

**WATER QUALITY ASSURANCE
REVOLVING FUND (WQARF)
FY15 ANNUAL REPORT**

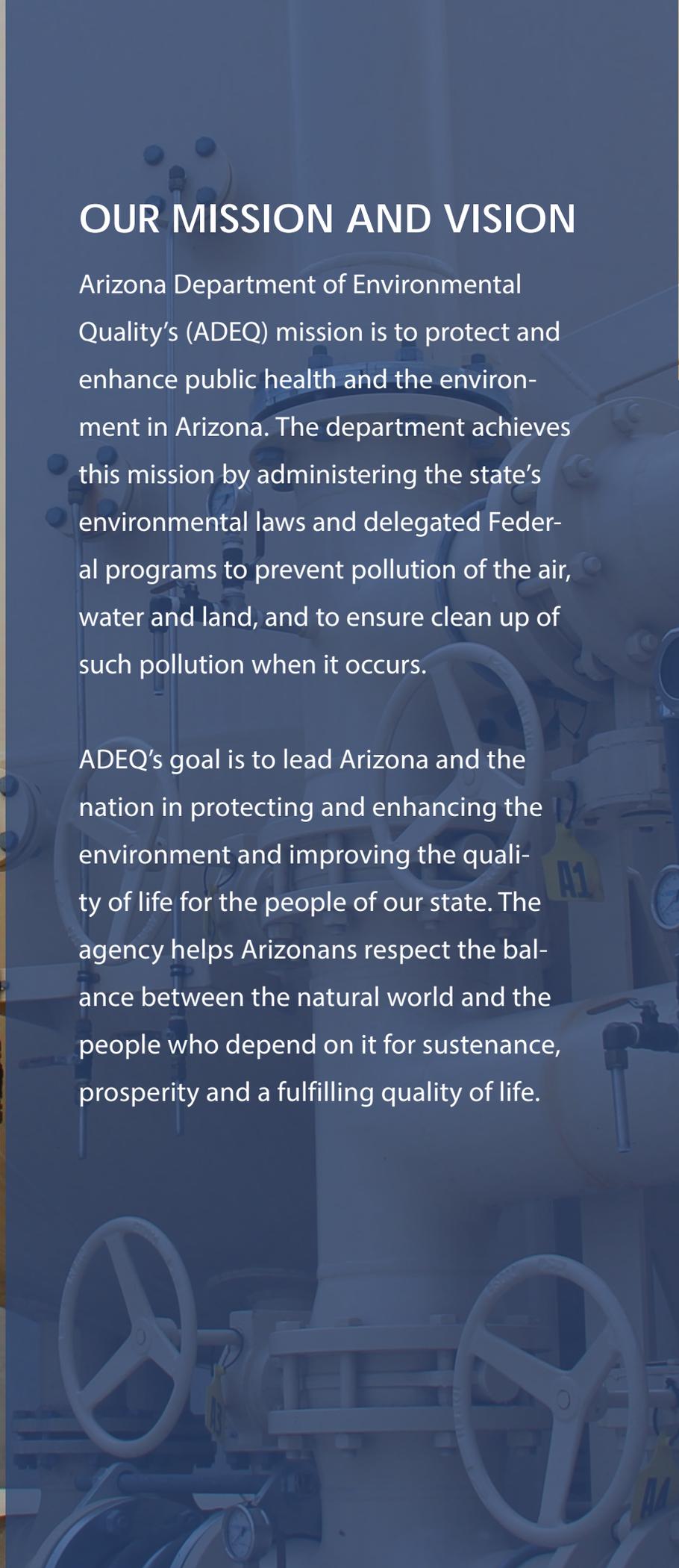




OUR MISSION AND VISION

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.



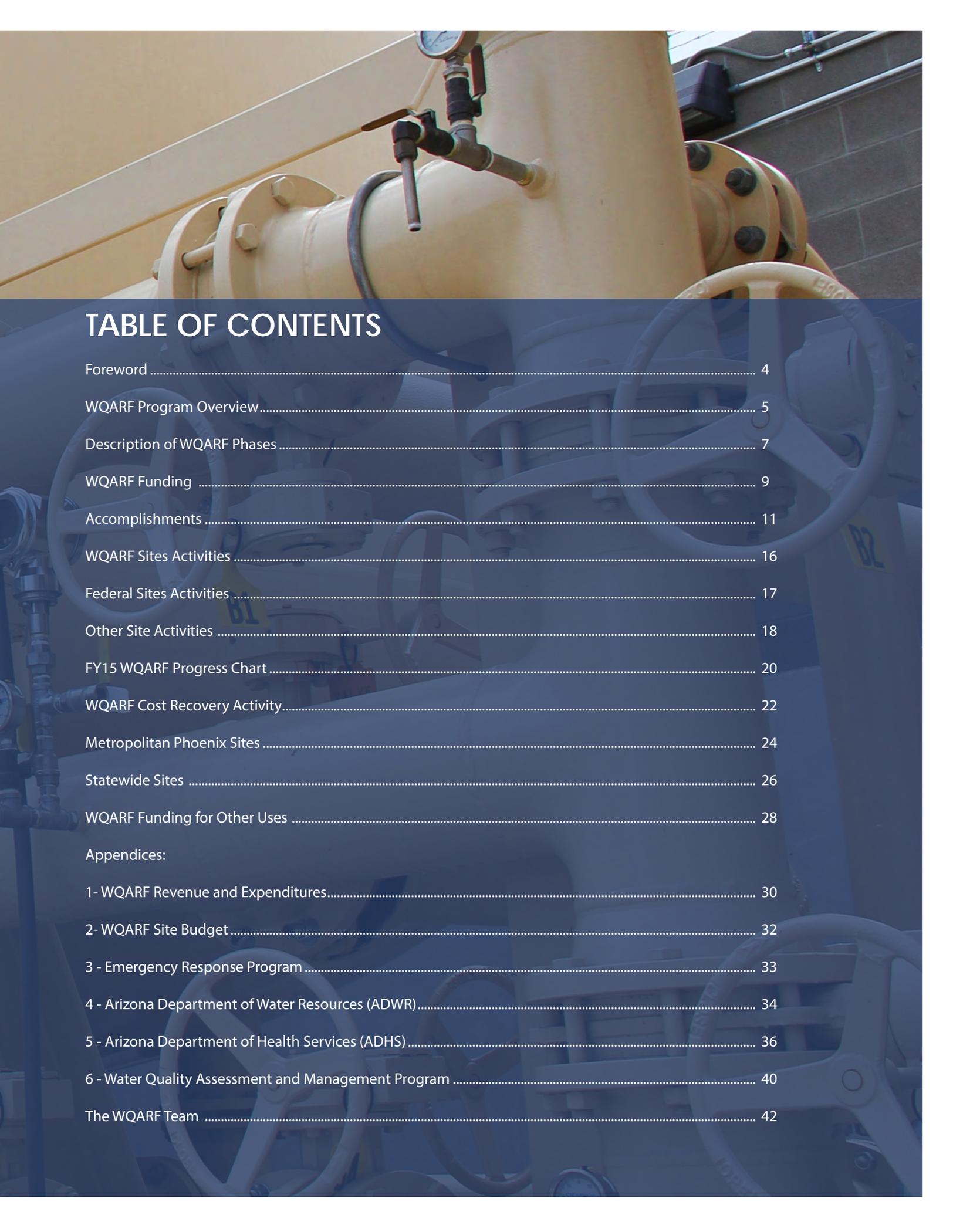


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FOREWORD



As we conclude fiscal year 2015, ADEQ is extremely proud of its progress implementing the Water Quality Assurance Revolving Fund (WQARF) program. Despite repeated funding shortfalls, the WQARF program was able to fund sites where treatment systems were actively operating and where installations of new remediation systems for mass removal were necessary. These systems treated more than 1.6 billion gallons of groundwater, and the soil and groundwater systems combined resulted in the removal of over 1.6 million pounds of hazardous substances from the environment. In Fiscal Year 15, the WQARF Program aggressively moved all Registry sites through the WQARF phases, which achieved 14 milestones: six final Remedial Investigations (RI), four final Feasibility Studies, and four Proposed Remedial Action Plans. All of these accomplishments moved sites closer to a Record of Decision. Moreover, ADEQ saw the first WQARF site to be delisted from the Registry, the East Washington Fluff Site in Phoenix, approach redevelopment in FY15, supporting economic growth in an environmentally responsible way.

These kinds of outcomes directly benefit the quality of life in our state and deliver real value for the citizens of Arizona in the form of a cleaner, healthier environment. This mindset has allowed the Agency to achieve the accomplishments you will read about in this Report. ADEQ has made the conscious choice to deploy Lean as our management philosophy. This management philosophy is consistent with Governor Ducey's own priorities which include, among other initiatives, developing a strong, innovative economy, with safe communities and an efficient, effective, accountable government. ADEQ continues to evaluate the WQARF process to implement improvements to accelerate cleanups, engage responsible parties, and ultimately reduce the overall costs of remediating contaminated sites. In FY15, ADEQ continued its internal process improvement initiatives and was able to address thirty-two Preliminary Investigation sites, at least seven of which will be eligible for listing on the WQARF Registry in the near future. This implies that our job in the WQARF program is not done. More resources will be needed as future concerns develop today.

Although ADEQ is proud of these successes in FY15, there are challenges ahead with maintaining the momentum we've achieved. Session laws have been passed for the last five FYs to reduce ADEQ's allotment of the Corporate Income Tax (CIT) for the WQARF program. Arizona Revised Statutes (A.R.S.) § 49-282(B) mandates that \$15 million is transferred from CIT revenue to the WQARF program. This annual transfer of \$15 million of CIT to WQARF was mandated to offset and fund the state's costs associated with the "orphan" share of cleanup. 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 cleanup costs must not exceed 35 percent. Based on current estimations, the state's "orphan" share is conservatively estimated at more than 50 percent of the total liability. Recently, ADEQ calculated an increase in orphan share from the \$300 million estimated in 1991, to approximately \$429 million. This increase is due to several factors, including the fact that contaminated waters move in the natural environment and contamination spreads over time.

Based on the current liability scheme and funding challenges, it is becoming clear that the WQARF program is not sustainable at its current funding levels. ADEQ continues to look for alternative funding sources and be more efficient and good stewards of the almost 60 percent of funding spent on outside contractors and water resource issues. In addition, we continue to review our own internal processes to implement improvements to the WQARF program as a whole.

Misael Cabrera
Director

PROGRAM OVERVIEW

This annual report was prepared pursuant to SB 1469, Section 36 of Laws 2015, Chapter 8 making appropriations for the different departments of the state, for state institutions and for public schools; providing for certain reporting requirements. SB 1469 requires that a report on the WQARF along with specific site budgets for FY16 be submitted to the Joint Legislative Budget Committee (JLBC) members on or before September 1, 2015.

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 cleanup efforts. Responsible parties are identified, notified and then legal and technical evidence is gathered for recovery of ADEQ's costs and enforcement of cleanup requirements.

The WQARF program was created under the Environmental Quality Act of 1986 to support cleanup 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 cleanup 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 cleanup 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 cleanup need not always result in the achievement of drinking water standards within the aquifer.

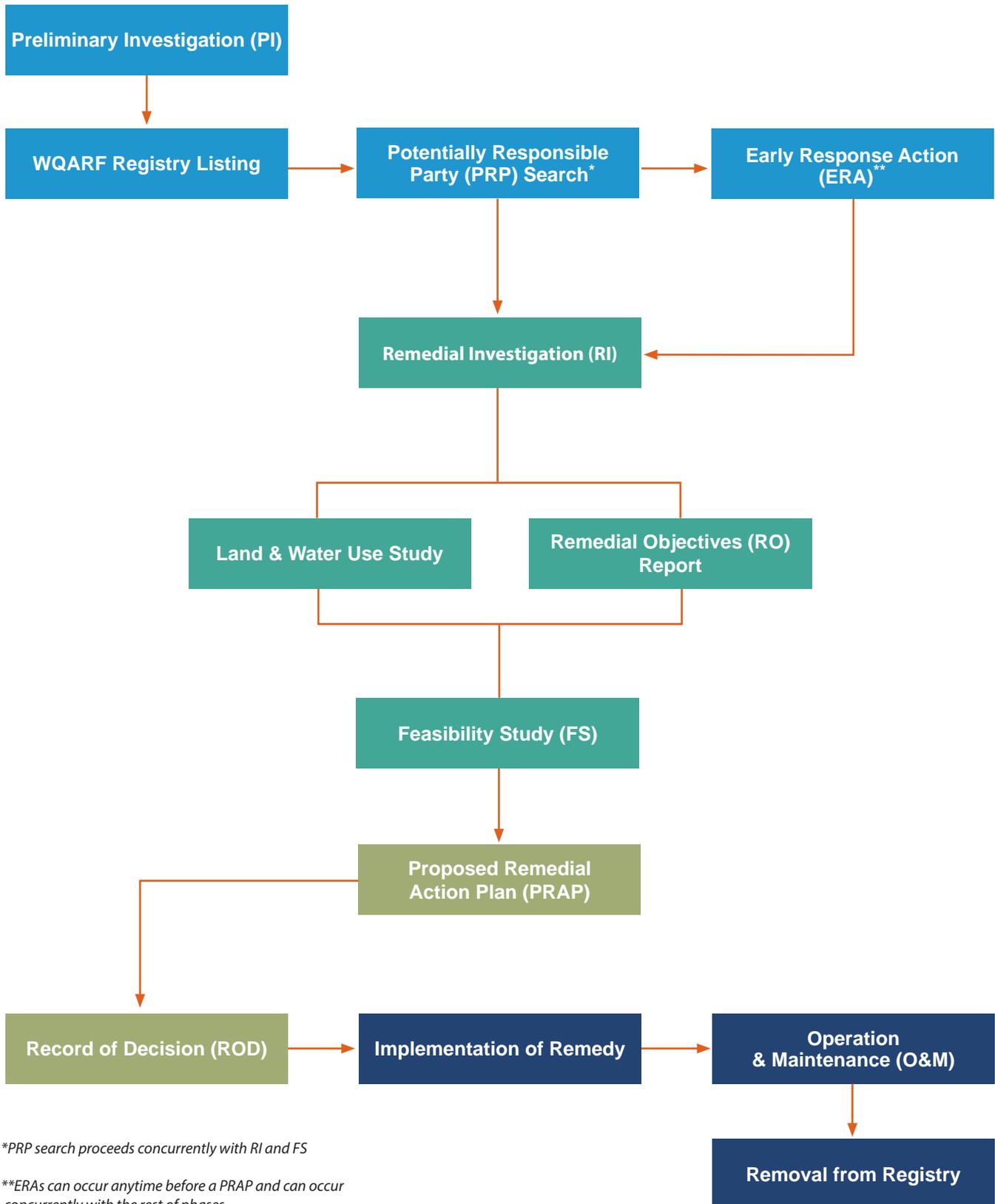
Community Involvement

Enhanced community involvement is required at all stages of the cleanup 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



*PRP search proceeds concurrently with RI and FS

**ERAs can occur anytime before a PRAP and can occur concurrently with the rest of 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 becomes 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 cleanup 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 upon 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 cleanup method for the site.

PROPOSED REMEDIAL ACTION PLAN (PRAP)

After the FS is completed, ADEQ prepares a PRAP to document the proposed cleanup 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 cleanup.

If ADEQ intends to seek recovery of costs from PRPs, notice is provided to these parties of the opportunity to submit an accounting of cleanup 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 cleanup 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 cleanup criteria at a site, or ADEQ determines that no further investigation or cleanup is needed, the site is eligible for delisting from the WQARF Registry.

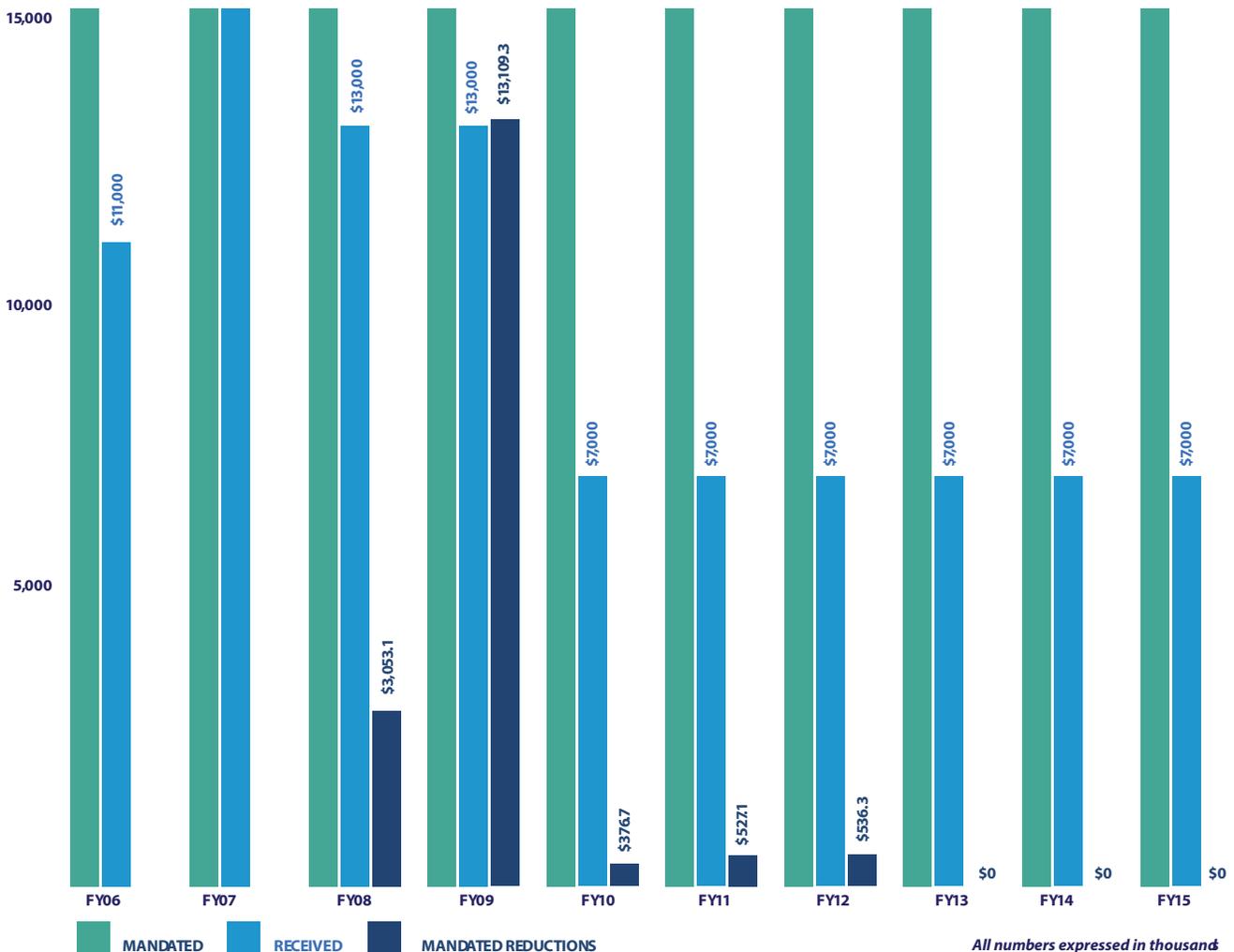
WQARF FUNDING

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 \$56 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 six fiscal years, the WQARF program’s fund balance has been reduced by almost \$50 million through reductions in CIT transfers and legislative fund transfers.

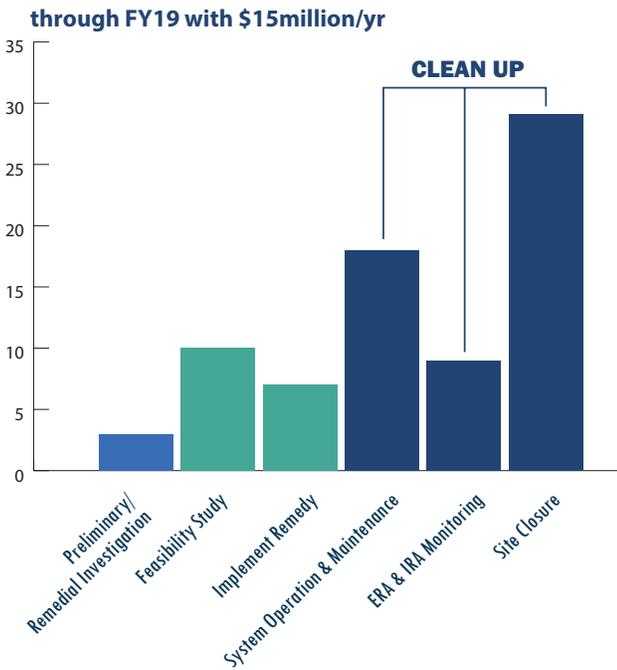
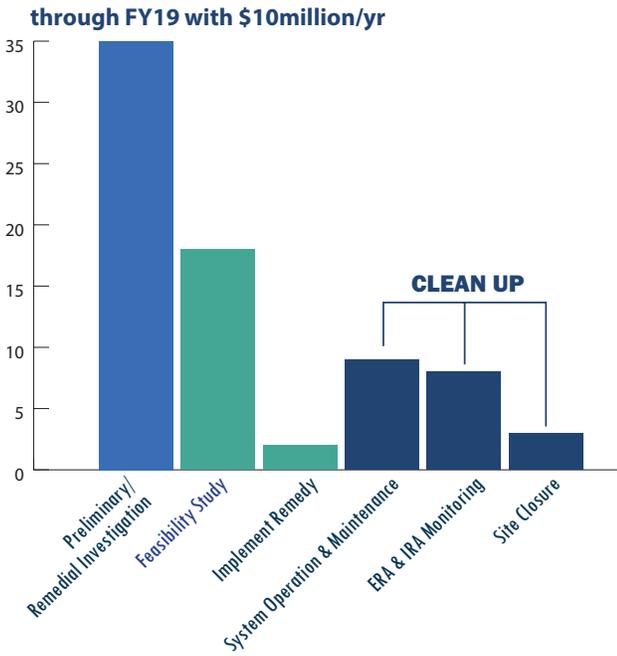
It was calculated in 1991 for the State of Arizona Office of the Auditor General’s Performance Report that for the \$15 million annual funding to be adequate, WQARF’s or the State’s share of the cleanup costs must not exceed 35 percent. Based on current estimations, the State’s “orphan” share is conservatively 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 FY06 – FY15



PROJECTED WQARF PROGRESS



The reduction in funding to the WQARF Program has had a negative impact on all sites and many goals were not achieved. Reductions in funding over the last five FYs have significantly delayed clean up at many WQARF sites and have severely limited activities that can be accomplished including groundwater monitoring, feasibility studies, and the design and construction of remediation systems. In addition, 70 non-registry sites have been identified and have not been fully evaluated and have gone unaddressed. Because contamination associated with several of these non-registry sites is believed to be extensive, in FY15, the WQARF Program performed limited investigations at 32 of the most potentially contaminated sites. However, performing these limited investigations takes funds away from the WQARF Registry sites.

The amount of funds the WQARF Program receives largely dictates the overall process and speed at which the WQARF sites move to the cleanup phase (see following charts). The difference between receiving \$10 million and \$15 million is significant; \$10 million per year for five years maintains the majority of the WQARF sites in the investigation and assessment phase for many years. The majority of funds only can be used to assess the contamination rather than used for site clean up.

The graph also shows that receiving just \$5 million more per year for 5 years moves the majority of the WQARF sites (and non-registry sites) through investigation and assessment and into the cleanup phase. Remediation system installation and long-term monitoring increases, and site closures increase dramatically as well. WQARF Program Revenue and Expenditures for FY15 are presented in Appendix 1. WQARF Site Budget is presented in Appendix 2.

ACCOMPLISHMENTS

In FY15, ADEQ continued to remove mass from soil and groundwater or provided drinking water through ERAs and focused on moving sites through the WQARF phases toward ROD by utilizing process improvements and new procurement procedures to complete milestones. FY15 also saw the redevelopment of the former East Washington Fluff WQARF site; the first WQARF site ever delisted in FY13. Efforts to enhance remedies and evaluate alternative technologies also served to align with the ADEQ's goal of accelerating clean ups. All of these activities serve to meet the ADEQ's mission of protecting human health and the environment while promoting responsible economic development.

Spring boarding on the success of FY14 when WQARF succeeded in completing 12 RIs in one year, more than any previous year since its statutory revision in 1998, in FY15 ADEQ initiated and completed improvements in other phases of the WQARF Program that proved to accelerate clean ups. Specifically, ADEQ conducted process improvement evaluations for the FS, PRAP, and ROD phases as well as the community involvement process, and began developing a systematic method for more efficiently performing PIs. Among other important things, ADEQ determined that in order to move into the RI phase sooner, development of registry listing documents and elements of the community involvement plan needed to be completed during the PI phase. Furthermore, the FS step, which forms the basis for overall remedy selection in the PRAP, was significantly streamlined by creating a boilerplate FS work plan aligned with the guidelines laid out in Statute, so that activities within this phase could focus on beginning the critical FS itself sooner, thereby selecting a proposed remedy faster. Improvements have allowed WQARF Program to significantly reduce the time needed for activities within phases, as well as improve internal and external implementation procedures, all without compromising the technical adequacy of activities.

A key element in the quest to accelerate cleanups was a new procurement process utilized by ADEQ in FY15 called Best Value. The Best Value Procurement methodology was developed by Dr. Dean Kashiwagi of the Performance Based Studies Research Group at Arizona State University. The Best Value methodology allowed ADEQ to utilize the technical capabilities of both internal and external experts in investigation and remediation to collaboratively become more proficient in achieving desired remediation strategies through measurement, accountability and transparency.

In FY15, ADEQ completed 14 milestones including six Final RIs, four Final FSs, and four PRAPs utilizing process improvements and the Best Value methodology. Moreover, ADEQ was able to update and standardize required Community Involvement Plans across the state. Other important milestones achieved during FY15 included positioning four WQARF sites for ROD, as well as an aggressive effort to preform PIs on 32 non-registry sites. The PIs resulted in the potential for at least seven sites to be eligible for WQARF Registry listing.

Several years ago, ADEQ calculated the State's total liability for the WQARF sites at greater than \$300 million. In FY14, ADEQ undertook a project to calculate the total liability for the known WQARF sites. The total potential liability to the State for the WQARF sites has increased nearly 50 percent to \$429 million.

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 in the state of Arizona. Accelerated clean ups through increased efficiencies and full funding also will reduce overall long-term costs and reduce the State's orphan share.

The following is a summary of major FY15 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 FY15, the WQARF Program continued O&M on ERAs that remove contaminant mass that were initiated in prior years, in addition to new ERA program initiatives.

Highway 260 and Johnson Lane (Lakeview)

ADEQ began PI activities to confirm initial detections of trichloroethene (TCE) by sampling selected domestic wells in the area of potential sources in FY15. TCE was confirmed above Aquifer Water Quality Standards (AWQS) in at least two wells. ADEQ has provided bottled water to the residences and is currently preparing to list this site on the WQARF Registry. Additional ERAs are being considered including connections to city water if practicable. Additional wells are scheduled to be sampled in the near future. Additional ERAs may be necessary for soil or groundwater to reduce contaminant concentrations.

State Route 95 and Kiowa Boulevard (Lake Havasu)

ADEQ initiated a PI that confirmed that groundwater contamination was present. A focused FS for an ERA to address vadose zone soils at the source has been completed. ADEQ may place this site on the WQARF Registry, and additional ERAs for soil or groundwater may be necessary.

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 for this site utilizing the infrastructure originally designated for the 48th Street and Indian School Road site. This SVE system is planned for installation and operation in FY16.

EFFORTS TO ACCELERATE CLEANUPS UNDER EXISTING RODs

The WQARF Program is placing new emphasis on accelerating cleanups 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 tests showed that contaminants were not decreasing as anticipated and were escaping the groundwater capture area. 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 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 very near future.

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 cleanup efforts to continue into 2036. In an effort to accelerate the cleanup 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 Enhanced Reductive Dechlorination (ERD).

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. Over the years, the PI list has grown to over 70 sites. Due to decreased WQARF funding, priorities have 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 FY15 the WQARF Program implemented an aggressive campaign to evaluate 32 priority PI sites at one time.

Results of this evaluation indicated:

- 7 sites may be eligible for WQARF Registry listing with 2 sites requiring ERAs. Registry packets are being prepared for executive level review.
- 3 sites require No Further Information or Action and can be removed from further consideration.
- 22 sites are undergoing further investigation before a determination to list on the WQARF Registry can be made.

During the FY15 evaluation, a systematic methodology following A.R.S § 49-287.01 and Arizona Administrative Code (A.A.C.) R-18-16-201 was developed 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 wells, 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 volatile organic compounds (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 23 million gallons of water in FY15. 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 288 million gallons of water were treated and nearly 65 pounds of VOCs were removed by this system in FY15. The treated water is distributed for drinking water use by Metro Water customers.

OPERATION & MAINTENANCE (O&M)

In FY15, 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

REMEDIAL INVESTIGATIONS (RI)

In FY15, ADEQ completed Final RIs for the following WQARF sites:

- 16th Street and Camelback
- Central and Camelback
- Cooper Road and Commerce Avenue
- East Central Phoenix - 38th Street and Indian School Road
- East Central Phoenix - 40th Street and Indian School Road
- Shannon Road/El Camino del Cerro

FEASIBILITY STUDIES (FS)

In FY15, ADEQ completed final FSs for the following WQARF sites:

- Central and Camelback
- West Central Phoenix - North Plume
- 16th Street and Camelback
- West Van Buren

PROPOSED REMEDIAL ACTION PLANS (PRAP)

In FY15, ADEQ completed final PRAPs for the following WQARF sites:

- 7th Avenue and Bethany Home Road
- Estes Landfill
- Western Avenue Plume
- West Central Phoenix - West Osborn Complex (shallow groundwater system)

RECORD OF DECISION (ROD)

No RODs were completed in FY15.

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.

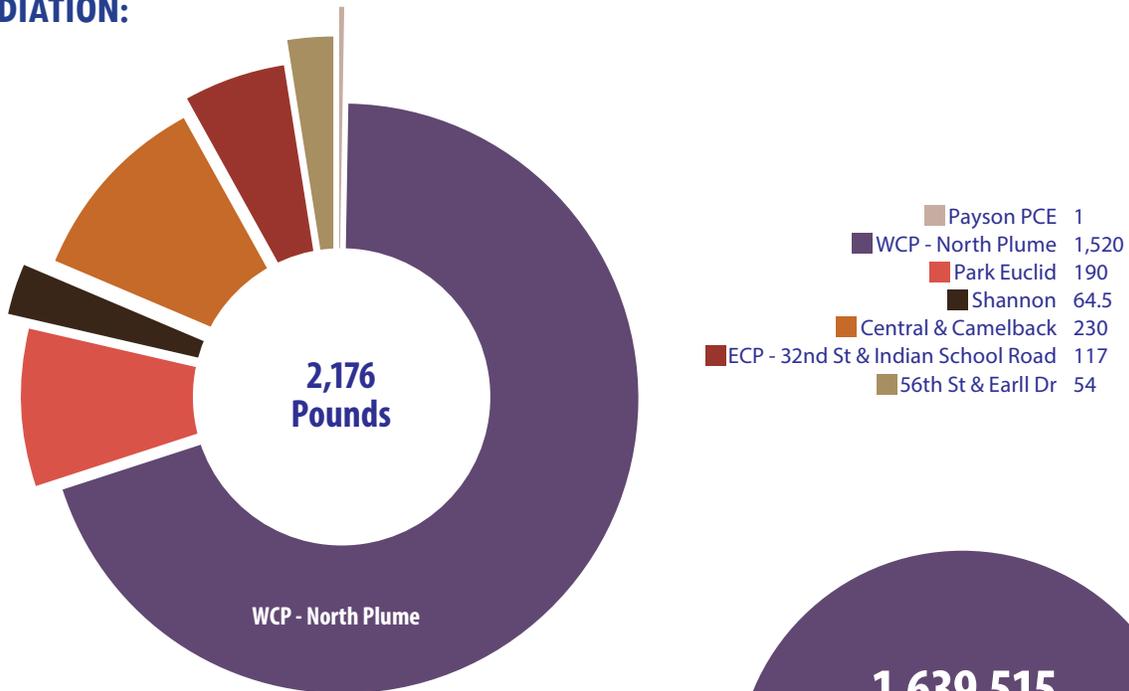
WQARF SITE	WORK CONDUCTED BY
West Van Buren	<i>Air Liquide America Specialty Gases LLC and Prudential Overall Supply</i> under an Amended Consent Order
	<i>Roosevelt Irrigation District and West Van Buren Working Group</i> under a working agreement
56th Street and Earll Drive	<i>Freescale Semiconductor, Inc.</i> under a Consent Order
West Central Phoenix - 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 and 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. In FY15, ADEQ received five packages: City of Phoenix, Town of Payson, City of Goodyear and the Roosevelt Irrigation District(2). ADEQ reimbursed a total amount of \$250,000 divided among the five applications.

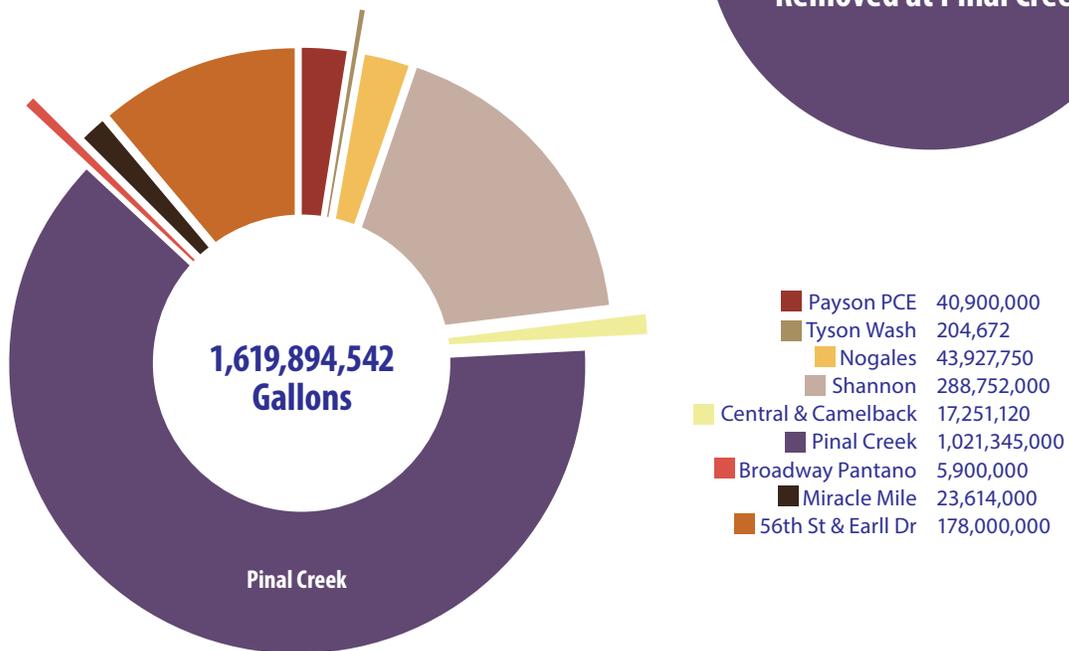
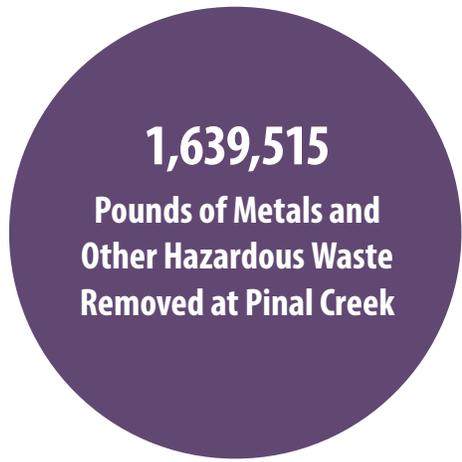
WQARF SITES ACTIVITIES

Summaries are provided of activities and accomplishments for WQARF and PI sites. FY15 revenues and expenditures for the WQARF Program can be found in Appendix 1.

REMEDIATION:



Volatile Organic Compounds (VOCs) Removed

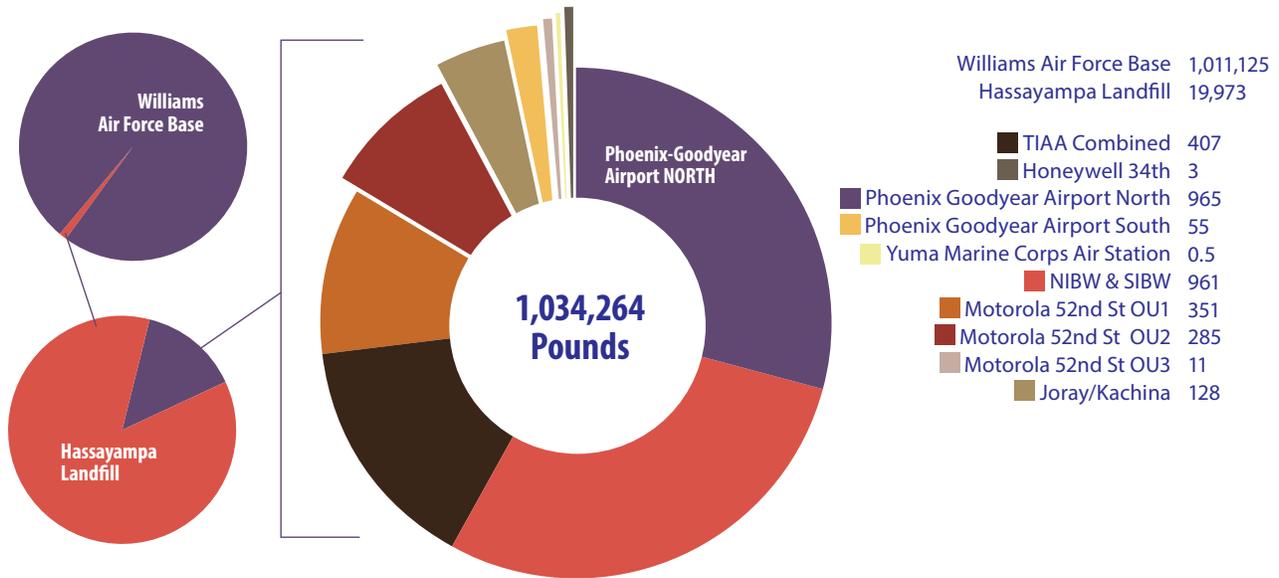


Groundwater Treated

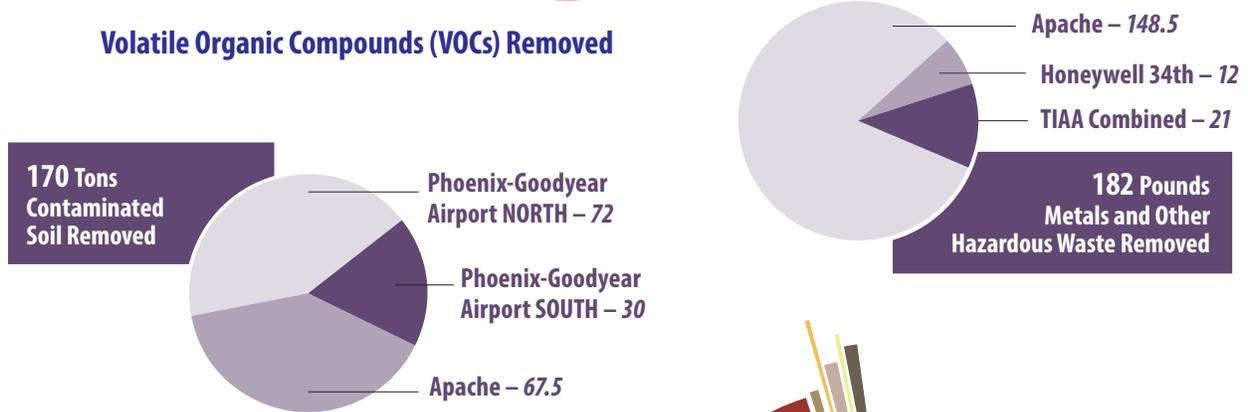
FEDERAL SITES ACTIVITIES

Summaries are provided of activities and accomplishments for Federal sites supported by WQARF.

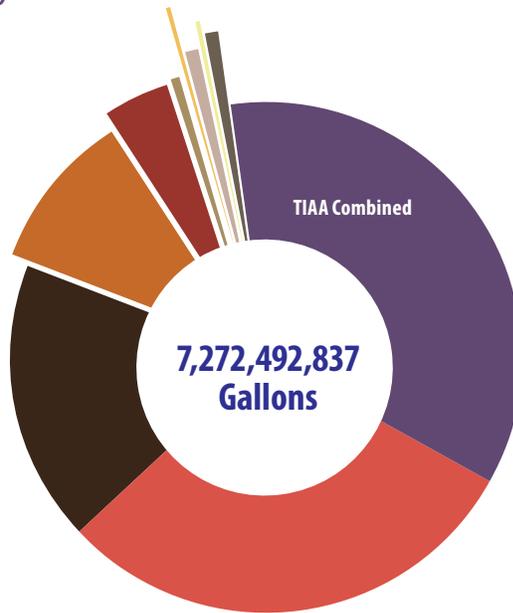
REMEDIATION:



Volatile Organic Compounds (VOCs) Removed



TIAA Combined	2,589,884,942
Apache	32,021,710
Phoenix Goodyear Airport North	1,298,100,000
Phoenix Goodyear Airport South	318,000,000
Yuma Marine Corps Air Station	12,851,994
NIBW & SIBW	2,198,900,000
Williams Air Force Base	46,500,000
Hassayampa Landfill	1,534,191
Motorola 52nd St OU1	44,700,000
Motorola 52nd St OU2	730,000,000



Gallons of Groundwater Treated

OTHER SITE ACTIVITIES

WQARF:

21 GROUNDWATER WELLS INSTALLED

4	7th Street and Arizona Avenue	5	East Central Phoenix - 24th Street and Grand Canal
2	Park Euclid	4	East Central Phoenix - 32nd Street and Indian School
4	Shannon Road/El Camino del Cerro	1	East Central Phoenix - 40th Street & Osborn
1	Cooper and Commerce		

11 SOIL VAPOR WELLS INSTALLED

2	7th Street & Arizona Avenue
4	East Central Phoenix - 24th St & Grand Canal
5	East Central Phoenix - 32nd St & Indian School

3,117 GROUNDWATER SAMPLES COLLECTED

220 SOIL VAPOR SAMPLES COLLECTED

61 SOIL SAMPLES COLLECTED

26 PUBLIC NOTICES (NOT INCLUDING CAB NOTICES)

35 PUBLIC MEETINGS

11 POTENTIALLY RESPONSIBLE PARTIES REPORTS

86 ACCESS AGREEMENTS

4 PROSPECTIVE PURCHASER AGREEMENTS

FEDERAL:

42 GROUNDWATER WELLS INSTALLED

2	TIAA Combined	2	Williams AFB
7	Phoenix Goodyear Airport North	10	Iron King Mine/Humboldt Smelter
6	Phoenix Goodyear Airport South	2	Hassayampa Landfill
7	Yuma Marine Corps Air Station	5	Nelson Engineering
1	Camp Navajo		

26 SOIL VAPOR WELLS INSTALLED

3	TIAA Combined
8	Williams AFB
15	Motorola 52nd St OU3

4,850 GROUNDWATER SAMPLES COLLECTED

634 SOIL VAPOR SAMPLES COLLECTED

7,290 SOIL SAMPLES COLLECTED

170 TONS CONTAMINATED SOIL REMOVED

15 FACT SHEETS PRODUCED

15 PUBLIC NOTICES
(NOT INCLUDING CAB NOTICES)

46 PUBLIC MEETINGS

FY15 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								
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 - PI								
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 - PI								
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 not funded by WQARF - Old WQARF Program

** = Former National Priority List Site, only on going long-term monitoring and upkeep

WQARF Closures:

- EAST WASHINGTON FLUFF
- TONTO AND CHERRY

PRELIMINARY INVESTIGATION CHART

SITES	PRELIMINARY INVESTIGATION	ELIGIBLE FOR REGISTRY LISTING	NO FURTHER INVESTIGATION OR ACTION (NFIA)
5TH AVE & BROADWAY			
7TH AVE & OSBORN RD			
7TH ST & MISSOURI AVE			
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 & POE			
ESCO			
FAITH COOPERAGE			
FREDONIA REFINERY			
GARIGAN DROSS			
HWY 260 & JOHNSON LANE			
HWY 260 & MAIN			
LEHI AREA			
MARATHON STEEL			
STATE ROUTE 95 & KIOWA BLVD			
MESA DBCP			
MILLER VALLEY RD & HILLSIDE AVE			
NOGALES GRAND AVE			
RAYMOND STREET			
SHULTZ AUTO SHREDDER FLUFF			
SOUTHERN PACIFIC & BARNES			
SOUTHWEST PLATING			
SURPRISE DBCP			
URBAN MESA PCE & TCE			
WILLCOX TCE & 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	53		\$ 387,567.93*
Motorola 56th Street Plant	4	6,836.16	
Phoenix Goodyear Airport	2	51,256.13	
19th Avenue Landfill	1	17,640.06	
West Van Buren- Air Liquide	2	1,687.34	
Asarco-Hayden	4	35,796.15	
West Van Buren - RID	3	6,515.42	
Honeywell Area 13	4	5,216.12	
D-Velco	1	1,080.00	
Motorola 52nd Street	15	175,095.23	
North Indian Bend Wash	1	39,345.06	
Phoenix Goodyear Airport - South	3	1,567.38	
Pinal Creek	2	32,177.78	
Inspiration Mine	1	690.56	
Copper Cities Unit	2	1,191.76	
Miami Tailings Reprocessing	2	293.90	
West Van Buren Work Group	4	10,169.60	
West Van Buren - Prudential	2	1,009.28	
Payments Received	42		\$281,220.06

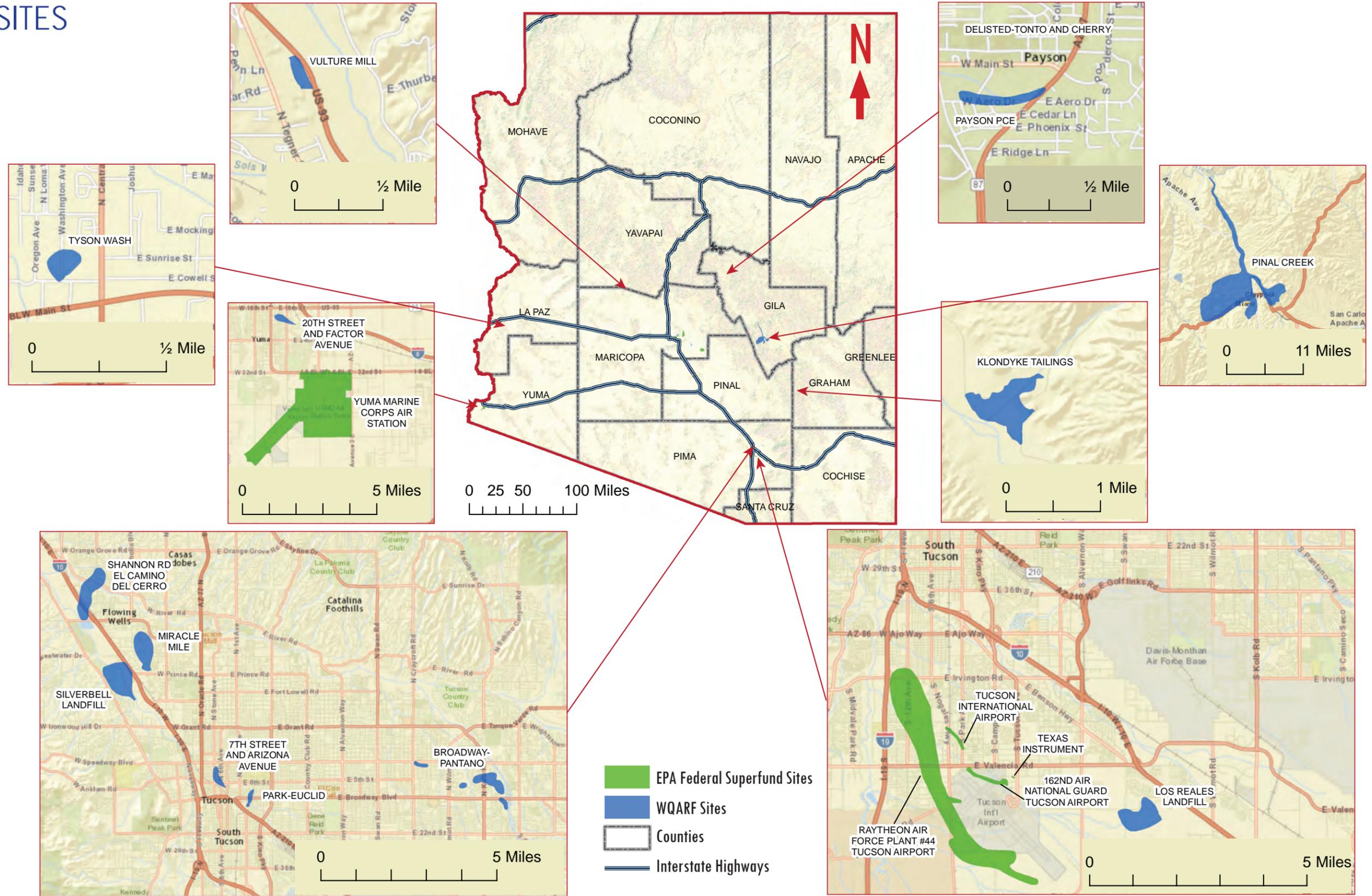
Notes:

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

FIGURES



STATEWIDE SITES



Disclaimer: plumes are estimated and subject to change over time.

DJGrose: 7/10/2014

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 FY15 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 FY15 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 FY15 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 FY15 activities and accomplishments are found in Appendix 6.

APPENDICES



APPENDIX 1

WQARF REVENUES AND EXPENDITURES

BALANCE	FY14 ACTUAL	FY15 PROJECTION	FY15 ACTUAL
Beginning Fund Balance - WQARF & Priority Sites	7,830.9	4,741.8	4,469.1
Beginning Fund Balance - Site Specific Account	1,165.2	887.8	1,160.5
Subtotal: Funds Available	8,996.1	5,629.6	5,629.6
Prior Year Corporate Income Tax Reversion	0.0	0.0	0.0
Total Balance from Prior Year	8,996.1	5,629.6	5,629.6

REVENUE SUBJECT TO 18M CAP	FY14 ACTUAL	FY15 PROJECTION	FY15 ACTUAL
Corporate Income Tax	7,000.0	7,000.0	7,000.0
FEES:			
Municipal Water (A.R.S. 42-5302)	2,428.1	2,400.1	2,208.6
Fertilizer Registration (A.R.S. 3-272)	60.7	25.4	31.0
HW Facility Registration Fee (A.R.S. 49-929/49-930)	128.2	197.1	208.8
HW Manifest Re-submittal Fee (A.R.S. 49-922.01)	0.0	0.0	0.8
Industrial Discharge Permit Fee (A.R.S. 49-209)	30.3	39.8	42.0
Pesticide Registration (A.R.S. 3-351)	909.5	821.8	1,069.2
Quality Assurance Fee (A.R.S. 45-616)	327.5	302.6	325.9
Subtotal: Fees	3,884.3	3,787.4	3,886.3
Total: Revenue Subject to 18M Cap	10,884.3	10,787.4	10,886.3

REVENUE NOT SUBJECT TO 18M CAP	FY14 ACTUAL	FY15 PROJECTION	FY15 ACTUAL
Consent Decrees	75.0	0.0	36.0
Cost Recovery (A.R.S. 49-282)	452.3	0.0	474.6*
Responsible Parties	527.3	0.0	510.6
<i>*Includes revenue from prior year packets</i>			
Prospective Purchaser Agreement (A.R.S. 49-285.01)	17.2	13.3	13.3
Interest (A.R.S. 49-282)	62.7	61.5	52.6
Other Income	43.0	0.0	0.1
Other Revenue	122.9	74.8	66.0
Total: Revenue Not Subject to 18M Cap	650.2	74.8	576.6

Beginning Balance and Revenue	20,530.6	16,491.8	17,092.5
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EXPENDITURES	FY14 ACTUAL	FY15 PROJECTION	FY15 ACTUAL
Non-Site Expenditures	6,712.1	6,925.0	5,216.6
Site Expenditures	7,780.9	7,850.0	5,893.8
Transfers Out	300.0	300.0	300.0
General Fund Sweep	108.1	0.0	0.0
Total Expenditures	14,901.1	15,075.0	11,410.4

Note: All figures expressed in thousands.

APPENDIX 1

WQARF EXPENDITURE STATEMENT

CORE EXPENDITURES	FY16 SPENDING PLAN
WQARF Professional & Support Staff	3,510.6
Professional & Outside - Remedial Projects	150.0
Hydrologic Support & Assessment	735.3
Professional & Outside - Hydrologic Support & Assessment	0
Emergency Response	31.4
Attorney General's Office	633.0
PRP Identification/Liability	350.0
Litigation	20.0
Appeals	0.0
Advisory Board	0.0
Rule Development	0.0
Community Involvement/General WQARF	0.0
Core Expenditures	5,430.3

REGISTRY SITES AND PRELIMINARY INVESTIGATIONS (PI)	FY16 SPENDING PLAN
Proposed New Sites	0.0
RI/FS - Site Specific WQARF	2,850.0
Cleanup - Site Specific WQARF	1,665.6
ERA	1,500.0
O&M	2,250.0
Community Involvement	50.0
Preliminary Investigations	500.0
Registry Sites & PI	8,815.6

Subtotal: WQARF Program	14,465.0
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TRANSFERS AND DISBURSEMENTS	FY16 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
Prior Year Adjustments	850.0
Subtotal: Transfers & Disbursements	1,290.0

Total Disbursements	15,535.9
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APPENDIX 2

WQARF SITE BUDGET

WQARF is funded in part from an annual \$15 million transfer from the CIT, as stipulated in A.R.S. § 49-282. In addition, WQARF generates other revenue from various license and registration fees.

Some types of revenue, including cost recovery collections and interest, are not included in this calculation. Therefore, actual program revenues can exceed \$18 million in a year depending on how much is deposited from these other sources.

In FY10, the transfer of CIT revenues to WQARF was reduced from \$15 million to \$7 million and remained at that level through FY15.

SITE	FY16 PROJECTED BUDGET
7th Street and Arizona Avenue	\$150,000
7th Avenue and Bethany Home Road	\$525,000
16th Street and Camelback	\$75,000
20th Street and Factor Avenue	\$50,000
56th Street and Earll Drive	\$10,000
Broadway Pantano	\$275,000
Central Avenue and Camelback	\$200,000
Cooper Road and Commerce Avenue	\$150,000
ECP - 24th Street and Grand Canal	\$650,000
ECP - 32nd Street and Indian School Road	\$375,000
ECP - 38th Street and Indian School Road	\$125,000
ECP - 40th Street and Indian School Road	\$125,000
ECP - 40th Street and Osborn	\$125,000
ECP - 48th Street and Indian School Road	\$50,000
Estes Landfill	\$20,000
Klondyke Tailings	\$325,000
Miracle Mile	\$500,000
Mountain View Estates	\$20,000
Park Euclid	\$20,000
Payson PCE	\$250,000
Pinal Creek	\$0
Shannon Road/El Camino del Cerro	\$450,000
South Mesa	\$50,000
Tyson Wash	\$250,000
Vulture Mill	\$20,000
WCP - North Canal Plume	\$825,000
WCP - North Plume	\$850,000
WCP - West Osborn Complex	\$1,575,000
WCP - East Grand Avenue	\$10,000
WCP - West Grand Avenue	\$25,000
Western Avenue Plume	\$225,000
West Van Buren	\$25,000
Proposed New Sites	\$0
Site specific community Involvement	\$50,000
Preliminary Investigations	\$440,600
WQARF Sites Budget FY15	\$8,815,600

\$150,000*

* 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 cost 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 Unit (ERU) was notified of 174 reported incidents and handled more than 310 calls/complaints off of the "Spill Report Line". During the year, the ERU took part in several drills and exercises around the state. The ERU also provided several outside agencies with both on-scene and technical assistance involving incidents around the state.

FY15 ACTIVITIES AND ACCOMPLISHMENTS:

Unknown Materials Discovered on U.S. Forest Service Lands:

At the request of Tonto National Forest Officials, ERU personnel responded to the Cave Creek Ranger Station to investigate the discovery of several containers of unknown liquids. These containers were found by law enforcement officers during an investigation of a suspected drug lab that was being operated on Forest Service lands. During this response, ERU personnel were able to determine that the containers were filled with water and were not a threat to onsite investigators or to the environment. No evidence of a drug lab was discovered during this incident.

San Carlos Hospital Evacuation:

At the request of tribal officials, ERU personnel responded to the San Carlos Apache hospital located on the community of San Carlos. This request came after several people at the hospital began to complain about lung irritation and difficulty breathing. At the time of the request, an evacuation of the hospital was underway and the facility was being sealed off. Response personnel from Arizona Department of Public Service (AZDPS) and ADEQ worked with Tribal fire, police and local Emergency Medical Services (EMS) units to determine the cause of the illness. During this incident approximately 20 people were sent to other area medical facilities for treatment and the cause of their illness was not determined.

West Valley Mulch Fire

At the request of Maricopa County, ERU personnel responded to a large green waste/mulch fire that was burning in the west valley. The fire was contained to a 25-acre borrow pit which contained hundreds of tons of green waste like materials. Smoke from this fire was causing a huge impact on several communities in the west valley including Glendale, Goodyear, Sun City and Luke Air Force Base. At times the smoke was so thick that flight operations at Luke Air Force Base were suspended and flight line personnel were ordered to stay inside for health reasons. The owner of the mulch facility was able to work with local fire department and a plain to extinguish the fire was put into play. A ditch was dug and millions of gallons of irrigation water was diverted into the pit and over the course of several days the fire was drown as water covered the burning materials.

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 Cleanup Task Force

FY15 ACCOMPLISHMENTS:

Well application and withdrawal permit review:

- Reviewed 2,970 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 613 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 151 permit applications to withdraw groundwater for proximity to WQARF/CERCLA or other remedial action sites.
- Performed technical review of 16 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 FY15.

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 FY15.

FY16 ACTIVITIES:

- Continue technical review of NOI to Drill/Abandon/Deepen/Modify/Replace a well for water quality concerns and for compliance with applicable well construction requirements, or site-specific special well construction requirements, to prevent vertical cross-contamination between aquifers.
- Continue technical review of Applications to Drill and Operate a Non-Exempt Well and Groundwater Withdrawal Permit Applications for potential impacts to other wells of record from potential contaminant plume migration, and for compliance with applicable well construction requirements to prevent vertical cross-contamination between aquifers.
- Continue to coordinate with ADEQ regarding database needs in support of the WQARF program.
- Continue to prepare quarterly, annual and other reports as specified in the Inter-agency Service Agreement for FY16.
- Submit annual report on ADWR WQARF activities to the governor and legislature for FY16.

APPENDIX 4

DEPARTMENT OF WATER RESOURCES: FY15 REVENUES AND EXPENDITURES & FY16 BUDGET FOR THE YEAR ENDED JUNE 30, 2015

FY15 REVENUE AND EXPENDITURES	REMAINING BALANCE
Funds Available	
Beginning Balance, (7/1/14)	331,778.94
Transfer from ADEQ	300,000.00
Earnings on Investments	1,687.91
Total – Funds Available	\$633,466.85
Expenditures	
Personal Services	71,400.16
Employee related Expenditures	22,169.41
Professional and Outside Services	
Travel – In State	111.60
Travel – Out of State	
Other Operating Expenditures	9,065.00
Capital Equipment	
Indirect Costs	58,652.34
Transfers Out – Legislative Actions	
Total – Expenditures	\$161,398.51
Cash Balance	\$472,068.34
Less: Outstanding Encumbrances	
Fund Balance	\$472,068.34

FY16 BUDGET	REMAINING BALANCE
Funds Available	
Beginning Balance, (7/1/15)	472,068
Transfer from ADEQ	130,000
Total – Funds Available	\$602,068
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
Fund Balance (06/30/16 estimate)	\$217,668

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.

ADHS also receives federal funding from the Agency for Toxic Substances and Disease Registry (ATSDR). ADHS follows ATSDR'S 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 FY15, 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.

HEALTH CONSULTATIONS AND LETTER HEALTH CONSULTATIONS:

Roosevelt Irrigation District – January 8, 2015: This health consultation was written in response to a request from interested parties to evaluate whether there are potential human health risks from exposure to water for domestic use and residential irrigation in the Roosevelt Irrigation District (RID). The report updated 2013 data from monitoring well RID #84, which was the subject of a 1992 report prepared by ADHS due to concerns of the plume contaminated with volatile organic compounds (VOCs) reaching a production well. It also reviewed 29 RID wells to determine whether concentrations of contaminants are at or above levels of public health concern. Since RID water is currently used for irrigation only, a risk assessment was conducted based on ingestion, inhalation, and dermal contact from recreational use and gardening.

- ADHS concluded that exposure to trichloroethene (TCE), tetrachloroethene (PCE) and 1,1-dichloroethene (1,1-DCE) in RID #84 would not be expected to harm people's health under typical conditions of household water use.
- ADHS concluded that ingestion exposure to TCE and PCE in groundwater and canal water in RID sampling area is not expected to harm people's health.
- The calculated cancer risk was below Environmental Protection Agency's (EPA) target risk range.
- ADHS recommended continuing to monitor levels of VOCs at RID #84, groundwater wells, and canal water to ensure that ingestion, inhalation, and dermal contact with the water does not occur at levels that exceed levels protective of public health.

APPENDIX 5

ARIZONA DEPARTMENT OF HEALTH SERVICES

HEALTH CONSULTATIONS AND LETTER HEALTH CONSULTATIONS (CONT.):

1,4-Dioxane Metro Water – September 29, 2014: This health consultation was written in response to a request from the ADEQ to understand whether there is a public health concern from the levels of 1,4-dioxane found in groundwater used for drinking and domestic purposes.

The Metro Water District provides water utility to approximately 70,000 customers in northwest, northeast and southwest metropolitan Tucson. A number of the wells operated by Metro Water were found to contain levels of 1,4-dioxane. Metro Water collected quarterly samples for 1,4-dioxane between October 2013 and July 2014. ADEQ has asked the ADHS to analyze the data and determine the health risks associated with these concentrations of 1,4-dioxane.

- ADHS concluded the non-cancer health risk from these concentrations of 1,4-dioxane can be assumed to be negligible for children and adults.
- ADHS determined the theoretical cancer risk is characterized as very low for all cases, and is within the levels EPA determined to be protective of public health.
- ADHS recommends the continuation of quarterly 1,4-dioxane sampling to ensure that concentrations do not exceed levels protective of public health.

1,4-Dioxane Pima County – December 1, 2014: This health consultation was written in response to a request from the Pima County Health Department and the Pima County Department of Environmental Quality (PDEQ) to evaluate human health risks from exposure to 1,4-dioxane in groundwater from a privately owned drinking water well (known as PW-13) that supplies water to a public drinking water supply in the Tucson area. PW-13 is one of seven wells currently sampled annually as part of the Private Well Monitoring Program, which provides well owners with ongoing information about the water quality of their wells. Sampling results at PW-13 have shown concentrations of 1,4-dioxane above EPA's Regional Screening Level, which is 0.35 micrograms per liter (µg/L). The Pima County Health Department and PDEQ have asked the ADHS to analyze the data from PW-13 and determine whether there are any potential health risks associated with drinking water with these concentrations of 1,4-dioxane.

- ADHS concluded the following health risks:
 1. Non-cancer: 1,4-dioxane in the groundwater from well PW-13 is not expected to harm people's health, because the levels are below the screening value (EMEG), which is protective of human health, and
 2. Cancer: the estimated cancer risk was 2.70×10^{-6} and represents a possible 2-3 excess cancer cases in a population of 1,000,000 over a lifetime. EPA has established a target risk range of 1 in 1,000,000 to 10,000 (10^{-6} to 10^{-4}) for hazardous waste sites. The estimated cancer risk did not exceed EPA's target risk range, and can be qualitatively characterized as very low.
- Although residents may be exposed to 1,4-dioxane by ingestion, inhalation, and skin contact, the detected concentrations of 1,4-dioxane were below the health screening values for acute and noncancerous adverse health effects.
- ADHS recommends continuing to monitor levels of 1,4-dioxane in well PW-13 to ensure that concentrations of 1,4-dioxane in drinking water do not exceed levels protective of public health.

Family with Lead Exposure from Bullet Making – Sept. 22, 2014, update Nov. 21, 2014: ADHS' Childhood Lead Poisoning Prevention Program (CLPPP) conducted a lead investigation at a private residence due to elevated blood lead levels identified children living at the residence. CLPPP requested ADHS to analyze the results from environmental samples and determine potential health risks associated with lead exposure at this residence. A number of soil samples, a paint chip sample, surface dust wipe samples, and water samples were collected at a private residence. ADHS found that the levels of lead were of public health concern, and made recommendations to the family to reduce exposures.

APPENDIX 5

ARIZONA DEPARTMENT OF HEALTH SERVICES

EXPOSURE INVESTIGATIONS:

ASARCO Hayden: The EPA requested ATSDR to investigate potential exposures to lead and arsenic in Hayden and Winkelman, Arizona. Air quality in the area was in non-attainment for lead. ADHS assisted ATSDR in the planning and execution of the exposure investigation. Eighty-three residents participated in the event and ATSDR is currently analyzing the results.

TECHNICAL ASSISTANCE:

Fish Advisory – Feb. 9, 2015: ADHS reviewed a fish advisory PowerPoint and PDF, and offered questions and comments. ADHS offered general suggestions to improve readability, suggested emphasis on important health topics, and requested clarification on technical aspects.

1,4-Dioxane – Sept. 24, 2014: ADHS reviewed groundwater data for Pima County Arizona. 1,4-dioxane had not been previously measured in the groundwater, and Pima County wanted to know if the levels measured were a public health concern. Pima County had some additional questions about the risk calculations in the health consultations, and ADHS responded with an email.

NAAQ Standards Review – Feb. 20, 2015: ADHS reviewed NAAQ Standards for Ozone. ADHS had general suggestions to improve readability and requested clarification on technical aspects.

Asbestos and Smoking – July 28, 2014: The Director of ADHS requested an article to be written about how exposure to asbestos and smoking causes lung cancer. The article outlined where asbestos can be found, the health risks and how to avoid exposure. In addition, it explained that smoking can increase the risk of lung cancer, especially when combined with asbestos exposure. This article was published on the Director's Blog, which is available to the public to view on the ADHS website.

CLPPP Lead Cleanup Value – Jan. 6, 2015: A family had been making bullets in the back yard, and children in the home were lead poisoned. ADHS worked with the family to determine a safe site-specific cleanup level.

Salero Mine - June 17, 2014: The ADHS reviewed the document entitled: Site-specific Risk-based Screening Levels and Soil Sampling at Salero Mine Site. This technical memorandum is prepared by Tetra Tech, Inc., on behalf of the ASARCO Multi-State Environmental Custodial Trust. The purpose of this memorandum is to develop risk-based soil screening levels based on site-specific exposure scenarios for trespassers, construction workers and site workers.

PureGro Risk Assessment Review - Apr. 20, 2015: ADHS previously reviewed and provided comments to ADEQ regarding the Draft Baseline Human Health Risk Assessment and the Final Baseline Human Health Risk Assessment for the Former Unocal (PureGro) Facility, 9801 West Harrison Street, Tolleson, Arizona. The consultant for the property responded to ADHS' comments, and ADEQ requested ADHS to provide a response of those comments.

APPENDIX 5

ARIZONA DEPARTMENT OF HEALTH SERVICES

FY15 BUDGET AND EXPENDITURES

BUDGET AND EXPENDITURES	TOTAL
Funds Available	
Beginning Balance	\$60,000
FY15 Expenditures	50,121
Funds Unused	\$9,879

ITEMIZED EXPENDITURES	BUDGET	TOTAL EXPENDITURE
Contracts	\$52,060	\$48,936
Travel	2,000	0
Operations	4,153	0
Indirect Costs	1,787	1,185
Total – Expenditures	\$60,000	\$50,121

2015 - 2016 BUDGET

CATEGORY	BUDGET
Contracts	\$52,060
Travel	2,000
Operations	4,153
Indirect Costs	1,787
Total – Expenditures	\$60,000

APPENDIX 6

WATER QUALITY ASSESSMENT AND MANAGEMENT PROGRAM

FY15 ACCOMPLISHMENTS:

SURFACE WATER MONITORING:

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

- Integrated Report of the Status of Arizona's Water Quality: The draft 2012/2014 assessment was submitted to EPA Region 9 for approval in March 2015.
- Ambient Surface Water Program: FY15 monitoring focused on the on warmwater sites (sites located below 5,000 feet).
- Lakes program: Twenty-nine lake samples were collected from seven lakes for the ambient lake monitoring program. Sampling of Rose Canyon Lake, Watson Lake, Rim Lakes, Rainbow Lake and Lynx Lake continued under the Total Maximum Daily Load (TMDL) program.
- Fish program: 87 fish samples were collected and analyzed for mercury. Fish were collected from 16 lakes and streams throughout Arizona.
- Status of ongoing water quality studies (A.R.S. §49-225 & §49-282):

TMDL Monitoring and Development:

The Watershed Protection Unit achieved the following in FY15:

- Six TMDLs on two waterbodies were released for public comment.
- TMDL data collection continued on 17 TMDLs for 5 waterbodies.
- Data collection efforts were ongoing for two Watershed Plan development projects.
- Effectiveness monitoring was conducted for five effectiveness monitoring projects.
- Delist reports were developed for nine impairments on three waterbodies.
- Data summaries were developed for 10 impairments on 3 waterbodies.
- 89 volunteers in 5 watersheds were trained to collect water quality data.
- Best Management Practice (BMP) effectiveness data was collected for 15 Water Quality Improvement Grant projects.

APPENDIX 6

WATER QUALITY ASSESSMENT AND MANAGEMENT PROGRAM

FY15 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 FY15:

- More than 87 groundwater samples were collected from wells/springs in Arizona. Results of sample analyses were provided to owners.
- The Avra Valley and Gila Bend basin reports have been completed and are in the review process.
- Sampling in the Salt, Duncan and Loer Gila basins is on-going.

Pesticide Program § 49-249 (Pesticides)

- Reviewed and approved 15 biopesticide waivers, 17 active ingredients, 2 formulators and 5 supplemental distributors in FY15. Of the active ingredients registered, 5 were added to the Groundwater Protection List. ADEQ staff presented an update on the program to the Western Plant Health Association (WPHA) on April 30, 2015. Program improvements include revamping the website and streamlining application forms.

Quality Assurance/Quality Control (QA/QC) Activities

- Served as WQD representative on QA/QC Advisory Committee for the redrafting of the agency's Quality Management Plan (QMP).
- The Quality Assurance Program Plan for streams, lakes, fish and biocriteria was approved by EPA on April 6, 2015.

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Pinal Creek WQARF Site, Freeport - McMoRan