,968,800

Constituent	Land Use weighted concentrations	Summer Pollutant Load (pounds)	Winter Pollutant Load (pounds)	Total Annual Pollutant Load (pounds)
BOD_5 (mg/L)	24.6	46,574	78,244	124,818
COD High Level (mg/L)	121	228,225	383,419	611,644
Residue, Total at 105 Deg.C (TDS)	114	215,225	361,577	576,802
Nitrogen $NO_2 + NO_3$, Total, (mg/L as N)	2.49	4,714	7,920	12,634
Nitrogen Organic, Total Kjeldahl (mg/L as N)	1.12	2,123	3,567	5,690
Phosphorous, Total, (mg/L as P)	0.38	725	1,219	1,944
Arsenic, Total, (µg/L as As)	2.94	5.6	9.4	14.9
Antimony Total (µg/l as Sb)	1.11	2.10	3.54	5.64
Barium Total (µg/l as Ba)	47.0	89	150	239
Beryllium, Total Recoverable, (µg/L as Be)	0.78	1.47	2.48	3.95
Cadmium, Total Recoverable, (µg/L as Cd)	1.47	2.79	4.68	7.47
Chromium, Total Recoverable, (µg/L as Cr)	19.6	37.2	62.5	100
Copper, Total Recoverable, (µg/L as Cu)	29.9	57	95.1	152
Lead, Total Recoverable, (µg/L as Pb)	19.7	37.3	62.6	100
Mercury, Total Recoverable, (µg/L as Hg)	0.80	1.51	2.53	4.04
Nickel, Total Recoverable, (µg/L as Ni)	20.3	38.5	64.7	103
Selenium Total Recoverable, (µg/L as Se)	5.14	9.7	16.4	26.1
Silver, Total Recoverable, (µg/L as Ag)	0.00	0.00	0.00	0.00
Thallium Total Recoverable, (µg/L as Th)	Insufficient Data, Not Calculated			
Zinc, Total Recoverable, (µg/L as Zn)	109	206	345	551

Table 11-7: Middle Indian Bend Wash Watershed Pollutant Loadings

Total area, acres: 19,142 Residential: 64.54% Industrial: 0.35% Undeveloped: 70.78% Commercial: 12.69%

Total Summer (June-Oct) Runoff, cubic feet: 42,489,289 Total Winter (Nov-May) Runoff, cubic feet: 89,886,155

Constituent	Land Use weighted concentrations	Summer Pollutant Load (pounds)	Winter Pollutant Load (pounds)	Total Annual Pollutant Load (pounds)
BOD_5 (mg/L)	29.9	79,259	167,672	246,931
COD High Level (mg/L)	138	366,869	776,111	1,142,980
Residue, Total at 105 Deg.C (TDS)	168	444,735	940,837	1,385,572
Nitrogen $NO_2 + NO_3$, Total, (mg/L as N)	3.10	8,227	17,404	25,631
Nitrogen Organic, Total Kjeldahl (mg/L as N)	3.67	9,731	20,585	30,316
Phosphorous, Total, (mg/L as P)	0.50	1,323	2,799	4,122
Arsenic, Total, (mg/L as As)	5.48	14,535	30,749	45,284
Antimony Total (mg/l as Sb)	2.01	5.32	11.26	16.6
Barium Total (mg/l as Ba)	130	344	727	1,071
Beryllium, Total Recoverable, (mg/L as Be)	0.78	2.07	4.37	6.43
Cadmium, Total Recoverable, (mg/L as Cd)	3.03	8.0	17.0	25.1
Chromium, Total Recoverable, (mg/L as Cr)	25.9	69	145.2	214
Copper, Total Recoverable, (mg/L as Cu)	38.1	101	214	315
Lead, Total Recoverable, (mg/L as Pb)	32.0	85	180	265
Mercury, Total Recoverable, (mg/L as Hg)	0.90	2.38	5.03	7.40
Nickel, Total Recoverable, (mg/L as Ni)	26.8	71	150.4	221
Selenium Total Recoverable, (mg/L as Se)	5.16	13.7	29.0	42.6
Silver, Total Recoverable, (mg/L as Ag)	0.00	0.00	0.00	0.00
Thallium Total Recoverable, (mg/L as Th)	Insufficient Data, Not Calculated			
Zinc, Total Recoverable, (mg/L as Zn)	156	415	878	1,293

Table 11-8: Cave Creek Watershed Pollutant Loadings

Total area, acres: 18,009 Residential: 16.83% Industrial: 0.28% Undeveloped: 77.63% Commercial: 5.26%

Total Summer (June-Oct) Runoff, cubic feet: 19,358,210 Total Winter (Nov-May) Runoff, cubic feet: 42,928,249

Constituent	Land Use weighted concentrations	Summer Pollutant Load (pounds)	Winter Pollutant Load (pounds)	Total Annual Pollutant Load (pounds)
BOD_5 (mg/L)	26.2	31,709	70,318	102,027
COD High Level (mg/L)	116	140,199	310,903	451,102
Residue, Total at 105 Deg.C (TDS)	117	140,907	312,472	453,380
Nitrogen NO_2 + NO_3, Total, (mg/L as N)	2.67	3,228	7,157	10,385
Nitrogen Organic, Total Kjeldahl (mg/L as N)	1.07	1,293	2,867	4,159
Phosphorous, Total, (mg/L as P)	0.38	459	1,018	1,478
Arsenic, Total, (mg/L as As)	2.92	3,530	7,829	11,359
Antimony Total (mg/l as Sb)	0.95	1.15	2.56	3.71
Barium Total (mg/l as Ba)	46.9	56.73	125.79	183
Beryllium, Total Recoverable, (mg/L as Be)	0.85	1.03	2.29	3.32
Cadmium, Total Recoverable, (mg/L as Cd)	0.93	1.12	2.48	3.61
Chromium, Total Recoverable, (mg/L as Cr)	21.2	25.67	56.93	82.6
Copper, Total Recoverable, (mg/L as Cu)	27.8	33.57	74.45	108
Lead, Total Recoverable, (mg/L as Pb)	20.4	24.69	54.75	79.4
Mercury, Total Recoverable, (mg/L as Hg)	0.87	1.05	2.34	3.39
Nickel, Total Recoverable, (mg/L as Ni)	21.1	25.50	56.55	82.0
Selenium Total Recoverable, (mg/L as Se)	5.58	6.74	14.95	21.7
Silver, Total Recoverable, (mg/L as Ag)	0.00	0.00	0.00	0.00
Thallium Total Recoverable, (mg/L as Th)	Insufficient Data, Not Calculated			
Zinc, Total Recoverable, (mg/L as Zn)	101	270	122	392

Table 11-9: Skunk Creek Watershed Pollutant Loadings

Total area, acres: 26,174 Residential: 19.12% Industrial: 1.15% Undeveloped: 59.46% Commercial: 20.26%
Total Summer (June-Oct) Runoff, cubic feet: 51,189,323
Total Winter (Nov-May) Runoff, cubic feet: 122,646,978

Constituent	Land Use weighted concentrations	Summer Pollutant Load (pounds)	Winter Pollutant Load (pounds)	Total Annual Pollutant Load (pounds)
BOD_5 (mg/L)	21.4	68,274	163,581	231,855
COD High Level (mg/L)	116	371,216	889,414	1,260,630
Residue, Total at 105 Deg.C (TDS)	111	354,762	849,991	1,204,753
Nitrogen NO_2 + NO_3, Total, (mg/L as N)	2.25	7,182	17,207	24,389
Nitrogen Organic, Total Kjeldahl (mg/L as N)	1.48	4,735	11,345	16,081
Phosphorous, Total, (mg/L as P)	0.36	1,161	2,781	3,942
Arsenic, Total, (µg/L as As)	3.12	10.0	23.9	33.8
Antimony Total (µg/l as Sb)	1.24	3.97	9.51	13.5
Barium Total (µg/l as Ba)	55.3	177	423	600
Beryllium, Total Recoverable, (µg/L as Be)	0.65	2.09	5.01	7.10
Cadmium, Total Recoverable, (µg/L as Cd)	2.03	6.5	15.55	22.0
Chromium, Total Recoverable, (µg/L as Cr)	18.0	58	137.8	195
Copper, Total Recoverable, (µg/L as Cu)	27.1	87	207	294
Lead, Total Recoverable, (µg/L as Pb)	19.5	62	149.5	212
Mercury, Total Recoverable, (µg/L as Hg)	0.69	2.20	5.26	7.46
Nickel, Total Recoverable, (µg/L as Ni)	19.1	61	146.3	207
Selenium Total Recoverable, (µg/L as Se)	4.35	13.9	33.3	47.2
Silver, Total Recoverable, (µg/L as Ag)	0.00	0.00	0.00	0.00
Thallium Total Recoverable, (µg/L as Th)	Insufficient Data, Not Calculated			
Zinc, Total Recoverable, (µg/L as Zn)	109	349	836	1,185

Table 11-10: Upper New River Watershed Pollutant Loadings

Total area, acres: 30,056 | Residential: 14.35% | Industrial: 0.64% | Undeveloped: 80.59% | Commercial: 4.42%

Total Summer (June-Oct) Runoff, cubic feet: 17,431,284 | Total Winter (Nov-May) Runoff, cubic feet: 78,310,695

Constituent	Land Use weighted concentrations	Summer Pollutant Load (pounds)	Winter Pollutant Load (pounds)	Total Annual Pollutant Load (pounds)
BOD_5 (mg/L)	27.1	29,447	132,290	161,736
COD High Level (mg/L)	118	128,201	575,947	704,148
Residue, Total at 105 Deg.C (TDS)	117	127,466	572,645	700,111
Nitrogen NO_2 + NO_3, Total, (mg/L as N)	2.73	2,971	13,349	16,321
Nitrogen Organic, Total Kjeldahl (mg/L as N)	0.96	1,041	4,676	5,717
Phosphorous, Total, (mg/L as P)	0.39	420	1,887	2,307
Arsenic, Total, (µg/L as As)	2.87	3.12	14.01	17.1
Antimony Total (µg/l as Sb)	0.92	1.01	4.52	5.52
Barium Total (µg/l as Ba)	44.1	48	216	264
Beryllium, Total Recoverable, (µg/L as Be)	0.89	0.96	4.33	5.30
Cadmium, Total Recoverable, (µg/L as Cd)	0.80	0.87	3.92	4.79
Chromium, Total Recoverable, (µg/L as Cr)	21.6	23.5	105.7	129
Copper, Total Recoverable, (µg/L as Cu)	28.7	31.2	140.2	171
Lead, Total Recoverable, (µg/L as Pb)	20.4	22.2	99.7	122
Mercury, Total Recoverable, (µg/L as Hg)	0.90	0.98	4.40	5.38
Nickel, Total Recoverable, (µg/L as Ni)	21.4	23.3	104.7	128
Selenium Total Recoverable, (µg/L as Se)	5.79	6.3	28.3	34.6
Silver, Total Recoverable, (µg/L as Ag)	0.00	0.00	0.00	0.00
Thallium Total Recoverable, (µg/L as Th)	Insufficient Data, Not Calculated			
Zinc, Total Recoverable, (µg/L as Zn)	101	495	110	605

Table 11-11: Lower New River Watershed Pollutant Loadings

Total area, acres: 1,395 Residential: 37.20% Industrial: 2.48% Undeveloped: 53.59% Commercial: 6.74%
Total Summer (June-Oct) Runoff, cubic feet: 1,266,904 Total Winter (Nov-May) Runoff, cubic feet: 4,452,471

Constituent	Land Use weighted concentrations	Summer Pollutant Load (pounds)	Winter Pollutant Load (pounds)	Total Annual Pollutant Load (pounds)
BOD_5 (mg/L)	22.4	1,775	6,239	8,015
COD High Level (mg/L)	97.1	7,676	26,977	34,653
Residue, Total at 105 Deg.C (TDS)	114	9,039	31,768	40,808
Nitrogen NO_2 + NO_3, Total, (mg/L as N)	2.21	175	614	789
Nitrogen Organic, Total Kjeldahl (mg/L as N)	2.28	181	635	816
Phosphorous, Total, (mg/L as P)	0.36	28.2	98.9	127
Arsenic, Total, (µg/L as As)	3.63	0.29	1.01	1.29
Antimony Total (µg/l as Sb)	1.34	0.11	0.37	0.48
Barium Total (µg/l as Ba)	84.2	6.7	23.4	30.1
Beryllium, Total Recoverable, (µg/L as Be)	0.59	0.05	0.16	0.21
Cadmium, Total Recoverable, (µg/L as Cd)	1.79	0.14	0.50	0.64
Chromium, Total Recoverable, (µg/L as Cr)	18.1	1.43	5.02	6.45
Copper, Total Recoverable, (µg/L as Cu)	30.2	2.39	8.41	10.8
Lead, Total Recoverable, (µg/L as Pb)	21.6	1.71	6.01	7.72
Mercury, Total Recoverable, (µg/L as Hg)	0.66	0.05	0.18	0.23
Nickel, Total Recoverable, (µg/L as Ni)	18.7	1.48	5.20	6.68
Selenium Total Recoverable, (µg/L as Se)	3.91	0.31	1.09	1.40
Silver, Total Recoverable, (µg/L as Ag)	0.00	0.00	0.00	0.00
Thallium Total Recoverable, (µg/L as Th)	Insufficient Data, Not Calculated			
Zinc, Total Recoverable, (µg/L as Zn)	110	8.7	30.5	39.1

Table 11-12: Upper Agua Fria River Watershed Pollutant Loadings

Total area, acres: 492 | Residential: 0.00% | Industrial: 0.00% | Undeveloped: 100.00% | Commercial: 0.00%

Total Summer (June-Oct) Runoff, cubic feet: 116,612 | Total Winter (Nov-May) Runoff, cubic feet: 578,239

Constituent	Land Use weighted concentrations	Summer Pollutant Load (pounds)	Winter Pollutant Load (pounds)	Total Annual Pollutant Load (pounds)
BOD_5 (mg/L)	31.0	226	1,119	1,345
COD High Level (mg/L)	130	946	4,693	5,639
Residue, Total at 105 Deg.C (TDS)	120	874	4,332	5,205
Nitrogen $NO_2 + NO_3$, Total, (mg/L as N)	3.12	22.7	112.6	135
Nitrogen Organic, Total Kjeldahl (mg/L as N)	0.11	0.82	4.08	4.91
Phosphorous, Total, (mg/L as P)	0.41	2.98	14.80	17.8
Arsenic, Total, (mg/L as As)	2.40	0.017	0.087	0.10
Antimony Total (mg/l as Sb)	0.64	0.005	0.023	0.028
Barium Total (mg/l as Ba)	20.0	0.15	0.72	0.87
Beryllium, Total Recoverable, (mg/L as Be)	1.10	0.008	0.040	0.048
Cadmium, Total Recoverable, (mg/L as Cd)	0.00	0.00	0.00	0.00
Chromium, Total Recoverable, (mg/L as Cr)	24.3	0.18	0.88	1.05
Copper, Total Recoverable, (mg/L as Cu)	29.0	0.21	1.05	1.26
Lead, Total Recoverable, (mg/L as Pb)	19.9	0.14	0.72	0.86
Mercury, Total Recoverable, (mg/L as Hg)	1.08	0.008	0.039	0.047
Nickel, Total Recoverable, (mg/L as Ni)	23.4	0.17	0.84	1.02
Selenium Total Recoverable, (mg/L as Se)	7.13	0.05	0.26	0.31
Silver, Total Recoverable, (mg/L as Ag)	0.00	0.00	0.00	0.00
Thallium Total Recoverable, (mg/L as Th)	Insufficient Data, Not Calculated			
Zinc, Total Recoverable, (mg/L as Zn)	96.0	3.47	0.70	4.16

Table 11-13: Lower Agua Fria River Watershed Pollutant Loadings

Total area, acres: 24 Residential: 0.00% Industrial: 89.39% Undeveloped: 10.61% Commercial: 0.00%

Total Summer (June-Oct) Runoff, cubic feet: 6,053 Total Winter (Nov-May) Runoff, cubic feet: 20,440

Constituent	Land Use weighted concentrations	Summer Pollutant Load (pounds)	Winter Pollutant Load (pounds)	Total Annual Pollutant Load (pounds)
BOD_5 (mg/L)	52.7	19.9	67.3	87.2
COD High Level (mg/L)	75.3	28.5	96.1	125
Residue, Total at 105 Deg.C (TDS)	122	46	156.1	202
Nitrogen NO_2 + NO_3, Total, (mg/L as N)	1.35	0.51	1.72	2.23
Nitrogen Organic, Total Kjeldahl (mg/L as N)	6.48	2.45	8.27	10.7
Phosphorous, Total, (mg/L as P)	0.74	0.28	0.95	1.23
Arsenic, Total, (mg/L as As)	7.20	0.0027	0.0092	0.012
Antimony Total (mg/l as Sb)	4.37	0.0017	0.0056	0.0072
Barium Total (mg/l as Ba)	280	0.11	0.36	0.46
Beryllium, Total Recoverable, (mg/L as Be)	0.12	0.00004	0.000149	0.00019
Cadmium, Total Recoverable, (mg/L as Cd)	3.29	0.0012	0.0042	0.0054
Chromium, Total Recoverable, (mg/L as Cr)	5.87	0.0022	0.0075	0.010
Copper, Total Recoverable, (mg/L as Cu)	185	0.07	0.24	0.31
Lead, Total Recoverable, (mg/L as Pb)	28.6	0.011	0.037	0.047
Mercury, Total Recoverable, (mg/L as Hg)	0.19	0.00007	0.00024	0.00031
Nickel, Total Recoverable, (mg/L as Ni)	16.3	0.006	0.021	0.027
Selenium Total Recoverable, (mg/L as Se)	1.83	0.0007	0.0023	0.0030
Silver, Total Recoverable, (mg/L as Ag)	0.00	0.00	0.00	0.00
Thallium Total Recoverable, (mg/L as Th)	Insufficient Data, Not Calculated			
Zinc, Total Recoverable, (mg/L as Zn)	319	0.41	0.12	0.53

Table 11-14: White Tanks A Watershed Pollutant Loadings

Total area, acres: 39 | Residential: 0.00% | Industrial: 90.30% | Undeveloped: 4.26% | Commercial: 5.44%

Total Summer (June-Oct) Runoff, cubic feet: 17,614 | Total Winter (Nov-May) Runoff, cubic feet: 59,482

Constituent	Land Use weighted concentrations	Summer Pollutant Load (pounds)	Winter Pollutant Load (pounds)	Total Annual Pollutant Load (pounds)
BOD_5 (mg/L)	51.3	56	190	247
COD High Level (mg/L)	75.7	83	281	365
Residue, Total at 105 Deg.C (TDS)	120	132	447	579
Nitrogen $NO_2 + NO_3$, Total, (mg/L as N)	1.20	1.32	4.46	5.78
Nitrogen Organic, Total Kjeldahl (mg/L as N)	6.63	7.3	24.6	31.9
Phosphorous, Total, (mg/L as P)	0.74	0.81	2.74	3.55
Arsenic, Total, (mg/L as As)	7.28	0.008	0.027	0.035
Antimony Total (mg/l as Sb)	4.49	0.005	0.017	0.022
Barium Total (mg/l as Ba)	284	0.31	1.05	1.37
Beryllium, Total Recoverable, (mg/L as Be)	0.047	0.00005	0.00017	0.00023
Cadmium, Total Recoverable, (mg/L as Cd)	3.69	0.0041	0.0137	0.018
Chromium, Total Recoverable, (mg/L as Cr)	4.67	0.005	0.017	0.022
Copper, Total Recoverable, (mg/L as Cu)	186	0.20	0.69	0.90
Lead, Total Recoverable, (mg/L as Pb)	28.3	0.031	0.105	0.14
Mercury, Total Recoverable, (mg/L as Hg)	0.12	0.00014	0.00046	0.00060
Nickel, Total Recoverable, (mg/L as Ni)	15.6	0.017	0.058	0.075
Selenium Total Recoverable, (mg/L as Se)	1.41	0.0016	0.0052	0.0068
Silver, Total Recoverable, (mg/L as Ag)	0.00	0.00	0.00	0.00
Thallium Total Recoverable, (mg/L as Th)	Insufficient Data, Not Calculated			
Zinc, Total Recoverable, (mg/L as Zn)	324	1.20	0.36	1.56

ASSESSMENT OF POLLUTANT LOADS

The City uses a pollutant load model that estimates individual pollutant loads by basin and season. As discussed at the end of Part 5 of this report, land use data obtained from the FCDMC is used because it is viewed as more accurate and consistent.

The load is a function of rainfall amounts in each basin, the areal percentage of four land-use classifications (undeveloped, residential, commercial and industrial) and a set of event mean concentrations (EMCs). For each of the City subwatersheds, the same land-use classifications, rainfall-runoff relationship, and EMCs have been used. The only variable has been the amount of rainfall. In this way, the load has decreased or increased as rainfall has changed from year to year and only reflects this variation.

Because rainfall and runoff in central Arizona follow a discontinuous and unpredictable pattern, especially during summer monsoon season when local convection patterns drive rainfall patterns, the volume of runoff observed at a specific outfall can vary by several orders of magnitude from year to year, and can vary just as much from one outfall location to another (i.e., rainfall associated with a specific storm event will vary widely across the COP system). Although some sampled outfalls may receive abundant runoff, precipitation may not occur at others. These factors skew data obtained via statistical analysis; thus efforts to identify overall patterns or trends in pollutant concentrations based on statistical analysis is not meaningful.

Table 11-15 contains a summary of the pollutant load data calculated for reporting years 2013 through the current reporting year. As discussed above, the data demonstrate that changes in pollutant load calculations vary strictly with rainfall volume.

Table 11-15
Pollutant Load Comparison 2013-2017

Constituent	Total Annual Pollutant Load 2012/13 (pounds)	Total Annual Pollutant Load 2013/14 (pounds)	Total Annual Pollutant Load 2014/15 (pounds)	Total Annual Pollutant Load 2015/16 (pounds)	Total Annual Pollutant Load 2016/17 (pounds)
BOD_5 (mg/L)	2,143,423	2,127,604	3,733,690	1,839,037	2,372,602
COD High Level (mg/L)	10,440,225	10,426,176	18,377,162	8,971,215	11,578,413
Residue, Total at 105 Deg.C (TDS)	11,721,289	11,704,768	20,634,575	10,081,558	12,988,914
Nitrogen NO2 + NO3, Total, (mg/L as N)	199,772	199,774	352,787	171,979	222,705
Nitrogen Organic, Total Kjeldahl (mg/L as N)	282,545	281,558	494,542	242,821	309,620
Phosphorous, Total, (mg/L as P)	38,343	38,294	67,305	32,947	42,339
Arsenic, Total, (mg/L as As)	409	404	726	43,969	57,037
Antimony Total (mg/l as Sb)	176	175	309	151	192
Barium Total (mg/l as Ba)	10,093	10,054	17,722	8,669	11,057
Beryllium, Total Recoverable, (mg/L as Be)	46	46	81.2	39.9	52.2
Cadmium, Total Recoverable, (mg/L as Cd)	282	280	492	241	309
Chromium, Total Recoverable, (mg/L as Cr)	1,624	1,610	2,844	1,395	1,812
Copper, Total Recoverable, (mg/L as Cu)	3,807	3,784	6,588	3,260	4,149
Lead, Total Recoverable, (mg/L as Pb)	2,236	2,220	3,908	1,920	2,474
Mercury, Total Recoverable, (mg/L as Hg)	54	54	94.9	46.6	60.7
Nickel, Total Recoverable, (mg/L as Ni)	1,834	1,819	3,206	1,574	2,037
Selenium Total Recoverable, (mg/L as Se)	320	317	560	275	359
Silver, Total Recoverable, (mg/L as Ag)	0	0	0.00	0.00	0.00
Thallium Total Recoverable, (mg/L as Th)	Insufficient Data, Not Calculated[1]				
Zinc, Total Recoverable, (mg/L as Zn)	12,674	13,083	22,934	11,294	14,475
Total Annual Runoff (millions of cubic feet)	1,645.9	1,633.2	2,882.6	1,404.1	1,819.7

1-A statistically representative event mean concentration for thallium could not be calculated as thallium occurs infrequently in stormwater samples regionally.

PART 12: ANNUAL EXPENDITURES

Provide a brief statement of the expenditures incurred each reporting period (July 1-June 30) to implement and maintain the stormwater management program, including associated monitoring and reporting activities. This figure should include funds related exclusively to implementation of the stormwater program. Provide the estimated budget for implementing and maintaining the stormwater program in the subsequent reporting period. Include a statement of the funding sources used to support program expenditures.

Personnel from the City departments responsible for implementation of the stormwater program provided actual and estimated expenditure data for each fiscal year. The expenditures are included in Table 12-1.

Table 12-1
Annual Expenditures Stormwater Program Implementation

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015	Fiscal Year 2016	Fiscal Year 2017	Fiscal Year 2018 (estimated)
Street Transportation Department	$2,126,525 (revised)	$1,805,029	$2,407,926 (revised)	$1,886,898	$1,949,181	$2,464,300	$2,945,792
Water Services Department	$1,677,371 (revised)	$1,646,649 (revised)	$1,947,736	$1,867,870	$1,702,105	$1,842,748	$2,181,283
Planning and Development Department	$400,928	$484,000	$487,100	$910,900	$1,288,398	$1,563,702	$1,600,000
Office of Environmental Programs	$104,212 (revised)	$131,845 (revised)	$119,840 (revised)	$121,232 (revised)	$139,424	$132,627	$150,349
Office of Environmental Programs – Capital Improvement Projects*	$101,061 (revised)	$232,556 (revised)	$231,076 (revised)	$240,854 (revised)	$231,716	$173,421	$250,000
TOTALS	$4,410,097 (revised)	$4,300,079 (revised)	$5,193,678 (revised)	$5,027,754 (revised)	$5,310,824	$6,176,798	$7,127,424

* Up to $250,000 in capital improvement project funding is made available each year, and used as necessary to ensure compliance and/or enhance the City's overall stormwater program. Revisions to prior year's expenditures are based on a recent re-evaluation of program expense tracking.

The City collects a stormwater fee to defray the costs of operating the stormwater management program. Stormwater program charges from the WSD, STD, and OEP are paid out of these funds. The fee does not cover the costs for maintenance of the storm drain system, infrastructure improvements, or other ancillary programs (e.g., HHW, street sweeping, etc.). Stormwater program costs for PDD are funded by construction permit fees.

PART 13: ATTACHMENTS

Attach a copy of each of the following documents for the first year Annual Report, and each subsequent year if changes are made. If no changes are made to these during a reporting period, indicate, *'no changes were made this period, the 2009 submittal is current'.*

☒ Drainage System Maps

The City considers the storm drains to be protected critical infrastructure. As such, the City has not provided an electronic copy of the GIS maps as an attachment. GIS maps are available for review by ADEQ upon request. Hard copies of the drainage basin maps are provided.

☒ List of major outfalls

☒ List of changes to the major outfall inventory (new outfalls, outfalls out of service), including drainage area and coordinates for the outfalls listed in Table 1 of the permit (4^{th} year report).

☒ Laboratory reports for stormwater monitoring performed in the reporting period.

☐ New or revised ordinances associated with stormwater management.

☒ New or revised public outreach documents.

The following attachments to the Annual Report are in addition to those required as listed above:

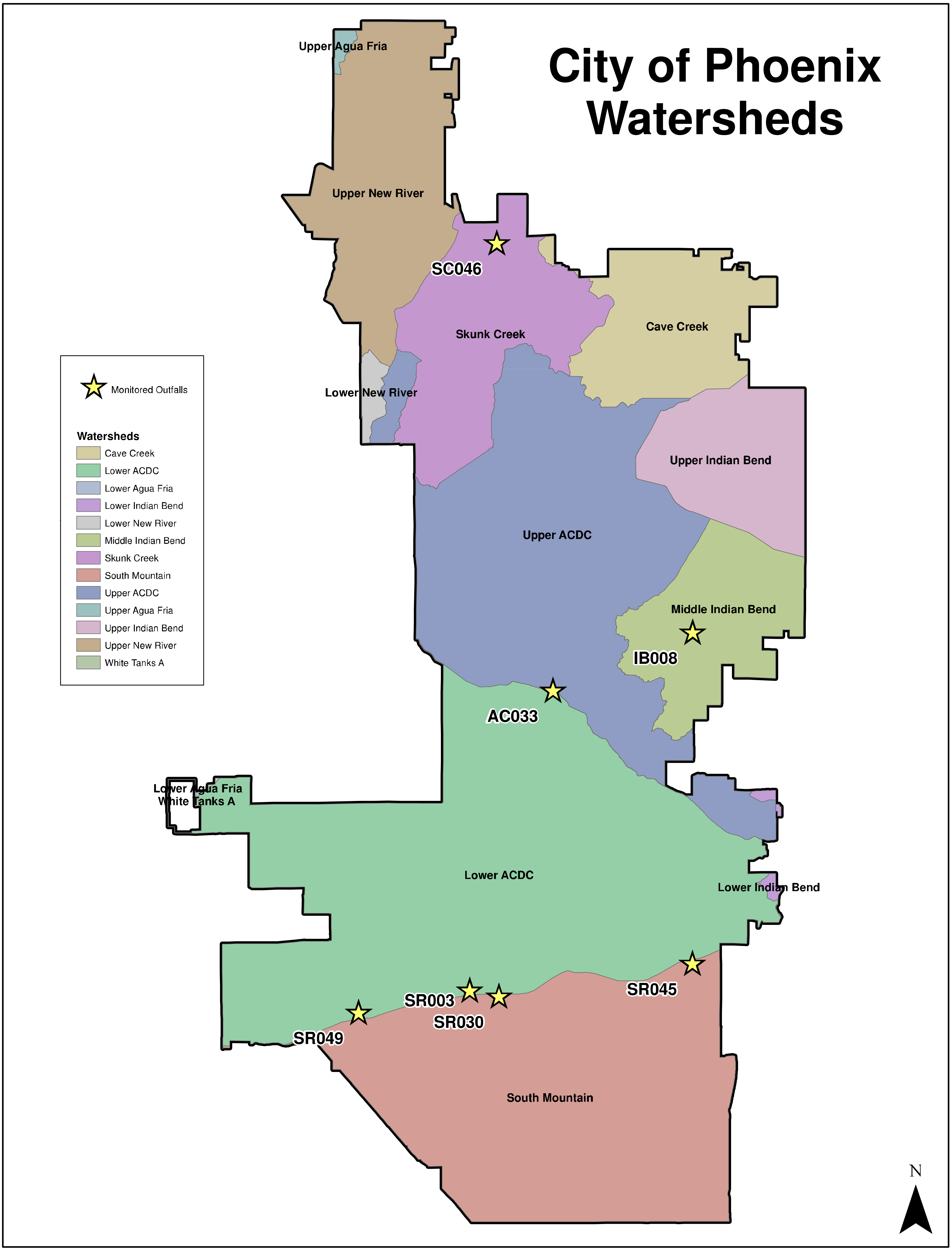
☒ Heptachlor Investigation Report

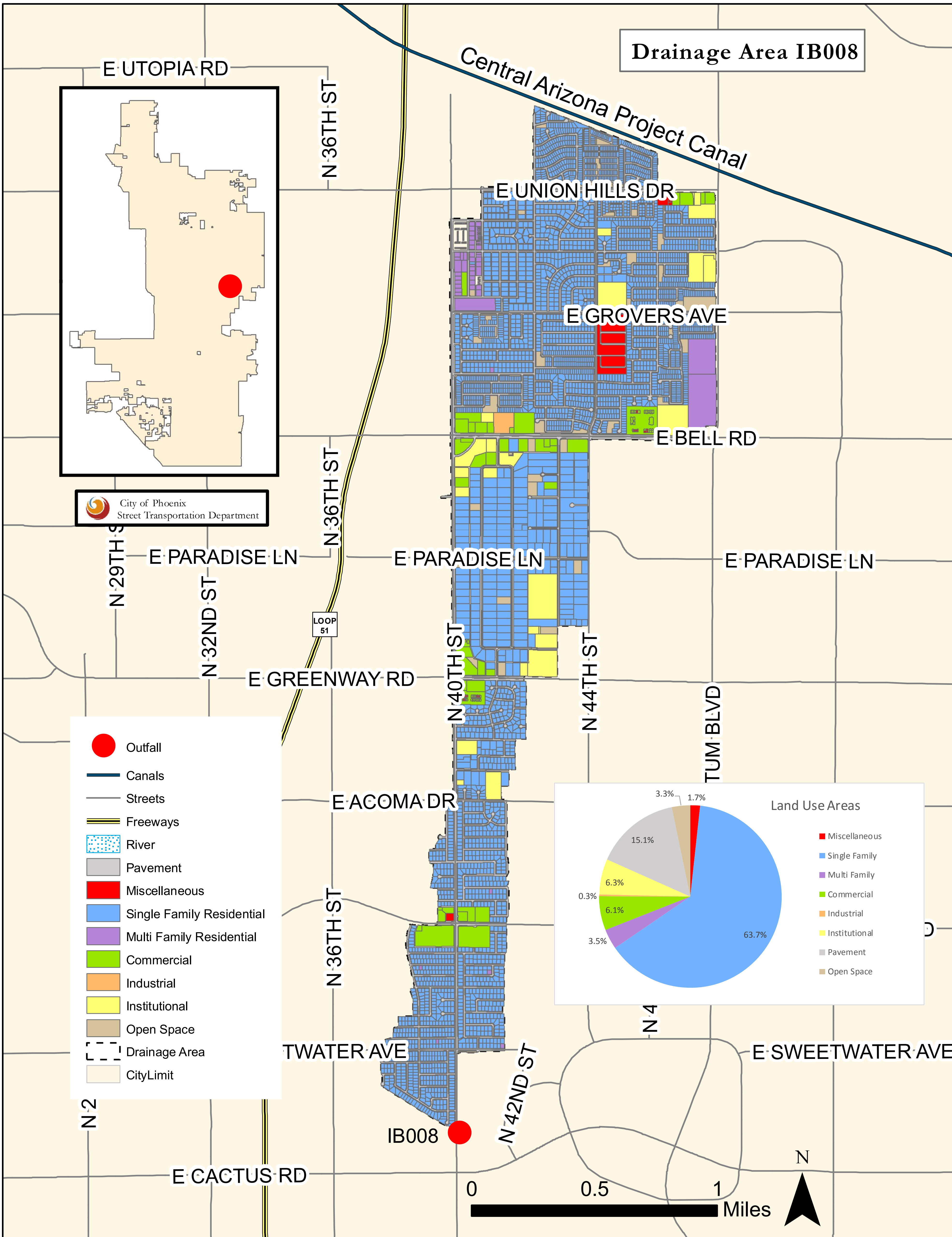
☒ STORM Annual Report

Attachments

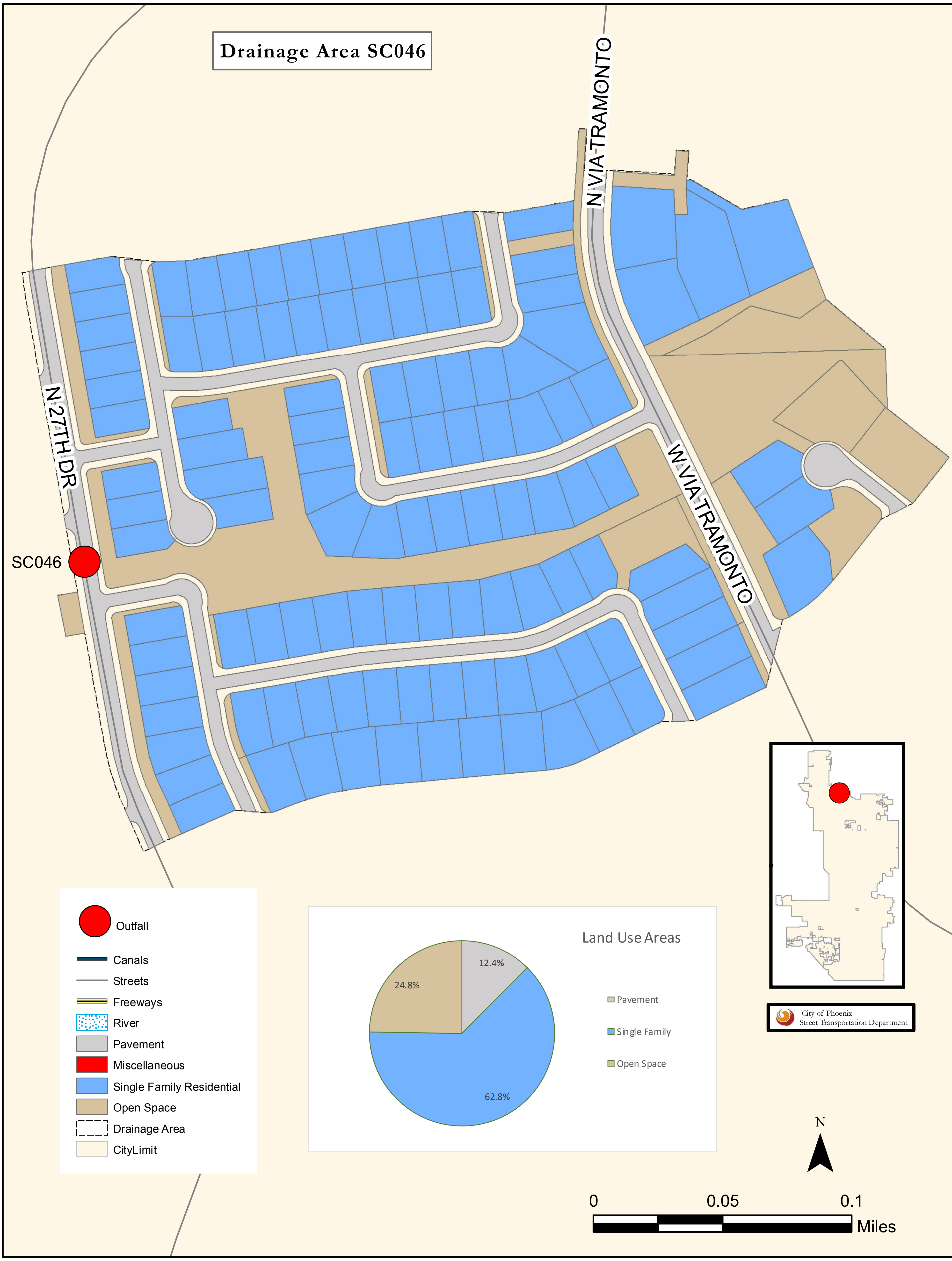
Drainage System Maps

City of Phoenix Watersheds

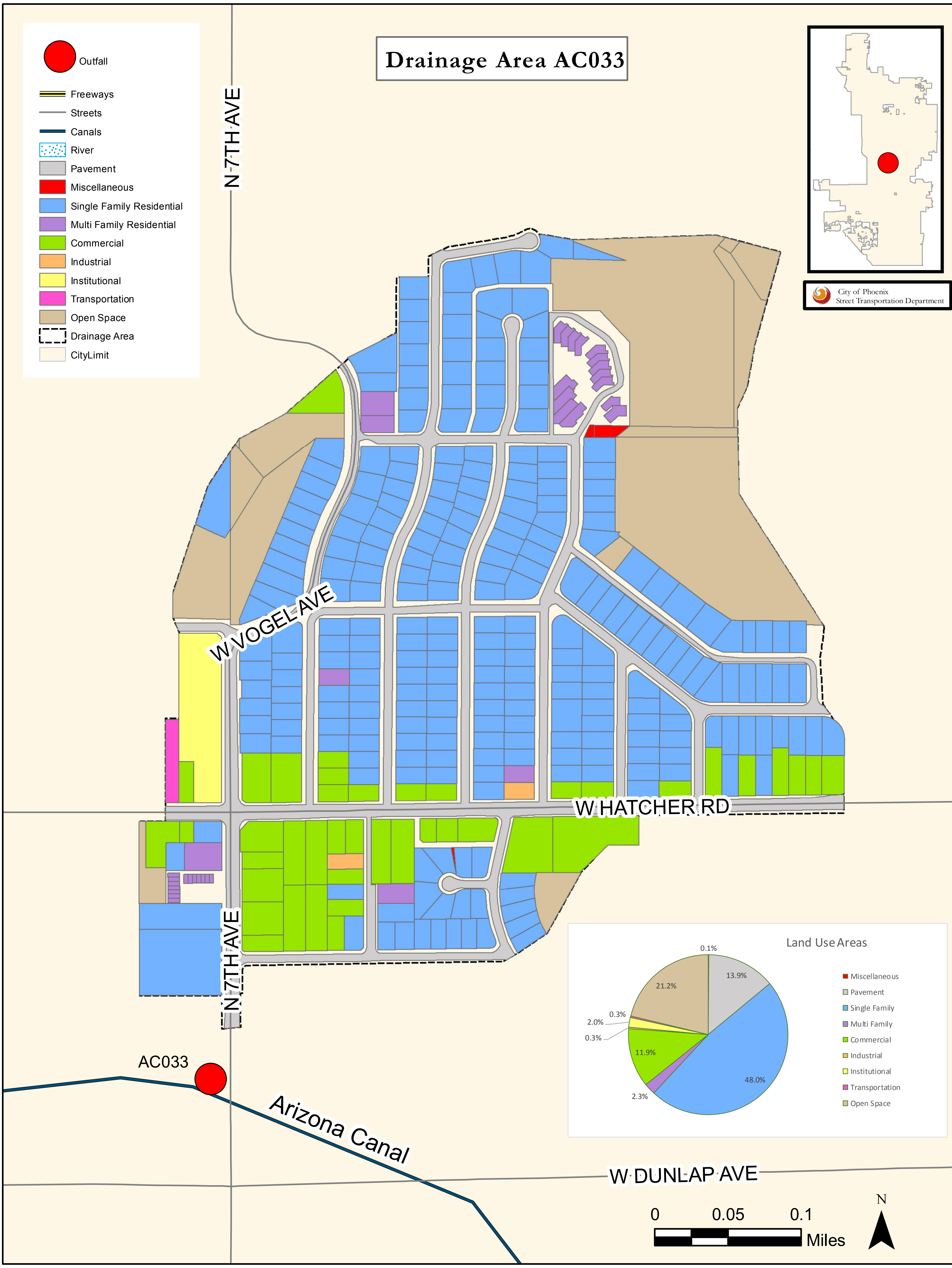




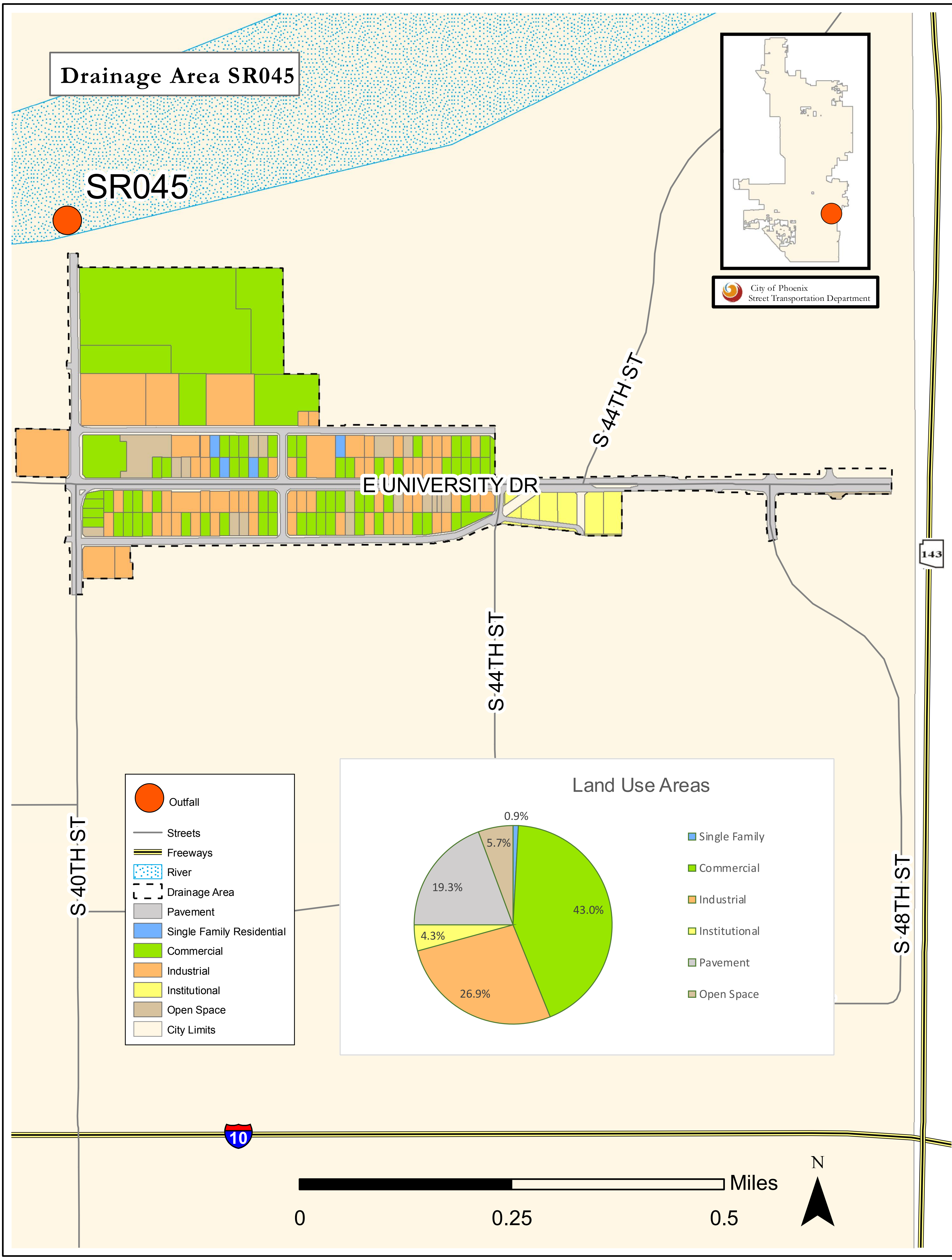
Drainage Area IB008
Central Arizona Project Canal
E UTOPIA RD
E UNION HILLS DR
E GROVERS AVE
E BELL RD
E PARADISE LN
E PARADISE LN
E PARADISE LN
E GREENWAY RD
E ACOMA DR
TWATER AVE
E SWEETWATER AVE
E CACTUS RD
N 36TH ST
N 36TH ST
N 36TH ST
N 29TH S
N 32ND ST
N 40TH ST
N 44TH ST
N 42ND ST
TUM BLVD
N 2
N 4
LOOP 51
City of Phoenix
Street Transportation Department
IB008
Outfall
Canals
Streets
Freeways
River
Pavement
Miscellaneous
Single Family Residential
Multi Family Residential
Commercial
Industrial
Institutional
Open Space
Drainage Area
CityLimit
Land Use Areas
Miscellaneous
Single Family
Multi Family
Commercial
Industrial
Institutional
Pavement
Open Space
3.3%
1.7%
15.1%
6.3%
0.3%
6.1%
3.5%
63.7%
0
0.5
1
Miles
N



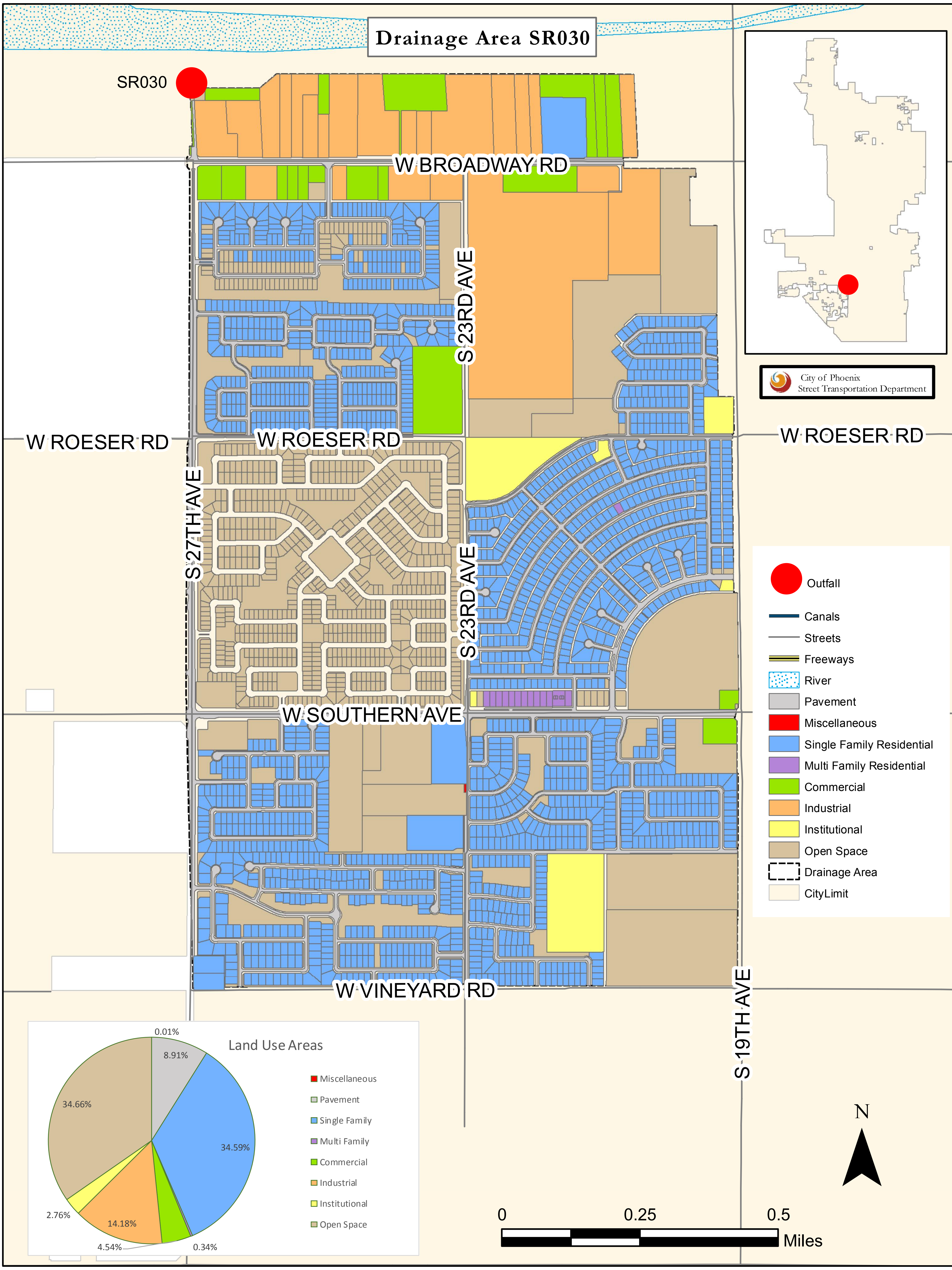
Drainage Area SC046
N VIA TRAMONTO
W VIA TRAMONTO
N 27TH DR
SC046
Outfall
Canals
Streets
Freeways
River
Pavement
Miscellaneous
Single Family Residential
Open Space
Drainage Area
CityLimit
Land Use Areas
12.4%
24.8%
62.8%
Pavement
Single Family
Open Space
City of Phoenix
Street Transportation Department
N
0
0.05
0.1
Miles



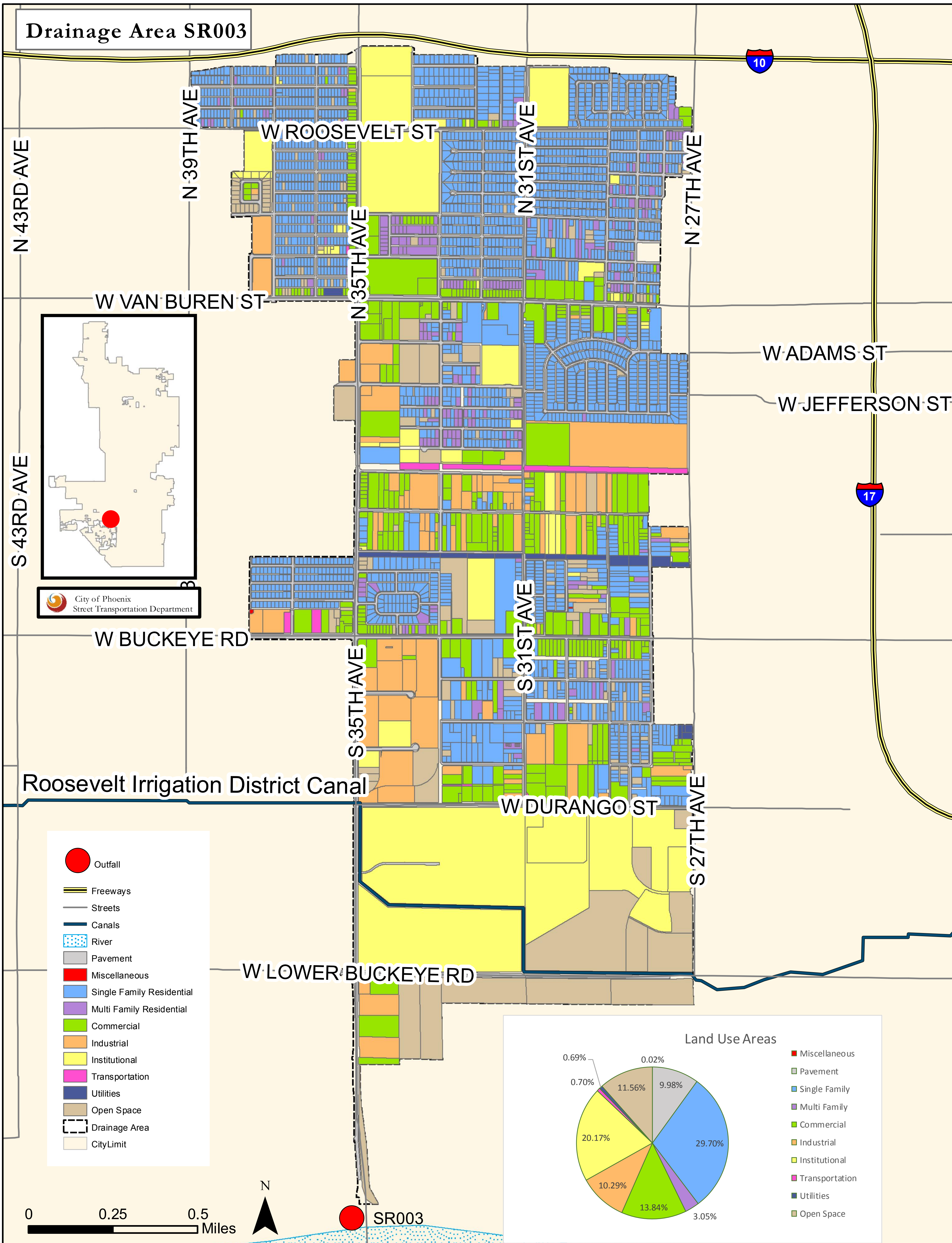
Drainage Area AC033
Outfall
Freeways
Streets
Canals
River
Pavement
Miscellaneous
Single Family Residential
Multi Family Residential
Commercial
Industrial
Institutional
Transportation
Open Space
Drainage Area
CityLimit
City of Phoenix
Street Transportation Department
N 7TH AVE
W VOGEL AVE
W HATCHER RD
N 7TH AVE
AC033
Arizona Canal
W DUNLAP AVE
Land Use Areas
0.1%
13.9%
21.2%
0.3%
2.0%
0.3%
11.9%
2.3%
48.0%
Miscellaneous
Pavement
Single Family
Multi Family
Commercial
Industrial
Institutional
Transportation
Open Space
0
0.05
0.1
Miles
N



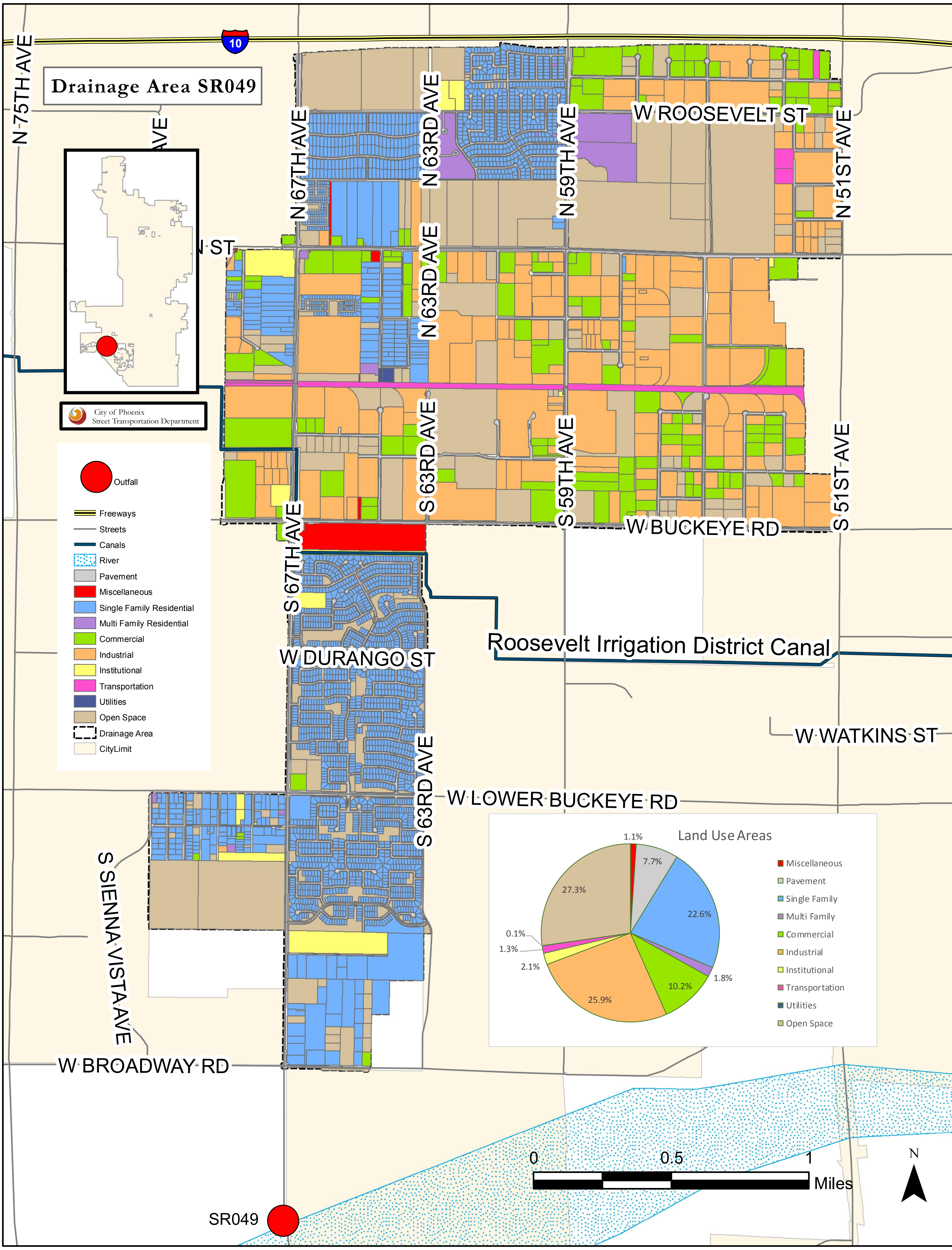
Drainage Area SR045
SR045
City of Phoenix
Street Transportation Department
E UNIVERSITY DR
S 44TH ST
S 44TH ST
S 40TH ST
S 48TH ST
143
10
Outfall
Streets
Freeways
River
Drainage Area
Pavement
Single Family Residential
Commercial
Industrial
Institutional
Open Space
City Limits
Land Use Areas
0.9%
5.7%
19.3%
43.0%
4.3%
26.9%
Single Family
Commercial
Industrial
Institutional
Pavement
Open Space
Miles
0
0.25
0.5
N



Drainage Area SR030
SR030
W BROADWAY RD
S 23RD AVE
W ROESER RD
W ROESER RD
W ROESER RD
S 27TH AVE
S 23RD AVE
W SOUTHERN AVE
W VINEYARD RD
S 19TH AVE
City of Phoenix
Street Transportation Department
Outfall
Canals
Streets
Freeways
River
Pavement
Miscellaneous
Single Family Residential
Multi Family Residential
Commercial
Industrial
Institutional
Open Space
Drainage Area
CityLimit
Land Use Areas
0.01%
8.91%
34.66%
34.59%
2.76%
14.18%
4.54%
0.34%
Miscellaneous
Pavement
Single Family
Multi Family
Commercial
Industrial
Institutional
Open Space
N
0
0.25
0.5
Miles



Drainage Area SR003
W ROOSEVELT ST
N 39TH AVE
N 43RD AVE
N 31ST AVE
N 27TH AVE
N 35TH AVE
W VAN BUREN ST
W ADAMS ST
W JEFFERSON ST
10
17
S 43RD AVE
City of Phoenix
Street Transportation Department
W BUCKEYE RD
S 31ST AVE
S 35TH AVE
Roosevelt Irrigation District Canal
W DURANGO ST
S 27TH AVE
W LOWER BUCKEYE RD
Outfall
Freeways
Streets
Canals
River
Pavement
Miscellaneous
Single Family Residential
Multi Family Residential
Commercial
Industrial
Institutional
Transportation
Utilities
Open Space
Drainage Area
CityLimit
0
0.25
0.5
Miles
N
SR003
Land Use Areas
0.69%
0.02%
0.70%
11.56%
9.98%
20.17%
29.70%
10.29%
13.84%
3.05%
Miscellaneous
Pavement
Single Family
Multi Family
Commercial
Industrial
Institutional
Transportation
Utilities
Open Space



Drainage Area SR049
City of Phoenix
Street Transportation Department
Outfall
Freeways
Streets
Canals
River
Pavement
Miscellaneous
Single Family Residential
Multi Family Residential
Commercial
Industrial
Institutional
Transportation
Utilities
Open Space
Drainage Area
CityLimit
N 75TH AVE
N 67TH AVE
N 63RD AVE
N 59TH AVE
N 51ST AVE
W ROOSEVELT ST
S 67TH AVE
S 63RD AVE
S 59TH AVE
S 51ST AVE
W BUCKEYE RD
W DURANGO ST
Roosevelt Irrigation District Canal
W WATKINS ST
W LOWER BUCKEYE RD
S SIENNA VISTA AVE
W BROADWAY RD
SR049
10
Land Use Areas
1.1%
7.7%
22.6%
1.8%
10.2%
25.9%
2.1%
1.3%
0.1%
27.3%
Miscellaneous
Pavement
Single Family
Multi Family
Commercial
Industrial
Institutional
Transportation
Utilities
Open Space
0
0.5
1
Miles
N

List of Major Outfalls

The report contains all active major outfalls 36" or greater serving>50 acres or 12" or greater outfalls serving>2 acres of industrial land use known to the City

Stormwater Management

Total Outfalls: 532

Outfall ID	Site Address	Latitude	Longitude	Drain Type	Drain Size	Last Inspection	Target Inspection
AC001	51st Ave And Cactus Road N/A, Phoenix, AZ	33.60	-111.83	Pipe	78 Inches	02/12/2016	2021
AC002	43rd Ave And Peoria Ave N/A, Phoenix, AZ	33.58	-111.85	Pipe	90 Inches	03/29/2017	2022
AC003	43rd Ave And Peoria Ave N/A, Phoenix, AZ	33.58	-111.85	Pipe	42 Inches	02/11/2016	2021
AC004	35th Ave And Acdc Channel N/A, Phoenix, AZ	33.57	-111.87	Pipe	96 Inches	03/29/2017	2022
AC005	30th Ave And Metrocenter N/A, Phoenix, AZ	33.57	-111.87	Pipe	53 Inches	03/28/2017	2022
AC006	29th Ave And Metrocenter N/A, Phoenix, AZ	33.57	-111.88	Pipe	48 Inches	02/11/2016	2021
AC007	29th Ave And Metrocenter N/A, Phoenix, AZ	33.57	-111.88	Pipe	43 Inches	02/24/2016	2021
AC008	I-17 (Black Canyon Fwy) And Acdc Channel N/A, Phoe	33.57	-111.88	Pipe	27 Inches	02/23/2016	2021
AC010	19th Ave And Acdc Channel N/A, Phoenix, AZ	33.57	-111.90	Pipe	36 Inches	02/23/2016	2021
AC011	7th St And Acdc Channel N/A, Phoenix, AZ	33.60	-111.17	Pipe	42 Inches	02/23/2016	2021
AC012	18th Pl And Acdc Channel N/A, Phoenix, AZ	33.54	-111.96	Pipe	48 Inches	03/29/2016	2021
AC013	24th St. Water Treatment Plant And Acdc Channel N	33.53	-111.97	Pipe	36 Inches	03/09/2016	2021
AC014	2 Mile Tunnel And Acdc Channel N/A, Phoenix, AZ	33.60	-111.83	Pipe	36 Inches	03/09/2016	2021
AC015	33rd Dr And Acdc Channel N/A, Phoenix, AZ	33.57	-111.87	Pipe	12 Inches	02/11/2016	2021
AC018	18th Ave And Hatcher N/A, Phoenix, AZ	33.57	-111.90	Pipe	36 Inches	02/23/2016	2021
AC021	49th Dr And Acdc Channel N/A, Phoenix, AZ	33.59	-111.84	Spillway	50 Feet	02/11/2016	2021
AC022	Lupine Dr And Acdc Channel N/A, Phoenix, AZ	33.59	-111.84	Spillway	50 Feet	02/11/2016	2021
AC023	Yucca St And Acdc Channel N/A, Phoenix, AZ	33.59	-111.84	Spillway	27 Feet	02/11/2016	2021
AC024	39th Ave And Acdc Channel N/A, Phoenix, AZ	33.58	-111.86	Spillway	30 Feet	02/11/2016	2021
AC025	Ironwood Dr And Acdc Channel N/A, Phoenix, AZ	33.58	-111.86	Spillway	30 Feet	02/11/2016	2021
AC026	3rd St And Acdc Channel N/A, Phoenix, AZ	33.56	-111.94	Spillway	70 Feet	02/23/2016	2021
AC028	10th St And Acdc Channel N/A, Phoenix, AZ	33.56	-111.94	Spillway	100 Feet	02/23/2016	2021
AC029	12th St And Acdc Channel N/A, Phoenix, AZ	33.55	-111.94	Spillway	16 Feet	02/23/2016	2021
AC030	13th St And Orangewood N/A, Phoenix, AZ	33.54	-111.95	Spillway	50 Feet	02/23/2016	2021
AC031	14th St And State Ave N/A, Phoenix, AZ	33.54	-111.95	Spillway	90 Feet	03/29/2016	2021
AC033	7th Ave And Acdc Channel N/A, Phoenix, AZ	33.57	-111.92	Pipe	42 Inches	02/23/2016	2021
AC034	12th Ave And Acdc Channel N/A, Phoenix, AZ	33.57	-111.91	Pipe	36 Inches	02/23/2016	2021
AC039	14th St And Acdc Channel N/A, Phoenix, AZ	33.58	-111.85	Pipe	36 Inches	03/29/2016	2021

Outfall Identification Legend

AC = Arizona Canal Diversion Canal
AF = Agua Fria (West Hwy loop 101)
AW = Ahwatukee
AZ = Arizona Canal
CC = Cave Creek Wash
CAP = Central Arizona Project
EF = East Fork of the Cave Creek
GC = Grand Canal
IB = Indian Bend Wash
LC = Laveen Area Conveyance Channel
MV = Moon Valley Wash
NM = North Mountain Wash
OC = Old Cross Cut Canal
PD = Papago Diversion Canal
PV = Paradise Valley
RID = Roosevelt Irrigation District
SC = Skunk Creek Wash
SR = Salt River
ST = Sweetwater Tributary of IB
SW = Scatter Wash
TD = Tempe Drainage Channel
TS = Tenth Street Wash
UC = Upper Cave Creek Wash
ZT = Emile Zola Tributary of IB

Outfall ID	Site Address	Latitude	Longitude	Drain Type	Drain Size	Last Inspection	Target Inspection
AC044	6th St And Acdc Channel N/A, Phoenix, AZ	33.56	-111.93	Pipe	36 Inches	02/23/2016	2021
AC048	10th St And Acdc Channel N/A, Phoenix, AZ	33.56	-111.94	Pipe	96 Inches	02/23/2016	2021
AC070	Dunlap Ave And Short Tunnel N/A, Phoenix, AZ	33.57	-111.88	Pipe	60 Inches	02/23/2016	2021
AC081	Hwy 51 And Acdc Channel N/A, Phoenix, AZ	33.57	-111.88	Box	6 x 6 Feet	03/29/2016	2021
AC083	24th St. Water Treatment Plant And Acdc Channel N	33.57	-111.88	Pipe	36 Inches	03/29/2016	2021
AC085	2 Mile Tunnel And Acdc Channel N/A, Phoenix, AZ	33.57	-111.88	Pipe	30 Inches	03/09/2016	2021
AC106	2 Mile Tunnel And Acdc Channel N/A, Phoenix, AZ	33.52	-111.99	Pipe	36 Inches	03/09/2016	2021
AC128	7th Ave And Dunlap Ave N/A, Phoenix, AZ	33.57	-111.92	Pipe	12 Inches	02/15/2017	2022
AC130	Paradise Dr And Acdc N/A, Phoenix, AZ	33.59	-111.83	Spillway	64 Feet	02/11/2016	2021
AC131	47th Ave And Acdc N/A, Phoenix, AZ	33.59	-111.84	Spillway	64 Feet	02/11/2016	2021
AC132	46th Ave And Acdc N/A, Phoenix, AZ	33.58	-111.84	Spillway	32 Feet	02/11/2016	2021
AC133	43rd Ave And Acdc N/A, Phoenix, AZ	33.58	-111.85	Spillway	32 Feet	02/11/2016	2021
AC134	43rd Ave And Acdc N/A, Phoenix, AZ	33.58	-111.85	Spillway	32 Feet	02/11/2016	2021
AC135	43rd Ave And Acdc N/A, Phoenix, AZ	33.58	-111.85	Spillway	24 Feet	02/11/2016	2021
AC136	North Ln And Acdc N/A, Phoenix, AZ	33.58	-111.85	Spillway	24 Feet	02/11/2016	2021
AC137	41st Dr And Acdc N/A, Phoenix, AZ	33.58	-111.85	Spillway	24 Feet	02/11/2016	2021
AC138	41st Ln And Acdc N/A, Phoenix, AZ	33.58	-111.85	Spillway	24 Feet	02/11/2016	2021
AC139	41st Ave And Acdc N/A, Phoenix, AZ	33.58	-111.85	Spillway	24 Feet	02/11/2016	2021
AC140	40th Dr And Acdc N/A, Phoenix, AZ	33.58	-111.85	Spillway	24 Feet	02/11/2016	2021
AC141	40th Ln And Acdc N/A, Phoenix, AZ	33.58	-111.85	Spillway	24 Feet	02/11/2016	2021
AC142	40th Ave And Acdc N/A, Phoenix, AZ	33.58	-111.85	Spillway	24 Feet	02/11/2016	2021
AC143	39th Ln And Acdc N/A, Phoenix, AZ	33.58	-111.86	Spillway	24 Feet	02/11/2016	2021
AC144	37th Ave And Acdc N/A, Phoenix, AZ	33.57	-111.86	Spillway	64 Feet	02/11/2016	2021
AC145	36th Ave And Acdc N/A, Phoenix, AZ	33.57	-111.86	Spillway	40 Feet	02/23/2016	2021
AC146	33rd Ave And Acdc N/A, Phoenix, AZ	33.57	-111.13	Spillway	48 Feet	02/23/2016	2021
AC147	23rd Ave And Acdc N/A, Phoenix, AZ	33.57	-111.89	Spillway	40 Feet	02/23/2016	2021
AC148	21st Dr And Acdc N/A, Phoenix, AZ	33.57	-111.90	Spillway	40 Feet	02/23/2016	2021
AC150	20th Dr And Acdc N/A, Phoenix, AZ	33.57	-111.90	Spillway	50 Feet	02/23/2016	2021
AC151	20th Ave And Acdc N/A, Phoenix, AZ	33.57	-111.90	Spillway	40 Feet	02/23/2016	2021
AC152	20th Dr And Acdc N/A, Phoenix, AZ	33.57	-111.90	Spillway	24 Feet	02/23/2016	2021
AC153	16th Ave And Acdc N/A, Phoenix, AZ	33.57	-111.91	Spillway	36 Feet	02/23/2016	2021

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Outfall ID	Site Address	Latitude	Longitude	Drain Type	Drain Size	Last Inspection	Target Inspection
AC154	15th Ave And Acdc N/A, Phoenix, AZ	33.57	-111.91	Spillway	60 Feet	02/23/2016	2021
AC155	14th Ave And Acdc N/A, Phoenix, AZ	33.57	-111.91	Spillway	60 Feet	02/23/2016	2021
AC156	13th Ave And Acdc N/A, Phoenix, AZ	33.57	-111.91	Spillway	60 Feet	02/23/2016	2021
AC157	9th Ave And Acdc N/A, Phoenix, AZ	33.57	-111.91	Spillway	46 Feet	02/23/2016	2021
AC158	8th Ave And Acdc N/A, Phoenix, AZ	33.57	-111.92	Spillway	48 Feet	02/23/2016	2021
AC159	Central Ave And Short Channel N/A, Phoenix, AZ	33.56	-111.93	Spillway	30 Feet	02/23/2016	2021
AC160	8th St And Acdc N/A, Phoenix, AZ	33.56	-111.94	Spillway	24 Feet	02/23/2016	2021
AC161	8th Pl And Acdc N/A, Phoenix, AZ	33.56	-111.94	Spillway	24 Feet	02/23/2016	2021
AC162	Harmont Dr And Acdc N/A, Phoenix, AZ	33.55	-111.94	Spillway	56 Feet	02/23/2016	2021
AC163	Northern Ave And Acdc N/A, Phoenix, AZ	33.55	-111.94	Spillway	80 Feet	02/23/2016	2021
AC165	E Desert Park Ln And Acdc N/A, Phoenix, AZ	33.55	-111.94	Spillway	40 Feet	02/23/2016	2021
AC166	Haywood Ave And Acdc N/A, Phoenix, AZ	33.55	-111.94	Spillway	40 Feet	02/23/2016	2021
AC169	Morten Ave And Acdc N/A, Phoenix, AZ	33.55	-111.94	Spillway	40 Feet	02/23/2016	2021
AC171	15th St And Acdc N/A, Phoenix, AZ	33.54	-111.95	Spillway	320 Feet	03/29/2016	2021
AC173	17th St And Acdc N/A, Phoenix, AZ	33.54	-111.96	Spillway	40 Feet	03/29/2016	2021
AC176	19th St And Acdc N/A, Phoenix, AZ	33.53	-111.96	Spillway	80 Feet	03/29/2016	2021
AC177	20th St And Acdc N/A, Phoenix, AZ	33.53	-111.96	Spillway	40 Feet	03/29/2016	2021
AC178	Maryland Ave And Acdc N/A, Phoenix, AZ	33.53	-111.96	Spillway	24 Feet	03/29/2016	2021
AC179	Maryland Ave And Acdc N/A, Phoenix, AZ	33.53	-111.04	Spillway	40 Feet	03/29/2016	2021
AC180	Maryland Ave And Acdc N/A, Phoenix, AZ	33.53	-111.96	Spillway	32 Feet	03/29/2016	2021
AC181	Maryland Ave And Acdc N/A, Phoenix, AZ	33.53	-111.96	Spillway	40 Feet	03/29/2016	2021
AC182	Marlette Ave And Acdc N/A, Phoenix, AZ	33.53	-111.96	Spillway	32 Feet	03/29/2016	2021
AC183	Claremont St And Acdc N/A, Phoenix, AZ	33.53	-111.96	Spillway	32 Feet	03/29/2016	2021
AC184	Squaw Peak Water Treatment Plant And Acdc N/A, Pho	33.53	-111.97	Spillway	72 Feet	03/29/2016	2021
AC191	I-17 And Acdc Channel N/A, Phoenix, AZ	33.57	-111.88	Spillway	31 Feet	03/29/2016	2021
AC192	3858 W Malapai Dr, Phoenix, AZ 85051	33.58	-111.86	Spillway	25 Feet	02/11/2016	2021
AC193	3848 W Malapai Dr, Phoenix, AZ	33.58	-111.86	Spillway	25 Feet	02/11/2016	2021
AC194	3832 W Malapai Dr. N/A, Phoenix, AZ	33.58	-111.86	Spillway	25 Feet	02/11/2016	2021
AC195	9th Avenue And Acdc Channel N/A, Phoenix, AZ	33.57	112.08	Pipe	72 Inches	09/07/2016	2021
AC196	1330 North State Ave And Acdc N/A, Phoenix, AZ	33.54	112.05	Spillway	5 Feet	02/24/2017	2022
AF002	Encanto Blvd And Sr101 West (9500 W) N/A, Phoenix,	33.47	-111.73	Pipe	42 Inches	07/16/2015	2020

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Outfall ID	Site Address	Latitude	Longitude	Drain Type	Drain Size	Last Inspection	Target Inspection
AF003	Mcdowell Rd And Sr101 West (9700 W) N/A, Phoenix,	33.47	-111.73	Box	4 x 11 Feet	07/16/2015	2020
AF005	Camelback Rd And Sr Loop 101 N/A, Phoenix, AZ	33.51	-111.73	Pipe	35 Inches	07/16/2015	2020
AF006	Camelback Road And 114th Aveune N/A, Phoenix, AZ	33.51	-111.70	Pipe	60 Inches	07/16/2015	2020
AW001	South Chandler Blvd (2700w) And Pecos Rd N/A, Phoe	33.29	-111.88	Pipe	36 Inches	07/03/2012	2017
AW003	25th Dr And Pecos Rd N/A, Phoenix, AZ	33.29	-111.89	Pipe	24 Inches	07/03/2012	2017
AW006	24th Ave And Pecos Rd N/A, Phoenix, AZ	33.29	-111.89	Box	4 x 8 Feet	07/03/2012	2017
AW007	Pecos Rd And 23rd Dr N/A, Phoenix, AZ	33.29	-111.89	Box	4 x 8 Feet	07/03/2012	2017
AW008	Pecos Rd And 23rd Ave N/A, Phoenix, AZ	33.29	-111.89	Box	4 x 8 Feet	07/03/2012	2017
AW009	Pecos Rd And 22nd Dr N/A, Phoenix, AZ	33.29	-111.89	Box	4 x 8 Feet	07/03/2012	2017
AW010	Pecos Rd And 22nd Ave N/A, Phoenix, AZ	33.29	-111.90	Box	4 x 8 Feet	07/03/2012	2017
AW011	Pecos Rd And 21st Dr N/A, Phoenix, AZ	33.29	-111.89	Box	4 x 8 Feet	07/03/2012	2017
AW012	Pecos Rd And 21st Dr N/A, Phoenix, AZ	33.29	-111.89	Box	4 x 8 Feet	07/03/2012	2017
AW013	Pecos Rd And 21st Ave N/A, Phoenix, AZ	33.29	-111.89	Box	4 x 8 Feet	07/09/2012	2017
AW014	Pecos Rd And 21st Ave N/A, Phoenix, AZ	33.29	-111.89	Box	4 x 8 Feet	07/09/2012	2017
AW015	Pecos Rd And 20th Dr N/A, Phoenix, AZ	33.29	-111.89	Box	4 x 8 Feet	07/09/2012	2017
AW016	Pecos Rd And 20th Dr N/A, Phoenix, AZ	33.29	-111.89	Box	4 x 8 Feet	07/09/2012	2017
AW017	Pecos Rd And 20th Dr N/A, Phoenix, AZ	33.29	-111.89	Box	4 x 8 Feet	07/09/2012	2017
AW018	Pecos Rd And 20th Dr N/A, Phoenix, AZ	33.29	-111.90	Box	4 x 8 Feet	07/09/2012	2017
AW020	Pecos Rd And 19th Dr N/A, Phoenix, AZ	33.29	-111.90	Pipe	18 Inches	07/09/2012	2017
AW023	Pecos Rd And 19th Ave N/A, Phoenix, AZ	33.29	-111.90	Pipe	24 Inches	07/18/2012	2017
AW024	Pecos Rd And 17th Ave N/A, Phoenix, AZ	33.29	-111.90	Pipe	82 Inches	07/18/2012	2017
AW025	Pecos Rd And 15th Ave N/A, Phoenix, AZ	33.29	-111.91	Pipe	54 Inches	07/18/2012	2017
AW026	Pecos Rd And 14th Ave N/A, Phoenix, AZ	33.29	-111.91	Pipe	4 Feet	07/18/2012	2017
AW028	Pecos Rd And 2nd Ave N/A, Phoenix, AZ	33.29	-111.92	Pipe	90 Inches	07/18/2012	2017
AW029	Pecos Rd And Central Ave N/A, Phoenix, AZ	33.29	-111.92	Pipe	84 Inches	07/18/2012	2017
AW031	Pecos Rd And 2nd St N/A, Phoenix, AZ	33.29	-111.92	Pipe	72 Inches	07/18/2012	2017
AW032	Pecos Rd And 2nd Pl N/A, Phoenix, AZ	33.29	-111.93	Pipe	54 Inches	07/18/2012	2017
AW034	Pecos Rd And 3rd St N/A, Phoenix, AZ	33.29	-111.93	Pipe	78 Inches	07/18/2012	2017
AW035	Pecos Rd And 4th St N/A, Phoenix, AZ	33.29	-111.93	Spillway	4 Feet	07/18/2012	2017
AW036	Pecos Rd And 6th St N/A, Phoenix, AZ	33.29	-111.93	Pipe	48 Inches	07/18/2012	2017
AW037	Pecos Rd And S Desert Foothills Pkwy N/A, Phoenix,	33.29	-111.94	Pipe	42 Inches	07/18/2012	2017

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Outfall ID	Site Address	Latitude	Longitude	Drain Type	Drain Size	Last Inspection	Target Inspection
AW038	Pecos Rd And 11th Way N/A, Phoenix, AZ	33.29	-111.94	Pipe	8 Feet	07/02/2012	2017
AW039	Pecos Rd And 12th Way N/A, Phoenix, AZ	33.29	-111.94	Pipe	60 Inches	07/18/2012	2017
AW041	Pecos Rd And 14th St N/A, Phoenix, AZ	33.29	-111.95	Spillway		07/23/2012	2017
AW042	Pecos Rd And 15th St N/A, Phoenix, AZ	33.29	-111.95	Pipe	66 Inches	07/23/2012	2017
AW044	Pecos Rd And 17th St N/A, Phoenix, AZ	33.29	-111.95	Pipe	6 Feet	07/23/2012	2017
AW046	Pecos Rd And 18th St N/A, Phoenix, AZ	33.29	-111.96	Pipe	6 Feet	07/23/2012	2017
AW047	Pecos Rd And 20th Way N/A, Phoenix, AZ	33.29	-111.96	Pipe	6 Feet	07/23/2012	2017
AW048	Pecos Rd And 24th St N/A, Phoenix, AZ	33.29	-111.97	Pipe	6 Feet	07/23/2012	2017
AW049	Pecos Rd And 24th St N/A, Phoenix, AZ	33.29	-111.97	Spillway		07/23/2012	2017
AW050	Pecos Rd And 24th Pl N/A, Phoenix, AZ	33.29	-111.97	Pipe	6 Feet	07/23/2012	2017
AW051	Pecos Rd And 25th St N/A, Phoenix, AZ	33.29	-111.97	Pipe	6 Feet	07/23/2012	2017
AW053	Pecos Rd And 26th St N/A, Phoenix, AZ	33.29	-111.97	Spillway		07/25/2012	2017
AW054	Pecos Rd And 28th Pl N/A, Phoenix, AZ	33.29	-111.98	Box	5 x 10 Feet	07/25/2012	2017
AW057	Pecos Rd And 36th St N/A, Phoenix, AZ	33.29	-111.99	Box	4 x 8 Feet	07/25/2012	2017
AW058	Pecos Rd And 36th St N/A, Phoenix, AZ	33.29	-111.99	Spillway	9 Feet	07/25/2012	2017
AW059	Pecos Rd And 37th St N/A, Phoenix, AZ	33.29	-112.00	Pipe	9 Feet	07/25/2012	2017
AW060	Pecos Rd And 39th St N/A, Phoenix, AZ	33.29	-110.00	Spillway	48 Feet	07/25/2012	2017
AW061	Pecos Rd And 41st St N/A, Phoenix, AZ	33.29	-110.00	Box	10 x 6 Feet	07/25/2012	2017
AW062	Pecos Rd And 44th St N/A, Phoenix, AZ	33.29	-110.01	Spillway		07/25/2012	2017
AZ001	Arizona Canal And 42nd St N/A, Phoenix, AZ	33.51	-110.01	Pipe	36 Inches	11/21/2014	2019
AZ002	Arizona Canal And 56th St N/A, Phoenix, AZ	33.49	-110.04	Pipe	48 Inches	11/21/2014	2019
AZ003	Arizona Canal And 57th St N/A, Phoenix, AZ	33.49	-110.04	Pipe	48 Inches	11/21/2014	2019
AZ024	Arizona Canal And 21st St N/A, Phoenix, AZ	33.53	-111.97	Pipe	36 Inches	12/03/2014	2019
AZ025	Arizona Canal And 21st St N/A, Phoenix, AZ	33.53	-111.97	Pipe	36 Inches	12/03/2014	2019
AZ028	Arizona Canal And 56th St N/A, Phoenix, AZ	33.49	-110.04	Spillway	6 Feet	11/21/2014	2019
AZ030	Arizona Canal And 44th St N/A, Phoenix, AZ	33.50	-110.01	Spillway	6 Feet	11/21/2014	2019
CC002	23rd Ave And Vogel Ave N/A, Phoenix, AZ	33.57	-111.89	Pipe	48 Inches	08/29/2014	2019
CC003	Peoria Ave And Cave Creek Wash N/A, Phoenix, AZ	33.58	-111.89	Pipe	84 Inches	03/28/2017	2022
CC004	25th Ave And Cholla Rd N/A, Phoenix, AZ	33.59	-111.89	Pipe	78 Inches	08/29/2014	2019
CC005	25th Ave And Cactus Rd N/A, Phoenix, AZ	33.60	-111.89	Pipe	48 Inches	08/26/2014	2019
CC006	25th Ave And Larkspur Dr N/A, Phoenix, AZ	33.60	-111.89	Pipe	30 Inches	08/26/2014	2019

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Outfall ID	Site Address	Latitude	Longitude	Drain Type	Drain Size	Last Inspection	Target Inspection
CC008	23rd Ave And Thunderbird Rd N/A, Phoenix, AZ	33.61	-111.89	Pipe	72 Inches	08/29/2014	2019
CC010	19th Ave And Greenway Rd N/A, Phoenix, AZ	33.62	-111.90	Pipe	90 Inches	08/29/2014	2019
CC024	Shangri-La Rd And Cave Creek Wash N/A, Phoenix, AZ	33.59	-111.89	Pipe	36 Inches	11/06/2014	2019
CC041	901 W Danbury Rd, Phoenix, AZ 85023	33.64	-111.92	Spillway	10 Feet	07/30/2014	2019
CC042	17407 N 8th Ave, Phoenix, AZ	33.64	-111.92	Spillway	10 Feet	07/30/2014	2019
CC043	7th Ave And Cave Creek Wash N/A, Phoenix, AZ	33.64	-111.92	Pipe	60 Inches	10/22/2014	2019
CC044	3rd Ave And Grovers Ave N/A, Phoenix, AZ	33.65	-111.92	Spillway	16 Feet	07/30/2014	2019
CC045	5th Ave And Michelle Dr N/A, Phoenix, AZ	33.65	-111.92	Spillway	10 Feet	07/30/2014	2019
CC046	5th Ave And Michigan Ave N/A, Phoenix, AZ	33.65	-111.92	Spillway	10 Feet	07/30/2014	2019
CC047	232 W Michigan Ave, Phoenix, AZ 85023	33.65	-111.92	Spillway	14 Feet	07/30/2014	2019
CC048	5th Ave And Bluefield Cir N/A, Phoenix, AZ	33.65	-111.92	Spillway	10 Feet	07/30/2014	2019
CC049	237 W Wagoner Rd, Phoenix, AZ 85023	33.65	-111.92	Spillway	8 Feet	07/30/2014	2019
CC050	Union Hills Dr And Cave Creek Wash N/A, Phoenix, A	33.65	-111.92	Pipe	72 Inches	10/22/2014	2019
CC052	15478 N 13th Ave, Phoenix, AZ	33.63	-111.91	Spillway	10 Feet	07/30/2014	2019
CC055	19th Ave And Greenway Rd N/A, Phoenix, AZ	33.62	-111.90	Spillway	3 x 6 Feet	07/30/2014	2019
CC056	19th Ave And Greenway Rd N/A, Phoenix, AZ	33.62	-111.90	Spillway	3 x 6 Feet	07/30/2014	2019
CC057	Cave Creek Golf Course At Acoma Dr N/A, Phoenix, A	33.62	-111.89	Pipe	42 Inches	09/19/2014	2019
CC060	18019 N Villa Rita Dr, Phoenix, AZ	33.65	-111.92	Spillway	18 Feet	07/30/2014	2019
CC062	19823 N 3rd St, Phoenix, AZ	33.67	-111.93	Spillway	29 Feet	07/31/2014	2019
CC063	19819 N 3rd St, Phoenix, AZ	33.66	-111.93	Spillway	20 Feet	07/31/2014	2019
CC064	19801 N 3rd St, Phoenix, AZ	33.67	-111.93	Spillway	7 Feet	07/31/2014	2019
CC065	301 E Behrend Dr, Phoenix, AZ 85024	33.67	-111.93	Spillway	9 Feet	07/31/2014	2019
CC066	301 E Wikieup Ln, Phoenix, AZ	33.67	-111.93	Spillway	9 Feet	07/31/2014	2019
CC067	301 E Sequoia Dr, Phoenix, AZ 85024	33.66	-111.93	Spillway	9 Feet	07/31/2014	2019
CC068	301 E Oraibi Dr, Phoenix, AZ 85024	33.66	-111.93	Spillway	9 Feet	07/31/2014	2019
CC069	301 E Piute Ave, Phoenix, AZ 85024	33.66	-111.93	Spillway	9 Feet	07/31/2014	2019
CC070	301 E Utopia Rd, Phoenix, AZ 85024	33.66	-111.93	Spillway	9 Feet	07/31/2014	2019
CC071	401 E Wescott Dr, Phoenix, AZ 85024	33.66	-111.93	Spillway	13 Feet	07/31/2014	2019
CC072	18650 N 2nd Ave, Phoenix, AZ	33.66	-111.92	Spillway	12 Feet	08/01/2014	2019
CC073	18819 N 2nd Ave, Phoenix, AZ	33.66	-111.92	Spillway	10 Feet	07/31/2014	2019
CC074	18802 N 2nd Dr, Phoenix, AZ	33.66	-111.92	Spillway	9 Feet	07/31/2014	2019

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Outfall ID	Site Address	Latitude	Longitude	Drain Type	Drain Size	Last Inspection	Target Inspection
CC075	201 W Taro Ln, Phoenix, AZ 85027	33.66	-111.92	Spillway	10 Feet	07/31/2014	2019
CC076	27th Ave And Cholla Rd N/A, Phoenix, AZ	33.59	-111.89	Spillway	62 Feet	07/22/2014	2019
CC077	519 W Helena Dr, Phoenix, AZ 85023	33.64	-111.92	Spillway	15 Feet	07/22/2014	2019
CC078	4th Ave And Muriel Dr N/A, Phoenix, AZ	33.65	-111.92	Spillway	24 Feet	07/22/2014	2019
CC079	4th Ave And Angela Dr N/A, Phoenix, AZ	33.65	-111.92	Spillway	16 Feet	07/22/2014	2019
CC080	4th Ave And Angela Dr N/A, Phoenix, AZ	33.65	-111.92	Spillway	16 Feet	07/22/2014	2019
CC081	17415 N 6th Ave, Phoenix, AZ	33.64	-111.92	Spillway	19 Feet	07/22/2014	2019
CC082	Cave Creek Gc And Cave Creek Wash N/A, Phoenix, AZ	33.62	-111.89	Pipe	42 Inches	09/19/2014	2019
CC083	23rd Ave And Greenway Rd N/A, Phoenix, AZ	33.62	112.11	Pipe	48 Inches	09/19/2014	2019
CC087	Deer Valley Road And 11th Pl N/A, Phoenix, AZ	33.68	-111.94	Pipe	66 Inches	11/14/2014	2019
CC094	7th St And Lone Cactus N/A, Phoenix, AZ	33.68	112.07	Pipe	54 Inches	10/13/2015	2020
CO001	Nisbet Rd And 42nd St N/A, Phoenix, AZ	33.62	111.99	Spillway	5 Feet	12/13/2016	2021
CO003	42nd St And Whitney Ln N/A, Phoenix, AZ	33.62	111.99	Spillway	11 Feet	12/13/2016	2021
CO005	42nd St. South Of Acoma Dr. East Side Of Channel N	33.62	111.99	Spillway	5 Feet	12/13/2016	2021
CO006	Located At 14245 N. 42nd St. East Side Of Channel	33.62	111.99	Spillway	5 Feet	12/13/2016	2021
CO007	42nd St And Hearn Rd. East Side Of Channel N/A, Ph	33.62	111.99	Spillway	9 Feet	12/13/2016	2021
CO008	41st Place And Gelding Dr. N/A, Phoenix, AZ	33.62	111.99	Spillway	30 Feet	12/14/2016	2021
CO009	41st Place And Sheena Dr. N/A, Phoenix, AZ	33.61	111.99	Spillway	9 Feet	12/14/2016	2021
CO010	Thunderbird Rd And 41st Pl N/A, Phoenix, AZ	33.61	111.99	Spillway	5 Feet	12/14/2016	2021
CO011	Thunderbird Rd And 41st Place N/A, Phoenix, AZ	33.61	111.99	Spillway	5 Feet	12/14/2016	2021
CO012	4202 East Sheena Dr. N/A, Phoenix, AZ	33.61	111.99	Spillway	10 Feet	12/14/2016	2021
CO013	4202 East Redfield Dr. N/A, Phoenix, AZ	33.61	111.99	Spillway	10 Feet	12/14/2016	2021
CO014	Thunderbird Rd And 41st Place N/A, Phoenix, AZ	33.61	111.99	Spillway	5 Feet	12/14/2016	2021
CO015	Thunderbird Rd And 41st Place N/A, Phoenix, AZ	33.61	111.99	Spillway	5 Feet	12/14/2016	2021
CO017	4215 E Andora Dr N/A, Phoenix, AZ	33.61	111.99	Spillway	4 Feet	12/14/2016	2021
CO018	13221 N 42nd St N/A, Phoenix, AZ	33.61	111.99	Spillway	9 Feet	12/14/2016	2021
CO019	13021 N. 42nd St N/A, Phoenix, AZ	33.61	111.99	Spillway	9 Feet	12/15/2016	2021
CO020	4156 E. Sweetwater Ave. N/A, Phoenix, AZ	33.60	111.99	Spillway	5 Feet	12/15/2016	2021
CO021	4127 E Windrose Dr N/A, Phoenix, AZ	33.60	111.99	Spillway	9 Feet	12/15/2016	2021
EF001	Cave Creek Rd And Greenway Pkwy N/A, Phoenix, AZ	33.63	-111.97	Pipe	72 Inches	09/30/2015	2020
EF002	16th St And Greenway Pkwy N/A, Phoenix, AZ	33.63	-111.96	Pipe	84 Inches	09/30/2015	2020

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Outfall ID	Site Address	Latitude	Longitude	Drain Type	Drain Size	Last Inspection	Target Inspection
EF003	18th St And Greenway Pkwy N/A, Phoenix, AZ	33.63	-111.96	Pipe	84 Inches	09/30/2015	2020
EF004	20th St And Greenway Pkwy N/A, Phoenix, AZ	33.63	-111.96	Pipe	96 Inches	09/30/2015	2020
EF006	9th St And Greenway Pkwy N/A, Phoenix, AZ	33.64	-111.94	Pipe	96 Inches	08/20/2015	2020
EF007	9th St And Greenway Pkwy N/A, Phoenix, AZ	33.64	-111.94	Pipe	36 Inches	08/27/2015	2020
EF008	Cave Creek Rd And Greenway Pkwy N/A, Phoenix, AZ	33.63	-111.97	Pipe	72 Inches	10/01/2015	2020
EF009	16th St And Greenway Pkwy N/A, Phoenix, AZ	33.64	-111.95	Pipe	48 Inches	09/30/2015	2020
EF010	7th St And Greenway Pkwy N/A, Phoenix, AZ	33.64	-111.93	Pipe	84 Inches	08/21/2015	2020
EF011	7th St And Greenway Pkwy N/A, Phoenix, AZ	33.64	-111.93	Pipe	36 Inches	08/20/2015	2020
EF012	7th St And Greenway Pkwy N/A, Phoenix, AZ	33.64	-111.93	Pipe	36 Inches	08/20/2015	2020
EF013	Cave Creek Rd And Greenway Pkwy N/A, Phoenix, AZ	33.63	-111.97	Spillway	22 Feet	08/19/2015	2020
EF014	22nd Pl And Monte Cristo N/A, Phoenix, AZ	33.63	-111.97	Spillway	50 Feet	08/19/2015	2020
EF015	22nd St And East Fork N/A, Phoenix, AZ	33.63	-111.97	Pipe	36 Inches	09/30/2015	2020
EF016	22nd St And East Fork N/A, Phoenix, AZ	33.63	-111.97	Pipe	36 Inches	09/30/2015	2020
EF017	22nd St And Monte Cristo N/A, Phoenix, AZ	33.63	-111.96	Spillway	40 Feet	08/19/2015	2020
EF018	21st St And East Fork N/A, Phoenix, AZ	33.63	-111.96	Pipe	36 Inches	09/30/2015	2020
EF019	21st St And East Fork N/A, Phoenix, AZ	33.63	-111.96	Pipe	42 Inches	09/30/2015	2020
EF020	20th Pl And Monte Cristo N/A, Phoenix, AZ	33.63	-111.96	Spillway	12 Feet	08/19/2015	2020
EF021	2012 E Monte Cristo Ave, Phoenix, AZ 85022	33.63	-111.96	Spillway	21 Feet	08/19/2015	2020
EF022	20th St And Greenway Pkwy N/A, Phoenix, AZ	33.63	-111.96	Spillway	15 Feet	08/19/2015	2020
EF023	19th St And East Fork (1926 E Monte Cristo) N/A, P	33.63	-111.96	Spillway	10 Feet	08/19/2015	2020
EF025	1410 E Sandra Terrace N/A, Phoenix, AZ	33.64	-111.95	Spillway	15 Feet	08/19/2015	2020
EF026	14th St And Grandview Rd N/A, Phoenix, AZ	33.64	-111.95	Spillway	21 Feet	08/19/2015	2020
EF027	12th St And East Fork N/A, Phoenix, AZ	33.64	-111.94	Box	36 Feet	08/26/2015	2020
EF028	16431 N 12th St, Phoenix, AZ	33.64	-111.94	Spillway	50 Feet	08/19/2015	2020
EF033	301 W Lemarche Ave, Phoenix, AZ	33.63	-111.92	Spillway	10 Feet	08/27/2015	2020
EF034	301 W Monte Cristo Ave, Phoenix, AZ 85023	33.63	-111.92	Pipe	6 Feet	08/27/2015	2020
EF035	15802 N 4th Ave, Phoenix, AZ	33.63	-111.92	Spillway	12 Feet	08/27/2015	2020
EF036	15803 N 4th Dr, Phoenix, AZ	33.63	-111.92	Spillway	14 Feet	08/27/2015	2020
EF037	Moon Valley Park N/A, Phoenix, AZ	33.63	-111.92	Pipe	5 Feet	08/27/2015	2020
EF038	214 W Kathleen Rd, Phoenix, AZ 85023	33.63	-111.92	Spillway	10 Feet	08/27/2015	2020
EF039	16042 N 1st St, Phoenix, AZ	33.63	-111.93	Pipe	8 Feet	08/27/2015	2020

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Outfall ID	Site Address	Latitude	Longitude	Drain Type	Drain Size	Last Inspection	Target Inspection
EF040	1407 W Beck Ln, Phoenix, AZ 85023	33.63	-111.91	Spillway	21 Feet	08/26/2015	2020
EF041	1101 W Beck Ln, Phoenix, AZ 85023	33.63	-111.91	Spillway	19 Feet	08/26/2015	2020
EF042	15406 N 7th Dr, Phoenix, AZ	33.63	-111.92	Spillway	25 Feet	08/26/2015	2020
EF043	1527 W Caribbean Ln, Phoenix, AZ 85023	33.62	-111.91	Spillway	10 Feet	08/26/2015	2020
EF044	1445 W Caribbean Ln, Phoenix, AZ 85023	33.63	-111.91	Spillway	6 Feet	08/26/2015	2020
EF045	1455 W Caribbean Ln, Phoenix, AZ 85023	33.63	-111.91	Spillway	10 Feet	08/26/2015	2020
EF046	1503 W Caribbean Ln, Phoenix, AZ 85023	33.63	-111.91	Spillway	6 Feet	08/26/2015	2020
EF051	19th Pl And Greenway Pkwy N/A, Phoenix, AZ	33.63	-111.96	Pipe	36 Inches	09/30/2015	2020
EF052	Cave Creek Rd And Greenway Pkwy N/A, Phoenix, AZ	33.63	-111.97	Spillway	48 Feet	08/19/2015	2020
EF053	1802 E Paradise Ln, Phoenix, AZ 85022	33.63	-111.93	Spillway	18 Feet	08/20/2015	2020
EF054	16th St And Greenway Pkwy N/A, Phoenix, AZ	33.64	-111.95	Spillway	23 Feet	08/20/2015	2020
EF055	16th St And Greenway Pkwy N/A, Phoenix, AZ	33.64	-111.95	Spillway	14 Feet	08/20/2015	2020
EF056	1610 E Sandra Ter, Phoenix, AZ	33.64	-111.95	Spillway	6 Feet	08/20/2015	2020
EF057	1526 W Caribbean Ln, Phoenix, AZ 85023	33.62	-111.91	Spillway	12 Feet	08/26/2015	2020
EF058	15406 N 7th Dr, Phoenix, AZ	33.63	-111.92	Pipe	90 Inches	08/26/2015	2020
EF063	7th St And Greenway Pkwy N/A, Phoenix, AZ	33.64	-111.93	Spillway	150 Feet	08/27/2015	2020
EF065	Union Hills And 25th Way N/A, Phoenix, AZ	33.65	112.03	Pipe	48 Inches	07/22/2015	2020
EF066	Union Hills And 25th Way N/A, Phoenix, AZ	33.65	112.03	Pipe	63 Inches	07/22/2015	2020
EF069	Utopia Rd Between 27th And 28th Street N/A, Phoeni	33.66	112.02	Pipe	48 Inches	07/22/2015	2020
EF070	Utopia Road Between 27th And 28th St. N/A, Phoenix	33.66	112.02	Pipe	96 Inches	07/22/2015	2020
EF086	20300 N. 26th St. N/A, Phoenix, AZ	33.67	112.04	Pipe	76 Inches	07/24/2015	2020
EF087	20300 N. 26th St. N/A, Phoenix, AZ	33.67	112.02	Pipe	76 Inches	07/24/2015	2020
EF088	Cave Creek And 101 N/A, Phoenix, AZ	33.67	112.04	Pipe	58 Inches	07/24/2015	2020
EF091	2302 E. Grovers Ave N/A, Phoenix, AZ	33.66	112.04	Pipe	96 Inches	08/04/2015	2020
GC001	Grand Ave And Grand Canal N/A, Phoenix, AZ	33.49	-111.87	Pipe	24 Inches	01/07/2015	2020
GC002	Grand Ave And Grand Canal N/A, Phoenix, AZ	33.49	-111.87	Pipe	36 Inches	01/07/2015	2020
GC033	Grand Canal And E Of Pueblo Grande Museum Park N/A	33.44	-110.02	Spillway	14 Feet	01/07/2015	2020
IB001	52nd St And Shea Blvd N/A, Phoenix, AZ	33.58	-110.03	Pipe	36 Inches	08/15/2013	2018
IB002	52nd St And Shea Blvd N/A, Phoenix, AZ	33.58	-110.03	Pipe	84 Inches	07/18/2013	2018
IB003	Tatum Blvd And Cholla St N/A, Phoenix, AZ	33.59	-110.02	Pipe	66 Inches	02/05/2014	2019
IB004	Tatum Blvd And Cholla St N/A, Phoenix, AZ	33.59	-110.02	Pipe	66 Inches	02/05/2014	2019

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Outfall ID	Site Address	Latitude	Longitude	Drain Type	Drain Size	Last Inspection	Target Inspection
IB005	52nd St And Indian Bend Wash N/A, Phoenix, AZ	33.58	-110.03	Box	14 x 3 Feet	07/18/2013	2018
IB007	36th St And Sweetwater Ave N/A, Phoenix, AZ	33.60	-112.00	Pipe	78 Inches	08/05/2013	2018
IB008	40th St And Indian Bend Wash N/A, Phoenix, AZ	33.60	-110.00	Pipe	66 Inches	08/23/2013	2018
IB010	40th Street And Indian Bend Wash. North Side Of Wa	33.60	-110.00	Pipe	36 Inches	03/15/2017	2022
IB011	56th St And Indian Bend Wash N/A, Phoenix, AZ	33.57	-110.04	Pipe	66 Inches	06/13/2014	2019
IB013	Cactus Rd And Indian Bend Wash N/A, Phoenix, AZ	33.60	-110.01	Pipe	72 Inches	08/14/2013	2018
IB016	Tatum Blvd And Cholla St N/A, Phoenix, AZ	33.59	-110.02	Pipe	36 Inches	08/22/2013	2018
IB018	Cactus Rd And Indian Bend Wash N/A, Phoenix, AZ	33.60	-110.01	Pipe	72 Inches	08/15/2013	2018
IB021	10202 N 54th Pl, Phoenix, AZ	33.58	-110.04	Pipe	36 Inches	10/14/2013	2018
IB023	3526 E Dahlia Dr, Phoenix, AZ 85032	33.60	-112.00	Spillway	20 Feet	08/14/2013	2018
IB024	3631 E Dahlia Dr, Phoenix, AZ 85032	33.60	-112.00	Spillway	21 Feet	08/14/2013	2018
IB025	3716 E Aster Dr, Phoenix, AZ 85032	33.60	-112.00	Spillway	19 Feet	08/14/2013	2018
IB026	12806 N 37th Ct, Phoenix, AZ	33.60	-112.00	Spillway	8 Feet	08/14/2013	2018
IB027	4150 E Cactus Rd, Phoenix, AZ 85032	33.60	-110.01	Spillway	11 Feet	08/14/2013	2018
IB035	Thunderbird Rd And Indian Bend Wash N/A, Phoenix,	33.61	-111.99	Pipe	60 Inches	08/05/2013	2018
IB036	Thunderbird Rd And Indian Bend Wash N/A, Phoenix,	33.61	-111.99	Pipe	60 Inches	08/05/2013	2018
IB037	Thunderbird Rd And Indian Bend Wash N/A, Phoenix,	33.61	-111.99	Box	6 x 10 Feet	08/05/2013	2018
IB038	Thunderbird Rd And Indian Bend Wash N/A, Phoenix,	33.61	-111.99	Pipe	84 Inches	08/05/2013	2018
IB039	13636 N 34th Pl, Phoenix, AZ	33.61	-111.99	Spillway	10 Feet	08/15/2013	2018
IB040	13614 N 34th Pl, Phoenix, AZ	33.61	-111.99	Spillway	10 Feet	08/15/2013	2018
IB041	Presidio Rd And Indian Bend Wash N/A, Phoenix, AZ	33.61	-111.99	Spillway	30 Feet	08/15/2013	2018
IB042	13402 N 35th St, Phoenix, AZ	33.61	-111.99	Spillway	30 Feet	08/15/2013	2018
IB043	10811 N 52nd St, Phoenix, AZ	33.58	-110.03	Spillway	18 Feet	07/18/2013	2018
IB044	11016 N 50th St, Phoenix, AZ	33.59	-110.03	Spillway	12 Feet	07/18/2013	2018
IB045	4943 E Cholla St, Phoenix, AZ 85254	33.59	-110.03	Spillway	7 Feet	07/18/2013	2018
IB050	40th St And Indian Bend Wash. North Side Of Wash.	33.60	112.00	Pipe	48 Inches	03/15/2017	2022
LC001	4532 W Alta Vista Rd, Phoenix, AZ	33.39	-111.84	Spillway	9 Feet	09/15/2016	2021
LC002	6616 S 46th Gn N/A, Phoenix, AZ	33.39	-111.84	Spillway	13 Feet	09/15/2016	2021
LC003	46th Dr And Vineyard Rd N/A, Phoenix, AZ	33.38	-111.84	Spillway	32 Feet	09/15/2016	2021
LC008	53rd Ln And Baseline Rd N/A, Phoenix, AZ	33.38	-111.83	Pipe	66 Inches	09/15/2016	2021
LC015	63rd Land And Beverly Rd N/A, Phoenix, AZ	33.37	112.20	Pipe	26 Inches	09/27/2016	2021

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LC017	7377 W Magdalena Ln N/A, Phoenix, AZ	33.37	112.21	Pipe	34 Inches	05/16/2012	2017
LC018	7810 S 74th Ave N/A, Phoenix, AZ	33.37	-111.78	Pipe	36 Inches	09/27/2016	2021
LC020	S 63rd Ave And Lacc N/A, Phoenix, AZ	33.37	112.19	Pipe	60 Inches	09/21/2016	2021
LC022	4724 W. Carson Rd. N/A, Phoenix, AZ	33.38	-111.84	Spillway	8 Feet	09/15/2016	2021
LC023	North Side Of Channel. About 50 Ft. West Of 51st S	33.38	-111.83	Pipe	62 Inches	09/15/2016	2021
LC026	Inside West Tunnel Culvert @ Baseline And Lacc N/A	33.38	-111.82	Pipe	48 Inches	09/20/2016	2021
LC028	74th Lane And Fawn N/A, Phoenix, AZ	33.37	112.22	Spillway	10 Feet	09/28/2016	2021
MV001	19th Ave And Sweetwater Ave N/A, Phoenix, AZ	33.60	-111.90	Pipe	48 Inches	09/06/2012	2017
MV002	19th Ave And Sweetwater Ave N/A, Phoenix, AZ	33.60	-111.90	Pipe	24 Inches	09/06/2012	2017
MV004	14th Dr And Sweetwater Ave N/A, Phoenix, AZ	33.60	-111.91	Spillway	8 Feet	09/06/2012	2017
MV005	12th Ave And Thunderbird Rd N/A, Phoenix, AZ	33.61	-111.91	Pipe	54 Inches	09/20/2012	2017
MV007	7th St And Hearn Rd N/A, Phoenix, AZ	33.62	-111.93	Pipe	48 Inches	09/20/2012	2017
MV010	17th Dr And Sweetwater Ave N/A, Phoenix, AZ	33.60	-111.90	Spillway	9 Feet	09/06/2012	2017
MV011	17th Ave And Sweetwater Ave N/A, Phoenix, AZ	33.60	-111.90	Spillway	20 Feet	09/06/2012	2017
MV012	16th Dr And Sweetwater Ave N/A, Phoenix, AZ	33.60	-111.91	Spillway	20 Feet	09/06/2012	2017
MV013	16th Ave And Sweetwater Ave N/A, Phoenix, AZ	33.60	-111.91	Spillway	20 Feet	09/06/2012	2017
MV014	15th Dr And Sweetwater Ave N/A, Phoenix, AZ	33.60	-111.91	Spillway	21 Feet	09/06/2012	2017
MV015	15th Ave And Sweetwater Ave N/A, Phoenix, AZ	33.60	-111.91	Spillway	18 Feet	09/06/2012	2017
MV016	13th Ln And Thunderbird Rd N/A, Phoenix, AZ	33.61	-111.91	Spillway	11 Feet	09/20/2012	2017
MV017	N 3rd Ave And Mv Wash N/A, Phoenix, AZ	33.61	112.08	Spillway	15 Feet	09/20/2012	2017
MV018	N. 3rd Avenue And Mv Wash N/A, Phoenix, AZ	33.61	112.08	Spillway	12 Feet	09/20/2012	2017
MV019	7th St. And E. Roberts Rd. West Side Of Street N/A	33.67	-111.97	Pipe	60 Inches		2017
MV020	7th St. And E. Roberts Rd. West Side Of Street. N/	33.67	-111.97	Pipe	54 Inches		2017
NR004	4640 West Heyerdahl Court N/A, Phoenix, AZ	33.87	112.16	Pipe	40 Inches	08/31/2016	2021
NR005	N 45th Ave And W Emily Dr N/A, Phoenix, AZ	33.88	112.16	Pipe	40 Inches	08/31/2016	2021
NR006	45th Ave And Judson Drive N/A, Phoenix, AZ	33.88	112.16	Pipe	36 Inches	08/31/2016	2021
OC001	Old Cross Cut And Washington St, South Tunnel N/A,	33.45	-110.02	Pipe	36 Inches	06/03/2014	2019
OC002	Old Cross Cut And Van Buren St, South Tunnel N/A,	33.45	-110.02	Pipe	42 Inches	06/03/2014	2019
OC004	46th St And Mcdowell Rd N/A, Phoenix, AZ	33.47	-110.02	Pipe	42 Inches	01/28/2014	2019
OC005	48th St And Thomas Rd N/A, Phoenix, AZ	33.48	-110.02	Pipe	36 Inches	01/29/2014	2019
OC006	48th St And Earll Dr N/A, Phoenix, AZ	33.48	-110.02	Pipe	52 Inches	01/28/2014	2019

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Outfall ID	Site Address	Latitude	Longitude	Drain Type	Drain Size	Last Inspection	Target Inspection
OC007	48th St And Indian School Rd N/A, Phoenix, AZ	33.49	-110.02	Pipe	36 Inches	01/28/2014	2019
OC008	46th St And Mcdowell Rd N/A, Phoenix, AZ	33.47	-110.02	Pipe	54 Inches	01/28/2014	2019
OC022	48th St And Oak St N/A, Phoenix, AZ	33.47	-110.02	Pipe	48 Inches	01/28/2014	2019
OC028	48th St And Indian School Rd N/A, Phoenix, AZ	33.50	-110.02	Spillway	5 Feet	01/28/2014	2019
OC039	46th Street And Roosevelt Street - Old Cross Cut N	33.46	-110.02	Box	6 x 5 Feet	05/16/2014	2019
OC053	48th St And Osborn Rd N/A, Phoenix, AZ	33.49	-110.02	Pipe	52 Inches	01/28/2014	2019
OC054	48th St And Osborn Rd N/A, Phoenix, AZ	33.49	-110.02	Box	8 x 6 Feet	01/28/2014	2019
OC055	48th St And Weldon Ave N/A, Phoenix, AZ	33.49	-110.02	Pipe	48 Inches	01/28/2014	2019
OC062	48th St And Thomas Rd N/A, Phoenix, AZ	33.48	-110.02	Pipe	36 Inches	01/28/2014	2019
OC072	Old Cross Cut And Granada N/A, Phoenix, AZ	33.47	-110.02	Pipe	42 Inches	01/28/2014	2019
OC073	47th St And Melvin St N/A, Phoenix, AZ	33.45	-110.02	Spillway	13 Feet	03/07/2014	2019
OC074	46th St And Taylor St N/A, Phoenix, AZ	33.45	-110.02	Spillway	28 Feet	03/07/2014	2019
OC075	46th St And Taylor St N/A, Phoenix, AZ	33.45	-110.02	Spillway	12 Feet	03/07/2014	2019
OC076	46th St And Fillmore St N/A, Phoenix, AZ	33.45	-110.02	Spillway	29 Feet	03/07/2014	2019
OC077	46th St And Pierce St N/A, Phoenix, AZ	33.46	-110.02	Spillway	30 Feet	03/07/2014	2019
OC078	46th St And Mckinley St N/A, Phoenix, AZ	33.46	-110.02	Spillway	27 Feet	03/07/2014	2019
OC083	48th St And Earll Dr N/A, Phoenix, AZ	33.48	-110.02	Spillway		01/28/2014	2019
PD001	91st Ave And Papago Diversion Channel N/A, Phoenix	33.46	-111.74	Pipe	90 Inches	04/07/2014	2019
PD002	83rd Ave And Papago Diversion Channel N/A, Phoenix	33.46	-111.24	Pipe	90 Inches	04/07/2014	2019
PD003	75th Ave And Papago Diversion Channel N/A, Phoenix	33.63	-111.78	Pipe	90 Inches	05/22/2014	2019
PD004	67th Ave And Papago Diversion Channel N/A, Phoenix	33.46	-111.80	Pipe	90 Inches	04/07/2014	2019
PD005	59th Ave And Papago Diversion Channel N/A, Phoenix	33.46	-111.19	Pipe	90 Inches	04/07/2014	2019
PD006	51st Ave And Papago Diversion Channel N/A, Phoenix	33.46	-111.83	Pipe	84 Inches	04/07/2014	2019
PD007	43rd Ave And Papago Diversion Channel N/A, Phoenix	33.46	-111.85	Pipe	96 Inches	05/28/2014	2019
PD008	43rd Ave And Papago Diversion Channel N/A, Phoenix	33.46	-111.85	Pipe	54 Inches	05/28/2014	2019
PD009	39th Ave And Papago Diversion Channel N/A, Phoenix	33.46	-111.86	Pipe	78 Inches	05/29/2014	2019
PD010	35th Ave And Papago Diversion Channel N/A, Phoenix	33.57	-111.87	Pipe	54 Inches	05/28/2014	2019
PD011	31st Ave And Papago Diversion Channel N/A, Phoenix	33.46	-111.87	Box	10 x 4 Feet	12/13/2013	2018
PD014	31st Ave And Papago Diversion Channel N/A, Phoenix	33.46	-111.87	Pipe	48 Inches	05/28/2014	2019
PD015	32nd Ave And Papago Diversion Channel N/A, Phoenix	33.46	-111.87	Pipe	40 Inches	12/13/2013	2018
PD016	34th Ave And Papago Diversion Channel N/A, Phoenix	33.46	-111.87	Pipe	42 Inches	05/28/2014	2019

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ZT = Emile Zola Tributary of IB

Outfall ID	Site Address	Latitude	Longitude	Drain Type	Drain Size	Last Inspection	Target Inspection
PD017	43rd Ave And Papago Diversion Channel N/A, Phoenix	33.46	-111.85	Pipe	18 Inches	05/28/2014	2019
PD023	2901 W Culver St In Papago Diversion N/A, Phoenix,	33.46	-111.88	Spillway	14 Feet	04/07/2014	2019
PV001	33rd St And Lincoln Dr N/A, Phoenix, AZ	33.53	-111.99	Pipe	36 Inches	10/09/2012	2017
PV002	34th St And Lincoln Dr N/A, Phoenix, AZ	33.53	-111.99	Pipe	48 Inches	09/26/2012	2017
PV004	35th St And Lincoln Dr N/A, Phoenix, AZ	33.53	-111.99	Pipe	48 Inches	09/26/2012	2017
PV005	35th Pl And Lincoln Dr N/A, Phoenix, AZ	33.53	-111.99	Pipe	36 Inches	09/26/2012	2017
PV006	3636 E Lincoln Dr, Phoenix, AZ 85018	33.53	-112.00	Pipe	5 Feet	10/09/2012	2017
PV007	3762 E Lincoln Dr, Phoenix, AZ	33.53	-110.00	Pipe	48 Inches	10/09/2012	2017
PV008	3843 E Lincoln Dr, Phoenix, AZ	33.53	-110.00	Pipe	36 Inches	10/18/2012	2017
PV009	3865 E Lincoln Dr, Phoenix, AZ	33.53	-110.00	Pipe	75 Inches	10/18/2012	2017
PV010	35th Place And Lincoln Dr N/A, Phoenix, AZ	33.53	-111.99	Spillway	7 Feet	09/26/2012	2017
SC001	56th Ave And Union Hills Dr N/A, Phoenix, AZ	33.66	-111.82	Box	10x11 Feet	07/13/2016	2021
SC002	51st Ave And Skunk Creek, Near Norhtwest Bike Lane	33.66	-111.83	Pipe	36 Inches	07/07/2016	2021
SC006	19432 N 50th Ave, Phoenix, AZ	33.66	-111.83	Spillway	10 Feet	07/07/2016	2021
SC008	19653 N 48th Ln, Phoenix, AZ	33.66	-111.84	Spillway	16 Feet	07/13/2016	2021
SC009	19623 N 48th Ave, Phoenix, AZ	33.66	-111.84	Spillway	24 Feet	07/07/2016	2021
SC010	47th Dr And Behrend Dr N/A, Phoenix, AZ	33.66	-111.84	Spillway	6 Feet	07/07/2016	2021
SC012	4790 W Oraibi Dr, Phoenix, AZ 85308	33.66	112.16	Spillway	6 Feet	07/13/2016	2021
SC013	19634 N 47th Dr, Phoenix, AZ	33.66	-111.84	Spillway	4 Feet	07/07/2016	2021
SC014	19640 N 47th Ave, Phoenix, AZ	33.66	-111.84	Pipe	6 Feet	07/07/2016	2021
SC015	46th Dr And Behrend Dr N/A, Phoenix, AZ	33.67	-111.84	Pipe	6 Feet	07/07/2016	2021
SC016	19810 N 46th Ave, Phoenix, AZ	33.67	-111.84	Pipe	6 Feet	07/07/2016	2021
SC017	19828 N 45th Ln, Phoenix, AZ	33.67	112.16	Spillway	6 Feet	07/13/2016	2021
SC022	2749 W Darien Way, Phoenix, AZ	33.80	-111.88	Spillway	10 Feet	07/12/2016	2021
SC023	27th Ct And Florimond Rd N/A, Phoenix, AZ	33.80	-111.88	Spillway	50 Feet	07/12/2016	2021
SC024	27th Ln And Via Aquila N/A, Phoenix, AZ	33.81	-111.88	Box	4 x 2 Feet	07/12/2016	2021
SC025	27th Ln And Via Aquila, West Side N/A, Phoenix, AZ	33.81	-111.88	Box	4 x 2 Feet	07/12/2016	2021
SC027	Carefree Hwy And 27th Dr N/A, Phoenix, AZ	33.80	-111.88	Pipe	36 Inches	07/12/2016	2021
SC031	35th Dr And Soft Wind Dr N/A, Phoenix, AZ	33.70	-111.86	Pipe	30 Inches	08/16/2016	2021
SC032	20659 N 41st Ln, Phoenix, AZ	33.67	-111.85	Spillway	18 Feet	07/26/2016	2021
SC033	20669 N 41st Ln, Phoenix, AZ	33.67	-111.85	Spillway	17 Feet	07/26/2016	2021

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Outfall ID	Site Address	Latitude	Longitude	Drain Type	Drain Size	Last Inspection	Target Inspection
SC034	20657 N 42nd Ave, Phoenix, AZ	33.67	-111.85	Spillway	18 Feet	07/26/2016	2021
SC035	20622 N 42nd Ave, Phoenix, AZ	33.67	-111.85	Spillway	17 Feet	07/26/2016	2021
SC036	20670 N 41st Ave, Phoenix, AZ	33.67	-111.85	Spillway	45 Feet	07/26/2016	2021
SC037	Sc Wash And Sr101 Frontage Rd N/A, Phoenix, AZ	33.67	-111.85	Pipe	36 Inches	07/26/2016	2021
SC040	Via Puzzola And Via Del Deserto N/A, Phoenix, AZ	33.81	-111.88	Pipe	36 Inches	07/12/2016	2021
SC043	2761 W Via Calabria N/A, Phoenix, AZ	33.80	0.00	Spillway	19 Feet	07/12/2016	2021
SC044	35th Ave And Parkside Ln N/A, Phoenix, AZ	33.69	112.13	Pipe	35 Inches	08/16/2016	2021
SC046	35206 N 27th Drive N/A, Phoenix, AZ	33.80	-111.88	Pipe	36 Inches	07/12/2016	2021
SC048	W Oberlin Way And N 26th Ave N/A, Phoenix, AZ	33.74	112.11	Spillway	32 Feet	08/16/2016	2021
SC049	Pinnacle Peack Road And 40th Lane N/A, Phoenix, A	33.70	112.15	Pipe	62 Inches	08/17/2016	2021
SC050	South Side Of Pinnacle Peak Road At 40th Lane. N/A	33.70	112.15	Pipe	60 Inches	08/17/2016	2021
SC052	Southside Of Pinnacle Peak Road Just Before 47th A	33.70	112.16	Pipe	54 Inches	08/17/2016	2021
SC053	Southside Of Pinnacle Peak Road Just Before 47th A	33.70	112.16	Pipe	48 Inches	08/17/2016	2021
SC054	Southside Of Pinnacle Peak Road Just Before 47th A	33.70	112.16	Pipe	42 Inches	08/17/2016	2021
SC055	Southside Of Pinnacle Peak Road And 51st Avenue. N	33.70	112.17	Pipe	42 Inches	08/17/2016	2021
SC058	4531 W. Soft Wind Dr N/A, Phoenix, AZ	33.72	112.16	Spillway		08/17/2016	2021
SC059	23620 N. 45th Ave N/A, Phoenix, AZ	33.71	112.16	Pipe	24 Inches	08/17/2016	2021
SC060	23804 N. 44th Ln N/A, Phoenix, AZ	33.70	112.16	Spillway	6 Feet	08/17/2016	2021
SC061	Mariposa Grande And 45th Dr N/A, Phoenix, AZ	33.70	112.16	Spillway	10 Feet	08/17/2016	2021
SC064	Alamedia Road Between 43rd Ave And 45th Dr N/A, Ph	33.71	112.16	Pipe	24 Inches	08/17/2016	2021
SC065	44th Ln And W Misty Willow Ln N/A, Phoenix, AZ	33.70	112.16	Spillway	9 Feet	08/17/2016	2021
SC067	35th Avenue And Williams Drive N/A, Phoenix, AZ	112.21	34.16	Pipe	56 Inches	08/16/2016	2021
SR001	51st Ave And Salt River N/A, Phoenix, AZ	33.41	-111.83	Pipe	96 Inches	04/04/2017	2018
SR002	43rd Ave And Salt River N/A, Phoenix, AZ	33.41	-111.85	Pipe	90 Inches	04/05/2017	2018
SR003	35th Ave And Salt River N/A, Phoenix, AZ	33.41	-111.87	Pipe	75 Inches	04/06/2017	2018
SR004	27th Ave And Salt River N/A, Phoenix, AZ	33.42	-111.88	Pipe	72 Inches	04/11/2017	2018
SR005	25th Ave And Salt River N/A, Phoenix, AZ	33.42	-111.89	Pipe	102 Inches	04/18/2016	2021
SR006	22nd Ave And Salt River N/A, Phoenix, AZ	33.42	-111.89	Pipe	72 Inches	04/12/2017	2022
SR007	19th Ave And Salt River N/A, Phoenix, AZ	33.41	-111.90	Pipe	54 Inches	04/12/2017	2022
SR008	15th Ave And Salt River N/A, Phoenix, AZ	33.41	-111.91	Pipe	96 Inches	09/18/2015	2020
SR009	11th Ave And Salt River N/A, Phoenix, AZ	33.42	-111.91	Pipe	81 Inches	04/09/2015	2020

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Outfall ID	Site Address	Latitude	Longitude	Drain Type	Drain Size	Last Inspection	Target Inspection
SR010	7th Ave And Salt River N/A, Phoenix, AZ	33.42	-111.92	Pipe	54 Inches	04/18/2017	2018
SR012	Central Ave And Salt River N/A, Phoenix, AZ	33.42	-111.93	Pipe	42 Inches	05/11/2015	2020
SR013	Central Ave And Salt River N/A, Phoenix, AZ	33.42	-111.93	Box	10 x 21 Feet	04/07/2015	2020
SR014	3rd St And Salt River N/A, Phoenix, AZ	33.42	-111.93	Pipe	36 Inches	05/31/2016	2021
SR015	3rd St And Salt River N/A, Phoenix, AZ	33.42	-111.93	Pipe	84 Inches	04/18/2017	2018
SR016	10th St And Salt River N/A, Phoenix, AZ	33.42	-111.94	Pipe	54 Inches	04/15/2015	2020
SR017	12th St And Salt River N/A, Phoenix, AZ	33.42	-111.94	Pipe	96 Inches	04/15/2015	2020
SR018	16th St And Salt River N/A, Phoenix, AZ	33.42	-111.95	Pipe	66 Inches	01/05/2015	2020
SR019	20th St And Salt River N/A, Phoenix, AZ	33.42	-111.96	Box	10 x 21 Feet	04/05/2016	2021
SR020	24th St And Salt River N/A, Phoenix, AZ	33.42	-111.97	Pipe	84 Inches	05/02/2017	2018
SR024	28th St And Salt River N/A, Phoenix, AZ	33.42	-111.98	Pipe	90 Inches	05/07/2015	2020
SR026	37th St And Salt River N/A, Phoenix, AZ	33.43	-111.99	Pipe	42 Inches	05/12/2015	2020
SR027	36th St And Salt River, Under Sky Harbor N/A, Phoe	33.43	-112.00	Pipe	82 Inches	05/27/2016	2021
SR029	47th St And Salt River N/A, Phoenix, AZ	33.43	-110.02	Pipe	78 Inches	05/27/2016	2021
SR030	27th Ave And Salt River N/A, Phoenix, AZ	33.41	-111.88	Pipe	108 Inches	04/12/2017	2018
SR031	19th Ave And Salt River N/A, Phoenix, AZ	33.41	-111.90	Pipe	60 Inches	04/05/2016	2021
SR032	7th Ave And Salt River N/A, Phoenix, AZ	33.42	-111.92	Pipe	72 Inches	06/15/2016	2021
SR033	Central Ave And Salt River N/A, Phoenix, AZ	33.42	-111.93	Pipe	66 Inches	04/14/2015	2020
SR035	7th St And Salt River N/A, Phoenix, AZ	33.42	-111.94	Pipe	72 Inches	06/15/2016	2021
SR036	15th St And Salt River N/A, Phoenix, AZ	33.42	-111.95	Pipe	72 Inches	05/07/2015	2020
SR037	16th St And Salt River N/A, Phoenix, AZ	33.42	-111.95	Pipe	36 Inches	05/07/2015	2020
SR038	24th St And Salt River N/A, Phoenix, AZ	33.42	-111.97	Pipe	72 Inches	04/08/2015	2020
SR039	28th St And Salt River N/A, Phoenix, AZ	33.42	-111.98	Pipe	96 Inches	05/07/2015	2020
SR045	40th St And Salt River N/A, Phoenix, AZ	33.43	-110.00	Pipe	54 Inches	05/07/2015	2020
SR046	7th St And Salt River N/A, Phoenix, AZ	33.42	-111.94	Pipe	24 Inches	04/16/2015	2020
SR048	45th St And Salt River N/A, Phoenix, AZ	33.43	-110.02	Pipe	48 Inches	05/12/2015	2020
SR049	67th Ave And Salt River N/A, Phoenix, AZ	33.40	-111.80	Pipe	96 Inches	04/04/2017	2018
SR052	52nd St And Hohokam Frwy N/A, Phoenix, AZ	33.44	-110.03	Box	8 x 5 Feet	01/29/2015	2020
SR056	28th St And Salt River N/A, Phoenix, AZ	33.42	-111.98	Pipe	36 Inches	05/07/2015	2020
SR059	25th Ave And Salt River N/A, Phoenix, AZ	33.42	-111.87	Pipe	60 Inches	04/18/2016	2021
SR061	32nd St And Salt River N/A, Phoenix, AZ	33.42	-111.99	Box	7 x 5 Feet	08/18/2016	2017

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Outfall ID	Site Address	Latitude	Longitude	Drain Type	Drain Size	Last Inspection	Target Inspection
SR062	38th St And Salt River N/A, Phoenix, AZ	33.43	-112.00	Pipe	60 Inches	05/12/2015	2020
SR063	15th Ave And Salt River N/A, Phoenix, AZ	33.41	-111.91	Pipe	60 Inches	04/08/2015	2020
SR064	19th Ave And Salt River N/A, Phoenix, AZ	33.41	-111.90	Pipe	36 Inches	04/06/2015	2020
SR068	28th St And Salt River N/A, Phoenix, AZ	33.42	-111.98	Box	8 x 8 Feet	05/27/2016	2021
SR069	31st St And Salt River N/A, Phoenix, AZ	33.42	-111.99	Pipe	60 Inches	05/12/2015	2020
SR070	33rd St And Salt River N/A, Phoenix, AZ	33.42	-111.99	Pipe	36 Inches	05/12/2015	2020
SR071	33rd St And Salt River N/A, Phoenix, AZ	33.42	-111.99	Pipe	60 Inches	05/12/2015	2020
SR072	45th St And Salt River N/A, Phoenix, AZ	33.43	-110.01	Pipe	48 Inches	05/12/2015	2020
SR073	45th St And Salt River N/A, Phoenix, AZ	33.43	-110.01	Pipe	60 Inches	05/12/2015	2020
SR075	43rd Ave And Broadway Rd N/A, Phoenix, AZ	33.40	-111.85	Box	10 Feet	04/06/2016	2021
SR076	43rd Ave And Broadway Rd N/A, Phoenix, AZ	33.40	-111.85	Pipe	48 Inches	04/06/2016	2021
SR077	22nd Ave And Rio Salado Service Yard N/A, Phoenix,	33.42	-111.89	Spillway	17 Feet	04/18/2016	2021
SR079	35th Ave And Salt River N/A, Phoenix, AZ	33.41	-111.87	Pipe	42 Inches	04/18/2016	2021
SR080	51st Ave And Salt River N/A, Phoenix, AZ	33.40	-111.83	Pipe	42 Inches	04/18/2016	2021
SR082	75th Ave S/O Broadway Rd N/A, Phoenix, AZ	33.40	112.22	Pipe	84 Inches	04/05/2016	2021
SR083	83rd Ave And Salt River N/A, Phoenix, AZ	33.39	112.23	Pipe	12 Inches	04/04/2017	2018
SR084	Sw Corner Of The 153 Expressway And The Salt River	33.43	-110.02	Pipe	72" Inches	05/12/2015	2020
SR088	31st Ave. And Salt River N/A, Phoenix, AZ 85009	33.41	112.12	Pipe	30 Inches	06/02/2017	2022
SR089	31st And Salt River N/A, Phoenix, AZ 85009	33.41	112.12	Spillway	11 Feet	06/02/2017	2022
ST002	33rd Pl And Pershing Ave N/A, Phoenix, AZ	33.61	-111.99	Spillway	33 Feet	09/14/2012	2017
ST003	33rd Pl And Captain Dreyfus Ave N/A, Phoenix, AZ	33.61	-111.99	Spillway	50 Feet	09/14/2012	2017
ST004	Sweetwater Ave And 35th St N/A, Phoenix, AZ	33.60	-111.99	Pipe	36 Inches	09/14/2012	2017
SW001	33rd Ave And Deer Valley Rd N/A, Phoenix, AZ	33.68	-111.87	Pipe	54 Inches	11/21/2012	2017
SW006	43rd Ave And Behrend Dr N/A, Phoenix, AZ	33.67	-111.85	Pipe	36 Inches	11/28/2012	2017
SW009	21041 N 33rd Ave, Phoenix, AZ	33.68	-111.87	Pipe	8 Feet	11/14/2012	2017
SW010	3201 W Salter Dr, Phoenix, AZ 85027	33.68	-111.87	Spillway	37 Feet	11/14/2012	2017
SW011	33rd Ave And Deer Valley Rd N/A, Phoenix, AZ	33.68	-111.87	Pipe	36 Inches	11/21/2012	2017
SW013	3143 W Quail Ave, Phoenix, AZ	33.68	-111.87	Spillway	22 Feet	11/07/2012	2017
SW014	3223 W Rose Garden Ln, Phoenix, AZ 85027	33.68	-111.87	Spillway	16 Feet	11/07/2012	2017
SW015	38th Ave And Beardsley Rd N/A, Phoenix, AZ	33.67	-111.86	Pipe	78 Inches	11/28/2012	2017
SW019	31st Dr And Deer Valley Rd N/A, Phoenix, AZ	33.68	-111.87	Pipe	36 Inches	11/21/2012	2017

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SW020	3173 W Matthew Dr, Phoenix, AZ 85027	33.68	-111.87	Spillway	18 Feet	11/07/2012	2017
SW021	3119 W Melinda Ln, Phoenix, AZ 85027	33.68	-111.87	Spillway	12 Feet	11/07/2012	2017
SW022	3135 W Salter Dr, Phoenix, AZ 85027	33.68	-111.87	Spillway	13 Feet	11/07/2012	2017
SW023	3135 W Abraham Ln, Phoenix, AZ 85027	33.68	-111.87	Spillway	22 Feet	11/07/2012	2017
SW024	3135 W Lone Cactus Dr, Phoenix, AZ 85027	33.68	-111.87	Spillway	24 Feet	11/07/2012	2017
SW025	3240 W Ross Ave, Phoenix, AZ 85027	33.68	-111.87	Spillway	17 Feet	01/22/2013	2018
SW026	31st Ave And Deer Valley Rd N/A, Phoenix, AZ	33.68	-111.87	Pipe	36 Inches	11/21/2012	2017
SW027	21064 W Beaubien N/A, Phoenix, AZ	33.68	-111.87	Spillway	14 Feet	11/14/2012	2017
SW028	3204 W Lone Cactus Dr, Phoenix, AZ 85027	33.68	-111.87	Spillway	10 Feet	11/14/2012	2017
SW029	22202 N 29th Dr, Phoenix, AZ	33.69	-111.88	Spillway	4 Feet	01/22/2013	2018
SW030	22220 N 27th Ave N/A, Phoenix, AZ	33.69	-111.88	Spillway	4 Feet	01/22/2013	2018
SW032	22125 Sands Dr N/A, Phoenix, AZ	33.69	-111.88	Pipe	53 Inches	01/22/2013	2018
SW037	35th Avenue And Mohawk Lane N/A, Phoenix, AZ	33.67	112.14	Pipe	48 Inches	02/11/2013	2018
SW038	North 26th Avenue And West Adobe Drive N/A, Phoeni	33.69	112.12	Spillway	4 Feet	02/11/2013	2018
TD002	4350 E Superior Ave, Phoenix, AZ	33.42	-110.01	Spillway	6 Feet	08/14/2012	2017
TD003	4302 E Superior Ave, Phoenix, AZ 85040	33.42	-111.01	Spillway	6 Feet	08/14/2012	2017
TD004	4116 E Superior Ave, Phoenix, AZ 85040	33.42	-111.01	Spillway	10 Feet	08/14/2012	2017
TD006	4048 E Superior Ave, Phoenix, AZ 85040	33.42	-110.01	Spillway	11 Feet	08/14/2012	2017
TD007	4031 E Superior Ave, Phoenix, AZ	33.42	-110.01	Spillway	6 Feet	08/14/2012	2017
TD008	3402 S 40th St, Phoenix, AZ 85040	33.42	-110.00	Pipe	36 Inches	08/14/2012	2017
TS002	11421 N Cave Creek Rd, Phoenix, AZ	33.59	-111.95	Pipe	48 Inches	09/13/2016	2021
TS007	1425 E Desert Cove Rd, Phoenix, AZ	33.58	-111.95	Pipe	36 Inches	09/13/2016	2021
TS008	14th St And Desert Cove Ave N/A, Phoenix, AZ	33.59	-111.95	Spillway	52 Feet	09/13/2016	2021
TS009	15th Way And Sahauro Dr. N/A, Phoenix, AZ	33.58	-111.95	Spillway	36 Inches	09/13/2016	2021
TS011	10th St. And Townley Ave. N/A, Phoenix, AZ	33.57	-111.94	Spillway	36 Feet	10/11/2016	2021
TS013	11th Street And Townley Ave. N/A, Phoenix, AZ	33.57	112.04	Box	8 Feet	10/18/2016	2021
TS014	Dunlap And 11th Street N/A, Phoenix, AZ	33.57	112.06	Spillway	72 Inches	10/18/2016	2021
TS018	1107 East Hatcher Rd. N/A, Phoenix, AZ	33.57	112.06	Spillway	45 Inches	10/19/2016	2021
TS025	1839 East Cinnabar Ave N/A, Phoenix, AZ	33.58	112.06	Spillway	9 Feet	10/19/2016	2021
UC001	Cave Creek Rd And Cave Butte Dam N/A, Phoenix, AZ	33.72	-111.99	Box	14 x 15 Feet	09/19/2013	2018
UC002	29221 N Cave Creek Rd, Phoenix, AZ	33.75	-110.01	Box	3 x 15 Feet	09/19/2013	2018

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ST = Sweetwater Tributary of IB
SW = Scatter Wash
TD = Tempe Drainage Channel
TS = Tenth Street Wash
UC = Upper Cave Creek Wash
ZT = Emile Zola Tributary of IB

Outfall ID	Site Address	Latitude	Longitude	Drain Type	Drain Size	Last Inspection	Target Inspection
UC003	Cave Creek Rd And Tatum Blvd N/A, Phoenix, AZ	33.76	-110.01	Box	4 x 14 Feet	09/19/2013	2018
UC004	40th St And Tatum Blvd N/A, Phoenix, AZ	33.76	-110.00	Box	4 x 8 Feet	09/19/2013	2018
UC005	40th St And Cascalote Dr N/A, Phoenix, AZ	33.76	-110.00	Box	4 x 9 Feet	09/19/2013	2018
UC006	40th St And Montgomery Rd N/A, Phoenix, AZ	33.76	-110.00	Box	3 x 10 Feet	09/19/2013	2018
UC007	40th St And Lone Mountain Rd N/A, Phoenix, AZ	33.77	-110.00	Box	4 x 8 Feet	09/19/2013	2018
UC008	Black Mountain Pkwy N/A, Phoenix, AZ	33.78	-110.01	Box	4 x 16 Feet	09/19/2013	2018
ZT001	33rd Pl And Sharon Dr N/A, Phoenix, AZ	33.61	-111.99	Spillway	18 Feet	10/05/2016	2021
ZT002	33rd Pl And Emile Zola Ave N/A, Phoenix, AZ	33.61	-111.99	Spillway	46 Feet	10/05/2016	2021

Outfall Identification Legend

AC = Arizona Canal Diversion Canal
AF = Agua Fria (West Hwy loop 101)
AW = Ahwatukee
AZ = Arizona Canal
CC = Cave Creek Wash
CAP = Central Arizona Project
EF = East Fork of the Cave Creek
GC = Grand Canal
IB = Indian Bend Wash
LC = Laveen Area Conveyance Channel
MV = Moon Valley Wash
NM = North Mountain Wash
OC = Old Cross Cut Canal
PD = Papago Diversion Canal
PV = Paradise Valley
RID = Roosevelt Irrigation District
SC = Skunk Creek Wash
SR = Salt River
ST = Sweetwater Tributary of IB
SW = Scatter Wash
TD = Tempe Drainage Channel
TS = Tenth Street Wash
UC = Upper Cave Creek Wash
ZT = Emile Zola Tributary of IB

List of Changes to the Major Outfall Inventory

New and Removed Outfalls - 2016/17

Outfall #	NEW	Removed	Date
CHARTER OAK CO001	*		12/13/2016
CO002	*		12/13/2016
CO003	*		12/13/2016
CO004	*		12/13/2016
CO005	*		12/13/2016
CO006	*		12/13/2016
CO007	*		12/14/2016
CO008	*		12/14/2016
CO009	*		12/14/2016
CO010	*		12/14/2016
CO011	*		12/14/2016
CO012	*		12/14/2016
CO013	*		12/14/2016
CO014	*		12/14/2016
CO015	*		12/14/2016
CO016	*		12/14/2016
CO017	*		12/14/2016
CO018	*		12/14/2016
CO019	*		12/15/2016
CO020	*		12/15/2016
CO021	*		12/15/2016
SKUNK CREEK SC067	*		08/16/2016
SC068	*		08/30/2016
SC069	*		08/30/2016
TENTH STREET TS009	*		09/13/2016
TS010	*		10/11/2016
TS011	*		10/11/2016
TS012	*		10/11/2016
TS013	*		10/18/2016
TS014	*		10/18/2016
TS015	*		10/19/2016
TS016	*		10/19/2016
TS017	*		10/19/2016
TS018	*		10/19/2016
TS019	*		10/19/2016
TS020	*		10/19/2016
TS021	*		10/19/2016
TS022	*		10/19/2016
TS023	*		10/19/2016
TS024	*		10/19/2016
TS025	*		10/19/2016
LAVEEN CHANNEL LC022	*		09/15/2016
LC023	*		09/15/2016
LC024	*		09/20/2016

New and Removed Outfalls - 2016/17

Outfall #	NEW	Removed	Date
LC025	*		09/20/2016
LC026	*		09/20/2016
LC027	*		09/27/2016
LC028	*		09/28/2016
LC011		X	09/28/2016
LC012		X	09/28/2016
LC013		X	09/28/2016
LC014		X	09/28/2016
AC/DC037		X	03/01/2017
AC/DC038		X	03/01/2017
AC/DC040		X	03/01/2017
AC/DC041		X	03/01/2017
AC/DC087		X	02/09/2017
AC/DC088		X	02/08/2017
AC/DC089		X	02/08/2017
AC/DC090		X	02/08/2017
AC/DC091		X	02/08/2017
AC/DC092		X	02/09/2017
AC/DC093		X	02/09/2017
AC/DC094		X	02/09/2017
AC/DC098		X	02/09/2017
AC/DC099		X	02/08/2017
AC/DC100		X	02/09/2017
AC/DC101		X	02/09/2017
AC/DC102		X	02/08/2017
AC/DC103		X	02/08/2017
AC/DC105		X	02/08/2017
AC/DC106		X	02/08/2017
AC/DC107		X	02/08/2017
AC/DC108		X	02/08/2017
AC/DC109		X	02/09/2017
AC/DC110		X	02/09/2017
AC/DC164		X	03/01/2017
AC/DC167		X	03/01/2017
AC/DC168		X	03/01/2017
AC/DC170		X	03/01/2017
AC/DC172		X	03/01/2017
AC/DC174		X	03/01/2017
AC/DC175		X	03/01/2017
AC/DC185		X	03/01/2017
AC/DC187		X	03/01/2017
NEW MOUNTAIN NM001		X	12/20/2016
SALT RIVER SR088	*		06/02/2017
SR089	*		06/02/2017

Laboratory Reports

New or Revised
Public Outreach Documents
Including Public Awareness Survey

Will you help name me?

The stormwater mascot needs a name!
First prize is a $25 gift certificate to Lowes and runner up gets $15 to Taco Bell!

Enter your suggestion in our survey, or fill out a slip in the cafeteria. Voting ends at the end of the day July 20th!

Take the leap, Phoenix! Clean water starts with YOU!

Water Harvest` g

101

Green Gardening Group invites you to a Green Bag Event

Guest Speaker:

Ryan Wood

Watershed Management

ENVIRONMENTAL COMPLIANCE WORKSHOP

WHEN

November 16
8am–3pm
*(Doors open at 7:30am)

WHERE

Public Transit Bldg
302 N. 1st Ave, 6th Fl

WHO

Project managers, planners, supervisors, managers

FEATURING · Stormwater · Archaeology · Dust Control · Historic Preservation · 404 and Wildlife · P2

- How can I follow environmental regulations while doing my job?
- What's new? What can I expect in the world of environmental regulations in the future?
- Where can I turn for help?

GET THE ANSWERS TO THESE QUESTIONS AND MORE!

Sign up to attend on eCHRIS, Course Code EP1000

Questions? Call or email Tricia Balluff, Office of Environmental Programs, 602-534-1775, tricia.balluff@phoenix.gov

SIGN UP FAST! SPACE IS LIMITED

OFFICE OF ENVIRONMENTAL PROGRAMS

City of Phoenix FIND OUT FIRST!

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In This Issue

- Biogas Groundbreaking
- WSD Integrity Line
- Meet Richard Madrid
- Hopper 's Big Reveal
- What Are Pathogens

PHX WATER SMART

WATER COOLER

A Monthly Publication for Phoenix Water Employees February 2017

91st Avenue Biogas Facility Groundbreaking

The Biogas project is expected to produce $1.2 million in annual revenue, to be shared among the cities that jointly own the 91st Avenue Wastewater Treatment Plant.

Phoenix and Ameresco hosted a groundbreaking ceremony February 2 for the Largest Wastewater Treatment Biogas Facility in the U.S. The event kicked off a multimillion-dollar wastewater treatment biogas utilization project at the 91st Avenue Wastewater Treatment Plant. Attendees included Phoenix Vice Mayor Kate Gallego and Glendale Mayor Jerry Weiers.

The gas is a result of the natural breakdown of organic matter in the wastewater treatment process. Currently, a small portion of the gas produced is burned as boiler fuel in the plant, but most is burned off using flares.

Through this new effort, 600,000 cubic feet of gas will be treated and transferred to a nearby commercial gas pipeline, where it will be sold on the open market as green energy. Once operational, it is expected to be the largest wastewater treatment biogas-to-renewable natural gas facility of its kind in the United States.

Building Our Sustainable Water Future!

In January, city representatives attended the 2017 AZ Water Research Committee "Building Our Sustainable Water Future" workshop. Staff presented "City of Phoenix Water Delivery System Alternative for the Central Arizona Canal Dry-up," discussing the overall water modeling approach of the city preparing for future Central Arizona Project (CAP) canal dry-up scenario.

WSD Director Kathryn Sorensen joined Tucson Water Director Tim Thomure & CAP Manager Chuck Cullom, who participated in the panel discussion "When the Colorado Dries Up."

WSD Director Kathryn Sorensen was joined by Tucson Water Director Tim Thomure and CAP Manager Chuck Cullom, who participated the panel discussion "When the Colorado Dries Up." Kathryn talked about the city's measures on water conservation, partnering with Tucson on ground water storage, and future water supply challenges.

WSD's Internal Integrity Line

If you observe or suspect anything out of the norm in the workplace, you should report it to your supervisor, department head or HR liaison immediately.

Water Services Department has a process to report fraud and related issues via the WSD "Integrity Line" at (602) 534-3066. This line is completely confidential.

Employees can also send an email at aud.integrity.line@phoenix.gov.

Richard Madrid really enjoys his job responsibilities as a Utility Foreman because he's out in the field interacting a lot with customers and contractors on a daily basis. He's been with the city since 2004.

Meet Richard B. Madrid

Richard B. Madrid III works for the city of Phoenix Water Services Department as a Utility Foreman and has been a city employee since 2004; all but one year have been spent in the Water Distribution Section.

"I have worked all three shifts including weekends in Water Distribution which is a 24/7 operation," said Richard. "I have worked my way up from a Utility Technician Trainee to my current position as a Utility Foreman."

In his current position as a Utility Foreman at the Water Distribution Campbell Yard, Richard oversees and schedules all fire hydrant replacements throughout the city. The city has more than 53,000 fire hydrants throughout the valley!

Q&A:

* Favorite app on phone: Instagram
* Favorite Movie popcorn topping: Jalapenos
* Favorite Phoenix restaurant: Comedor Guadalajara
* TV series he/she wishes was still on: "Sons of Anarchy"

Keep Your City Badge Safe

What happens if you lose your WSD employee ID? Most of us don't think about our badges until they either stop working or worse – we can't find them! It does happen, but the important thing is that you know what to do. The *first* to do is immediately contact the Security Management Unit (SMU) at 602-388-5244.

Why? Because the last thing you want is that someone else finds your ID and pretends to be you. Every department has a procedure for reporting lost or stolen badges after hours; it's a better idea to have that information before it's needed! The *next* step is to arrange to get a new badge which requires completing and having an approved (signed by your supervisor) City of Phoenix Badge Data Form. This form must be brought with you. If your badge is stolen, your department will need to file a police report and the police department will generate a report number for SMU. Be safe and keep you city ID safe too.

PHX WATER SMART

Hey everyone, I'm Stormwater's new mascot, "Hopper." Thanks to everyone who participated in the stormwater mascot naming contest last Fall. I love my name!

So, as a mascot my role is to help with stormwater pollution prevention outreach. Here's my profile:

Birthday: June 15

Home: Salt River Bed

Behavior: Sonoran Desert toad who loves to ride storm flows, yeehaw!

Vent to Snout Length: 7 inches

Leg Length: 8 inches

Favorite Foods: Insects, centipedes, spiders, lizards, mice, pepperoni pizza

Hobbies: Swimming, hip-hop, playing in the rain, storm chasing

Favorite TV Station: PHX Channel 11

Favorite Website: phoenix.gov/stormwater

Favorite Movie: " The Muppet Movie"

Favorite Actor: Miss Piggy

Favorite Vacation Spot: Rio Salado and Tres Wetlands

Favorite Color: Mud

Lifetime Goals: Prevent pollution from affecting amphibian habitat

Most Memorable Moment: The first time I set foot on land

Accomplishment: Runner-up '02 Calaveras County Fair Frog Jump

Favorite Song: "The Hippopotamus"

Favorite Book: "The Wind in the Willows"

Email me at ask.water@phoenix.gov.

Feel free to use PHX Water Smart and Hopper logos in your Outlook signature located at insidephx/depts/wsd.

PHX WATER SMART

Protect Your Portable

All city electronic portables contain sensitive information. Laptops and handheld computers pose special physical security risks. A thief can easily steal the entire computer, including any data stored on its disk as well as network logon passwords. If you use a laptop at work, make sure you log off at the end of the day and secure it when you leave. Handhelds can be locked in a drawer or safe or slipped into a pocket and carried on your person when you leave the area.

Full disk encryption, biometric readers, and software that "phones home" if the stolen laptop connects to the Internet can supplement physical precautions. If unsure about what you have, contact IT and give them your city ID number.

And always remember, lock up as well as lock down!

Ready to Respond?

Want to know how to respond to emergency situations? Community Emergency Response Training (CERT) includes disaster preparedness, disaster medical operations, light search, and rescue operations, terrorism awareness , etc. Details:

Feb. 13 & 14: 8:30 a.m.-4:30 p.m.

Feb. 15: 8:30 a.m.-2 p.m.

Phoenix Sky Harbor Airport, Fire Station 19

Parking validation available in T3 parking garage. Register through eCHRIS using course code AVCERT or email Don Peyton.

Supersized Buses are Here!

Great news! New articulated, or "artic," buses are now servicing Phoenix's busiest routes, with more to come in early 2017.

The 60-foot buses are made of two sections linked by a joint, or turntable, that allows a longer length for higher passenger capacity.

Phoenix Public Transit has three new artic buses currently serving both local and RAPID routes, with 25 more due to arrive in early 2017.

The Public Transit department replaces aging buses each year to ensure the fleet remains reliable and efficient for the riders who count on it each day.

Visit us at phoenix.gov/publictransit for the latest news.

Save The Date

Fix a Leak Week

Leaks Can Run, but They Can't Hide! Are YOU ready to chase down leaks?

Household leaks can waste more than one trillion gallons of water annually nationwide, so each year you and your family and friends should hunt down the drips during Fix a Leak Week.

Mark your calendars for Fix a Leak Week which will take place **March 20 through 26, 2017!**

Remember, you can find and fix leaks inside and outside your home to save valuable water and money all year long.

Connect on Facebook & Twitter at home to get all the latest news & events!

Blood-Borne Pathogens

Blood-borne pathogens are micro-organisms such as viruses or bacteria that are carried in blood and can be transmitted from one person to another. The main pathogens are Human Immunodeficiency Virus and Hepatitis B. Blood-borne pathogens can be passed through broken skin, eyes, mouth, other mucous membranes, non-intact skin, and open wounds. If employees come into contact with blood, there is a chance that such pathogens could be passed.

Not only can pathogens be found in the blood, they can also be found in other body fluids and tissues known as Other Potentially Infectious Materials (OPIM). Any fluid that may have come from a human should be considered infectious. Use caution whenever there is the potential for exposure. WSD considers all blood and bodily fluids as being potentially infectious materials. Employees must ensure they are properly protected. **For more information, visit** *insidephx/depts/wsd/humanresources/safety.*

Contributed by Safety Analyst II Ryan Flemings

Sign Up to Run!

Visit InsidePhx WSD to view new Conservation PSAs!

New Public Records Request Procedures & Development Policy

The City Clerk's Office recently published a new public records request web form. All customers must now submit this form to ensure that we capture all public records request activity and are able to inform all stakeholders.

The form can be reached directly here: https://www.phoenix.gov/cityclerk/public-records-request.

WSD has developed a new Water Services Public Records Request Policy to better coincide with the City Clerk's new processes and to better serve our customers. Please review and share this policy and procedure.

The policy is located on the Department's HR SharePoint page under HR Documents.

Anniversaries, Promotions, New Employees!

5 Years
Ella Boyd
Christopher Griffin, Sr.
Tarshela Heard
Andrea Lopez
Joe Tovar

10 Years
Jeffrey Cowee
Chris Johnson
Maluno Kindred
Mark Morgan

15 Years
Olivia Aguilera
Shawn Johnson
Frank Montano
Michael Stewart
Isaias Vargas
Xiaomei Yu

20 Years
Melissa Stewart

Promotions
Jamie Campbell
Javier Chavez
Chadwick Graham
Christopher Guzman
Scott Henseleit
Jonathan Heyland
Roman Lopez
Jesus Mendoza
Debi Mitchell
Jesus Rodriguez
Joseph Rua

New Employees
Troy Anderson
Matthew Balph
Gina Bolger
Nathan Chavez
Christina DuBois
Jesus Hernandez
Roy Heyl
Jane Huff
Audrey Jameson
Joseph Jeziorski
Yasmine Johnson
Richard Lindmar
Stacy McKinney
Benjamin Oglesby
Mark Ortiz
Navasie Roscoe

Contributed by Patricia Albanese, HR

Have an idea for The Water Cooler? Email victoria.welch@phoenix.gov

PHX WATER SMART

Phoenix Water Festival @ Bret R Tarver School

Volunteer with us

Join us for the City of Phoenix Water Festival, an educational field day event that instills a deeper understanding of water in the earth system and Arizona's water resources through:

- Celebrating science and water stewardship
- Hands-on learning activities for students
- Bringing City of Phoenix staff to demonstrate to children career paths and opportunities within Science, Technology, Engineering, and Math (STEM) fields

You can teach a lesson, help set up and breakdown, escort student classes, register volunteers, coordinate learning station activities, and more!

We need *YOU!*

We'll train you on the four different learning stations so you can feel confident when you teach the students all about water.

Then, enjoy the actual Water Festival day on Tuesday, March 21, 2017.

Estimated Attendance
400 third and fourth-grade students.

Volunteer Training Date

Please plan on attending one of two sessions on Friday, March 10, 2017 at City Hall, 10th Floor.:

- **10 a.m. to 12 p.m. OR**
- **2:00 p.m. to 4:00 p.m.**

Register to volunteer by e-mailing tina.sleeper@phoenix.gov.

Water Festival Date

Tuesday, March 21, 2017
6:30 a.m. to 11:30 a.m.
Bret Tarver School
4308 N 51st Ave,
Phoenix, AZ 85031

Clear Channel Outdoor – Hopper Campaign (April 2017)

Monsoon Season Is Coming!

What Can You Do to Prevent Stormwater Pollution?

Did you know that the summer monsoon season begins on June 15 and lasts until September 30? That is longer than your summer break.

When rainwater falls to the earth, some of it soaks into the soil and some flows over the ground's surface. The rain water that does not soak in is called stormwater runoff. Rain that falls on your roof and driveway cannot soak into the soil and instead, it runs off across the pavement and onto the road. As it flows, if there are any pollutants, like chemicals, or oil, or dog poo, the pollutant goes with the stormwater runoff. Keep in mind that here in the desert the runoff goes directly to a wash, a basin, a park, or a dry riverbed. This is because there is a storm sewer system that captures all that runoff and sends it to the lowest point in the valley (the Salt River, and eventually the Gila River).

Hopper, stormwater's mascot, would like your help in recognizing pollutants and identifying things you can do to help keep runoff clean. Here we go!

Circle all the items above that do NOT belong in the stormwater stream!

Match the pollutant with the best practice.

Solution

Pollution

1. Foam Cup
2. Oil stain or leaking vehicle
3. Empty water/soda bottle
4. Unused herbicide or household chemical
5. Residential car washing
6. Pool draining to street
7. Pet waste
8. Leaves

Solution

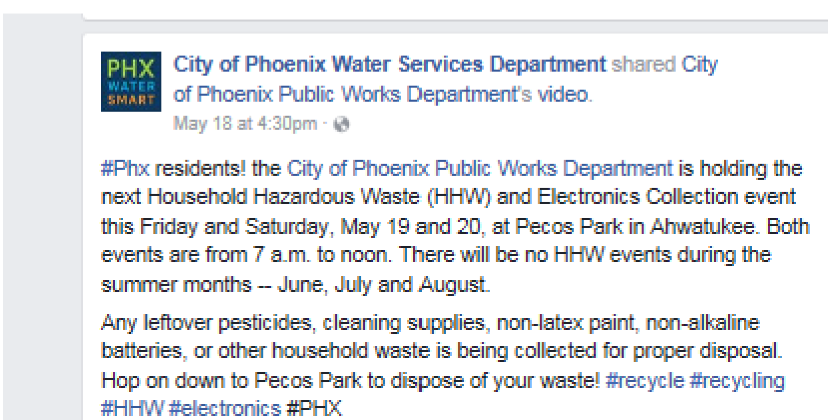
PHX WATER SMART

City of Phoenix
WATER SERVICES DEPARTMENT
Quality Reliability Value

Answers: 1) Garbage bin. 2) Kitty litter, broom and bag. 3) Recycle bin. 4) Household hazardous waste collection. 5) Comercial car wash. 6) Pool draining to sanitary, or yard. 7) Bag—tied at top. 8) Rake and large bag.

phoenix.gov/stormwater

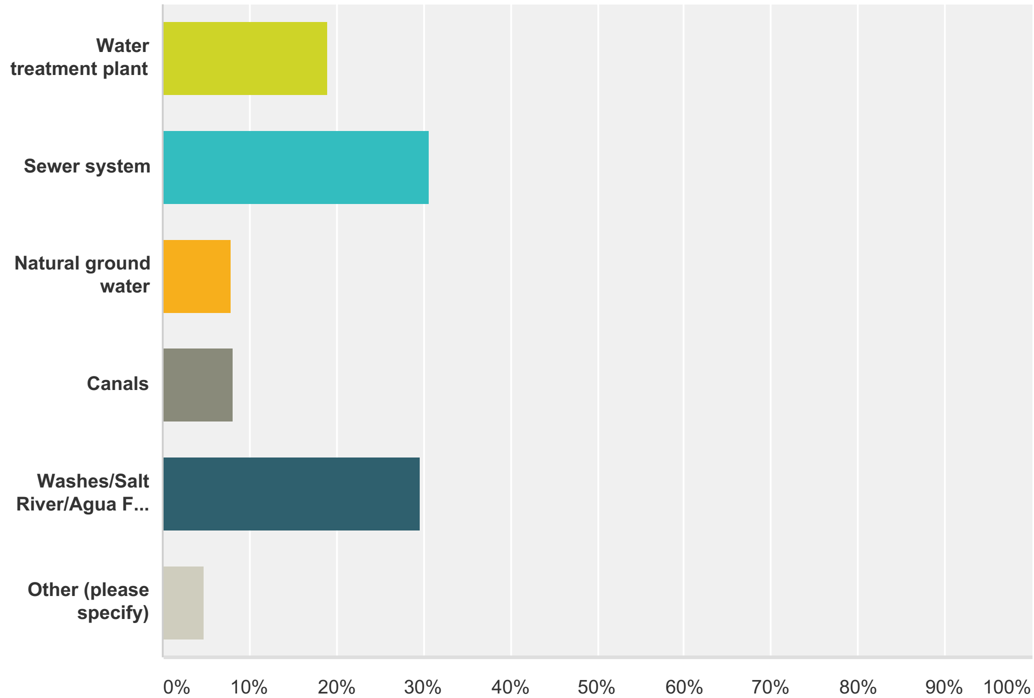
Example Facebook Posts



City of Phoenix
Public Awareness Survey

Q1 Where does water that flows into storm drains end up?

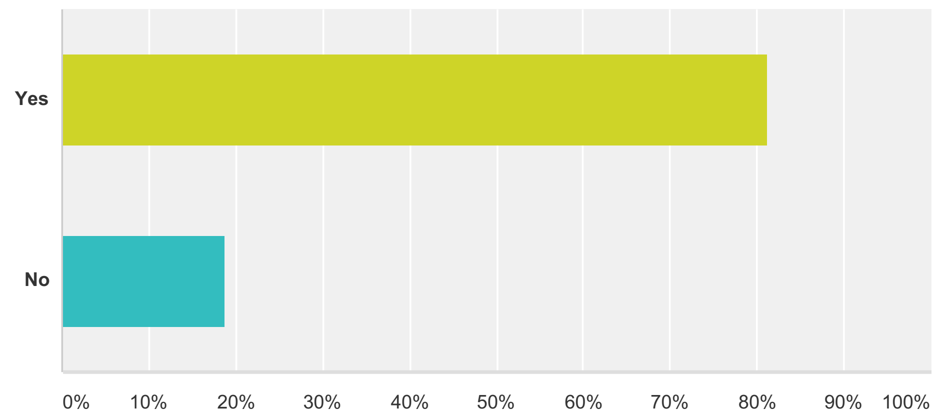
Answered: 791 Skipped: 10



Answer Choices	Responses	
Water treatment plant	**18.96%**	150
Sewer system	**30.59%**	242
Natural ground water	**7.84%**	62
Canals	**8.22%**	65
Washes/Salt River/Agua Fria River	**29.58%**	234
Other (please specify)	**4.80%**	38
Total		**791**

Q2 Do you think we have a problem in the Valley with pollution entering storm drains?

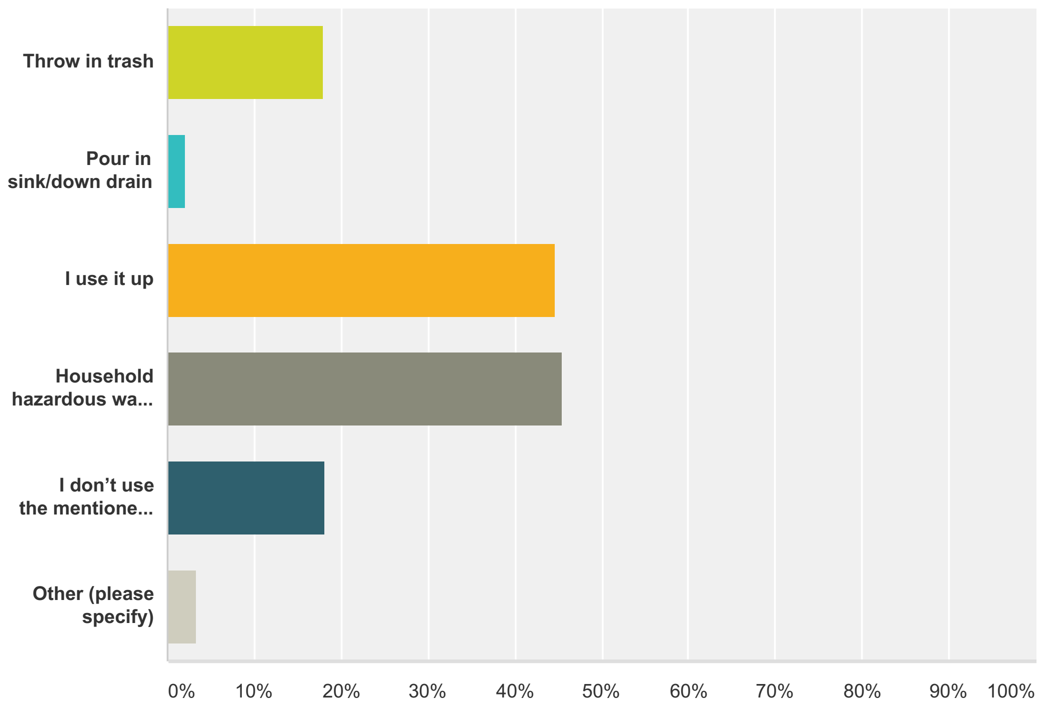
Answered: 785 Skipped: 16



Answer Choices	Responses	
Yes	**81.27%**	638
No	**18.73%**	147
Total		**785**

Q3 How do you currently dispose of things such as household and garden chemicals or pesticides? Select all applicable:

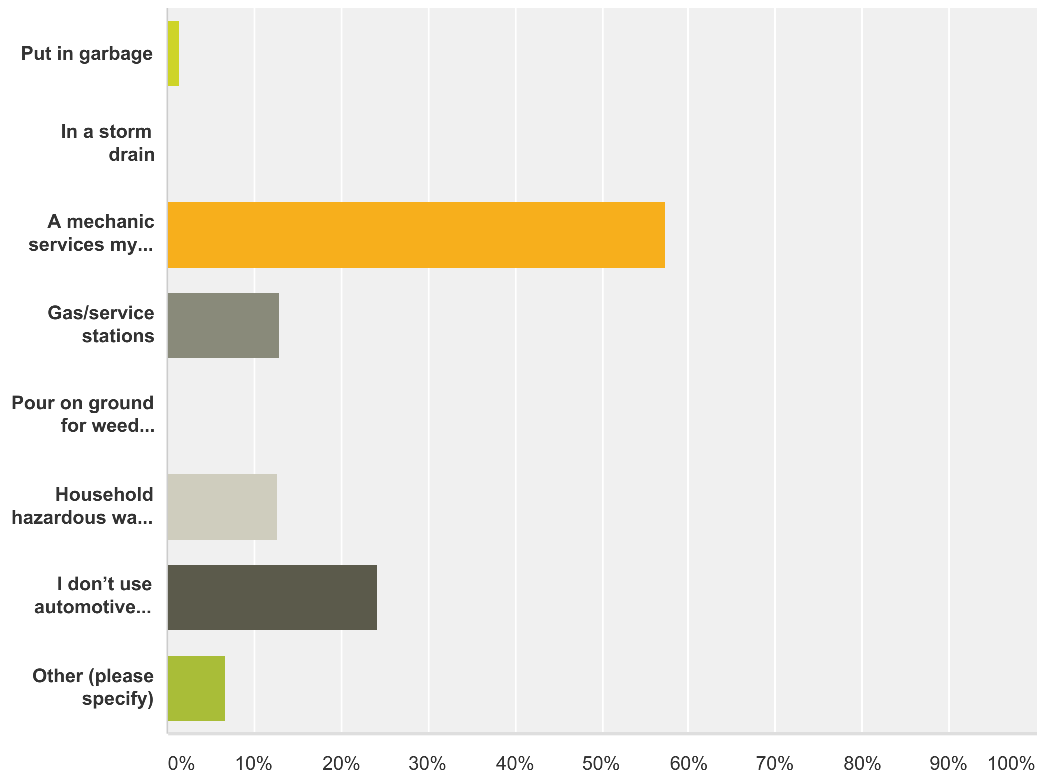
Answered: 799 Skipped: 2



Answer Choices	Responses	
Throw in trash	**18.02%**	144
Pour in sink/down drain	**2.13%**	17
I use it up	**44.68%**	357
Household hazardous waste collection day	**45.56%**	364
I don't use the mentioned chemicals	**18.15%**	145
Other (please specify)	**3.25%**	26
Total Respondents: 799		

Q4 How do you dispose of automotive fluids (e.g., oil, transmission fluid)? Select all applicable:

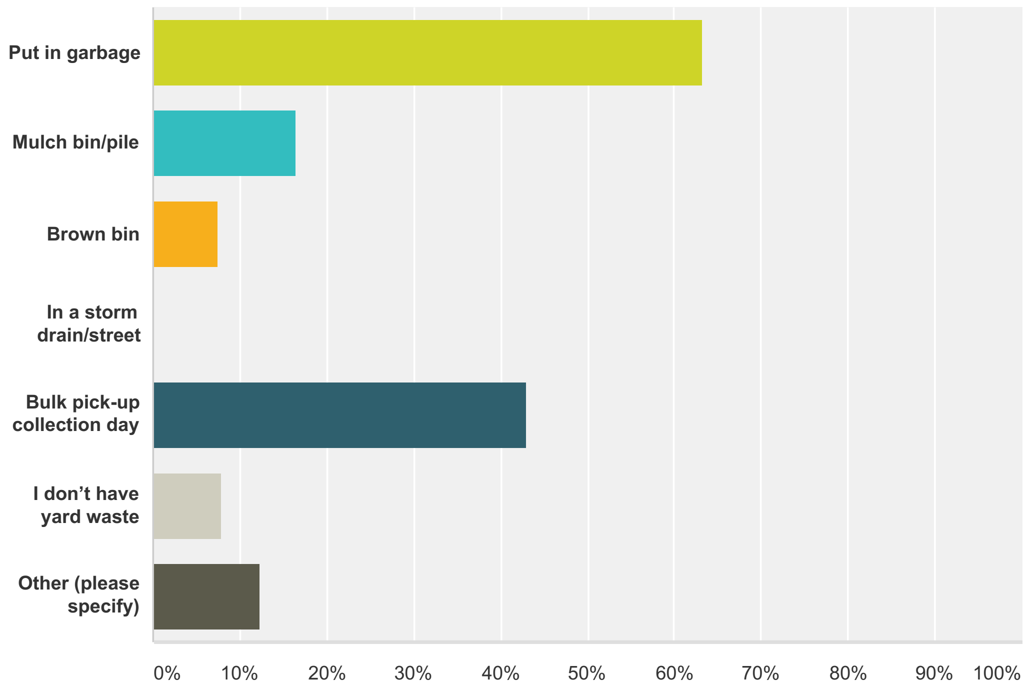
Answered: 796 Skipped: 5



Answer Choices	Responses	
Put in garbage	1.51%	12
In a storm drain	0.13%	1
A mechanic services my vehicle	57.41%	457
Gas/service stations	12.94%	103
Pour on ground for weed control	0.00%	0
Household hazardous waste collection day	12.81%	102
I don't use automotive fluids	24.25%	193
Other (please specify)	6.66%	53
Total Respondents: 796		

Q5 How do you dispose of yard waste? Select all applicable:

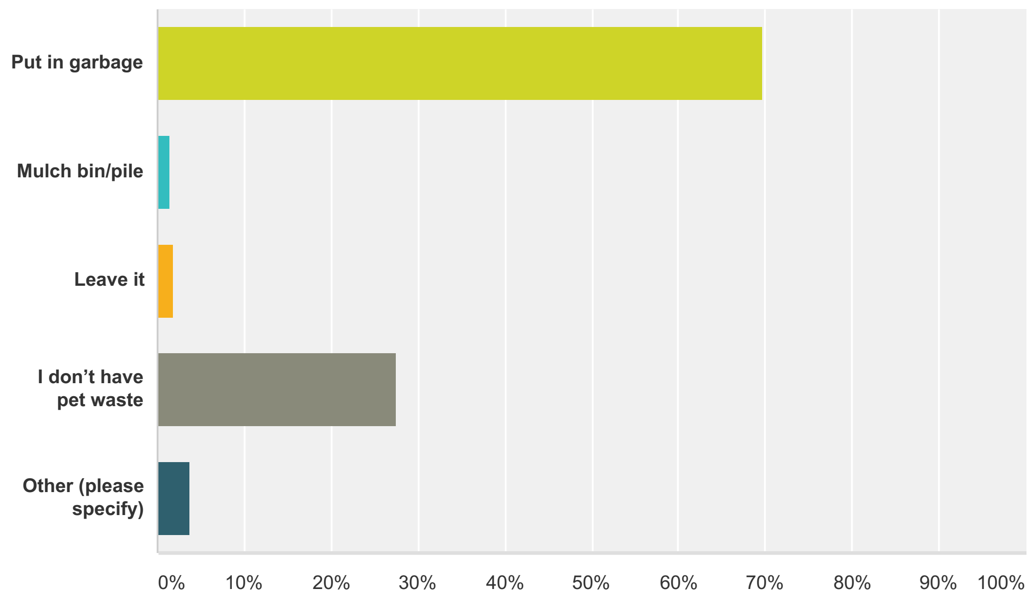
Answered: 798 Skipped: 3



Answer Choices	Responses	
Put in garbage	**63.16%**	504
Mulch bin/pile	**16.42%**	131
Brown bin	**7.52%**	60
In a storm drain/street	**0.13%**	1
Bulk pick-up collection day	**42.98%**	343
I don't have yard waste	**8.02%**	64
Other (please specify)	**12.28%**	98
Total Respondents: 798		

Q6 How do you dispose of pet waste? Select all applicable:

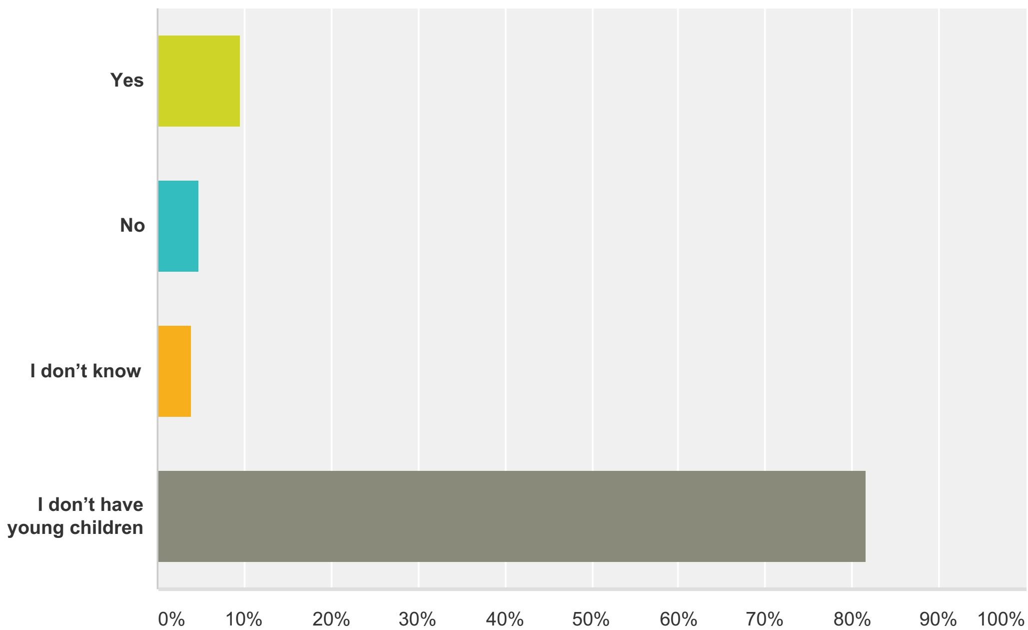
Answered: 797 Skipped: 4



Answer Choices	Responses	
Put in garbage	**69.76%**	556
Mulch bin/pile	**1.38%**	11
Leave it	**1.88%**	15
I don't have pet waste	**27.60%**	220
Other (please specify)	**3.76%**	30
Total Respondents: 797		

Q7 Do your younger children understand what should or should not go in a storm drain?

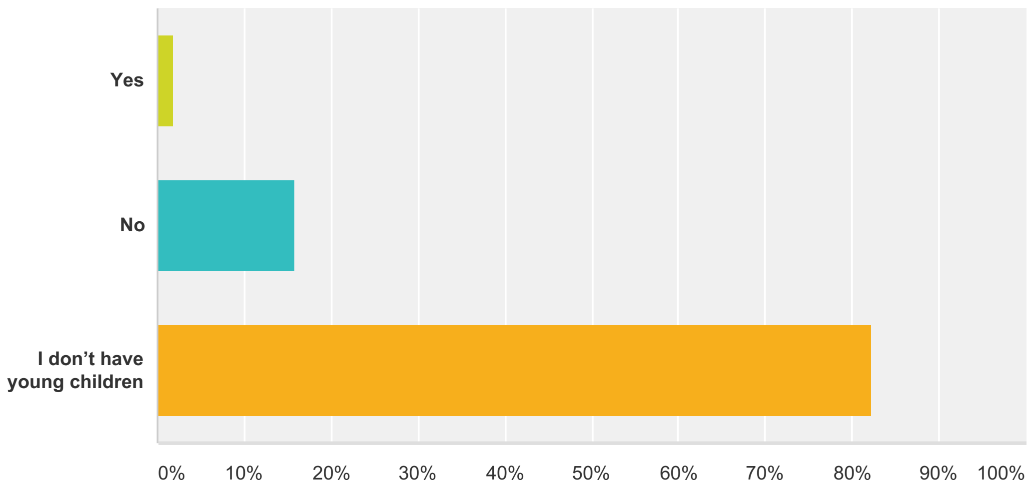
Answered: 796 Skipped: 5



Answer Choices	Responses	
Yes	**9.55%**	76
No	**4.90%**	39
I don't know	**4.02%**	32
I don't have young children	**81.53%**	649
Total		**796**

Q8 Have your young children mentioned, or brought home any materials from school related to this topic?

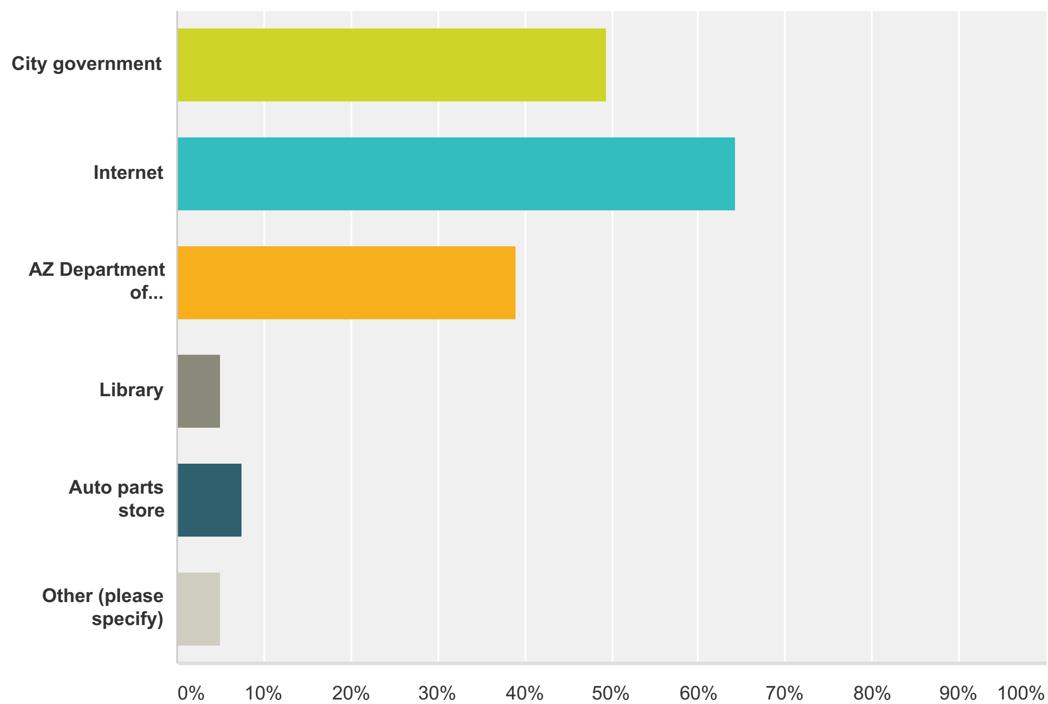
Answered: 799 Skipped: 2



Answer Choices	Responses	
Yes	**1.88%**	15
No	**15.77%**	126
I don’t have young children	**82.35%**	658
Total		**799**

Q9 If you wanted to learn how to dispose of things like household chemicals, automotive fluids, lawn and garden chemicals, and pet wastes, where would you go? Select all applicable:

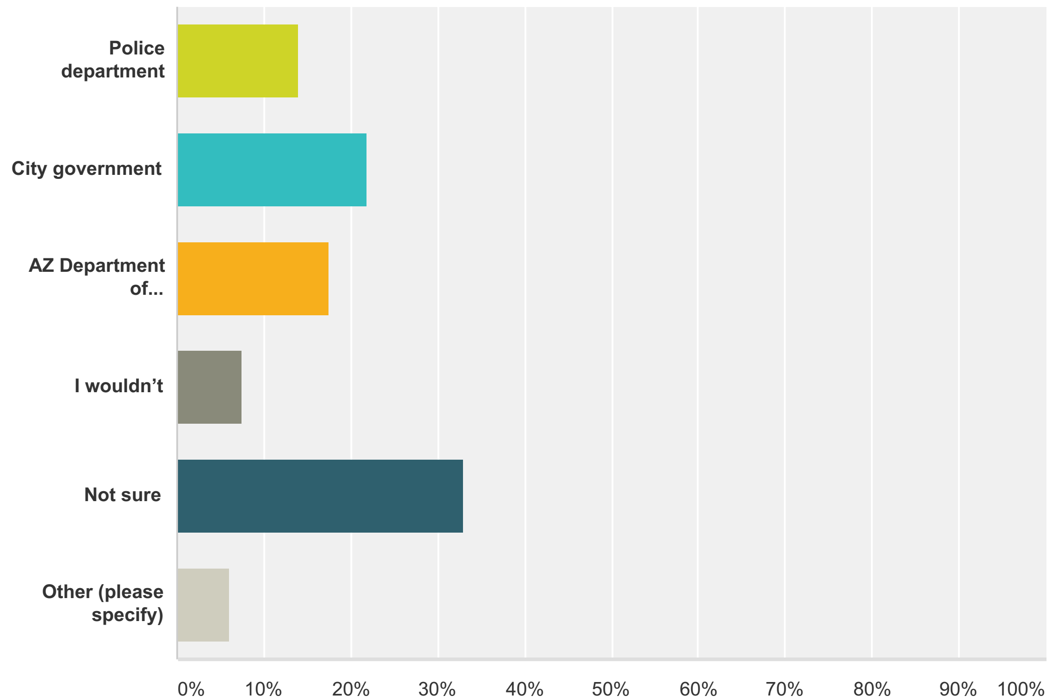
Answered: 800 Skipped: 1



Answer Choices	Responses	
City government	**49.50%**	396
Internet	**64.38%**	515
AZ Department of Environmental Quality	**39.13%**	313
Library	**5.00%**	40
Auto parts store	**7.50%**	60
Other (please specify)	**5.00%**	40
Total Respondents: 800		

Q10 If you saw someone dumping trash or chemicals, automotive fluids, lawn and garden chemicals, and pet wastes, where would you go for information?

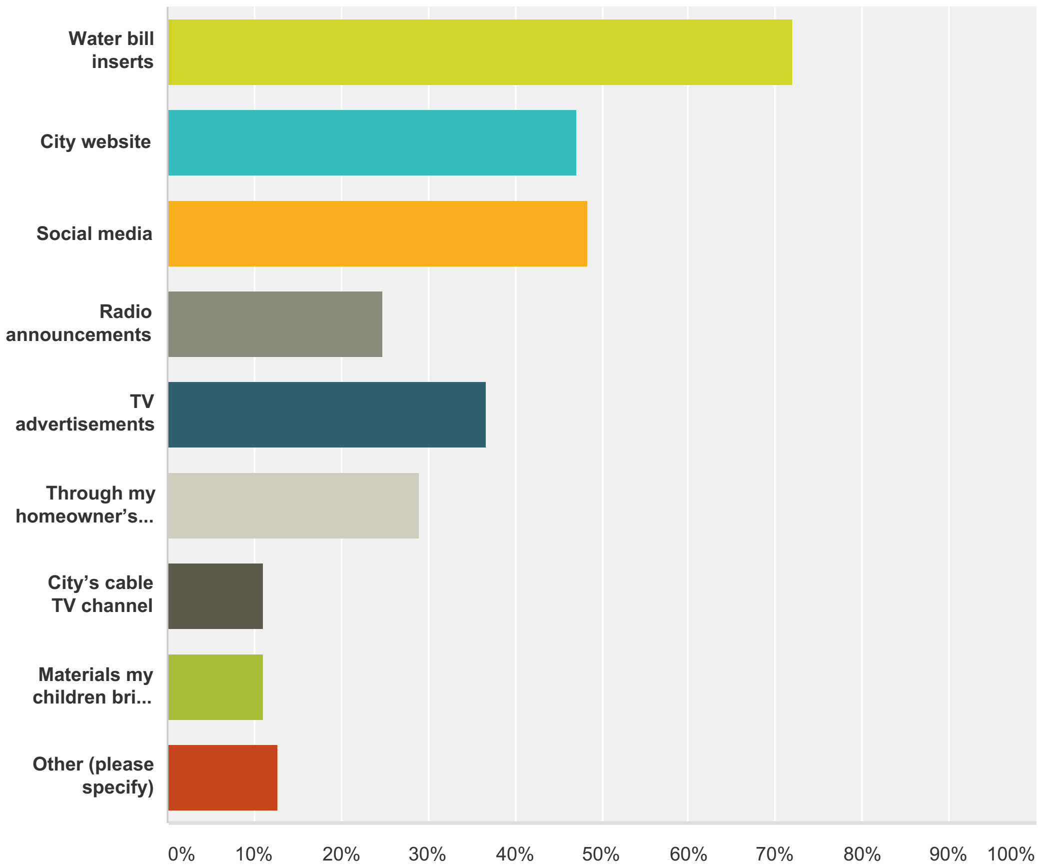
Answered: 796 Skipped: 5



Answer Choices	Responses	
Police department	**13.94%**	111
City government	**21.86%**	174
AZ Department of Environmental Quality	**17.59%**	140
I wouldn't	**7.54%**	60
Not sure	**32.91%**	262
Other (please specify)	**6.16%**	49
Total		**796**

Q11 The City wants the community to learn more about stormwater and tips to prevent pollution. What is a good way to provide information to you? Select all applicable:

Answered: 799 Skipped: 2



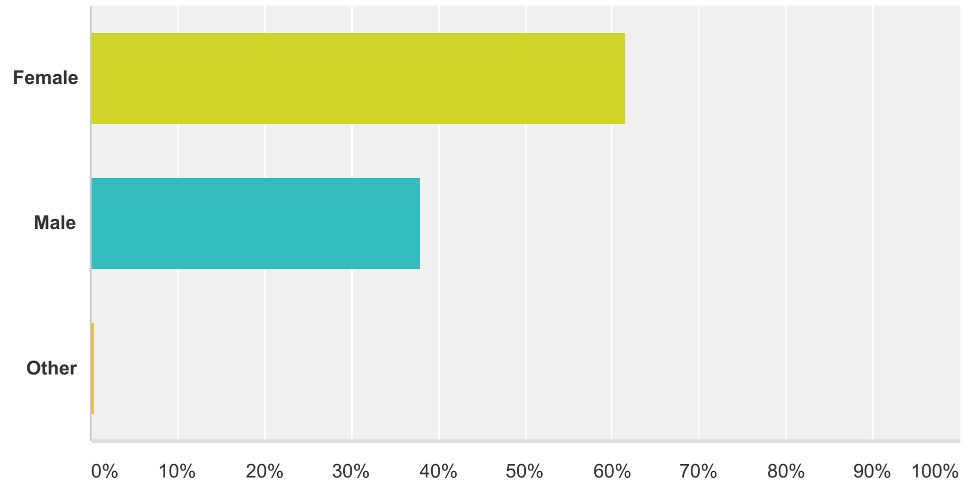
Answer Choices	Responses	
Water bill inserts	**71.96%**	575
City website	**47.18%**	377
Social media	**48.44%**	387
Radio announcements	**24.91%**	199
TV advertisements	**36.80%**	294
Through my homeowner's association	**29.04%**	232
City's cable TV channel	**11.01%**	88
Materials my children bring home from school	**11.01%**	88
Other (please specify)	**12.64%**	101
Total Respondents: 799		

Q12 Is there anything else you want to tell us about storm drains and their use?

Answered: 199 Skipped: 602

Q13 Your gender:

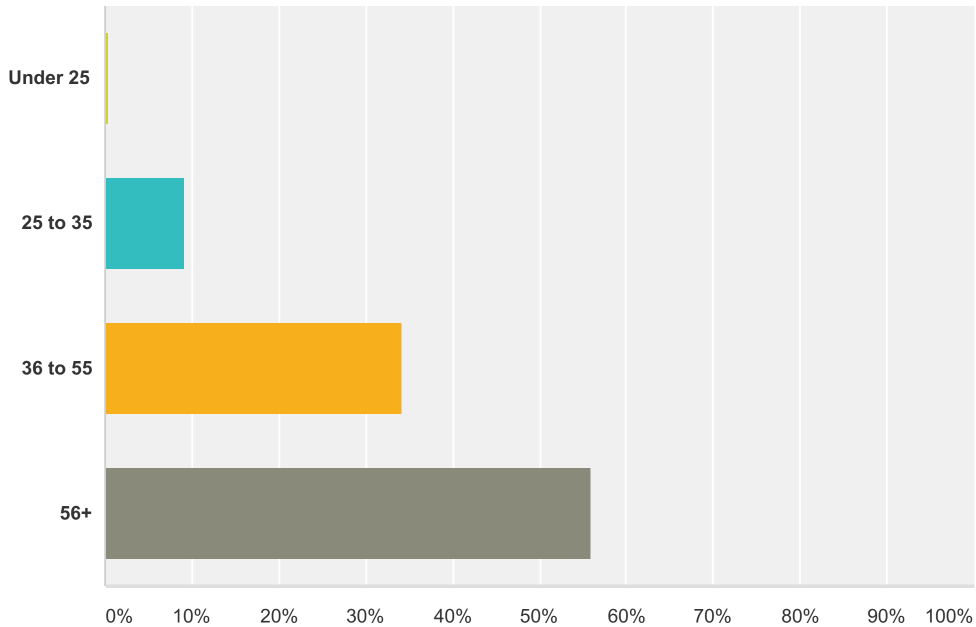
Answered: 793 Skipped: 8



Answer Choices	Responses	
Female	**61.54%**	488
Male	**37.96%**	301
Other	**0.50%**	4
Total		**793**

Q14 Your age group:

Answered: 793 Skipped: 8



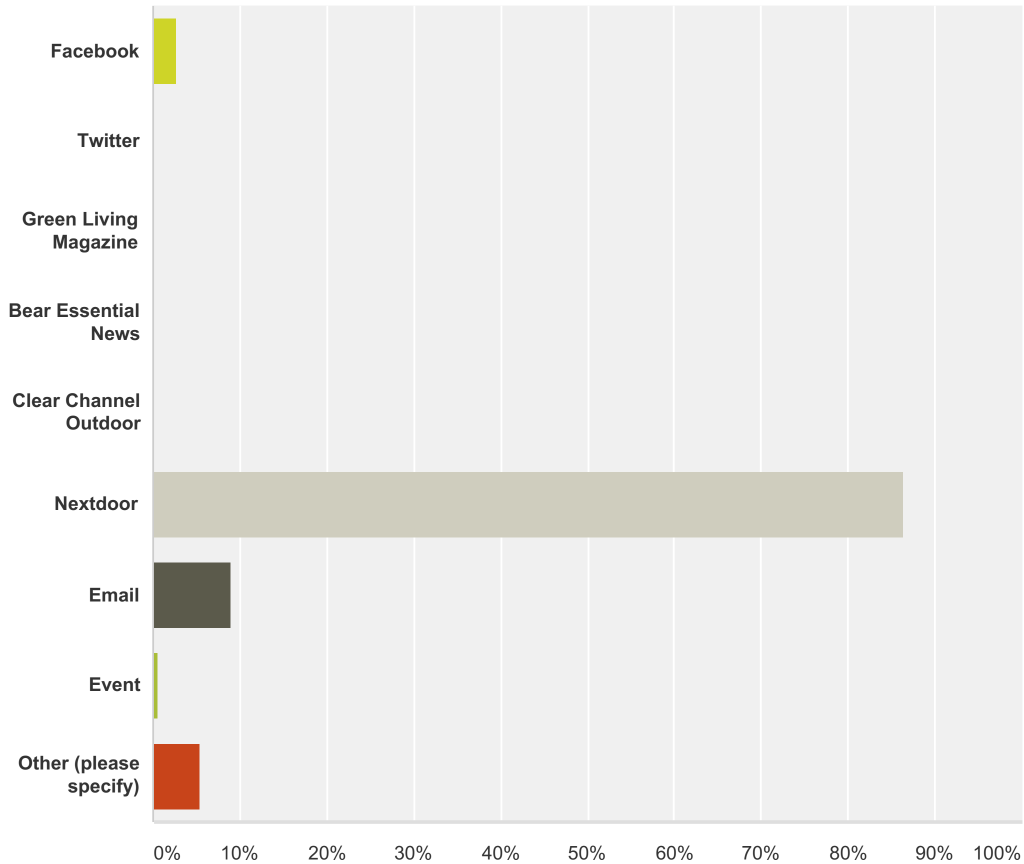
Answer Choices	Responses	
Under 25	**0.50%**	4
25 to 35	**9.21%**	73
36 to 55	**34.30%**	272
56+	**55.99%**	444
Total		**793**

Q15 ZIP code

Answered: 778 Skipped: 23

Q16 How did you hear about us?

Answered: 798   Skipped: 3



Answer Choices	Responses	
Facebook	**2.76%**	22
Twitter	**0.25%**	2
Green Living Magazine	**0.13%**	1
Bear Essential News	**0.25%**	2
Clear Channel Outdoor	**0.13%**	1
Nextdoor	**86.47%**	690
Email	**8.90%**	71
Event	**0.63%**	5
Other (please specify)	**5.39%**	43
Total Respondents: 798		

City of Phoenix
Complete Streets Policy

CITY OF PHOENIX
COMPLETE STREETS POLICY

VISION

The intent of the Complete Streets Policy ("Policy") is to help the City of Phoenix ("City");

- Become more walkable, bikeable and public transit friendly
- Foster social engagement
- Instill community pride
- Grow the local economy and property values
- Identify projects that will improve equitable transportation access for vulnerable and transit-dependent populations
- Improve the livability and long-term sustainability of the region.

With the implementation of the Complete Streets Policy, Phoenix will be a better place to live, work, and realize long-term savings from improved public health, safety, environmental stewardship, economic development, social mobility, and transportation equity.

It is the intent of this document to provide context sensitive Complete Streets design guidance for all projects within the public right-of-way and all streets accepted by the City.

This Policy aligns with the City's overall vision for transportation and the General Plan.

GOALS

When designing, constructing and improving rights-of-way City staff will incorporate this Policy to ensure the City's rights-of-way:

- Are planned, designed, constructed, operated, and maintained with the ultimate goal of serving a variety of transportation modes
- Will contribute to active transportation and public health
- Accommodate transportation users of all ages and abilities
- Are economically and environmentally sustainable
- Are designed to be compatible with the surrounding contexts and connecting transportation networks
- Comply with state and federal law and City code and Ordinance S-41094
- Follow the Complete Streets Planning and Design Principles which will be integrated into the Street Transportation Design Guidelines
- Provide new or improved connectivity between all transportation modes and adjacent land uses.

ROLES AND RESPONSIBILITIES

(A) While the Street Transportation Department will lead implementation of Complete Streets for projects, transformation of the Phoenix street environment to be more inclusive of pedestrians, cyclists, and transit-users will require coordination with and support of many City departments and adjacent landowners. These departments may include, but are not limited to: Public Transit, Planning and Development, Neighborhood Services, Water Services, Police, Fire, and Community and Economic Development.

(B) The Planning and Development Department will provide guidance for privately funded projects to implement the Policy, and will encourage coordination and support of private landowners, developers, builders, city departments, and other stakeholders.

(C) The City will continue efforts to coordinate with adjacent municipalities and agencies to encourage interjurisdictional connectivity.

(D) The City will work with builders, developers, utilities, and industry trade associations to encourage the use of the Policy for privately funded projects and all relevant partners for publicly funded projects.

(E) The City staff will propose the inclusion of Complete Streets principles into the General Plan and other relevant plans, manuals, rules, regulations, ordinances and programs as determined by staff and the Complete Streets Advisory Board.

(F) The City will incorporate Complete Streets improvements into its Capital Improvement Program and pursue other funding sources to accelerate the implementation of this Policy.

(G) The City will provide training to appropriate City staff on Complete Streets principles and best practices for implementation and will encourage staff professional development and training on non-motorized transportation issues.

(H) The City will prepare annual reports detailing implementation impacts including exceptions, obstacles and successes of this Policy. The report will be posted online and shared with the relevant City departments, committees, Council subcommittees, and the Complete Streets Advisory Board.

EXCEPTIONS

Any exception to this Policy must be reviewed and documented with supporting data by the appointed designee of the Street Transportation Department. Exceptions may be considered for approval if:

(A) The activities are maintenance activities (not including street overlays) that do not change the roadway geometry or operations and are designed to keep assets in serviceable condition; or

(B) The application of Complete Streets principles would be contrary to public safety; or

(C) The application of Complete Streets principles would have significant adverse historic, cultural, contextual, or environmental impacts; or

(D) Accommodation is not necessary where non-motorized uses are prohibited by law; or

(E) Cost of accommodations is excessively disproportionate to the cost of the project.

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Heptachlor Investigation Report

TECHNICAL MEMORANDUM

To: Linda Palumbo, City of Phoenix Water Services Dept.

From: Rebecca Sydnor and Sean Gormley, Amec Foster Wheeler

CC: Leigh Padgitt, City of Phoenix Water Services Dept.

Re: Heptachlor Investigation Status

Background

The City of Phoenix (City) Water Services Department (WSD) reported heptachlor surface water quality standard (SWQS) exceedances in stormwater from three City outfalls that discharge to the Salt River. Samples that exceeded the SWQS were identified at Outfalls SR049, SR030, and SR003 and occurred between 2012 and 2016. As a result of repeated detections, Arizona Department of Environmental Quality (ADEQ) required the City to undertake an investigation to determine the source of the heptachlor. To assist in that response, Amec Foster Wheeler Environment & Infrastructure (Amec Foster Wheeler) was asked to support the investigation.

As of June 30, 2017, Amec Foster Wheeler has performed a review of the historic data; evaluated alternative laboratory methods; and evaluated each drainage basin for historic uses, recent authorized uses, and remediation sites where heptachlor could have been present. If warranted, remaining activities include: performing dry and wet weather field reconnaissance of the drainage basins and developing a Sediment Trapping Plan.

Investigation Status

Review of Historic Data

For this evaluation, Amec Foster Wheeler reviewed data provided by the City of Phoenix Laboratory Superintendent. The information provided included raw data for samples collected in 2012, 2014 and 2016 that had reported detections of heptachlor, as well as representative method detection limit study data and initial calibration to help evaluate laboratory performance for low concentration samples.

The purpose of this evaluation was to perform a review for evidence of possible interferences in analysis of stormwater samples using gas chromatography with electron capture detection (GC/ECD). Based on the quality control (QC) data provided, review of the chromatography and annotations added by the analyst during data review, no concern were noted. The documentation provided showed excellent chromatography and QC performance, and the analyst notes were clear and helpful.

It was immediately evident that the chromatograms show the presence of many peaks not related to the target compounds. There are also many instances where there are peaks that elute within the retention time window required for identification of a target compound on one of the two analytical columns used, but not on the second column, showing that the target analyte was not present.

In some cases, however, peaks were present at the correct retention time on both columns, which is considered to show that the target analyte is most likely present. In cases where concentrations are high enough to allow, the City of Phoenix laboratory subjects positive results from GC/ECD analysis to reanalyze using mass selective detection (MSD), which is considered a best practice in environmental analysis because MSD is much less subject to positive interference from non-target chemicals. It is of note that in almost all cases where concentrations were high enough to allow use of confirmation using MSD, the target analyte was found to be not present, despite being apparently detected using GC/ECD. This includes multiple heptachlor results in the data set provided by the City of Phoenix, as well as other target chlorinated insecticide analytes. A comparison of heptachlor results generated using EPA Method 608 to GC/MSD confirmation results for the matching samples is provided in the table below.

Comparison of Heptachlor Results by EPA Method 608 to GC/MSD Confirmation Data

Sample	Date Analyzed by Method 608	Method 608 Concentration µg/L (ppb)	GC/MSD Confirmation Result
81989	12/20/2012	0.081	Result was not confirmed by GC/MSD results. Amec Foster Wheeler reviewed the provided MS output and agrees with the City Lab evaluation. The spectral match very poor, with multiple mass fragments not present compared to the reference spectrum.
81950	12/20/2012	0.087	
75819	12/08/2016	0.379	
81980	12/20/2012	0.059	Reported heptachlor concentration was too low to allow confirmation using GC/MSD.
79261	12/22/2014	0.063	
79277	12/22/2014	0.063	
79314	12/22/2014	0.045	
79636	12/08/2016	0.040	

Based on this evidence, it appears most likely that apparent heptachlor detections at concentrations too low to be confirmed by MSD are likely to also be false positive results, although this cannot be absolutely established using the data. As discussed below, the most useful approach to address the potential for low level false positive heptachlor results is to consider use of alternative analytical approaches that provide higher selectivity with low enough detection limits to provide definitive data that meet required data quality objectives.

Alternative Lab Methods

In order to assess the possible use of GC/MSD with selective ion monitoring to provide definitive data with adequate detection limits, the City of Phoenix completed a stormwater sampling and analysis program in May of 2017. Tabulated results for these samples were received from the City of Phoenix on June 23, 2017. Raw data and chromatograms were not reviewed by Amec Foster Wheeler for these samples.

On May 8, 2017, a dry weather sample (SR003 Dry) was collected to allow comparison of baseline results for analysis using EPA Method 608 (GC/ECD) to those generated using EPA Method 525.2 (GC/MSD-SIM). Neither heptachlor nor any other target insecticides were detected in this sample using either method, although the reported compound list differed between the 2 methods. In addition, detections using the GC/MSD-SIM method were lower than detection limits using the GC/ECD method, demonstrating that the GC/MSD-SIM approach could work.

On May 9, 2017, two stormwater samples (SR003 Wet and SR049 Wet) were collected for analysis using GC/MSD-SIM. Total suspended solids were present in both samples at concentrations greater than 100 mg/L, which clogged the sample preparation apparatus and prevented extraction of an adequate sample volume to reduce the detection limit to the same level as for the dry weather sample, but still resulted in detection limits for heptachlor only slightly higher than typically obtained using GC/ECD. Neither heptachlor nor other target insecticides were detected in either sample using this method, although, as before, the reported analytes differ from the list reported for sample SR003 Dry using GC/ECD.

Based on this limited initial study, use of GC/MSD-SIM appears to have potential to provide more definitive data for heptachlor in stormwater samples, and to eliminate what appear to be likely false positive heptachlor results from previous years based on the historical pattern of lack of confirmation of heptachlor results by GC/MSD where concentrations are adequate. It is possible that the GC/MSD-SIM method can be extended to more of the target analytes reported by the City of Phoenix Laboratory using EPA Method 608, but more evaluation by the lab will be required.

If use of the GC/MSD-SIM method remains problematic due to high suspended solids levels, it may be necessary to consider analysis of stormwater by EPA Method 1699 (Method 1699: Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS), which uses extended chromatographic run times and high resolution mass spectrometric detection to produce highly selective analyte results with very low detection limits. Disadvantages of using Method 1699 include cost, which is significantly higher than either EPA Method 608 (GC/ECD) or EPA Method 525.2 (GC/MSD-SIM), and availability from a limited number of laboratories.

Review of Historic Uses, Recent Authorized Uses, and Remediation Sites

Based on a review of historic imagery, much of the drainage basins evaluated in this study have historically been used in former agriculture operations and may have been subject to pesticide application before heptachlor began being phased out in 1974 and banned in 1988. Development of each drainage basin was steady through the mid-2000's. Basin SR003 shows little change in recent years. Basin SR030 shows one large construction project in close proximity to the Salt River converting agricultural land to Grayson Square residential community between 2005 and 2009. Basin SR049 shows a number of infill projects, particularly between Lower Buckeye Road and Broadway Road between 2007 and 2009. No other major developments were identified in recent years. The Grayson Square area, in the lower portion of basin SR049, and current agriculture areas that are still in active use along the Salt River may be assessed during dry or wet weather field reconnaissance, if warranted. See figures in **Attachment A**.

Based on an inquiry through the Arizona Department of Agriculture (AZDA), there have been no records of organochlorine pesticide (OCP) use, including heptachlor, between 2012 – 2017. AZDA records retention policy is limited to five years; therefore, there no records are available for review prior to June 2012.

In reviewing ADEQ's GIS Web Mapping application for remediation site in the basin areas, there were four inactive and one active remediation sites identified within basin SR003, three inactive remediation sites within basin SR030, and two inactive remediation sites in basin SR049. See figures in **Attachment B**. None of the remediation sites were related to heptachlor. Amec Foster Wheeler will review these locations during the dry or wet weather field reconnaissance, if warranted.

Anecdotal reports indicate that one business, Keller Electrical Industries, has used heptachlor for fire ant control in transformers. Transformers were sold and installed state-wide. Amec Foster Wheeler contacted Keller Electrical by phone and e-mail to request information on heptachlor use in their transformers or components and possible installation locations within the drainage areas. Amec Foster Wheeler has not received a response from Keller Electrical regarding the use of heptachlor in their electrical equipment. Keller Electrical was also considered as a potential storage location for heptachlor; however, they are physically located in Tempe, Az.

Conclusions

Summary

Based on the preliminary investigation indicating false positive results are the likely cause of heptachlor detections, Amec Foster Wheeler does not anticipate needing to perform dry or wet weather field reconnaissance or develop and implement a plan for sediment trapping, as originally intended. Additional Best Management Practices to reduce or eliminate the exceedances of heptachlor are not likely to be needed if the recommendations below are implemented and confirm the preliminary finding that the historic detections are false positives.

Next Steps

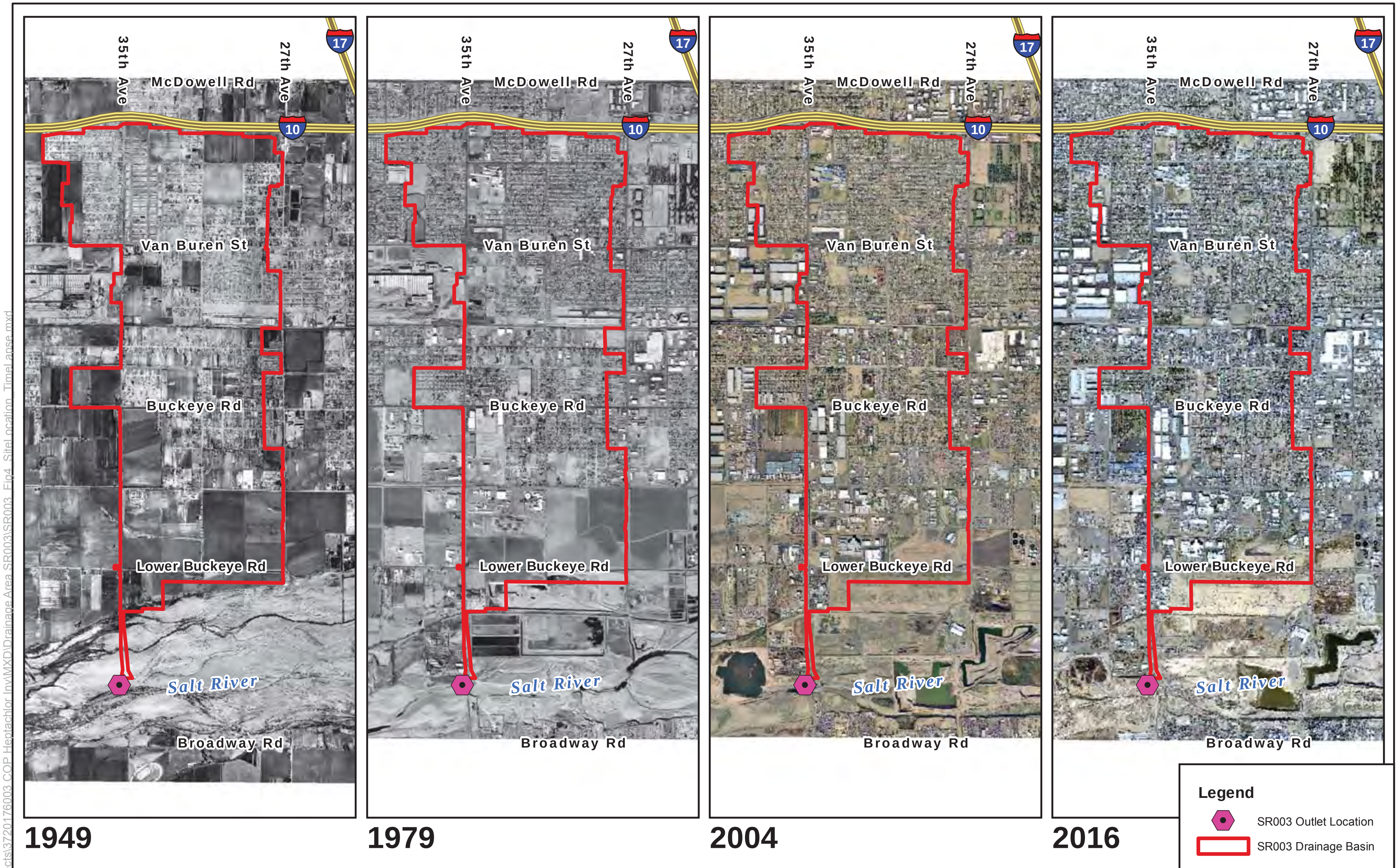
To confirm the preliminary determination, the City of Phoenix, with support from Amec Foster Wheeler, will collect and analyze one additional wet weather sample from each outfall. Samples will be analyzed using Method 608 (GC/ECD) and EPA Method 525.2 (GC/MSD-SIM). Results from the sampling event will be assessed to determine consistency between the two test methods and what conclusions can be drawn regarding the likelihood of false positives.

In addition, the City will collect dry weather samples from SR003 and SR049, if any is present prior to September 30. Samples will be analyzed using Method 608 (GC/ECD) and EPA Method 525.2 (GC/MSD-SIM).

Results of the wet and dry weather sampling will be presented to ADEQ.

Attachment A

Historical Imagery



0 0.85 1.7 3.4 Miles

Job No.:	37-2017-6003
PM:	RLS
Date:	7/20/2017
Scale:	1" = 4500'

N

The map shown here has been created with all due and reasonable care and is strictly for use with Amec Foster Wheeler Project Number 37-2017-6003. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. Amec Foster Wheeler assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.

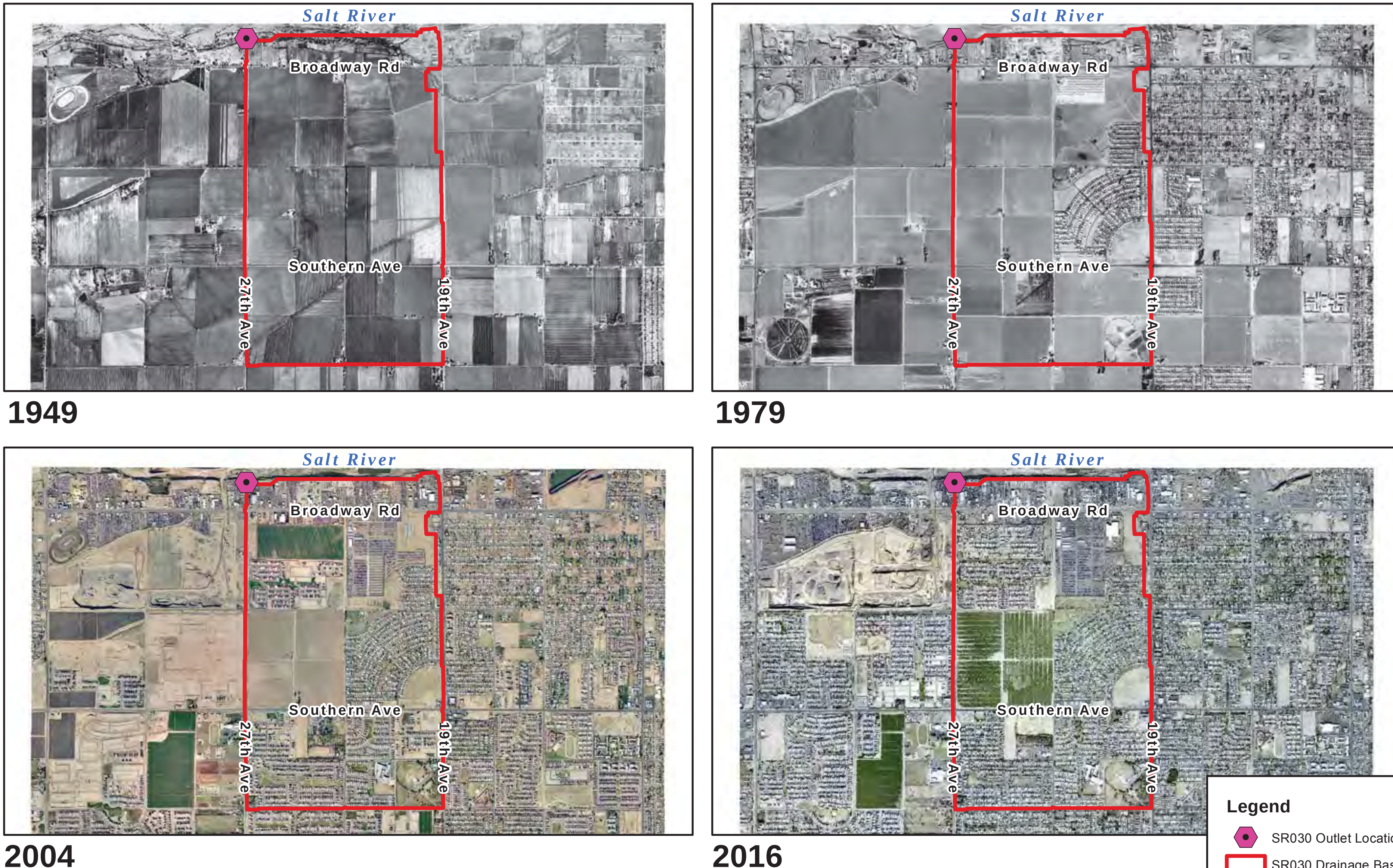
Heptachlor Source Investigation
City of Phoenix
Phoenix, Arizona

SR003 Drainage Basin Time Lapse
Maricopa County Historic Aerial Photography

FIGURE
1

amec foster wheeler

Path: X:\Projects\2017 Projects\3720176003 COP Heptachlor Inv\MXD\Drainage Area SR003\SR003_Fig4_SiteLocation_TimeLapse.mxd



Legend

- SR030 Outlet Location
- SR030 Drainage Basin

0 0.72 1.44 2.88 Miles

Job No.:	37-2017-6003
PM:	RLS
Date:	7/20/2017
Scale:	1" = 3800'

N

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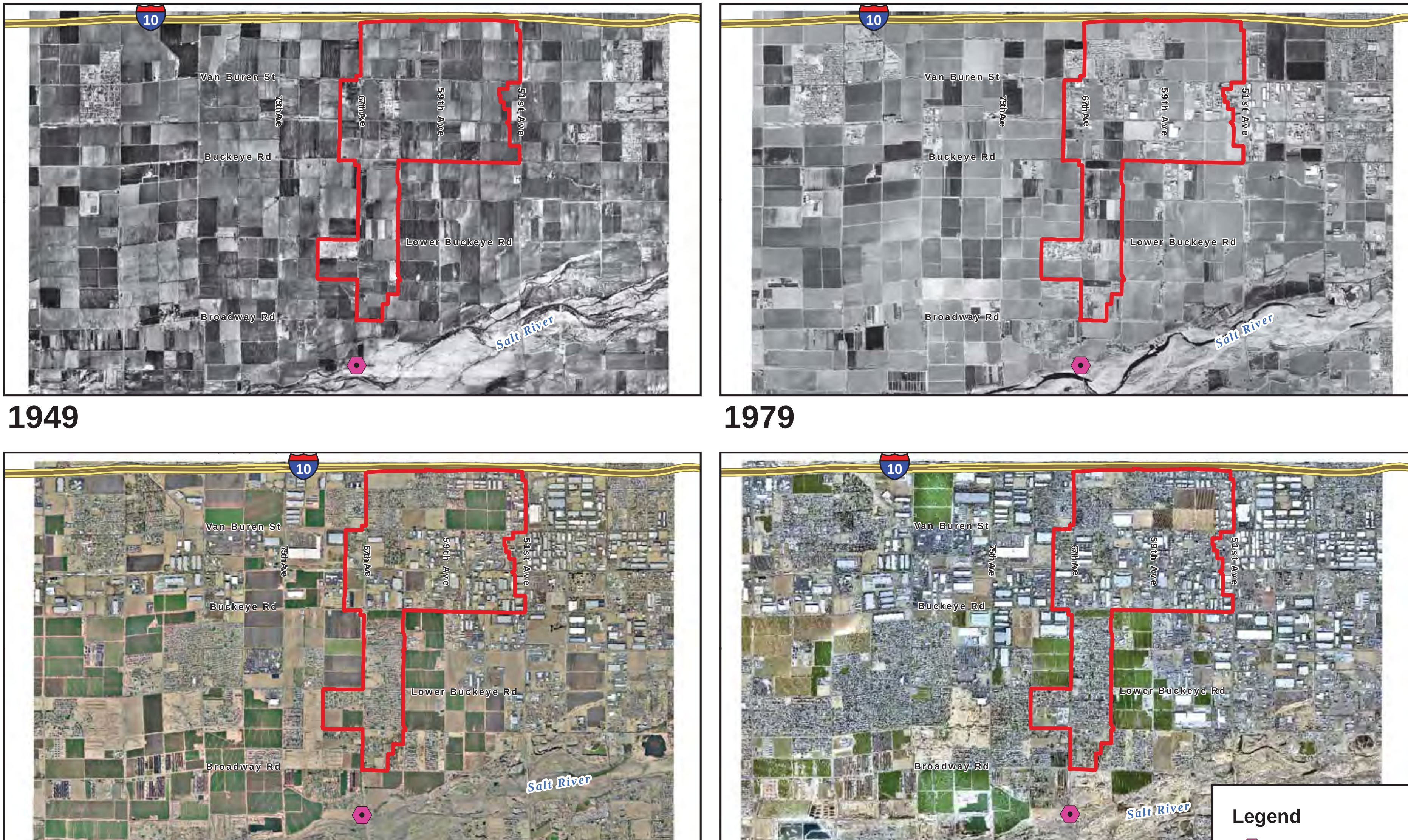
Heptachlor Source Investigation
City of Phoenix
Phoenix, Arizona

SR030 Drainage Basin Time Lapse
Maricopa County Historic Aerial Photography

FIGURE
2

amec foster wheeler

Path: X:\Projects\2017 Projects\3720176003 COP Heptachlor Inv\MXD\Drainage Area SR030\SR030_Fig5_SiteLocation_TimeLapse.mxd



Legend

- SR049 Outlet Location
- SR049 Drainage Basin

0 0.9 1.8 3.6 Miles

Job No.:	37-2017-6003
PM:	RLS
Date:	7/25/2017
Scale:	1" = 9500'

N

Heptachlor Source Investigation
City of Phoenix
Phoenix, Arizona

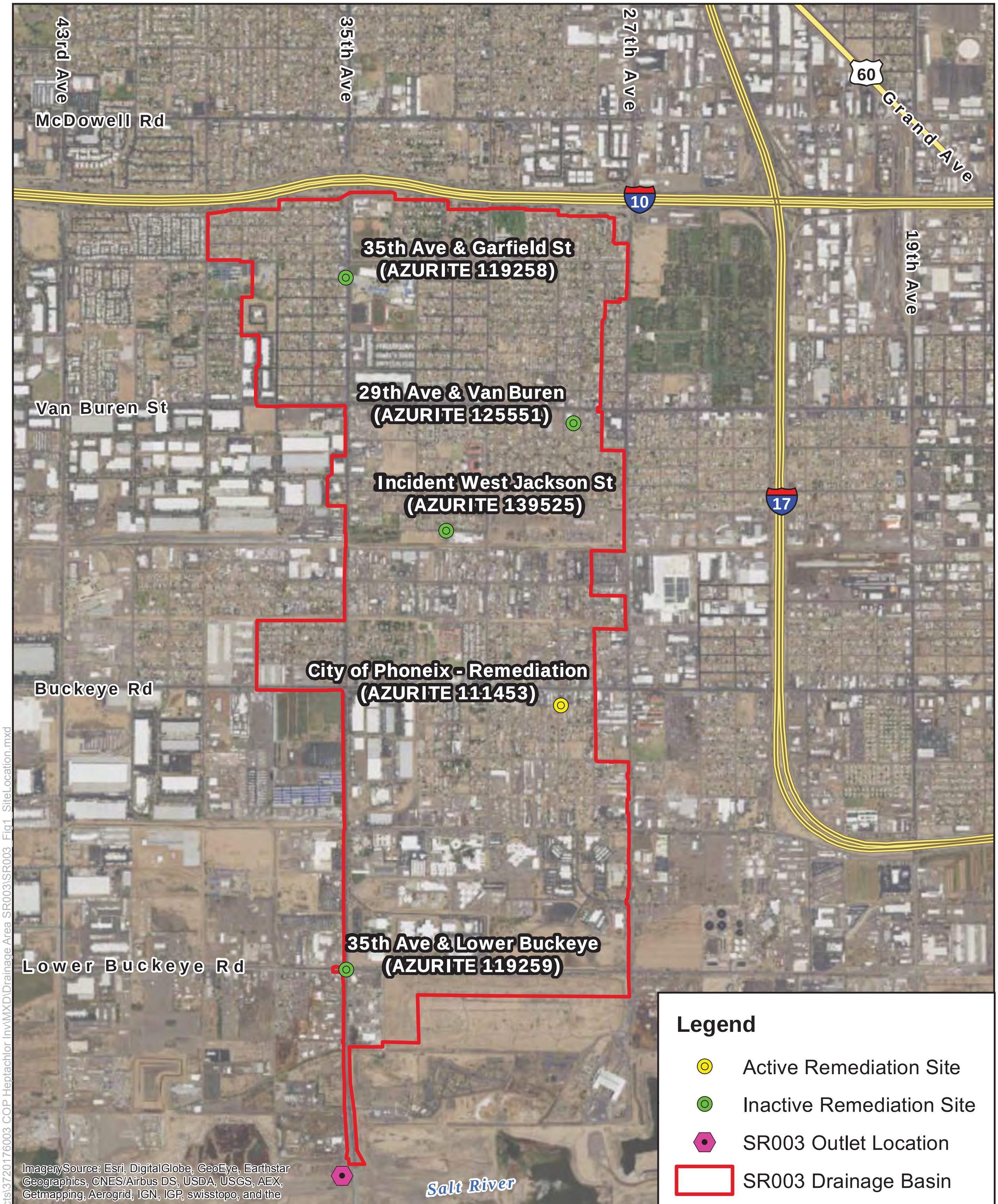
SR049 Drainage Basin Time Lapse
Maricopa County Historic Aerial Photography

FIGURE
3

amec foster wheeler

Attachment B

Remediation Site Locations



Job No.:	3720176003
PM:	RLS
Date:	7/20/2017
Scale:	1" = 2500'

N

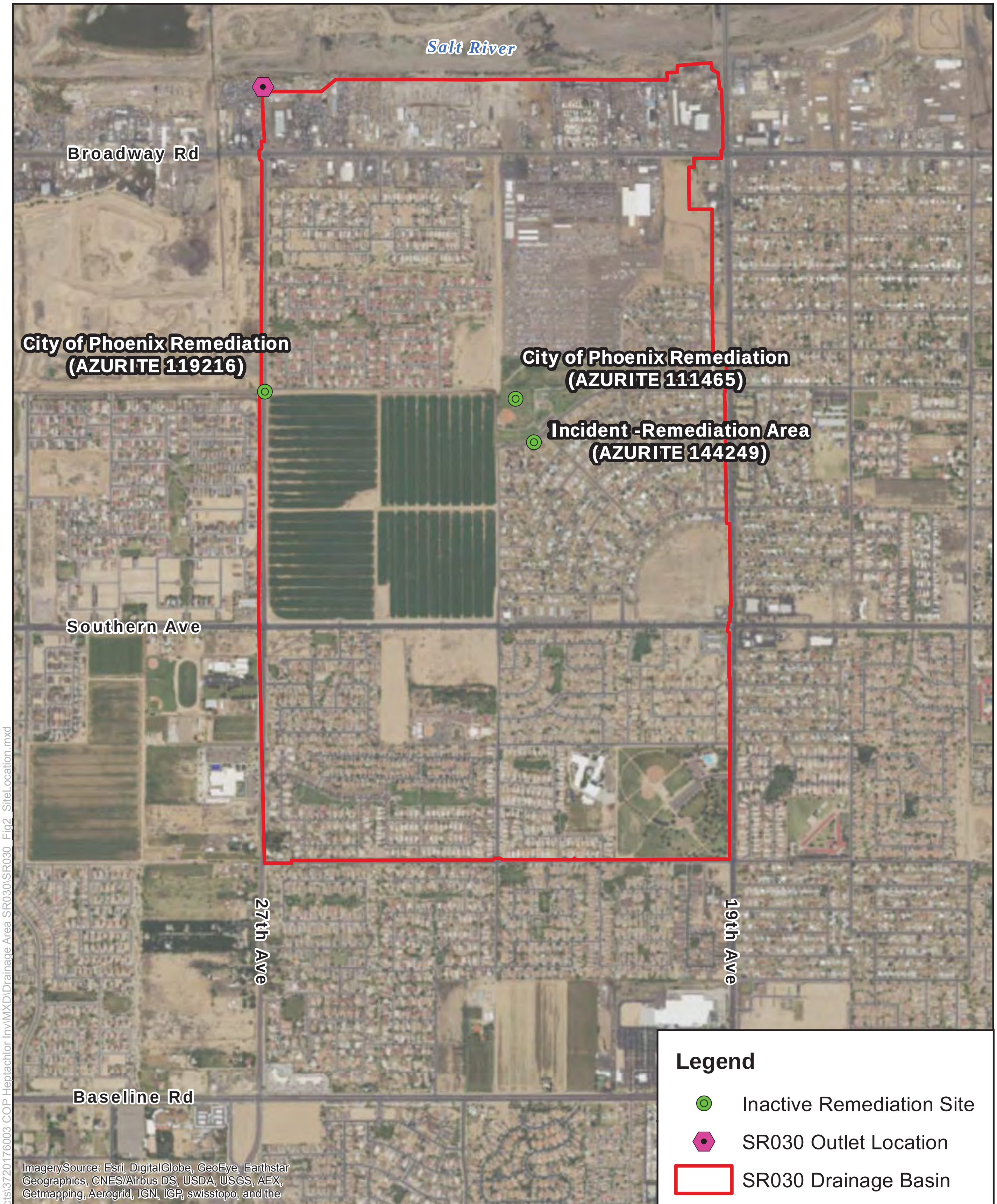
Heptachlor Source Investigation
City of Phoenix
Phoenix, Arizona

SR003 Remediation Sites

FIGURE 4

amec foster wheeler

Path: X:\Projects\2017 Projects\3720176003 COP Heptachlor Inv\MXD\Drainage Area SR003\SR003_Fig1_SiteLocation.mxd



Job No.:	3720176003
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Date:	7/20/2017
Scale:	1" = 1500'

N

Heptachlor Source Investigation
City of Phoenix
Phoenix, Arizona

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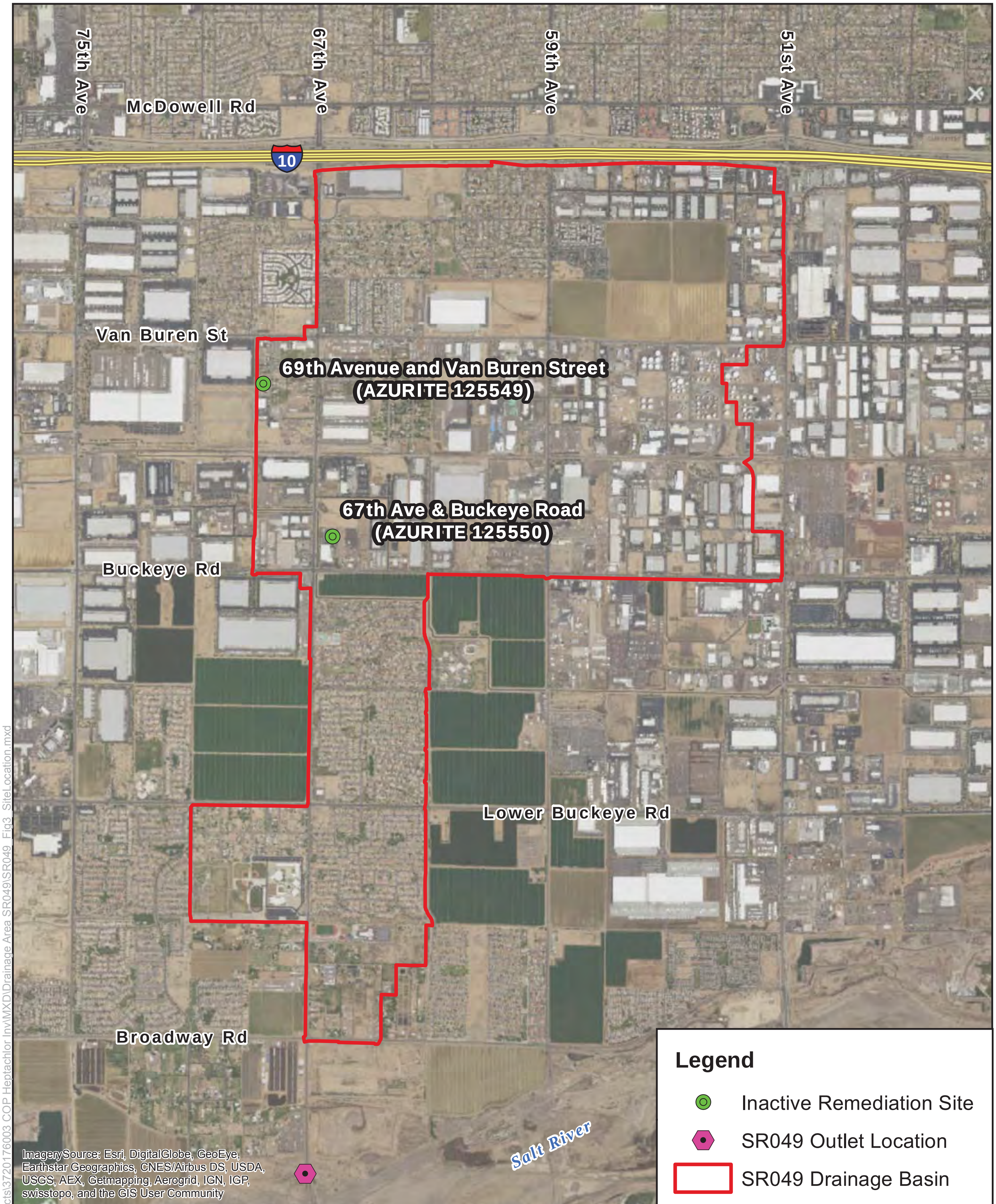
SR030 Remediation Sites

FIGURE
5

amec foster wheeler

Path: X:\Projects\2017 Projects\3720176003 COP Heptachlor Inv\MXD\Drainage Area SR030\SR030_Fig2_SiteLocation.mxd



Job No.:	3720176003
PM:	RLS
Date:	7/20/2017
Scale:	1" = 2500'

Heptachlor Source Investigation
City of Phoenix
Phoenix, Arizona

SR049 Remediation Sites

FIGURE
6

amec foster wheeler

Path: X:\Projects\2017 Projects\3720176003 COP Heptachlor Inv\MXD\Drainage Area SR049\SR049_Fig3_SiteLocation.mxd

STORM Annual Report

STORM – Fiscal Year 2017 Annual Report (July 1, 2016 – June 30, 2017)

SUMMARY

Arizona's Stormwater Outreach for Regional Municipalities (STORM) provides a platform for collaborative effort by which educational outreach may be provided to residents in the greater Phoenix area with the message of pollution prevention to keep our waters clean. In Fiscal Year 2017, STORM members completed outreach via web, print, social media, and events. The coordination among 25 member cities, towns, and non-traditional municipal separate storm sewer systems or affiliates, resulted in:

- Events – 108 events 15,000 direct contacts compared to 231 events 24,839 people directly contacted (FY2016). While the numbers are less than the previous fiscal year, significant time and effort was dedicated to making face to face contact and engaging with the public on the importance of stormwater pollution prevention. These interactions continue to be a substantial part of STORM's public education effort.
- Social Media – increased audience engagement on social media by nearly 400% through the use of ABC15 creative advertising; a combination of displays, Facebook ads and posts, and high-impact units. Overall, the use of digital media performed very well with more than 3.5M impressions and nearly 15,000 clicks (General Public 18+ years of age);
- Website – received a total of 13,871 webpage views; an increase of 33% from FY16. Webpage sessions increased by 112% from FY16 to reach 8180 sessions in FY17. A session is defined as a period of time a user is engaged in the website. Meaning, more people are actively using and searching the STORM website. Users, or individuals increased when compared to FY16 by 126%, to 6328 users (Table 1);
- Middle School Activity Books – developed and purchased 38,000 activity books to support messaging to school-aged children about stormwater pollution prevention (Children ages 6-12);
- Promotional Items – minimized variety of items and focused on relevant messaging and gadgets (Cups, Fliers, and Stamps) (Ages 6-70); and,
- Future Plans – established a baseline plan to target audiences via specified messages on a rotating basis.

MEMBERSHIP

ADOT, Apache Junction, Avondale, Buckeye, Casa Grande, Chandler, El Mirage, Fountain Hills, Gilbert, Glendale, Goodyear, Guadalupe, Luke Air Force Base, Maricopa County, Mesa, Paradise Valley, Peoria, Phoenix, Pinal County, Queen Creek, Scottsdale, Surprise, Tempe, Tolleson, Youngtown.

BUDGET

:::Total Revenue $86,664::: :::Total Expenditures $55,957::: :::Bank Balance $27,707:::

STATISTICS

Members meet monthly on the fourth Tuesday at 130PM. These working meetings are the primary method of sharing relevant information about regulatory issues, identifying potential outreach events, updating committee efforts, and reporting. Members track outreach events online for inclusion in this annual report, which supports a regional front, stretches municipal dollars and coordinates consistent messages in the Middle Gila River Watershed.

STORM
Only rain in the stormdrain

STORM – Fiscal Year 2017 Annual Report (July 1, 2016 – June 30, 2017)

STORM members conducted 108 events or workshops throughout the central Arizona region with an estimated two-hundred thousand attendees, of which fifteen thousand attendees engaged with municipal staff about stormwater pollution prevention. At these events, 3,702 print materials (brochures and activity books) and 9,926 promotional items (wristbands, bags on board, cups, frisbees, pencils, sack bags, jar openers, and magnets) were distributed. Table 1 identifies the month, number of events, estimated attendance and public engagement with our members.

Table 1. Distribution of events, attendance, engagement and corresponding website traffic.

2016					2017				
Month	***Events***	***Attended***	***Engaged***	***Website***	***Month***	***Events***	***Attended***	***Engaged***	***Website***
July	4	618	218	764	January	4	2,160	180	761
August	2	97	97	1,059	February	11	36,956	2,395	1,218
September	11	10,369	457	654	March	14	56,800	2,308	1425
October	17	27,531	1,967	692	April	24	15,126	2,997	1,704
November	5	5,568	1,468	1,679	May	6	2,177	1,097	1,373
December	6	40,070	894	1,213	June	4	9,602	401	1,329

SOCIAL MEDIA CAMPAIGN

Social Media, specifically Facebook, campaigns were very successful this fiscal year. STORM contracted with ABC15, to run an advertisement campaign which included regular banner ads on their website, Facebook ads, Facebook posts, and large banner ads resulting in more than 3.5M impressions and almost fifteen thousand clicks (engagement). View Attachment 1 for specifics.

In addition, STORM members contributed time to post and interact with the public on the AZSTORM Facebook page. STORM posted 170 times with a reach of 67,164 resulting in 1,277 Likes. It is worthwhile to note that when Facebook posts were boosted, approximately 44,162 were reached for a nominal fee of $600. Topics included pollutants around the home, pet waste, construction activity, industrial dischargers, green infrastructure and low-impact development. Target audiences included general public, residential, business, home owner associations, development community, and contractors. Table 2 includes the top five posts, when they posted, how many reached and liked, and the topic.

Table 2. Top 5 Posts

Day and Time	Reach	Likes	Topic
March 28, 2017 at 10:30AM	23,520	800	Shared ABC15
June 29, 2017 at 3:04PM	12,518	736	Do Your Part to Prepare Your Home: Housekeeping Tips.
May 9, 2017 at 6:08AM	6,146	288	Stormwater Word of the Day: Stormwater Runoff
June 29, 2017 at 4:43PM	3,834	166	When water flows…do you know where it goes?
June 1, 2017 at 6:03AM	1,100	44	When water comes to town…do you know where it goes and what it takes with it?

ATTACHMENT 1

ABC15 RECAP

ABC15 Recap
for

STORM

Only rain in the stormdrain

Brittany Schmidt
Email: brittany.schmidt@abc15.com
Phone: 602-509-9473

July 06, 2017

OVERALL

The campaign delivered your message 3,541,612 times and drove 14,698 clicks through June 30th.

	Performance	
	Impressions	Clicks
Regular Banner Ads	1,667,685	4,864
Facebook Ads	1,446,462	3,535
Facebook Posts	258,050	5,377
Large Banner Ads	169,415	922
Totals	3,541,612	14,698

Facebook Posts

FACEBOOK POSTS

The Facebook Posts reached 187,868 People, generated 1,597 reactions, and drove 923 people to your website!

ABC15 Arizona added 2 new photos.
November 4, 2016 ·

DOG TIP: Carry enough baggies with you to hand out to less conscientious dog walkers!

Azstorm -Stormwater Outreach for Regional Municipalities says pet waste that isn't picked up ends up in our storm drains...and that's just gross. SEE MORE TIPS: azstorm.org #abc15sponsor

70,182 People Reached

333 Reactions, Comments & Shares

267 Like	**251** On Post	**16** On Shares
11 Love	**8** On Post	**3** On Shares
6 Wow	**6** On Post	**0** On Shares
1 Sad	**0** On Post	**1** On Shares
14 Comments	**13** On Post	**1** On Shares
34 Shares	**32** On Post	**2** On Shares

1,466 Post Clicks

1,009 Photo Views	**16** Link Clicks	**441** Other Clicks

NEGATIVE FEEDBACK

24 Hide Post **0** Hide All Posts

FACEBOOK POSTS

Post Details

Reported stats may be delayed from what appears on posts

ABC15 Arizona added 2 new photos — with AZ Stormwater Outreach for Regional Municipalities.
February 27 ·

AT HOME or at the CARWASH: Where do you prefer to wash your car?

If you're the DIY type, Azstorm -Stormwater Outreach for Regional Municipalities has these tips to make sure you're environmentally friendly: http://bit.ly/2m4VLDp #abc15sponsor

80,465 People Reached

594 Reactions, Comments & Shares

391 Like	**335** On Post	**56** On Shares
4 Love	**3** On Post	**1** On Shares
8 Haha	**3** On Post	**5** On Shares
7 Wow	**6** On Post	**1** On Shares
160 Comments	**130** On Post	**30** On Shares
24 Shares	**23** On Post	**1** On Shares

1,557 Post Clicks

746 Photo Views	**120** Link Clicks	**691** Other Clicks

NEGATIVE FEEDBACK

22 Hide Post	**2** Hide All Posts
0 Report as Spam	**0** Unlike Page

FACEBOOK POSTS

Post Details

Reported stats may be delayed from what appears on posts

ABC15 Arizona with AZ Stormwater Outreach for Regional Municipalities.

May 20 · Paid ·

YES or NO: Does the summer heat change your plans for yard maintenance? 😁🌷🌵

The experts at AZ Stormwater Outreach for Regional Municipalities have some tips that will leave your yard clean and still keep your water sparkling! Remember: Only rain in the storm drain! MORE: http://bit.ly/2qBayc0 #abc15sponsor

azstorm.org: Easy lawn and garden care tips.

AZSTORM.ORG

107,403 People Reached

670 Reactions, Comments & Shares

529 Like	**507** On Post	**22** On Shares
6 Love	**5** On Post	**1** On Shares
5 Wow	**5** On Post	**0** On Shares
12 Sad	**10** On Post	**2** On Shares
3 Angry	**3** On Post	**0** On Shares
61 Comments	**61** On Post	**0** On Shares
54 Shares	**54** On Post	**0** On Shares

1,431 Post Clicks

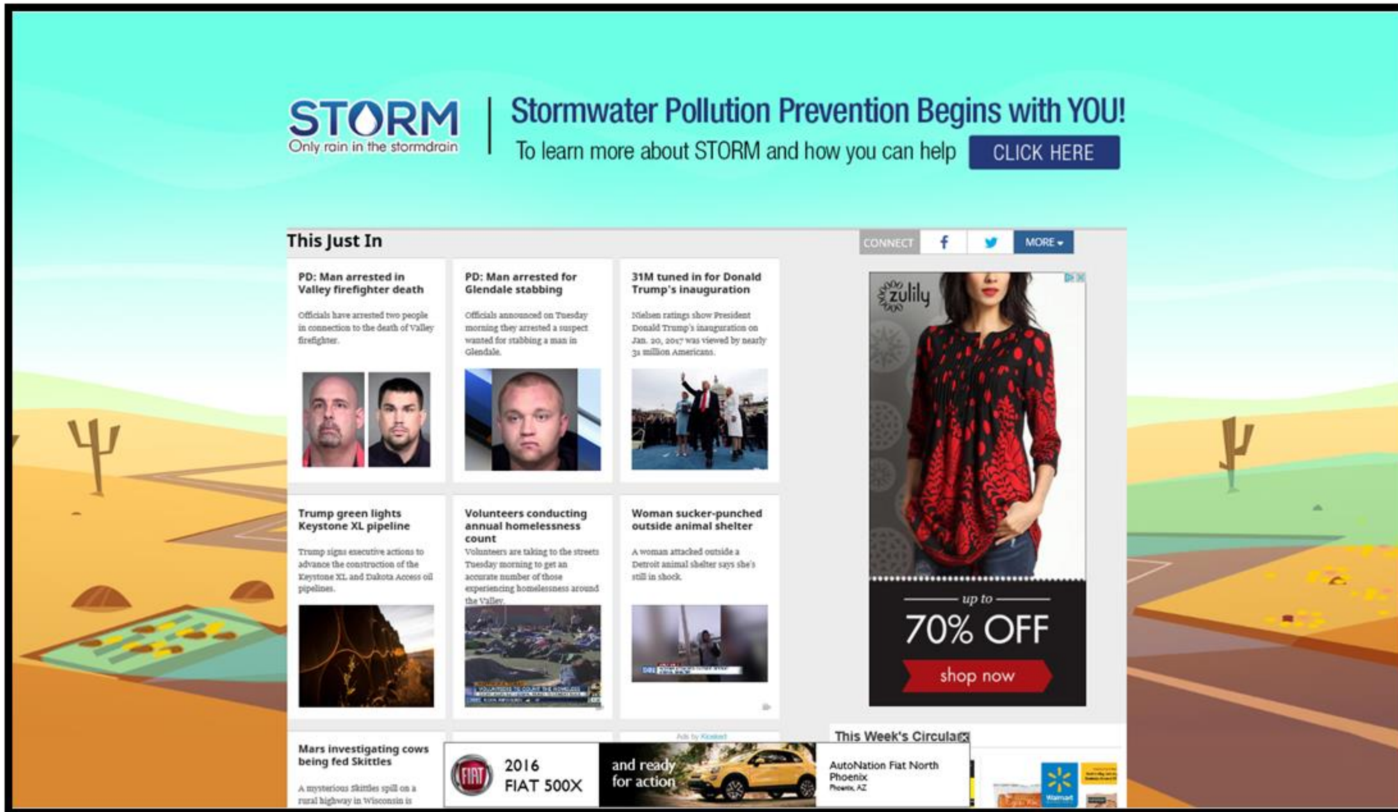
0 Photo Views	**787** Link Clicks	**644** Other Clicks

Large Banner Ads

LARGE BANNER AD

The large banner ad was served 169,415 times and drove 922 people to your website.

	Performance	
	Impressions	Clicks
January 20	127,028	825
March 10	42,387	97



Regular Banner Ads

REGULAR BANNER ADS

The regular banner ads were served 1,667,685 times and drove 4,864 people to your website.

	Performance	
	Impressions	Clicks
Regular Banner Ads	1,667,685	4,864

Facebook Ads

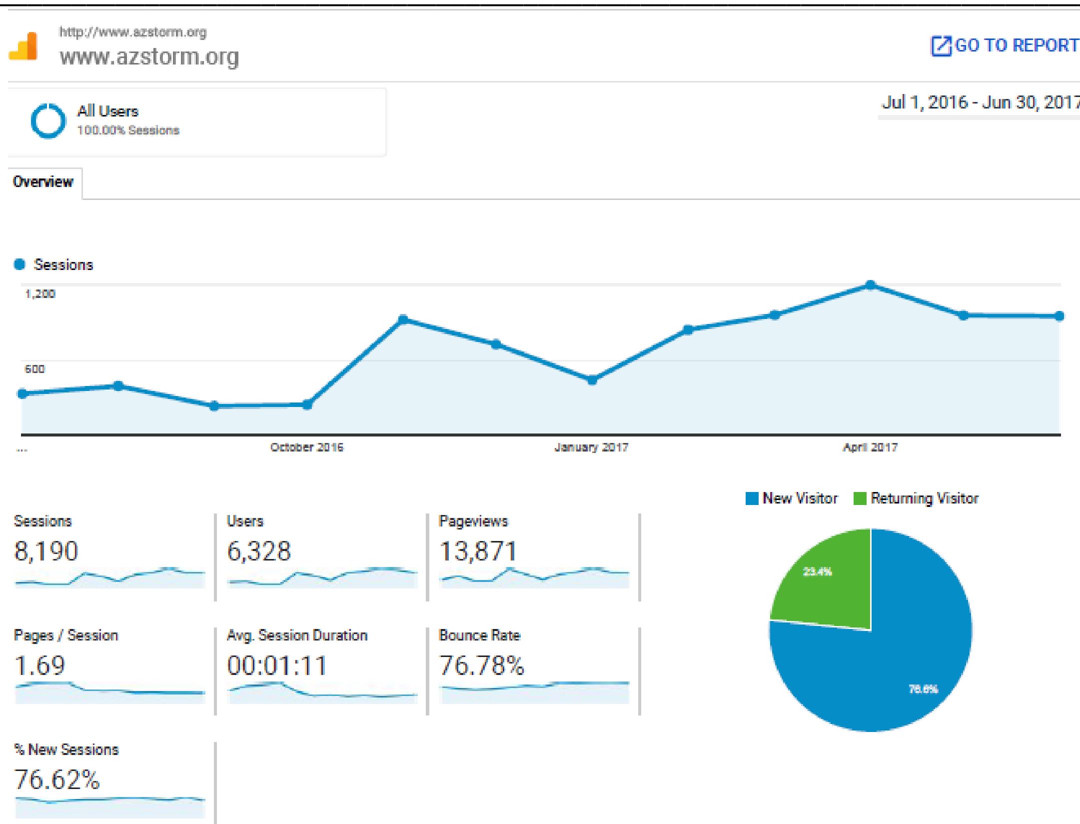
FACEBOOK ADS

The Facebook ads were served 1,446,462 times and drove 3,535 people to your website.

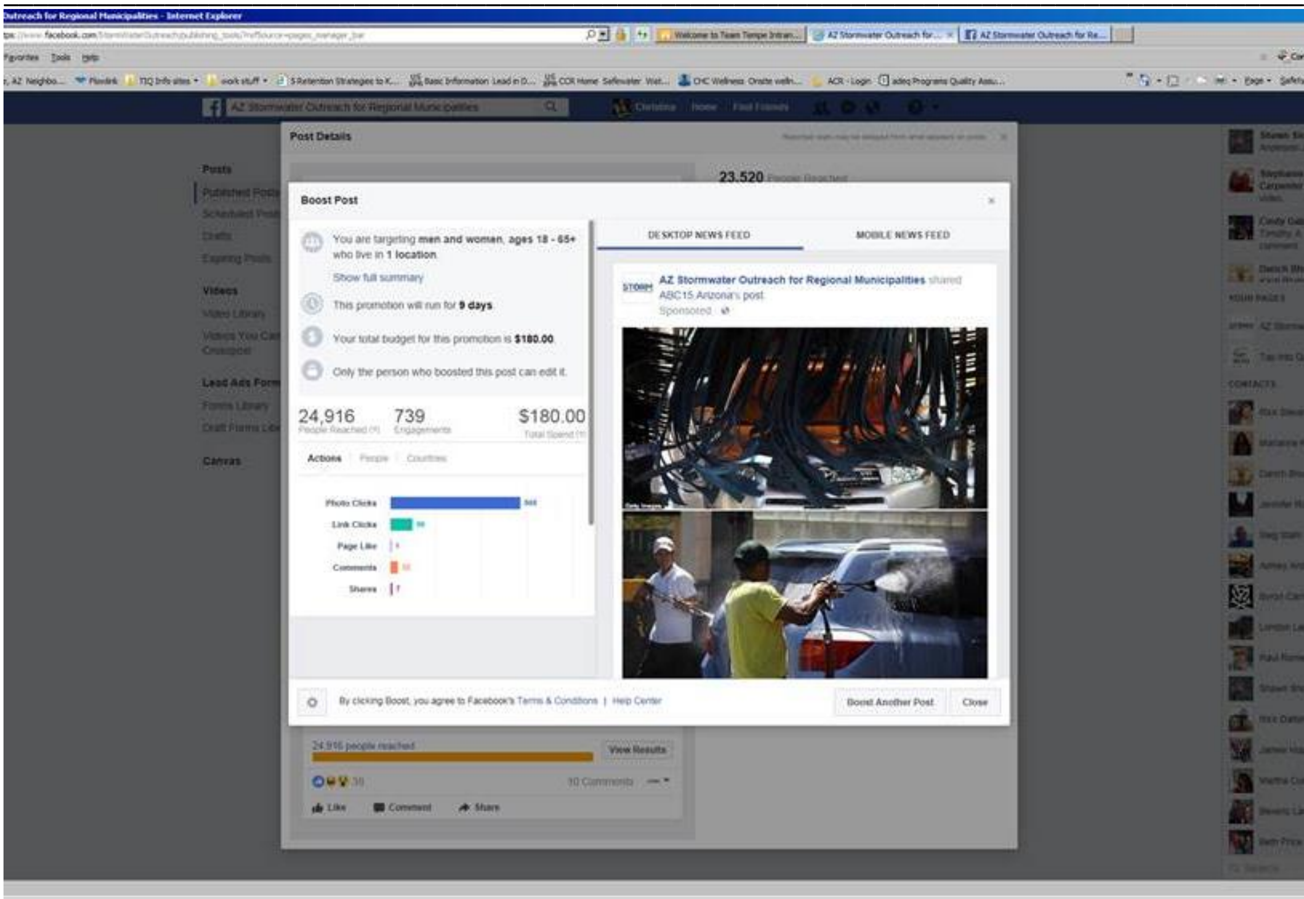
	Performance	
	Impressions	Clicks
Facebook Ads	1,446,462	3,535

ATTACHMENT 2

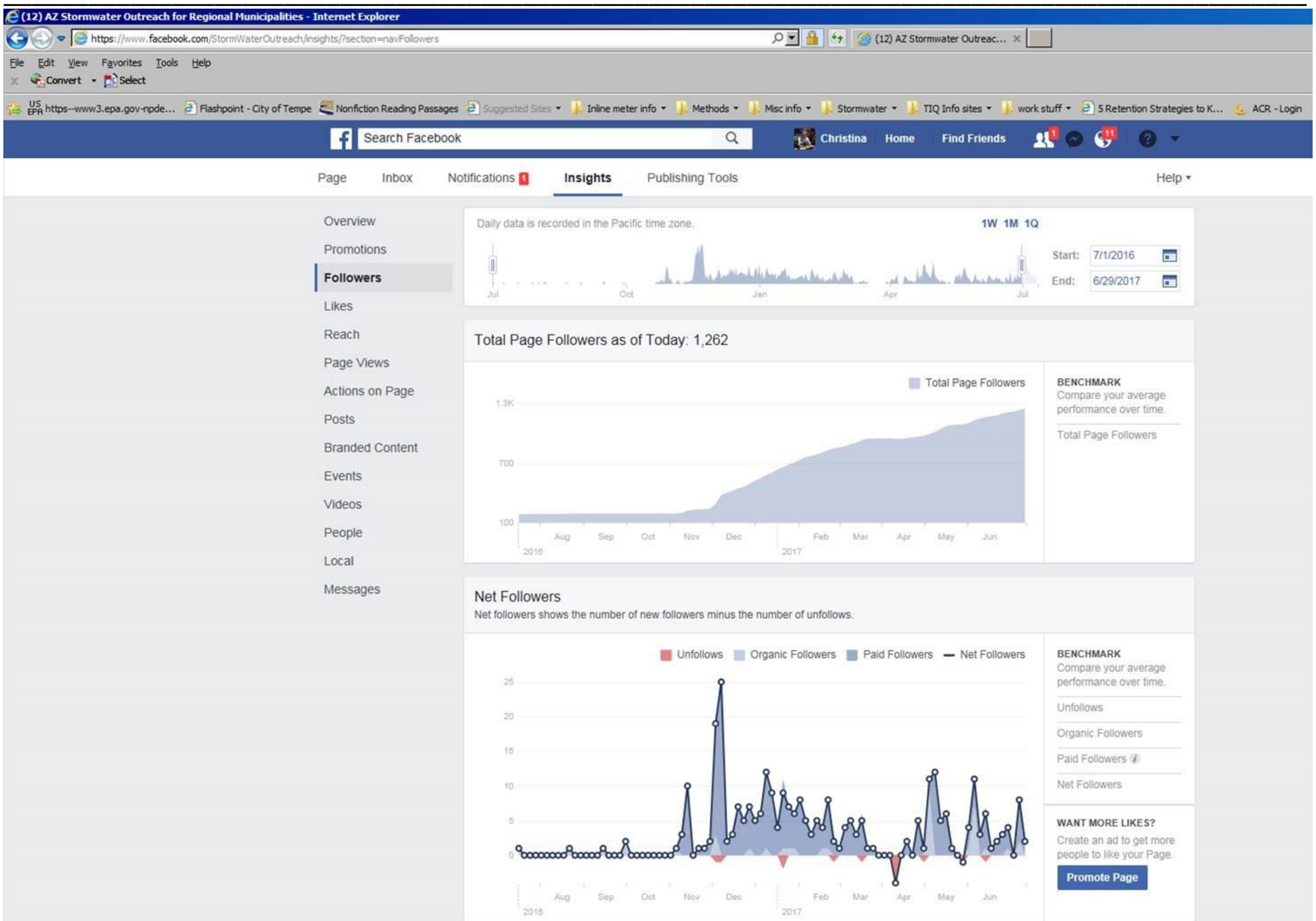
SCREEN SHOTS – AZSTORM WEBSITE & FACEBOOK



Analytic – break down of new (76%) versus return visitors (24%) to the website, includes number of visitors (6,328), number of page views and bounce (to other pages).



Example post from Facebook.



Analytic – indicating net increase of followers after implementation of a social media campaign.

Analytic – indicating net increase of followers after boosting.

ATTACHMENT 3

PROMOTIONAL ITEMS

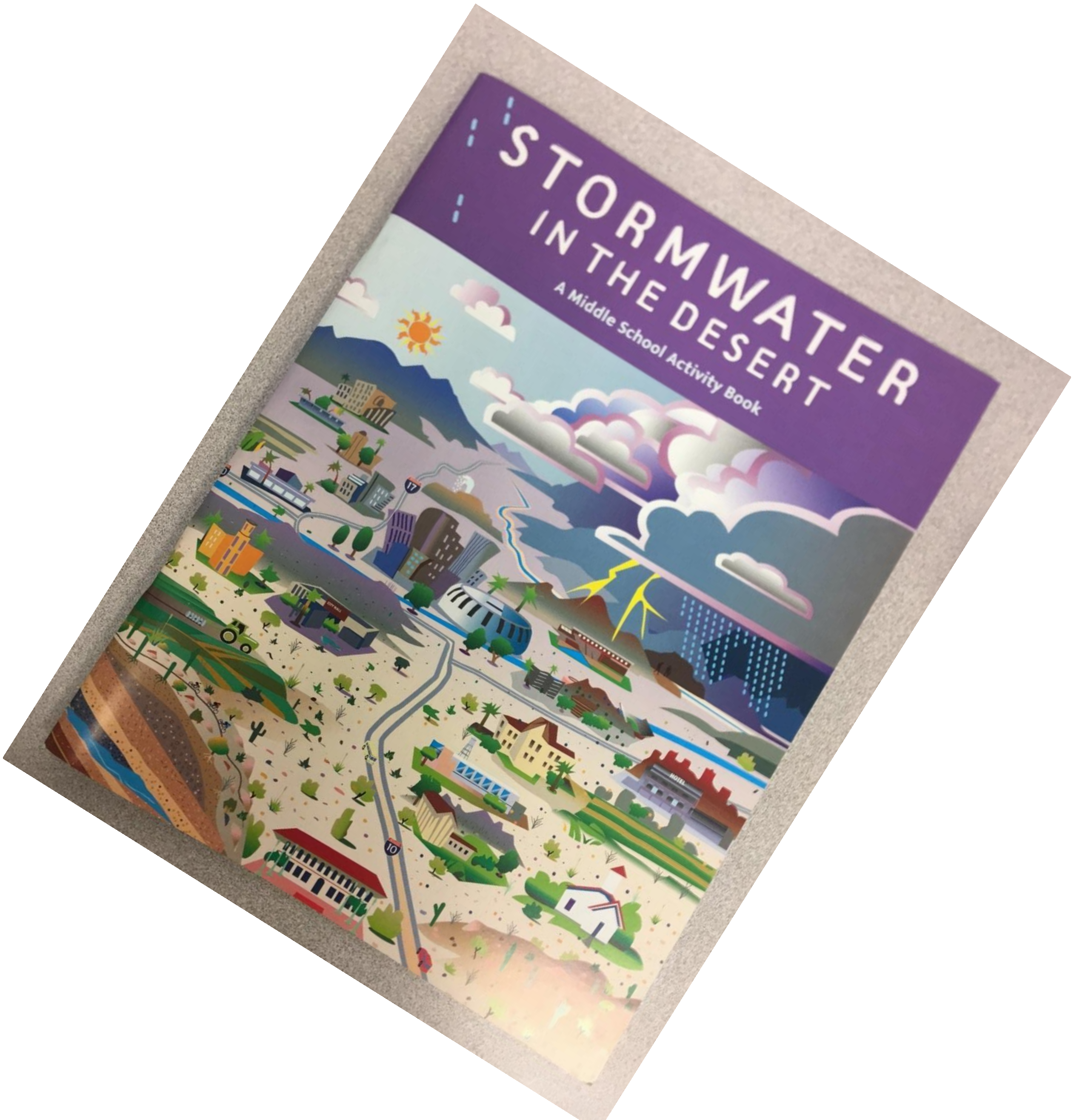
STORM
Only rain in the stormdrain

Fabric flier – general public fun and cooling off (use it like a fan!)

Poop emoji stamp – children and pet owners

Sticker – pet owners

STORM – Fiscal Year 2017 Annual Report (July 1, 2016 – June 30, 2017)



Activity Book – children and educators

STORM
Only rain in the stormdrain

STORM – Fiscal Year 2017 Annual Report (July 1, 2016 – June 30, 2017)

Multilingual cup – general public can use this color-changing cup, which reminds them and anyone who sees it that only rain (belongs) in the storm drain!


FIVE GUYS
City of Phoenix