

**Arizona Department of Transportation
Annual Report From
MS4 Permit AZS0000018-2015**

Part 1: General Information

Reporting Period: July 1, 2017– June 30, 2018

MS4 Program Contact: Eileen Dunn, CPMSM

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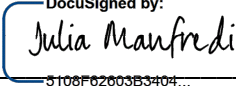
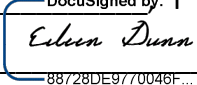
Name of Certifying Official: Julia Manfredi, CPESC, CPSWQ
(Section 14.3 of this permit)

Title: Environmental Programs Manager

Mailing Address: Same as above

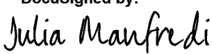
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As the Certifying Official, Julia Manfredi  DocuSigned by: 3108F62603B3404...
authorize the Water Resources Manager, Eileen Dunn  DocuSigned by: 88728DE9770046F..., to
be a representative and signatory on the Arizona Department of Transportation Annual Report
Form, MS4 Permit AZS0000018-2015.

Part 2: Annual Report Certification

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly 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.

DocuSigned by:

5108F62603B3404...

9/28/2018

Signature of Certifying Official

Date

Part 3: Narrative Summary of Stormwater Management Program Activities

This section provides a status summary of implementation activities, progress, successes and challenges in each area during the reporting year. The discussion contains an overall annual program review for each of the components, including an assessment of the effectiveness of stormwater best management practices in reducing the discharge of pollutants to and from the MS4 to the maximum extent practicable, and to assess improvements in stormwater quality (Permit Part 4.1.3). Each section will identify the permit requirements and whether the requirements were satisfied or not satisfied and explain if a permit condition could not be met. Additionally, any changes or revisions to the water quality monitoring program, including providing an update to the current listing of impaired waters and recently modified TMDLs will be provided here. For those permit conditions that require certain activities to be completed throughout the permit term, the narrative will include a percent complete for that permit task. Substantial developments or changes to the number or type of activities, frequency or schedule of activities, or the priorities or procedures for specific best management practices (BMPs) will be identified and significant timelines or proposed milestones associated with the next annual reporting period may be discussed.

If applicable, the summary will provide a description of modifications and updates to the stormwater management program (SWMP) (Section 4.1.4) for the following activities under each subsection:

- 1.) Addition of New Control Measures (Part 4.1.4.1):- Summarize the development and implementation of any new stormwater best management practices or control measures each year; *ADOT is currently reviewing the utilization of suitable recycled inert materials from recycled crushed concrete, recycled crushed clay pipes, recycled crushed waste ceramic materials, recycled crushed bricks/tiles for final stabilization. Such recycled crushed inert substances must meet the ADOT material and gradation requirements for Riprap, Rock Mulch and Decomposed Granite. The recycled inert materials that generate excessive fine particles beyond the ADOT specified amount in the gradation requirements shall be prohibited. Nearly 1/5 of the project budget could be potentially decreased for urban landscape projects if suitable recycled inert materials are installed for final stabilization ground cover in lieu of natural Decomposed Granite and Granite Mulch. In addition ADOT has been experimenting with installing, maintaining, removing and disposing of simple non-proprietary temporary BMPs consisting of non-woven very high-survivability geotextile fabric at the catch basins located within construction limits. The contractor shall lift the existing grate and wrap the non-woven geotextile fabric completely around both sides of the grates, completely overlapping from end to end on the surface of the grate. The contractor shall fasten fabric to the grate using wire ties, or other measures as approved by the Engineer, to secure the fabric in place. The contractor shall then place existing grate securely back into original position of the catch basin. This should act as a barrier to further minimize ADOT's contribution of sediment and other pollutants to the stormwater conveyance. ADOT is also still pursuing the updates to the language in the Standard Specifications for Road and*

Bridge Construction under Section 104.09, as well as, introducing the use of the Environmental Permits Issues and Commitments (EPIC) sheet which will outline specific project environmental commitments and permitting requirements as a formal design sheet in the 100% plans. The objective of both efforts will be to reduce duplicative or conflicting information and present an overall concise and readily available format to the contractor, ensuring a better bid advertisement, award and constructability review process and enhanced compliance with regulation. ADOT continues to implement the use of non-netted waddles in areas of concern for specific listed threatened and endangered species. In coordination with the USFWS, ADOT has utilized coordination, communication and problem-solving techniques to ensure compliance with the Arizona Pollutant Discharge Elimination System (AZPDES) as well as the Endangered Species Act (ESA).

- 2) Addition of Temporary or Experimental Control Measures (Part 4.1.4.2): Specify the occasions when these control measures were initiated and terminated, and the perceived success of these temporary control measures; *The measures discussed in part 1 above are new and can be considered experimental, since they will be adjusted if not successful. Additionally, ADOT has undergone updates to allow the approved projects list to become more comprehensive and streamlined. The below table is a list of "Temporary and Experimental Control Measures" added to the ADOT's Product List from September 2017 to August 2018.*

Product ID No.	Product	Product Type	Approval Date
16074	Straw Lock	Tacking Agent	Nov-17
17112	Conwed 1000	Wood Fiber	Nov-17
17151	EcoSolutions EcoFibre	Wood Fiber	Mar-18
17150	Second Nature Wood Fiber, Hydraulic Mulch - Wood	Wood Fiber	Mar-18
17110	Terra-Wood with UltraGro	Wood Fiber	Nov-17
17104	SF-3D7736	Silt Fence	Nov-17
17106	SF-3D9036	Silt Fence	Nov-17
18002	Smart Fence 36	Silt Fence	May-18
16136	W100	Silt Fence	Nov-17
16151	WINFAB 77SF	Silt Fence	Nov-17
17012	Excel CC-4	Blankets	Nov-17
17051	Landlok C2	Blankets	Nov-17
16018	S32	Blankets	Nov-17
16096	Nedia Straw Wattle 0925B	Sediment Logs, Wattles, Fiber Rolls	Sep-17
16097	Nedia Straw Wattle 0925P	Sediment Logs, Wattles, Fiber Rolls	Sep-17
16098	Nedia Straw Wattle 1210B	Sediment Logs, Wattles, Fiber Rolls	Sep-17
16099	Nedia Straw Wattle 1210P	Sediment Logs, Wattles, Fiber Rolls	Sep-17

- 3) Increase of Existing Control Measures (Part 4.1.4.3): Summarize modifications to existing stormwater best management practices that increase the number of activities, increase the frequency of activities, or other increases in the level of implementation; *ADOT is working on ensuring open lines of beneficial and concise communication are carried on throughout the project life, cradle to grave, among all Agency personnel. Chains of communication have been reinforced, training has been provided and step-by-step implementation meetings have been utilized to further translate the changes associated with the MyDEQ online system. All the ADOT Districts are now live and active on the MyDEQ system. In addition to training and communication, construction projects continue to experience the following increase in guidance according to our Roadside Resource specialists:*

Emphasis on Tillage - All seeded areas suitable for tillage shall be pre-tilled to promote on-site stormwater infiltration and alleviate stormwater surface runoff, as a part of stormwater Volume Reduction Approaches (VRAs).

Emphasis on noxious and invasive weeds- In addition to Federal Seed Act Regulations, unless otherwise approved by Roadside Development through the Engineer, the contamination of seed lots from the following noxious / invasive plant species are not permitted.

NOXIOUS / INVASIVE WEEDS WATCH LIST FOR THE CONTAMINATED SEED LOTS	
SCIENTIFIC NAME	COMMON NAME
<i>Amaranthus retroflexus</i>	Redroot Amaranth / Redroot Pigweed / Red-Rooted Pigweed / Rough Pigweed
<i>Bassia scoparia</i> (syn. <i>Kochia scoparia</i>)	Kochia / Fireweed
<i>Bothriochloa bladhii</i> (syn. <i>Andropogon bladhii</i> / <i>Andropogon caucasicus</i> / <i>Andropogon intermedius</i> / <i>Bothriochloa caucasica</i> / <i>Bothriochloa intermedia</i>)	Caucasian Bluestem
<i>Bothriochloa ischaemum</i>	Yellow Bluestem
<i>Brassica tournefortii</i>	Sahara Mustard / Mediterranean Mustard / Prickly Turnip
<i>Bromus tectorum</i>	Cheatgrass / Downy Brome / Broncograss / Downy Chess / Soft Chess / Drooping Brome
<i>Cynodon dactylon</i> (syn. <i>Capriola dactylon</i>)	Bermudagrass / Devilgrass
<i>Cenchrus spinifex</i> (syn. <i>Cenchrus incertus</i> / <i>Cenchrus pauciflorus</i> / <i>Cenchrus parviceps</i>)	Field Sandbur / Coastal Sandbur / Common Sandbur
<i>Chorispora tenella</i>	Crossflower / Purple Mustard / Blue Mustard / Musk Mustard / Beanpodded Mustard / Tenella Mustard
<i>Eragrostis lehmanniana</i>	Lehmann Lovegrass
<i>Euphorbia esula</i>	Leafy Spurge / Green Spurge / Wolf's Milk

NOXIOUS / INVASIVE WEEDS WATCH LIST FOR THE CONTAMINATED SEED LOTS	
SCIENTIFIC NAME	COMMON NAME
<i>Euphorbia prostrata</i> (syn. <i>Chamaesyce prostrata</i> / <i>Euphorbia chamaesyce</i>)	Prostrate Spurge / Prostrate Sandmat / Ground Spurge / Blue Weed
<i>Onopordum acanthium</i>	Scotch Thistle / Cotton Thistle
<i>Pennisetum ciliare</i> (syn. <i>Cenchrus ciliaris</i>)	Buffelgrass / African Foxtail Grass
<i>Salsola kali</i> subsp. <i>tragus</i> (syn. <i>Salsola iberica</i>)	Russian Thistle / Tumbleweed
<i>Setaria faberi</i>	Japanese Bristlegrass / Giant Foxtail
<i>Setaria pumila</i> (syn. <i>Chaetochloa glauca</i> / <i>Chaetochloa lutescens</i> / <i>Panicum glaucum</i> / <i>Setaria glauca</i>)	Yellow Foxtail / Pigeon Grass / Yellow Bristlegrass
<i>Setaria viridis</i>	Green Bristlegrass / Pigeon Grass / Wild Millet / Green Foxtail
<i>Solanum physalifolium</i> (syn. <i>Solanum physalifolium</i> / <i>Solanum sarachoides</i> / <i>Solanum villosum</i>)	Hoe Nightshade / Argentine Nightshade / Green Nightshade / Hairy Nightshade

Strengthening quality control regarding filler material/media used for Wattles/Logs, Bio-socks, Filter Socks, Compost Socks, and Cotton Mesh Tubes- Filler material/media used for perimeter control and stormwater quality protection BMPs shall not discharge harmful pollutants/nutrients that impair stormwater quality. The Engineer shall randomly sample/inspect a minimum of three (3) above-specified BMPs by opening the outer layer. Non-filler materials such as: animal manures/wastes, city biosolids, rocks, tree barks, unspecified wood chips, construction debris, soil clumps, and/or other unspecified inert materials are not allowed within the compost BMP/CM products.

Enforced Functional Longevity and good working condition of all temporary BMPs- The contractor is responsible to maintain the functional longevity and good working condition of all temporary stormwater quality protection BMPs during the entire contract time. No separate measurement or direct payment will be made for the maintenance and/or replacement of such temporary BMPs to assure manufacturer-specified functionality.

Emphasis on the removal of non-biodegradable and/or non-photodegradable components of temporary BMPs- Wattles/Logs, bio-socks, filter socks, compost socks, or cotton mesh tubes shall be deemed as temporary stormwater quality CMs/BMPs- The non-biodegradable and/or non-photodegradable components of such temporary BMPs are required to be removed when the project site has achieved final stabilization as approved by the Engineer.

Continued emphasis on fractured/crushed rock materials for enhanced energy/velocity dissipation- Rock Mulch/Riprap materials shall be fractured/crushed rocks in angular shape and as defined in the ADOT Standard Specifications, Section 810. Unless otherwise called out in the plans/details/estimates or as directed by the Engineer, natural river-run

materials, especially the rounded natural river rocks/cobblestones and pebbles are not acceptable.

Erosion/Sediment Control and Stormwater Quality Protection beyond the project limits- The contractor will apply erosion/sediment and water quality protection BMPs for off-project-site staging, material storage, maintenance yard, disposal spots, and stockpiling areas as required by the facility owner and environmental permit standard at no additional cost. If the contractor elects to obtain off-project sites for staging, stockpiling, material storage, maintenance yard, or waste disposal, the contractor will meet the requirements for erosion/stormwater quality control within the written agreements with facility/land owner, as well as environmental permits for such operations.

- 4) Replacement of Existing Control Measures (Part 4.1.4.4): Briefly summarize any replacements of existing control measures made with prior approval of ADEQ pursuant to section SWMP Revisions Requiring Permit Modification; According to ADOT Roadside Resources specialists:

Emphasis to limit the amount of temporary Silt Fencing on ADOT projects- Temporary Silt Fences have been replaced by large diameter perimeter control Best Management Practices (BMPs) or temporary stormwater quality Control Measures (CMs) – such as the engagement of more 20-inch diameter (+) wattles in lieu of temporary Silt Fences. This is a result of inconsistent proper installation and maintenance of Silt Fencing. To circumvent the continued issue, technical specialists have developed appropriate alternatives.

Utilize Straw Mulch Cover in lieu of Wood Fiber as final mulch cover to protect all seeded areas- Final straw mulch cover or hydraulically applied straw mulch cover shall be applied on all seeded areas, as specified in in the ADOT Standard Specifications, Sections 3.04 or 3.05, within 24 hours of seed application. Seeding application shall be accomplished prior to installation of straw mulch cover or hydraulically applied straw mulch cover. Combining the seed application process with the mulching process will not be acceptable. By implementing Low Impact Development (LID) source-control measure, the contractor shall install final straw mulch cover or hydraulically applied final straw mulch cover to minimize raindrop splash erosion and wind erosion/dust, as close as possible at the source of disturbance to protect all seeded areas. Thermally-refined wood fiber shall not be utilized solely as final mulch cover to protect all seeded areas.

*Emphasis on Replacing BMPs products of interior/exterior netting layer with dense outer layer that will not entangle snakes- No BMPs products with interior/exterior netting layer shall be applied within the identified Narrow-Headed Garter Snake (*Thamnophis rufipunctatus*) and/or Northern Mexican Garter Snake (*Thamnophis eques megalops*) habitats including the 600-foot-buffer zone from Ordinary High Water Mark (OHWM) of all definable washes/streams or watercourses within the project limits. The contractor shall replace straw/excelsior Wattles/Logs with equivalent BMP products made of bio-*

degradable containment material – such as cotton mesh with openings/holes not greater than ¼"X¼" or 0.25" in diameter (≤ 0.25 inch) at no additional cost to the Department as approved by the Engineer based on the ADOT construction Professional Landscape Architect's (PLA's) evaluation. If the contractor chooses to employ compost-filled BMPs, they shall be covered with dense outer layer that will not entangle garter snakes during its entire life span as approved by the Engineer based on the ADOT construction PLA's evaluation.

- 5) Discontinuing or Decreasing an Existing Control Measure (Part 4.1.4.5): Briefly summarize any discontinuing or decreasing of existing control measures, including an explanation of why the controls were eliminated and analysis of how the goals of the existing control measure are expected to be achieved once the control is eliminated or reduced; *Silt Fencing control measures have been decreased as a result of inconsistent proper installation and maintenance. Due to past projects' experience, ADOT is also suggesting that it would be more cost effective to apply Class II Seeding in combination with mini-benching BMP in lieu of conventional Erosion Control Blanket.*

The narrative summary shall include the following:

A. Mapping the MS4 Program

- Stormwater Sewer System and Outfall inventory and mapping status update. *During the 2017-2018 reporting period, ADOT completed mapping of both the I-19 and I-8 consisting of over 240 lane miles. Additionally, the I-8, I-10, I-17, and I-19 corridors were assessed via aerial imagery for presence of existing post construction best management practices (PCBMPs) as established by the ADOT Water Resources Post Construction BMP Manual. This work was finalized within the timeframes required in the permit; and will be made available when the ADOT Feature Inventory System is updated by internal staff. The information and methodology are available upon request as a KMZ file and PDF format for both the outfall identification and PCBMP efforts. ADOT is currently requesting proposals for the mapping of the next round of required routes in the current permit year as well as establishing a method for mapping the rest of the State Route and US Route system within Arizona.*

B. Summarize Illicit Discharge, Detection and Elimination (IDDE) program activities.

- Describe any changes in authority. *There have been no changes in authority during this reporting period. ADOT does not have the legal authority to enforce removal or elimination action. When required, notification is sent to the land owner or operator to eliminate the illicit discharge or the proper authorities, the Arizona Office of the Attorney General, will be notified for further action.*
- IDDE Trainings. *IDDE training material is incorporated into ADOT's Stormwater Awareness and Environmental Awareness classes. Continued one on one coordination and training is provided to District personnel upon request. The ADOT Water Resources team's focus for the next permit term will be to standardize and implement a unified IDDE program using the*

development of Standard Operating Procedures (SOPs), form consistency and possibly digital documentation. More specific online training for field personnel is currently in development for completion in the following year provided sufficient funding is maintained.

- *Outfall Inspections and tracking systems, includes reporting and any follow-up activities. During the 2017-2018 reporting period, ADOT inspected 21.3% of currently identified priority outfalls. Defer to Part 4 table, Section 6.3 and 6.4 for more information.*
- *Illicit discharge prevention activities. In addition to dry weather screening activities, ADOT personnel within the Districts statewide have been trained to identify, investigate, and respond to potential illicit discharges. When a potential discharge is identified and investigated, one-on-one coordination with the land owner or operator is pursued to aid in eliminating the source. If further follow up is required, a formal letter is sent referencing the above mentioned enforcement authority of the Arizona Office of the Attorney General. Per the direction of the formal letter, District personnel will re-investigate the site to confirm elimination within 30 days of the request. A follow-up report consisting of a memo or email format is provided to ADOT Water Resources for file, when requested or when an official letter/investigation is documented.*
- *Outfall inspection and field screening procedures and significant findings. 73 outfalls were inspected during this reporting period per the requirement of the permit to review at least 20% of priority outfalls during each year of the permit, Section 6.3. The 73 outfalls consisted of 21.3% of all mapped outfalls. Nine of the locations were found to have some indication of flows (either presence of standing water or actual flows) at the outlet. All of the nine locations were inspected during the dry season and were located within the highly urban area of the Central District and South Central District. Screening procedures included inspection by a qualified person (Water Resources staff member) and documentation of the outfall location, date and time of inspection, person performing the inspection, if a rainfall event was within the last 72 hours, type of structure, and presence of flows, smell, floatables, vegetation/algae and deposits. Photographs were provided for all outfalls with presences of flows; additional notes were provided when necessary. Flows present within the nine identified locations were likely a result of existing agricultural or housing complex connections to ADOT's MS4. Standard scope of work procedures will be drafted to provide further guidance on how ADOT maintenance staff should or should not address this type of situation when excessive vegetation is present. Currently the hydraulics manual is contracted to be updated and ADOT Environmental Planning and ADOT Water Resources section will be involved in the update. This will accommodate the need to establish standard operating procedures. ADOT is also reviewing current procedures to address this particular type of concern by modifying the encroachment permit process to include runoff and stormwater connections. This would allow for tracking and mapping of new connections to ADOTs MS4 as well as ensure the integrity of the stormwater system infrastructure.*

- Number of illicit discharges identified and resolutions. *The total number of illicit discharge locations is identified in Part 4, Sections 6.3, 6.4 and 6.4.3 of the table. The majority of the illicit discharge locations were found to be within the urban metropolitan area of the Central District. In the cases where a formal letter was issued, follow-up investigations occurred within 30 days of the date indicated on the letter. Formal letter documentation always includes municipality ordinances and guidance for future compliance (website details are provided in the letter, and informally in person if needed). The predominate source of illicit discharge, indicated by District staff, was a result of improperly installed pool drains and improper disposal of grease trap debris. ADOT had one illicit discharge occurrence within the Town of Quartzsite, AZ. An ADOT storm drain was inundated by illegal dumping of grease and debris. The local property owner was notified of the improper disposal concern and issued a formal letter to cease the activity in question. ADOT contracted to have the storm drain and outlet area cleared of debris and grease in order to return the stormdrain to a pre-impacted condition, minimizing pollutants to extent practicable and ensuring maintained operational capacity.*
- Complaint driven inspections and investigations. *ADOT received 3 direct complaints from the public regarding Stormwater concerns via the "Contact" page, "Send Us Your Questions and Feedback" form on the ADOT website. Of which, one complaint was followed up on by ADOT District Maintenance staff. This consisted of cleaning debris from a stormwater conveyance channel to ensure adequate flows during monsoon events. Comments are received by the ADOT Communications Department and relayed to the appropriate District. The Districts will review the comment and address concerns when applicable.*
- IDDE field screening program and investigations - including identified source identification, and any resolutions/corrective or enforcement actions, including those reported to other jurisdictions for follow-up. *Field screening efforts included the review of 73 priority outfalls which consisted of 21.3% of all mapped priority outfalls. Nine outfall locations experienced dry weather flows. Surrounding land use consisted of a predominantly urban environment with adjacent housing complexes and agricultural lands. ADOT is confirming the source of flows at each location; the sources are presumed to be existing connections related to agricultural use. None of the locations have been reported to other jurisdictions for follow-up. ADOT is also reviewing current procedures in place to address this particular type of concern by modifying the encroachment permit process to include runoff and stormwater connections. This would allow for tracking and mapping of new connections to ADOTs MS4 as well as ensure the integrity of the stormwater system infrastructure.*
- Spills within permit area. *The number of spills within ADOT's MS4/ right-of-way has been recorded in Part 4, Section 6.5. Spills into ADOT's MS4 and/or Right of Ways are responded to and managed by ADOT HAZMAT. They are directed to notify ADOT Water Resources, ADEQ, and the NRC when appropriate. Spills often consist of fuel and other automotive fluids. In this event, absorbent material and Microblaze are typically used to control and clean up the spill*

area immediately. Following the initial response, an environmental response contractor is hired to conduct a full remediation.

- *Described updates to Dry Weather Screening Manual. In an effort to ensure consistency in format and recorded documentation, the Dry Weather Field Screening form was updated in the 2016 -2017 permit term. The form now consists of a fillable PDF with check box options, text fields, and notes indicating when photo documentation is required. The form was consistently applied during field screening activities and has been deemed accurate for continuation into the next permit term, 2018-2019.*
- *Describe updates to Stormwater Monitoring Guidance Manual. The MS4 Stormwater Monitoring Guidance Manual was completed in the winter of 2016, revised 2017 and most recently updated in July of 2018. The sampling protocol and decontamination procedures have been edited to more accurately reflect the current process and requirements. This guidance document will be posted to the ADOT website.*
- *Describe updates to Enforcement Response Plan (ERP). No updates were made to this manual. It will continue to be reviewed annually and updated as necessary.*

C. Construction Program Activities

- *Trainings for construction and post-construction. Both ADOT and contractors are trained through the Arizona Chapter Associated General Contractors, Erosion Control Coordinator Training courses. In addition, ADOT employees are trained in new development and redevelopment, as well as good housekeeping. Training numbers are listed in Part 4, Section 9 of the below table.*
- *Annual updated inventory of construction activities. An inventory for the reporting period is attached.*
- *Status of inventory/plan review of these facilities. The inventory has been created, maintained, and is included as Appendix B.*
- *An overview of inspection findings and significant findings. ADOT inspections/results are documented in the Stormwater Pollution Prevention Plan for each project.*
- *Corrective and enforcement actions needed and taken in response to construction inspections. No formal enforcement actions have been necessary for construction inspections. ADOT and the contractor meet a minimum of weekly to discuss projects, including stormwater controls, and typically conduct inspections together. ADOT and selected contractors follow a formal partnering program and escalation process for issues as needed, and ADOT maintains the ability to stop work, if justified.*

- Summary of any new post-construction controls for discharges from new development and redevelopment ADOTs projects. *ADOT continues to use currently identified post-construction controls. To ensure continued implementation of post construction BMPs on ADOT bid and administered projects, ADOT Water Resources and Project Management are in coordination to develop a standard process for considerations during initial design phases. Post construction BMPs and/or Stormwater controls will likely be added as a section in the Initial Project Assessment and the Project Management and/or Drainage and Hydraulics Manual to ensure continued review throughout final design. The contract to update these manuals is currently in review. A pilot widening project along Interstate 17 has included this item in the scope of work for design, as well as, several traffic interchange and widening projects across the state. Results from the project will be utilized to determine applicability of this approach to all ADOT projects or those meeting justifiable criteria. PCBMPs are also being tracked through the outfall mapping process. The aerial imagery in KMZ format will be more readily available for District staff to conduct routine maintenance. This has been completed for routes I-8, I-10, I-17 and I-19 and will continue through future permit terms.*
- An overview of the ADOT's post-construction inspection program. *Post-construction controls are inspected and maintained as needed by District Maintenance Orgs. A maintenance tracking system, PeCos, records when drainage or drainage related activities are conducted. ADOT PCBMPs were recorded as part of the 2017-2018 outfall mapping effort along routes I-8, I-10, I-17 and I-19. This information is now available via KMZ file format as Appendix C.*
- Annual updated inventory of post-construction water quality control measures/BMPs. *An inventory of PCBMPs can now be viewed via KMZ through Google Earth. The KMZ files for I-8, I-10, I-17 and I-19 are available as an updated Appendix C. The design and implementation of PCBMPs are being identified in early design through coordination with the Project Management team. These have specifically been called out on two traffic interchange projects, I-17 lane addition project and are now installed on the South Mountain Freeway project. In coordination with the design team, the process describing when PCBMPs should be utilized within ADOT's MS4 will likely be added to the design manual.*
- Corrective and enforcement actions needed and taken in response to post-construction inspections. *None recorded during this reporting period.*
- Summary of any new or revised post-construction requirements issues. *ADOT continues to develop the post-construction program. To ensure continued implementation of post construction BMPs on ADOT bid and administered projects, ADOT Water Resources and Project Management are in coordination to develop a standard process for considerations during initial design phases. Post construction BMPs and/or Stormwater controls will be added as a section/appendix in a design manual. This will allow for better tracking and consistent implementation. As part of the outfall mapping effort, existing PCBMPs will continue to be identified.*

- Describe updates to Erosion and Pollution Control Manual. *The Erosion and Pollution Control Manual is currently contracted to be updated, managed by the ADOT Roadside Resources Section and overseen by the ADOT Water Resources Section. This will ensure applicable BMPs for Arizona remain the focus of the manual.*
- Describe updates to Post-Construction BMP Inventory/Manual. *No updates have been made to the PCBMP Manual. The PCBMP inventory is now being updated concurrently with the outfall mapping process. Please see above bullet descriptions.*

D. Measures to Control Discharges for Roadways

- Trainings. *ADOT staff is trained in how to utilize appropriate measures to control discharges from roadways through stormwater awareness, environmental awareness, and storm sewer system and highway maintenance classes. Number of employees trained is identified in Part 4, Section 9 of the table.*
- Summary of roadway and stormwater sewer repairs, maintenance schedules and priorities, inspections, control measures, cleaning, vegetation management are included in Part 4, Section 8 of the table. *This information is obtained from the ADOT PeCos recording and tracking system associated with all ADOT maintenance activities. The units in which the line items are recorded have been updated in the SWMP to more accurately record what activities have occurred. This will directly correlate to the units presented in PeCos. The table in Part 4, Section 8 has been updated to reflect the PeCos tracking system units. Units in previous years were recorded as number of occurrences.*
- Updates to roadway BMPs. *There have been no major updates to roadway BMPs. Defer to numbers 1-5 in the beginning of this report to review trends in implementation.*
- Pollution Prevention and Control Measures for Pesticides and Fertilizer Applications in ROWs. *Control measures include application by licensed professionals, use of approved materials, and timing with respect to precipitation and proximity to water bodies. ADOT avoids using pesticides and fertilizers near waters where possible and complies with the Pesticide General Permit where needed. In addition, ADOT utilizes pesticide use plans (PUPs) where applicable.*
- Erosion Abatement Projects. *ADOT has identified 37 federally funded construction projects which specifically addressed erosion concerns relative to culvert replacement, bridge repair, rockfall mitigation, drainage improvements, landscaping, and erosion control and/or slope improvements. The 37 federally funded construction projects have been advertised for bid and award throughout the last fiscal year. The list and brief description of the projects may be found in Appendix D. The maintenance project associated with Mule Gulch culvert and slope repair was finalized in August of 2018. This project was completed to address the NOV Case ID # 175419 which has since closed. ADOT continues to work closely with the District personnel to assess if similar concerns remain on the State Route 80. It is also important to note, that*

though these projects were identified solely for erosion related concerns, general erosion, drainage, slope, etc. repairs are addressed on all ADOT projects where applicable. Typical pavement preservation projects will review the level of service associated with the pavement structure as well as the associated drainage structures and bridges.

- *Status of Retrofit Updates. ADOT has not completed any retrofit updates for this reporting period. ADOT plans to address retrofits as part of other planned construction or maintenance work.*
- *Winter Storm Policies. ADOT's Winter Storm Policies and Guidance are outlined through the Winter Storm Management Operations Manual: <https://azdot.gov/business/environmental-planning/programs/winter-storm-management>*

E. Summarize public awareness activities including outreach and education/public participation activities

- *Summarize outreach events, topics, number of events, number of people reached, number and type of materials distributed, and target groups. ADOT is an active member in Stormwater Outreach for Regional Municipalities (STORM). As part of this group, ADOT served on the panel to implement online outreach through coordination with ABC15 and update for the STORM website, as well as, presented at the STORM Construction Seminars for the general public and contractors. Combinations of creative advertisements were used to increase visibility of STORMs online resources; advertisements included display banners voted on by the team, Facebook ads and posts and high-impact units. This resulted in over 3.1 million impression views and over 48,727 clicks from the general public. Defer to STORM's online annual report for more information. Additionally, as part of the STORM membership, ADOT receives educational and promotional items for outreach opportunities. ADOT is currently establishing procedures for allowing stormwater outreach materials to be made available at all rural public meetings relative to construction projects. ADOT has also continued to provide outreach materials at local municipality trainings and ADOT trainings when applicable or presenting. ADOT, outside of STORM, is focusing on the development of multi-cultural posters for rotation as ADOT rest stop facilities. Since the last permit term, personnel are now available within the Communications Department to implement the poster initiative. ADOT also continues to participate in Environmental Resource Roadshow Outreach events and press coverage including but not limited to Keep Arizona Beautiful. In below Part 4, Section 10.2.5 of the table, new items have been added to more accurately reflect online public participation in these efforts.*
- *Public access to stormwater documents. Stormwater documents can be found on ADOT's Water Resources Website at <http://www.azdot.gov/business/environmental-planning/water-resources>. ADOT has completed annual reviews of the website to ensure that all program documents are maintained online. All ADOT water activities are condensed into a more readily accessible web-format. Information concerning Stormwater Discharge Permit, manuals, Section 404, Section 401, Section 402 and contacts may all be found on the same page, to be*

navigated by visible tabs rather than searching through the entire environmental sections' webpage. ADOT's Erosion and Pollution Control Manual and Water Quality Section 404/401 Manual have been contracted to be updated within this permit term. The manuals will be made available on the ADOT Water Resources website when completed. Adopt-a-Highway information is also found online: <http://www.azdot.gov/business/programs-and-partnerships/AdoptaHighway> with links to Keep Arizona Beautiful. ADOT also participates in STORM, whose website includes stormwater information (www.azstorm.org) The STORM FY18 Annual Report (will be available here: <http://www.azstorm.org/about-us/annual-reports>) provides additional details regarding the group's outreach activities.

- Identify activities, number of people involved, number and type of materials distributed if applicable. *This information is included in the table in Part 4, Section 10.*
- Describe MS4 procedures for public reporting of spills, dumping, discharges, and related stormwater issues. *Spills can be reported through the Traffic Operations Center, which in turn, notifies ADOT's HAZMAT team. Dumping and littering can be reported through Keep Arizona Beautiful/Adopt-a-Highway hotline. In addition, contact for ADOT Water Resources staff is available online for use as well. ADOT has also updated the online "Send Us Your Questions and Feedback" form to indicate more specifically illicit discharge and/or stormwater related concerns. The current category is stormwater and/or environment.*

F. ADOT Facilities:

- Trainings. *Facilities trainings are currently incorporated in other stormwater awareness and good housekeeping trainings (documented in the table in Part 4 of this report).*
- Status of inventory/prioritization of ADOT facilities. *ADOT has identified approximately 275 sites throughout the state comprised of Maintenance Yards, Storage Yards, Administrative Complexes, Multi-function Complexes, Ports of Entry, Rest Areas, and MVD offices. Of the 275 sites identified 75 sites were evaluated in this reporting cycle, of those sites approximately 7 are high risk based on the stormwater criteria set forth in the permit.*
- Annual updated inventory of ADOT facilities. *The inventory is included with this report as an electronic Excel Spreadsheet.*
- Update/changes to the SWMP procedures for maintenance and facilities BMPs. *No updates were made.*
- Summary of inspection findings. *Facility inspections are ongoing for compliance under facility pollution prevention plans and documented in the plans. Inspections are tracked and documented at the individual facilities.*

- Describe updates to Maintenance and Facilities BMP Manual. *No updates were deemed necessary at this time.*
- Representative Outfalls, including a discussion of essentially identical outfall(s) if applicable incorporating outfall ID, outfall location, drainage area [ft²], runoff coefficient of drainage area [%]. *ADOT does not currently utilize any representative outfalls at facility locations. Outfall information for facilities that require sampling is listed below.*

Site Location	Location of the outfall	Substantially identical effluents	Drainage area (sqft)	Runoff Coefficient	
Spring Creek Storage Site	West side of site	There is one outfall for the entire site	218,000	0.35	Low
Roosevelt Maintenance Yard	Northeast corner of site	There is one outfall for the entire site	50,928	0.4	Medium
Superior Maintenance Yard	West side of site	There is one outfall for the entire site	55,290	0.6	Medium
Superior Office	South side of site	There is one outfall for the entire site	37,069	0.7	High
Nogales Maintenance Yard	Southwest corner of site	There is one outfall for the entire site	115,037	0.55	Medium

G. Description of any new or revised policies related to stormwater management, if applicable.

ADOT is currently updating and field testing improvements to the language in the Standard Specifications for Road and Bridge Construction under Section 104.09, as well as, introducing the use of the Environmental Permits Issues and Commitments (EPIC) sheet which will outline specific project environmental commitments and permitting requirements as a formal design sheet in the 100% plans. The objective of both efforts will be to reduce duplicative or conflicting information and present an overall concise and readily available format to the contractor, ensuring a better bid advertisement, award and constructability review process and enhanced compliance with regulation. Currently both initiatives are in the industry review stage, prior to finalization. As a supplemental objective to the updating of the standard specifications, ADOT is also developing standard operating procedures to ensure consistent and implementable methods for determining final stabilization. This will ensure appropriate and repeatable methods are used in compliance with the CGP and any permit requiring stabilization. As mentioned above, ADOT has begun efforts to also standardize considerations of post-construction BMPs during initial design phases. Post construction BMPs and/or Stormwater controls will be added as a section in the Initial Project Assessment to ensure continued review throughout final design. A pilot widening project along Interstate 17 has included this item in the scope of work for design. Results from the project will be utilized to determine applicability of this approach to all ADOT projects or those meeting justifiable criteria. The project is ongoing and in the final design phase.

H. Instances of Other Non-Compliance (part 14.18.6): *ADOT had one instance of non-compliance during the 2017-2018 permit term. A Notice of Violation (NOV), Case File number 175419, was issued June 11, 2018 to ADOT for failing to repair the Mule Gulch drainage culverts on the State Route 80 Bridge over the Queen Mine Lavender Pit area, owned by Freeport McMoRan, during the 2016-2017 permit term as agreed previously with ADEQ. ADOT completed the repairs on August 3, 2018 and ADEQ closed the NOV on August 7, 2018. ADOT continues to monitor the corridor to ensure the culvert area is maintained.*

Part 4: Numeric Summary of Statewide Stormwater Management Program Activities

The number of best management practices performed each year is indicated in the table. If no measurable goal has been identified in the table below, the progress of the BMP is described in Part 3 Narrative Summary.

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
STORMWATER SEWER AND OUTFALL MAPPING						
5.2	Update Storm Sewer System Mapping and Outfalls					
	Miles of MS4 mapped I-10 Corridor	391	391	391		
	Outfalls identified I-10 Corridor	1615	1,824	1,824		
	Miles of MS4 mapped I-17 Corridor	118	118	118		
	Outfalls identified I-17 Corridor	381	646	646		
	Miles of MS4 mapped I-8 and I-19 Corridor	0	0	243		
	Outfalls identified I-8 and I-19 Corridor	0	0	596		
	Miles of MS4 mapped I-40 Corridor	0	0	0		
	Outfalls identified I-40 Corridor	0	0	0		
ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)						
6.2.2	Enforce Standard Encroachment Permit-					
	Encroachment permits issued	5069	5920	1813		
	(Other Numeric measurable goal(s))					
6.3	Detecting Potential Illicit Discharges and Illicit Connections					
6.3.1	Outfalls inspected	46	59	73		
6.3.1	Priority outfalls identified to date	230	295	342		
	Priority outfalls inspected	46	59	73		
	Percent priority outfalls inspected	20	20	21.3		
6.3.1.B	IDDE discharges within ¼ of impaired or OAW	0	0	0		

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	Storm drain cross connection detected	0	0	0		
6.3.2	Other dry weather flows detected	11	9	3		
	Illicit discharges detected	Pending investigation	6	4		
	<i>(Other numeric measurable goal(s))</i>					
6.4	Investigate Illicit Discharges (Source Identification and Elimination)					
	Storm drain cross connection investigated	0	0	0		
	Illicit connections eliminated	0	0	0		
	Other dry weather flows investigated	0	9	3		
	Other dry weather flows eliminated	0	0	3		
	Illicit discharges investigated	4	6	5		
	Illicit discharges eliminated	4	6	4		
	<i>(Other numeric measurable goal(s))</i>					
6.4.1(b)	Report Incidental Dry Weather Discharges					
	Discharges reported to ADEQ	0	0	0		
	<i>(Other numeric measurable goal(s))</i>					
6.4.3	Duty to Eliminate Illicit Discharges					
	Follow-up Investigations	0	2	4		
	<i>(Other numeric measurable goal(s))</i>					
6.4.4	Coordinate with Local Jurisdictions for Complaint Response and Investigation					
	Illicit discharges reported to other jurisdictions for follow-up	0	1	0		
	<i>(Other numeric measurable goal(s))</i>					
6.5	Responding to Spills					
	Highway accident spills responded to	209	217	222		

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	Highway accident spills prioritized (potential for discharge)	27	16	15		
	Hazardous materials released	182	185	164		
	<i>(Other numeric measurable goal(s))</i>					
MEASURES TO CONTROL DISCHARGES FROM CONSTRUCTION SITES						
7.2	ADOT Construction Activity					
	NOIs submitted to ADEQ	387	96	118		
	NOTs submitted to ADEQ	Not Reported	45	0		
7.3	ADOT Contractor Construction Activity					
	NOIs submitted to ADEQ	203	172	133		
	NOTs submitted to ADEQ	Not Reported	61	0		
7.4	Violations and Enforcement					
	Stormwater violations	0	0	0		
	Contractors w/ enforcement action	0	0	0		
	<i>(Other numeric measurable goal(s))</i>					
7.5	Post-Construction and Measures to Control Discharges from New Development and Redevelopment					
	Projects reviewed for program	4	1	3		
	Post-construction BMPs installed	3	0	1 (Installed along South Mountain Freeway)		

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	Post-construction BMPs inspected	0	0	0 (task are recorded in PeCos, documented in Section 8.1.3 of this table)		
	(Other numeric measurable goal(s))					
MEASURES TO CONTROL DISCHARGES FROM ROADWAYS						
8.1.1	Inspect Storm Sewer System					
	Drainage inspections performed	128	19,098	12,443.29		
	(Other numeric measurable goal(s))					
8.1.2	System Maintenance Schedules and Priorities					
	Drainage work planned	ongoing	ongoing	ongoing		
	(Numeric measurable goal(s))					
8.1.3	Perform Repair, Maintenance, and Cleaning					
	Pavement protection and repair- Activities listed below	1408				
	101- Patch with Premix- CU YDS		1,072.7	4,407.73		
	102-Level with Premix- 12 FT Lane Miles (LM)		6,293.0	46.53		
	103- Fill Cracks- 12 FT LM		11.70	114.86		
	105- Replace Surface/Base- CU YDS		73.90	1,052.37		
	106- Chip Seal Coat (Major)- 12 FT LM		24.50	4.50		
	107- Seal Coat (Minor)- 12 FT LM		0.10	0.60		
	108- Flush Coat- 12 FT LM		1,516.9	1,783.06		
	109-Spot Flush/Seal Coat- 12 FT LM		24.0	38.66		
	111- Emergency Patch with Bulk Premix- CU YDS		1,325.5	588.46		

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	112-Tight Blading – CU YDS		1,733.5	1,349.54		
	113- Seal Cracks with Asphalt Rubber Sealant -12 FT LM		4,519.9	1,008.13		
	116- Emergency Patch with Special Material- pounds		1,356,569.5	This code was not recorded in PeCos		
	117-Patching with Recycler- CU YDS		448.1	201.31		
	119- Other Paved Surface Maintenance- Labor Hours		3,696.0	3,020.5		
	9102- Contract Pavement Leveling- 12 FT LM		6.1	0.27		
	9103- Contract on-call Concrete Repair- CU YDS		255.7	403.98		
	9106- Contract Seal Coat-State- 12 FT LM		23.9	156.00		
	9109-Contract Flushing- 12 FT LM		101.4	377.10		
	9111- Contract Pavement Milling and Replacement-12 FT LM		132.2	100.02		
	9112-Contract Pavement Profiling- 12 FT LM		53.0	This code was not recorded in PeCos		
	9113- Contract Crack Filling/Asphalt Rubberized Sealant- 12 FT LM		96.0	380.67		
	121-Blade unpaved roads-12 FT LM	118	511.2	12,531.79		
	131- Blade unpaved shoulders- Acres	96	369.8	This code was not recorded in PeCos		
	134-Maintain unpaved turnout/crossover- SQ FT	48	306,629.2	613,007.61		
	Litter removal	222				
	1501-Full Width Litter Pick Up- Acres		2,689.5	2,771.25		
	9313-Contract Litter (on-call)- Acres		596,710.0	706,966.00		
	1502-Spot litter and Debris Pick-up- Labor Hours	326	42,593.8	46,943.19		
	Mechanical sweeping	35				
	1507-Mechanical Sweeping- 12 FT LM		6,918.10	130,611.10		
	9157-Contract Mechanical Sweeping-Miles		23,735.4	79,929.34		

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	1601-Routine drainage maintenance-number of occurrences	238	15,603	10,149.10		
	1602-Emergency drainage maintenance- number of occurrences	78	555.0	841.50		
	1603- Clean cuts/channel/dikes/curbs- Linear FT	224	1,130,546.6	906,165.73		
	1604-Minor slide removals-SQ FT	98	878,462.0	76,549.50		
	1605-Routine structural repair-SQ FT	82	342,246.5	1,030,590.26		
	1607-Storm and rock patrol- miles	195	52,550.9	33,271.72		
	1608-Drainage inspection-number of occurrences	128	19,098	12,443.29		
	1610-Roadway pump inspections-number of occurrences	161	709	630.00		
	1690-Other drainage maintenance-Labor Hours	280	6,851.8	7,315.75		
	180-Major damage -Labor Hours	Not currently separated from regular emergency or damage repair in tracking system.	Not currently separated from regular emergency or damage repair in tracking system.- Total Hours – 2,341.5	Not currently separated from regular emergency or damage repair in tracking system.- Total Hours – 3,612.50		
	181-Emergency (if stormwater related)- Labor Hours		32	355.00		
	191-Encroachment permit (for Bluestake. Maintenance)-Labor Hours	340	23,348.5	22,640.50		
	Irrigation inspection	234				
	332- Irrigation Inspection-Units		494,279.5	221,610.00		
	9307-Contract Irrigation Inspection/Repair-Labor Hours		24.8	This code was not recorded in PeCos		
	333-Irrigation repair- Labor Hours	274	9,626.5	15,457.74		

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	341-Granite erosion control- Labor Hours	102	1,950.0	619.00		
	343-Non-granite erosion control-CU YDS	27	1,950.0	2,494.50		
	1400-Soil Stabilization- Acres	0	4.0	This code was not recorded in PeCos		
	Chemical vegetation control	395				
	351-Herbicide Vegetation Control - Acres		3,649.6	3,675.76		
	354-Chemical Control of Vegetation-Acres		83.8	67.61		
	1420-1430-1431-1432-1440-1441- Chemical Control of Vegetation - Acres		7,018.5	5,462.48		
	1433- Spot Pre-Emergent Shoulder Application- Acres		2,031.0	2,322.10		
	456-Wash interstate signs- SF Signs	74	1,871.5	1,651.00		
	603-Building and yard maintenance-	98	Not recorded	66,252.38		
	611- Material handling- Labor Hours	260	11,520.0	14,949.90		
	891-Premix material	65	Not recorded	4,347.24		
	892-Stockpile material- CU YDS	130	8,136.5	247,705.50		
	897-Screen material- CU YDS	20	6,106.0	2,450.00		
	899-Other material operations- Labor Hours	173	3,120.0	3,522.58		
	901-Administrative- Labor Hours	XX	93,917.0	77,018.41		
	(Other numeric measurable goal(s))					
8.2.3	Stabilize Roadway Slopes (attach summary of tracking & prioritization)					
	Acres of roadway slopes stabilized	Project in process – H8907, priority list in Appendix D	See Appendix D	See Appendix D		

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	(Other numeric measurable goal(s))					
8.2.4	Develop a program to Retrofit Existing Developed Highways					
	Retrofits completed					
	(Other numeric measurable goal(s))					
TRAINING						
9.1.1	Train ADOT Employees- Stormwater Awareness					
	Employees trained	243	149	463		
	Employees Trained through Environmental Awareness	30	73	117		
9.1.3	Train ADOT Employees- Construction Site Inspections					
	Employees trained	23	44	28		
	Employees Recertified	13	25	41		
9.1.4	Train ADOT Employees - New development and significant redevelopment					
	Employees trained	143	0	0		
	(Other numeric measurable goal(s))					
9.1.5	Train ADOT Employees - Storm sewer system and highway maintenance					
	Employees trained	162	113	388		
	Employees Trained through Environmental Awareness	30	74	117		
9.1.6	Train ADOT Employees - Good housekeeping					
	Employees trained	131	149	463		
	(Other numeric measurable goal(s))					
9.2	ADOT Contractor Training and Certification					
	Contractors trained/certified	117	111	147		

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	Contractors re-certified	69	31	77		
	<i>(Other numeric measurable goal(s))</i>					
PUBLIC OUTREACH and EDUCATION / PUBLIC INVOLVEMENT and PARTICIPATION						
10.1.2(a)	Distribution of Educational Materials Through Public Places					
	Materials distributed	156	Not recorded	380		
	Public events attended	1	12	9		
	People reached	100	400+	12,000		
	<i>(Other numeric measurable goal(s))</i>					
10.1.2(b)	Distribution of Educational Materials Through ADOT's Stormwater Webpage					
	Hits on webpage	3465	3,267	3,962		
	<i>(Other numeric measurable goal(s))</i>					
10.2.2	Record and Consider Public Comments on SWMP					
	Public meetings or forums held	0	0	0		
	Public comments received	0	0	0		
	<i>(Other numeric measurable goal(s))</i>					
10.2.3	Implement a Public Reporting System					
	Reports received from public	0	0	4		
	Reports investigated	0	0	1 (handled at District level when applicable)		
	<i>(Other numeric measurable goal(s))</i>					

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
10.2.4	Develop , Implement, and Maintain a Litter Pick-up Program					
	Groups participating	1449	569	810		
	Lane miles cleaned	1873	1,288	1,500		
	Tons of trash collected	59.53	Not Recorded	Not Recorded		
	(Other numeric measurable goal(s))					
10.2.5	Continue Implementation of Litter Hotline					
	Calls received	1276	1323	1,347		
	Letters sent	1153	2,459	1,213		
	Number of people reached on Facebook	N/A	76,644	68,704		
	Number of likes on Instagram	N/A	5,169	1,379		
	(Other numeric measurable goal(s))					
MEASURES TO CONTROL DISCHARGES FROM ADOT MAINTENANCE FACILITIES						
11.1	ADOT Facility Inventory					
	Facilities on inventory	270	270	275		
	High risk facilities	7	7	7		
	(Other numeric measurable goal(s))					
11.3.4.k	Spill Prevention at ADOT Facilities					
	Facilities identified with hazardous materials	126	67	67		
	Spills at ADOT Facilities	Not Reported	4	2		
	(Other numeric measurable goal(s))					
11.3.4.1	Number of ADOT facilities that Store Salt and Anti-Icing Chemicals					

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	Facilities	27 – MgCL, 38 Salt barns	32 MgCL, 43 Salt Barns	32 MgCL, 43 Salt Barns		
	<i>(Other numeric measurable goal(s))</i>					
11.6	ADOT Facility Monitoring					
	Facilities within ¼ of impaired water or OAW	4	5	5		
	<i>(Other numeric measurable goal(s))</i>					

The Stormwater Management Plan (SWMP) was revised and submitted in February of 2017. Currently, it is undergoing updates for the next permit term. The updates include the addition of more specific language in regards to the anticipated timelines and how to address TMDLs and impaired waters throughout the program. Coordination is currently on-going to further implement more standard processes relative to post-construction BMPs and will be addressed by the new environmental specification (EPIC) sheet that is to part of all 100% design packages approved for construction. In addition, ADOT is updating its procedure for communication of the Environmental Planning office in Phoenix to the seven District offices to clarify the triggers and forms of notification necessary including tracking in the case of communication.

In addition, ADOT will be addressing TMDLs for which ADOT has been listed as a contributor through upcoming research projects. The projects will identify points of compliance and ADOT's contribution of the pollutant(s) of concern to the impaired waters in each case. Based on monitoring results, pollutant sources, and site specific conditions, ADOT will identify and implement BMPs at the sites designed to reduce and or eliminate ADOT's contribution to the impaired water. This permit term's initial research project was delayed due to an insufficiently qualified pool of applicants. The project scope will be updated with clarified requirements and then be re-advertised through a new procurement cycle. The Environmental Planning: Water Resources Group and the ADOT Research Center will be the two entities at ADOT responsible for implementing the projects.

All ADOT Districts are active and maintaining CGP documentation through the MyDEQ system. ADOT has requested additional assistance from ADEQ in developing a proper tracking mechanism for the following permit terms consisting of a viewer role allowing access to all Districts without retaining signatory authority. This development is ongoing. To retain permit compliance, ADOT is currently obtaining NOI and NOT documentation from ADEQ via email coordination.

Part 5: Storm Event Records

All measurable storm events (greater than 0.1 inch) recorded at each monitoring location during the winter and summer wet seasons will be included in the table until samples have been collected at the given location. The date, the amount of precipitation, and status of sampling will be documented, including any explanation on the conditions that prevented sampling.

Summer 2017	Status*	Inches
Flagstaff		
6/25/2017	TI	0.64
7/8/2017	CI	0.14
7/11/2017 - 7/12/2017	**	0.64
7/15/2017	**	0.1
7/17/2017 - 7/21/2017	**	1.94
7/23/2017 - 7/25/2017	**	1.11
7/27/2017 - 7/28/2017	**	0.64
8/4/2017	CI	1.51
8/10/2017	CI	0.27
8/13/2017	**	0.71
8/24/2017	CI	0.48
8/29/2017	CI	0.18
9/13/2017	CI	0.13
Sedona		
7/9/2017	CI	0.16
7/11/2017	**	0.39
7/18/2017 - 7/19/2017	CI	1.4
7/23/2017 - 7/25/2017	CI	1.36
7/28/2017 - 7/30/2017	**	0.65
8/24/2017	CI	0.28
8/27/2017	**	0.14
Phoenix		
7/24/2017	CI	0.29
8/12/2017 - 8/13/2017	CI	0.44

Winter 2017-18	Status*	Inches
Flagstaff		
3/11/2018	IF	0.53
4/20/2018	IF	0.12
5/2/2018	TI	0.24
Sedona		
1/9/2018 - 1/10/2018	PS	1.29
1/20/2018	NS	0.24
2/12/2018 - 2/14/2018	NS	0.65
2/19/2018	NS	0.16
2/27/2018 - 2/28/2018	NS	0.27
3/11/2018	NS	0.29
Phoenix		
1/9/2018	TI	0.18
1/22/2018	TI	0.24
2/14/2018	SC	0.34
Tucson		
12/17/2017	PS	0.24
1/20/2018	NS	0.15
2/14/2018 - 2/16/2018	NS	1.23
2/28/2018	NS	0.12
Nogales		
2/14/2018 - 2/16/2018	SC	2.24
2/19/2018	NS	0.36
2/27/2018	NS	0.12

Tucson		
7/11/2017 - 7/13/2017	CI	1.37
7/15/2017 - 7/17/2017	**	2.28
7/19/2017 - 7/20/2017	**	1.02
7/22/2017	**	0.83
7/28/2017 - 7/29/2017	CI	0.77
8/8/2017	CI	0.93
8/10/2017	**	0.3
8/13/2017	**	0.47
8/22/2017	CI	0.27
Nogales		
6/25/2017	TI	0.14
7/8/2017	CI	0.25
7/10/2017	**	0.17
7/12/2017 - 7/20/2017	**	4.97
7/22/2017 - 7/23/2017	**	1.32
7/27/2017 - 7/29/2017	CI	0.58
7/31/2017	**	0.47
8/4/2017	CI	0.37
8/9/2017 - 8/10/2017	CI	0.73
8/13/2017	**	0.36
8/26/2017	CI	0.27

*Status: SC-Sample Collected; PS-Partial Sample Collected; NS-No Sample Collected; EF-Equipment Failure; IF-Insufficient Flow

TI-Technical Issues

CI-Contractual Issues

** - 72-hour rule

Part 6: Summary of Monitoring Data

A separate table is provided for each monitoring location. The analytical results are reported each season for five years prior. The laboratory reports are attached. Pollutants monitored more frequently than required by the permit will be included in this section. Part 3 Narrative Summary contains information on adverse conditions that prevented sampling or conditions that prevent sampling within the first 30 minutes of storm event.

Maintenance Facilities located within ¼ miles of an impaired water or OAW (Part 12.3)

Site ID: Roosevelt Maintenance Yard Address and Physical Location: State Route 188 Milepost 242-243, Roosevelt Latitude/Longitude: 33° 39' 46.13" N; 111° 8' 1.36" W Receiving Water: Roosevelt Lake Impaired: Mercury in fish tissue Designated Uses: DWS, FC, FBC, A&Ww, Agl, AgL		MONITORING SEASONS Summer: June 1 – October 31 Winter: November 1 – May 31									
		Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18
		NR	NR	NR	NR	NR	11/4/2015	6/30/2016	NS/IF	NS	1/20/2018
SAMPLING DATE ¹ :		NR	NR	NR	NR	NR	11/4/2015	6/30/2016	NS/IF	NS	1/20/2018
MONITORING PARAMETERS ²	SWQS										
Total Dissolved Solids (TDS) (mg/L)	500	NR	NR	NR	NR	NR	43	78	NS/IF	NS	260
Total Suspended Solids (TSS) (mg/L)	NNS	NR	NR	NR	NR	NR	14	161	NS/IF	NS	380
Total Metals											
Mercury (µg/L)	2	NR	NR	NR	NR	NR	<0.2	<0.2	NS/IF	NS	<1
Polynuclear Aromatic Hydrocarbon (µg/L)											
Acenaphthene	198	NR	NR	NR	NR	NR	ND	ND	NS/IF	NS	<0.05
Acenaphthylene	NNS	NR	NR	NR	NR	NR	ND	ND	NS/IF	NS	<0.05
Anthracene	74	NR	NR	NR	NR	NR	ND	ND	NS/IF	NS	<0.05
Benz(a)anthracene	0.005	NR	NR	NR	NR	NR	ND	ND	NS/IF	NS	<0.05
Benzo(a)pyrene	0.02	NR	NR	NR	NR	NR	ND	ND	NS/IF	NS	<0.05
Benzo(b)fluoranthene	0.005	NR	NR	NR	NR	NR	ND	ND	NS/IF	NS	<0.05
Benzo(g,h,i)perylene	NNS	NR	NR	NR	NR	NR	ND	ND	NS/IF	NS	<0.05
Benzo(k)fluoranthene	0.005	NR	NR	NR	NR	NR	ND	ND	NS/IF	NS	<0.05
Chrysene	0.005	NR	NR	NR	NR	NR	ND	ND	NS/IF	NS	<0.05

Dibenzo(a,h)anthracene	0.005	NR	NR	NR	NR	NR	ND	ND	NS/IF	NS	<0.05
Fluoranthene	28	NR	NR	NR	NR	NR	ND	ND	NS/IF	NS	<0.05
Fluorene	280	NR	NR	NR	NR	NR	ND	ND	NS/IF	NS	<0.05
Indeno(1,2,3-cd)pyrene	0.05	NR	NR	NR	NR	NR	ND	ND	NS/IF	NS	<0.05
Naphthalene	140	NR	NR	NR	NR	NR	ND	ND	NS/IF	NS	<0.05
Phenanthrene	30	NR	NR	NR	NR	NR	ND	ND	NS/IF	NS	<0.05
Pyrene	210	NR	NR	NR	NR	NR	ND	ND	NS/IF	NS	<0.05

Total Metals											
Mercury (mg/L)	0.002	NR	NR	NR	NR	NR	<0.0002	<0.0002	NS/IF	NS	<0.001

* Dissolved Copper Surface Water Quality Standard is hardness based

** Ammonia Surface Water Quality Standard is pH based

CONF - Confluent bacteria growth observed, accurate colony count of the presence or non-presence of Fecal Coliforms could not be determined

EF - Equipment Failure

IF - Insufficient Flow

ND - Not Detected

NR - Not Required

NNS - No Numerical Standard

NS - No Sample

TNTC - Too Numerous to Count

(H) - Sampled outside of hold time

Site ID: Spring Creek Maintenance Yard Address and Physical Location: 1340 N. Hohokam Drive, Nogales Latitude/Longitude: 34° 48' 0.22" N; 111° 55' 23.84" W Receiving Water: Spring Creek Impaired: E. coli Designated Uses: FC, FBC, A&Ww, AgI, AgL		MONITORING SEASONS Summer: June 1 – October 31 Winter: November 1 – May 31									
		Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18
SAMPLING DATE ¹ :		NR	NR	NR	NR	NR	11/4/2015	NS/IF	NS/IF	NS	NS
MONITORING PARAMETERS ²	SWQS										
Total Dissolved Solids (TDS) (mg/L)	500	NR	NR	NR	NR	NR	262	NS/IF	NS/IF	NS	NS
Total Suspended Solids (TSS) (mg/L)	NNS	NR	NR	NR	NR	NR	24	NS/IF	NS/IF	NS	NS
Microbiological											
E.Coli (MPN/100 ml)	235	NR	NR	NR	NR	NR	2	NS/IF	NS/IF	NS	NS
Polynuclear Aromatic Hydrocarbon (µg/L)											
Acenaphthene	198	NR	NR	NR	NR	NR	ND	NS/IF	NS/IF	NS	NS
Acenaphthylene	NNS	NR	NR	NR	NR	NR	ND	NS/IF	NS/IF	NS	NS
Anthracene	74	NR	NR	NR	NR	NR	ND	NS/IF	NS/IF	NS	NS
Benz(a)anthracene	0.02	NR	NR	NR	NR	NR	ND	NS/IF	NS/IF	NS	NS
Benzo(a)pyrene	0.02	NR	NR	NR	NR	NR	ND	NS/IF	NS/IF	NS	NS
Benzo(b)fluoranthene	0.02	NR	NR	NR	NR	NR	ND	NS/IF	NS/IF	NS	NS
Benzo(g,h,i)perylene	NNS	NR	NR	NR	NR	NR	ND	NS/IF	NS/IF	NS	NS
Benzo(k)fluoranthene	0.02	NR	NR	NR	NR	NR	ND	NS/IF	NS/IF	NS	NS
Chrysene	0.02	NR	NR	NR	NR	NR	ND	NS/IF	NS/IF	NS	NS
Dibenzo(a,h)anthracene	0.02	NR	NR	NR	NR	NR	ND	NS/IF	NS/IF	NS	NS
Fluoranthene	28	NR	NR	NR	NR	NR	ND	NS/IF	NS/IF	NS	NS
Fluorene	1067	NR	NR	NR	NR	NR	ND	NS/IF	NS/IF	NS	NS

Indeno(1,2,3-cd)pyrene	0.49	NR	NR	NR	NR	NR	ND	NS/IF	NS/IF	NS	NS
Naphthalene	1524	NR	NR	NR	NR	NR	ND	NS/IF	NS/IF	NS	NS
Phenanthrene	30	NR	NR	NR	NR	NR	ND	NS/IF	NS/IF	NS	NS
Pyrene	800	NR	NR	NR	NR	NR	ND	NS/IF	NS/IF	NS	NS

* Dissolved Copper Surface Water Quality Standard is hardness based

** Ammonia Surface Water Quality Standard is pH based

CONF - Confluent bacteria growth observed, accurate colony count of the presence or non-presence of Fecal Coliforms could not be determined

EF - Equipment Failure

IF - Insufficient Flow

ND - Not Detected

NR - Not Required

NNS - No Numerical Standard

NS - No Sample

TNTC - Too Numerous to Count

(H) - Sampled outside of hold time

Site ID: Superior Maintenance Yard Address and Physical Location: 951 Main Street, Superior Latitude/Longitude: 33° 17' 14.14" N; 111° 6' 40.31" W Receiving Water: Queen Creek Impaired: Copper (dissolved), lead (total), selenium (total) Designated Uses: PBC, A&Ww, AgL		MONITORING SEASONS Summer: June 1 – October 31 Winter: November 1 – May 31									
		Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18
SAMPLING DATE ¹:		NR	NR	NR	12/4/2014	6/5/2015	11/4/2015	6/30/2016	12/17/2016	NS	2/15/2018
MONITORING PARAMETERS²	SWQS										
Total Dissolved Solids (TDS) (mg/L)	500	NR	NR	NR	436	240	16	297	86	NS	160
Total Suspended Solids (TSS) (mg/L)	NNS	NR	NR	NR	8	26	249	45	19	NS	11
Hardness (mg/L)	NNS	NR	NR	NR	NR	NR	NA	NA	46.1	NS	76
Total Metals											
Lead (µg/L)	15	NR	NR	NR	NR	NR	8.38	24	4.3	NS	3.3
Selenium (µg/L)	50	NR	NR	NR	NR	NR	<10	<10	<0.5	NS	0.62
Dissolved Metals											
Copper (µg/L)	*	NR	NR	NR	NR	NR	48.8	12	18 (6.5*)	NS	49 (10.4*)
Polynuclear Aromatic Hydrocarbon (µg/L)											
Acenaphthene	850	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Acenaphthylene	NNS	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Anthracene	280000	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Benz(a)anthracene	0.2	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Benzo(a)pyrene	0.2	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.02
Benzo(b)fluoranthene	1.9	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1

Benzo(g,h,i)perylene	NNS	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Benzo(k)fluoranthene	1.9	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Chrysene	19	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Dibenzo(a,h)anthracene	1.9	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Fluoranthene	2000	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Fluorene	37333	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Indeno(1,2,3-cd)pyrene	1.9	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Naphthalene	3200	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Phenanthrene	30	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Pyrene	28000	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1

Total Metals											
Lead (mg/L)	0.015	NR	NR	NR	NR	NR	0.00838	0.024	0.0043	NS	0.0033
Selenium (mg/L)	0.05	NR	NR	NR	NR	NR	<0.01	<0.01	<0.0005	NS	0.00062
Dissolved Metals											
Copper (mg/L)	*	NR	NR	NR	NR	NR	0.0488	0.012	0.018 (0.0065*)	NS	0.049 (0.0104*)

* Dissolved Copper Surface Water Quality Standard is hardness based. Applicable standard is in parentheses.

** Ammonia Surface Water Quality Standard is pH based

CONF - Confluent bacteria growth observed, accurate colony count of the presence or non-presence of Fecal Coliforms could not be determined

EF - Equipment Failure

IF - Insufficient Flow

ND - Not Detected

NR - Not Required

NNS - No Numerical Standard

NS - No Sample

TNTC - Too Numerous to Count

(H) - Sampled outside of hold time

Indicates detection with exceedance

Site ID: Superior Storage and Fuel Yard Address and Physical Location: 952 Main Street, Superior Latitude/Longitude: 33° 17' 17.12" N; 111° 6' 43.49" W Receiving Water: Queen Creek Impaired: Copper (dissolved), lead (total), selenium (total) Designated Uses: PBC, A&Ww, AgL		MONITORING SEASONS Summer: June 1 – October 31 Winter: November 1 – May 31									
		Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18
SAMPLING DATE ¹:		NR	NR	NR	12/4/2014	6/5/2015	11/4/2015	6/30/2016	12/17/2016	NS	2/15/2018
MONITORING PARAMETERS²	SWQS										
Total Dissolved Solids (TDS) (mg/L)	500	NR	NR	NR	282	191	143	122	91	NS	420
Total Suspended Solids (TSS) (mg/L)	NNS	NR	NR	NR	90	46	122	374	336	NS	50
Hardness (mg/L)	NNS	NR	NR	NR	NR	NR	NA	NA	91.4	NS	98
Total Metals											
Lead (µg/L)	15	NR	NR	NR	NR	NR	11	<5	36	NS	5.2
Selenium (µg/L)	50	NR	NR	NR	NR	NR	<10	<10	<0.5	NS	0.57
Dissolved Metals											
Copper (µg/L)	*	NR	NR	NR	NR	NR	114	59.3	30 (12.3*)	NS	60 (13.2*)
Polynuclear Aromatic Hydrocarbon (µg/L)											
Acenaphthene	850	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Acenaphthylene	NNS	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Anthracene	280000	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Benz(a)anthracene	0.2	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Benzo(a)pyrene	0.2	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	0.093
Benzo(b)fluoranthene	1.9	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	0.14

Benzo(g,h,i)perylene	NNS	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	0.15
Benzo(k)fluoranthene	1.9	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	0.11
Chrysene	19	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Dibenzo(a,h)anthracene	1.9	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	0.14
Fluoranthene	2000	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Fluorene	37333	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Indeno(1,2,3-cd)pyrene	1.9	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	0.16
Naphthalene	3200	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Phenanthrene	30	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Pyrene	28000	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1

Total Metals											
Lead (mg/L)	0.015	NR	NR	NR	NR	NR	0.011	<0.005	0.036	NS	0.0052
Selenium (mg/L)	0.05	NR	NR	NR	NR	NR	<0.01	<0.01	<0.0005	NS	0.00057
Dissolved Metals											
Copper (mg/L)	*	NR	NR	NR	NR	NR	0.114	0.0593	0.03 (0.0123*)	NS	0.06 (0.0132*)

* Dissolved Copper Surface Water Quality Standard is hardness based.

** Ammonia Surface Water Quality Standard is pH based

CONF - Confluent bacteria growth observed, accurate colony count of the presence or non-presence of Fecal Coliforms could not be determined

EF - Equipment Failure

IF - Insufficient Flow

ND - Not Detected

NR - Not Required

NNS - No Numerical Standard

NS - No Sample

TNTC - Too Numerous to Count

(H) - Sampled outside of hold time

Indicates detection with exceedance

Site ID: Nogales Maintenance Yard Address and Physical Location: 1340 N. Hohokam Drive, Nogales Latitude/Longitude: 31° 21' 22.97'' N; 110° 55' 38.96'' W Receiving Water: Nogales Wash Impaired: Ammonia and copper (dissolved), total residual chlorine, E. coli Designated Uses: PBC, A&Ww		MONITORING SEASONS Summer: June 1 – October 31 Winter: November 1 – May 31									
		Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18
		SAMPLING DATE ¹ :	7/19/2013	11/25/2013	8/11/2014	12/17/2014	7/13/2015	12/12/2015	6/25/2016; 7/6/2016; 8/9/2016	12/22/2016	NS
MONITORING PARAMETERS ²	SWQS										
Total Dissolved Solids (TDS) (mg/L)	500	580	395	229	340	330	160	210	220	NS	94
Total Suspended Solids (TSS) (mg/L)	NNS	100	11	28	494	1000	280	800	54	NS	52
Hardness (mg/L)	NNS	NR	NR	NR	NR	NR	NA	NA	79	NS	36
Nutrients											
Total Ammonia (mg/L)	**	<0.5	<1	<1	NR	NR	ND	ND	<0.5	NS	<1
Microbiological											
E.Coli (MPN/100 ml)	575	3500 (H3)	2400 (H3)	172.3 (H3)	NR	NR	52	210(H); 2600	980	NS	248.1
Dissolved Metals											
Copper (µg/L)	*	NR	NR	NR	NR	NR	15	25	22 (10.8*)	NS	<10
Organic Toxic Pollutants											
Chlorine, residual (µg/L)	19	270	10 (H5)	280 (H5)	NR	NR	73	ND	<100	NS	470

Polynuclear Aromatic Hydrocarbon (µg/L)											
Acenaphthene	198	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Acenaphthylene	NNS	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Anthracene	74	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Benz(a)anthracene	0.02	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Benzo(a)pyrene	0.02	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Benzo(b)fluoranthene	0.02	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Benzo(g,h,i)perylene	NNS	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Benzo(k)fluoranthene	0.02	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Chrysene	0.02	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Dibenzo(a,h)anthracene	0.02	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Fluoranthene	28	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Fluorene	1067	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Indeno(1,2,3-cd)pyrene	0.49	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Naphthalene	1524	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<1
Phenanthrene	30	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Pyrene	800	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1

Dissolved Metals											
Copper (mg/L)	*	NR	NR	NR	NR	NR	0.015	0.025	0.022 (0.0108*)	NS	<0.01
Organic Toxic Pollutants											
Chlorine, residual (mg/L)	0.019	0.27	0.01 (H5)	0.28 (H5)	NR	NR	0.073	ND	<0.1	NS	0.47

* Dissolved Copper Surface Water Quality Standard is hardness based

** Ammonia Surface Water Quality Standard is pH based

CONF - Confluent bacteria growth observed, accurate colony count of the presence or non-presence of Fecal Coliforms could not be determined

EF - Equipment Failure

IF - Insufficient Flow
ND - Not Detected
NR - Not Required
NNS - No Numerical Standard
NS - No Sample
TNTC - Too Numerous to Count
(H) - Sampled outside of hold time

Indicates detection with exceedance

Wet Weather Monitoring at Outfalls in Phoenix, Tucson, Sedona, Nogales and Flagstaff (Part 12.4.2)

Provide the outfall identification number, the outfall address and physical location including latitude/longitude, size of outfall drainage, land use percentages, the receiving water (including whether the receiving water is impaired or an OAW, designated uses, and the lowest surface water quality standards applicable to the receiving water.

Outfall ID: Phoenix Outfall Address and Physical Location: East of State Route 101 on north bank of Skunk Creek Latitude/Longitude: 33° 37' 19.84" N, 112° 14' 21.61" W Size of Outfall Drainage (acres): 17.5 Land Use Percentages: Urban Highway 90%; Commercial Streets 10% Receiving Water: Skunk Creek Impaired ____ OAW ____ (include other parameters) Designated Uses: FC, FBC, A&Ww Sample Method: <i>first flush manual auto composite</i>		MONITORING SEASONS Summer: June 1 – October 31 Winter: November 1 – May 31									
		Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18
		9/8/2013	11/22/2013	8/12/2014	12/4/2014; 2/23/2015; 3/19/2015	6/5/2015	11/15/2015	6/30/2016; 8/5/2016; 8/20/2016; 9/7/2016	12/22/2016	NS	2/15/2018
MONITORING PARAMETERS²	SWQS										
Flow ³ [field]	NNS	72.5	39.5	840	505.3	105	EF	31.7; 427.9; 171.9; 142.7	3011.6	NS	NA
pH [field]	6.5-9.0	7.15	7.62	7.57	8.16	7.93	8.6	7.42	NA	NS	7.98
Temperature (°C) [field]	NNS	28.3	13.1	26.2	17.2	25.9	16.1	31.4	NA	NS	14
Total Dissolved Solids (TDS) (mg/L)	500	230	80	150	132	240	117	96	180	NS	300
Total Suspended Solids (TSS) (mg/L)	NNS	24	26	49	58	57	44	169	73	NS	14

Turbidity	NNS	30	16	65	39	54	36.8	18.1	21	NS	22
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	22	9.3	14	17	80	<7.66	105	7	NS	29
Chemical Oxygen Demand (COD) (mg/L)	NNS	220	72	130	166	220	125	537	86.5	NS	210
Inorganics											
Sulfates	250	31	6.2	8.2	8.2	17	14.3	11.9	8.4	NS	24
Nutrients (mg/L)											
Nitrate (NO ₃ -N)	3733.333	2.8	0.54	1	1.27	2.5	0.98	5.18	1	NS	2.5
Nitrite (NO ₂ -N)	233.333	0.35	<0.1	<0.1	0.13	0.2	<0.1	0.14	<0.1	NS	0.33
Sodium	NNS	10	5.6	4.3	7	10	9	9	8.9	NS	20
Calcium	NNS	22	12	15	17	26	16	18	12.6	NS	34
Chloride	250	10	2.4	4.4	<5	10	6	19	4.2	NS	16
Microbiological											
<i>Escherichia coli</i> (<i>E. coli</i>) (CFU/100 mg or MPN)	575	63	1100	20	>2419.6	770	980	>2419.6	330	NS	<1.0
Fecal Coliform	NNS	1100000	>600	560000	46000	CONF	108000	122000; >2000	>2419.6	NS	<1.0
Total Metals (µg/L) ⁴											
Arsenic	200	<20	<20	<20	<1	ND	<1	1	1.3	NS	2.5
Barium	98000	42	22	64	50	83	50	80	32	NS	61
Cadmium	50	<5	<5	<5	0.1	ND	0.1	0.2	<0.08	NS	<0.1
Chromium	1000	<10	<10	<10	<5	ND	<5	7	2.3	NS	2.8
Copper	500	45	<20	35	40	61	2.5	56	23	NS	49
Lead	15	<5	<5	8.3	2.8	ND	2.5	5.9	1.5	NS	1.3
Mercury	10	<0.2	<0.2	<0.2	<0.2	ND	<0.2	<0.2	0.012	NS	<0.2
Nickel	28000	<20	<20	<20	<20	ND	<0.2	<20	2.8	NS	5.6
Selenium	33	<20	<20	<20	<2	ND	<2	<2	<0.5	NS	0.54
Silver	4667	<10	<10	<10	<0.1	ND	6.1	<0.1	<0.5	NS	<0.1

Zinc	25000	80	61	120	100	160	100	130	44	NS	72
Polynuclear Aromatic Hydrocarbon (µg/L)											
Acenaphthene	56000	NR	NR	NR	NR	NR	ND	ND; ND	<0.05	NS	<0.1
Acenaphthylene	NNS	NR	NR	NR	NR	NR	ND	ND; ND	<0.05	NS	<0.1
Anthracene	280000	NR	NR	NR	NR	NR	ND	ND; ND	<0.05	NS	<0.1
Benz(a)anthracene	0.2	NR	NR	NR	NR	NR	ND	ND; ND	<0.05	NS	<0.1
Benzo(a)pyrene	0.2	NR	NR	NR	NR	NR	ND	ND; ND	<0.05	NS	<0.02
Benzo(b)fluoranthene	1.9	NR	NR	NR	NR	NR	ND	ND; ND	<0.05	NS	<0.1
Benzo(g,h,i)perylene	NNS	NR	NR	NR	NR	NR	ND	ND; ND	<0.05	NS	<0.1
Benzo(k)fluoranthene	1.9	NR	NR	NR	NR	NR	ND	ND; ND	<0.05	NS	<0.1
Chrysene	19	NR	NR	NR	NR	NR	ND	ND; ND	<0.05	NS	<0.1
Dibenzo(a,h)anthracene	1.9	NR	NR	NR	NR	NR	ND	ND; ND	<0.05	NS	<0.1
Fluoranthene	37333	NR	NR	NR	NR	NR	ND	ND; ND	<0.05	NS	<0.1
Fluorene	37333	NR	NR	NR	NR	NR	ND	ND; ND	<0.05	NS	<0.1
Indeno(1,2,3-cd)pyrene	1.9	NR	NR	NR	NR	NR	ND	ND; ND	<0.05	NS	<0.1
Naphthalene	18667	NR	NR	NR	NR	NR	ND	ND; ND	<0.05	NS	<0.1
Phenanthrene	NNS	NR	NR	NR	NR	NR	ND	ND; ND	<0.05	NS	<0.1
Pyrene	28000	NR	NR	NR	NR	NR	ND	ND; ND	<0.05	NS	<0.1

Total Metals (mg/L) 4											
Arsenic	0.2	<0.02	<0.02	<0.02	<0.001	ND	<0.001	0.001	0.0013	NS	0.0025
Barium	98	0.042	0.022	0.064	0.05	0.083	0.05	0.08	0.032	NS	0.061
Cadmium	0.05	<0.005	<0.005	<0.005	0.0001	ND	0.0001	0.0002	<0.00008	NS	<0.0001
Chromium	1	<0.01	<0.01	<0.01	<0.005	ND	<0.005	0.007	0.0023	NS	0.0028
Copper	0.5	0.045	<0.02	0.035	0.04	0.061	0.0025	0.056	0.023	NS	0.049
Lead	0.015	<0.005	<0.005	0.0083	0.0028	ND	0.0025	0.0059	0.0015	NS	0.0013
Mercury	0.01	<0.0002	<0.0002	<0.0002	<0.0002	ND	<0.0002	<0.0002	0.000012	NS	<0.0002

Nickel	28	<0.02	<0.02	<0.02	<0.02	ND	<0.002	<0.02	0.0028	NS	0.0056
Selenium	0.033	<0.02	<0.02	<0.02	<0.002	ND	<0.002	<0.002	<0.0005	NS	0.00054
Silver	4.667	<0.01	<0.01	<0.01	<0.0001	ND	0.0061	<0.0001	<0.0005	NS	<0.0001
Zinc	25	0.08	0.061	0.12	0.1	0.16	0.1	0.13	0.044	NS	0.072

* Dissolved Copper Surface Water Quality Standard is hardness based

** Ammonia Surface Water Quality Standard is pH based

CONF - Confluent bacteria growth observed, accurate colony count of the presence or non-presence of Fecal Coliforms could not be determined

EF - Equipment Failure

IF - Insufficient Flow

ND - Not Detected

NR - Not Required

NNS - No Numerical Standard

NS - No Sample

TNTC - Too Numerous to Count

(H) - Sampled outside of hold time

Indicates detection with exceedance

Outfall ID: Tucson Outfall Address and Physical Location: West of Interstate 10 north of Grant Road within ADOT Yard Latitude/Longitude: 32° 15' 17.19" N, 110° 59' 49.39" W Size of Outfall Drainage (acres): 4.8 Land Use Percentages: Urban Highway 90%; ADOT Facility 10% Receiving Water: Santa Cruz River Impaired _____ OAW _____ (include other parameters) Designated Uses: PBC, A&We, AgL Sample Method: <i>first flush manual auto composite</i>		MONITORING SEASONS Summer: June 1 – October 31 Winter: November 1 – May 31									
		Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18
SAMPLING DATE ¹:		7/19/2013; 8/2/2013	11/26/2013	8/12/2014; 8/18/2014	12/4/2014; 3/19/2015	7/28/2015; 8/1/2015; 8/7/2015	12/12/2015; 1/4/2016	8/9/2016	12/22/2016	NS	12/17/2017; 1/10/2018
MONITORING PARAMETERS²	SWQS										
Flow ³ [field]	NNS	<10 (both)	<10	236	20667.2	276.5	EF	EF	15.9	NS	NA
pH [field]	6.5-9.0	7.46	7.86	7.4	7.7	8.59; 8.48	8.87	8.58	NA	NS	NA
Temperature (°C) [field]	NNS	28.6	18.2	25.1	NS	30.9; 32.7	14	25.6	NA	NS	NA
Total Dissolved Solids (TDS) (mg/L)	500	82	IS	112	186	110; 114	130	110	80	NS	228
Total Suspended Solids (TSS) (mg/L)	NNS	350	IS	14	88	16; 110; 186	40	380	200	NS	18
Turbidity	NNS	230	IS	6.53	104	40; 95.8	52	350	170	NS	43.6
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	7.2	IS	8	27	27	14	ND	20	NS	24
Chemical Oxygen Demand (COD) (mg/L)	NNS	IS	IS	108	273	78; 147	100	56	180	NS	201

Inorganics											
Sulfates	250	2.2	IS	9.5	16.6	6.8; 8.8	7.4	3.9	70	NS	18.6
Nutrients (mg/L)											
Nitrate (NO ₃ -N)	3733.333	0.5	IS	0.62	1.31	1.1; 1.49	0.75	0.93	0.74	NS	1.73
Nitrite (NO ₂ -N)	233.333	<0.2	IS	0.18	<0.1	0.19; 0.16	0.1	ND	<0.1	NS	0.24
Sodium	NNS	IS	IS	5	8	3.8; 4	7.1	2.9	<5	NS	11
Calcium	NNS	IS	IS	15	24	19; 22	17	36	22	NS	25
Chloride	250	<2	IS	<5	<5	ND; <5	20	2.2	2.8	NS	8
Microbiological											
<i>Escherichia coli</i> (<i>E. coli</i>) (CFU/100 mg or MPN)	575	IS	650	5.2	980	790	<10(H)	16000	2400	NS	170
Fecal Coliform	NNS	IS	IS	>20000	>200	CONF	690(H)	TNTC	2400	NS	2400(E3)
Total Metals (µg/L) ⁴											
Arsenic	200	IS	IS	<1	2.5	3.4; <5	1.2	4.9	2.4	NS	1.9
Barium	98000	IS	IS	30	110	58; 90	52	150	110	NS	84
Cadmium	50	IS	IS	0.1	0.5	ND; <0.5	0.26	0.53	0.42	NS	0.2
Chromium	1000	IS	IS	<5	5	ND; 7	ND	12	14	NS	<25
Copper	500	IS	IS	40	230	68; 91	64	100	150	NS	120
Lead	15	IS	IS	1.4	16.7	ND; 100	ND	52	24	NS	4.3
Mercury	10	IS	IS	<0.2	<0.2	ND; <0.2	ND	ND	<1	NS	<0.2
Nickel	28000	IS	IS	<20	<20	ND; <20	ND	16	11	NS	<100
Selenium	33	IS	IS	<2	<2	ND; <10	0.49	1.7	<2.5	NS	<2
Silver	4667	IS	IS	0.2	0.4	ND; <0.5	ND	0.49	<0.5	NS	0.1
Zinc	25000	IS	IS	70	270	160; 210	270	240	230	NS	120
Polynuclear Aromatic Hydrocarbon (µg/L)											
Acenaphthene	56000	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Acenaphthylene	NNS	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Anthracene	280000	NR	NR	NR	NR	NR	ND	ND	0.07	NS	<0.1

Benz(a)anthracene	0.2	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Benzo(a)pyrene	0.2	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Benzo(b)fluoranthene	1.9	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Benzo(g,h,i)perylene	NNS	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Benzo(k)fluoranthene	1.9	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Chrysene	19	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Dibenzo(a,h)anthracene	1.9	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Fluoranthene	37333	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Fluorene	37333	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Indeno(1,2,3-cd)pyrene	1.9	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Naphthalene	18667	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<1
Phenanthrene	NNS	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1
Pyrene	28000	NR	NR	NR	NR	NR	ND	ND	<0.05	NS	<0.1

Total Metals (mg/L) 4											
Arsenic	0.2	IS	IS	<0.001	0.0025	0.0034; <0.005	0.0012	0.0049	0.0024	NS	0.0019
Barium	98	IS	IS	0.03	0.11	0.058; 0.09	0.052	0.15	0.11	NS	0.084
Cadmium	0.05	IS	IS	0.0001	0.0005	ND; <0.0005	0.00026	0.00053	0.00042	NS	0.0002
Chromium	1	IS	IS	<0.005	0.005	ND; 0.007	ND	0.012	0.014	NS	<0.025
Copper	0.5	IS	IS	0.04	0.23	0.068; 0.091	0.064	0.1	0.15	NS	0.12
Lead	0.015	IS	IS	0.0014	0.0167	ND; <0.1	ND	0.052	0.024	NS	0.0043
Mercury	0.01	IS	IS	<0.0002	<0.0002	ND; <0.0002	ND	ND	<0.001	NS	<0.0002
Nickel	28	IS	IS	<0.02	<0.02	ND; <0.02	ND	0.016	0.011	NS	<0.1
Selenium	0.033	IS	IS	<0.002	<0.002	ND; <0.01	0.00049	0.0017	<0.0025	NS	<0.002
Silver	4.667	IS	IS	0.0002	0.0004	ND; <0.0005	ND	0.00049	<0.0005	NS	0.0001
Zinc	25	IS	IS	0.07	0.27	0.16; 0.21	0.27	0.24	0.23	NS	0.12

* Dissolved Copper Surface Water Quality Standard is hardness based

** Ammonia Surface Water Quality Standard is pH based

CONF - Confluent bacteria growth observed, accurate colony count of the presence or non-presence of Fecal Coliforms could not be determined

EF - Equipment Failure

IF - Insufficient Flow

ND - Not Detected

NR - Not Required

NNS - No Numerical Standard

NS - No Sample

TNTC - Too Numerous to Count

(H) - Sampled outside of hold time

Indicates detection with exceedance

Outfall ID: Sedona Outfall Address and Physical Location: Below western abutment of State Route 179 bridge over Oak Creek Latitude/Longitude: 34° 51' 43.93" N, 111° 45' 42.68" W Size of Outfall Drainage (acres): 7.35 Land Use Percentages: State/Business Route 90%; Commercial Streets 10% Receiving Water: Oak Creek Impaired: E. coli; OAW Designated Uses: DWS, FC, FBC, A&Ww, Agl, AgL Sample Method: <i>first flush manual auto composite</i>		MONITORING SEASONS Summer: June 1 – October 31 Winter: November 1 – May 31									
		Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18
SAMPLING DATE ¹ :		NS/IF	NS/IF	7/31/2014; 8/26/2014	4/24/2015	6/14/2015; 7/6/2015; 7/31/2015	11/3/2015	6/29/2016	2/28/2017	NS	1/10/2018
MONITORING PARAMETERS ²	SWQS										
Flow ³ [field]	NNS	NS/IF	NS/IF	3.9	216.6	EF	126	499.3	332.9	NS	NA
pH [field]	6.5-9.0	NS/IF	NS/IF	7.63	8.2	9.17	8.5	8.54	NA	NS	NA
Temperature (°C) [field]	NNS	NS/IF	NS/IF	21.3	13.5	17.8	13.9	14.1	NA	NS	NA
Total Dissolved Solids (TDS) (mg/L)	500	NS/IF	NS/IF	171	236	204	44	67	120	NS	210
Total Suspended Solids (TSS) (mg/L)	NNS	NS/IF	NS/IF	80	732	389	118	468	65	NS	320
Turbidity	NNS	NS/IF	NS/IF	240	NS	118	53	207	110	NS	140
Biochemical Oxygen	NNS	NS/IF	NS/IF	23	NS	51	12	16	11	NS	70

Demand (BOD) (mg/L)											
Chemical Oxygen Demand (COD) (mg/L)	NNS	NS/IF	NS/IF	220	NS	154	290	75.4	83	NS	310
Inorganics											
Sulfates	250	NS/IF	NS/IF	8.2	7.7	6.1	<5	<5	3.7	NS	6.8
Nutrients (mg/L)											
Nitrate (NO ₃ -N)	10	NS/IF	NS/IF	0.92	NS	0.594(H)	0.63	0.58	0.23	NS	0.8
Nitrite (NO ₂ -N)	1	NS/IF	NS/IF	<0.1	NS	0.594(H)	<0.2	<0.1	<0.1	NS	<0.1
Sodium	NNS	NS/IF	NS/IF	4	6	3.93	3.29	2.39	10	NS	5.2
Calcium	NNS	NS/IF	NS/IF	18	71	39.1	35.8	32.8	15	NS	38
Chloride	250	NS/IF	NS/IF	5	<5	2.46	6.89	1.14	10	NS	7.1
Microbiological											
Escherichia coli (E. coli) (CFU/100 mg or MPN)	235	NS/IF	NS/IF	42	>2419.6	118.7	107.6	6.3	11000	NS	NA
Fecal Coliform	NNS	NS/IF	NS/IF	>200000	TNTC	TNTC	TNTC	289	930	NS	NA
Total Metals (µg/L) ⁴											
Arsenic	10	NS/IF	NS/IF	<1	<1	<20	<10	<10	<100	NS	3.7
Barium	2000	NS/IF	NS/IF	40	360	157	119	180	53	NS	190
Cadmium	5	NS/IF	NS/IF	0.1	<0.1	<5	<2	<2	<1	NS	<0.1
Chromium	100	NS/IF	NS/IF	<5	22	10.2	<10	15.2	<10	NS	13
Copper	500	NS/IF	NS/IF	30	130	62.2	37.7	57.9	21	NS	78
Lead	15	NS/IF	NS/IF	1.5	<1	29.1	8.51	6.82	<15	NS	8
Mercury	2	NS/IF	NS/IF	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	NS	<0.2
Nickel	140	NS/IF	NS/IF	<20	50	<20	15.8	22.8	<10	NS	21
Selenium	20	NS/IF	NS/IF	<2	<2	<20	<10	<10	<100	NS	1.5
Silver	35	NS/IF	NS/IF	<0.1	<0.1	<20	<5	<5	<10	NS	0.11
Zinc	2100	NS/IF	NS/IF	150	920	520	316	369	210	NS	650
Polynuclear Aromatic Hydrocarbon (µg/L)											

Acenaphthene	198	NR	NR	NR	NR	NR	ND	ND	<1	NS	NA
Acenaphthylene	NNS	NR	NR	NR	NR	NR	ND	ND	<1	NS	NA
Anthracene	74	NR	NR	NR	NR	NR	ND	ND	<0.051	NS	NA
Benz(a)anthracene	0.005	NR	NR	NR	NR	NR	ND	ND	<0.2	NS	NA
Benzo(a)pyrene	0.02	NR	NR	NR	NR	NR	ND	ND	<0.051	NS	NA
Benzo(b)fluoranthene	0.005	NR	NR	NR	NR	NR	ND	ND	<0.1	NS	NA
Benzo(g,h,i)perylene	NNS	NR	NR	NR	NR	NR	ND	ND	<0.1	NS	NA
Benzo(k)fluoranthene	0.005	NR	NR	NR	NR	NR	ND	ND	<0.051	NS	NA
Chrysene	0.005	NR	NR	NR	NR	NR	ND	ND	<0.1	NS	NA
Dibenzo(a,h)anthracene	0.005	NR	NR	NR	NR	NR	ND	ND	<0.1	NS	NA
Fluoranthene	28	NR	NR	NR	NR	NR	ND	0.00104	<0.1	NS	NA
Fluorene	280	NR	NR	NR	NR	NR	ND	ND	<0.1	NS	NA
Indeno(1,2,3-cd)pyrene	0.05	NR	NR	NR	NR	NR	ND	ND	<0.1	NS	NA
Naphthalene	140	NR	NR	NR	NR	NR	ND	ND	<0.51	NS	NA
Phenanthrene	30	NR	NR	NR	NR	NR	ND	ND	<0.1	NS	NA
Pyrene	210	NR	NR	NR	NR	NR	ND	ND	<0.1	NS	NA

Total Metals (mg/L) 4											
Arsenic	0.01	NS/IF	NS/IF	<0.001	<0.001	<0.02	<0.01	<0.01	<0.1	NS	0.0037
Barium	2	NS/IF	NS/IF	0.04	0.36	0.157	0.119	0.18	0.053	NS	0.19
Cadmium	0.005	NS/IF	NS/IF	0.0001	<0.0001	<0.005	<0.002	<0.002	<0.001	NS	<0.0001
Chromium	0.1	NS/IF	NS/IF	<0.005	0.022	0.0102	<0.01	0.0152	<0.01	NS	0.013
Copper	0.5	NS/IF	NS/IF	0.03	0.13	0.0622	0.0377	0.0579	0.021	NS	0.078
Lead	0.015	NS/IF	NS/IF	0.0015	<0.001	0.0291	0.00851	0.00682	<0.015	NS	0.008
Mercury	0.002	NS/IF	NS/IF	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NS	<0.0002
Nickel	0.14	NS/IF	NS/IF	<0.02	0.05	<0.02	0.0158	0.0228	<0.01	NS	0.021
Selenium	0.02	NS/IF	NS/IF	<0.002	<0.002	<0.02	<0.01	<0.01	<0.1	NS	0.0015
Silver	0.035	NS/IF	NS/IF	<0.0001	<0.0001	<0.02	<0.005	<0.005	<0.01	NS	0.00011

Zinc	2.1	NS/IF	NS/IF	0.15	0.92	0.52	0.316	0.369	0.21	NS	0.65
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* Dissolved Copper Surface Water Quality Standard is hardness based

** Ammonia Surface Water Quality Standard is pH based

CONF - Confluent bacteria growth observed, accurate colony count of the presence or non-presence of Fecal Coliforms could not be determined

EF - Equipment Failure

IF - Insufficient Flow

ND - Not Detected

NR - Not Required

NNS - No Numerical Standard

NS - No Sample

TNTC - Too Numerous to Count

(H) - Sampled outside of hold time

Indicates detection with exceedance

Outfall ID: Nogales Outfall Address and Physical Location: Morley Road at Intersection of State Route 82 Latitude/Longitude: 31° 21' 2.1" N, 110° 55' 24.48" W Size of Outfall Drainage (acres): 59.5 Land Use Percentages: Urban Highway 80%; Residential Streets 20% Receiving Water: Tributary to Nogales Wash Impaired: Ammonia, copper (dissolved), total residual chlorine, E. coli Designated Uses: PBC, A&Ww Sample Method: <i>first flush manual auto composite</i>		MONITORING SEASONS Summer: June 1 – October 31 Winter: November 1 – May 31									
		Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18
		SAMPLING DATE ¹:	7/19/2013	NS/IF	8/10/2014	2/15/2015	8/20/2015	12/12/2015; 1/4/2016	6/25/2016; 7/6/2016; 8/9/2016	NS/EF	NS
MONITORING PARAMETERS²	SWQS										
Flow ³ [field]	NNS	<10	NS/IF	2757	2372.3	1895.7	465.34; 1012.16	459.4; 1087.3; 792.5	NS/EF	NS	NA
pH [field]	6.5-9.0	7.21	NS/IF	7.46	9.32	8.78	8.72; 9.2	8.54	NS/EF	NS	7.35
Temperature (°C) [field]	NNS	27.4	NS/IF	26.8	11	23.6	7.2; 12.3	19.9	NS/EF	NS	13.9
Total Dissolved Solids (TDS) (mg/L)	500	82	NS/IF	121	43	81	66	82	NS/EF	NS	69
Total Suspended Solids (TSS) (mg/L)	NNS	350	NS/IF	54	1330	718	160	350	NS/EF	NS	36
Turbidity	NNS	230	NS/IF	47	508	450	180	40; 220	NS/EF	NS	73.8
Biochemical Oxygen Demand	NNS	7.2	NS/IF	6	NS	9.9	14	22; 12	NS/EF	NS	5

(BOD) (mg/L)											
Chemical Oxygen Demand (COD) (mg/L)	NNS	IS	NS/IF	56	497	303	120	56	NS/EF	NS	72
Inorganics											
Sulfates	250	2.2	NS/IF	5.6	6.8	<5	2.9	6.3	NS/EF	NS	2.37
Nutrients (mg/L)											
Nitrate (NO ₃ -N)	3733.333	0.5	NS/IF	2.31	1.33	0.89	0.6	1.2; 0.78	NS/EF	NS	0.431
Nitrite (NO ₂ -N)	233.333	IS	NS/IF	<0.1	<0.1	<0.1	ND	ND	NS/EF	NS	<0.1
Sodium	NNS	IS	NS/IF	4	2	2	2.2	3.3	NS/EF	NS	1.7
Calcium	NNS	IS	NS/IF	21	28	19	14	17	NS/EF	NS	9.9
Chloride	250	IS	NS/IF	<5	<5	<5	2.2	ND	NS/EF	NS	1.1
Total Ammonia (mg/L)	**						NR	NR	NS/EF	NS	<1
Microbiological											
<i>Escherichia coli</i> (<i>E. coli</i>) (CFU/100 mg or MPN)	575	2400	NS/IF	1986.3	NS/EF	≥1600(H)	<10(H)	4400(H); 1700	NS/EF	NS	770.1
Fecal Coliform	NNS	IS	NS/IF	>2000	NS/EF	125000(H)	310(H)	TNTC(H); TNTC	NS/EF	NS	>800
Total Metals (µg/L) ⁴											
Arsenic	80	IS	NS/IF	3	6.9	4.6	4.6	5.3	NS/EF	NS	<1
Barium	98000	IS	NS/IF	40	260	140	50; 130	150	NS/EF	NS	43
Cadmium	84	IS	NS/IF	<0.1	0.7	0.5	0.29	0.43	NS/EF	NS	0.1
Chromium	NNS	IS	NS/IF	<5	16	10	ND	12	NS/EF	NS	<5
Copper	1300	IS	NS/IF	20	90	65	36; 680	68	NS/EF	NS	17
Lead	15	IS	NS/IF	7	65.4	38	25	38	NS/EF	NS	7.4
Mercury	280	IS	NS/IF	<0.2	<0.2	<0.2	ND	ND	NS/EF	NS	<0.2
Nickel	4600	IS	NS/IF	<20	20	<20	ND	14	NS/EF	NS	<20
Selenium	667	IS	NS/IF	<2	<10	<2	1.1	1.1	NS/EF	NS	<2
Silver	4667	IS	NS/IF	<0.1	<0.5	<0.1	NA	0.25	NS/EF	NS	<0.1
Zinc	5106	IS	NS/IF	40	280	190	110; 200	230	NS/EF	NS	52

Dissolved Metals											
Copper (mg/L)	*	IS	NS/IF	NA	NA	NA	NA	NA	NS/EF	NS	<0.01
Organic Toxic Pollutants											
Chlorine, residual (mg/L)	0.019	<0.05	NS/IF	0.3	<0.08	0.32	NA	NA	NS/EF	NS	0.87(H5)
Polynuclear Aromatic Hydrocarbon (µg/L)											
Acenaphthene	198	NR	NR	NR	NR	NR	ND	ND	NS/EF	NS	<0.1
Acenaphthylene	NNS	NR	NR	NR	NR	NR	ND	ND	NS/EF	NS	<0.1
Anthracene	74	NR	NR	NR	NR	NR	ND	ND	NS/EF	NS	<0.1
Benz(a)anthracene	0.02	NR	NR	NR	NR	NR	ND	ND	NS/EF	NS	<0.1
Benzo(a)pyrene	0.02	NR	NR	NR	NR	NR	ND	ND	NS/EF	NS	<0.1
Benzo(b)fluoranthene	0.02	NR	NR	NR	NR	NR	ND	ND	NS/EF	NS	<0.1
Benzo(g,h,i)perylene	NNS	NR	NR	NR	NR	NR	ND	ND	NS/EF	NS	<0.1
Benzo(k)fluoranthene	0.02	NR	NR	NR	NR	NR	ND	ND	NS/EF	NS	<0.1
Chrysene	0.02	NR	NR	NR	NR	NR	ND	ND	NS/EF	NS	<0.1
Dibenzo(a,h)anthracene	0.02	NR	NR	NR	NR	NR	ND	ND	NS/EF	NS	<0.1
Fluoranthene	28	NR	NR	NR	NR	NR	ND	ND	NS/EF	NS	<0.1
Fluorene	1067	NR	NR	NR	NR	NR	ND	ND	NS/EF	NS	<0.1
Indeno(1,2,3-cd)pyrene	0.49	NR	NR	NR	NR	NR	ND	ND	NS/EF	NS	<0.1
Naphthalene	1524	NR	NR	NR	NR	NR	ND	ND	NS/EF	NS	<1
Phenanthrene	30	NR	NR	NR	NR	NR	ND	ND	NS/EF	NS	<0.1
Pyrene	800	NR	NR	NR	NR	NR	ND	ND	NS/EF	NS	<0.1

Total Metals (mg/L) 4											
Arsenic	0.08	IS	NS/IF	0.003	0.0069	0.0046	0.0046	0.0053	NS/EF	NS	<0.001
Barium	98	IS	NS/IF	0.04	0.26	0.14	0.05; 0.13	0.15	NS/EF	NS	0.043
Cadmium	0.084	IS	NS/IF	<0.0001	0.0007	0.0005	0.00029	0.00043	NS/EF	NS	0.0001

Chromium	NNS	IS	NS/IF	<0.005	0.016	0.01	ND	0.012	NS/EF	NS	<0.005
Copper	1.3	IS	NS/IF	0.02	0.09	0.065	0.036; 0.68	0.068	NS/EF	NS	0.017
Lead	0.015	IS	NS/IF	0.007	0.0654	0.038	0.025	0.038	NS/EF	NS	0.0074
Mercury	0.28	IS	NS/IF	<0.0002	<0.0002	<0.0002	ND	ND	NS/EF	NS	<0.0002
Nickel	4.6	IS	NS/IF	<0.02	0.02	<0.02	ND	0.014	NS/EF	NS	<0.02
Selenium	0.667	IS	NS/IF	<0.002	<0.01	<0.002	0.0011	0.0011	NS/EF	NS	<0.002
Silver	4.667	IS	NS/IF	<0.0001	<0.0005	<0.0001	NA	0.00025	NS/EF	NS	<0.0001
Zinc	5.106	IS	NS/IF	0.04	0.28	0.19	0.11; 0.2	0.23	NS/EF	NS	0.052

* Dissolved Copper Surface Water Quality Standard is hardness based

** Ammonia Surface Water Quality Standard is pH based

CONF - Confluent bacteria growth observed, accurate colony count of the presence or non-presence of Fecal Coliforms could not be determined

EF - Equipment Failure

IF - Insufficient Flow

IS - Insufficient Sample

ND - Not Detected

NR - Not Required

NNS - No Numerical Standard

NS - No Sample

TNTC - Too Numerous to Count

(H) - Sampled outside of hold time

Indicates detection with exceedance

Outfall ID: Flagstaff Outfall Address and Physical Location: South side of intersection at Business 40 and State Route 180 Latitude/Longitude: 35° 11' 53.29" N, 111° 39' 5.48" W Size of Outfall Drainage (acres): 29.3 Land Use Percentages: Urban Highway 80%; Commercial Streets 20% Receiving Water: Rio de Flag Impaired ____ OAW ____ (include other parameters) Designated Uses: PBC, A&We Sample Method: <i>first flush manual auto composite</i>		MONITORING SEASONS Summer: June 1 – October 31 Winter: November 1 – May 31									
		Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18
SAMPLING DATE ¹ :		8/21/2013	NS/IF	8/11/2014	12/3/2014; 3/1/2015; 4/25/2015	6/5/2015; 6/28/2015; 8/7/2015	11/15/2015; 1/7/2016	6/10/2016; 6/28/2016	3/23/2017	NS	NS/IF
MONITORING PARAMETERS ²	SWQS										
Flow ³ [field]	NNS	84.34	NS/IF	1643	1089.1	332.9	EF	301.2; 4073.5	174.4	NS	NS/IF
pH [field]	6.5-9.0	7	NS/IF	7.35	8.16	8.59	8.63	7.7; 8.48	NA	NS	NS/IF
Temperature (°C) [field]	NNS	22.3	NS/IF	21.8	5	16.4	3	19.5; 19.4	NA	NS	NS/IF
Total Dissolved Solids (TDS) (mg/L)	500	110	NS/IF	110	372	205	222	285	250	NS	NS/IF
Total Suspended Solids (TSS) (mg/L)	NNS	65	NS/IF	110	1112	816	185	178	260	NS	NS/IF
Turbidity	NNS	96	NS/IF	63	305	432	110	153	400	NS	NS/IF
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	28	NS/IF	34	9	68	57	300	65	NS	NS/IF
Chemical Oxygen Demand (COD) (mg/L)	NNS	100	NS/IF	160	180	209	178	330	490	NS	NS/IF

Inorganics											
Sulfates	250	8.8	NS/IF	<5	<5	16.3	<5	6.1	5.3	NS	NS/IF
Nutrients (mg/L)											
Nitrate (NO ₃ -N)	3733.333	0.05(H)	NS/IF	0.59	672	0.38	0.108(H)	0.92(H); 0.48	0.67	NS	NS/IF
Nitrite (NO ₂ -N)	233.333	0.05(H)	NS/IF	<0.1	<0.1	<0.1	0.108(H)	0.92(H); <0.1	<0.1	NS	NS/IF
Sodium	NNS	13	NS/IF	8.1	6	23	55	11.1	40	NS	NS/IF
Calcium	NNS	9.8	NS/IF	10	18	39	13.7	16.8	27	NS	NS/IF
Chloride	250	11	NS/IF	5.9	<25	<10	81.6	14.2	50	NS	NS/IF
Microbiological											
<i>Escherichia coli</i> (<i>E. coli</i>) (CFU/100 mg or MPN)	575	3900	NS/IF	298.7	224.7	119.8	>2419.6	1203.3(H); 435.2	<1	NS	NS/IF
Fecal Coliform	NNS	23000	NS/IF	2419.6	TNTC	TNTC	TNTC	TNTC(H); TNTC	270	NS	NS/IF
Total Metals (µg/L) ⁴											
Arsenic	280	<20	NS/IF	<20	<0.1	<10	<10	<10	3.2	NS	NS/IF
Barium	98000	44	NS/IF	42	120	350	84.6	101	250	NS	NS/IF
Cadmium	700	<5	NS/IF	<5	0.3	<1	<20	<2	0.29	NS	NS/IF
Chromium	NNS	<10	NS/IF	<10	11	29	<10	13.2	27	NS	NS/IF
Copper	1300	<20	NS/IF	25	50	110	22	49.8	57	NS	NS/IF
Lead	15	6.3	NS/IF	<5	12.2	30.1	6.85	10.6	15	NS	NS/IF
Mercury	280	<2	NS/IF	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	NS	NS/IF
Nickel	28000	<20	NS/IF	<20	<20	40	<10	12.6	22	NS	NS/IF
Selenium	33	<20	NS/IF	<20	<2	<20	<10	<10	2.3	NS	NS/IF
Silver	4667	<10	NS/IF	<10	<0.1	<1	<5	<5	<100	NS	NS/IF
Zinc	280000	89	NS/IF	89	320	550	151	215	270	NS	NS/IF
Polynuclear Aromatic Hydrocarbon (µg/L)											
Acenaphthene	56000	NR	NR	NR	NR	NR	ND	ND	<1	NS	NS/IF

Acenaphthylene	NNS	NR	NR	NR	NR	NR	ND	ND	<1	NS	NS/IF
Anthracene	280000	NR	NR	NR	NR	NR	ND	ND	<0.051	NS	NS/IF
Benz(a)anthracene	0.2	NR	NR	NR	NR	NR	ND	ND	<0.2	NS	NS/IF
Benzo(a)pyrene	0.2	NR	NR	NR	NR	NR	ND	ND	<0.051	NS	NS/IF
Benzo(b)fluoranthene	1.9	NR	NR	NR	NR	NR	ND	ND	<0.1	NS	NS/IF
Benzo(g,h,i)perylene	NNS	NR	NR	NR	NR	NR	ND	ND	<0.1	NS	NS/IF
Benzo(k)fluoranthene	1.9	NR	NR	NR	NR	NR	ND	ND	<0.051	NS	NS/IF
Chrysene	19	NR	NR	NR	NR	NR	ND	ND	<0.1	NS	NS/IF
Dibenzo(a,h)anthracene	1.9	NR	NR	NR	NR	NR	ND	ND	<0.1	NS	NS/IF
Fluoranthene	37333	NR	NR	NR	NR	NR	ND	ND	<0.1	NS	NS/IF
Fluorene	37333	NR	NR	NR	NR	NR	ND	ND	<0.1	NS	NS/IF
Indeno(1,2,3-cd)pyrene	1.9	NR	NR	NR	NR	NR	ND	ND	<0.1	NS	NS/IF
Naphthalene	18667	NR	NR	NR	NR	NR	ND	ND	<0.51	NS	NS/IF
Phenanthrene	NNS	NR	NR	NR	NR	NR	ND	ND	<0.1	NS	NS/IF
Pyrene	28000	NR	NR	NR	NR	NR	ND	ND	<0.1	NS	NS/IF

Total Metals (mg/L) 4											
Arsenic	0.28	<0.02	NS/IF	<0.02	<0.0001	<0.01	<0.01	<0.01	0.0032	NS	NS/IF
Barium	98	0.044	NS/IF	0.042	0.12	0.35	0.0846	0.101	0.25	NS	NS/IF
Cadmium	0.7	<0.005	NS/IF	<0.005	0.0003	<0.001	<0.02	<0.002	0.00029	NS	NS/IF
Chromium	NNS	<0.01	NS/IF	<0.01	0.011	0.029	<0.01	0.0132	0.027	NS	NS/IF
Copper	1.3	<0.02	NS/IF	0.025	0.05	0.11	0.022	0.0498	0.057	NS	NS/IF
Lead	0.015	0.0063	NS/IF	<0.005	0.0122	0.0301	0.00685	0.0106	0.015	NS	NS/IF
Mercury	0.28	<0.002	NS/IF	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NS	NS/IF
Nickel	28	<0.02	NS/IF	<0.02	<0.02	0.04	<0.01	0.0126	0.022	NS	NS/IF
Selenium	0.033	<0.02	NS/IF	<0.02	<0.002	<0.02	<0.01	<0.01	0.0023	NS	NS/IF
Silver	4.667	<0.01	NS/IF	<0.01	<0.0001	<0.001	<0.005	<0.005	<0.1	NS	NS/IF

Zinc	280	0.089	NS/IF	0.089	0.32	0.55	0.151	0.215	0.27	NS	NS/IF
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* Dissolved Copper Surface Water Quality Standard is hardness based

** Ammonia Surface Water Quality Standard is pH based

CONF - Confluent bacteria growth observed, accurate colony count of the presence or non-presence of Fecal Coliforms could not be determined

EF - Equipment Failure

IF - Insufficient Flow

ND - Not Detected

NR - Not Required

NNS - No Numerical Standard

NS - No Sample

TNTC - Too Numerous to Count

(H) - Sampled outside of hold time

Indicates detection with exceedance

Outfall Identification, Latitude, Longitude	Physical Location	Land Use by Percent and Drainage Area	Receiving Water	Equipment Type
Flagstaff 35 11 53.29N 111 39 05.48W	South side of intersection at Business 40 and State Route 180	Urban Highway 80% Commercial Streets 20% 29.3 Acres	AZ15020015-004A Rio de Flag, Partial Body Contact, effluent dependent, assessment inconclusive	Auto-sampler – Avalanche
Sedona 34 51 43.93N 111 45 42.68W	Below western abutment of State Route 179 bridge over Oak Creek	State/Business Route 90% Commercial Streets 10% 7.35 Acres	AZ15060202-018C Oak Creek, Full Body Contact, outstanding Arizona water, impaired water, Fish Consumption, Agricultural Livestock Watering	Auto-sampler – Avalanche
Phoenix 33 37 19.84N 112 14 21.61W	East of State Route 101 on north bank of Skunk Creek	Urban Highway 90% Commercial Streets 10% 17.5 Acres	AZ15070102 Skunk Creek, Partial Body Contact, effluent dependent	Auto-sampler – Model 6712
Tucson 32 15 17.19N 110 59 49.39W	West of Interstate 10 north of Grant Road within ADOT Yard	Urban Highway 90% ADOT Facility 10% 4.8 Acres	AZ15050301-003B Santa Cruz River, Partial Body Contact, effluent dependent	Auto-sampler – Model 6712
Nogales 31 21 02.10N 110 55 24.48W	Morley Road at Intersection of State Route 82	Urban Highway 80% Residential Streets 20% 59.5 Acres	AZ15050301-011 Tributary to Nogales Wash, Partial Body Contact, impaired water	Auto-sampler – Avalanche

Part 7: Assessment of Monitoring Results

- A. Stormwater Quality: Provide an evaluation of the sampling results for each monitoring location, including an assessment of any improvements or degradation of stormwater quality from each drainage area. Discuss possible explanations for stormwater quality trends, including the implementation of stormwater management best management practices to reduce the discharge of pollutants to and from the municipal separate storm sewer system to the maximum extent practicable.

Table 1. Summarizes sample collection dates and laboratory reports for sampling efforts conducted during winter 2017-2018 sampling season. Lab reports are located in Appendix F.

Sampling Location (Type)	Collection Date	Report Number	Report Date
Sedona (Composite)	1/10/2018	550-96008-1	1/26/2018
Phoenix (Both)	2/15/2018	550-98033-1	2/28/2018
Tucson (Composite)	12/17/2017	7121594	1/9/2018
Tucson (Grab)	1/10/2018	18A0347	1/16/2018
Nogales (Both)	2/15/2018	18B1513	3/2/2018

MS4 monitoring data for the past five years is tabulated in Part 9. The following trends provide an evaluation of the data:

- Flagstaff – E. coli levels exceeded the water quality standards in two seasons in the past five years. One exceedance during summer 2013 and the other during winter 2015-2016. This outfall site is located in an area adjacent to heavily used roads, and down-gradient of both residentially and commercially active areas of downtown Flagstaff. In addition, the area's noted for historical infrastructure, and a community park that is heavily used by residents with dogs. It is well documented in the local literature that pet feces, especially dog feces, contribute considerable amounts of E. coli to stormwater in the area. Potential sources contributing to elevated E. coli levels may also include sanitary sewer overflows due to old infrastructure, pet waste from high recreational use, and/or excessive vegetation or fertilizer use from landscaping practices. In addition, aggradation of the bed of the Rio de Flag has resulted in negative flow from the stream into the culvert during high flow events. This hydraulic condition mixes contaminated stream flow with stormwater at the sampling site. Samples may not be reflective of transportation impacts. It is proposed that ADOT will collaborate with the City of Flagstaff during summer 2019 to identify and control potential sources of E. coli present in stormwater.*

- *Flagstaff – Lead concentrations exceeded the water quality standards in one season in the past five years. The exceedance was during summer 2015 (30.1µg/L). The reported concentration was more than double the water quality standard of 15µg/L. The lead concentration is at the water quality standard in winter 2016-2017. As mentioned above, this outfall site is located adjacent to some of the most heavily used roads and residential and commercial active areas containing some of the oldest infrastructure in Flagstaff. Potential sources of elevated lead levels may include activities conducted at local business in the downtown (e.g., businesses that use paint), excessive lead deteriorating from old lead pipes and paint in the residential and commercial areas, and/or loss of lead wheel weights along the roadway. It is proposed that ADOT and the City of Flagstaff collaborate during summer 2019 to identify and control potential sources of lead that are presenting in stormwater.*
- *Sedona – E. coli levels exceeded the water quality standards in two seasons in the past five years. The exceedances occurred during winter 2014-15 with a concentration of >2,419.6 MPN/100 mL and winter 2016-2017 with a concentration of 11,000 MPN/100 mL. This outfall site is located in a heavily used commercial and residential area that receives a notable amount of human use and is a high traffic given Highway 179 connects north and south Sedona. Several years ago ADOT installed a stormceptor to treat roadway runoff prior to discharge and the equipment is currently maintained under an intergovernmental agreement with the City of Sedona. Potential sources for elevated E. coli levels include inadequate maintenance of the stormceptor, failing septic systems, sanitary sewer overflows, increased deposit of pet waste, and increased use of the area by human transients, and/or excessive vegetation or fertilizer use from landscaping practices. It is proposed that ADOT and the City of Sedona collaborate during summer 2019 to identify and control potential sources of E. coli that are presenting in stormwater. ADOT and the City of Sedona should review stormceptor maintenance records and inspect sewage systems within the outfall area and above the outfall area, and consider enforcing pet waste management and management of transient peoples.*
- *Sedona – Lead concentrations exceeded water quality standards in one season in the past five years. The exceedance was during summer 2015. As mentioned previously, the Sedona outfall site is located in a high use residential and commercial area with a major highway serving as the main thoroughfare connecting north and south Sedona. Potential sources of elevated lead levels may include activities conducted at local business or residents (e.g., use paint), excessive lead deteriorating from old lead pipes and paint in the ageing residential and commercial areas, and/or excessive loss of lead wheel weights along the roadway. It is proposed that ADOT and the City of Sedona collaborate during summer 2019 to identify and control potential sources of lead that are presenting in stormwater.*
- *Sedona – pH exceeded water quality standards in one season in the past five years. pH exceeded water quality standards during summer 2015 with a measured reading of 9.17 SU. It is proposed that ADOT continue to monitoring pH levels closely to determine if pH levels continue to exceed water quality standards in the future. If future trends warrant further attention, then ADOT and*

the City of Sedona should collaborate to identify and control potential sources contributing to elevated pH levels that are presenting in stormwater.

- *Phoenix – E. coli levels exceeded water quality standards in five seasons in the past five years. At this outfall site there is a high density of residential and commercial development, and roadways in this densely populated area receive high use. Potential sources of E. coli may come from transient humans (e.g., hobos frequent the area), human pet waste, excessive vegetation or fertilizer use from landscaping practices, and/or failing sewage systems. It is proposed that ADOT and the local municipalities of the Phoenix area collaborate during summer 2019 to identify and control potential sources of lead that are presenting in stormwater.*
- *Tucson – E. coli levels exceeded water quality standards in five seasons in the past five years. The majority of this outfall site is composed of an urban highway and adjacent commercial businesses; therefore sewage is not likely contributing to the elevated E. coli levels. However, all the sources that commonly contribute to elevated E. coli levels should be evaluated, including: livestock transport along Interstate 10, excessive transient human waste, pet waste, vegetation or fertilizer use from landscaping practices, sanitary sewer overflows, and/or failing sewage systems. It is proposed that ADOT and the City of Tucson collaborate during summer 2019 to identify and control potential sources of E. coli that are presenting in stormwater. The city of Tucson may have documented similar trends in E. coli levels in the nearby area, which may lead to the source of elevated E. coli levels at this outfall site.*
- *Tucson – Lead concentrations exceeded water quality standards in three seasons in the past five years. As noted previously, the majority of this outfall site is composed of an urban highway and adjacent commercial businesses. Potential sources of elevated lead levels may include activities conducted at local business or residents (e.g., use paint), excessive lead deteriorating from old lead pipes and paint in the ageing residential and commercial areas, and/or excessive loss of lead wheel weights along the roadway. It is proposed that ADOT and the City of Tucson collaborate during summer 2019 to identify and control potential sources of lead that are presenting in stormwater.*
- *Nogales – E. coli levels exceeded water quality standards in five summer seasons while remaining below the limit during the corresponding winter seasons. The outfall site is located in a border town to Mexico and is characterized as a densely populated residential area dominated by older, low-income housing. The area has a large summer transient population and many home-owner pets that frequent the up-gradient drainage area. Due to the population's demographics and older low-income infrastructure there may be failing septic systems, small animal feeding operations (e.g., dog kennels) and/or home-owner pet wastes, and there is a known history of sanitary sewer overflows in the area, all which can be responsible for elevated E.coli*

levels. It is proposed that ADOT and the City of Nogales collaborate during summer 2019 to identify and control potential sources of E. coli that are presenting in stormwater.

- Nogales – Lead exceeded water quality standards in four seasons in the past five years. Three of the exceedances were greater than two times the water quality standard. As noted previously, within this outfall site there is a densely populated residential area dominated by older, low income housing. Some potential sources of elevated lead levels may include lead-based application of lead products (e.g., home-owner activities), the excessive deterioration of old lead pipes and paint chippings from old housing infrastructure, and/or excessive lead paint deterioration from old parked cars and loss of lead wheel weights along the roadway. It is proposed that ADOT and the City of Nogales collaborate during summer 2019 to identify and control potential sources of lead that are presenting in stormwater.*
- Nogales – pH exceeded the SWQS once in the past five years, during winter of 2014-2015. It is proposed that ADOT continue to monitor pH levels closely to determine if pH levels continue to exceed SWQS in the future. If future trends warrant further attention, then ADOT and the City of Nogales will collaborate to identify and control sources contributing to elevated pH levels presenting in stormwater.*
- Nogales – Total Residual Chlorine exceeded the SWQS twice in the past five years, once in the summer of 2015 (350 µg/L) and once in the winter 2017-18 (870 µg/L). The receiving water segment in this area is impaired for chlorine; therefore further investigation must be done to determine the source of the impairment and what, if any, contribution to the impairment ADOT may be responsible for. In addition appropriate BMPs will be identified based on the source, and site-specific conditions to reduce and/or eliminate ADOTs contribution to the impaired water. In addition, that area is known for sanitary sewer overflows and for leaking subterranean sewer pipes that sporadically exposed during various storm events and through human intervention to gain access.*

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

The majority of exceedances of a SWQS reported in the last five years are isolated instances. However, two pollutants, E. coli and lead, have been commonly documented in ADOT runoff and are discussed per location where the exceedances were reported in the paragraphs above. There are several exceedances where the discharges are to impaired waters which are also impaired for that same pollutant of concern. Therefore those particular locations will be addressed through the TMDL research studies and BMPs implementations that will follow when research project is completed.

C. Pollutant Concentration Greater than Applicable SWQS: Note any pollutant concentration that is greater than an applicable SWQS (as measured at the monitoring location) during the reporting year, including, at a minimum, the following information:

- a. Sampling date;
- b. Monitoring location (outfall identification number);
- c. Waters of the U.S. that received the discharge and the SWQS that was exceeded;
- d. Outfall monitoring results (laboratory reports);
- e. A description of the circumstances that may have caused or contributed to the pollutant concentration being greater than the applicable SWQS;
- f. If discharges of the same pollutants(s) are reoccurring (i.e., detected more than once at an outfall), a description of the efforts to investigate potential sources of the pollutants(s) and identify the sources/ circumstances that may have caused or contributed to the reoccurrence(s);
- g. Recommended actions for reducing the discharge of pollutants and any recommended actions for water quality improvement, if any, including feasible changes in management practices or existing pollution control measures; to prevent the discharge from causing or contributing to an exceedance of a SWQS in the future; and
- h. If applicable, a schedule for implementing the proposed stormwater or non-stormwater best management practices.

See Tables above for information.

- D. Total Maximum Daily Loads: Assess the effectiveness of BMPs in meeting wasteload allocations or load allocations associated with any TMDL established for any receiving water.

ADOT will be addressing TMDLs for which ADOT has been listed as a contributor through upcoming research projects. The projects will identify points of compliance and ADOT's contribution of the pollutant(s) of concern to the impaired waters in each case. Based on monitoring results, pollutant sources, and site specific conditions, ADOT will identify and implement BMPs at the sites designed to reduce and or eliminate ADOT's contribution to the impaired water. This project was initially planned for the third permit term but was delayed due to an insufficiently qualified pool of applicants in response to the RFP advertised during the third permit term. The project scope will be updated with clarified requirements and then be re-advertised through a new procurement cycle. The Environmental Planning Water Resources and the ADOT Research Center will be the two entities at ADOT responsible for implementing the projects.

- E. Reference(s), if applicable

Part 9: 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 management program; if a control measure is shared (e.g., street sweeping) the amount in terms of dollars and percentage of cost allocated to the stormwater management program shall be provided. Provide the estimated budget for implementing and maintaining the stormwater management program in the subsequent reporting period. Include a statement of the funding sources used to support program expenditures.

*Costs associated with implementation of ADOT's 810 and 805 Specifications for erosion control and seeding were **\$5,053,324** for fiscal year 2018, funded through federal programs associated with construction projects. Costs for program management, including but not limited to illicit discharge cleanup, manual updates, consultant support and monitoring, through state funding is approximately **\$440,287.93**. A Statewide Stormwater and Erosion Control Plan funding source is also being initiated for fiscal year 2019, totally approximately **\$250,000**. Stormwater related projects may also be implemented and funded through District Minor funding, if considered a priority by the review committee.*

Part 10: Attachments/ Appendices

Attach a copy of each of the following documents or include the required summary, as appropriate. This information may be included either as a separate volume to the Annual Report, or as an appendix to the same volume as the Annual Report.

- A. Dry Weather Screening Forms
- B. Construction Program Inventory
- C. Post-Construction BMP Inventory-KMZ, Google Earth
- D. Erosion Abatement Prioritization
- E. Facility Inventory
- F. Laboratory Reports
- G. Changes to Authorization Letter

Part 11: Other Reporting Requirements

1. First Year

- ADOT shall submit the ERP, including any intergovernmental agreements in the first Annual Report.

2. Fourth Year

- The fourth year Annual Report shall include a proposal to identify and map the remaining outfalls statewide. The proposal shall identify and prioritize all remaining unmapped areas and propose schedule for completing the mapping of these areas in phases within the next three 5-year permit terms.
- The fourth year Annual Report –include Renewal Application (Part 13.1.3) information.