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STORMWATER ANNUAL REPORT JULY 2010 – JUNE 2011

September 30, 2011

IMPORTANT NOTE:

This annual report has been prepared by the City of Mesa (City) in response to the conditions established by the Arizona Department of Environmental Quality's (ADEQ) Municipal Separate Storm Sewer System (MS4) permit issued to the City, effective August 30, 2010 (herein referred to as the 2010 MS4 Permit). This report is designed to meet all the requirements established under Appendix B (Annual Report Form for Phase I MS4) and is required to be submitted to the ADEQ on or before September 30th of each year. This report incorporates the requirements under the 2010 MS4 Permit for the previous reporting year, which also coincides with the City's fiscal year.

This document can be found on the ESD Server at the following location:
I:\Stormwater 2010\Annual Report\2010-2011 Annual Report\Document Text\2011-09 Stormwater Annual Report - Final.docx

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ACRONYMS AND ABBREVIATIONS

2010 MS4 Permit – City of Mesa MS4 Stormwater Permit, AZS000004-2010

ADEQ – Arizona Department of Environmental Quality

APP – Aquifer Protection Permit

AZPDES - Arizona Pollutant Discharge Elimination System

BMP – Best Management Practice(s)

City – City of Mesa

CGP – Construction General Permit

FCDMC – Flood Control District of Maricopa County

FOG – Fats, Oils, and Greases

GRD – Grease Removal Device

HHW – Household Hazardous Waste

MS4 – Municipal Separate Storm Sewer System

MSGP – Multi-Sector General Permit

NAICS - North American Industry Classification System

NOI - Notice of Intent

NOT – Notice to Terminate

PSA – Public Service Announcement

SARA – Superfund Amendments and Reauthorization Act

SIC – Standard Industrial Code

STORM – STormwater Outreach for Regional Municipalities

SWMP – Storm Water Management Plan

SWPPP – Storm Water Pollution Prevention Plan

SWQS – Surface Water Quality Standard

TRI - Toxic Release Inventory

USEPA – United States Environmental Protection Agency

1.0 GENERAL INFORMATION

- A. Name of Permittee: City of Mesa
- B. Permit Number: AZS000004-2010
- C. Reporting Period: July 1, 2010 through June 30, 2011
- D. Program Contact: Scott Bouchie
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2.0 ANNUAL REPORT CERTIFICATION

Written by:

Date:



John H. Meyer
Environmental Programs Specialist

9/26/11


Reviewed by:

Date:



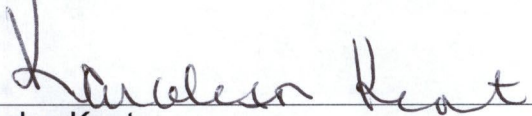
Scott Bouchie
Deputy Director, Environmental & Sustainability

09/26/11



Christine Zielonka
Development & Sustainability Department Director

9/27/11



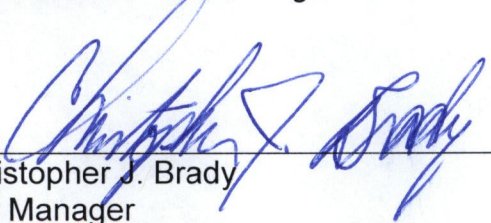
Karolyn Kent
Deputy City Manager

9-29-11

Approved by:

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.

Date:



Christopher J. Brady
City Manager

9/29/11

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3.0 NARRATIVE SUMMARY OF STORMWATER PROGRAM ACTIVITIES

The 2010 MS4 Permit requires the City of Mesa (City) to provide a narrative describing the implementation, progress, and challenges associated with the stormwater program activities as provided in the following subsections. The permit also requires the City to explain any significant developments or changes to the number or type of activities or the priorities or procedures for specific management practices.

3.1 PUBLIC EDUCATION & OUTREACH

The 2010 MS4 Permit requires the City to report outreach events, topics, number of people reached, number and type of materials distributed and the target groups in this Annual Report as it pertains to the City's stormwater public education and outreach program. The City's stormwater public education and outreach method is managed through the STormwater Outreach for Regional Municipality (STORM) organization.

STORM is comprised of Phase I and Phase II MS4 operators in the greater Phoenix Metropolitan Area. STORM was founded in 2002 largely in response to the Phase II stormwater regulations and was spearheaded by the Phase I MS4 operators as a method of assisting all regulated MS4 operators in the development of their public education programs, among other things. As such, the City played a key role in the early years of the development of the STORM organization and continues to be a major participant and proud supporter to this day.

The traditional approach to public stormwater education and outreach is for individual communities to work independently. STORM encourages a new perspective at a regional level to improve public outreach and education. Members meet monthly to discuss ideas, gather information, and share results of stormwater management tools, techniques, programs, and initiatives.

The City realizes a great economic benefit from their membership investment. For a relatively small contribution, the City receives a significant return in public outreach and education, much more than the City would have gained working independently. Membership in STORM also provides increased buying power that helps achieve bulk pricing on storm water pollution awareness promotional items. Additionally, the ability to

cooperatively apply for grants and other financial assistance helps further the common goal of public education to reduce stormwater pollutants and ultimately improve the regional water quality.

STORM uses a multimedia approach targeting audiences through radio, television, special events, and providing permit information to the general public and the regulated community. These approaches include, but are not limited to, radio and television public service announcements (PSAs), developing brochures and other handouts, and attending public events. Additionally, STORM has created a comprehensive website that includes the copies of outreach materials and PSAs which can be accessed at www.azstorm.org.

3.1.1 General Public

The 2010 MS4 Permit requires the City to target at least one of the following groups during each permit year (August 30 through August 29th):

1. General Public
2. Residential Community
3. Home Owners
4. Home Owners Associations
5. Schools

The 2010 MS4 Permit requires that at least one of the following topics be addressed for these target groups:

- Post-construction ordinances and long-term maintenance requirements for permanent stormwater controls
- Stormwater runoff issues and residential stormwater management practices
- Potential water quality impacts of application of pesticides, herbicides and fertilizer and control measures to minimize runoff of pollutants in stormwater
- Potential impacts of animal waste on water quality and the need to clean up and properly dispose of pet waste to minimize runoff of pollutants in stormwater
- Illicit discharges and illegal dumping, proper management of non-stormwater discharges, and to provide information on reporting spills, dumping, and illicit discharges

- Spill prevention, proper handling and disposal of toxic and hazardous materials, and measures to contain and minimize discharges to the storm sewer system
- Installation of catch basin markers or stenciling of storm sewer inlets to minimize illicit discharges and illegal dumping to the storm sewer system
- Proper management and disposal of used oil

STORM aired a public service announcement (PSA) campaign targeting the general public regarding the importance of used oil recycling to prevent pollution from improperly disposal of used oil. The PSA was aired in both English and Spanish on nine radio stations between November 29, 2010 and January 15, 2011. The audience, age twelve and above, was estimated at over three (3) million people. The cost of the PSA campaign was \$9,978.26.

3.1.2 Business Sectors

The 2010 MS4 Permit also requires the City to target at least one of the following business sector groups during each permit year:

1. Development Community
2. Construction Site Operators
3. Targeted Sources
4. Types of Businesses (industrial or commercial)

The 2010 MS4 Permit requires that at least one of the following topics be addressed for these target groups:

- Planning ordinances, engineering standards and grading and drainage design standards for stormwater management in new developments and significant redevelopments
- Municipal stormwater requirements and stormwater management practices for construction sites
- Illicit discharges and proper management of non-stormwater discharges
- Spill prevention, proper handling of toxic and hazardous materials, and measures to contain and minimize discharges to the storm sewer system

- Proper management and disposal of used oil and other hazardous or toxic materials, including practices to minimize exposure of materials/wastes to rainfall and minimize contamination of stormwater runoff
- Stormwater management practices, pollution prevention plans, and facility maintenance procedures

STORM targeted construction site operators regarding the topic of municipal stormwater requirements and stormwater management practices for construction sites by teaming with the Arizona Chapter of the Associated General Contractors of America in hosting the 1st Annual Maricopa County Stormwater Construction Seminar with approximately 80 attendees. The seminar featured presentations by member municipalities, as well as county and state agency representatives regarding Arizona Pollutant Discharge Elimination System (AZPDES) regulatory requirements unique to construction sites within Maricopa County. The Arizona Department of Transportation, a STORM member, provided the seminar room at no charge and refreshments were purchased for approximately \$220.

3.1.3 Additional Education & Outreach Activities

More information regarding the STORM organization's public education and outreach program activities for the current reporting year can be found in the STORM Annual Report, FY 2011 available at the following address: <http://www.azstorm.org/annual-reports>.

3.2 PUBLIC INVOLVEMENT

The 2010 MS4 Permit requires the City to identify activities, number of people involved, number and type of materials distributed, if applicable and to describe MS4 system for public reporting of spills, dumping, discharges, and related stormwater issues in this Annual Report as it pertains to the City's public involvement stormwater program.

3.2.1 Environmental Hotline

The 2010 MS4 Permit requires the City to provide and publicize a reporting system to facilitate and track public reporting of spills, discharges or dumping to the storm sewer system (i.e., storm water hotline, web page, etc.) on a continuous basis. The City established an Environmental Hotline as a method to receive calls regarding stormwater as well as other environmental issues [air quality, hazardous material disposal, illegal

dumping, and public nuisances (i.e. mosquitoes)]. During normal business hours, calls are answered by personnel trained to understand the nature of the types of calls they receive and can address questions that informational in nature. Where a complaint is filed, the record is turned over to appropriate personnel trained in code enforcement procedures for inspection. All complaints are logged into the City's Tidemark® database system for tracking purposes.

During off-business hours, callers are provided an opportunity to leave a message which is retrieved and processed the following business day. Emergency call related to stormwater issues received during off-hour operations are handled through the City's public safety dispatch operations.

3.2.2 Stormwater Website

The 2010 MS4 Permit requires the City to post the Storm Water Management Plan (SWMP) and latest annual report on the City's web site within one (1) year from the effective date of the permit (August 30, 2011). The City maintains a website specifically for stormwater. That website has information specific to the City's stormwater program.

The City's SWMP is required to be submitted to the Arizona Department of Environmental Quality (ADEQ) on or before September 30, 2011, after asking for and gaining acceptance by the ADEQ for a 30 day extension. Similarly, this Annual Report is due on September 30, 2011 with no extension required. The City will post their SWMP on the website within ten (10) business days of submittal to the ADEQ as a draft document. Once approval of the SWMP is received from the ADEQ, the document will be re-titled as a final document. The City will also provide a link to this Annual Report drafted within ten (10) business days of submittal of that document to the ADEQ.

These documents would be accessible through City's Environmental & Sustainability Division website at <http://www.mesaaz.gov/environ/>.

3.2.3 Household Hazardous Waste Program

The 2010 MS4 Permit requires the City to incorporate at least one of the following as fundamental support to its storm water program:

- An opportunity to involve the public in the City's stormwater program and encourage public participation in monitoring and reporting spills, discharges, or dumping within their communities (such as facilitation of neighborhood watch groups) once per year.
- An opportunity to participate in the city's stormwater program, such as voluntary litter control activities (e.g., facilitation of Adopt-A-Wash, Adopt-A-Park, and Adopt-A-Street litter control activities) or voluntary erosion control projects as a regular ongoing activity.
- A household hazardous waste (HHW) program to facilitate proper disposal of used oil, antifreeze, pesticides, herbicides, paints, and other hazardous and toxic materials by city residents (such as scheduled household hazardous waste collection events or operation of full-time disposal facilities) a minimum of two (2) times per year for the first two (2) years of the permit, three (3) times per year for years three (3) and four (4) of the permit, and every year thereafter.

The City has selected to incorporate the HHW program into their stormwater program since the City has been conducting these types of events as part of meeting the requirements of their previous MS4 permit.

The City's HHW program facilitates proper disposal of used oil, antifreeze, pesticides, herbicides, paints, and other hazardous and toxic materials as well as electronics, tires, and prescription medicine generated by city residents. During this reporting period, the City provided four opportunities to residents to dispose of HHW. By providing a proper disposal option to the City's residents, the City has kept this material from potentially being illegally dumped into the MS4, spilled onto City streets, or improperly disposed of into solid waste receptacles.

The City's HHW collection events are held at two different locations, one on the east side of the City, the other on the west. The events alternate between locations to ensure that all residents have adequate access to these events. Information, including the number of residents attending, amount and type of material received, is included as an attachment to this Annual Report (see [Section 13.0](#)).

At these events, the City distributes packets to residents as they enter. Based on the timing of each event, this information would have included some or all of the following:

- HHW Collection Event Date Flier
- Add'l. Electronics Recycling Opportunities
- Census 2010
- Christmas tree recycling information
- Clear Air – Make More
- Environmental & Sustainability Information
- Fat Free Sewers
- Prescription Medicine Disposal

3.3 NON-STORMWATER FLOWS TO THE CITY'S MS4

The City's 2010 MS4 Permit requires the City to summarize their program activities related to non-stormwater flows. This includes:

1. Prevention activities associated with the release of non-stormwater flows to the MS4;
2. Training dates and topics of City personnel addressing non-stormwater flow complaints; and,
3. Overview of identified sources resulting from industrial facility inspections, illicit releases, types of illicit connections identified, and significant corrective or enforcement actions.

For the overview of industrial facility inspections, see [Section 3.6.2](#).

3.3.1 Non-Stormwater Flow Prevention Activities

The City does not operate as a permitting agency for stormwater or non-stormwater flows. However, the City has identified the following non-stormwater releases to target through the development of fact sheets that will be available on the City's website to reduce the pollutants from these sources to the maximum extent practicable and distributed by City inspection staff where violations are identified.

Targeted Release	Targeted Pollutant(s)	Targeted Areas
Flood Irrigation Water	Sediment	Irrigation over areas that are exposed to bare soils.

Targeted Release	Targeted Pollutant(s)	Targeted Areas
Individual Car Washing	Sediment Solvents	Washing heavily soiled trucks. Washing undercarriage or engine compartments.
Street Wash Water	Sediment Oils	Washing paved surfaces impacted with dirt. Washing standing liquid oil spills from paved surfaces.
Swimming Pools & Hot Tub Water (generally not allowed)	Chlorine Bromine Sediment Bacteria	Flows must remain on site (irrigation usage) go to sanitary sewer, or be pumped and hauled away for disposal.

The City anticipates having this information on the website during year two (2) of the 2010 MS4 Permit term (August 30, 2011 through August 29, 2012).

3.3.2 Training Dates and Topics

City staff that conduct inspections regarding non-stormwater flows were trained under the conditions of the previous MS4 permit. During this reporting period, the City drafted Environmental Code Violation Standard Operating Procedures. The City anticipates developing a training program and providing training sessions to those personnel who operate under those procedures during year two (2) of the 2010 MS4 Permit term (see [Section 5.1](#)).

3.3.3 Investigations

For stormwater complaints publically reported to the City, the 2010 MS4 Permit requires the City to:

1. Investigate reported releases to identify the source(s) of the release;
2. Respond to 90% of all reports of releases made to the City (i.e. called into the Environmental Hotline, or other form of reporting) or other detection methods (i.e. drive-by inspections); and,
3. Initiate investigation of 80% of releases reported to the City within three (3) business days of the date of report.

The City has established an Environmental Hotline as a method to receive calls regarding stormwater as well as other environmental issues (see [Section 3.2.1](#)). It has

been the City's experience that non-stormwater releases reported to the Environmental Hotline are identified at locations prior to entering the subsurface portions of the City's MS4 (primarily flowing down the curb and gutter system). Most connections that are reported to the Environmental Hotline are in the form of a pipe (usually PVC) installed through a block wall or a pump hose that is placed in the yard, through a fence, or directly in the street or alleyway. These surface flows and connections are generally easy to track down to the source through a drainage area investigative approach.

In general, the City can utilize a corrective or enforcement action to obtain compliance with the Mesa City Code.

“Corrective actions” are generally those taken by the responsible party to remove pollutants or reduce the potential of pollutants from entering the City's MS4.

“Enforcement actions” are those taken by the City to address any hazards associated with the violation, generally where a voluntary compliance option has failed to be an effective tool in gaining compliance, and includes reporting violations to other City departments or regulatory agencies having ultimate authority regarding the nature of the violation.

During this reporting period, the majority of the complaints received through public reporting involved draining and/or backwashing of swimming pools to the City's MS4. Most of these cases were closed without a violation being confirmed. The remaining cases were closed through the issuance of a courtesy notice. The version of Title 8 - Health, Sanitation, and Environment, Chapter 5 - Storm Water Pollution Control of the Mesa City Code (Stormwater Code) in effect during this reporting period did allow for non-chlorinated swimming pool discharges. However, the Stormwater Code, expected to be revised through ordinance during the next reporting period, would strike that exemption to be consistent with other City department and division policies and procedures.

3.4 MUNICIPAL FACILITIES

The 2010 MS4 Permit requires the City to report the following in the annual report as it relates to City facilities:

1. Description of the status of identification and inventory of these facilities.
2. Overview of inspection findings (i.e., number inspected, number with follow-up actions needed, significant findings).
3. Description of activities needed and performed in response to inspections (control measures implemented).
4. Description of the identification and tracking of municipally-owned and operated facilities subject to permitting under the Multi-Sector General Permit (MSGP).

In general, this program includes City facilities that meet the following conditions:

- City parks, golf courses, and other recreational facilities (where landscape maintenance, herbicide, pesticide, and fertilizer application, and waste management are implemented);
- Public swimming pools (pool maintenance/repair and chemical storage);
- Water treatment plants;
- Public septic systems (sanitary waste handling);
- Fire stations and other city fleet maintenance facilities (vehicle washing and maintenance, chemical handling, waste storage);
- Publically-owned treatment works and sludge handling areas;
- Material and waste storage and processing facilities, including oil collection facilities; or,
- Those facilities that handle, store, or otherwise use hazardous materials where any single container exceeds five (5) gallons and where such materials are exposed or have the potential to be exposed to stormwater

3.4.1 Description & Status of Inventory

No changes to the description or status of the inventory of non-MSGP municipal facilities have been identified since the development of the City's SWMP.

3.4.2 Overview of Findings

Initial inspections of these facilities will take place during year two (2) of the 2010 MS4 Permit.

3.4.3 Response Actions

No inspections were conducted during this reporting period; therefore, no response actions were identified.

3.4.4 Facilities Covered under the Multi-Sector General Permit

No changes to the description or status of the inventory of municipal facilities that conduct activities associated with the 2011 MSGP have been identified since the development of the City's SWMP. During this reporting period, the City applied for coverage and/or no-exposure for those facilities conducting activities associated with the ADEQ's MSGP. Documentation regarding these facilities was filed prior to the deadline provided in the 2011 MSGP. Prior to filing, Storm Water Pollution Prevention Plans (SWPPPs) were updated as required for those facilities not filing under the no-exposure certification.

3.5 INVENTORIES, MAPS, AND MAP STUDIES

The 2010 MS4 Permit requires the City to report the status of all inventories, maps, and map studies required by the permit to be developed including completion dates.

3.5.1 Inventories

The 2010 MS4 Permit requires to City to develop "inventories" or other methods of identification of the following:

1. An inventory or map of all major outfalls, and of other field screening points (if applicable), identified by Mesa as priority for illicit discharges or other non-stormwater flows (see [Section 13.2](#));
2. An inventory, list, database or map of facilities owned and operated by Mesa (excluding office and administration buildings) that have the potential to discharge pollutants to waters of the United States (see [Section 3.4](#));
3. An inventory, list, or database of private commercial and industrial facilities that have the potential to discharge pollutants to the city's storm sewer system (see [Section 3.6.1](#)); and,
4. An inventory, list, database, or map of construction activities that result in land disturbance of one (1) or more acres and that have the potential to discharge to the city's storm sewer system (see [Section 3.7.1](#)).

3.5.2 Maps

Appendix A of the 2010 MS4 Permit requires the City to prepare and routinely update maps of the MS4 system that incorporates mapping of all of the following:

1. Linear Drainage Structures - Line layer showing the location of the City's MS4 storm drain pipes and the direction of stormwater flow.
2. Storm Drain Inlets and Catch Basins - Point layer showing the locations of the City's MS4 storm drain inlets and catch basins.
3. Major Outfalls, Field Screening Points, and Monitoring Locations
 - a. Point layer showing the location of the City's stormwater monitoring locations, field screening points, and major outfalls (pipes or culverts).
 - b. Layer showing the drainage area associated with each monitoring location identified in the 2010 MS4 Permit.
4. Detention/Retention Basins - Point or polygon layer showing the locations of all City-owned retention and detention basins that are connected to the municipal stormwater conveyance system (i.e., that receive drainage from or discharge to a stormwater conveyance).
5. Jurisdictional MS4 Boundary - Line or polygon layer showing the jurisdictional boundaries of the City's MS4, including any new land annexations during the permit term.

The City is required to incorporate mapping of the above by the due date of the fourth (4th) year annual report (i.e. September 30, 2014). The City maintains Land and Utilities maps that are continually updated for use by City employees. The application provides the ability to view and print Land, Water, Gas, Sewer, or Storm Drain maps for each quarter section of the City. The City also maintains this information in ArcGIS software which is available for use by select City personnel.

As of the date of the Annual Report, the City's mapping system includes all the "required" information above except layers showing the drainage area associated with each monitoring location (i.e. outfall and field screening points). The City has contracted with a consulting firm to conduct these studies and anticipates that these studies will be completed during year two (2) of the 2010 MS4 Permit term (August 30, 2011 through August 29, 2012).

3.5.3 Map Studies

Appendix A of the 2010 MS4 Permit requires the City to complete a study that evaluates the cost, method, and time it will take to complete the following:

1. Linear Drainage Structures
 - a. Line layer showing the location of all streets used for stormwater conveyance and the direction of stormwater flow.
 - b. Line layer showing other linear stormwater conveyance structures (channels, floodways, etc.) and the direction of stormwater flow.
2. Land Uses - Layer showing the land uses.
3. Detention/Retention Basins
 - a. Point or polygon layer showing the location of all privately-owned retention and detention basins that are connected to the municipal stormwater conveyance system (i.e., that receive drainage from or discharge to a stormwater conveyance).
 - b. Line layers showing the drainage infrastructure associated with each retention/detention basin.
4. Locations of Discharges to Waters of the United States - Line or polygon layer showing the location (and name) of all waters of the United States that may receive stormwater discharges from the MS4 and to clearly identify any listed Outstanding Arizona Water or Impaired Water.

The City is required to complete studies associated with the above mapping requirements by the due date of the fourth (4th) year annual report (i.e. September 30, 2014). As of the date of the Annual Report, the City's mapping system includes all of the information required in the mapping studies, with the exception for the "*direction of flow from the streets with storm water conveyance.*" However, this information is included on engineering drawings on record with the City.

The City will include the results of the study to incorporate the direction of flow from the streets with storm water conveyance onto the City's mapping system in the fourth year annual report. Also note, the City does not discharge to waters of the United States that are considered to be an Outstanding Arizona Water or Impaired Water.

3.6 INDUSTRIAL FACILITIES

The 2010 MS4 Permit requires the City to report the following in the Annual Report as it pertains to the inspection of private commercial and industrial facilities:

1. Status of identification and inventory of these facilities.
2. An overview of inspection findings and note significant findings.
3. Corrective and enforcement actions needed and taken in response to inspections.

3.6.1 Identification and Inventory of Private Commercial and Industrial Facilities

The 2010 MS4 Permit requires the City to:

1. Develop and maintain an inventory, list, or database of commercial and industrial facilities that have the potential to discharge pollutants to the City's MS4.
2. Maintain a system to collect and update this information on a routine basis.

3.6.1.1 Commercial Facilities

The City inspects commercial facilities that required a grease removal device (GRD) as part of the City's industrial pre-treatment fats, oils, and greases (FOG) program. These types of facilities are required to submit an industrial pretreatment survey to the City to determine the type of business (i.e. industrial, commercial, manufacturing, restaurant etc.) and the nature of the facilities discharges to the City's sanitary sewer. This survey assists the City in determining what, if any, pretreatment devices are required. These facilities are entered into a database and tracked for inspection purposes. During these inspections, City inspectors also conduct a stormwater assessment associated with the operations of these facilities.

3.6.1.2 Industrial Facilities

The City contracted InfoUSA, a private customer listing group commonly used by other regulated Phase I MS4 operators (i.e. City of Phoenix, City of Tempe), to provide information on facilities subject to the MSGP based on Standard Industrial Classification (SIC) codes. Additionally, the City conducted a review of the United State Environmental Protection Agency Toxic Release Inventory (TRI) database.

The City redeveloped their Industrial (Private) database to include new information supplied by InfoUSA and to incorporate the most recent listing of TRI facilities. This information increased the City's industrial facility database to over 750 facilities. During this reporting period, and subsequent to the redevelopment of the industrial database, the City added twelve additional industrial facilities to its database.

3.6.2 Overview of Inspection Findings and Significant Findings

The 2010 MS4 Permit requires the City to:

1. Develop an inspection and prioritization program.
2. Inspect at least 50 industrial facilities [Superfund Amendments and Reauthorization Act (SARA) Title III and MSGP facilities] each year during the permit term.
3. Inspect other commercial and industrial sources (or category of sources) which the City determines to be a significant source of pollutants.
4. Verify implementation and maintenance of stormwater management practices in compliance with the City's Stormwater Code.
5. Identify and eliminate potential discharges of pollutants to the system.
6. Confirm permit coverage to discharge stormwater associated with industrial activity, as applicable.
7. Conduct follow-up inspections as necessary.

3.6.2.1 Commercial Facilities Inspection & Prioritization

Inspections of commercial facilities are based on a geographical distributional approach. Commercial inspections are also conducted in response to complaints from other City staff and the general public. Priority is given to complaint responses, which are investigated without regard to the geographical distribution approach. Commercial inspections are conducted by City inspectors trained to identify stormwater compliance issues related to these types of facilities.

Though all commercial facilities inspected under the FOG program are assessed for stormwater compliance, those that pose a higher risk include, but are not limited to:

- Auto Repair Shops
- Gasoline Stations

- Grocery Stores
- Restaurants
- Car Washes; and,
- Movie Theaters

Stormwater issues that were identified as a result of follow-up inspections at commercial facilities during this reporting period included:

- Washing of floor mats on the pavement; and,
- Significant oil/grease buildup on storm drain grate.

3.6.2.2 Industrial Facilities Inspection & Prioritization

Many of the industrial facilities in the City's database that were inspected during this reporting period did not perform operations consistent with the SIC codes that were assigned to them from the information provided by InfoUSA. When contacted, the facilities operator was asked what types of operations took place there and assisted them with identifying the appropriate SIC. The City conducted an inspection to ensure that these facilities did not require MSGP coverage and that their operations were being performed in compliance with the City's Stormwater Code. The City's industrial inspection database was updated for revised SIC codes.

The following criteria are used to determine categories and establishing a prioritization for conducting industrial inspections.

1. Complaints.
2. Newly identified TRI listed facilities that have not been previously inspected.
3. Current TRI listed facilities that were not previously inspected within the last 5 years.
4. Industrial facility sectors, SICs or North American Industry Classification System (NAICS) groups that have a reasonable potential to conduct dust generating operations and that may require permit coverage for such operations (i.e. unlikely to be no-exposure facilities).
5. Other industrial facility sectors, SICs or NAICS groups that the City determines may be a significant source of pollutants.

Industrial facilities required to obtain coverage under the ADEQ MSGP were required to submit an application for coverage (NOI) or “No Exposure” form no later than May 31, 2011. The majority of these that did file with the ADEQ had not received their authorization from the ADEQ at the time of inspection. A few companies needed to revise their Storm Water Pollution Prevention Plans at the time of the City inspection, but still had time to do so before the NOI submittal due date. The City inspector noted where authorizations were required.

Issues at industrial facilities noted as part of the inspection process included:

- Leaks and spills;
- Exposed materials;
- General housekeeping issues; and,
- Industrial waste (i.e. asphalt emulsions, floor tile cutting process water) discharged to on-site surface impoundments (i.e. detention or retention basins) or drywells that did not result in a release of pollutants to the City’s MS4.

3.6.3 Summary of Corrective and Enforcement Actions

The 2010 MS4 Permit requires the City to:

1. Establish an effective compliance and enforcement program that incorporates escalating actions for violations of the City’s Stormwater Code that provides timeframes and escalation for corrective actions; and,
2. Focus the escalated enforcement protocol on having the highest level of enforcement action resolved within one (1) year of the initial inspection/violation.

In general, the City can utilize corrective or enforcement actions to obtain compliance with City’s Stormwater Code (see [Section 3.3.3](#)).

3.6.3.1 Commercial Facility Corrective & Enforcement Actions

Corrective actions needed and taken at commercial facilities during this reporting period included:

- Operators agreed to wash mats inside the facility and residues were cleaned from pavement surface; and,

- Storm drain grate was cleaned of oil and grease residues.

All corrective actions at commercial facilities during this reporting period were taken within 15 calendar days of the initial stormwater inspection by the facility operators. Therefore, no formal enforcement actions (e.g. civil citation, notice to abate, etc.) were needed as a result of the commercial inspections conducted during this reporting period.

3.6.3.2 Industrial Facility Corrective & Enforcement Actions

Corrective actions needed and taken at industrial facilities during this reporting period included:

- Removing trackout from City streets;
- Cleaned spills and leaks; and,
- Established parts and oil storage areas.

All corrective actions initiated by industrial facilities during this reporting period were taken within ninety (90) calendar days of the initial stormwater inspection.

Enforcement actions needed and taken at industrial facilities during this reporting period included:

- Reporting operations to the City industrial pre-treatment program personnel to assist in developing proper industrial wastewater disposal options; and,
- Reporting operations to the ADEQ Aquifer Protection Permit (APP) program regarding discharges of industrial process water/wastes to on-site surface impoundments and/or drywells.

3.7 CONSTRUCTION PROGRAM ACTIVITIES

The 2010 MS4 Permit requires the City to report the following in the Annual Report as it pertains to the review of plans and inspections of construction operations:

1. Status of inventory/plan review of these facilities.
2. An overview of inspection findings and significant findings.
3. Corrective and enforcement actions needed and taken in response to inspections

3.7.1 Status of Inventory and Plan Review of Construction Operations

The 2010 MS4 Permit requires the City to:

1. Develop an inventory, list, or database, or map of construction activities that result in land disturbance of one (1) or more acres and that have the potential to discharge to the City's storm sewer system within one (1) year of permit issuance (August 30, 2011) and to be updated at least annually;
2. Review at least 80% of plans for new development and redevelopment (such as grading and drainage plans) to verify conformance with the City requirements for stormwater, including erosion and sediment control, prior to issuing construction approvals or authorizations; and,
3. Require a copy of the ADEQ's Authorization Certificate for non-municipal construction projects (as required by municipal stormwater requirements or ordinances or state stormwater requirements) be submitted prior to issuing construction approval or authorization.

3.7.1.1 Private Construction Projects

When plans are submitted to the City, information on the construction project is entered into a database providing a detailed record of the construction operations from the point of plan submittal through inspection and approval (i.e. issuance of a Certificate of Completion or Certificate of Occupancy). The City reviews all construction plans for compliance with all aspects of the City's Engineering and Design Standards Manual and the City Mesa Code. Stormwater drainage and infrastructure are generally detailed in grading and drainage plans. Approval of these plans is required before a building permit is issued by the City.

A copy of the contractor's ADEQ Authorization Certificate is also required before a building permit is issued by the City of Mesa for projects involving land disturbance of one or more acres. The City places a "hold" that prevents this issuance of a building permit where an ADEQ Authorization Certificate is required until it has been submitted.

3.7.1.2 City Projects

For City projects, the City is deeply involved in the project through all phases of development (i.e. conception, planning, construction, and completion). Grading and drainage plans are required for most engineering projects, certainly any project that

disturbs one or more acres of land. The City maintains a separate database for City construction projects that disturb more than 0.1 acres. This is the threshold disturbance limit where a dust control permit would be required from the Maricopa County Air Quality Department.

The general contractor to submit a copy of their SWPPP for review and approval along with a copy of their ADEQ Authorization Certificate before the contractor is authorized to conduct any land disturbance activities for City projects that disturb one or more acres. The City files as a co-permittee under the ADEQ's Construction General Permit (CGP) and is issued a separate Authorization Certificate.

3.7.2 Overview of Inspection Findings and Significant Findings

The 2010 MS4 Permit requires the City to:

1. Establish a prioritization schedule for inspecting construction sites with a higher frequency of inspections for those sites that have a higher potential to discharge to the storm sewer system;
2. Routinely inspect construction projects to determine whether effective erosion and sediment controls are in place, and verify conformance with local stormwater requirements and approved construction plans;
3. Inspect higher priority sites, based on the prioritization schedule, a minimum of one (1) time every three (3) months and all other sites at least once every six (6) months until final stabilization is established; and,
4. Conduct follow-up inspection of construction sites within 30 days to ensure stormwater deficiencies/concerns/non-compliance identified as a result of a routine inspection were corrected

3.7.2.1 Private Construction Projects

The City will generally first inspect a private construction operation during the footing stage of development. During this visit, City staff takes time to review the operator's plans to identify active areas and stormwater best management practices (BMPs).

During the inspection of the footing structure(s), City staff look at all active areas of the construction project to ensure that BMPs identified on the operator's plans are in place and maintained, and to ensure that the only non-stormwater releases to the City MS4

are properly permitted. These projects are inspected thereafter a minimum of one (1) time every three (3) months where construction activities are still active. Where deficiencies are noted and a re-inspection is required, the City will conduct this follow-up inspection within 30 calendar days.

Inspection findings for private construction projects during this reporting period included:

- Track-out and excessive track-out;
- Unprotected catch basins; and,
- Poorly maintained BMPs.

3.7.2.2 City Projects

The City generally conducts a compliance audit within two weeks of the approval of the City to the general contractor (i.e. issuance of a Notice to Proceed) or the disturbance of land associated with the project. These projects are inspected thereafter a minimum of one (1) time every three (3) months. Where deficiencies are noted and a re-inspection is required, the City will conduct this follow-up inspection within 30 calendar days.

Inspection findings for City construction projects during this reporting period included:

- Lack of SWPPP on-site;
- Lack of appropriate signage;
- Lack of perimeter control;
- Unprotected catch basins;
- Excessive trackout; and,
- Poorly maintained BMPs.

3.7.3 Summary of Corrective and Enforcement Action

The 2010 MS4 Permit requires the City to:

1. Establish an effective compliance and enforcement program that incorporates escalating actions for violations of the City's Stormwater Code that provides timeframes and escalation for corrective actions; and,

2. Focus the escalated enforcement protocol on having the highest level of enforcement action resolved within one (1) year of the initial inspection/violation.

In general, the City can utilize corrective or enforcement actions to obtain compliance with Mesa City Code (see [Section 3.3.3](#)).

3.7.3.1 Private Construction Projects

Corrective actions needed and taken at private construction projects during this reporting period included:

- Track-out and excessive track-out was cleaned from roads; and,
- BMPs were maintained.

All corrective actions at private construction projects during this reporting period were taken within 30 calendar days of the initial stormwater inspection where the violation was first identified. Therefore, no formal enforcement actions (e.g. issuance of a stop work order) were needed as a result of the private construction projects during this reporting period.

3.7.3.2 City Projects

Corrective actions needed and taken at City construction projects during this reporting period included:

- Excessive track-out was cleaned from roads;
- BMPs maintenance needs were addressed;
- SWPPP was present at site;
- Proper signage was installed;
- Perimeter control was established; and,
- Catch basin BMPs were installed.

All corrective actions at City construction projects during this reporting period were taken within 30 calendar days of the initial stormwater inspection where the violation was first identified. Therefore, no formal enforcement actions (e.g. issuance of a stop work order) were needed as a result of the private construction projects during this reporting period.

3.8 POST-CONSTRUCTION PROGRAM ACTIVITIES

The 2010 MS4 Permit requires the City to report the following in the Annual Report as it pertains to the post-construction requirements associated with construction operations:

1. Summary of any new or revised post-construction controls for City projects or post-construction requirements related to permits the City issues.
2. An overview of the city's post-construction inspection program.
3. Corrective and enforcement actions needed and taken in response to post-construction inspections.

3.8.1 New or Revised Post-Construction Controls

The City has not developed any new or revised post-construction controls for City projects or for projects related to permits issued by the City.

3.8.2 Overview of Post-Construction Inspection Program

For private construction projects, the City requires developers to obtain a third party inspection of post-construction stormwater controls to determine effectiveness of post-construction stormwater controls.

For City projects, the City conducts a final stability inspection and the end of construction projects that disturb greater than 0.1 acres of land to ensure the site has achieved permanent stability. An inspection of this nature is required under the CGP in order to file a Notice of Termination (NOT) to end coverage under the permit.

3.8.3 Summary of Corrective and Enforcement Action

3.8.3.1 Private Construction Projects

When deficiencies are identified pertaining to surface drainage, retention, and conveyance of stormwater at private construction projects, a notice of violation is issued requiring corrective actions within thirty (30) calendar days.

No post-construction corrective actions or enforcement actions regarding private construction projects were needed during this reporting period.

3.8.3.2 City Projects

The City files a NOT to end coverage under the CGP for each project that disturbed one or more acres of land based on the results of the final stability inspection. Where final stabilization has not been achieved, coverage under the CGP is maintained. This may occur in instances where one general contractor's scope of work did not include final stabilization (e.g. application of ground cover) but that this would be achieved under another project, either by City personnel or another general contractor.

No post-construction corrective actions or enforcement actions regarding City construction projects were needed during this reporting period.

3.9 DRY-WEATHER SCREENING

The 2010 MS4 Permit requires the City to report the status of the following in the Annual Report as it pertains to the dry-weather screening requirements:

1. Staff training.
2. Outfall and field screening point inventory.
3. Inspection tracking system.
4. Inspection and screening procedures and significant findings.

3.9.1 Staff Training

The 2010 MS4 Permit requires the existing employees directly involved with stormwater management activities, including dry-weather screening and associated investigations, be trained at least once every two (2) years and to provide an opportunity for new employee training at least one (1) time per year.

As such, all City staff who conducts these types of operations must meet the following requirements:

- Review the procedures detailed in the Environmental Code Violation Standard Operating Procedures;
- Have knowledge of:
 - Ordinances, rules, and regulations governing stormwater discharges, particulate pollution, and hazardous materials;

- Principles and practices for field monitoring protocols, sample collection, preservation, analysis, and documentation requirements;
- Occupational and safety precautions at industrial and construction work sites (position requirement; and,
- Have a basic knowledge of chemicals on human and ecological systems (position requirement).

Dry weather screening inspections involve two personnel for health and safety reasons among others. Dry-weather screening inspections conducted during this reporting involved at least one person that was involved in conducting these inspections during the previous reporting period and provided on-the-job training to the other person.

3.9.2 Outfall and Field Screening Point Inventory

No changes to the City's outfall and field screening point inventory have been made since its inclusion in the City's SWMP.

3.9.3 Inspection Tracking System

Dry-weather screening and associated investigations are documented on the Dry-Weather Screening Report Form specific for each location. The City is in the process of creating a database with the functionality to retrieve data and generating reports required for the annual report and to better track results at these locations. The City anticipates the development of the database to be complete during the next reporting period.

3.9.4 Inspection and Screening Procedures and Significant Findings

No changes to the dry-weather screening procedures have been made since their inclusion in the City's SWMP. No dry-weather flows were observed at the outfalls or field screening points monitored during this reporting period.

3.10 ORDINANCES, RULES, & POLICIES

The City's 2010 MS4 Permit requires the City to describe any new or revised ordinances, rules or policies related to stormwater management or control. During this reporting period, the City drafted an ordinance that would result in revising the Stormwater Code. Changes to the existing code were necessary to ensure compliance

with the new permit and to be consistent with other parts of the Mesa City Code as it pertains to inspection and enforcement actions.

3.11 FISCAL EXPENDITURES

See [Section 12.0](#).

4.0 STORMWATER PROGRAM NUMERIC SUMMARY

The 2010 MS4 Permit requires the City to provide a summary of management practices and activities performed each year and to report that summary in a table as provided in that permit. Attached in this section is the table summarizing activities conducted under the City's 2010 MS4 Permit.

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NUMERIC SUMMARY OF STORMWATER MANAGEMENT PROGRAM ACTIVITIES

STORMWATER MANAGEMENT PRACTICE OR ACTIVITY	ANNUAL REPORTING YEAR (July 1 – June 30)				
	2010 - 2011	2011 - 2012	2012 - 2013	2013 - 2014	2014 - 2015
Illicit Discharge Detection & Elimination Program					
1. Municipal Employee Training					
Number of training sessions (on non-stormwater discharges and the IDDE program)	0 ⁽¹⁾				
Number of employees attending training	NA				
2. Spill Prevention					
Number of municipal facilities identified with hazardous materials	0 ⁽²⁾				
Number of spills at municipal facilities with hazardous materials, that occurred in outside areas	NA				
Number of facility assessments completed (identify any issues found requiring follow-up in narrative and summarize new practices to minimize exposure)	NA				
Date of last review of site-specific materials handling and spill response procedures (identify participant(s) with stormwater expertise in narrative)	NA				

STORMWATER MANAGEMENT PRACTICE OR ACTIVITY	ANNUAL REPORTING YEAR (July 1 – June 30)				
	2010 - 2011	2011 - 2012	2012 - 2013	2013 - 2014	2014 - 2015
3. Outfall and Field Screening Point Inspections					
Total number inspected (attach or forward electronic copy of inventory or map of major outfalls and field screening points and priority outfalls and field screening points)	41 ⁽³⁾				
Number of 'priority outfalls' and field screening points identified to date (<i>summarize findings and follow-up actions in narrative</i>)	0 ⁽³⁾				
Number of 'priority outfalls' and field screening points inspected (summarize findings and follow-up actions in narrative)	NA ⁽⁴⁾				
Number of dry weather flows detected	0				
Number of dry weather flows investigated	NA				
Number of outfalls and field screening points sampled	NA				
Number of illicit discharges identified	12				
Number of illicit discharges eliminated	12				
Amount of storm drain inspected (length)	0				
Number of storm drain cross connection investigations	0				
Number of illicit connections detected	2				
Number of illicit connections eliminated	2				
Number of corrective or enforcement actions initiated within 60 days of identification	12				
Percent of cases resolved within one (1) calendar year of original enforcement action	100				
Number of illicit discharge reports received from public	28				
Percent of illicit discharge reports responded to	100				
Percent of responses initiated within three (3) business days of receipt	100				

STORMWATER MANAGEMENT PRACTICE OR ACTIVITY	ANNUAL REPORTING YEAR (July 1 – June 30)				
	2010 - 2011	2011 - 2012	2012 - 2013	2013 - 2014	2014 - 2015
Municipal Facilities					
1. Employee Training					
Number of training events (dates and topics to be included in narrative)	0 ⁽¹⁾				
Number of staff trained	NA				
2. Inventory, Map, or Database of MS4 Owned & Operated Facilities					
Total number of facilities on inventory	96				
Date identification of 'higher risk' facilities completed	NA				
Date prioritization of municipal facilities completed	NA				
3. Inspections					
Miles of MS4 drainage system prioritized for inspection	NA ⁽⁶⁾				
Miles visually inspected	NA ⁽⁶⁾				
Number of 'higher risk' municipal facilities inspected	0 ⁽²⁾				
Number of 'higher risk' municipal facilities found needing improved stormwater controls	NA				
4. Infrastructure Maintenance					
Linear miles of drainage system cleaned each year (city to maintain records documenting specific street cleaning events)	30,976				
Record amount of waste collected from street and lot sweeping (reported in pounds, gallons, etc.)	1,769 ⁽⁶⁾				
Total number of catch basins	8,508				
Number of retention/detention basins cleaned	19,146				
Number of catch basins cleaned	17,050				
Industrial and Commercial Sites Not Owned by the MS4					
Number of training events for MS4 staff	0 ⁽¹⁾				
Number of municipal staff trained	NA				
Number of industrial facilities inventory inspected (see Appendix A, Part V.B)	1,117				
Number of corrective or enforcement actions initiated on industrial facilities	9				
Percent of cases resolved within one (1) calendar year of original enforcement action	NA ⁽⁷⁾				

STORMWATER MANAGEMENT PRACTICE OR ACTIVITY	ANNUAL REPORTING YEAR (July 1 – June 30)				
	2010 - 2011	2011 - 2012	2012 - 2013	2013 - 2014	2014 - 2015
Construction Program Activities					
Number of training events for MS4 staff (include topics in narrative summary)	0 ⁽¹⁾				
Number of municipal staff trained	NA				
Number of construction/grading plans submitted for review	80				
Number of construction/grading plans reviewed	88				
Number of construction sites inspected	113				
Number of corrective or enforcement actions initiated on construction facilities (identify the type of actions in narrative summary)	56 ⁽⁶⁾				
Post Construction Program Activities					
Number of post-construction inspections completed	18				
Number of corrective or enforcement actions initiated for post-construction activities (identify the type of actions in narrative summary)	0 ⁽⁹⁾				

Notes:

- (1) Training of City staff on the requirements of the standard operating procedures will occur during the second permit year term.
- (2) Not required to be implemented until the second year of the 2010 M4 Permit term.
- (3) See [Section 3.9.2.](#)
- (4) See [Section 3.9.4.](#)
- (5) The City is in the process of developing a method to track the number of miles of MS4 prioritized for inspection and inspected.
- (6) Quantity reported in tons.
- (7) Since this is the first reporting period under the 2010 MS4 Permit which became effective August 30, 2011, there are no open cases that have existed for one calendar year.
- (8) See [Section 3.7.3.](#)
- (9) See [Section 3.8.3.](#)

5.0 EVALUATION OF THE STORMWATER PROGRAM

The 2010 MS4 Permit requires the City to provide an evaluation of the progress and success of the City's stormwater management program, including an assessment of the effectiveness of stormwater management practices in reducing the discharge of pollutants to and from the City's MS4 in the Annual Report.

5.1 PROGRAM PROGRESS

During this reporting period, the City re-evaluated their operations and drafted the following standard operating procedures addressing the requirements provided in the 2010 MS4 Permit.

- Commercial & Industrial Facility Inspection Standard Operating Procedures
- Environmental Code Violation Standard Operating Procedures
- Standard Operating Procedures for City Field Operations Activities
- Standard Operating Procedures for City Stormwater Infrastructure Operations Activities
- Standard Operating Procedures for Construction Activities for City Projects
- Standard Operating Procedures for Construction Activities of Private Projects
- Standard Operating Procedures for Environmental Training Programs
- Standard Operating Procedures for Stormwater Monitoring
- Wet-Weather Stormwater Sampling & Analysis Plan

As of the date of this Annual Report, these procedures are in various stages of draft (i.e. some are complete and in effect, others are under senior management review, one requires the completion of the outfall and field screening point drainage area study to be complete). The next reporting period, the City will be concentrating efforts on training staff on the requirements of these procedures as well as addressing additional requirements identified in the 2010 MS4 Permit that must be implemented during the second permit year.

5.2 PROGRAM SUCCESSES

During this fiscal year, the following successes to the City's stormwater program include:

- The City revised their Stormwater Code to be consistent with other sections of the Mesa City Code, to make enforcement more consistent at the inspector level, and to ensure compliance with the 2010 MS4 Permit requirements;
- The STORM organization conducted a radio PSA that reached an estimated 3,168,300 people in the Greater Phoenix Metropolitan Area.
- The Stormwater Construction Seminar provided by STORM.

5.3 REDUCTION OF POLLUTANTS TO THE CITY'S MS4

Elements of the City's stormwater program that the City identifies as having significantly reduced the release of pollutants to their MS4 include:

1. Public Education & Outreach
2. Public Reporting (i.e. Environmental Hotline)
3. Household Hazardous Waste Events
4. Commercial & Industrial Facility Inspections
5. Construction Site Inspections

5.3.1 Public Education & Outreach

The STORM organization's radio PSA campaign was a major benefit to the City's stormwater program by providing information pertaining to proper disposal of oil. City residents and businesses in addition to others in the Greater Phoenix Metropolitan Area that visit friends, work, conduct business, or attend entertainment venues in the City were informed not only that oil does not belong in the storm system, but the PSA provided appropriate options for the disposal of this material.

The STORM organization's Stormwater Construction Seminar provided information on sediment and erosion control and other BMPs as well as what member's required from construction site operators in their own jurisdiction. A copy of the information from that seminar was also placed on the STORM website for attendees and those operators who could not attend. This seminar reduces the amount of pollutants discharged to the City's MS4 by providing construction site operators with increased knowledge of what is required on their sites.

5.3.2 Public Reporting

By providing a public reporting method for complaints regarding stormwater issues, the City is able to identify and take timely action against persons who are responsible for releasing pollutants to the City's MS4. Additionally, this information can be used to determine what topics need to be further addressed through the STORM organization's public education and outreach program.

5.3.3 Household Hazardous Waste Events

The City's HHW events generated over 50,000 gallons of waste. It is not possible to quantify the amount of HHW that could be released into the storm sewer system if the HHW events were not held. However, since material collected at the events ensures this will be disposed of properly, these events ultimately result in significantly reducing releases of these types of pollutants to the City's MS4

5.3.4 Commercial & Industrial Facility Inspections

City inspectors conduct inspections on a daily basis of commercial facilities that require permitting under the City's FOG program. These inspectors are trained to identify violations of the City's Stormwater Code and to report such violations to appropriate City personnel. The inspections of industrial facilities by qualified personnel to identify violations of the City's Stormwater Code are also an effective method for reducing the release of pollutants to the City's MS4.

Through the issuance of a courtesy notice requiring corrective actions, the City is able to have the source of pollutants removed by the responsible party while at the same time providing a public education opportunity to prevent future discharges and encourage public reporting. Where necessary, the City does have the authority to pursue civil and criminal actions against responsible parties if they refuse to take action, take action then recommit the offense, or are commit offences in a manner that they are considered repeat offenders. These enforcement actions, or the threat of them, can be an effective tool in accelerating corrective actions by the responsible party.

5.3.5 Construction Site Inspections

City inspectors conduct inspections of private construction projects to ensure they are operating in compliance with the City's Stormwater Code. Through the issuance of a courtesy notice requiring corrective actions, the City is able to have the source of

pollutants removed by the responsible party while at the same time providing a public education opportunity to prevent future discharges and encourage public reporting. Where necessary, the City does have the authority to pursue civil and criminal actions against responsible parties if the operator refuses to take action, take action then recommit the offense, or commit offences in a manner that they are considered repeat offenders. These enforcement actions, or the threat of them, can be an effective tool in accelerating corrective actions by the responsible party.

Additionally, City inspectors conduct inspections of City projects to ensure compliance with environmental permitting requirements (dust and stormwater) as well as sections of the City Mesa Code. City inspectors work with the City's general contractor to remove any sources of pollutants and to ensure work is performed in an appropriate manner. Where necessary, City inspectors have the authority to issue a "Stop Work Order" as a mean of obtaining compliance if the general contractor refuses to take action, take action then recommit the offense, or commit offences in a manner that they are considered repeat offenders.

5.4 REDUCTION OF POLLUTANTS FROM THE CITY'S MS4

Elements of the City's stormwater program that the City identifies as having significantly reduced the discharge of pollutants from their MS4 to waters of the United States include:

1. MS4 Infrastructure Maintenance
2. Post-Construction Requirements

5.4.1 MS4 Infrastructure Maintenance

Maintenance of the City's MS4 System results in the direct removal of pollutants from the system, thus keeping them from being discharged into a water of the United States.

5.4.1.1 Street Sweeping

Sediment and debris that collects on paved streets owned and operated by the City is removed through the City's street sweeping program. The estimated amount of pollutants removed from the City's street sweeping program is provided in the Numeric Summary of Stormwater Management Program Activities table in [Section 4.0](#).

5.4.1.2 Storm Sewers Components

The City has a program to clean catch basins, storm pipes, open channels, headwalls and culverts that are owned and operated by the City. Removal of trash, debris and sediment from these structures prevents this material from being discharged to a water of the United States.

5.4.1.3 Detention/Retention Basins

The City owns and operates several detention and retention basins installed throughout the City. Much of the City's streets and storm pipes drain to a detention or retention basin at some point before draining to another regulated MS4 or a water of the United States. The City removes debris, trash, and sediment from detention basins to keep pollutants from discharging further into the City's MS4. The removal of these pollutants from retention basins keeps these basins operational and allows for the infiltration of stormwater.

The United States Environmental Protection Agency (USEPA)⁽¹⁾ cited studies of detention basins (i.e. dry detention ponds) where they were rated as a moderate management practice for pollutant removal. As reported in that study, detention basins are effective at removing some pollutants through settling and have typical removal rates for total suspended solids at 61%, total phosphorus at 19%, total nitrogen at 31%, nitrate nitrogen at 9%, and metals at 26%-54%.

For retention basins (i.e. infiltration basins) these are noted as having a very high pollutant removal because stormwater entering the systems infiltrates into subsurface soils over time. These systems only have infrastructure that drains into them and do not release stormwater to other components of the City's MS4 and in some locations drainage from these structures to the subsurface is increased through the installation of drywells. The USEPA cited studies estimated an average pollutant removal from a 1-inch storm for total suspended solids at 75%, phosphorous at 60-70%, nitrogen at 55-60%, metals at 85-90%, and bacteria at 90%.

5.4.2 Post-Construction Requirements

The City has developed an Engineering and Design Standards Manual that provides specific direction and guidelines to the design professionals preparing construction documents for private land development projects. That manual adopts the Uniform

Drainage Policies and Standards for Maricopa County as published by the Flood Control District of Maricopa County with modifications as specified within that manual.

Since December 1990, new development in the City has been required to retain rainfall from a 100 year, 2-hour storm event either through the installation of retention or detention basins or other structures (e.g. subsurface storage). The 100 Year, 2-Hour rainfall depth is 2.7 inches, except in the Mesa Town Center where the retention standard only requires 2/3 of the 100 year, 2 hour rainfall depth, or 1.8 inches. Rainfall can be retained in detention basins, retention basins, or other types of storage (e.g. subsurface storage). The retention standard results in the reduction of pollutants discharged from the City's MS4 to a water of the United States (see the removal rate studies summarized in [Section 5.4.1.3](#)).

Source:

- (1) National Pollutant Discharge Elimination System (NPDES); Menu of BMPs; Post-Construction Stormwater Management in New Development and Redevelopment webpage. http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=min_measure&min_measure_id=5

6.0 STORMWATER MANAGEMENT PROGRAM MODIFICATIONS

The 2010 MS4 Permit requires the City to provide a description of the modifications to the City's SWMP for the areas described in the following subsections. No other changes to the City's SWMP are allowed without permit modification.

6.1 ADDITION OF NEW CONTROL MEASURES

No additional control measures apart from those required in under the 2010 MS4 Permit were implemented during this reporting period.

6.2 ADDITION OF TEMPORARY CONTROL MEASURES

No temporary control measures were implemented during this reporting period.

6.3 INCREASE OF EXISTING CONTROL MEASURES

No increases to existing control measures were implemented during this reporting period.

6.4 REPLACEMENT OF EXISTING CONTROL MEASURES

No existing controls were deemed to be ineffective and replaced with an alternate control measure that will continue to achieve an equivalent or increased reduction in pollutants during this reporting period.

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7.0 MONITORING LOCATIONS

The 2010 MS4 Permit requires the City to provide a brief description of the City's wet-weather stormwater monitoring locations in the first annual report. Subsequent annual reports need only advise of any changes or updates are required.

The information required includes the following:

1. Name and description of water of the United States receiving discharges from the monitoring location;
2. Monitoring location identification number (see subsection titles);
3. Address or physical location of the monitoring locations;
4. Latitude and longitude of monitoring locations;
5. Size (acres) of drainage area associated with each monitoring location;
6. Estimated acreage of individual land uses with each drainage area; and,
7. Type of monitoring equipment

7.1 STATION AS-US60

Monitoring station AS-US60 is located at the intersection of Alma School Road and U.S. Highway 60. The exact locations of City stormwater infrastructure (i.e. longitude and latitude), and all of its utility infrastructure, are considered to be confidential and for use by City personnel only. As such, the City cannot supply this information in this report. The City would be able to supply this information to the ADEQ upon official request and only under a signed confidentiality agreement.

Releases of stormwater at this station are to the east Mesa section of the U.S. Highway 60 channel which is owned and operated by the Arizona Department of Transportation (ADOT). Stormwater flows in this section of the U.S. Highway 60 channel have the potential to ultimately discharge to the Salt River near the LOOP 101 and LOOP 202 interchange.

The City has installed a Teledyne Isco Avalanche® automated sampler at this location to monitor rainfall, level, and flow. Additionally, the sampler collects composite samples during representative storm events. The City has hired a consultant to conduct a study of the drainage areas associated with this monitoring location to determine drainage

size and land use data. The City anticipates that study to be completed by August 30, 2012.

7.2 STATION SS-US60

Monitoring station SS-US60 is located at the intersection of Superstition Springs and U.S. Highway 60. The exact locations of City stormwater infrastructure (i.e. longitude and latitude), and all of its utility infrastructure, are considered to be confidential and for use by City personnel only. As such, the City cannot supply this information in this report. The City would be able to supply this information to the ADEQ upon official request and only under a signed confidentiality agreement.

Releases of stormwater at this station are to the central Mesa section of the U.S. Highway 60 channel which is owned and operated by ADOT. Stormwater flows in this section of the U.S. Highway 60 channel have the potential to ultimately discharge to the East Maricopa Floodway (EMF) owned and operated by the Flood Control District of Maricopa County (FCDMC).

The City has installed a Teledyne Isco Avalanche® automated sampler at this location to monitor rainfall, level, and flow. Additionally, the sampler collects composite samples during representative storm events. The City has hired a consultant to conduct a study of the drainage areas associated with this monitoring location to determine drainage size and land use data. The City anticipates that study to be completed by August 30, 2012.

7.3 STATION 54-EMF

Monitoring station 54-EMF is located where 54th Street meets the EMF northeast of Broadway and Higley roads. The exact locations of City stormwater infrastructure (i.e. longitude and latitude), and all of its utility infrastructure, are considered to be confidential and for use by City personnel only. As such, the City cannot supply this information in this report. The City would be able to supply this information to the ADEQ upon official request and only under a signed confidentiality agreement.

Releases of stormwater at this station are directly to the EMF which is owned and operated by the FCDMC.

The City has installed a Teledyne Isco Avalanche® automated sampler at this location to monitor rainfall, level, and flow. Additionally, the sampler collects composite samples during representative storm events. The City has hired a consultant to conduct a study of the drainage areas associated with this monitoring location to determine drainage size and land use data. The City anticipates that study to be completed by August 30, 2012.

7.4 STATION UN-EMF

Monitoring station UN-EMF is located where University Drive crosses the EMF. The exact locations of City stormwater infrastructure (i.e. longitude and latitude), and all of its utility infrastructure, are considered to be confidential and for use by City personnel only. As such, the City cannot supply this information in this report. The City would be able to supply this information to the ADEQ upon official request and only under a signed confidentiality agreement.

Releases of stormwater at this station are directly to the EMF which is owned and operated by the FCDMC.

The City has installed a Teledyne Isco Avalanche® automated sampler at this location to monitor rainfall, level, and flow. Additionally, the sampler collects composite samples during representative storm events. The City has hired a consultant to conduct a study of the drainage areas associated with this monitoring location to determine drainage size and land use data. The City anticipates that study to be completed by August 30, 2012.

7.5 STATION FF-ACES

Monitoring station FF-ACES is located near the intersection Falcon Field and Fighter Aces drives. The exact locations of City stormwater infrastructure (i.e. longitude and latitude), and all of its utility infrastructure, are considered to be confidential and for use by City personnel only. As such, the City cannot supply this information in this report. The City would be able to supply this information to the ADEQ upon official request and only under a signed confidentiality agreement.

Releases of stormwater at this station are to an on-site detention basin owned and operated by the City. Stormwater flows from the detention basin have the potential to ultimately discharge to the EMF which is owned and operated by the FCDMC.

The City has installed a Teledyne Isco Avalanche® automated sampler at this location to monitor rainfall, level, and flow. Additionally, the sampler collects composite samples during representative storm events. The City has hired a consultant to conduct a study of the drainage areas associated with this monitoring location to determine drainage size and land use data. The City anticipates that study to be completed by August 30, 2012.

8.0 STORM EVENT RECORDS

The 2010 MS4 Permit requires the City to summarize all measurable storm events (0.10 inches or greater) at each monitoring location until such a time that stormwater samples have been collected at that particular monitoring location during that particular season.

The information is to include the following:

- Date of each event;
- Amount of precipitation of each event;
- Indication of whether or not a sample was collected as part of the event;
- Information on conditions that prevented the collection of a sample.

As part of the 2010 MS4 Permit conditions, the City was required to relocate four of the five sampling locations established under the original Phase I permit issued to the City by the United States Environmental Protection Agency in 1997. The remaining station (FF-ACES) was retained but required re-equipping since the equipment at this station was used beyond the City's equipment depreciation schedule (i.e. old equipment was retained until it was determined that this location would be retained under the 2010 MS4 Permit). Security improvements were also made at that location.

The City accepted the installation of this equipment as part of City of Mesa Engineering Project 07-036-001 on April 12, 2011. On May 6, 2011, all of the monitoring stations had been programmed and were ready for activation. Attached in this section is a table summarizing storm event records obtained under the 2010 MS4 Permit.

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STORM EVENT RECORDS

Storm Monitoring Station	Storm Start Date/Time	Storm Event Stop Date/Time	Duration ⁽¹⁾	Season ⁽²⁾ (S/W)	Storm Information			Composite Sample Information		Discrete Sample Information	
					Event Rainfall (inches)	Flood Event ⁽³⁾ (Y/N)	Normal Storm ⁽⁴⁾ (Y/N)	Insufficient Rainfall ⁽⁵⁾ (Y/N)	Sample Collection Result ⁽⁶⁾	Notes	Sample Collection Result ⁽⁷⁾
AS-US60	5/18/11 17:25	5/18/11 21:10	3:45	W	0.04	N	Y	Y			
SS-US60	5/18/11 20:45	5/18/11 21:50	1:05	W	0.02	N	Y	Y			
FF-ACES	5/18/11 21:25	5/18/11 21:25	0:00	W	0.01	N	Y	Y			
	6/30/11 13:55	6/30/11 13:55	0:00	S	0.01	N	Y	Y			

Notes:

- (1) Storm event duration is established as any measurable rainfall over a period of 6 hours for short duration storms [monsoon (summer season); 12 hours (most storms); or, 24 hours (long duration storms)].
- (2) Summer Season (S): June 1st through September 30th. Winter Season (W): October 1st through May 30th.
- (3) Storm intensity up to and including the 100-year 2-hour duration storm. For the purposes of this Manual that is equivalent an event of 2.7 inches (i.e. 1.35 inches per hour).
- (4) Storm intensity exceeded the 100 Year, 2-Hour event (i.e. greater than 1.35 inches per hour).
- (5) Storm intensity did equal or exceed 0.10 inches per hour; therefore, samplers did not activate, no notification was sent, and no samples were collected.
- (6) Where sufficient rainfall did occur, indicate one of the following results for composite sampling and/or describe in the "Notes" section:
 DWF (Dry-Weather Flow): Dry-weather flows were detected that may contain quantities and concentrations of pollutants that would significantly alter stormwater samples.
 EM (Equipment Malfunction): Equipment failed to activate or failed to notify stormwater monitoring personnel that a sample had been collected.
 IF (Insufficient Flow): Storm did not result in a flow of two or more inches at the monitoring location.
 IS (Insufficient Sample): Did not collect enough aquilots to qualify as a flow proportional composite.
 NR (Not Required): Composite samples for all analyses were previously collected. Only discrete samples need to be collected.
 SC (Sample Collected): Composite sample was collected from this storm event.
- (7) Where sufficient rainfall did occur, indicate one of the following for discrete samples and/or describe in the "Notes" section:
 DS (Dangerous Storm): Adverse climatic conditions existed that created a dangerous condition for stormwater monitoring staff (e.g. local flooding, high winds, lightning, etc.).
 DWF (Dry-Weather Flow): Dry-weather flows were detected that may contain quantities and concentrations of pollutants that would significantly alter stormwater samples.
 EM (Equipment Malfunction): Sampler failed to notify stormwater monitoring staff to that a representative storm event had occurred.
 IF (Insufficient Flow): Flow at monitoring location demished or ceased by time stormwater monitoring staff could respond.
 IM (Insufficient Manpower): Storm occurred during off-hours where a less than 20% chance of rain was forecasted and/or appropriate stormwater monitoring personnel were unavailable to respond.
 NR (Not Required): Discrete samples for all analyses were previously collected. Only composite samples need to be collected.
 SC (Sample Collected): Discrete sample was collected from this storm event.

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9.0 SUMMARY OF MONITORING DATA

None of the storm events detailed in [Section 8.0](#) of this report produced enough rainfall to meet the City's representative storm event criteria. Therefore, no samples were collected. Attached in this section are tables summarizing stormwater monitoring data obtained under the 2010 MS4 Permit.

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SUMMARY OF MONITORING DATA - MONITORING STATION AS-US60

Parameter	Units ⁽¹⁾	SWQS Salt ⁽²⁾	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015
Conventional Parameters												
Average Flow Rate ⁽³⁾	NA	NA	NA									
pH	Standard Units	9.0/6.5 ⁽⁴⁾	NA									
Temperature	Degrees Celsius	NA ⁽⁵⁾	NA									
Hardness	mg/L	NA	NA									
Total Dissolved Solids (TDS)	mg/L	NA	NA									
Total Suspended Solids (TSS)	mg/L	NA	NA									
Biochemical Oxygen Demand (BOD)	mg/L	NA	NA									
Chemical Oxygen Demand (COD)	mg/L	NA	NA									
Microbiological												
Escherichia coli (E. coli)	MPN	NA	NA									
Inorganics												
Cyanide, total ⁽⁶⁾	ug/L	41 T	NA									
Total Metals												
Antimony	mg/L	0.747	NA									
Arsenic	mg/L	0.28	NA									
Barium	mg/L	98.000	NA									
Beryllium	mg/L	1.867	NA									
Cadmium	mg/L	0.700 ⁽⁷⁾	NA									
Chromium ⁽⁶⁾	mg/L	NA	NA									
Copper	mg/L	1.300 ⁽⁷⁾	NA									
Lead	mg/L	0.015 ⁽⁷⁾	NA									
Mercury	mg/L	0.002	NA									
Nickel	mg/L	28.000 ⁽⁷⁾	NA									
Selenium	mg/L	4.667	NA									
Silver	mg/L	4.667 ⁽⁷⁾	NA									
Thallium	mg/L	0.075	NA									
Zinc	mg/L	280.000 ⁽⁷⁾	NA									
Nutrients												
Nitrate plus Nitrite as N	mg/L	NA	NA									
Ammonia as N	mg/L	0.0361 ⁽⁹⁾	NA									
Total Kjeldahl Nitrogen (TKN) as N	mg/L	NA	NA									
Total Phosphorus	mg/L	NA	NA									
Orthophosphate (Total)	mg/L	NA	NA									
Organic Toxic Pollutants												
Total Petroleum Hydrocarbons (TPH)	mg/L	NA	NA									
Total Oil and Grease	mg/L	NA	NA									

Parameter	Units ⁽¹⁾	SWQS Salt ⁽²⁾	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015
Volatile Organic Compounds (VOCs)⁽¹⁰⁾												
Acrolein	ug/L	34	NA									
Acrylonitrile	ug/L	3,800	NA									
Benzene	ug/L	3,733	NA									
Bromoform	ug/L	15,000	NA									
Carbon tetrachloride	ug/L	1,307	NA									
Chlorobenzene	ug/L	3,800	NA									
Chlorodibromomethane	ug/L	NA	NA									
Chloroethane	ug/L	NA	NA									
2-chloroethylvinyl ether	ug/L	180,000	NA									
Chloroform	ug/L	9,333	NA									
Dichlorobromomethane (Bromodichloromethane)	ug/L	NA	NA									
1,2-dichlorobenzene	ug/L	1,200	NA									
1,3-dichlorobenzene	ug/L	2,500	NA									
1,4-dichlorobenzene	ug/L	2,000	NA									
1,1-dichloroethane	ug/L	NA	NA									
1,2-dichloroethane	ug/L	59,000	NA									
1,1-dichloroethylene	ug/L	15,000	NA									
1,2-dichloropropane	ug/L	26,000	NA									
1,3-dichloropropylene	ug/L	NA	NA									
Ethylbenzene	ug/L	23,000	NA									
Methyl bromide	ug/L	NA	NA									
Methyl chloride	ug/L	NA	NA									
Methylene chloride	ug/L	NA	NA									
1,1,2,2-tetrachloroethane	ug/L	4,700	NA									
Tetrachloroethylene	ug/L	6,500	NA									
Toluene	ug/L	8,700	NA									
1,2-trans-dichloroethylene	ug/L	NA	NA									
1,1,1-trichloroethane	ug/L	2,600	NA									
1,1,2-trichloroethane	ug/L	3,733	NA									
Trichloroethylene	ug/L	280	NA									
Trimethylbenzene	ug/L	NA	NA									
Vinyl chloride	ug/L	2,800	NA									
Xylene ⁽¹¹⁾	ug/L	186,667	NA									
Semi-Volatile Acid Compounds⁽¹⁰⁾												
2-chlorophenol	ug/L	2,200	NA									
2,4-dichlorophenol	ug/L	1,000	NA									
2,4-dimethylphenol	ug/L	1,000	NA									
4,6-dinitro-o-cresol	ug/L	310	NA									
2,4-dinitrophenol	ug/L	110	NA									
2-nitrophenol	ug/L	NA	NA									
4-nitrophenol ⁽¹²⁾	ug/L	4,100	NA									
p-chloro-m-cresol	ug/L	15	NA									
Pentachlorophenol	ug/L	9,070 ⁽⁹⁾	NA									
Phenol	ug/L	7,300	NA									
2,4,6-trichlorophenol	ug/L	130	NA									

Parameter	Units ⁽¹⁾	SWQS Salt ⁽²⁾	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015
Semi-Volatile Base/Neutrals⁽¹⁰⁾												
Acenaphthene	ug/L	850	NA									
Acenaphthylene	ug/L	NA	NA									
Anthracene	ug/L	280,000	NA									
Benzo(a)anthracene	ug/L	0.2	NA									
Benzo(a)pyrene	ug/L	0.2	NA									
Benzo(b)fluoranthene	ug/L	NA	NA									
Benzo(g,h,i)perylene	ug/L	NA	NA									
Benzo(k)fluoranthene	ug/L	1.9	NA									
Chrysene	ug/L	19	NA									
Dibenzo(a,h)anthracene	ug/L	1.9	NA									
3,3'-dichlorobenzidine	ug/L	3	NA									
Diethyl phthalate	ug/L	26,000	NA									
Dimethyl phthalate	ug/L	17,000	NA									
Di-n-butyl phthalate	ug/L	NA	NA									
2,4-dinitrotoluene	ug/L	1,867	NA									
2,6-dinitrotoluene	ug/L	3,733	NA									
Di-n-octyl phthalate	ug/L	373,333	NA									
1,2-diphenylhydrazine (as azobenzene)	ug/L	1.8	NA									
Fluoranthene	ug/L	2,000	NA									
Fluorene	ug/L	37,333	NA									
Hexachlorobenzene	ug/L	6	NA									
Hexachlorobutadiene	ug/L	45	NA									
Hexachlorocyclopentadiene	ug/L	3.5	NA									
Hexachloroethane	ug/L	490	NA									
Indeno(1,2,3-cd)pyrene	ug/L	1.9	NA									
Isophorone	ug/L	59,000	NA									
Naphthalene	ug/L	3,200	NA									
Nitrobenzene	ug/L	467	NA									
N-nitrosodimethylamine	ug/L	0.03	NA									
N-nitrosodi-n-propylamine	ug/L	88,667	NA									
N-nitrosodiphenylamine	ug/L	NA	NA									
Phenanthrene	ug/L	60	NA									
Pyrene	ug/L	28,000	NA									
1,2,4-trichlorobenzene	ug/L	1,700	NA									

Parameter	Units ⁽¹⁾	SWQS Salt ⁽²⁾	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015
Pesticides												
Aldrin	ug/L	3	NA									
Alpha-BHC	ug/L	NA	NA									
Beta-BHC	ug/L	NA	NA									
Gamma-BHC (Lindane)	ug/L	NA	NA									
Delta-BHC	ug/L	NA	NA									
Chlordane	ug/L	2.4	NA									
4,4'-DDT	ug/L	1.1	NA									
4,4'-DDE	ug/L	1.1	NA									
4,4'-DDD	ug/L	1.1	NA									
Dieldrin	ug/L	0.2	NA									
Alpha-endosulfan	ug/L	0.2 ⁽¹³⁾	NA									
Beta-endosulfan	ug/L	0.2 ⁽¹³⁾	NA									
Endosulfan sulfate	ug/L	0.2 ⁽¹³⁾	NA									
Endrin	ug/L	0.09	NA									
Endrin aldehyde	ug/L	0.09	NA									
Heptachlor	ug/L	0.6	NA									
Heptachlor epoxide	ug/L	0.6	NA									
PCB-1242 (AROCOLOR 1242)	ug/L	2 ⁽¹⁴⁾	NA									
PCB-1254 (AROCOLOR 1254)	ug/L	2 ⁽¹⁴⁾	NA									
PCB-1221 (AROCOLOR 1221)	ug/L	2 ⁽¹⁴⁾	NA									
PCB-1232 (AROCOLOR 1232)	ug/L	2 ⁽¹⁴⁾	NA									
PCB-1248 (AROCOLOR 1248)	ug/L	2 ⁽¹⁴⁾	NA									
PCB-1260 (AROCOLOR 1260)	ug/L	2 ⁽¹⁴⁾	NA									
PCB-1016 (AROCOLOR 1016)	ug/L	2 ⁽¹⁴⁾	NA									
Toxaphene	ug/L	0.7	NA									

Notes:

Bold values were reported at levels above the method reporting limit (MRL). Non-bold values are the MRL. Shaded results were detected above the SWQS.

- 1) Analytical results shall be reported in the units specified for each category or parameter.
- 2) Surface Water Quality Standards (SWQSS) established for Salt River segment extending from City of Mesa NW WRF outfall at 33°26'45"/11°56'35" to Tempe Town Lake at 33°26'01"/11°54'55". Partial Body Contact (PBC) and Aquatic and Wildlife Effluent Dependent Water (A&WEdw).
- 3) Average flow rate for the sampling period (no more than 6 hours).
- 4) pH range (maximum/minimum).
- 5) Comparison of temperature at point of discharge is upgradient from the nearest stream segment having established SWQSSs and is thus not relevant at proposed sampling locations.
- 6) Based on free-cyanide.
- 7) SWQS for total metals is provided and based on partial body contact. The SWQS for dissolved metal concentration for effluent dependent water is dependant on the hardness value for each sample and will in most cases be below the SWQS for partial body contact.
- 8) Based on total chromium.
- 9) Depends on pH. Reported values are for pH of 7.0.
- 10) Methods: These parameters may be run using the following methods: VOCs, 624 or 8260; SVOCs, 625 or 8270; and PCB / Pesticides, 608/625 or 8081/8082 if the laboratory can pass QA with the method. In this case, the data should be marked with a T2 flag.
- 11) SWQSSs reported for total xylenes.
- 12) Also known as p-nitrophenol.
- 13) SWQSSs report as total endosulfan.
- 14) SWQSSs reported as PCBs

SUMMARY OF MONITORING DATA - MONITORING STATION SS-US60

Parameter	Units ¹	SWQS EMF ²	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015
Conventional Parameters												
Average Flow Rate ⁽³⁾	NA	NA	NA									
pH	Standard Units	9.0/6.5 ⁽⁴⁾	NA									
Temperature	Degrees Celsius	NA ⁽⁵⁾	NA									
Hardness	mg/L	NA	NA									
Total Dissolved Solids (TDS)	mg/L	NA	NA									
Total Suspended Solids (TSS)	mg/L	NA	NA									
Biochemical Oxygen Demand (BOD)	mg/L	NA	NA									
Chemical Oxygen Demand (COD)	mg/L	NA	NA									
Microbiological												
Escherichia coli (E. coli)	MPN	NA	NA									
Inorganics												
Cyanide, total ⁽⁶⁾	ug/L	84 T	NA									
Total Metals												
Antimony	mg/L	0.747	NA									
Arsenic	mg/L	0.28	NA									
Barium	mg/L	98.000	NA									
Beryllium	mg/L	1.867	NA									
Cadmium	mg/L	0.700 ⁽⁷⁾	NA									
Chromium ⁽⁶⁾	mg/L	NA	NA									
Copper	mg/L	1.300 ⁽⁷⁾	NA									
Lead	mg/L	0.015 ⁽⁷⁾	NA									
Mercury	mg/L	0.005	NA									
Nickel	mg/L	28.000 ⁽⁷⁾	NA									
Selenium	mg/L	0.033	NA									
Silver	mg/L	4.667 ⁽⁷⁾	NA									
Thallium	mg/L	0.075	NA									
Zinc	mg/L	280.000 ⁽⁷⁾	NA									
Nutrients												
Nitrate plus Nitrite as N	mg/L	NA	NA									
Ammonia as N	mg/L	NA	NA									
Total Kjeldahl Nitrogen (TKN) as N	mg/L	NA	NA									
Total Phosphorus	mg/L	NA	NA									
Orthophosphate (Total)	mg/L	NA	NA									
Organic Toxic Pollutants												
Total Petroleum Hydrocarbons (TPH)	mg/L	NA	NA									
Total Oil and Grease	mg/L	NA	NA									

Parameter	Units ¹	SWQS EMF ²	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015
Volatile Organic Compounds (VOCs)⁽¹⁰⁾												
Acrolein	ug/L	467	NA									
Acrylonitrile	ug/L	37,333	NA									
Benzene	ug/L	3,733	NA									
Bromoform	ug/L	18,667	NA									
Carbon tetrachloride	ug/L	1,307	NA									
Chlorobenzene	ug/L	18,677	NA									
Chlorodibromomethane	ug/L	NA	NA									
Chloroethane	ug/L	NA	NA									
2-chloroethylvinyl ether	ug/L	NA	NA									
Chloroform	ug/L	9,333	NA									
Dichlorobromomethane (Bromodichloromethane)	ug/L	NA	NA									
1,2-dichlorobenzene	ug/L	5,900	NA									
1,3-dichlorobenzene	ug/L	NA	NA									
1,4-dichlorobenzene	ug/L	6,500	NA									
1,1-dichloroethane	ug/L	NA	NA									
1,2-dichloroethane	ug/L	186,667	NA									
1,1-dichloroethylene	ug/L	46,667	NA									
1,2-dichloropropane	ug/L	84,000	NA									
1,3-dichloropropylene	ug/L	NA	NA									
Ethylbenzene	ug/L	93,333	NA									
Methyl bromide	ug/L	NA	NA									
Methyl chloride	ug/L	NA	NA									
Methylene chloride	ug/L	NA	NA									
1,1,2,2-tetrachloroethane	ug/L	93,333	NA									
Tetrachloroethylene	ug/L	9,333	NA									
Toluene	ug/L	373,333	NA									
1,2-trans-dichloroethylene	ug/L	NA	NA									
1,1,1-trichloroethane	ug/L	1,866,667	NA									
1,1,2-trichloroethane	ug/L	3,733	NA									
Trichloroethylene	ug/L	280	NA									
Trimethylbenzene	ug/L	NA	NA									
Vinyl chloride	ug/L	2,800	NA									
Xylene ⁽¹¹⁾	ug/L	186,667	NA									
Semi-Volatile Acid Compounds⁽¹⁰⁾												
2-chlorophenol	ug/L	4,667	NA									
2,4-dichlorophenol	ug/L	2,800	NA									
2,4-dimethylphenol	ug/L	18,667	NA									
4,6-dinitro-o-cresol	ug/L	3,733	NA									
2,4-dinitrophenol	ug/L	1,867	NA									
2-nitrophenol	ug/L	NA	NA									
4-nitrophenol ⁽¹²⁾	ug/L	NA	NA									
p-chloro-m-cresol	ug/L	48,000	NA									
Pentachlorophenol	ug/L	28,000	NA									
Phenol	ug/L	180,000	NA									
2,4,6-trichlorophenol	ug/L	130	NA									

Parameter	Units ¹	SWQS EMF ²	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015
Semi-Volatile Base/Neutrals⁽¹⁰⁾												
Acenaphthene	ug/L	56,000	NA									
Acenaphthylene	ug/L	NA	NA									
Anthracene	ug/L	280,000	NA									
Benzo(a)anthracene	ug/L	0.2	NA									
Benzo(a)pyrene	ug/L	0.2	NA									
Benzo(b)fluoranthene	ug/L	NA	NA									
Benzo(g,h,i)perylene	ug/L	NA	NA									
Benzo(k)fluoranthene	ug/L	1.9	NA									
Chrysene	ug/L	19	NA									
Dibenzo(a,h)anthracene	ug/L	1.9	NA									
3,3'-dichlorobenzidine	ug/L	3	NA									
Diethyl phthalate	ug/L	746,667	NA									
Dimethyl phthalate	ug/L	NA	NA									
Di-n-butyl phthalate	ug/L	NA	NA									
2,4-dinitrotoluene	ug/L	1,867	NA									
2,6-dinitrotoluene	ug/L	3,733	NA									
Di-n-octyl phthalate	ug/L	373,333	NA									
1,2-diphenylhydrazine (as azobenzene)	ug/L	1.8	NA									
Fluoranthene	ug/L	37,333	NA									
Fluorene	ug/L	37,333	NA									
Hexachlorobenzene	ug/L	747	NA									
Hexachlorobutadiene	ug/L	187	NA									
Hexachlorocyclopentadiene	ug/L	11,200	NA									
Hexachloroethane	ug/L	850	NA									
Indeno(1,2,3-cd)pyrene	ug/L	1.9	NA									
Isophorone	ug/L	186,667	NA									
Naphthalene	ug/L	18,667	NA									
Nitrobenzene	ug/L	467	NA									
N-nitrosodimethylamine	ug/L	0.03	NA									
N-nitrosodi-n-propylamine	ug/L	88,667	NA									
N-nitrosodiphenylamine	ug/L	NA	NA									
Phenanthrene	ug/L	NA	NA									
Pyrene	ug/L	28,000	NA									
1,2,4-trichlorobenzene	ug/L	9,333	NA									

Parameter	Units ¹	SWQS EMF ²	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015
Pesticides												
Aldrin	ug/L	4.5	NA									
Alpha-BHC	ug/L	NA	NA									
Beta-BHC	ug/L	NA	NA									
Gamma-BHC (Lindane)	ug/L	NA	NA									
Delta-BHC	ug/L	NA	NA									
Chlordane	ug/L	3.2	NA									
4,4'-DDT	ug/L	1.1	NA									
4,4'-DDE	ug/L	1.1	NA									
4,4'-DDD	ug/L	1.1	NA									
Dieldrin	ug/L	4	NA									
Alpha-endosulfan	ug/L	3 ⁽¹³⁾	NA									
Beta-endosulfan	ug/L	3 ⁽¹³⁾	NA									
Endosulfan sulfate	ug/L	3 ⁽¹³⁾	NA									
Endrin	ug/L	0.7	NA									
Endrin aldehyde	ug/L	0.7	NA									
Heptachlor	ug/L	0.9	NA									
Heptachlor epoxide	ug/L	0.9	NA									
PCB-1242 (AROCOR 1242)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1254 (AROCOR 1254)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1221 (AROCOR 1221)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1232 (AROCOR 1232)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1248 (AROCOR 1248)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1260 (AROCOR 1260)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1016 (AROCOR 1016)	ug/L	11 ⁽¹⁴⁾	NA									
Toxaphene	ug/L	11	NA									

Notes:

Bold values were reported at levels above the method reporting limit (MRL). Non-bold values are the MRL. Shaded results were detected above the SWQS.

- 1) Analytical results shall be reported in the units specified for each category or parameter.
- 2) Surface Water Quality Standards (SWQSs) for EMF are based on that provided in A.C. R18-11-105(1) per 2010 MS4 Permit ADEQ Response to Comments. Partial Body Contact (PBC) and Aquatic & Wildlife Ephemeral (A&WE).
- 3) Average flow rate for the sampling period (no more than 6 hours).
- 4) pH range (maximum/minimum).
- 5) No surface water quality standard established for maximum allowable increase in ambient water temperature for ephemeral waters.
- 6) Based on free-cyanide.
- 7) SWQS for total metals is provided and based on partial body contact. The SWQS for dissolved metal concentration for ephemeral water is dependant on the hardness value for each sample and will in most cases be below the SWQS for partial body contact.
- 8) Based on total chromium.
- 9) Depends on pH. Reported values are for pH of 7.0.
- 10) Methods: These parameters may be run using the following methods: VOCs, 624 or 8260; SVOCs, 625 or 8270; and PCB / Pesticides, 608/625 or 8081/8082 if the laboratory can pass QA with the method. In this case, the data should be marked with a T2 flag.
- 11) SWQSs reported for total xylenes.
- 12) Also known as p-nitrophenol.
- 13) SWQSs report as total endosulfan.
- 14) SWQSs reported as PCBs

SUMMARY OF MONITORING DATA - MONITORING STATION 54-EMF

Parameter	Units ¹	SWQS EMF ²	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015
Conventional Parameters												
Average Flow Rate ⁽³⁾	NA	NA	NA									
pH	Standard Units	9.0/6.5 ⁽⁴⁾	NA									
Temperature	Degrees Celsius	NA ⁽⁵⁾	NA									
Hardness	mg/L	NA	NA									
Total Dissolved Solids (TDS)	mg/L	NA	NA									
Total Suspended Solids (TSS)	mg/L	NA	NA									
Biochemical Oxygen Demand (BOD)	mg/L	NA	NA									
Chemical Oxygen Demand (COD)	mg/L	NA	NA									
Microbiological												
Escherichia coli (E. coli)	MPN	NA	NA									
Inorganics												
Cyanide, total ⁽⁶⁾	ug/L	84 T	NA									
Total Metals												
Antimony	mg/L	0.747	NA									
Arsenic	mg/L	0.28	NA									
Barium	mg/L	98.000	NA									
Beryllium	mg/L	1.867	NA									
Cadmium	mg/L	0.700 ⁽⁷⁾	NA									
Chromium ⁽⁶⁾	mg/L	NA	NA									
Copper	mg/L	1.300 ⁽⁷⁾	NA									
Lead	mg/L	0.015 ⁽⁷⁾	NA									
Mercury	mg/L	0.005	NA									
Nickel	mg/L	28.000 ⁽⁷⁾	NA									
Selenium	mg/L	0.033	NA									
Silver	mg/L	4.667 ⁽⁷⁾	NA									
Thallium	mg/L	0.075	NA									
Zinc	mg/L	280.000 ⁽⁷⁾	NA									
Nutrients												
Nitrate plus Nitrite as N	mg/L	NA	NA									
Ammonia as N	mg/L	NA	NA									
Total Kjeldahl Nitrogen (TKN) as N	mg/L	NA	NA									
Total Phosphorus	mg/L	NA	NA									
Orthophosphate (Total)	mg/L	NA	NA									
Organic Toxic Pollutants												
Total Petroleum Hydrocarbons (TPH)	mg/L	NA	NA									
Total Oil and Grease	mg/L	NA	NA									

Parameter	Units ¹	SWQS EMF ²	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015
Volatile Organic Compounds (VOCs)⁽¹⁰⁾												
Acrolein	ug/L	467	NA									
Acrylonitrile	ug/L	37,333	NA									
Benzene	ug/L	3,733	NA									
Bromoform	ug/L	18,667	NA									
Carbon tetrachloride	ug/L	1,307	NA									
Chlorobenzene	ug/L	18,677	NA									
Chlorodibromomethane	ug/L	NA	NA									
Chloroethane	ug/L	NA	NA									
2-chloroethylvinyl ether	ug/L	NA	NA									
Chloroform	ug/L	9,333	NA									
Dichlorobromomethane (Bromodichloromethane)	ug/L	NA	NA									
1,2-dichlorobenzene	ug/L	5,900	NA									
1,3-dichlorobenzene	ug/L	NA	NA									
1,4-dichlorobenzene	ug/L	6,500	NA									
1,1-dichloroethane	ug/L	NA	NA									
1,2-dichloroethane	ug/L	186,667	NA									
1,1-dichloroethylene	ug/L	46,667	NA									
1,2-dichloropropane	ug/L	84,000	NA									
1,3-dichloropropylene	ug/L	NA	NA									
Ethylbenzene	ug/L	93,333	NA									
Methyl bromide	ug/L	NA	NA									
Methyl chloride	ug/L	NA	NA									
Methylene chloride	ug/L	NA	NA									
1,1,2,2-tetrachloroethane	ug/L	93,333	NA									
Tetrachloroethylene	ug/L	9,333	NA									
Toluene	ug/L	373,333	NA									
1,2-trans-dichloroethylene	ug/L	NA	NA									
1,1,1-trichloroethane	ug/L	1,866,667	NA									
1,1,2-trichloroethane	ug/L	3,733	NA									
Trichloroethylene	ug/L	280	NA									
Trimethylbenzene	ug/L	NA	NA									
Vinyl chloride	ug/L	2,800	NA									
Xylene ⁽¹¹⁾	ug/L	186,667	NA									
Semi-Volatile Acid Compounds⁽¹⁰⁾												
2-chlorophenol	ug/L	4,667	NA									
2,4-dichlorophenol	ug/L	2,800	NA									
2,4-dimethylphenol	ug/L	18,667	NA									
4,6-dinitro-o-cresol	ug/L	3,733	NA									
2,4-dinitrophenol	ug/L	1,867	NA									
2-nitrophenol	ug/L	NA	NA									
4-nitrophenol ⁽¹²⁾	ug/L	NA	NA									
p-chloro-m-cresol	ug/L	48,000	NA									
Pentachlorophenol	ug/L	28,000	NA									
Phenol	ug/L	180,000	NA									
2,4,6-trichlorophenol	ug/L	130	NA									

Parameter	Units ¹	SWQS EMF ²	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015
Semi-Volatile Base/Neutrals⁽¹⁰⁾												
Acenaphthene	ug/L	56,000	NA									
Acenaphthylene	ug/L	NA	NA									
Anthracene	ug/L	280,000	NA									
Benzo(a)anthracene	ug/L	0.2	NA									
Benzo(a)pyrene	ug/L	0.2	NA									
Benzo(b)fluoranthene	ug/L	NA	NA									
Benzo(g,h,i)perylene	ug/L	NA	NA									
Benzo(k)fluoranthene	ug/L	1.9	NA									
Chrysene	ug/L	19	NA									
Dibenzo(a,h)anthracene	ug/L	1.9	NA									
3,3'-dichlorobenzidine	ug/L	3	NA									
Diethyl phthalate	ug/L	746,667	NA									
Dimethyl phthalate	ug/L	NA	NA									
Di-n-butyl phthalate	ug/L	NA	NA									
2,4-dinitrotoluene	ug/L	1,867	NA									
2,6-dinitrotoluene	ug/L	3,733	NA									
Di-n-octyl phthalate	ug/L	373,333	NA									
1,2-diphenylhydrazine (as azobenzene)	ug/L	1.8	NA									
Fluoranthene	ug/L	37,333	NA									
Fluorene	ug/L	37,333	NA									
Hexachlorobenzene	ug/L	747	NA									
Hexachlorobutadiene	ug/L	187	NA									
Hexachlorocyclopentadiene	ug/L	11,200	NA									
Hexachloroethane	ug/L	850	NA									
Indeno(1,2,3-cd)pyrene	ug/L	1.9	NA									
Isophorone	ug/L	186,667	NA									
Naphthalene	ug/L	18,667	NA									
Nitrobenzene	ug/L	467	NA									
N-nitrosodimethylamine	ug/L	0.03	NA									
N-nitrosodi-n-propylamine	ug/L	88,667	NA									
N-nitrosodiphenylamine	ug/L	NA	NA									
Phenanthrene	ug/L	NA	NA									
Pyrene	ug/L	28,000	NA									
1,2,4-trichlorobenzene	ug/L	9,333	NA									

Parameter	Units ¹	SWQS EMF ²	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015
Pesticides												
Aldrin	ug/L	4.5	NA									
Alpha-BHC	ug/L	NA	NA									
Beta-BHC	ug/L	NA	NA									
Gamma-BHC (Lindane)	ug/L	NA	NA									
Delta-BHC	ug/L	NA	NA									
Chlordane	ug/L	3.2	NA									
4,4'-DDT	ug/L	1.1	NA									
4,4'-DDE	ug/L	1.1	NA									
4,4'-DDD	ug/L	1.1	NA									
Dieldrin	ug/L	4	NA									
Alpha-endosulfan	ug/L	3 ⁽¹³⁾	NA									
Beta-endosulfan	ug/L	3 ⁽¹³⁾	NA									
Endosulfan sulfate	ug/L	3 ⁽¹³⁾	NA									
Endrin	ug/L	0.7	NA									
Endrin aldehyde	ug/L	0.7	NA									
Heptachlor	ug/L	0.9	NA									
Heptachlor epoxide	ug/L	0.9	NA									
PCB-1242 (AROCOLOR 1242)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1254 (AROCOLOR 1254)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1221 (AROCOLOR 1221)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1232 (AROCOLOR 1232)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1248 (AROCOLOR 1248)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1260 (AROCOLOR 1260)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1016 (AROCOLOR 1016)	ug/L	11 ⁽¹⁴⁾	NA									
Toxaphene	ug/L	11	NA									

Notes:

Bold values were reported at levels above the method reporting limit (MRL). Non-bold values are the MRL. Shaded results were detected above the SWQS.

- 1) Analytical results shall be reported in the units specified for each category or parameter.
- 2) Surface Water Quality Standards (SWQSs) for EMF are based on that provided in A.C. R18-11-105(1) per 2010 MS4 Permit ADEQ Response to Comments. Partial Body Contact (PBC) and Aquatic & Wildlife Ephemeral (A&WE).
- 3) Average flow rate for the sampling period (no more than 6 hours).
- 4) pH range (maximum/minimum).
- 5) No surface water quality standard established for maximum allowable increase in ambient water temperature for ephemeral waters.
- 6) Based on free-cyanide.
- 7) SWQS for total metals is provided and based on partial body contact. The SWQS for dissolved metal concentration for ephemeral water is dependant on the hardness value for each sample and will in most cases be below the SWQS for partial body contact.
- 8) Based on total chromium.
- 9) Depends on pH. Reported values are for pH of 7.0.
- 10) Methods: These parameters may be run using the following methods: VOCs, 624 or 8260; SVOCs, 625 or 8270; and PCB / Pesticides, 608/625 or 8081/8082 if the laboratory can pass QA with the method. In this case, the data should be marked with a T2 flag.
- 11) SWQSs reported for total xylenes.
- 12) Also known as p-nitrophenol.
- 13) SWQSs report as total endosulfan.
- 14) SWQSs reported as PCBs

SUMMARY OF MONITORING DATA - MONITORING STATION UN-EMF

Parameter	Units ¹	SWQS EMF ²	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015
Conventional Parameters												
Average Flow Rate ⁽³⁾	NA	NA	NA									
pH	Standard Units	9.0/6.5 ⁽⁴⁾	NA									
Temperature	Degrees Celsius	NA ⁽⁵⁾	NA									
Hardness	mg/L	NA	NA									
Total Dissolved Solids (TDS)	mg/L	NA	NA									
Total Suspended Solids (TSS)	mg/L	NA	NA									
Biochemical Oxygen Demand (BOD)	mg/L	NA	NA									
Chemical Oxygen Demand (COD)	mg/L	NA	NA									
Microbiological												
Escherichia coli (E. coli)	MPN	NA	NA									
Inorganics												
Cyanide, total ⁽⁶⁾	ug/L	84 T	NA									
Total Metals												
Antimony	mg/L	0.747	NA									
Arsenic	mg/L	0.28	NA									
Barium	mg/L	98.000	NA									
Beryllium	mg/L	1.867	NA									
Cadmium	mg/L	0.700 ⁽⁷⁾	NA									
Chromium ⁽⁶⁾	mg/L	NA	NA									
Copper	mg/L	1.300 ⁽⁷⁾	NA									
Lead	mg/L	0.015 ⁽⁷⁾	NA									
Mercury	mg/L	0.005	NA									
Nickel	mg/L	28.000 ⁽⁷⁾	NA									
Selenium	mg/L	0.033	NA									
Silver	mg/L	4.667 ⁽⁷⁾	NA									
Thallium	mg/L	0.075	NA									
Zinc	mg/L	280.000 ⁽⁷⁾	NA									
Nutrients												
Nitrate plus Nitrite as N	mg/L	NA	NA									
Ammonia as N	mg/L	NA	NA									
Total Kjeldahl Nitrogen (TKN) as N	mg/L	NA	NA									
Total Phosphorus	mg/L	NA	NA									
Orthophosphate (Total)	mg/L	NA	NA									
Organic Toxic Pollutants												
Total Petroleum Hydrocarbons (TPH)	mg/L	NA	NA									
Total Oil and Grease	mg/L	NA	NA									

Parameter	Units ¹	SWQS EMF ²	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015
Volatile Organic Compounds (VOCs)⁽¹⁰⁾												
Acrolein	ug/L	467	NA									
Acrylonitrile	ug/L	37,333	NA									
Benzene	ug/L	3,733	NA									
Bromoform	ug/L	18,667	NA									
Carbon tetrachloride	ug/L	1,307	NA									
Chlorobenzene	ug/L	18,677	NA									
Chlorodibromomethane	ug/L	NA	NA									
Chloroethane	ug/L	NA	NA									
2-chloroethylvinyl ether	ug/L	NA	NA									
Chloroform	ug/L	9,333	NA									
Dichlorobromomethane (Bromodichloromethane)	ug/L	NA	NA									
1,2-dichlorobenzene	ug/L	5,900	NA									
1,3-dichlorobenzene	ug/L	NA	NA									
1,4-dichlorobenzene	ug/L	6,500	NA									
1,1-dichloroethane	ug/L	NA	NA									
1,2-dichloroethane	ug/L	186,667	NA									
1,1-dichloroethylene	ug/L	46,667	NA									
1,2-dichloropropane	ug/L	84,000	NA									
1,3-dichloropropylene	ug/L	NA	NA									
Ethylbenzene	ug/L	93,333	NA									
Methyl bromide	ug/L	NA	NA									
Methyl chloride	ug/L	NA	NA									
Methylene chloride	ug/L	NA	NA									
1,1,2,2-tetrachloroethane	ug/L	93,333	NA									
Tetrachloroethylene	ug/L	9,333	NA									
Toluene	ug/L	373,333	NA									
1,2-trans-dichloroethylene	ug/L	NA	NA									
1,1,1-trichloroethane	ug/L	1,866,667	NA									
1,1,2-trichloroethane	ug/L	3,733	NA									
Trichloroethylene	ug/L	280	NA									
Trimethylbenzene	ug/L	NA	NA									
Vinyl chloride	ug/L	2,800	NA									
Xylene ⁽¹¹⁾	ug/L	186,667	NA									
Semi-Volatile Acid Compounds⁽¹⁰⁾												
2-chlorophenol	ug/L	4,667	NA									
2,4-dichlorophenol	ug/L	2,800	NA									
2,4-dimethylphenol	ug/L	18,667	NA									
4,6-dinitro-o-cresol	ug/L	3,733	NA									
2,4-dinitrophenol	ug/L	1,867	NA									
2-nitrophenol	ug/L	NA	NA									
4-nitrophenol ⁽¹²⁾	ug/L	NA	NA									
p-chloro-m-cresol	ug/L	48,000	NA									
Pentachlorophenol	ug/L	28,000	NA									
Phenol	ug/L	180,000	NA									
2,4,6-trichlorophenol	ug/L	130	NA									

Parameter	Units ¹	SWQS EMF ²	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015
Semi-Volatile Base/Neutrals⁽¹⁰⁾												
Acenaphthene	ug/L	56,000	NA									
Acenaphthylene	ug/L	NA	NA									
Anthracene	ug/L	280,000	NA									
Benzo(a)anthracene	ug/L	0.2	NA									
Benzo(a)pyrene	ug/L	0.2	NA									
Benzo(b)fluoranthene	ug/L	NA	NA									
Benzo(g,h,i)perylene	ug/L	NA	NA									
Benzo(k)fluoranthene	ug/L	1.9	NA									
Chrysene	ug/L	19	NA									
Dibenzo(a,h)anthracene	ug/L	1.9	NA									
3,3'-dichlorobenzidine	ug/L	3	NA									
Diethyl phthalate	ug/L	746,667	NA									
Dimethyl phthalate	ug/L	NA	NA									
Di-n-butyl phthalate	ug/L	NA	NA									
2,4-dinitrotoluene	ug/L	1,867	NA									
2,6-dinitrotoluene	ug/L	3,733	NA									
Di-n-octyl phthalate	ug/L	373,333	NA									
1,2-diphenylhydrazine (as azobenzene)	ug/L	1.8	NA									
Fluoranthene	ug/L	37,333	NA									
Fluorene	ug/L	37,333	NA									
Hexachlorobenzene	ug/L	747	NA									
Hexachlorobutadiene	ug/L	187	NA									
Hexachlorocyclopentadiene	ug/L	11,200	NA									
Hexachloroethane	ug/L	850	NA									
Indeno(1,2,3-cd)pyrene	ug/L	1.9	NA									
Isophorone	ug/L	186,667	NA									
Naphthalene	ug/L	18,667	NA									
Nitrobenzene	ug/L	467	NA									
N-nitrosodimethylamine	ug/L	0.03	NA									
N-nitrosodi-n-propylamine	ug/L	88,667	NA									
N-nitrosodiphenylamine	ug/L	NA	NA									
Phenanthrene	ug/L	NA	NA									
Pyrene	ug/L	28,000	NA									
1,2,4-trichlorobenzene	ug/L	9,333	NA									

Parameter	Units ¹	SWQS EMF ²	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015
Pesticides												
Aldrin	ug/L	4.5	NA									
Alpha-BHC	ug/L	NA	NA									
Beta-BHC	ug/L	NA	NA									
Gamma-BHC (Lindane)	ug/L	NA	NA									
Delta-BHC	ug/L	NA	NA									
Chlordane	ug/L	3.2	NA									
4,4'-DDT	ug/L	1.1	NA									
4,4'-DDE	ug/L	1.1	NA									
4,4'-DDD	ug/L	1.1	NA									
Dieldrin	ug/L	4	NA									
Alpha-endosulfan	ug/L	3 ⁽¹³⁾	NA									
Beta-endosulfan	ug/L	3 ⁽¹³⁾	NA									
Endosulfan sulfate	ug/L	3 ⁽¹³⁾	NA									
Endrin	ug/L	0.7	NA									
Endrin aldehyde	ug/L	0.7	NA									
Heptachlor	ug/L	0.9	NA									
Heptachlor epoxide	ug/L	0.9	NA									
PCB-1242 (AROCLOL 1242)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1254 (AROCLOL 1254)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1221 (AROCLOL 1221)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1232 (AROCLOL 1232)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1248 (AROCLOL 1248)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1260 (AROCLOL 1260)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1016 (AROCLOL 1016)	ug/L	11 ⁽¹⁴⁾	NA									
Toxaphene	ug/L	11	NA									

Notes:

Bold values were reported at levels above the method reporting limit (MRL). Non-bold values are the MRL. Shaded results were detected above the SWQS.

- 1) Analytical results shall be reported in the units specified for each category or parameter.
- 2) Surface Water Quality Standards (SWQSs) for EMF are based on that provided in A.C. R18-11-105(1) per 2010 MS4 Permit ADEQ Response to Comments. Partial Body Contact (PBC) and Aquatic & Wildlife Ephemeral (A&WE).
- 3) Average flow rate for the sampling period (no more than 6 hours).
- 4) pH range (maximum/minimum).
- 5) No surface water quality standard established for maximum allowable increase in ambient water temperature for ephemeral waters.
- 6) Based on free-cyanide.
- 7) SWQS for total metals is provided and based on partial body contact. The SWQS for dissolved metal concentration for ephemeral water is dependant on the hardness value for each sample and will in most cases be below the SWQS for partial body contact.
- 8) Based on total chromium.
- 9) Depends on pH. Reported values are for pH of 7.0.
- 10) Methods: These parameters may be run using the following methods: VOCs, 624 or 8260; SVOCs, 625 or 8270; and PCB / Pesticides, 608/625 or 8081/8082 if the laboratory can pass QA with the method. In this case, the data should be marked with a T2 flag.
- 11) SWQSs reported for total xylenes.
- 12) Also known as p-nitrophenol.
- 13) SWQSs report as total endosulfan.
- 14) SWQSs reported as PCBs

SUMMARY OF MONITORING DATA - MONITORING STATION FF-ACES

Parameter	Units ¹	SWQS EMF ²	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015
Conventional Parameters												
Average Flow Rate ⁽³⁾	NA	NA	NA									
pH	Standard Units	9.0/6.5 ⁽⁴⁾	NA									
Temperature	Degrees Celsius	NA ⁽⁵⁾	NA									
Hardness	mg/L	NA	NA									
Total Dissolved Solids (TDS)	mg/L	NA	NA									
Total Suspended Solids (TSS)	mg/L	NA	NA									
Biochemical Oxygen Demand (BOD)	mg/L	NA	NA									
Chemical Oxygen Demand (COD)	mg/L	NA	NA									
Microbiological												
Escherichia coli (E. coli)	MPN	NA	NA									
Inorganics												
Cyanide, total ⁽⁶⁾	ug/L	84 T	NA									
Total Metals												
Antimony	mg/L	0.747	NA									
Arsenic	mg/L	0.28	NA									
Barium	mg/L	98.000	NA									
Beryllium	mg/L	1.867	NA									
Cadmium	mg/L	0.700 ⁽⁷⁾	NA									
Chromium ⁽⁶⁾	mg/L	NA	NA									
Copper	mg/L	1.300 ⁽⁷⁾	NA									
Lead	mg/L	0.015 ⁽⁷⁾	NA									
Mercury	mg/L	0.005	NA									
Nickel	mg/L	28.000 ⁽⁷⁾	NA									
Selenium	mg/L	0.033	NA									
Silver	mg/L	4.667 ⁽⁷⁾	NA									
Thallium	mg/L	0.075	NA									
Zinc	mg/L	280.000 ⁽⁷⁾	NA									
Nutrients												
Nitrate plus Nitrite as N	mg/L	NA	NA									
Ammonia as N	mg/L	NA	NA									
Total Kjeldahl Nitrogen (TKN) as N	mg/L	NA	NA									
Total Phosphorus	mg/L	NA	NA									
Orthophosphate (Total)	mg/L	NA	NA									
Organic Toxic Pollutants												
Total Petroleum Hydrocarbons (TPH)	mg/L	NA	NA									
Total Oil and Grease	mg/L	NA	NA									

Parameter	Units ¹	SWQS EMF ²	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015
Volatile Organic Compounds (VOCs)⁽¹⁰⁾												
Acrolein	ug/L	467	NA									
Acrylonitrile	ug/L	37,333	NA									
Benzene	ug/L	3,733	NA									
Bromoform	ug/L	18,667	NA									
Carbon tetrachloride	ug/L	1,307	NA									
Chlorobenzene	ug/L	18,677	NA									
Chlorodibromomethane	ug/L	NA	NA									
Chloroethane	ug/L	NA	NA									
2-chloroethylvinyl ether	ug/L	NA	NA									
Chloroform	ug/L	9,333	NA									
Dichlorobromomethane (Bromodichloromethane)	ug/L	NA	NA									
1,2-dichlorobenzene	ug/L	5,900	NA									
1,3-dichlorobenzene	ug/L	NA	NA									
1,4-dichlorobenzene	ug/L	6,500	NA									
1,1-dichloroethane	ug/L	NA	NA									
1,2-dichloroethane	ug/L	186,667	NA									
1,1-dichloroethylene	ug/L	46,667	NA									
1,2-dichloropropane	ug/L	84,000	NA									
1,3-dichloropropylene	ug/L	NA	NA									
Ethylbenzene	ug/L	93,333	NA									
Methyl bromide	ug/L	NA	NA									
Methyl chloride	ug/L	NA	NA									
Methylene chloride	ug/L	NA	NA									
1,1,2,2-tetrachloroethane	ug/L	93,333	NA									
Tetrachloroethylene	ug/L	9,333	NA									
Toluene	ug/L	373,333	NA									
1,2-trans-dichloroethylene	ug/L	NA	NA									
1,1,1-trichloroethane	ug/L	1,866,667	NA									
1,1,2-trichloroethane	ug/L	3,733	NA									
Trichloroethylene	ug/L	280	NA									
Trimethylbenzene	ug/L	NA	NA									
Vinyl chloride	ug/L	2,800	NA									
Xylene ⁽¹¹⁾	ug/L	186,667	NA									
Semi-Volatile Acid Compounds⁽¹⁰⁾												
2-chlorophenol	ug/L	4,667	NA									
2,4-dichlorophenol	ug/L	2,800	NA									
2,4-dimethylphenol	ug/L	18,667	NA									
4,6-dinitro-o-cresol	ug/L	3,733	NA									
2,4-dinitrophenol	ug/L	1,867	NA									
2-nitrophenol	ug/L	NA	NA									
4-nitrophenol ⁽¹²⁾	ug/L	NA	NA									
p-chloro-m-cresol	ug/L	48,000	NA									
Pentachlorophenol	ug/L	28,000	NA									
Phenol	ug/L	180,000	NA									
2,4,6-trichlorophenol	ug/L	130	NA									

Parameter	Units ¹	SWQS EMF ²	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015
Semi-Volatile Base/Neutrals⁽¹⁰⁾												
Acenaphthene	ug/L	56,000	NA									
Acenaphthylene	ug/L	NA	NA									
Anthracene	ug/L	280,000	NA									
Benzo(a)anthracene	ug/L	0.2	NA									
Benzo(a)pyrene	ug/L	0.2	NA									
Benzo(b)fluoranthene	ug/L	NA	NA									
Benzo(g,h,i)perylene	ug/L	NA	NA									
Benzo(k)fluoranthene	ug/L	1.9	NA									
Chrysene	ug/L	19	NA									
Dibenzo(a,h)anthracene	ug/L	1.9	NA									
3,3'-dichlorobenzidine	ug/L	3	NA									
Diethyl phthalate	ug/L	746,667	NA									
Dimethyl phthalate	ug/L	NA	NA									
Di-n-butyl phthalate	ug/L	NA	NA									
2,4-dinitrotoluene	ug/L	1,867	NA									
2,6-dinitrotoluene	ug/L	3,733	NA									
Di-n-octyl phthalate	ug/L	373,333	NA									
1,2-diphenylhydrazine (as azobenzene)	ug/L	1.8	NA									
Fluoranthene	ug/L	37,333	NA									
Fluorene	ug/L	37,333	NA									
Hexachlorobenzene	ug/L	747	NA									
Hexachlorobutadiene	ug/L	187	NA									
Hexachlorocyclopentadiene	ug/L	11,200	NA									
Hexachloroethane	ug/L	850	NA									
Indeno(1,2,3-co)pyrene	ug/L	1.9	NA									
Isophorone	ug/L	186,667	NA									
Naphthalene	ug/L	18,667	NA									
Nitrobenzene	ug/L	467	NA									
N-nitrosodimethylamine	ug/L	0.03	NA									
N-nitrosodi-n-propylamine	ug/L	88,667	NA									
N-nitrosodiphenylamine	ug/L	NA	NA									
Phenanthrene	ug/L	NA	NA									
Pyrene	ug/L	28,000	NA									
1,2,4-trichlorobenzene	ug/L	9,333	NA									

Parameter	Units ¹	SWQS EMF ²	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015
Pesticides												
Aldrin	ug/L	4.5	NA									
Alpha-BHC	ug/L	NA	NA									
Beta-BHC	ug/L	NA	NA									
Gamma-BHC (Lindane)	ug/L	NA	NA									
Delta-BHC	ug/L	NA	NA									
Chlordane	ug/L	3.2	NA									
4,4'-DDT	ug/L	1.1	NA									
4,4'-DDE	ug/L	1.1	NA									
4,4'-DDD	ug/L	1.1	NA									
Dieldrin	ug/L	4	NA									
Alpha-endosulfan	ug/L	3 ⁽¹³⁾	NA									
Beta-endosulfan	ug/L	3 ⁽¹³⁾	NA									
Endosulfan sulfate	ug/L	3 ⁽¹³⁾	NA									
Endrin	ug/L	0.7	NA									
Endrin aldehyde	ug/L	0.7	NA									
Heptachlor	ug/L	0.9	NA									
Heptachlor epoxide	ug/L	0.9	NA									
PCB-1242 (AROCLOL 1242)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1254 (AROCLOL 1254)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1221 (AROCLOL 1221)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1232 (AROCLOL 1232)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1248 (AROCLOL 1248)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1260 (AROCLOL 1260)	ug/L	11 ⁽¹⁴⁾	NA									
PCB-1016 (AROCLOL 1016)	ug/L	11 ⁽¹⁴⁾	NA									
Toxaphene	ug/L	11	NA									

Notes:

Bold values were reported at levels above the method reporting limit (MRL). Non-bold values are the MRL. Shaded results were detected above the SWQS.

- 1) Analytical results shall be reported in the units specified for each category or parameter.
- 2) Surface Water Quality Standards (SWQSs) for EMF are based on that provided in A.C. R18-11-105(1) per 2010 MS4 Permit ADEQ Response to Comments. Partial Body Contact (PBC) and Aquatic & Wildlife Ephemeral (A&WE).
- 3) Average flow rate for the sampling period (no more than 6 hours).
- 4) pH range (maximum/minimum).
- 5) No surface water quality standard established for maximum allowable increase in ambient water temperature for ephemeral waters.
- 6) Based on free-cyanide.
- 7) SWQS for total metals is provided and based on partial body contact. The SWQS for dissolved metal concentration for ephemeral water is dependant on the hardness value for each sample and will in most cases be below the SWQS for partial body contact.
- 8) Based on total chromium.
- 9) Depends on pH. Reported values are for pH of 7.0.
- 10) Methods: These parameters may be run using the following methods: VOCs, 624 or 8260; SVOCs, 625 or 8270; and PCB / Pesticides, 608/625 or 8081/8082 if the laboratory can pass QA with the method. In this case, the data should be marked with a T2 flag.
- 11) SWQSs reported for total xylenes.
- 12) Also known as p-nitrophenol.
- 13) SWQSs report as total endosulfan.
- 14) SWQSs reported as PCBs

10.0 ASSESSMENT OF MONITORING DATA

The 2010 MS4 Permit requires the City to:

1. 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;
2. Compare the sampling results for each monitoring location with the applicable surface water quality standards (SWQSS); and,
3. Note any exceedance of SWQSS for the water of the United States receiving discharges during the reporting year.

10.1 STORMWATER QUALITY EVALUATION

No stormwater samples were collected from any of the City's stormwater monitoring stations; therefore, the City cannot provide an evaluation or assessment regarding stormwater quality at this time.

10.2 SURFACE WATER QUALITY STANDARDS

SWQSS associated with the water of the United States that has a potential to receive discharges from each monitoring location is provided with the summary of monitoring data in [Section 9.0](#).

10.3 EXCEEDANCES OF SURFACE WATER QUALITY STANDARDS

No stormwater samples were collected from any of the City's stormwater monitoring stations; therefore, no exceedances of SWQSS were noted.

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11.0 ESTIMATE OF POLLUTANT LOADING

The 2010 MS4 Permit requires the City to provide an estimate of the pollutant loadings each year from the City's MS4 to waters of the United States for the following constituents:

- Biological Oxygen Demand;
- Chemical Oxygen Demand;
- Total Suspended Solids;
- Total Dissolved Solids;
- Total Nitrogen;
- Total Ammonia;
- Total Organic Nitrogen;
- Total Phosphorous; and,
- Metals.

No stormwater samples were collected from any of the City's stormwater monitoring stations during this reporting period; therefore, the City cannot provide an estimate of the pollutant loadings each year from the City's MS4 to waters of the United States for this reporting period.

The City has contracted a consultant to conduct a study to establish the parameters necessary to calculate pollutant loading. The City anticipates that study to be completed by August 30, 2012.

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12.0 ANNUAL EXPENDITURES

The 2010 MS4 Permit requires the City to provide a brief statement of the expenditures incurred each reporting period (July 1 – June 30) related exclusively to implementing and maintaining the stormwater management program, including associated monitoring and reporting activities.

Additionally, the permit requires the City to provide the estimated budget for implementing and maintaining the stormwater program in the subsequent reporting period and to include a statement of the funding sources used to support program expenditures.

The City's stormwater management program during this reporting period was funded in part from an Environmental Fee that is assessed to City residents and businesses as part of their utility bills and the remaining was funded from the City's General Fund. An Annual Expenditure Report is included as an attachment is [Section 13.0](#).

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13.0 ATTACHMENTS

The 2010 MS4 Permit requires the City to attach the following to the Annual Reports:

1. Drainage system maps
2. List of major outfalls and field screening points
3. List of changes to the major outfalls and field screening points inventory (new, out of service, other changes), including drainage area and coordinates for the monitoring locations listed in Table 1 of the permit (4th year report)
4. Laboratory reports for stormwater monitoring performed in the reporting period
5. New or revised ordinances associated with stormwater management
6. New or revised public outreach documents

13.1 DRAINAGE SYSTEM MAPS

The City considers the exact location of its utility infrastructure to be confidential and for use by City personnel only. As such, the City cannot supply this information as an attachment to this document. The City would be able to supply this information to the ADEQ upon official request and only under a signed confidentiality agreement or provide a presentation of this information to the ADEQ upon request.

13.2 LISTING OF OUTFALLS & FIELD SCREENING POINTS

No changes to the drainage map indicating the locations of outfall and FSP locations were made since the development of the City's SWMP dated September 2011.

13.3 LIST OF CHANGES TO OUTFALL & FIELD SCREENING POINTS

No changes to the drainage map indicating the locations of outfall and FSP locations were made since the development of the City's SWMP dated September 2011.

13.4 STORMWATER MONITORING ANALYTICAL LABORATORY REPORTS

No wet-weather stormwater samples were collected during this reporting period.

13.5 NEW OR REVISED STORMWATER MANAGEMENT ORDINANCES

Only draft versions of an ordinance to change the City's Stormwater Code were made during this reporting period. The Stormwater Code is expected to be revised through

ordinance during the next reporting period. The City anticipates submitting a copy of the final codified version of the Stormwater Code in the subsequent Annual Report.

13.6 NEW OR REVISED PUBLIC EDUCATION & OUTREACH DOCUMENTS

Public education and outreach materials developed by the STORM organization are available at the STORM website at the following addresses:

<http://www.azstorm.org/brochures/>

<http://www.azstorm.org/storm-drain-dan/>

<http://www.azstorm.org/other-fun-stuff/>

13.7 HOUSEHOLD HAZARDOUS WASTE EVENT REPORTS

Reports for the four HHW events conducted this reporting period are provided in [Attachment A](#).

13.8 ANNUAL EXPENDITURE REPORTS

Expenditures associated with the City's stormwater management program for the current reporting year and the estimated expenditures for the subsequent reporting year are provided in [Attachment B](#).

ATTACHMENT A

HOUSEHOLD HAZARDOUS WASTE EVENT REPORTS

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HHW Event Report



Date of Event October 02, 2010

Event Lead Greg Edwards

Location East Mesa Service Center

Vehicle Information

<i>Customers came from...</i>		<i>And they brought...</i>			
Mesa	1133	HHW Only	0	Appliances Only	0
Gilbert	0	HHW & Appliances	0	Tires only	0
Chandler	0	HHW & Tires	0	Rx Drugs Only	0
County	0	HHW & Rx	0	Appliances & Tires	0
Other	0	HHW, Appls. & Tires	0	Appliances & Rx	0
TOTAL	1133	HHW, Appls. & Rx	0	Tires & Rx	0
		HHW, Tires & Rx	0	Appls., Tires & Rx	0
				All four	0

Hazardous Waste Collected

<i>DOT Description</i>	<i>Adj. Quantity</i>
Aerosols, 2.1, UN1950	793
Batteries, dry, containing potassium hydroxide solid, electric, storage, 8, UN3028 (Ni-MH)	10
Batteries, dry, containing potassium hydroxide solid, electric, storage, 8, UN3028 (Alkaline)	65
Batteries, dry, containing potassium hydroxide solid, electric, storage, 8, UN3028 (Ni-Cad)	28
Batteries, wet, filled with acid, electric storage, 8, UN2794	60
Cartridges, small arms, ORM-D	10
Compressed gases, n.o.s., 2.2, UN1956	10
Consumer Commodity, ORM-D	74
Corrosive liquid, acidic, inorganic, n.o.s., 8, UN3264	110
Corrosive liquid, acidic, organic, n.o.s., 8, UN3265	165
Corrosive solid, acidic, inorganic, n.o.s., 8, UN3260	110
Flammable liquids, n.o.s., 3, UN1993	275
Flammable liquids, n.o.s., 3, UN1993	330
Flammable solids, organic, n.o.s., 4.1, UN1325	606
Fusee (railway or highway), 4.1, NA1325	10

HHW Event Report

Date of Event October 02, 2010

Event Lead Greg Edwards

Location East Mesa Service Center

<i>DOT Description</i>	<i>Adj. Quantity</i>
Lithium batteries, 9, UN3090	10
Mercury contained in manufactured articles, 8, UN2809	95
Mercury, 8, UN2809	5
Organic peroxide type D, liquid, 5.2, UN3105	10
Other regulated substances, liquid, n.o.s., 9, NA3082	1414
Oxidizing liquid, n.o.s., 5.1, UN3139	110
Oxidizing solid, n.o.s., 5.1, UN1479	110
Paint related material, 3, UN1263	110
Paint related material, 3, UN1263	2424
Pesticides, liquid, toxic, n.o.s., 6.1, UN2902	495
Pesticides, solid, toxic, n.o.s., 6.1, UN2588	404
Petroleum gases, liquefied or liquefied petroleum gas, 2.1, UN1075	44
Radioactive material, excepted package-limited quantity of material, 7, UN2910	10
Refrigerant gases, n.o.s., 2.2, UN1078	15
Regulated medical waste, 6.2, UN3291	80
Sodium hydroxide, solid, 8, UN1823	69
Used AntiFreeze	220
Used Oil	1045
Fireworks, 1.4G, UN0336	5
Compressed gas, flammable, n.o.s., 2.1, UN1954	55
Polychlorinated biphenyls, solid, 9, UN3432	10
Lighters, 2.1, UN1057	10

Waste disposal cost of this event = \$46,252.30 **Total for this event = 9406 gallons**

HHW Event Report

Date of Event October 02, 2010

Event Lead Greg Edwards

Location East Mesa Service Center

Other Waste Collected

Batteries	5228 pounds
Carbon Monoxide Tanks	0
Electronics	10231 pounds
Fire Extinguishers	27
Fluorescent Tubes	1504 linear feet
Helium Tanks	0
Latex Paint	5328 gallons
Oxygen Tanks	2
Prescription Drugs	5 gallons
Propane Tanks	79 5-gal / 20-lb tanks
Tires w/ rims	30
Tires w/o rims	192

Number collected unless otherwise indicated

Appliances Collected

Air Conditioners	0
Clothes Dryers	0
Clothes Washers	0
Coolers	0
Dishwashers	0
Freezers	0
Other	0
Ranges	0
Refrigerators	0
Water Heaters	0
Water Softeners	0

Total for event **0**

Weight* 9,482 Pounds

**may include Electronics*

Total Gallons of Hazardous Waste Diverted = 14739

Hazardous Waste, Latex Paint & Prescription Drugs

HHW Event Report



Date of Event December 11, 2010

Event Lead Greg Edwards

Location Center Street Service Center

Vehicle Information

<i>Customers came from...</i>		<i>And they brought...</i>			
Mesa	776	HHW Only	0	Appliances Only	0
Gilbert	0	HHW & Appliances	0	Tires only	0
Chandler	0	HHW & Tires	0	Rx Drugs Only	0
County	0	HHW & Rx	0	Appliances & Tires	0
Other	0	HHW, Appls. & Tires	0	Appliances & Rx	0
TOTAL	776	HHW, Appls. & Rx	0	Tires & Rx	0
		HHW, Tires & Rx	0	Appls., Tires & Rx	0
				All four	0

Hazardous Waste Collected

<i>DOT Description</i>	<i>Adj. Quantity</i>
Aerosols, 2.1, UN1950	808
Aerosols, 2.1, UN1950	55
Batteries, dry, containing potassium hydroxide solid, electric, storage, 8, UN3028 (Alkaline)	120
Batteries, dry, containing potassium hydroxide solid, electric, storage, 8, UN3028 (Ni-Cad)	30
Batteries, wet, filled with acid, 8, UN2794	120
Cartridges, small arms, ORM-D	5
Consumer Commodity, ORM-D	30
Corrosive liquid, n.o.s., 8, UN1760	220
Environmentally Hazardous substances, liquid, n.o.s., 9, UN3082	440
Environmentally Hazardous substance, solid, n.o.s., 9, UN3077	220
Environmentally Hazardous substance, solid, n.o.s., 9, UN3077	6
Environmentally Hazardous substance, solid, n.o.s., 9, UN3077	24
Flammable liquids, n.o.s., 3, UN1993	580
Fusee (railway or highway), 4.1, NA1325	5
Lithium batteries, 9, UN3090	5

HHW Event Report

Date of Event December 11, 2010

Event Lead Greg Edwards

Location Center Street Service Center

<i>DOT Description</i>	<i>Adj. Quantity</i>
Mercury, 8, UN2809	5
Non-RCRA/Non-DOT Liquid	500
Non-RCRA/Non-DOT Liquid	165
Non-RCRA/Non-DOT Solid	5
Non-RCRA/Non-DOT Solid	60
Organic peroxide type D, liquid, 5.2, UN3105	5
Oxidizing liquid, n.o.s., 5.1, UN3139	5
Oxidizing solid, n.o.s., 5.1, UN1479	55
Oxidizing solid, n.o.s., 5.1, UN1479	5
Paint related material, 3, UN1263	275
Paint related material, 3, UN1263	3635
Propane, 2.1, UN1978	30
Propane, 2.1, UN1978	55
Refrigerant gases, n.o.s., 2.2, UN1078	9
Regulated medical waste, 6.2, UN3291	19
Toxic liquids, flammable, organic, n.o.s., 6.1, UN2929	715
Toxic solids, organic, n.o.s., 6.1, UN2811	330
Caustic alkali liquids, n.o.s., 8, UN1719	275
Polychlorinated biphenyls, solid, 9, UN3432	5
Lighters, 2.1, UN1057	5

Waste disposal cost of this event = \$48,692.90 **Total for this event = 8826 gallons**

HHW Event Report

Date of Event December 11, 2010

Event Lead Greg Edwards

Location Center Street Service Center

Other Waste Collected

Batteries	3006 pounds
Carbon Monoxide Tanks	0
Electronics	8756 pounds
Fire Extinguishers	33
Fluorescent Tubes	1080 linear feet
Helium Tanks	2
Latex Paint	6300 gallons
Oxygen Tanks	0
Prescription Drugs	20 gallons
Propane Tanks	42 5-gal / 20-lb tanks
Tires w/ rims	36
Tires w/o rims	166

Number collected unless otherwise indicated

Appliances Collected

Air Conditioners	0
Clothes Dryers	0
Clothes Washers	0
Coolers	0
Dishwashers	0
Freezers	0
Other	0
Ranges	0
Refrigerators	0
Water Heaters	0
Water Softeners	0

Total for event 0

Weight* 8,921 Pounds

**may include Electronics*

Total Gallons of Hazardous Waste Diverted = 15146

Hazardous Waste, Latex Paint & Prescription Drugs

HHW Event Report



Date of Event February 05, 2011

Event Lead Greg Edwards

Location East Mesa Service Center

Vehicle Information

Customers came from...

Mesa	998
Gilbert	0
Chandler	0
County	0
Other	0
TOTAL	998

Hazardous Waste Collected

<i>DOT Description</i>	<i>Adj. Quantity</i>
Aerosols, 2.1, UN1950	808
Batteries, dry, containing potassium hydroxide solid, electric, storage, 8, UN3028 (Ni-MH)	5
Batteries, dry, containing potassium hydroxide solid, electric, storage, 8, UN3028 (Alkaline)	10
Batteries, dry, containing potassium hydroxide solid, electric, storage, 8, UN3028 (Ni-Cad)	10
Batteries, wet, filled with acid, 8, UN2800 (Gel Cells)	10
Consumer Commodity, ORM-D	60
Corrosive liquid, n.o.s., 8, UN1760	220
Environmentally Hazardous substances, liquid, n.o.s., 9, UN3082	330
Environmentally Hazardous substance, solid, n.o.s., 9, UN3077	12
Environmentally Hazardous substance, solid, n.o.s., 9, UN3077	330
Flammable liquids, n.o.s., 3, UN1993	55
Flammable liquids, n.o.s., 3, UN1993	495
Flammable solids, organic, n.o.s., 4.1, UN1325	5
Fusee (railway or highway), 4.1, NA1325	5
Lithium batteries, 9, UN3090	10

HHW Event Report

Date of Event February 05, 2011

Event Lead Greg Edwards

Location East Mesa Service Center

<i>DOT Description</i>	<i>Adj. Quantity</i>
Mercury, 8, UN2809	55
Organic peroxide type D, liquid, 5.2, UN3105	5
Oxidizing liquid, n.o.s., 5.1, UN3139	5
Oxidizing solid, n.o.s., 5.1, UN1479	55
Paint related material, 3, UN1263	10
Paint related material, 3, UN1263	2827
Pesticides, solid, toxic, n.o.s., 6.1, UN2588	165
Propane, 2.1, UN1978	165
Refrigerant gases, n.o.s., 2.2, UN1078	20
Regulated medical waste, 6.2, UN3291	45
Toxic liquids, flammable, organic, n.o.s., 6.1, UN2929	605
Used Oil	750
Used Oil	110
Caustic alkali liquids, n.o.s., 8, UN1719	165
Polychlorinated biphenyls, solid, 9, UN3432	5
Helium, compressed, 2.2, UN1046	7

Waste disposal cost of this event = \$38,884.70

Total for this event = 7359 gallons

HHW Event Report

Date of Event February 05, 2011

Event Lead Greg Edwards

Location East Mesa Service Center

Other Waste Collected

Batteries	2590 pounds
Carbon Monoxide Tanks	0
Compact Fluorescents	679
Electronics	13593 pounds
Fire Extinguishers	12
Fluorescent Tubes	2040 linear feet
Helium Tanks	6
Latex Paint	6600 gallons
Oxygen Tanks	1
Prescription Drugs	30 gallons
Propane Tanks	41 5-gal / 20-lb tanks
Tires w/ rims	17
Tires w/o rims	190

Number collected unless otherwise indicated

Appliances Collected

Air Conditioners	0
Clothes Dryers	0
Clothes Washers	0
Coolers	0
Dishwashers	0
Freezers	0
Other	0
Ranges	0
Refrigerators	0
Water Heaters	0
Water Softeners	0

Total for event **0**

Weight* **12,354** Pounds

**may include Electronics*

Total Gallons of Hazardous Waste Diverted = 13989

Hazardous Waste, Latex Paint & Prescription Drugs

HHW Event Report



Date of Event April 16, 2011

Event Lead Greg Edwards

Location Center Street Service Center

Vehicle Information

Customers came from...

Mesa	970
Gilbert	0
Chandler	0
County	0
Other	0
TOTAL	970

Hazardous Waste Collected

<i>DOT Description</i>	<i>Adj. Quantity</i>
Acetylene, dissolved, 2.1, UN1001	7
Aerosols, flammable, 2.1, UN1950	606
Batteries, dry, containing potassium hydroxide solid, electric, storage, 8, UN3028 (Alkaline)	65
Batteries, dry, containing potassium hydroxide solid, electric, storage, 8, UN3028 (Ni-Cad)	15
Batteries, wet, filled with acid, 8, UN2800 (Gel Cells)	35
Cartridges, small arms, ORM-D	5
Consumer Commodity, ORM-D	60
Corrosive liquid, n.o.s., 8, UN1760	220
Environmentally Hazardous substances, liquid, n.o.s., 9, UN3082	330
Environmentally Hazardous substance, solid, n.o.s., 9, UN3077	404
Environmentally Hazardous substance, solid, n.o.s., 9, UN3077	72
Environmentally Hazardous substance, solid, n.o.s., 9, UN3077	18
Environmentally Hazardous substance, solid, n.o.s., 9, UN3077	24
Flammable liquids, n.o.s., 3, UN1993	495
Fusee (railway or highway), 4.1, NA1325	5

HHW Event Report

Date of Event April 16, 2011

Event Lead Greg Edwards

Location Center Street Service Center

<i>DOT Description</i>	<i>Adj. Quantity</i>
Lithium batteries, 9, UN3090	10
Mercury, 8, UN2809	35
Organic peroxide type D, liquid, 5.2, UN3105	5
Oxidizing liquid, n.o.s., 5.1, UN3139	5
Oxidizing solid, n.o.s., 5.1, UN1479	5
Oxidizing solid, n.o.s., 5.1, UN1479	90
Paint related material, 3, UN1263	3837
Propane, 2.1, UN1978	30
Propane, 2.1, UN1978	55
Refrigerant gases, n.o.s., 2.2, UN1078	1
Regulated medical waste, 6.2, UN3291	55
Toxic liquids, flammable, organic, n.o.s., 6.1, UN2929	655
Toxic solids, organic, n.o.s., 6.1, UN2811	404
Used Oil	825
Used Oil	110
Caustic alkali liquids, n.o.s., 8, UN1719	220
Polychlorinated biphenyls, solid, 9, UN3432	5
Lighters, 2.1, UN1057	5
Radioactive material, excepted package-instruments or articles, 7, UN2911	10
<hr/>	
Waste disposal cost of this event = \$45,019.33	Total for this event = 8723 gallons

HHW Event Report

Date of Event April 16, 2011

Event Lead Greg Edwards

Location Center Street Service Center

Other Waste Collected

Batteries	1368 pounds
Carbon Monoxide Tanks	8
Compact Fluorescents	606
Electronics	15472 pounds
Fire Extinguishers	51
Fluorescent Tubes	1392 linear feet
Helium Tanks	5
Latex Paint	5750 gallons
Oxygen Tanks	3
Prescription Drugs	10 gallons
Propane Tanks	51 5-gal / 20-lb tanks
Tires w/ rims	126
Tires w/o rims	27

Number collected unless otherwise indicated

Appliances Collected

Air Conditioners	0
Clothes Dryers	0
Clothes Washers	0
Coolers	0
Dishwashers	0
Freezers	0
Other	0
Ranges	0
Refrigerators	0
Water Heaters	0
Water Softeners	0

Total for event **0**

Weight* **13,585** Pounds

**may include Electronics*

Total Gallons of Hazardous Waste Diverted = 14483

Hazardous Waste, Latex Paint & Prescription Drugs

ATTACHMENT B

ANNUAL EXPENDITURE REPORTS

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Annual Expenditure Report

Stormwater Program Expenditures Fiscal Year 2010/2011

Monitoring Program	\$	288,732
Storm Drain Maintenance	\$	876,714
• Repair of Damaged Facilities		
• Sediment Removal from Catch Basins		
• Clearing Debris from Inlet/Outlets		
• Regrading and Stabilizing Earthen Channels		
• Installation of Erosion Control Measures		
• Silt Removal from Retention Basins		
Retention Basin Maintenance	\$	3,601,213
• Regular Litter and Debris Removal		
• Turf Maintenance		
• Erosion Control and Bank Stabilization		
• Repair of Damaged Facilities		
Street Cleaning	\$	1,907,012
• Sweeping of Arterial Streets		
• Sweeping of Residential Streets		
Emergency Response	\$	9,764
• Spill Clean-Up		
• Material Dumping Clean-Up		
Household Hazardous Waste Management Program	\$	199,644
Administration, Inspection and Enforcement	\$	451,644
• General Program Management		
• Annual Field Screening		
• Inspection of Construction and Industrial Sites		
• Preparation of Annual Program Summaries		
• Public Information and Education		
• Soil Stabilization Activities (Personal and Professional Services)		
Total Annual Expenditures	\$	7,334,723

Annual Expenditure Report

Stormwater Program Proposed Budget Fiscal Year 2011/2012

Monitoring Program	\$	\$113,608
Storm Drain Maintenance	\$	949,232
• Repair of Damaged Facilities		
• Sediment Removal from Catch Basins		
• Clearing Debris from Inlet/Outlets		
• Regrading and Stabilizing Earthen Channels		
• Installation of Erosion Control Measures		
• Silt Removal from Retention Basins		
Retention Basin Maintenance	\$	5,216,841
• Regular Litter and Debris Removal		
• Turf Maintenance		
• Erosion Control and Bank Stabilization		
• Repair of Damaged Facilities		
Street Cleaning	\$	2,196,335
• Sweeping of Arterial Streets		
• Sweeping of Residential Streets		
Emergency Response	\$	40,907
• Spill Clean-Up		
• Material Dumping Clean-Up		
Household Hazardous Waste Management Program	\$	256,165
Administration, Inspection and Enforcement	\$	356,110
• General Program Management		
• Annual Field Screening		
• Inspection of Construction and Industrial Sites		
• Preparation of Annual Program Summaries		
• Public Information and Education		
• Soil Stabilization Activities (Personal and Professional Services)		
Total Proposed Annual Expenditures	\$	9,129,198