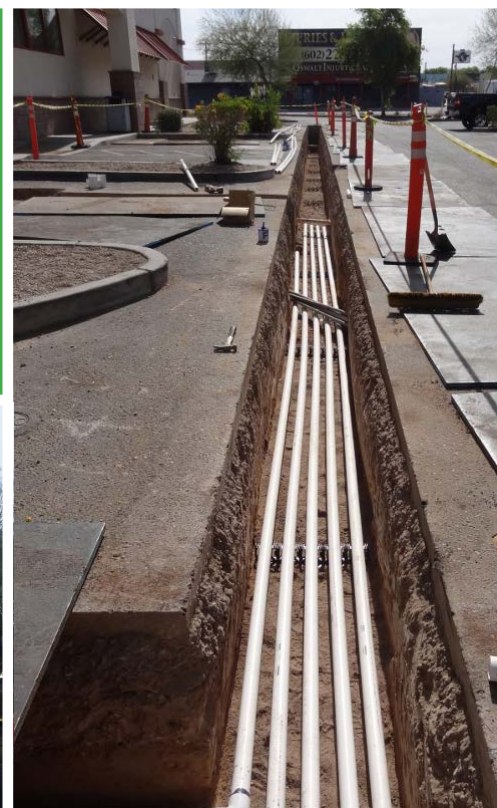




**WATER QUALITY
ASSURANCE
REVOLVING FUND
(WQARF)
FY16 ANNUAL REPORT**





OUR MISSION AND VISION

Arizona Department of Environmental Quality's (ADEQ) mission is to protect and enhance public health and the environment in Arizona. The department achieves this mission by administering the state's environmental laws and delegated Federal programs to prevent pollution of the air, water and land, and to ensure clean up of such pollution when it occurs.

ADEQ's goal is to lead Arizona and the nation in protecting and enhancing the environment and improving the quality of life for the people of our state. The agency helps Arizonans respect the balance between the natural world and the people who depend on it for sustenance, prosperity and a fulfilling quality of life.



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FOREWORD



ADEQ’s goals, strategies and performance measures align well with Governor Doug Ducey’s desire for Arizona to have safe communities, a strong, innovative economy, and efficient, effective, accountable government. To that end, ADEQ is extremely proud once again, of its progress implementing the Water Quality Assurance Revolving Fund (WQARF) Program.

In fiscal year 16, our WQARF Program staff continued to aggressively reevaluate Preliminary Investigation sites, resulting in the listing of two new sites on the WQARF Registry. These are the first sites added to the Registry since 2004. In addition, all existing Registry sites continued to be moved through the WQARF phases, setting the stage for three Proposed Remedial Action Plans, three Records of Decision and one site delisting next year. Consistent with our Mission to protect and enhance public health and the environment, we also initiated six Early Response Actions in FY16. Additional process improvement efforts continue to accelerate cleanups, earlier and more effectively engage responsible parties and ultimately reduce the overall cost of remediating contaminated sites.

Looking forward to FY17, we will have available approximately \$14 million for the WQARF Program from a combination of legislative transfers and appropriations. We are already planning to fully utilize these resources to do more environmental good in the coming fiscal year. However, the FY17 funding structure for WQARF is not sustainable in upcoming years and ADEQ will soon be convening a series of stakeholder meetings to discuss the future of this critically important program. By working together with our stakeholders and the customers of our WQARF process, we hope to permanently address the funding shortfalls that have impacted the program since the new WQARF statute was enacted in 1997.

As our positive mission outcomes continue to grow, the total WQARF liability also continues to grow along with the Agency’s estimated share of orphan site liabilities. By embracing the complexities of our current situation and working closely with our stakeholders, we can develop win-win solutions for Arizona’s unique environment and the people who live in it.

Misael Cabrera
Director

PROGRAM OVERVIEW

This annual report was prepared pursuant to HB2695/SB1526 making appropriations for the different departments of the state, for state institutions and for public schools; providing for certain reporting requirements. HB2695/SB1526 requires that a report on the WQARF along with specific site budgets for FY17 be submitted to the Joint Legislative Budget Committee (JLBC) members on or before September 1, 2016.

The Waste Programs Division is committed to safeguarding public health, protecting the environment and restoring natural resources through investigation, management and remediation of soil and groundwater contaminated with hazardous substances. Through the WQARF Program, ADEQ identifies, prioritizes, assesses and remediates these threats. The Program conducts these efforts state wide using state funds and also oversees privately funded clean up efforts. Responsible parties are identified, notified and then legal and technical evidence is gathered for recovery of ADEQ’s costs and enforcement of clean up requirements.

The WQARF Program was created under the Environmental Quality Act of 1986 to support clean up efforts in the state. The Program underwent significant revisions as a result of what is known as the WQARF Reform Legislation of 1997 (Laws 1997, Chapter 287). The major provisions of the WQARF Reform Legislation are as follows:

Proportionate Liability

Liability for the costs of the clean up of contaminated sites is proportionate, rather than joint (as it is in the federal regulations). Clean up costs are proportionately allocated among responsible parties using a process defined in statute. ADEQ is responsible for identifying responsible parties and allocating clean up costs. A non-judicial allocation hearing process is available for dispute resolution.

Program Funding

The adoption of a proportionate liability system increased the need for adequate and dedicated program funding. To ensure the WQARF Program funding is sufficient to administer the program and pay allocated, noncollectable orphan shares, WQARF reform legislation provided for an annual \$18 million expenditure. The WQARF fund is dependent upon the direct transfer of funds from legislative appropriations, corporate income tax, cost recovery and special fees.

Site Prioritization

Sites are to be prioritized with a greater emphasis on risk to human health. The Statute provides a process to score sites according to actual and potential exposure to hazardous substances. This score and other factors are considered when prioritizing the expenditure of WQARF funds.

Cleanup Methods and Goals

WQARF reform provided increased flexibility in selecting of groundwater clean up methods and levels. ADEQ adopted and applies remedy selection rules that incorporate analysis of a range of clean up options, from remediation of the contamination to no action. Significantly, the Statute clarifies that the clean up need not always result in the achievement of drinking water standards within the aquifer.

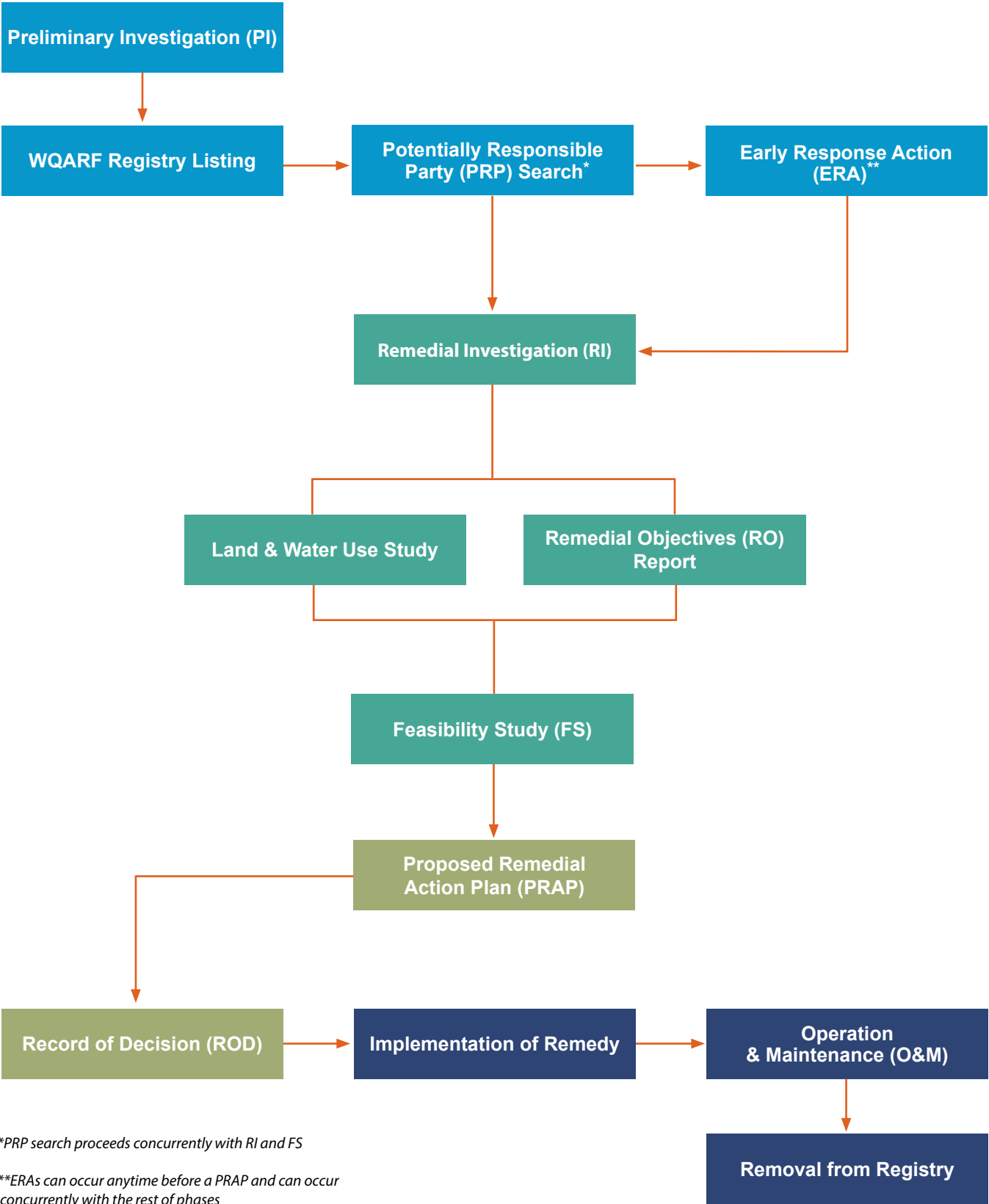
Community Involvement

Enhanced community involvement is required at all stages of the clean up process. The Statute establishes a process to encourage active community involvement, including provisions for notices, community involvement plans and the formation of a Community Advisory Board (CAB) for each site.

Settlements

Prompt settlements as an alternative to litigation are encouraged. ADEQ is authorized to offer a 25 percent discount to responsible parties who settle after the department provides notice to them of their proportionate share of liability.

WQARF PHASES



DESCRIPTION OF WQARF PHASES

PRELIMINARY INVESTIGATION (PI)

The WQARF process begins when ADEQ receives information about a release or potential release of a hazardous substance. This information may come from a citizen complaint, from an investigation conducted by ADEQ or from an investigation conducted by an outside party. ADEQ assesses whether the information is credible, if another regulatory program has jurisdiction or if the site is already being cleaned up voluntarily. If a potential release has occurred and no other regulatory program has jurisdiction, a WQARF PI is initiated.

The purpose of the PI is to confirm the release or potential release and determine whether further investigation or action is necessary. The PI is not a full investigation to determine the extent of the contamination nor is its purpose to identify the parties potentially responsible for the contamination. If ADEQ determines that no additional investigation or action is necessary, the site is removed from further consideration. If ADEQ determines that additional investigation or action is necessary, the site is scored using the eligibility and evaluation model and is eligible for listing on the WQARF Registry.

WQARF REGISTRY LISTING

The WQARF Registry provides public access to information on WQARF sites. The Registry replaces the former WQARF Priority List and provides a list of sites where groundwater and/or soil contamination is known to be present. Sites listed on the WQARF Registry qualify for WQARF funds for investigation and/or clean up. The WQARF Registry contains a brief description of each site, the site's score and the current status of the clean up. The date that a site is added to the Registry does not necessarily indicate the date that a clean up is started.

POTENTIALLY RESPONSIBLE PARTY (PRP) SEARCH

If ADEQ determines that cost recovery may be appropriate at a site, ADEQ initiates a PRP search that proceeds concurrently with the Remedial Investigation (RI). ADEQ uses information gathered in the PRP search to determine the financial viability and the legal liability of PRPs. Identification of PRPs enables ADEQ to allocate proportional shares of liability among the identified responsible parties in order to finance the remedy.

EARLY RESPONSE ACTION (ERA)

Several years may be required to conduct a full investigation of a site and select the remedy. ADEQ developed the ERA process to address contamination where human health or the environment is potentially impacted, where sources of contamination can cause significant environmental impact or where early actions can save significant WQARF funds by limiting the spread of contamination. ERAs may be relatively inexpensive short-term actions, such as fencing or providing alternative water supplies, or they may involve an expensive large-scale groundwater and/or soil treatment system.

An initial evaluation (ERA evaluation) of risks at a site occurs immediately after a site is listed in the WQARF Registry. If a current or potential risk to human health or the environment exists through direct contact with a hazardous substance, an ERA may be implemented immediately. If there is no risk, ADEQ collects information about a site to determine if an ERA is appropriate to protect a water supply or to prevent the spread of contamination. A site is continuously reevaluated as more data become available and an ERA can be implemented at any time prior to the selection of a final remedy. Just as with the selection of a final remedy, the implementation of an ERA includes design and construction and may include a period of operation and maintenance (O&M).

REMEDIAL INVESTIGATION (RI)

The purpose of a RI is to collect enough information to determine the appropriate clean up actions needed at the site. The information collected includes the physical characteristics of the site; the nature, extent and sources of the contamination and the actual and potential impacts of contaminants on the site to public health, welfare and the environment. The RI also identifies present and reasonably foreseeable uses of land and waters of the state that have been or may be impacted by the contamination.

After conditions at the site are known, ADEQ holds public meetings to establish remedial objectives (ROs). ADEQ invites land owners, local governments, water providers and the public to discuss land and water uses impaired or lost due to the contamination, as well as future uses, which could be impacted by the contamination. Based on this input, ADEQ prepares a report of the proposed ROs for the site that lists the uses, the time frames when completion of clean up is required to protect or provide for the use, and the duration of the required actions.

FEASIBILITY STUDY (FS)

Using the information collected in the RI, the FS documents technologies and options that may achieve the ROs. Various options are identified and compared to facilitate selection of the most feasible and cost-effective clean up method for the site.

PROPOSED REMEDIAL ACTION PLAN (PRAP)

After the FS is completed, ADEQ prepares a PRAP to document the proposed clean up or remedy. The plan describes the means by which the proposed remedy will meet each of the ROs identified in the RI and how accomplishment of the ROs is to be measured. The plan also provides an estimate of the cost of the clean up.

If ADEQ intends to seek recovery of costs from PRPs, notice is provided to these parties of the opportunity to submit an accounting of clean up costs they may have incurred at the site and of the opportunity to object to costs submitted by other PRPs. Any costs approved by ADEQ as reasonable and necessary may be used as a credit against potential liability in a settlement or allocation.

RECORD OF DECISION (ROD)

The ROD documents the selected remedy. The ROD includes an estimated cost, time frames for beginning and completing the clean up process and a demonstration that the selected remedy meets the ROs. After the ROD is signed, an allocation process follows in which past and future costs are distributed among responsible parties.

IMPLEMENTATION OF REMEDY

The design and implementation stage includes the development of the engineered design of the selected remedy and implementation of the remedy through construction. A period of O&M may follow the design and construction activities.

OPERATION AND MAINTENANCE (O&M)

The O&M is conducted pursuant to a schedule applicable to the type of remedy completed. This includes performance of all O&M steps required for performance of the remedy.

REMOVAL FROM REGISTRY

Once the remedy has met the specified clean up criteria at a site, or ADEQ determines that no further investigation or clean up is needed, the site is eligible for delisting from the WQARF Registry.

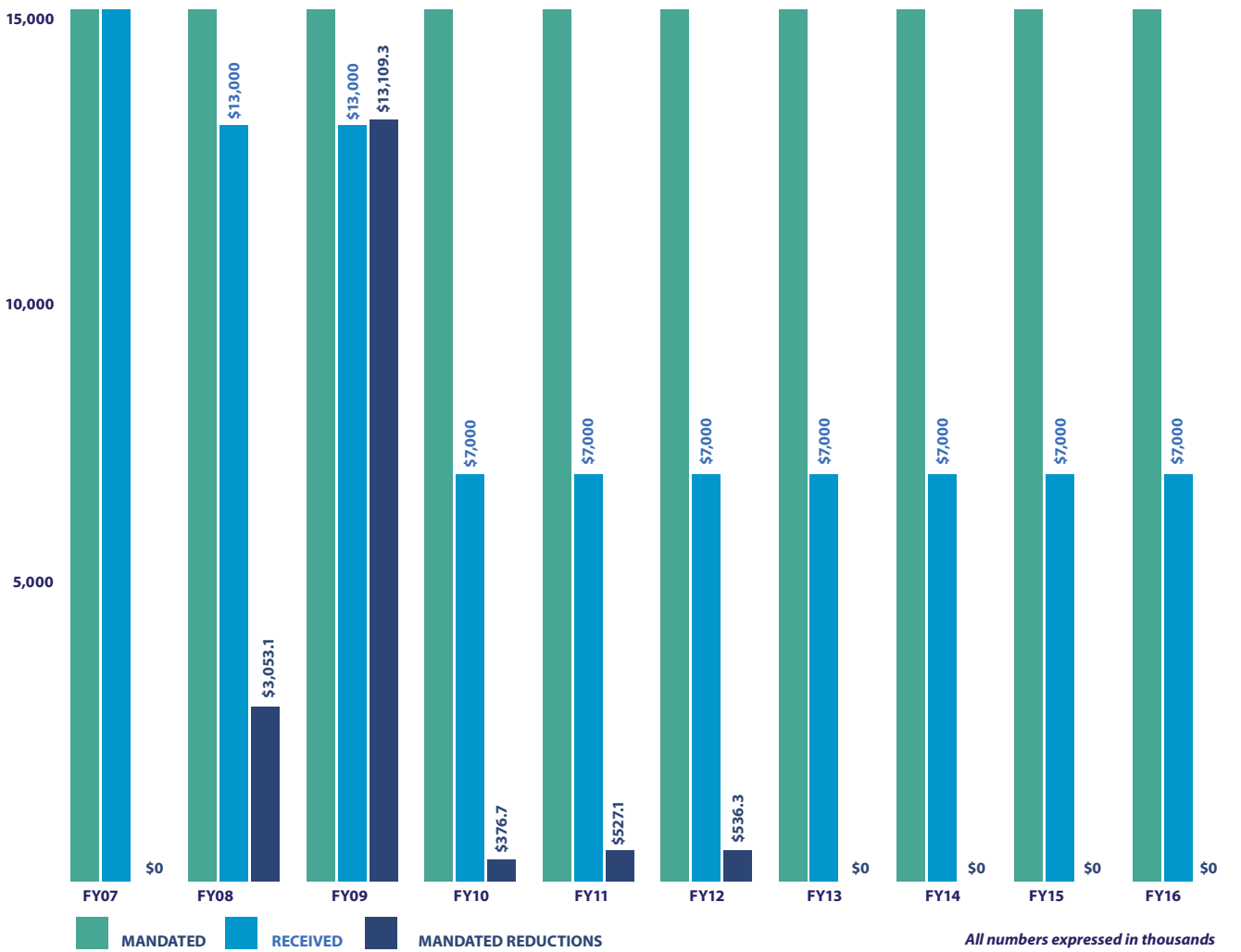
WQARF FUNDING

ADEQ’s ability to fully administer and implement the WQARF Program depends on \$18 million per year in dedicated funding to offset and fund the State’s costs associated with the “orphan” share of clean up, Arizona Revised Statutes (A.R.S.) § 49-282(B) specifies that \$15 million of that \$18 million is received from Corporate Income Tax (CIT) revenue. However, due to budget shortfalls, the WQARF Program received \$60 million less in CIT revenue for the last 10 fiscal years and funding was further reduced by legislative fund transfers in the amount of \$17.6 million. The only time during the last 10 FYs that the WQARF Program received full CIT funding was in FY07. During the last seven fiscal years, the WQARF Program’s fund balance has been reduced by almost \$50 million through reductions in CIT transfers and legislative fund transfers.

It was calculated in 1991 for the State of Arizona Office of the Auditor General’s Performance Report that for the \$15 million annual funding to be adequate, WQARF’s or the State’s share of the clean up costs must not exceed 35 percent. Based on current estimations, the State’s “orphan” share is conservatively estimated at more than 50 percent.

The chart below depicts CIT funding of the WQARF Program during the past 10 FYs and also accounts for the additional reduction in program funding that resulted from the legislative fund transfers.

CORPORATE INCOME TAX REVENUE COMPARISON FY07 – FY16



ACCOMPLISHMENTS

The WQARF Program continued to deploy Lean management principles, and in FY16 began a comprehensive reanalysis of all PI sites for the first time in 13 years. A total of 35 sites were investigated; 15 of which ADEQ issued No Further Investigation or Action (NFIA) memos and were closed and removed from the PI list. Evaluation of the PI sites resulted in the listing of two new sites on the WQARF Registry, and the potential for at least eight other sites to be listed. The two new WQARF sites, 7th Avenue and Missouri in Phoenix and Highway 260 and Johnson Lane in Pinetop-Lakeside are the first new WQARF sites added to the registry since August 2004. Both sites contain elevated concentrations of PCE in groundwater. FY16 saw the deployment of significant new process developments in the performance of Pls. Most notably a more robust identification of sources in PI and early RI phases to avoid the reinvestigation of sites later in the WQARF process. As the program continues moving closer to resolution of contamination issues, we continue to test the process improvements in all WQARF phases in order to accelerate clean ups.

ADEQ continues to look to implement ERAs to remove mass from soil and groundwater to facilitate sites through the WQARF phases toward ROD, utilizing process improvements to complete milestones. Efforts to enhance remedies and evaluate alternative technologies and implement new contracting mechanisms also served to align with the Agency goal of accelerating clean ups.

The Best Value Procurement process continues to improve the ability of the WQARF Program to become more responsive to initiating clean up work on WQARF Registry sites. In FY16, the WQARF Program has attempted to also streamline the legal support process by opening up the Program’s legal support contract to bid, effectively initiating new contract terms favorable to reducing the timeframe for completion of legal support activities. These activities are critical to the completion of later WQARF phases, including PRAP and ROD.

Several years ago, ADEQ calculated the State’s total liability for the WQARF sites at greater than \$300 million. Recently it was calculated that the total potential liability to the State for the WQARF sites has increased nearly 50 percent to \$429 million. As stated in previous reports, full statutory funding of \$18 million is critical to ensure that the accelerated clean up rate is maintained to support future development and economic growth. Accelerated clean ups through increased efficiencies and full funding also will reduce overall long-term costs and reduce the State’s orphan share, which has grown to more than 50 percent of all WQARF liability.

In FY16, in addition to listing new WQARF sites, and the potential for eight additional WQARF sites to the Registry, the WQARF Program moved many of the Remedial Investigations completed in FY14 and FY15 through the feasibility study and into the PRAP phase. Three RODs we issued as well as moving one site through the later phases of PRAP and ROD toward delisting in FY17. Furthermore, six new ERA (ERAs) were initiated in accordance to our Mission.

The following consists of a summary of major FY16 accomplishments.

EARLY RESPONSE ACTIONS (ERA)

ADEQ’s WQARF Program continues to place a high priority on ERAs at sites where human health is potentially impacted, where sources of contamination can cause significant environmental impact or where early actions can reduce potential future costs to the WQARF Program by limiting the spread of contamination. In FY16, the WQARF Program continued O&M on ERAs that remove contaminant mass and/or are protective of human health that were initiated in prior years, in addition to new ERA program initiatives.

East Central Phoenix (24th Street and Grand Canal, Phoenix)

To address contaminated soils discovered in FY15 at the 24th Street and Grand Canal site, a soil vapor extraction (SVE) system was designed and installed in FY16. SVE startup procedures have commenced. If effective, this system may be incorporated into the final remedy for the site.

East Central Phoenix (32nd Street and Indian School Road, Phoenix)

To address contaminated soils, in FY13 a soil vapor extraction (SVE) system became operational behind the Maroney’s Cleaners facility near the corner of 32nd Street and Indian School Road. To address contaminated soil behind the former Viking Cleaners facility, an additional SVE system was installed and became operational in FY14. These ERA SVE systems continue to operate and are planned to be optimized in FY17. They will likely be incorporated into the final site remedy.

Klondyke Mine Tailings (Klondyke)

ADEQ initiated the removal of lead impacted soil resulting from abandoned mine tailings at three residential properties and a mill site. Approximately 7,850 cubic yards of soil were placed on the lower tailings pile which will be capped and armored as part of the final remedy. Additional ERA activities involving soil removals of outlying areas of the residential properties are planned for FY17.

Harrison Road and Millmar (Tucson)

In late FY16, ADEQ initiated an ERA at homes surrounding a former aluminum dross disposal area currently zoned residential and containing one existing residence in Tucson. In FY16, ADEQ performed sampling of the Dross area and nearby residences for characterization. A consolidation action to reduce the current threat of exposure to hazardous substances is planned for FY17 prior to listing. This site is currently a PI site and is one of the eight that has been slated for listing on the WQARF registry in FY17.

Hwy 260 and Johnson Lane (Pinetop-Lakeside)

This is one of the newly listed WQARF sites. In FY16 as a result of sampling during the PI, ADEQ initiated temporary bottled water delivery to one residence that has detectable concentrations of PCE in groundwater. Efforts are underway to begin Remedial Investigation activities in FY17.

Chrome Company (Tucson)

This PI site contained a small area with lead impacted soils next to a residence. Approximately 4 cubic yards of impacted soils were removed and disposed of at a local landfill. This site has been removed from the PI list.

Highway 260 & Main (Cottonwood)

In FY16 as a result of sampling during the PI, ADEQ initiated temporary bottled water delivery to one residence and a residential trailer park containing 14 individual residences that have detectable concentrations of PCE in groundwater. This site is currently a PI site and is one of the eight that has been slated for listing on the WQARF registry in FY17.

EFFORTS TO ACCELERATE CLEAN UPS

The WQARF Program is placing new emphasis on accelerating clean ups under new and existing RODs. Periodic reviews of remedies will focus on augmenting existing methodologies and evaluating ways to move sites toward delisting sooner.

Tyson Wash, Quartzite:

A 2009 ROD specified groundwater pump-and-treat and continued monitoring as the selected remedy to address groundwater contamination at the site. The ROD estimated clean up efforts to continue into 2032. Groundwater laboratory results showed that contaminants were not decreasing as anticipated and were potentially escaping the groundwater capture area of the existing remediation system. After optimizing the existing remediation system in FY14, ADEQ initiated a pilot test using In-Situ Chemical Oxidation (ISCO) to break down contaminants. The pilot test conducted in FY14 dramatically reduced the groundwater contaminant level. Because of its success, a full scale ISCO system was installed and operated in FY15 and FY16 at the site, further decreasing contaminant concentrations in groundwater. Because of this action, full clean up and delisting of this WQARF site may be possible in the next two years, cutting approximately 13 years off the projected pump-and-treat clean up timeframe and reducing the overall associated cost.

West Central Phoenix — North Plume (Phoenix)

ADEQ initiated an Enhanced Reductive Dechlorination (ERD) study to isolate zones within the aquifer for treatability. The existing soil vapor extraction (SVE) system ERA has been ongoing since 2001. This effort was conducted to accelerate time to clean up. ADEQ may continue to expand the ERD application to other zones within the aquifer to further expedite clean up. These actions will likely be incorporated into the final site remedy.

16th Street and Camelback (Phoenix)

ADEQ initiated an ERD injection to determine if an ERA could be cost effectively implemented to expedite the proposed remedial option of Monitored Natural Attenuation (MNA). Groundwater sampling results are currently being compared to determine viability of this option. If effective, this technology may be incorporated into the final MNA remedy for the site to facilitate accelerated site delisting.

Payson PCE, Payson:

A 2007 ROD specified groundwater pump-and-treat and continued monitoring as the selected remedy to address groundwater contamination at the site. The ROD estimated clean up efforts to continue into 2036. In an effort to accelerate the clean up time frame and move the site closer to delisting, in FY15 ADEQ began evaluating alternative remedial technologies to augment the existing pump-and-treat remedy, including ISCO and ERD with bioaugmentation. After evaluating these options, ERD was selected as a viable alternative. In FY16, injections began and results showed groundwater concentrations decreasing significantly at the source and downgradient of the source. ERD nutrient injections and bioaugmentation consisting of microbial enhancement will continue into FY17. Initial indications are these actions are expected to dramatically reduce clean up timeframe and costs for this site.

PRELIMINARY INVESTIGATION REMEDIAL ACTIONS (PI)

Sites are often referred to the WQARF Program by other Sections of the Waste Programs Division. This includes Hazardous Waste Compliance and Underground Storage Tank Corrective Action. These referrals then wait for WQARF to begin assessment through a PI. Over the years, the PI list has grown to more than 70 sites. Due to decreased WQARF funding, priority has been focused on sites of contamination already on the WQARF registry. To better balance use of WQARF funding and estimate additional liabilities to the WQARF Program, in FY16 the WQARF Program implemented an aggressive campaign to complete investigations at 35 of the highest priority PI sites. Each of the 35 sites was evaluated during FY16.

Results of these evaluations indicated:

- 2 sites have been listed on the WQARF registry. This represents the first addition to the WQARF registry since 2004.
- 8 additional sites may be eligible for WQARF registry listing and registry packets have been prepared for executive level Agency review
- One site eligible for listing is under executive level Agency review.
- 15 sites require No Further Investigation or Action (NFIA) and have been removed from further consideration.
- 4 sites required ERAs which have been implemented:
 1. Chrome Co - Lead impacted soil removal.
 2. Harrison Road and Millmar - Aluminum dross consolidation.
 3. Hwy 260 and Johnson Lane - Providing temporary bottled water.
 4. Highway 260 and Main - Providing temporary bottled water.
- 9 sites were determined to not have current human health risks above criteria but are slated for periodic monitoring.

RPU plans to conduct investigations at 30 PI sites during FY17, while applying continuous improvement to the systematic methodology following A.R.S § 49-287.01 and Arizona Administrative Code (A.A.C.) R-18-16-201 that was developed in FY15 to assess whether a site should be listed on the WQARF Registry. This methodology will be utilized in subsequent fiscal years to continue evaluation and move sites off the PI list to resolution.

INTERIM REMEDIAL ACTIONS (IRA)

IRAs (and sometimes ERAs), are implemented at a Registry site to protect water supply wells, provide alternative water supplies, replace well, or for water treatment. ADEQ has been working with the Flowing Wells Irrigation District (FWID) and the Metropolitan Domestic Water Improvement District (Metro Water) to implement water treatment at the Miracle Mile and Shannon Road/El Camino del Cerro WQARF sites, respectively.

Miracle Mile, Tucson

ADEQ entered into a Intergovernmental Service Agreement (IGA) with FWID to provide wellhead treatment for the removal of VOCs at two FWID production wells. The treatment system was jointly designed and constructed by ADEQ and FWID and incorporated into FWID’s arsenic treatment system. The 900 gallon per minute (gpm) system was put into operation in January 2007 and treated approximately 107 million gallons of water in FY16. The treated water is distributed for drinking water use by FWID customers.

Shannon Road/El Camino del Cerro, Tucson

Through a cooperative agreement with Metro Water, ADEQ has been funding the wellhead treatment and O&M costs associated with a system designed to treat Volatile Organic Compound (VOC) contaminated groundwater. The location of the pumping wells associated with this remediation system allows for the capture and containment of the groundwater contaminant plume. Approximately 274 million gallons of water were treated and nearly 52 pounds of VOCs were removed by this system in FY16. The treated water is distributed for drinking water use by Metro Water customers.

OPERATION & MAINTENANCE (O&M)

In FY16, ADEQ continues to fund O&M activities at the following WQARF sites:

WQARF SITE	WORK CONDUCTED
20th Street and Factor Avenue	engineered cap placement/maintenance
Broadway – Pantano	groundwater pump-and-treat
Central Avenue and Camelback Road	groundwater pump-and-treat and SVE system
East Central Phoenix (ECP) – 32nd Street and Indian School Road	Dual SVE systems
Klondyke Tailings	upper tailings cap protection
Miracle Mile	FWID wellhead treatment
Mountain View Estates (<i>former NPL site</i>)	soil cap maintenance
Shannon Road/El Camino del Cerro	Metro Water wellhead treatment
Tyson Wash	groundwater pump-and-treat/ISCO
Vulture Mill	soil cap maintenance
West Central Phoenix (WCP) – North Plume	SVE system
Payson PCE	groundwater pump-and-treat/ERD
East Central Phoenix (ECP) – 24th Street and Grand Canal	SVE system

REMEDIAL INVESTIGATIONS (RI)

No final remedial investigations were completed in FY16. The sites completing the WQARF remedial investigation phase are listed in the progress chart on Page 20.

FEASIBILITY STUDIES (FS)

In FY16, no final FSs were completed. Most sites are continuing to determine feasible remedy options. The sites currently completing feasibility studies are listed in the progress chart on Page 20.

PROPOSED REMEDIAL ACTION PLANS (PRAP)

In FY16, ADEQ completed final PRAPs for the following WQARF sites:

- South Mesa
- West Central Phoenix - West Grand Avenue
- 16th Street and Camelback

RECORD OF DECISION (ROD)

In FY16, ADEQ completed RODs for the following WQARF sites:

- South Mesa
- West Central Phoenix - West Grand Avenue
- 7th Avenue and Bethany Home Road

PARTIES CONDUCTING WORK WITH ADEQ OVERSIGHT

The following parties are conducting site investigations and remedial activities at WQARF sites with ADEQ project manager oversight. The work is being paid for by the parties and ADEQ costs are recoverable.

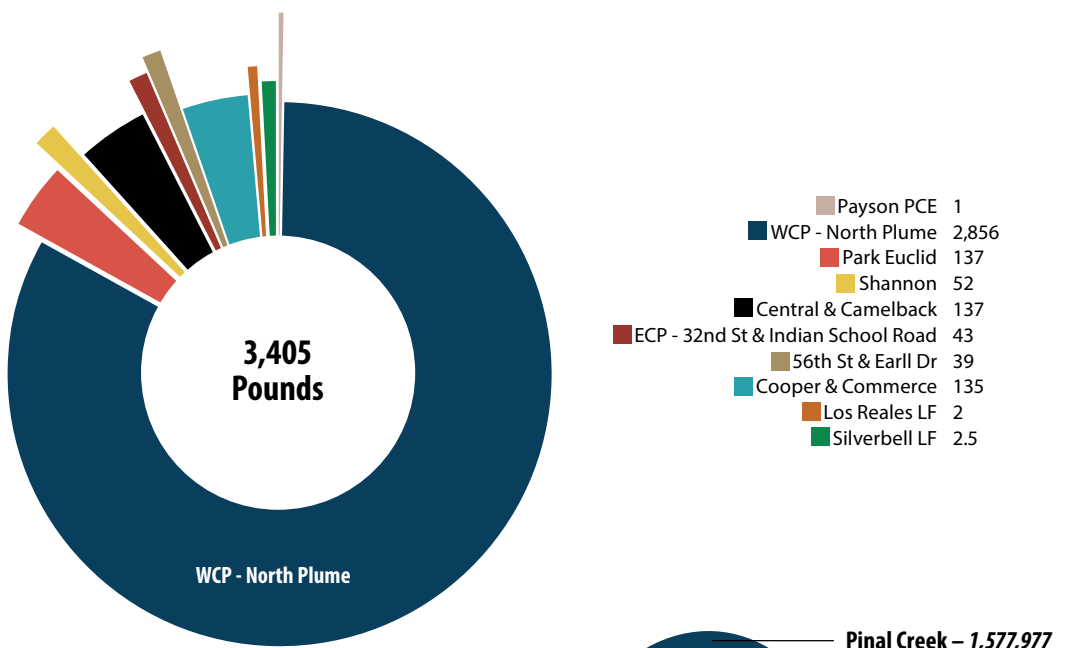
WQARF SITE	WORK CONDUCTED BY
West Van Buren	<i>Air Liquide America Specialty Gases LLC and Prudential Overall Supply</i> under an Amended Consent Order
56th Street and Earll Drive	<i>Freescale Semiconductor, Inc.</i> under a Consent Order
West Central Phoenix (WCP) - East Grand Avenue	<i>Univar</i> under a working agreement
Pinal Creek	<i>Freeport McMoRan Inc.</i> as successors of interest under a Consent Decree <i>BHP</i> and <i>Pinal Creek Working Group</i> under a Consent Decree
Los Reales Landfill	<i>City of Tucson</i> under a Remedial Action Plan
Silverbell Jail Annex Landfill	<i>City of Tucson</i> under a Remedial Action Plan
Park-Euclid	<i>Park-Euclid Group</i> under a working agreement

A.R.S. §49-282(E)(11) also provides for reimbursement to political subdivisions for the costs incurred in response to a release or a threat of a release of a hazardous substance or pollutant that presents an immediate and substantial endangerment to public health or the environment. No applications were processed in FY16.

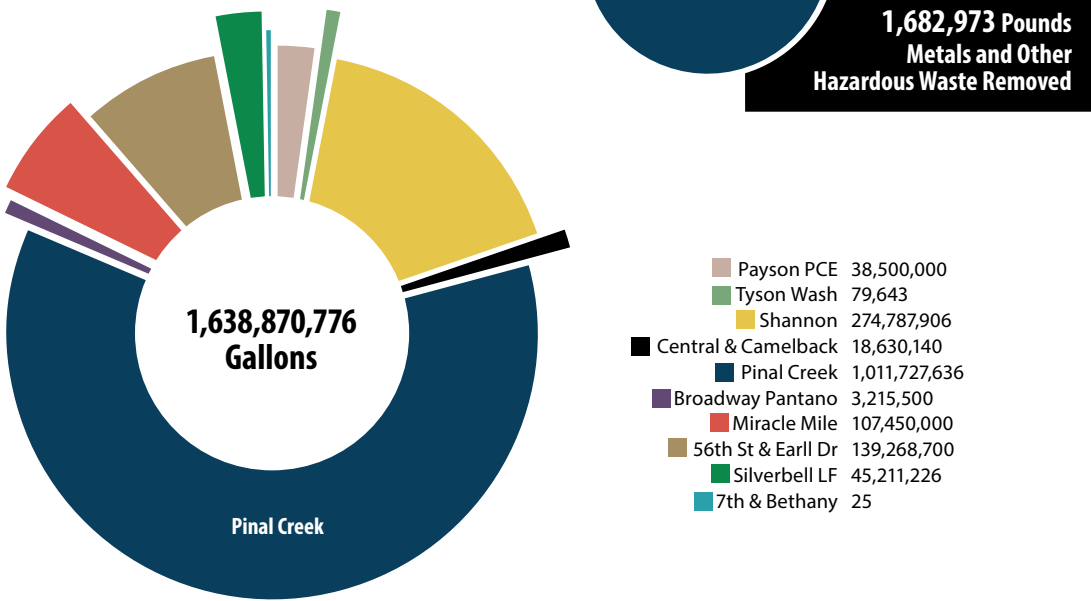
WQARF SITES ACTIVITIES

Summaries are provided of activities and accomplishments for WQARF and PI sites. FY16 revenues and expenditures for the WQARF Program can be found in Appendix 1.

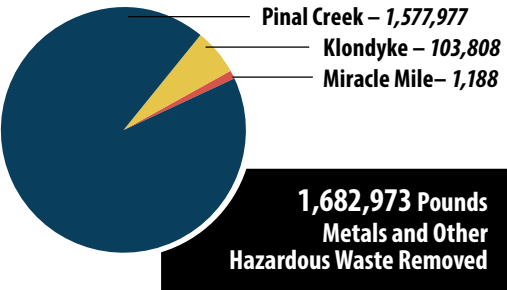
REMEDIATION:



Volatile Organic Compounds (VOCs) Removed



Groundwater Treated

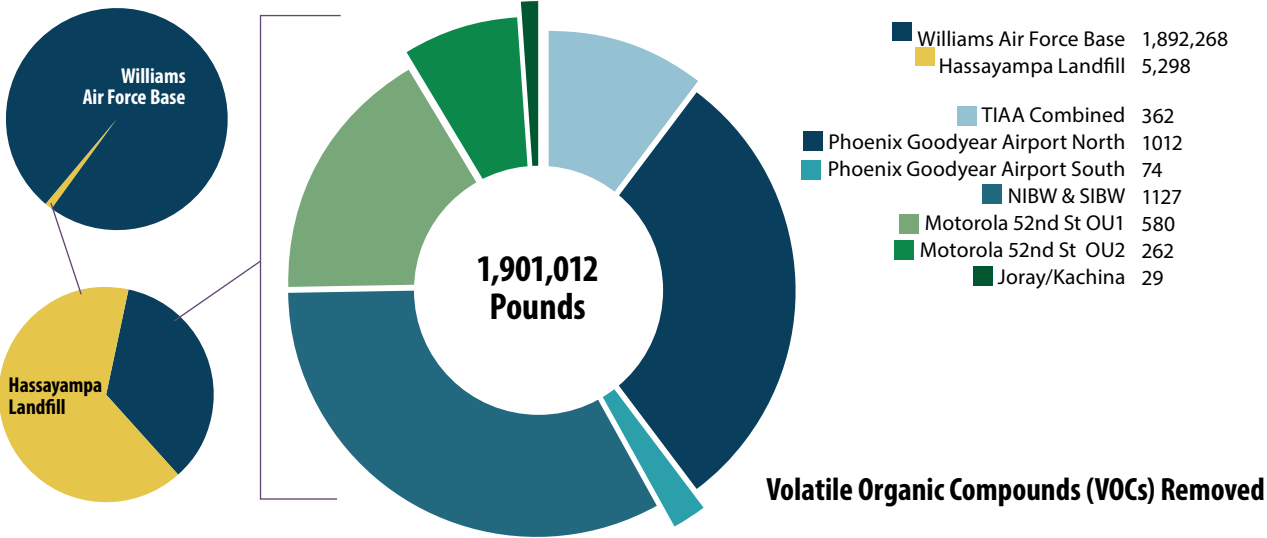


1,682,973 Pounds
Metals and Other
Hazardous Waste Removed

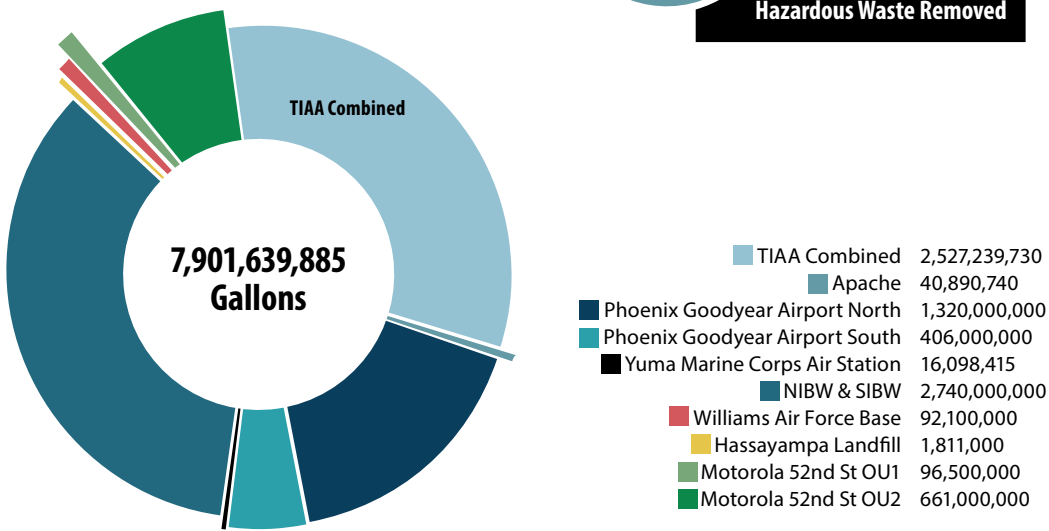
FEDERAL SITES ACTIVITIES

Summaries are provided of activities and accomplishments for Federal sites.

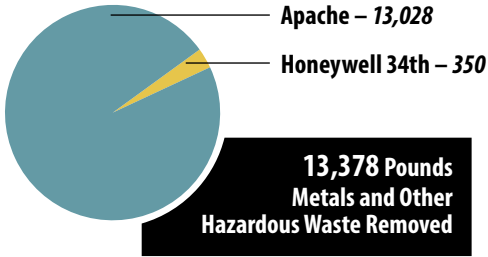
REMEDIATION:



Volatile Organic Compounds (VOCs) Removed



Gallons of Groundwater Treated



13,378 Pounds
Metals and Other
Hazardous Waste Removed

OTHER SITE ACTIVITIES

WQARF:

30 GROUNDWATER WELLS INSTALLED

1	7th Street and Arizona Avenue	2	East Central Phoenix - 48th Street and Indian School
2	7th Street & Bethany Home	1	Los Reales LF
1	20th & Factor	6	Pinal Creek
3	Broadway & Pantano	1	Silverbell LF
5	East Central Phoenix - 24th Street and Grand Canal	3	West Central Phoenix - West Osborn
2	East Central Phoenix - 32nd Street and Indian School	2	West Central Phoenix - North Canal
1	East Central Phoenix - 40th Street & Osborn		

24 SOIL VAPOR WELLS INSTALLED

5	7th Street & Arizona Avenue
16	East Central Phoenix - 24th St & Grand Canal
3	Miracle Mile

2,743 GROUNDWATER SAMPLES COLLECTED

459 SOIL VAPOR SAMPLES COLLECTED

225 SOIL SAMPLES COLLECTED

14 PUBLIC NOTICES (NOT INCLUDING CAB NOTICES)

20 PUBLIC MEETINGS

5 LEGAL AGREEMENTS (COs, CDs, AOCs, IGAs, ETC.)

33 ACCESS AGREEMENTS

1 PROSPECTIVE PURCHASER AGREEMENTS

FEDERAL:

59 GROUNDWATER WELLS INSTALLED

2	TIAA Combined	23	Williams AFB
10	Phoenix Goodyear Airport North	4	Apache Powder
4	Phoenix Goodyear Airport South	15	Motorola 52nd Street OU1
1	Yuma Marine Corps Air Station		

4,502 GROUNDWATER SAMPLES COLLECTED

724 SOIL VAPOR SAMPLES COLLECTED

1,530 SOIL SAMPLES COLLECTED

35 PUBLIC MEETINGS

FY16 WQARF PROGRESS CHART

SITES	EARLY RESPONSE ACTION	REMEDIAL INVESTIGATION	FEASIBILITY STUDY	PROPOSED REMEDIAL ACTION PLAN	RECORD OF DECISION	REMEDY IMPLEMENTATION	OPERATION AND MAINTENANCE	REMOVAL FROM REGISTRY
7TH AVENUE AND BETHANY HOME ROAD								
7TH STREET AND ARIZONA AVENUE								
7TH STREET AND MISSOURI								
16TH STREET AND CAMELBACK ROAD								
20TH STREET AND FACTOR AVENUE								
56TH STREET AND EARLL DRIVE								
BROADWAY-PANTANO								
CENTRAL AVENUE AND CAMELBACK ROAD								
COOPER ROAD AND COMMERCE AVENUE								
ECP - 24th STREET AND GRAND CANAL								
ECP - 32nd STREET AND INDIAN SCHOOL ROAD								
ECP - 38th STREET AND INDIAN SCHOOL ROAD								
ECP - 40th STREET AND INDIAN SCHOOL ROAD								
ECP - 40th STREET AND OSBORN ROAD								
ECP - 48th STREET AND INDIAN SCHOOL ROAD								
ESTES LANDFILL								
HWY 260 & JOHNSON LANE								
KLONDYKE TAILINGS								
LOS REALES LANDFILL*								
MIRACLE MILE								
MOUNTAIN VIEW ESTATES**								
PARK – EUCLID								
PAYSON PCE								
PINAL CREEK*								
SHANNON RD/EI CAMINO del CERRO								
SILVERBELL LANDFILL*								
SOUTH MESA								
STATE ROUTE 95 & KIOWA BLVD ***								
TYSON WASH								
VULTURE MILL								
WCP - EAST GRAND AVENUE								
WCP - NORTH CANAL PLUME								
WCP - NORTH PLUME								
WCP - WEST GRAND AVENUE								
WCP - WEST OSBORN COMPLEX								
WESTERN AVENUE								
WEST VAN BUREN								

Notes:
Operating systems initiated as ERA or IRA or as a final remedy are considered in the operation and maintenance phase.

- * Long-term operation and maintenance - Old WQARF Program
** Former National Priority List Site, only on going long-term monitoring and upkeep
*** Potential registry listing site currently under Executive Level Agency Review

- WQARF Closures:**
- EAST WASHINGTON FLUFF - 2012
 - TONTO AND CHERRY - 2013

PRELIMINARY INVESTIGATION CHART

SITES	PRELIMINARY INVESTIGATION	ELIGIBLE FOR REGISTRY LISTING	NO FURTHER INVESTIGATION OR ACTION (NFIA)	EARLY RESPONSE ACTION
5TH AVENUE & BROADWAY				
7TH AVENUE & OSBORN ROAD				
14TH ST & EDWARD DR				
19TH AVE & OSBORN RD				
27TH AVE LANDFILL				
32ND AVE & MCDOWELL RD				
ALAMEDA & PRIEST PLUME 2				
ALAMEDA & PRIEST PLUME 3				
ALAMEDA & PRIEST PLUME 4				
CENTRAL & MOHAVE				
CHROME COMPANY				
DOUGLAS LANDFILL				
DOUGLAS PORT OF ENTRY				
ESCO				
FAITH COOPERAGE				
FREDONIA REFINERY				
GRANT RD AND STONE AVE				
HARRISON RD AND MILLMAR RD				
HIGHWAY 260 & MAIN				
LEHI AREA				
MARATHON STEEL				
MESA DBCP				
MILLER VALLEY RD & HILLSIDE AVE				
RAYMOND STREET				
SHULTZ SHREDDER FLUFF DUMP				
SOUTH MESA URBAN TCE				
SOUTH MESA URBAN PCE				
SOUTHERN PACIFIC & BARNES				
SOUTHWEST PLATING				
SURPRISE DBCP				
WILLCOX TCE				
WILLCOX PCE				

WQARF COST RECOVERY ACTIVITY

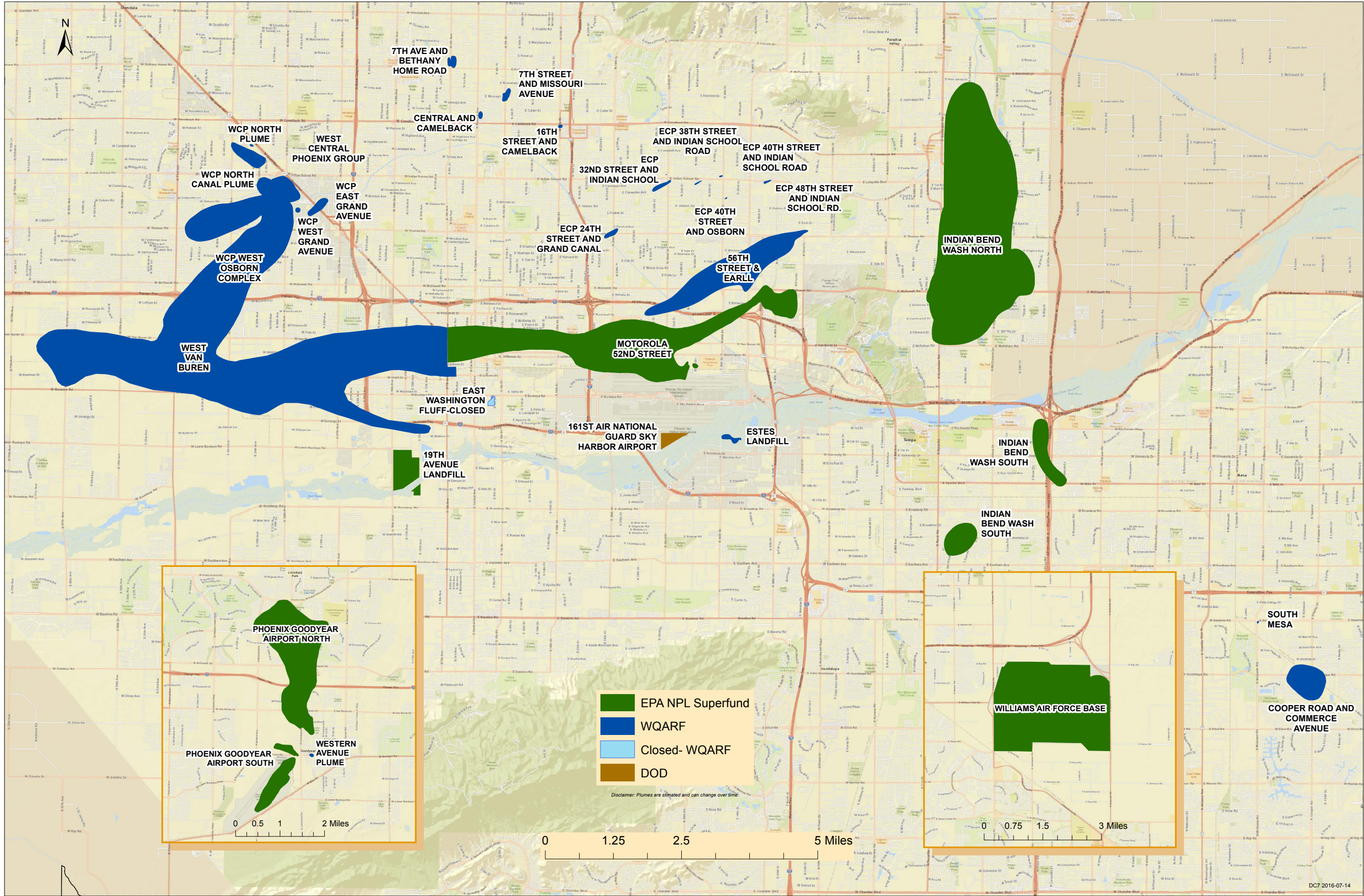
Pursuant to A.R.S. § 49-282(E)(1), WQARF can be used to provide state-matching funds or to meet other obligations as prescribed by §104 of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). WQARF funds also are used for oversight activities at state-lead CERCLA sites, which are reimbursed by the responsible parties. Cost reimbursement activities at WQARF and CERCLA sites supported by ADEQ are provided below.

	NO. OF PACKAGES	\$ AMOUNT	TOTAL AMOUNT
New Packages	40		\$277,854.23*
Motorola 56th Street Plant	3	\$6749.1	
Phoenix Goodyear Airport	2	\$35,668.6	
19th Avenue Landfill	3	\$8,411.76	
Air Liquide Specialty Gases	2	\$1,159.81	
Asarco-Hayden	3	\$18,709.42	
Roosevelt Irrigation District	3	\$3,601.83	
Honeywell Area 13	1	\$510.51	
Honeywell Area 21	3	\$5,673.9	
Honeywell 34th Street	3	\$16,512.74	
Motorola 52nd Street	10	\$112,937.87	
40 North Indian Bend Wash	1	\$32,961.81	
Pinal Creek	2	\$20,753.89	
Miami Tailings Reprocessing	1	\$937.32	
Prudential	2	\$578.83	
TIAA Area B - West Cap	1	\$12,686.84	
Payments Received	33		\$210,034.53

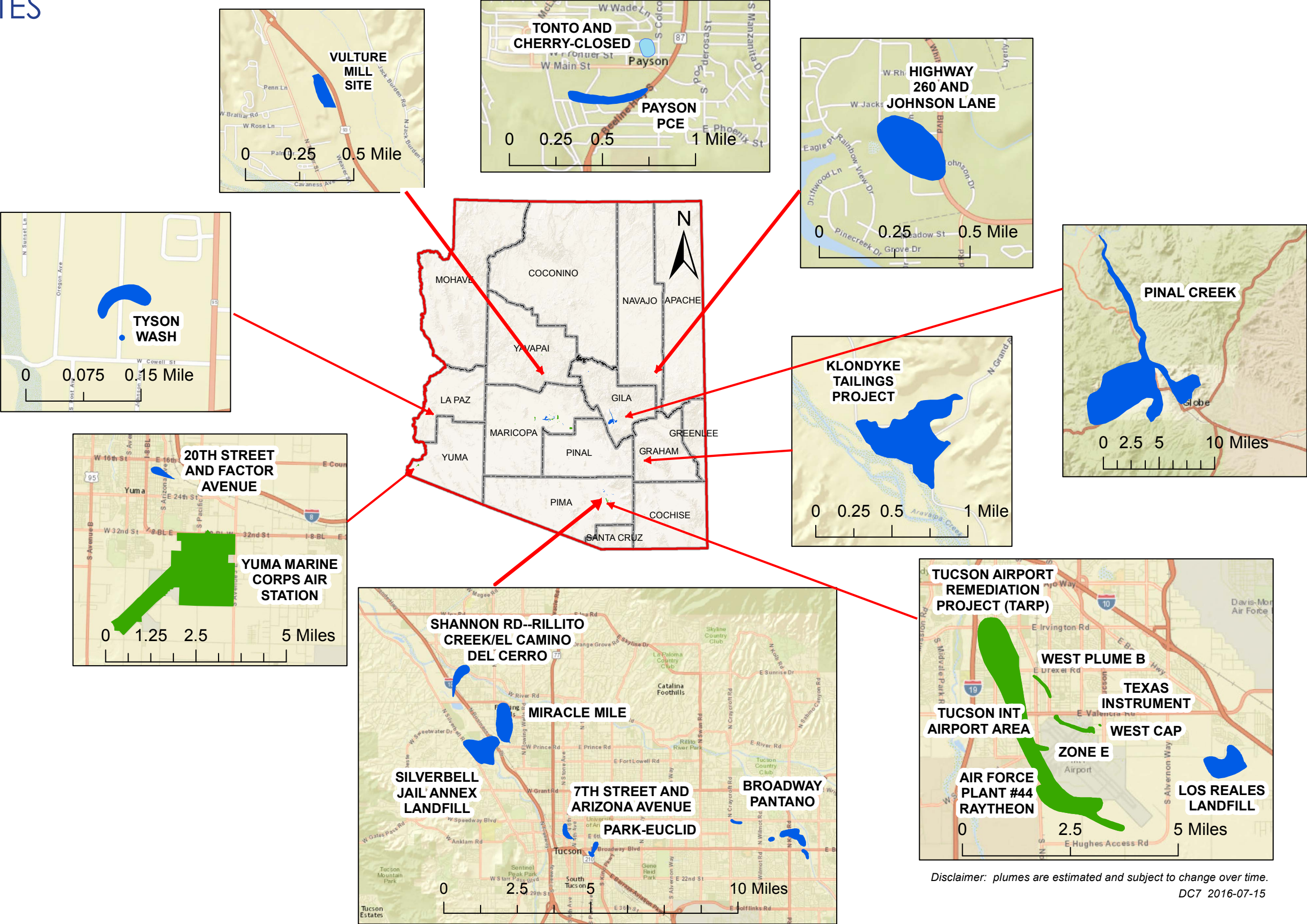
*Does not include revenue received from prior fiscal year packages.



METROPOLITAN PHOENIX SITES



STATEWIDE SITES



WQARF FUNDING FOR OTHER USES

In addition to the costs of administering the program and conducting remedial actions, A.R.S. § 49-282(E) authorizes WQARF funding for other uses. Descriptions of the following uses/programs and their accomplishments are discussed in the following appendices of this report:

EMERGENCY RESPONSE PROGRAM

Pursuant to A.R.S. § 49-282(E)(8), WQARF monies may be used for all reasonable costs incurred for remedial actions taken in response to a release or threat of a release of a hazardous substance or pollutant that presents a threat to public health or the environment. The FY16 accomplishments of the Emergency Response Program are found in Appendix 3.

WELL INSPECTION AND APPROVAL PROGRAM (ADWR)

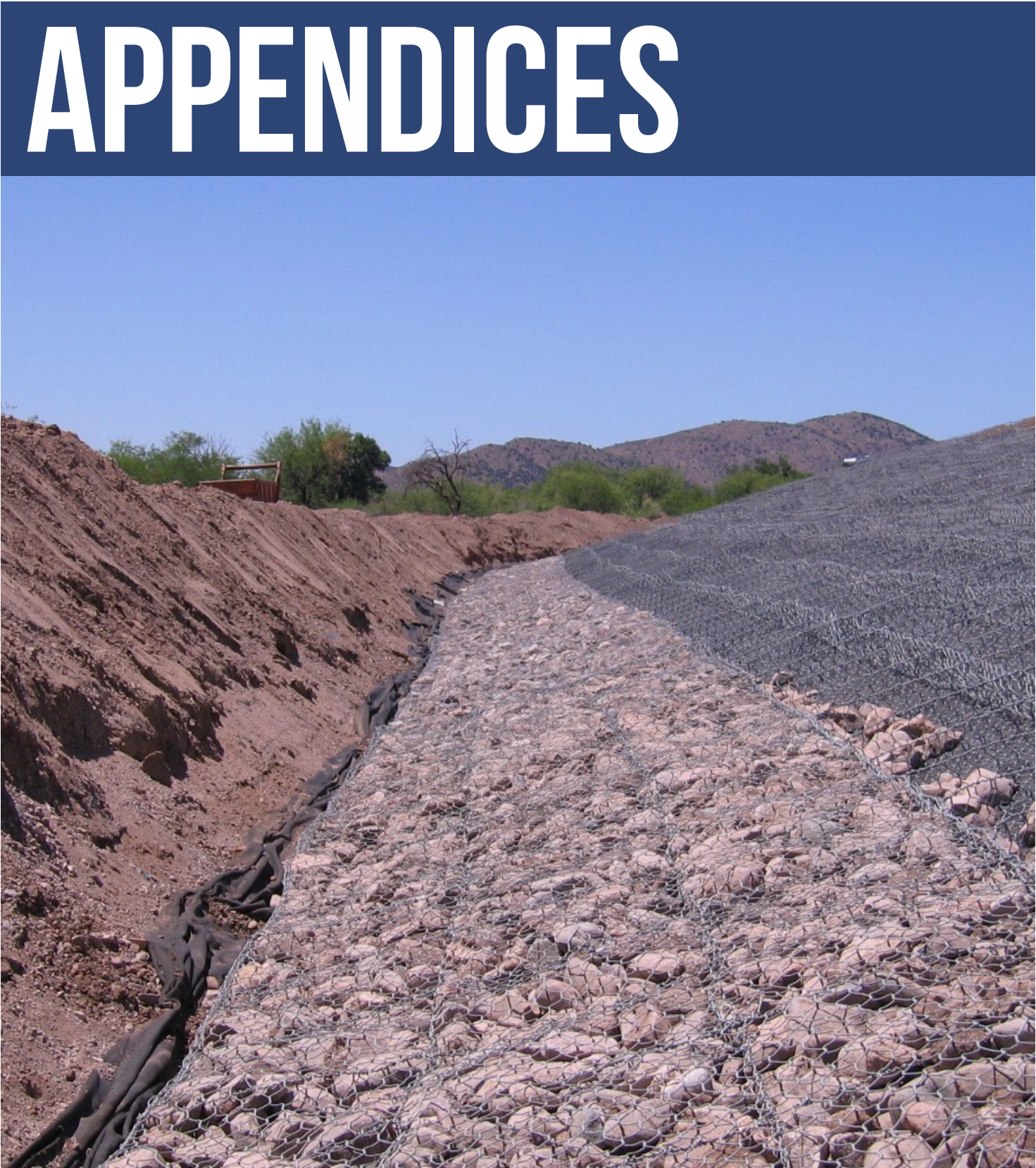
Pursuant to A.R.S. § 282(E)(12), WQARF funds are used to fund the Arizona Department of Water Resources (ADWR) to conduct well inspections and remedial actions, and for the review and approval of well construction design necessary to prevent vertical cross-contamination. The FY16 accomplishments of the Well Inspections and Approval Program are found in Appendix 4.

RISK ASSESSMENT PROGRAM (ADHS)

Pursuant to A.R.S. § 282(E)(15), WQARF funds are used to fund the Arizona Department of Health Services (ADHS) to assess and evaluate the effect of a release or a threatened release of hazardous substances to the public health, welfare or the environment. The FY16 accomplishments of the Risk Assessment Program are found in Appendix 5.

WATER QUALITY ASSESSMENT AND MANAGEMENT PROGRAM

Pursuant to A.R.S. § 49-282(E)(3), WQARF funds are used for the costs of monitoring, assessing, identifying, locating and evaluating the degradation, destruction, loss of or threat to the waters of the state resulting from a release of a hazardous substance to the environment. Pursuant to A.R.S. § 49-282(E)(6), WQARF monies also are used for the costs of the water quality monitoring program described in A.R.S. § 49-225. A description of Water Quality Assessment and Management Program FY16 activities and accomplishments are found in Appendix 6.



APPENDIX 1

WQARF REVENUES
AND EXPENDITURES

BALANCE	FY15 ACTUAL	FY16 PROJECTION	FY16 ACTUAL
Beginning Fund Balance - WQARF & Priority Sites	4,469.1	4,794.3	4,794.3
Beginning Fund Balance - Site Specific Account	1,160.5	887.8	887.8
Subtotal: Funds Available	5,629.6	5,682.1	5,682.1
Prior Year Corporate Income Tax Reversion	0.0	0.0	0.0
Total Balance from Prior Year	5,629.6	5,682.1	5,682.1

REVENUE SUBJECT TO 18M CAP	FY15 ACTUAL	FY16 PROJECTION	FY16 ACTUAL
Corporate Income Tax	7,000.0	7,000.0	7,000.0
FEES:			
Municipal Water (A.R.S. 42-5302)	2,208.6	2,570.0	2,232.9
Fertilizer Registration (A.R.S. 3-272)	31.0	45.0	81.7
HW Facility Registration Fee (A.R.S. 49-929/49-930)	208.8	220.0	157.9
HW Manifest Re-submittal Fee (A.R.S. 49-922.01)	0.8	0.0	1.0
Industrial Discharge Permit Fee (A.R.S. 49-209)	42.0	35.0	35.0
Pesticide Registration (A.R.S. 3-351)	1,069.2	1,000.0	927.4
Quality Assurance Fee (A.R.S. 45-616)	325.9	330.0	
Subtotal: Fees	3,886.3	4,200.0	3,435.9
Total: Revenue Subject to 18M Cap	10,886.3	11,200.0	10,435.9

REVENUE NOT SUBJECT TO 18M CAP	FY15 ACTUAL	FY16 PROJECTION	FY16 ACTUAL
Consent Decrees	36.0	0.0	0.0
Cost Recovery (A.R.S. 49-282)	474.6	0.0	378.4
Responsible Parties	510.6	0.0	378.4
<i>*Includes revenue from prior year packets</i>			
Prospective Purchaser Agreement (A.R.S. 49-285.01)	13.3	0.0	0.0
Interest (A.R.S. 49-282)	52.6	35.7	38.1
Other Income	0.1	0.0	3.6
Other Revenue	66.0	35.7	41.7
Total: Revenue Not Subject to 18M Cap	576.6	35.7	420.1

Beginning Balance and Revenue	20,530.6	16,917.8	16,538.1
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EXPENDITURES	FY15 ACTUAL	FY16 PROJECTION	FY16 ACTUAL
Non-Site Expenditures	5,216.6	5,680.3	6,581.9
Site Expenditures	5,893.8	9,665.6	7,059.8
Transfers Out	300.0	190.0	130.0
General Fund Sweep	0.0	0.0	0.0
Total Expenditures	11,410.4	15,535.9	13,771.7

Note: All figures expressed in thousands.

APPENDIX 1

WQARF EXPENDITURE
STATEMENT

CORE EXPENDITURES	FY17 SPENDING PLAN
WQARF Professional & Support Staff	4,538.5
Professional & Outside - Remedial Projects	50.0
Hydrologic Support & Assessment	643.0
Professional & Outside - Hydrologic Support & Assessment	25.0
Emergency Response	135.0
Attorney General's Office	580.0
PRP Identification/Liability	500.0
Litigation	50.0
Appeals	0.0
Advisory Board	0.0
Rule Development	0.0
Community Involvement/General WQARF	0.0
Core Expenditures	6,521.5

REGISTRY SITES AND PRELIMINARY INVESTIGATIONS (PI)	FY17 SPENDING PLAN
Proposed New Sites	900.0
RI/FS - Site Specific WQARF	1,500.0
Clean up - Site Specific WQARF	1,500.0
ERA	2,300.0
O&M	1,750.0
Community Involvement	50.0
Preliminary Investigations	300.0
Registry Sites & PI	8,300.0

Subtotal: WQARF Program	14,821.0
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TRANSFERS AND DISBURSEMENTS	FY17 SPENDING PLAN
Department of Health Services - Risk Assessment	60.0
Department of Water Resources - Appropriation Transfer Out	130.0
Aid to Municipalities	250.0
Voluntary Program	0.0
Subtotal: Transfers & Disbursements	440.0

Total Disbursements	15,261.5
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APPENDIX 2

WQARF SITE BUDGET

SITE	FY17 PROJECTED BUDGET
7th Street and Arizona Avenue	\$668,000
7th Avenue and Bethany Home Road	\$497,000
16th Street and Camelback	\$53,000
20th Street and Factor Avenue	\$477,000
56th Street and Earll Drive	\$10,000
Broadway Pantano	\$190,000
Central Avenue and Camelback	\$268,000
Cooper Road and Commerce Avenue	\$195,000
ECP - 24th Street and Grand Canal	\$440,000
ECP - 32nd Street and Indian School Road	\$694,000
ECP - 38th Street and Indian School Road	\$191,000
ECP - 40th Street and Indian School Road	\$202,000
ECP - 40th Street and Osborn	\$410,000
ECP - 48th Street and Indian School Road	\$224,000
Estes Landfill	\$31,000
Klondyke Tailings	\$648,000
Miracle Mile	\$480,000
Mountain View Estates	\$17,000
Park Euclid	\$20,000
Payson PCE	\$210,000
Pinal Creek	\$0
Shannon Road/El Camino del Cerro	\$195,000
South Mesa	\$32,000
Tyson Wash	\$47,000
Vulture Mill	\$20,000
WCP - North Canal Plume	\$170,000
WCP - North Plume	\$379,000
WCP - West Osborn Complex	\$145,000
WCP - East Grand Avenue	\$10,000
WCP - West Grand Avenue	\$50,000
Western Avenue Plume	\$67,000
West Van Buren	\$10,000
Proposed New Sites	\$900,000
Site specific community Involvement	\$50,000
Preliminary Investigations	\$300,000
WQARF Sites Budget FY15	\$8,300,000

\$50,000*

* Money reimbursed by Federal Project Unit for cost recovery not included in sites total

APPENDIX 3

EMERGENCY RESPONSE PROGRAM

Pursuant to A.R.S. 49-282(E)(8), WQARF monies may be used for all reasonable costs incurred for remedial actions taken in response to a release or threat of a release of a hazardous substance or pollutant that presents a threat to public health or the environment. The Emergency Response Team (ERT) was notified of approximately 210 reported incidents and handled more than 360 calls/complaints off of the “Spill Report Line”. During the year the ERT participated in several drills and exercises around the state. Additionally, the ERT provided several outside agencies with both on-scene and technical assistance involving incidents around the state.

FY16 ACTIVITIES AND ACCOMPLISHMENTS:

Papago Plating Company, Inc. (Papago)

In cooperation with the City of Phoenix (City), ADEQ ERT personnel assisted in the remediation of a facility that conducted metal plating, polishing and grinding for brass, chrome, silver, nickel and copper. Papago was in violation of multiple Resource Conservation and Recovery Act (RCRA) regulations, including unpermitted treatment and storage of hazardous waste, plating liquid and debris on the floor, stained and degraded concrete, container and tank condition requirements. Additionally, Papago violated a 2009 Consent Judgment with ADEQ that required further groundwater contamination investigations for hexavalent chromium and implementing an environmental management system.

Both the City and ADEQ concluded that the operations and conditions at Papago presented an imminent life, safety and environmental threat to the area, which included a high traffic corridor and light rail system. ADEQ and the City coordinated to secure the site and abate any immediate threats to human health and the environment.

During the response, ERT personnel removed (5) 275-gallon totes of cyanide waste, (1) Cubic Yard Box (CYB) of cyanide salts, (2) 55-gal-lon drums of methylene chloride, (2) CYB of F006 filter cake, (1) 55-gallon drum of alkaline liquid, (11) 275-gallon totes of nickel plating solution, (16) 275-gallon totes of chrome rinse water and (14) 275-gallon totes of acidic plating solution.

City of Chandler Illegal Dumping and Release

At the request of the City of Chandler (City), ADEQ ERT personnel assisted in the remediation of abandoned and leaking 55-gallon con-tainers located in an empty lot. The location of the containers was easily accessible to the public and posed a threat to public health. With no secondary containment, the unknown released material was leaching into the soil and surrounding vegetation. ERT person-nel responded to the complaint and determined the property owner was not responsible for the release. Law enforcement officers attempted to track down the suspect responsible for the incident but were unable to locate the individual. ERT personnel coordinated with clean up contractors to remediate the release.

Unknown Materials found during Arizona Department of Public Safety Raid:

At the request of the Department of Public Safety (DPS), ERT personnel responded to a house that had recently been raided for drugs. During the raid, law enforcement officers noticed several 5-gallon and 55-gallon containers of unknown materials. ERT personnel de-termined the 55-gallon drums contained hazardous waste and coordinated with a clean up contractor to have them removed from the property. The 5-gallon containers held an unknown substance mixed with a restricted narcotic. These containers could only be handled and disposed of by law enforcement officers and a certified treatment, storage and disposal facility. The ERT ensured the removal of the containers and the mitigation of the hazards within were completed prior to the conclusion of the search warrant.

APPENDIX 4

ARIZONA DEPARTMENT OF WATER RESOURCES

WELL INSPECTION AND APPROVAL PROGRAM OBJECTIVES:

- Perform technical review of well applications (Notices of Intent to Drill/Abandon/Deepen/Modify/Replace a Well, Applications to Drill and Operate a Non-Exempt Well, and Groundwater Withdrawal Permits)* and consult with ADEQ regarding new wells, abandonments and modifications to wells near remedial action sites.
- Conduct well inventories to support ADEQ’s WQARF Program as requested.+
- Coordinate with ADEQ regarding database needs in support of ADEQ’s WQARF Program.*
- Establish mechanism to exchange verified well locations and Global Positioning System (GPS) measurements within ADWR’s Well Registry (WELLS55) database.+
- Perform other WQARF and water quality activities as required by statute, rule or Interagency Service Agreement (ISA).

**Required by statute or rule*
+Recommended by Groundwater Clean up Task Force

FY16 ACCOMPLISHMENTS:

Well application and withdrawal permit review:

- Reviewed 3,224 Notices of Intent (NOI) to Drill/Abandon/Deepen/ Modify/Replace a Well for proximity to WQARF/CERCLA or other remedial action sites.
- Performed technical review of 985 NOIs to Drill/Abandon/Deepen/Modify/Replace wells near or within WQARF/CERCLA or other remedial action sites for water quality concerns, potential contaminant plume migration and well construction.
- Reviewed 125 permit applications to withdraw groundwater for proximity to WQARF/CERCLA or other remedial action sites.
- Performed technical review of 13 permit applications near or within WQARF/ CERCLA or other remedial action sites for water quality concerns, potential contaminant plume migration, well construction and well impacts. These permits include Poor Quality Ground Water Withdraw Permits for remediation projects.

No well inventory activities were performed during FY16.

Well application and withdrawal permit review:

- Submitted quarterly reports to ADEQ as required by the ADEQ-ADWR ISA.
- Submitted annual report on ADWR WQARF activities to the governor and legislature for FY16.

FY16 ACTIVITIES:

- ADWR selected the Groundwater Permitting and Wells Section as a Lean Transformation in Government project. The project was initiated in FY2015 and fully implemented in FY2016 with changes in the ADEQ/ADWR collaborative review process for NOIs near remedial action sites. The agencies eliminated an inefficiency by reducing the number of NOIs sent to ADEQ for review by well type. NOIs are now routed directly to ADEQ Project Managers, rather than through section managers, reducing handoffs. These changes help the Groundwater Permitting and Wells Section continue to meet its goal for NOI lead time.
- Continue to prepare quarterly, annual and other reports as specified in the Inter-agency Service Agreement (ISA) for FY16.
- Submit annual report on ADWR WQARF activities to the governor and legislature for FY16.

APPENDIX 4

DEPARTMENT OF WATER RESOURCES: FY16 REVENUES AND EXPENDITURES & FY17 BUDGET FOR THE YEAR ENDED JUNE 30, 2016

FY16 REVENUE AND EXPENDITURES	REMAINING BALANCE
Funds Available	
Beginning Balance, (7/1/15)	472,068.00
Transfer from ADEQ	130,000 .00
Earnings on Investments	3,179 .00
Total – Funds Available	\$605,247.00

Expenditures	
Personal Services	72,828.00
Employee related Expenditures	22,148.00
Professional and Outside Services	
Travel – In State	
Travel – Out of State	
Other Operating Expenditures	360.00
Capital Equipment	
Non-Capital Equipment	
Indirect Costs	42,492.00
Transfers Out – Legislative Actions	

Total – Expenditures	\$137,828.00
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Cash Balance	\$467,419.00
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Less: Outstanding Encumbrances	
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Fund Balance	\$ 467,419.00
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FY17 BUDGET	REMAINING BALANCE
Funds Available	
Beginning Balance, (7/1/16)	472,419
Transfer from ADEQ	130,000
Total – Funds Available	\$597,419

Expenditures	
Personal Services	180,000
Employee related Expenditures	72,000
Travel – In State	2,000
Other Operating Expenditures	17,000
Non-Capital Equipment	0
Indirect Costs	113,400

Total – Expenditures	\$384,400
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Fund Balance (06/30/16 estimate)	\$213,019
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APPENDIX 5

ARIZONA DEPARTMENT OF HEALTH SERVICES

RISK ASSESSMENT PROGRAM OBJECTIVES:

A.R.S. §36-(1691-1694) created the Environmental Toxicology Program to analyze health risks from environmental exposure, provide independent evaluation of strategies to prevent health risks from environmental exposures and provide the ADEQ and others with information to address potential public health risks from environmental exposures.

Arizona Department of Health Services (ADHS) also receives federal funding from the Agency for Toxic Substances and Disease Registry (ATSDR). ADHS follows ATSDRs guidance for conducting public health risk assessments and health consultations. Documents created for CERCLA sites are peer-reviewed and ultimately published by ATSDR. Under a cooperative agreement with ATSDR, ADHS works on other sites such as WQARF sites, technical assistance and health education activities.

ADEQ/ADHS ISA Agreement

ADHS and ADEQ have signed, and annually review an ISA which provides ADHS with \$15,000 minimum quarterly payments and a maximum of \$25,000 per quarter. The additional \$10,000 is dependent on additional work. In FY16, the ISA funded one contracted staff to provide risk assessment services to ADEQ. One contracted staff is currently funded and \$60,000 annually will provide this base availability.

SUMMARY OF SITES:

The following information provides a snapshot regarding projects that the ADHS has worked on for the ISA for risk assessment consultation services with the ADEQ in fiscal year 2016 (July 1, 2015 – June 30, 2016). The period of performance, site location, contaminants of concern (COCs), activities and ADHS recommendation(s) are provided in Table 1.

Program Objectives

- Analyze health risks from environmental exposure.
- Provide independent evaluation of strategies to prevent health risks from environmental exposures.
- Provide ADEQ and others with information to address potential public health risks from environmental exposures.

APPENDIX 5

ARIZONA DEPARTMENT OF HEALTH SERVICES

SUMMARY OF SITES - TABLE 1:

EAST CENTRAL PHOENIX, 32ND ST. AND INDIAN SCHOOL RD. (WQARF SITE) - JULY 1, 2015 – JUNE 30, 2016		
Contaminant(s) of Concern	Activity	Recommendations
Tetrachloroethylene (PCE), trichloroethylene (TCE)	<ul style="list-style-type: none">• Health Consultation Report	In Progress
MERCURY VAPOR IN SCHOOL GYMS - NOVEMBER 5, 2015 – JUNE 30,2016		
Mercury vapor	<ul style="list-style-type: none">• Provide support to SFB and school flooring taskforce• Sampling Protocol Assistance• Risk assessment reports for 54 schools• Public Education – Community Meeting	The mercury vapors are not posing public health concerns at the schools assessed.
HAYDEN/WINKELMAN (EPA SUPERFUND ALTERNATIVE SITE DESIGNATION) - DECEMBER 9, 2015 – JANUARY 25, 2016		
As, Pb	<ul style="list-style-type: none">• Request by ADEQ's Federal Projects Unit to review a human health risk assessment report developed by an ASARCO contractor, as part of the remedial investigation for the site. Comments were submitted to ADEQ. ADEQ then reviewed the work and then submitted combined comments to EPA.	Reevaluate site-specific exposure scenario (exposure duration and exposure frequency).
MOTOROLA 52ND (EPA SUPERFUND SITE) - JANUARY 1, 2015 – JUNE 30, 2016		
TCE, PCE	<ul style="list-style-type: none">• Health Consultation Report	In Progress
SUPERIOR, AZ - JULY 1, 2015 – JUNE 30, 2016		
As	<ul style="list-style-type: none">• SSSRL plan review• Bioaccessibility approach review• Case study plan review• Community Health Profile (In Progress)	Take additional soil samples for probabilistic risk assessment approach. Use EPA's regression line to obtain the estimation of relative bioavailability for arsenic in soil.
KLONDYKE MINE TAILINGS (WQARF SITE) - FEBRUARY 9, 2016 – JUNE 25, 2016		
Sb, As, Cd, Cu, Pb, Mn, Hg, V, Zn	<ul style="list-style-type: none">• Site Work plan review [2/9 – 3/17]• Human Health Risk Assessment Review [6/9 – 6/25]	The residential and recreational exposure scenario assumptions used are consistent with the characteristics of the Klondyke Mine Tailings Site. ADHS encourages providers to follow CDC recommendations for addressing blood lead levels (BLLs) greater than 5 µg/dL.
IRON KING MINE AND HUMBOLDT SMELTER (DEWEY-HUMBOLDT, AZ) (EPA SUPERFUND SITE) - OCTOBER 1, 2013 – JUNE 30, 2016		
As	<ul style="list-style-type: none">• Health Consultation Report on Water	In Progress
ARIZONA WINDSONG WATER COMPANY (SANDERS, AZ) - SEPTEMBER 3, 2015 – FEBRUARY 24, 2016		
Uranium	<ul style="list-style-type: none">• Health Consultation Report• Public Education – Community Meeting	Children less than 12 months old should not consume the water from the water system.
ESTES LANDFILL (WQARF SITE) - OCTOBER 29, 2015 – JANUARY 21, 2016		
Vinyl chloride, cis-1,2-dichloroethene	<ul style="list-style-type: none">• Health Consultation Report	No adverse non-cancer or cancer health effects are expected.
PRIVATE DOMESTIC WELLS IN MESA - DECEMBER 23, 2015 – MARCH 3, 2016		
1,2-dibromo-3-chloropropane (DBCP)	<ul style="list-style-type: none">• Letter Health Consultation Report	No adverse non-cancer or cancer health effects are expected.

APPENDIX 5

ARIZONA DEPARTMENT OF HEALTH SERVICES

SUCCESS STORIES JULY 1, 2015 - JUNE 30, 2016:

Statewide Mercury Flooring Project in Arizona School Districts: A rubber-like polyurethane flooring is a popular choice for school gyms and multipurpose rooms. Some polyurethane flooring manufactured from about 1960 until the 1990s contains mercury. Mercury was used as a catalyst during the installation of the floor.

In August 2015, the Arizona School Facilities Board (SFB) became aware that a certain kind of rubberized flooring (manufactured under the trade name Tartan, as well as other names) typically used in school gymnasiums, multi purpose rooms, cafeterias and possibly in classrooms, has the potential to off-gas mercury vapors during the normal wear and tear of the flooring. The SFB conducted a self-reported survey of school districts to determine whether these types of floors might be installed in Arizona schools. Based on survey responses, SFB dispatched an assessment team to confirm whether the floor is in fact a suspected rubberized floor that could off-gas mercury vapor.

All 220 Arizona school districts responded to the SFB Flooring Survey. In total, 168 suspect floors were reviewed by an assessment team. Of the 168 floors, 54 needed testing.

In November 2015, SFB reached out to the ADHS and ADEQ to request assistance in addressing potential health effects of mercury vapor for people using the school gyms and other school rooms identified to have a rubberized floor. A task force was created among SFB, ADEQ and ADHS to address the issue. The task force created a sampling plan for bulk floor testing and air monitoring, which included a decision matrix to help categorize risk, and which specified that grab air samples be collected at a height that corresponded with the breathing zone of the children attending the school.

The goal of the task force is to keep exposure to mercury vapor as low as possible, preferably less than 1 µg/m³. If the mercury vapor is between 1 and 3 µg/m³, the task force recommended conducting 8-hour sampling to better characterize the overall exposure. The task force agreed on a decision matrix with an action level of 3 µg/m³ (micrograms per cubic meter*) of air. The action level is an indoor air concentration of mercury vapor to prompt public health and environmental officials to implement immediate response action.

The task force asked ADHS to perform risk assessments for the schools tested within 48 hours of receiving the data for the bulk floor samples and air monitoring data. ADHS completed a total of 54 risk assessments. 29 school floors were determined to be Level A (no public health concern associated with the exposure to the flooring material). Twenty-one school floors were determined to be Level B, meaning that the level of mercury vapor detected is less than the level known to produce any immediate symptoms of illness. Exposures to the levels found at Level B schools during normal school days are also unlikely to produce measurable long-term harm. As a best practice recommendation to reduce the exposure to mercury vapor, ADHS suggested turning on the ventilation three to four hours before use of the gym and performing follow-up indoor air monitoring for mercury vapor if the floor condition changed. Additionally, there were 4 school floors tested even though they did not meet the sampling criteria. Tests found levels of mercury vapor associated with these floors were less than 1 µg/m³.

In this statewide assessment, the highest concentration of mercury vapor found using the sampling criteria developed by the task force was 0.81 µg/m³. This value is less than the task force’s preference of <1 µg/m³ and action level of 3 µg/m³. Through conducting timely assessments, this multi-agency collaboration helped inform school districts about the safety of the children and staff in their schools as well as provide a roadmap and tools for any school to use to ensure a healthy environment now and in the future.

As a next step, to ensure confirmation of the identification of all floors of concern in Arizona school districts, for all floors self-reported by the districts as not containing a floor of concern, the SFB will send a floor assessor to verify the response in a new phase. The next phase has already begun to verify that all potential floors have been identified and evaluated for health risks. It is expected that the next phase will identify an additional minimal number of floors to be evaluated, but those assessments are currently being conducted. This should produce a comprehensive database of the floors used in the State, their current conditions and concerns, and whether possible actions need to be taken.

APPENDIX 5

ARIZONA DEPARTMENT OF HEALTH SERVICES

SUCCESS STORIES JULY 1, 2015 - JUNE 30, 2016 (CONT.):

ARIZONA MERCURY FLOORING PROJECT SUMMARY DATA	
Maximum	.81 µg/m³*
Minimum	Below detectable level
# Level A	29
# Level B	21
*Result reported in micrograms per cubic meter	

ADEQ Risk Assessment Brown Bag: ADHS works closely with ADEQ on projects regarding environmental contamination. ADHS was invited by ADEQ to present a brown bag session to the Waste Programs Division staff in March 2016 to discuss the risk assessment process, and explain the different risk assessment documents that can be requested for sites. The Waste Programs Division protects and enhances public health and the environment by reducing the risk associated with waste management, contaminated sites and regulated substances. ADHS frequently works with teams in the Waste Programs Division on Voluntary Remediation Program Sites, Brownfields, WQARF and Superfund Sites. ADEQ can use these documents to assist in decision-making processes on various projects.

ADHS provided an interactive-style presentation on the resources available from the ADHS Environmental Toxicology Program and the types of technical assistance the program can provide. ADEQ staff took away a better understanding of the program and how to request assistance.

Uranium in a Public Water System in Sanders, Arizona: In September 2015, ADEQ requested that ADHS conduct an evaluation of the levels of uranium detected in the water being delivered by the Arizona Windsong Water Company in Sanders, Arizona. The levels of uranium exceeded the EPA’s Maximum Contaminants Level (MCL) and community members had expressed their concerns about the water quality.

Based on the available information from 2003-2015, ADHS determined that the levels of uranium in the water samples were not expected to harm the health of adults or children older than one year old, because the estimated daily exposure doses were below EPA’s reference dose. However, ADHS recommended that the water should not be given to children who were younger than one year old, based on the evaluation of estimated daily exposure doses. An alternative water source was recommended for children younger than 1 year old.

ADHS presented these findings at a public meeting and answered community members’ questions and concerns. ADHS also created and distributed a flyer that discussed the background of the situation, information about exposure routes and results and recommendations from the risk assessment for community members unable to attend the meeting.

APPENDIX 5

ARIZONA DEPARTMENT OF HEALTH SERVICES

FY16 BUDGET AND EXPENDITURES

BUDGET AND EXPENDITURES	TOTAL
Funds Available	
Beginning Balance	\$60,000
FY16 Expenditures	\$36,440
Funds Unused	\$23,560

ITEMIZED EXPENDITURES	BUDGET	TOTAL EXPENDITURE
Contracts	\$32,900	\$24,243
Travel	\$2,000	0
Operations	\$23,989	11,340
Indirect Costs	\$1,111	858
Total – Expenditures	\$60,000	\$36,440

2016 - 2017 BUDGET

CATEGORY	BUDGET
Contracts	\$32,900
Travel	\$4,000
Operations	\$21,097
Indirect Costs	\$2,003
Total – Expenditures	\$60,000

APPENDIX 6

WATER QUALITY ASSESSMENT AND MANAGEMENT PROGRAM

FY16 ACCOMPLISHMENTS:

SURFACE WATER MONITORING:

A.R.S. § 49-225 (Water Quality Monitoring) & § 49-282 RIs

- Integrated Report of the Status of Arizona’s Water Quality: The 45-day public comment period for the 2016 Clean Water Act Assessment began on June 13, 2016.
- Ambient Surface Water Program: FY16 monitoring focused on the on cold water sites (sites located above 5,000 feet).
- 260 stream samples were collected from 71 sites. Sample sites were used to fill in data gaps, monitor intermittent and perennial waters and to monitor sites for reference conditions. The Surface Water Section (SWS) continues to fund a joint cooperative agreement with the U.S. Geological Surveys (USGS) to sample 10 sites on the large rivers in the state from its gauging stations (§49-225).
- Lakes program: 136 lake samples were collected from nine lakes for the ambient lake monitoring program. Sampling of Rainbow Lake continued under the Total Maximum Daily Load (TMDL) program.
- Fish program: 108 fish samples were collected and analyzed for mercury and polychlorinated biphenyls. Fish were collected from 14 lakes and streams throughout Arizona.

TMDL Monitoring and Development:

The Watershed Protection Unit achieved the following in FY16:

- 10 TMDLs completed and approved by EPA (Watson Lake - 4, Granite Creek - 4, Gila River – 2).
- 18 waters removed from the 303(d) list - 12 Gila River, 4 Mule Gulch, 1 Colorado River, 1 Verde.
- Data collection efforts were ongoing for 2 TMDL/Watershed Plan development projects.
- Effectiveness monitoring was conducted for 9 effectiveness monitoring projects.
- 95 volunteers in ADEQ priority watersheds were trained to collect water quality data in support of ADEQ activities. Over 400 additional individuals were trained on basic data collection techniques as part of Sedona’s “Water Week” event.
- Best Management Practice (BMP) effectiveness data were collected for 21 Water Quality Improvement Grant projects.

APPENDIX 6

WATER QUALITY ASSESSMENT AND MANAGEMENT PROGRAM

FY16 ACCOMPLISHMENTS (CONT.):

GROUNDWATER MONITORING:

A.R.S. §49-225 (Water Quality Monitoring)

Ambient Groundwater Monitoring

Field staff is limited to one employee. Despite this, the groundwater program achieved the following in FY16:

- 55 groundwater samples were collected from wells/springs in Arizona. Results of sample analyses were provided to owners.
- The Salt River basin reports has been completed.
- Sampling in the Lower Gila basin is on going.

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