

Janice K. Brewer, Governor John S. Halikowski, Director Jennifer Toth, State Engineer Robert Samour, Senior Deputy State Engineer, Operations Dallas Hammit, Senior Deputy State Engineer, Development

October 31, 2014

Christopher M. Henninger, Supervisor Stormwater and General Permits Unit Surface Water Section Arizona Department of Environmental Quality 1110 W. Washington Street Phoenix, AZ 85007

Subject: AZSO000018-2008 Annual Report

Dear Ms. Henninger:

The Arizona Department of Transportation (ADOT) is thrilled to submit this Annual Report regarding stormwater activities between July 1, 2013 and June 30, 2014. Major accomplishments during this time frame include completing compliance documentation in three program areas: storm sewer system outfall mapping, post-construction best management practices mapping, and implementing a construction oversight program.

ADOT is appreciative of the stakeholder process that ADEQ facilitated in the first half of this reporting period and is looking forward to the streamlined permit that we have had the pleasure to review recently.

Please contact Leigh Padgitt at 602.712.6170 should you have any questions concerning this annual report submittal.

Sincerely,

Wendy Terlizzi, CMS4S

Compliance and Reporting Manager

Enclosures (2)

Part 1: General Information

Permittee Name: Arizona Department of Transportation

Permit Number: AZS0000018-2008

Name of Stormwater Management Program Contact:

Leigh Padgitt, CMS4S

Stormwater Program Coordinator 1611 West Jackson Street, Mail Drop EM04

Phoenix, AZ 85007 Desk: 602.712.6170 Cell: 602.292.5648

Email: lpadgitt@azdot.gov

Reporting Period: July 1, 2013 - June 30, 2014

Name of Certifying Official (Refer to permit Section 11.3):

Wendy Terlizzi, CMS4s

Compliance and Reporting Manager 1611 West Jackson Street, Mail Drop EM04

Phoenix, AZ Desk: 602.712.8353

Email: wterlizzi@azdot.gov

Part 2: Annual Report Certification

The Annual Report Form must be signed and certified by either a principal executive officer or ranking elected official; or by a "duly authorized representative" of that person in accordance with Section 11.3 of the permit.

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

Signature of Certifying Official

Date

### Part 3: Narrative Summary of Statewide Stormwater Management Program (SSWMP) Activities

Provide a summary of the status of the SSWMP each year, including a brief description of the implementation and progress of every individual best management practice (BMP). Also, provide an explanation of any significant developments or changes to the number or type of activities, the frequency or schedule of activities, or the priorities or procedures for implementation of specific management practices.

Appendix B, Part 3, review technical documents and describe major updates to manuals.

As a result of on-going negotiations with ADEQ regarding a new stormwater permit, ADOT has not undertaken any revisions to the manuals referenced in the SSWMP. However, ADOT distributed a Request for Proposals to begin updating all program operating manuals, guidance, and procedures, into a single Water Quality Manual, which will augment the stormwater management program in the next permit cycle.

Outfall inspections and tracking (3.2.3.2(e).

ADOT completed mapping of outfalls in 2013 per the Administrative Order on Consent. Data is tracked in the Features Inventory System. ADOT is in the sixth year of permit coverage and inspected 12 outfalls in Phoenix Maintenance District during the report period.

Public access to stormwater documents (3.2.2.3(a).

All stormwater documents, including reports, technical manuals, and resources are posted at <a href="http://www.azdot.gov/business/environmental-services-and-planning/water-quality">http://www.azdot.gov/business/environmental-services-and-planning/water-quality</a>.

Illicit discharges (3.2.3.4(d).

ADOT continues to track potential illicit discharges with documentation generally originating at the District level. The progressive action levels have been augmented to include a close-out loop whereby ADOT submits a letter to the confirmed discharger upon cessation of the connection. Most instances are a one-time, accidental connection or overflow and would not require a close-out. Three circumstances have led to on-going coordination that spanned multiple years to permit or reconstruct. Two connections required active participation by the land owner to stop the connection and remediate (3.2.3.4(b)(ii). At this time, two connections are being addressed and should be completely resolved by year-end 2014. For examples of letters sent this report period, refer to Appendix A.

Erosion abatement (3.2.6.2.(d).

ADOT designed a major project to redevelop slopes and erosion abatement structures along 1.2 miles of highway on State Route 260 nearly five miles south of Cottonwood. The total project cost for less than one acre of permanent ground disturbance (approximately four acres temporary) to provide this erosion protection is \$879,170. Other smaller projects conducted by ADOT maintenance forces are combined in acreage in Part 4, Numeric Summary.

Spills and other releases (4.1.5.2(d).

ADOT tracks spills and other releases to yards in site-specific Facility Pollution Prevention Plans (FPPPs), which are kept onsite with copies generally available at the regional/district level. Spills documented include minor releases of fuel at a depot and liquid magnesium chloride leaks. Site inspections are outlined in the FPPPs and are based on risk associated with the material stored or used onsite. Similarly, SWPPPs, as required by 4.2.1.1., are subject to the same inspection and documentation protocols and are kept at the district level, updated as necessary.

Construction sites (5.3.4).

No enforcement actions were taken against ADOT contractors.

Industrial facilities (6.6.2., 6.7.2, and 6.8.3).

- Grand Canyon National Park Airport has been inspected routinely and the annual comprehensive evaluation was performed on April 14, 2014. No discharges from either outfall were noted and routine debris removal and housekeeping measures will be applied. Annual Compliance Evaluation Report is included in Appendix B.
- Durango Sign Factory has been inspected on a regular basis with no incidents of non-compliance. ADOT has completed wet-weather monitoring at this location and provides discharge monitoring reports and laboratory results of sampling in Part 10. Annual Compliance Evaluation Report is included in Appendix B.
- Material Sources within the State of Arizona do not occur within ¼ mile of an Outstanding Arizona Water or impaired water. Therefore, no special circumstances, such as monitoring, apply.

Provide a map and summary of the status of each material source site (Section 6.8.3); present a list of all abandoned material source sites (unreclaimed sites where final stabilization was never completed), accompanied by a four year schedule to reclaim or utilize all Group B sites statewide (Section 6.8.4.1.(f)(ii)); describe the progress made toward reclaiming or utilizing Group B sites (Section 6.8.4.1.(f)(ii)); provide a summary of findings, deficiencies, and corrections made to each site in the inspection reports on Groups A, B and C material sources (Section 6.8.4.2.(a)).

Appendix C provides the ADOT-Licensed Material Sources Location Map and Status of each site (Inventory). Table 1 identifies ADOT's intentions with respect to renewal or reclamation and release of Group B material sources. Table 2 summarizes the findings, deficiencies, and corrections made to each site as a result of inspections of the material source sites in Group A, B, and C.

Table 1.

Site Number	Source Name	District	County	Status
3044	Board Tree Saddle	Globe	Gila	Permit Renewal
7225	Connor Canyon	Globe	Gila	Permit Renewal
8629	Sevenmile Wash	Globe	Gila	Reclamation
8763	Fish Creek	Globe	Maricopa	Permit Renewal
7810	Crabtree	Safford	Greenlee	Permit Renewal
478	Mohawk	Yuma	Yuma	Further Evaluation

Table 2.

Site Number	Findings	Deficiencies	Corrective Action
1245	Berm at northwest corner breached	Berm requires routine maintenance	Berm was rebuilt and reinforced
2979	Berm along northwest corner on north end breached	Berm requires routine maintenance	Berm was rebuilt and reinforced
5002	Several five gallon containers were identified that had been perforated with gunshots and leaked material	Illegal dumping	Berm was constructed to prevent runoff to surface waters; site reclamation is being prioritized for FY 2015
5643	Significant headcutting near south boundary causing considerable amounts of erosion; check dam north of wash not working	BMPs require implementation or routine maintenance	Vegetation has established and is stabilizing the soils
8400	Sediment discharge off the site	BMPs need to be installed	Installed sediment basin; installation of rip rap on the slope will be prioritized for FY 2015

### Part 4: Numeric Summary of Stormwater Management Program Activities

Provide a numeric summary of BMPs and activities performed each year. Every year's Annual Report should include the numbers reported in the previous years. Do not delete any of the existing measures listed in the table. Insert any additional measurable goals of BMP progress in the rows labeled as Other numeric measurable goal(s) or Numeric measurable goal(s). Use italic font to clearly identify any additional measurable goals. If no measurable goal has been identified in the table below, the progress of the BMP must be described in Part 3 Narrative Summary of SSWMP Activities.

Section			Annual Reporting Year (July 1 – June 30)						
Number	Stormwater BMP or Activity	2008-	2009-2010	2010-	2011-2012	2012-2013	2013-2014		
Number				2011					
	MEASURES TO CONTROL DISCHARGE	S THROU	GH EDUCATIO	N					
3.2.2.1(a)(ii)(1)	Train ADOT Employees - Illicit discharges and illegal dumping (IDDE) (Combined with 3.2.2.1.(a)(ii)(2)								
	Number of trainings offered	7	17	13	Online	Online	Online		
	Number of employees trained	35	112	33	973	194	136		
	(Other numeric measurable goal(s))								

Section			An	ınual Reporti	ng Year (July 1 – .	June 30)	
Number	Stormwater BMP or Activity	2008- 2009	2009-2010	2010- 2011	2011-2012	2012-2013	2013-2014
3.2.2.1(a)(ii)(2)	Train ADOT Employees - Non-stormwater discharges (Combined with 3.2.2.1.(a)(ii)(1)						
	Number of trainings offered	7	17	13	Online	Online	Online
	Number of employees trained	35	112	33	See IDDE	See 3.2.2.1 (a)(ii)(1)	Same as 3.2.2.1. (a)(ii)(1)
	(Other numeric measurable goal(s))						
3.2.2.1(a)(ii)(3)	Train ADOT Employees- New construction and land disturbances (Combined with 3.2.2.1.(a)(ii)(4) – named Stormwater Management of Construction Discharges)						
	Number of trainings offered	7	17	13	Online	Online	Online
	Number of employees trained	35	112	33	See IDDE	168	122
	(Other numeric measurable goal(s))						
3.2.2.1(a)(ii)(4)	Train ADOT Employees - New development and significant redevelopment (Combined with 3.2.2.1.(a)(ii)(3)						
	Number of trainings offered	7	17	13	Online	Online	Online
	Number of employees trained	35	112	33	932	See 3.2.2.1 (a)(ii)(3)	Same as 3.2.2.1. (a)(ii)(3)
	(Other numeric measurable goal(s))						
3.2.2.1(a)(ii)(5)	Train ADOT Employees - Storm sewer system and highway maintenance						
	Number of trainings offered	7	17	13	Online	Online	Online
	Number of employees trained	35	112	33	906	179	129
	(Other numeric measurable goal(s))						

Section			Annual Reporting Year (July 1 – June 30)							
Number	Stormwater BMP or Activity	2008- 2009	2009-2010	2010- 2011	2011-2012	2012-2013	2013-2014			
3.2.2.1(a)(ii)(6)	Train ADOT Employees - Good housekeeping and material BMPs (Combined some modules and changed the title) Spill Prevention and Response are part of General Awareness; Pesticides and Fertilizers are stand alone; Industrial is lumped with Waste Disposal									
	Spill Prevention and Response - Number of trainings offered	7	17	1	Online	Online	Online			
	Spill Prevention and Response - Number of employees trained	35	112	36	654	369	301			
	Pesticides, Herbicides, and Fertilizer Application - Number of trainings offered	7	17	1	Online	Online	Online			
	Pesticides, Herbicides, and Fertilizer Application - Number of employees trained	35	112	36	See Spill	141	131			
	Industrial Sites - Number of trainings offered	7	17	1	Online	Online	Online			
	Industrial Sites - Number of employees trained	35	112	36	971	196	127			
	(Other numeric measurable goal(s))									
3.2.2.1(a)(iii)	Develop Stormwater Library									
	Number of times accessed or visited	N/A	N/A	N/A	365	3764	2,947			
	(Other numeric measurable goal(s))									
3.2.2.1(b)	ADOT Construction Contractor Training and Certification									
	Number of trainings offered:16hr; 6hr refresher	7	6	8	11	7; 5	6; 7			
	Number of ADOT employees trained/certified	35	22	34	46	42	36			
	Number of ADOT employees re-certified	5	28	5	14	12	20			
	Number of non-ADOT employees certified	N/A	129	53	132	95	85			
	Number of non-ADOT employees re-certified	N/A	N/A	N/A	N/A	51	80			
	(Other numeric measurable goal(s))									
3.2.2.2(b)(i)	Distribution of Educational Materials Through Public Places									

Section				nual Reporti	ng Year (July 1 – .	June 30)	
Number	Stormwater BMP or Activity	2008- 2009	2009-2010	2010- 2011	2011-2012	2012-2013	2013-2014
	Number of materials (posters, brochures, signs, etc.) distributed	2,600	4,577	5,200	0	1643 bags and bands	>200 bags
	Number of public events ADOT attended with displays		65	119	1	6	8
	Estimated Audience from TV, movie, radio, billboard PSAs	N/A	13,534,800	4,268,300	16,277,000 (STORM)	3,949,600 (STORM)	850,000 (STORM)
	Educational items (coloring books, wrist bands, magnet)	N/A	6,129	8,000	0	415 brochures	>200 brochures
	Construction seminar attendees	N/A	N/A	80	50	206 (LID and Industrial seminars combined)	141
	(Other numeric measurable goal(s))						
3.2.2.2(b)(ii)	Distribution of Educational Materials Through ADOT's Stormwater Webpage						
	Number of hits on webpage	0	0	0	365	5018	5,870
	(Other numeric measurable goal(s))						
3.2.2.3(b)	Record and Consider Public Comments						
	Number of public comments received	0	0	0	0	1	0
	(Other numeric measurable goal(s))						
3.2.2.3(c)	Implement a Public Reporting System						
	Number of reports received from public	0	0	0	0	1	1
	Number of reports investigated	0	0	0	0	1	1
	(Other numeric measurable goal(s))						
3.2.2.3(d)	Develop a Stormwater Component of the Adopt-a-Highway Litter Initiative						
	Number of volunteer groups participating	1,835	1,609	1,569	1,610	1,560	1,575
	Number of miles cleaned	2,291	2,026	3,935	2,052	1,985	3,938

Soction	Section		Annual Reporting Year (July 1 – June 30)						
Number	Stormwater BMP or Activity	2008- 2009	2009-2010	2010- 2011	2011-2012	2012-2013	2013-2014		
	Amount of trash collected	246	211	224	65 tons	64 tons	56 tons		
	(Other numeric measurable goal(s))								
3.2.2.3(e)	Continue Implementation of Litter Hotline								
	Number of calls received	3,389	2,864	2,776	1,783	2,144	2,789		
	(Other numeric measurable goal(s))								
	ILLICIT DISCHARGE/ILLEGAL DUMPING DETECT	ION AND	ELIMINATION	MEASURES					
3.2.3.1(a)	Maintain Illicit Discharge Authority								
	(Numeric measurable goal(s))								
3.2.3.1(b)	Enforce Standard Encroachment Permit								
	Number of enforcement actions	0	0	0	0	0	0		
	(Other Numeric measurable goal(s))								
3.2.3.1(d)	Implement Non-Stormwater BMPs					·			
	(Numeric measurable goal(s))								
3.2.3.2(d)	Inspect Outfalls for Dry Weather Discharges								
	Number of major outfalls inspected		35	0	51	68	N/A		
	Number of priority outfalls inspected	7	0	0	0	See Narrative	N/A		
	Number of storm drain cross connection detected	0	0	0	0	3	N/A		
	Number of illicit discharges detected	1	1	0	6	1	N/A		
	Number of other dry weather flows detected	0	0	0	7	7	N/A		
	Administrative Order on Consent Outfalls Identified	N/A	N/A	N/A	N/A	222	N/A		
	Administrative Order on Consent Outfalls Inspected	N/A	N/A	N/A	N/A	218	12		
	(Numeric measurable goal(s))								
3.2.3.3(b)	Investigate Illicit Discharges (Source Identification)								
	Number of storm drain cross connection investigated	0	0	0	0	4	8		
	Number of illicit discharges investigated	0	0	7	9	4	5		
	Number of other dry weather flows investigated	0	0	0	7	7	3		
	(Other numeric measurable goal(s))								

Section		Annual Reporting Year (July 1 – June 30)					
Number	Stormwater BMP or Activity	2008- 2009	2009-2010	2010- 2011	2011-2012	2012-2013	2013-2014
3.2.3.3(c)	Respond to Complaints	2005					
	Number of complaints received	0	0	0	0	1	3
	Number of complaints responded to	0	0	0	0	1	3
	Average response time (in days)	0	0	0	0	2	2
	(Other numeric measurable goal(s))						
3.2.3.3(d)	Report Incidental Dry Weather Discharges						
	Number of discharges reported to ADEQ		1	0	0	0	0
	(Other numeric measurable goal(s))						
3.2.3.4(a)	Take Action to Eliminate Existing Dry Weather Flows						
	Number of existing dry weather discharges eliminated	0	0	0	0	1	2
	(Other numeric measurable goal(s))						
3.2.3.4(b)	Take Action to Eliminate Sources of Illicit Discharges						
	Number of storm drain cross connection eliminated	0	0	0	0	0	0
	Number of illicit discharges eliminated	1	1	7	7	1	4
	Number of dry weather discharges eliminated	1	1	0	6	1	1
	(Other numeric measurable goal(s))						
3.2.3.4(c)	Coordinate with Local Jurisdictions for Complaint Response and Investigation						
	Number of illicit discharges reported to other jurisdictions for follow-up	1	0	0	5	6	1
	(Other numeric measurable goal(s))						
3.2.3.5	Responding to Spills						
	Number of highway accident spills responded to	0	156	180	196	196	213
	Number of highway accident spills prioritized (potential for discharge)	0	156	10	17	19	17
	Hazardous materials released	N/A	N/A	50	17	19	16

Section			Ar	nual Report	ing Year (July 1 –	June 30)	
Number	Stormwater BMP or Activity	2008- 2009	2009-2010	2010- 2011	2011-2012	2012-2013	2013-2014
	(Other numeric measurable goal(s))						
	MEASURES TO CONTROL DISCHARGES FROM NEW	DEVELOR	MENT AND R	EDEVELOPM	ENT		
3.2.5.2	Install Post-Construction Stormwater Control BMPs						
	Number of new post-construction stormwater control BMPs installed		0	0	0	0	0
	(Other numeric measurable goal(s))						
	MEASURES TO CONTROL DISCHAR	GES FROI	M ROADWAYS	1			
3.2.6.1(b)	Inspect Storm Sewer System						
	Number of inspections performed	0	51	51	51	6,933	9,310
	(Other numeric measurable goal(s))						
3.2.6.1(c)	Develop Maintenance Schedules and Priorities						
	(Numeric measurable goal(s))						
3.2.6.1(d)	Perform Repair, Maintenance, and Cleaning						
	Number of miles of roadways repaired/maintained	0	0	0	0	26,144	58,941
	Number of inlets cleaned	0	0	0	0	2,631	11,882
	Number of drain inlets containing significant materials	0	0	0	0	223	302
	Number of miles of canal/open-channel cleaned	-	-	-	-	32	84
	(Other numeric measurable goal(s))						
3.2.6.2(c)(ii)	Require Certification/License						
	Number of licensed ADOT applicators	41	41	40	Unreported	50	65
3.2.6.2(d)	Stabilize Roadway Slopes (attach summary of tracking & prioritization				'		
	Acres of roadway slopes stabilized	0	0	0	0	39	79
	MEASURES TO CONTROL DISCHARGES FROM	ADOT M	AINTENANCE	FACILITIES			
4.1.5.3	Stencil Drain Inlets at ADOT Facilities						
	Number of new catch basins installed	0	0	0	0	0	0
	Number of catch basins marked or stenciled	15	0	0	0	3	4

Section	Stormwater BMP or Activity		Annual Reporting Year (July 1 – June 30)					
Number			2009-2010	2010-	2011-2012	2012-2013	2013-2014	
Number				2011				
	(Other numeric measurable goal(s))							

#### Part 5: Evaluation of the Statewide Stormwater Management Program

In accordance with Section 3.1.5 of the permit, provide an evaluation of the progress and success of the SSWMP each year, including an assessment of the effectiveness of stormwater management practices in reducing the discharge of pollutants to and from the municipal storm sewer system.

The intent of the assessment is to measure success of a stormwater management program in its ability to reduce the discharge of pollutants to and from the MS4. The approach to evaluate the program effectiveness are:

- Assessing program operations
- Evaluating social indicators
- Monitoring water quality

#### **Program Operations**

The following status is provided for each of the four program elements:

Update of the SWMP: During this reporting period, ADOT has been negotiating a new permit and has not initiated any updates to the SWMP due to unknown requirements. It is envisioned that the SWMP will be fully updated within 12 months of a new permit.

Guidance Manuals/Technical Documents: ADOT has begun to update all manuals and technical documents that affect stormwater quality programs. The process commenced in 2013 to update relevant stormwater specifications that apply to construction activities in anticipation of new language that will require ADOT to comply with only the Construction General Permit(s), that is the ADEQ 2013 and USEPA 2012 general permits for construction activities.

BMP Tracking: ADOT strives to evaluate processes and improve any aspect of the program that may require implementation of additional steps, identification of procedures, and revision of outdated practices. Based on the Numeric Summary in Part 4 there are relatively constant fluctuations in public involvement efforts; there are more miles cleaned, with less trash removed; outfall inspections were down but overall illicit discharges / connections found were up, we completed more inspections of the storm sewer system statewide, and increased maintenance and repair of the system. This past year a few BMPs were modified with respect to tracking – refer to Part 6.

New or Revised Permits or Policies: No new or revised permits that affect water quality have been undertaken.

### **Social Indicators**

The assessment of social indicators is an important element that tracks knowledge and awareness and is a tool used to document behavioral changes. ADOT continues to monitor public outreach efforts conducted, events staff participated in, and intergovernmental coordination pursued. In 2013-2014, ADOT participated in the second MS4 Statewide Summit and brought together approximately 100 professionals from around the State to learn about MS4 permit-related activities and requirements. This effort was made possible through intergovernmental coordination with other municipalities, which assisted in planning.

Through other partnerships, such as with Stormwater Outreach for Regional Municipalities and Pima Association of Governments Stormwater Management Working Group, ADOT is more engaged at the public education level and can support local public outreach.

#### Water Quality

ADOT's monitoring program is strong with respect to construction project requirements. The projects are short in duration and are managed by an onsite Erosion Control Coordinator. Project inspections are managed weekly or bi-monthly, and rainfall from discrete discharge points are sampled per the applicable Construction General Permit. Five projects were subject to monitoring requirements in the report period (refer to 10 for Construction Monitoring).

ADOT's MS4 and Industrial monitoring programs have been fully implemented for three years. A total of nine monitoring points are operating statewide (refer to Parts 8, 9 and 10 for supplemental information). ADOT contracts the monitoring work, including equipment maintenance, sample collection, computer software management, laboratory analysis, and documentation. Of 46 qualifying rain events, ADOT received three full and four partial samples due to insufficient rainfall quantity, equipment failures (third party errors in updating software), and exceeded hold times (distance to certified labs and hours of operations). ADOT believes the situation has been remedied, and will describe new efforts in quality control in the new SWMP.

#### Part 6: Statewide Stormwater Management Program Modifications

In accordance with Section 3.1.6 of the permit, provide a description of modifications to the SSWMP each year as follows:

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

Two new BMPs were added this year:

- ADOT Erosion Control Coordinator training has additional requirements for recertification every 3 years; this measure is tracked by the Association of General Contractors Arizona Chapter and submitted to ADOT annually.
- Illicit Discharge Detection and Elimination procedures now include a step to issue a resolution letter to the offending party when a connection or discharge is remediated. Two illicit discharges were attended two resulting in closeout letters in 2013-2014 (refer to Appendix A).

2. <u>Adding Temporary or Experimental BMPs:</u> Describe the initiation and cessation of such BMPs and the perceived success of the temporary or experimental stormwater control.

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

None.

None.

4. <u>Replacement of Existing BMPs</u>: Describe modifications to replace an ineffective stormwater management practice with an alternate practice by demonstrating that the change will continue to achieve an equivalent reduction in pollutants and will not cause or contribute to a violation of any applicable water quality standard.

None.

#### Part 7: MS4 Monitoring Locations

Provide a brief description of each stormwater monitoring location (outfall), including the following information:

- 1. The outfall identification number or name;
- 2. Address or physical location of the site, including the latitude and longitude of the outfall;
- 3. Size of outfall's drainage area;
- 4. Land use(s) with an estimated percentage of each use;
- 5. Name and description of the receiving water; and
- 6. Type of monitoring equipment used.

ADOT has five fixed monitoring stations in the MS4 – Flagstaff, Sedona, Phoenix, Tucson, and Nogales. Refer to maps and other information in Appendix D.

#### Part 8: Storm Event Records (MS4)

For each MS4 outfall monitoring location, provide a summary of all subsequent representative storm events necessary to collect at least one representative stormwater sample (greater than 0.1 inch rainfall) occurring within the reporting period, including the date of each event, the amount of precipitation (inches) for each event, and whether a sample was collected, or if not collected, information on the conditions that prevented sampling.

As mentioned in Part 5, Water Quality assessment, the Isco samplers were not fully operational due to equipment malfunctions that can be attributed to inadequate software performance. Rain data is presented in Table 3.

Table 3.	Summer Season	Status	Inches	Winter Season	Status	Inches
	7/19/2013	EF/NS	0.62	11/22/2013	SC	0.85
DL	8/23/2013	EF/NS	0.40	12/20/2013	NS	0.33
Phoenix	8/28/2013	i F	0.31	3/1/2014	NS.	1.37
	9/8/2013	SC	0.24			
	7/10/2013	NS	0.43	11/15/2013	[F	0.30
	7/19/2013	ίF	0.35	11/22/2013	NS	0.46
Sedona	8/25/2013	[F	0.38	12/4/2013	IF	0.14
Secona	9/6/2013	IF	0.12	12/20/2013	EF/NS	0.46
	9/6/2013	EF	0.67	- ·		
	9/26/2013	IF.	0.10	•		
	8/17/2013	JF	0.10	11/21/2013	IF.	0.51
	8/21/2013	SC	0.14	11/23/2013	IF	0.18
Flagstaff	8/25/2013	NS	0.63	2/28/2014	1F	0.61
	9/8/2013	NS	0.72	4/26/2014	ΙF	0.45
	9/9/2013	NS	0.37			
	7/19/2013	PS	0.14	11/23/2013	PS	0.82
T	8/2/2013	PS	0.21	12/5/2013	ίF	0.19
Tucson	8/29/2013	EF/NS	0.22	12/20/2013	IF	0.23
				3/1/2014	[F	0.19
	6/30/2013	NS	0.38	11/23/2013	EF/NS	0.85
	7/6/2013	IF	0.18	12/20/2013	ÎF -	0.38
	7/19/2013	PS	0.76	3/1/2014	EF/NS	1.51
	7/24/2013	IF	0.31			
55.00 (a) (b) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	8/6/2013	IF	0.36	NS - No Sa	mple Collected	
Nogales	8/14/2013	IF	0.16	SC - Sam	ple Collected	
95 (6 (6 (5 (5 (6 )	8/20/2013	1F	0.13	IF - Insufficient F	low to Collect San	nple
	8/29/2014	1F	0.12	100000000000000000000000000000000000000	Sample Collected	e per la del per la disconsidera
	9/2/2013	J. IF	0.47	and the energy treatment of the energy of th	oment Failure	
	9/8/2013	ΊF	0.28		4/10/10/10/10/10/10	

### Part 9: Summary of MS4 Monitoring Data (By Location)

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

Refer to Appendix E for required monitoring data and laboratory reports. Table 4 summarizes sampling and lab report information.

Table 4.

Location	Sampling Season	Collection Date	Report Date	Lab Report Number				
Flagstaff	Summer	8/21/2013	9/4/2013	L653657				
Flagstaff	Summer	8/21/2013	8/28/2013	L653812*				
Flagstaff	Winter	None	None	None				
Sedona	Summer	None	None	None				
Sedona	Winter	None	None	None				
Phoenix	Summer	09/08/2013	9/26/2013	L656427*				
Phoenix	Winter	11/22/2013	12/4/2013	L670506				
Tucson	Summer	08/02/2013	08/22/2013	550-8220-1 (partial sample)				
Tucson	Winter	11/23/2013	12/17/2013	3112068* (partial sample)				
Nogales	Summer	07/19/2013	08/27/2013	550-7153-1 (partial sample)				
Nogales	Winter	None	None	None				
None = no sa	None = no sample taken; * = parameter(s) beyond holding time							

### Part 10: Summary of Industrial, Maintenance Yard, and Construction Monitoring Data

Provide a summary of monitoring performed at industrial and construction sites as required in the permit.

Industrial and Maintenance Yards: Monitoring regularly occurs at the Durango Sign Factory, which is one of multiple industrial facilities managed by ADOT. Three ADOT Maintenance Yards occur within ¼ mile of an impaired water and require monitoring. Table 5 summarizes sampling and lab report information for industrial facilities and maintenance yards. Discharge monitoring and lab reports are included in Appendix E.

Table 5.

Location	Sampling	Collection	Report Date	Report Number	Lab Notes	
	Season	Date				
Durango Sign Factory	Summer	09/09/2013	09/19/2013	L656417	Not applicable	
Durango Sign Factory	Winter	11/22/2013	12/04/2013	L670635	Not applicable	
Nogales Yard	Summer	07/19/2013	08/10/2013	550-7152-1*	E. coli	
Nogales Yard	Winter	11/25/2013	12/17/2013	3112070*+	Total Petroleum Hydrocarbons, E. coli	
Superior Fuel	Summer	09/09/2013	09/18/2013	L656420+	Total Petroleum Hydrocarbons	
Superior Fuel	Winter	11/25/2013	12/04/2013	L670768+	Total Petroleum Hydrocarbons	
Superior Yard	Summer	09/09/2013	09/10/2013	L656414+	Total Petroleum Hydrocarbons	
Superior Yard	Winter	11/25/2013	12/04/2013	L670771+	Total Petroleum Hydrocarbons	
None = no sample taken; * = parameter(s) past hold; + = insufficient volume for parameter(s)						

<u>Construction</u>: In addition to the industrial and maintenance yard monitoring, five construction sites were subject to monitoring in the reporting period. Table 6 summarizes sampling information for these projects and discharge monitoring reports are included as required in Appendix F.

Table 6.

Project Name	Contractor AZCON number	Discharge Sampled?	Lab Report Attached?	Exceedance of WQS?
Punkin Center	532057	No discharges	Not applicable	Not applicable
Silver King - Superior	532819	No discharges	Not applicable	Not applicable
Marsh Station (III)	73798	No discharges	Not applicable	Not applicable
San Pedro River	72275	Yes	Yes	Yes
Doubtful Canyon	57907	No discharges	Not applicable	Not applicable

### Part 11: Assessment of Monitoring Data

A. <u>Stormwater Quality</u>: Provide an evaluation of the sampling results for each outfall monitoring location, including an assessment of any trends, improvements, or degradation of stormwater quality from each drainage area. Discuss possible explanations for stormwater quality trends, including the implementation of stormwater management practices to reduce the discharge of pollutants to and from the storm sewer system.

ADOT monitoring of the MS4 was affected by a software issue; therefore, very few samples were collected during the report period. An evaluation of the five locations is briefly described in prior sections, lab reports, and monitoring data (Appendix D) and below. There are few

generalizations that can explain any trends due to multiple instances of equipment failures and insufficient flows. Because exceedences of E. coli have been common throughout our sampling sites, there is only one trend that stands out; yet it may not be valid due to issues with hold times. In Tucson and Phoenix there has been an increase in the number of colonies detected. As a result of ADEQs peer review of the 2012-2013 Annual Report and resulting inquiry regarding deficiencies in the report, ADOT commenced an audit of the monitoring program to include 1) evaluating contracts, 2) expediting report reviews, 3) color coding exceedences differently than detection/not-detect, and 4) increasing coordination and discussion with internal and external stakeholders.

B. <u>Water Quality Standards (WQS)</u>: Compare the sampling results for each outfall monitoring location with the applicable surface water quality standards for the receiving water. Provide an assessment of stormwater quality relative to water quality standards, including the progress towards reducing the discharge of pollutants to the maximum extent practicable and protecting receiving water quality.

The Phoenix MS4 data were flagged by the lab for multiple reasons, including being held beyond approved time and dilution factors. While E. coli was under the numeric standard in Summer 2013, it was elevated above the standard 10-fold during the Winter sample. Because the sample was beyond hold time, ADOT will continue to evaluate and revise the stormwater monitoring protocol. Although there were no other exceedences, the lab flagged both reports and as such, ADOT will defer to future monitoring results rather than assess current trends based on data received.

The Tucson MS4 did not collect enough sample in both seasons; and two attempts were made in the Summer season. E. coli was the only parameter above the water quality standard, and this past winter the quantity doubled its prior readings in report year 2013. Based on rain event data in Part 8, E. coli colonies would have had an opportunity to be twice as prolific in Winter simply because there was no flushing effect from a lack of summer rains. With insufficient data and equipment malfunctions, ADOT will continue to assess the monitoring program and quality assurance activities.

The Sedona MS4 sampler detected seasonal rainfall however, due to equipment malfunctions and/or insufficient flow, no samples were taken for analysis.

The Flagstaff MS4 detected and sampled Summer rainfall, which resulted in samples being sent for analysis. Both lab reports were flagged by the lab for parameter being out of hold time and being submitted in an improper container. Based on analysis performed, only E. coli was present in sufficient quantity to exceed the water quality standard. Although four Winter events were reported in the rainfall data, no samples were taken.

The Nogales MS4 data is similar to Flagstaff; a partial Summer event reported only E. coli exceeding the water quality standard. Although three Winter events were reported in the rainfall data, no samples were taken.

ADOT has modified its consultant contract to require all reports to be reviewed upon receipt and to anticipate additional sampling events in case of equipment failure or expired sample, that is, those beyond hold time. These measures are intended to reduce the discharge of pollutants to the maximum extent practicable and protect receiving water quality.

- C. Exceeding a WQS: Describe any exceedance of a surface water quality standard during the reporting year.

  Refer to Part 11 B.
- D. <u>Total Maximum Daily Loads</u>: Assess the effectiveness of BMPs in meeting wasteload allocations or load allocations associated with any TMDL established for any receiving water.

ADOT is not required to meet any allocations, as no waste load allocations have been assigned to ADOT.

#### Part 12: Assessment of Pollutant Loadings

In accordance with Section 8.7.7 of the permit, provide an estimate of the pollutant loadings each year from the storm sewer system to waters of the U.S. for each constituent detected by stormwater monitoring within the permit term. Include an estimate of the event mean concentration of each pollutant for a representative storm event each year. Provide the seasonal (winter and summer) and annual (total) pollutant loadings. Pollutant loadings and event mean concentrations may be estimated from sampling data collected at the representative monitoring locations, taking into consideration land uses and drainage areas for the outfall. Include a description of the procedures for estimating pollutant loads and concentrations, including any modeling, data analysis, and calculation methods. Compare the pollutant loadings estimated each year to previous estimates of pollutant loadings to identify trends in stormwater quality.

Refer to Appendix G for calculations and methods.

### Part 13: Annual Expenditures

Provide a summary of the expenditures incurred each reporting period (July 1-June 30) to implement and maintain the stormwater management program, including associated monitoring and reporting activities. Provide the estimated budget for implementing and maintaining the stormwater program in the subsequent reporting period. Include a brief description of the funding sources used to support program expenditures.

Various programs support the ADOT mission. State and Federal dollars are allocated for infrastructure improvements and associated maintenance. Private investments in the form of volunteer programs such as Adopt-A-Highway and Arizona Clean and Beautiful are also utilized. ADOT stormwater costs exceeded 22.5 million dollars. The construction dollars identified below as \* in Phoenix, Prescott, Safford, and Tucson includes only the cost of materials (seeding, wattles, mulch, mats, etc.). Table 7 summarizes program expenditures.

Table 7.

Organization/Activity	Maintenance	Construction	
Holbrook	721,201	1,320,236	
Phoenix*	6,486,863	2,328,778	
Kingman	280,123	49,576	
Yuma	1,183,398	1,432,779	
Globe	787,919	559,452	
Flagstaff	442,434	1,988,708	
Prescott*	-	400,369	
Safford*	167,481	533,758	
Tucson*	-	411,895	
Erosion Abatement	-	979,170	
Administrative Order	53,299	-	
Wet Weather Sampling	56,218	-	
Templates/Education	23,835	-	
Adopt-a-Highway	2,319,995	-	
	12,522,766	10,004,721	

### Part 14: Attachments

Appendix A – Illicit Discharge Detection and Elimination Program Correspondence

Appendix B – Material Sources Location Map and Status

Appendix C – MS4 Monitoring Location Maps

Appendix D – MS4 Monitoring Data and Lab Reports

Appendix E – Discharge Monitoring Reports (includes construction, industrial, yards, and associated lab reports)

Appendix F – MS4 Pollutant Loadings Calculations

Appendix G – Annual Compliance Evaluation Reports (Grand Canyon National Park Airport and Durango Sign Factory)

### Appendix A

Illicit Discharge Detection and Elimination Communication



Janice K. Brewer, Governor John S. Halikowski, Director John H. Nichols, Deputy Director

January 14, 2014

Shell – Wickenburg/Pacific Pride 30216 West Highway 60 Wickenburg, AZ 85390

#### NOTICE OF ILLEGAL DISCHARGE OR CONNECTION

### Dear Gentlemen:

The Arizona Department of Transportation (ADOT) is responsible for maintaining not only roadways, but also the extensive storm drain network located within the State rights-of-way. The Arizona Pollutant Discharge Elimination System (AZPDES) Program, which is a component of the Clean Water Act of 1972, requires ADOT to control the amount of pollutants entering the drainage system. Part of this charge is the detection and elimination of illegal discharges or connections to the system that may contain pollutants or are otherwise not allowed. Left uncorrected, any pollutants entering the system will ultimately impact nearby streams, as storm drainage is not treated at any sort of treatment facility. In addition, neighboring property owners are not allowed to occupy, use or interfere with public right of way without permission. Any discharge/connection without permission is an illegal encroachment on ADOT right of way.

It was reported on January 13, 2014 that approximately 50 gallons of fuel entered the US 60 right-of-way from the subject, adjacent property near milepost 112. As the spill originated on Shell property, and is affecting soils within the highway system, which ADOT is responsible for, ADOT may remediate the spilled material and bill Shell directly pursuant to A.R.S. § 28-7053. In the alternative, ADOT can forward this matter to the Arizona Office of the Attorney General so that a lawsuit may be filed.

If the spill cannot be remediated within 10 days, or you do not understand this notice, or you disagree that an illegal discharge exists from your property, please contact Leigh Waite at 602.292.5648 with further details or explanation.

Sincerely,

Wendy Terlizzi, CMS4S

Water and Air Quality Manager

cc: Todd G. Williams, M.Sc, ADOT Environmental Services Director

Alvin Stump, ADOT Prescott District Engineer

Chuck Budinger, ADOT Prescott District Environmental Coordinator



Environmental Services

Janice K. Brewer, Governor

John S. Halikowski, Director

John H. Nichols, Deputy Director

May 12. 2014

Bob Kec Western States Petroleum Fuelco #111 30210 West Highway 60 Wickenburg, AZ 85390

### NOTICE OF ILLEGAL DISCHARGE OR CONNECTION - Resolved

Dear Mr. Kec:

This letter is intended to close-out coordination efforts initiated to remediate an illicit discharge on Arizona Department of Transportation (ADOT) right-of-way resulting from a third party incident at 30216 West Highway 60. It is noted that immediately upon receipt of ADOT's January 14 letter, the owner of Wickenburg Pacific Pride initiated measures to document and remediate a fuel spill that entered the US 60 right-of-way near milepost 112.

Activities to remediate the spill included applying granular sorbent, removing contaminated soil, and restoring the highway right-of-way. Further, ADOT applied micro-blaze to treat any remaining petroleum constituents and will continue to monitor the right-of-way. Therefore, it has been determined that the final report provided by Environmental Technologies on 3-11-14 satisfies remediation activities for this incident.

ADOT appreciates the cooperation to complete this sensitive task by making weekly progress. Thank you for assisting in keeping transportation safe, efficient, and cost-effective for the residents and travelers in Arizona.

Sincerely,

Wendy Terlizzi, CMS4S

Water and Air Quality Manager

cc:

Todd G. Williams, M.Sc, ADOT Environmental Services Director

Alvin Stump, ADOT Prescott District Engineer

Chuck Budinger, ADOT Prescott District Environmental Coordinator

Ed Green, ADOT Hazmat Coordinator



Janice K. Brewer, Governor John S. Halikowski, Director John H. Nichols, Deputy Director

March 20, 2014

Moreno and Rosa Marquez 1811 South 5<sup>th</sup> Avenue Maricopa County Assessor Parcel 112-37-005A Phoenix AZ 85003

#### NOTICE OF ILLEGAL DISCHARGE OR CONNECTION

Dear Mr. and Ms. Marquez:

The Arizona Department of Transportation (ADOT) is responsible for maintaining not only roadways, but also the extensive storm drain network located within the State rights-of-way. The Arizona Pollutant Discharge Elimination System (AZPDES) Program, which is a component of the Clean Water Act of 1972, requires ADOT to control the amount of pollutants entering our system. Part of this charge is the detection and elimination of illegal discharges or connections to the system that may contain pollutants or are otherwise not allowed. Left uncorrected, any pollutants entering the system will ultimately impact nearby streams, as storm drainage is not treated at any sort of treatment facility. In addition, neighboring property owners are not allowed to occupy, use or interfere with public right of way without permission. Any discharge/connection without permission is an illegal encroachment on ADOT right of way.

An inspection of ADOT right-of-way was recently today and a pipe connection through the concrete block wall from Maricopa County Assessor Parcel 112-37-005A appears to be creating wet and muddy ground, as well as moderate vegetative growth on ADOT property.





This connection and associated discharge are not documented in the ADOT records and may be illegal. As such, the connection and associated discharge must be removed within 30 days (April 21, 2014). A follow-up investigation will be conducted after that time to ensure the connection has been removed. If the situation is not corrected, ADOT will take corrective measures, including but not limited to sending

this matter to the Arizona Office of the Attorney General so that a lawsuit may be filed. In the alternative, ADOT may remove the discharge/connection and bill you directly pursuant to A.R.S. § 28-7053.

If the illegal discharge/connection cannot be removed within 30 days, you do not understand this notice, or you disagree that an illegal discharge/connection exists at your property, please contact Leigh Waite with further details or explanation by calling 602.712.6170 or by email at <a href="mailto:lwaite@azdot.gov">lwaite@azdot.gov</a>.

Sincerely,

Wendy Terlizzi

Water and Air Quality Manager 1611 W Jackson Street, MD EM04

Phoenix, Arizona 85007

cc: Lisa Andersen, Phoenix Maintenance District Environmental Coordinator

Jim Windsor, Phoenix Maintenance District Engineer

Leigh Waite, Stormwater Program Coordinator



Janice K. Brewer, Governor John S. Halikowski, Director John H. Nichols, Deputy Director

April 21, 2014

Mr. Forrest Wald Desert Forrest Nursery, LLC 16739 West Olive Avenue Waddell, AZ 85355

#### NOTICE OF ILLEGAL DISCHARGE OR CONNECTION

Dear Sir:

The Arizona Department of Transportation (ADOT) is responsible for maintaining not only roadways, but also the extensive storm drain network located within the State rights-of-way. The Arizona Pollutant Discharge Elimination System (AZPDES) Program, which is a component of the Clean Water Act of 1972, requires ADOT to control the amount of pollutants entering our system. Part of this charge is the detection and elimination of illegal discharges or connections to the system that may contain pollutants or are otherwise not allowed. Left uncorrected, any pollutants entering the system will ultimately impact nearby streams, as storm drainage is not treated at any sort of treatment facility. In addition, neighboring property owners are not allowed to occupy, use or interfere with public right of way without permission. Any discharge/connection without permission is an illegal encroachment on ADOT right of way.

On April 3, 2014, there was evidence of an excavated drainage ditch that extends onto ADOT right-of-way from Parcel 7-11247. This connection and associated discharge are not documented in the ADOT records and may be illegal. As such, the connection and associated discharge must be removed within 30 days (May 21, 2014). A follow-up investigation will be conducted after that time to ensure the connection has been removed. If the situation is not corrected, ADOT will take corrective measures, including but not limited to sending this matter to the Arizona Office of the Attorney General so that a lawsuit may be filed. In the alternative, ADOT may remove the discharge/connection and bill you directly pursuant to A.R.S. § 28-7053.







If the illegal discharge/connection cannot be removed within 30 days, you do not understand this notice, or you disagree that an illegal discharge/connection exists at your property, please contact Leigh Waite with further details or explanation by calling 602.712.6170 or by email at <a href="mailto:lwaite@azdot.gov">lwaite@azdot.gov</a>.

Sincerely,

Wendy Terlizzi

Water and Air Quality Manager 1611 W Jackson Street, MD EM04

Phoenix, Arizona 85007

cc: Lisa Andersen, Phoenix Maintenance District Environmental Coordinator

Jim Windsor, Phoenix Maintenance District Engineer

Leigh Waite, Stormwater Program Coordinator



Janice K. Brewer, Governor John S. Halikowski, Director John H. Nichols, Deputy Director

June 16, 2014

Mr. Forrest Wald Desert Forrest Nursery, LLC 16739 West Olive Avenue Waddell, AZ 85355

### **NOTICE OF ILLEGAL DISCHARGE OR CONNECTION - Resolved**

Dear Mr. Wald:

This letter is intended to close-out the illicit discharge or connection (an excavated drainage ditch) on Arizona Department of Transportation (ADOT) right-of-way from Parcel 7-11247. It is noted that immediately upon receipt of ADOT's April 21 letter, the owner of Desert Forrest Nursery initiated measures to remediate the connection and associated flows.

Activities to remediate the connection included installation of a berm and redirecting of water to other areas on your property. These actions satisfy remediation activities for this incident.

ADOT appreciates the cooperation to complete this task by making immediate progress. Thank you for assisting in keeping transportation safe, efficient, and cost-effective for the residents and travelers in Arizona.

Sincerely,

Wendy Terlizzi, CMS4S

Water and Air Quality Manager

cc: Todd G. Williams, M.Sc, ADOT Environmental Services Director

Jim Windsor, ADOT Phoenix Maintenance District Engineer

Lisa Andersen, ADOT Phoenix Maintenance District Environmental Coordinator



Janice K. Brewer, Governor John S. Halikowski, Director John H. Nichols, Deputy Director

April 21, 2014

Karno Norton 16255 Ventura Blvd Ste 1200 Encino, CA 91436-2320

### NOTICE OF ILLEGAL DISCHARGE OR CONNECTION

Dear Sir:

The Arizona Department of Transportation (ADOT) is responsible for maintaining not only roadways, but also the extensive storm drain network located within the State rights-of-way. The Arizona Pollutant Discharge Elimination System (AZPDES) Program, which is a component of the Clean Water Act of 1972, requires ADOT to control the amount of pollutants entering our system. Part of this charge is the detection and elimination of illegal discharges or connections to the system that may contain pollutants or are otherwise not allowed. Left uncorrected, any pollutants entering the system will ultimately impact nearby streams, as storm drainage is not treated at any sort of treatment facility. In addition, neighboring property owners are not allowed to occupy, use or interfere with public right of way without permission. Any discharge/connection without permission is an illegal encroachment on ADOT right of way.

On April 1, 2014, there was evidence of extensive damage to ADOT property that originates from Valle del Oro at 1452 South Ellsworth in Mesa, Arizona.

It was reported that a water line broke and required immediate repairs, at or near parcel 218-74-8811. However, this connection and associated non-stormwater discharge are not documented in the ADOT records and may be illegal. Please note:

- that connections or discharges of non-stormwater to ADOT property, such as the highway right-ofway and local retention basins, are subject to encroachment permits and/or AZPDES permits,
- that the property owner discharging to ADOT property shall manage non-stormwater flows for volume and pollutants using appropriate BMPs, and
- that the department can exercise authority under statute to litigate any damages.

Because this basin is maintained by ADOT and there is a possibility of workers in the area, there shall be coordination and possible permitting requirements that apply. Continued or periodic discharges to this basin may be addressed by contacting David Loy, Permits Supervisor, at 602-712-7522 or visit Phoenix Maintenance District Encroachment Permit Office at 2140 West Hilton Avenue, Phoenix, AZ 85009.

If there is additional information to provide to ADOT, please contact Leigh Waite with further details or explanation by calling 602.712.6170 or by email at <a href="mailto:lwaite@azdot.gov">lwaite@azdot.gov</a>.

Sincerely,

Wendy Terlizzi

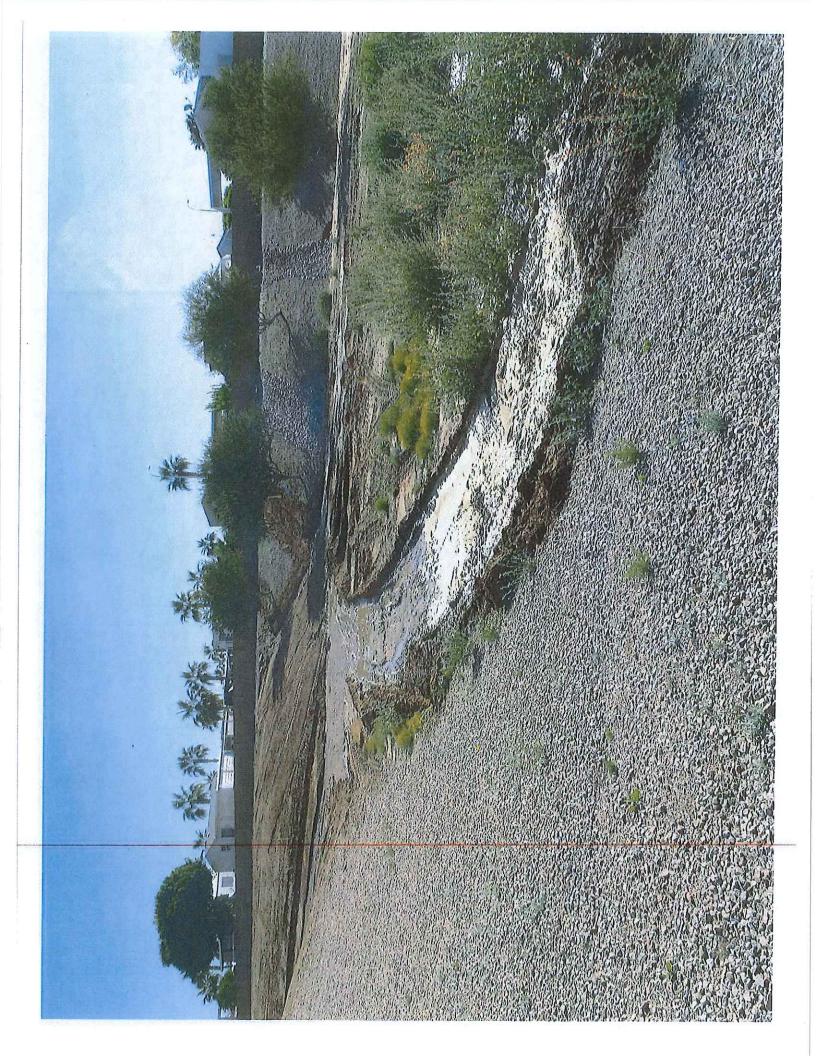
Water and Air Quality Manager 1611 W Jackson Street, MD EM04

Phoenix, Arizona 85007

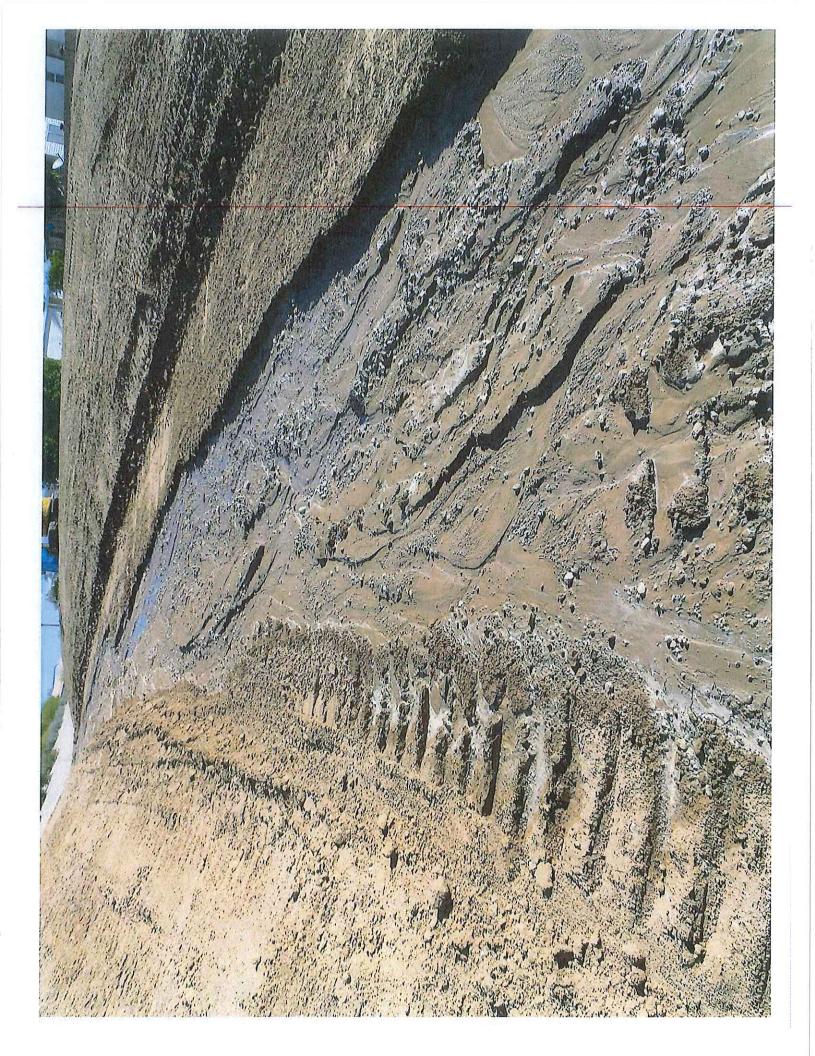
cc: Lisa Andersen, Phoenix Maintenance District Environmental Coordinator

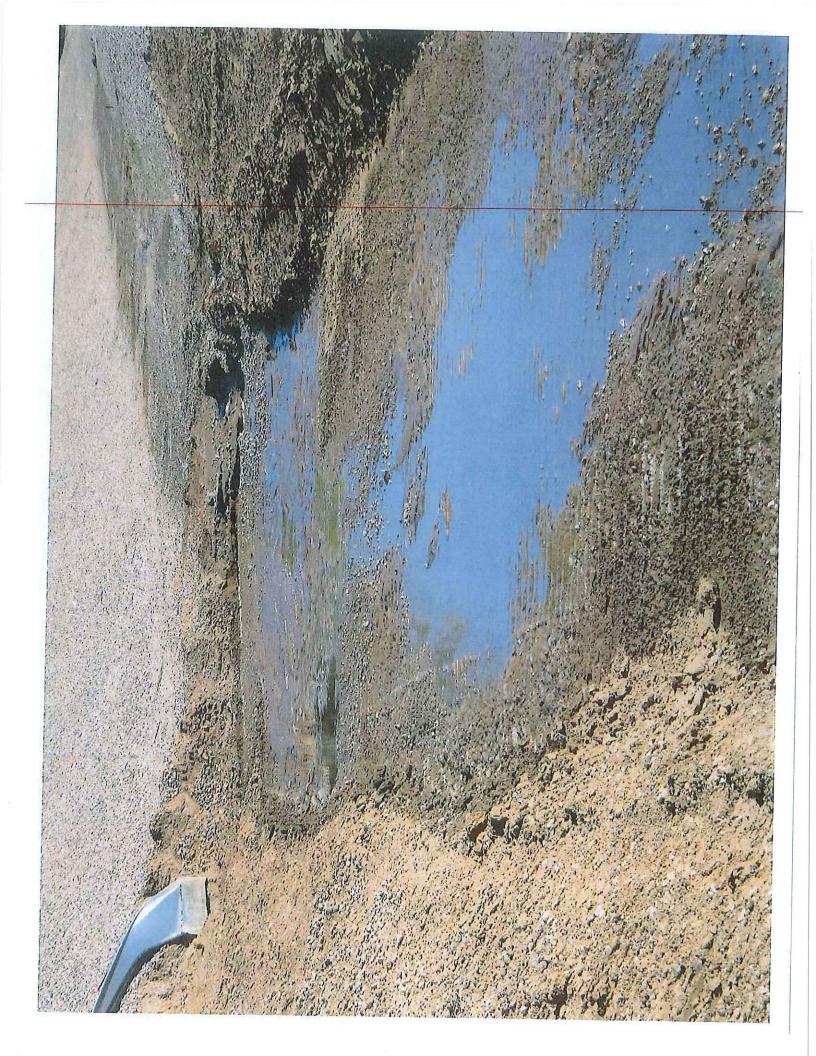
Jim Windsor, Phoenix Maintenance District Engineer

Leigh Waite, Stormwater Program Coordinator











**Environmental Services** 

Janice K. Brewer, Governor John S. Halikowski, Director John H. Nichols, Deputy Director

April 21, 2014

McDade Company Inc. 1102 North 21st Avenue Phoenix, AZ 85009

#### NOTICE OF ILLEGAL DISCHARGE OR CONNECTION

Dear Mr. McDade:

The Arizona Department of Transportation (ADOT) is responsible for maintaining not only roadways, but also the extensive storm drain network located within the State rights-of-way. The Arizona Pollutant Discharge Elimination System (AZPDES) Program, which is a component of the Clean Water Act of 1972, requires ADOT to control the amount of pollutants entering our system. Part of this charge is the detection and elimination of illegal discharges or connections to the system that may contain pollutants or are otherwise not allowed. Left uncorrected, any pollutants entering the system will ultimately impact nearby streams, as storm drainage is not treated at any sort of treatment facility. In addition, neighboring property owners are not allowed to occupy, use or interfere with public right of way without permission. Any discharge/connection without permission is an illegal encroachment on ADOT right of way.

During a post-fire reconnaissance inspection of ADOT property on February 24, 2014 it was noted that run-on and deposition of an unknown, powdery and crystalized white substance were accumulating in the southern portion of the property at 1135 North 22nd Avenue, also known as the ADOT Statewide Striping Facility. The discharge appeared to originate from 1102 North 21st Avenue, a tile manufacturing facility. Upon further review of ADOT property lines it was discovered that this substance also appears in a ditch between the PAS Technologies Manufacturing Facility at 1123 North 22nd Avenue and the McDade Company at 1102 North 21st Avenue, as well.







Therefore, this letter serves to alert both parties of a potential encroachment from property under ownership by industrial and/or manufacturing properties to our south. ADOT has completed a file search and does not retain any approvals for the encroachment; yet, the fenced area and right-of-way markers indicate there may be an exclusion of acquisition or lease of sorts.

Independent of any lease, there should not be deposition of substances from manufacturing or industrial activities upon State property. As such, all connections shall be ceased, including stormwater run-on, within 30 days (May 21, 2014). Additionally, ADOT will be conducting investigation of the substance(s) to determine proper handling and disposal procedures.

Please contact Leigh Waite at 602.712.6170, or by email at <a href="mailto:lwaite@azdot.gov">lwaite@azdot.gov</a> at your earliest convenience to accommodate remediation of the site. Without a response from both parties, a follow-up will occur in mid-May 2014. If the situation has not been addressed, ADOT will proceed with removing the connection(s) and billing the responsible party pursuant to A.R.S. § 28-7053 or referring this matter to the Arizona Office of the Attorney General.

Sincerely,

Wendy Terlizzi

Water and Air Quality Manager 1611 W Jackson Street, MD EM04

Phoenix, Arizona 85007

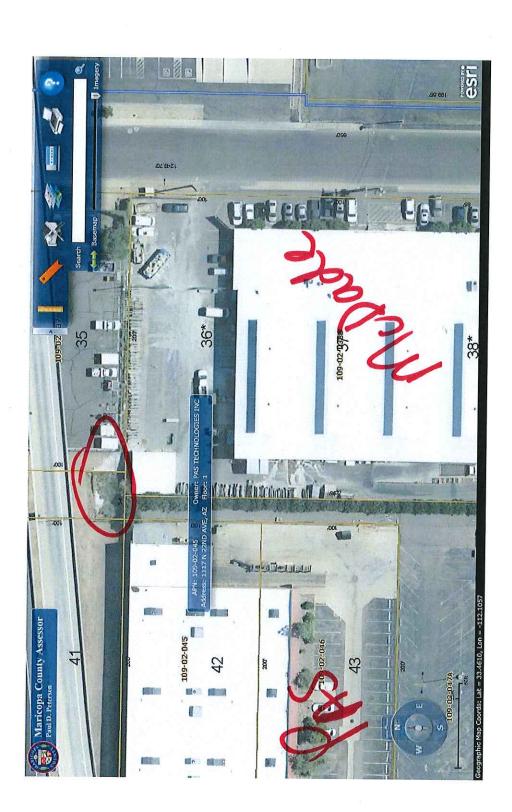
cc: Al Trujillo, Statewide Striping Facility

Ed Green, Hazardous Materials Coordinator

Paul Howard, Facilities Environmental Coordinator

Raul Torres, Property Management

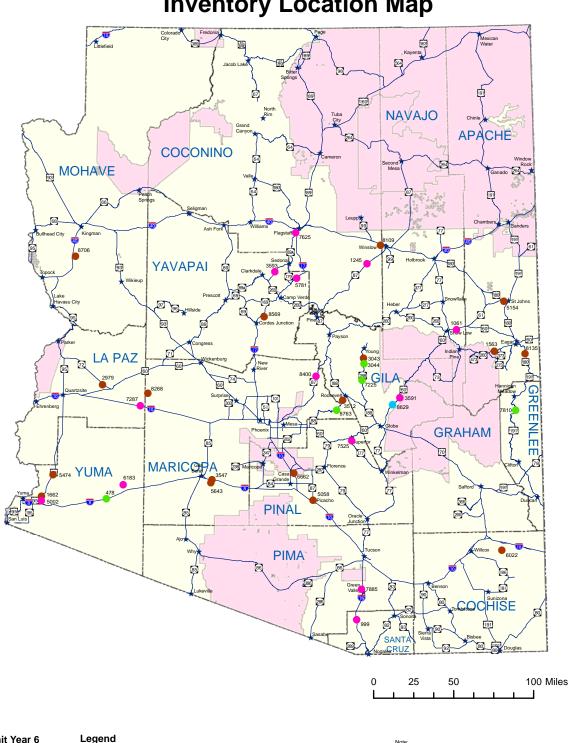
Leigh Waite, Stormwater Program Coordinator



# Appendix B

**Material Source Location Map and Inventory** 

# **ADOT-Licensed Material Sources Inventory Location Map**







#### **ADOT-Licensed Material Sources Inventory**

Material Source		ADOT		Owner	Town-					Latitude	Longitude	Total	SIC	Site	Non-	Potential Non-SW Discharg	Stockpile d	Water	Distance to Waters	U/I
(MS) No.	Source Name	District	County	Code	ship	Range	Sec	Hwy	MP	°-'-" N	° - ' - " W	Acres	Code	Use	Use	e	Material	US	(miles)	Waters
	A : A materials source in																			
	n the past, yet currently n																			.5
A1. These	sources are expected to	be used at	least annua	lly. Inspect	ions are co	nducted at I	east quarte	rly.												
1563	Pole Knoll	Globe	Apache	3	08 N	27 E	30	260	381		109-31-58.04	5	1429	20,22	No	HH,LL	Yes	Yes	0.25	No
3043	Squaw Peak	Globe	Gila	3	08 N	14 E	30	288	298		110-57-24.16	4	1499	20	Yes	HH	Yes	Yes	0.25	No
3512	Burnt Corral	Globe	Maricopa	3	03 N	11 E	1	88	236		111-11-18.65	11	1499	20	Yes	HH	Yes	Yes	0.25	No
5154	JMP Ranches Inc.	Globe	Apache	7	13 N	28 E	30	180	366		109-24-52.86	80	1499	22	No	HH	No	Yes	<0.25	No
8109	BVD	Holbrook	Coconino	1,5	19 N	15 E	21	I-40	250		110-45-32.79	80	1499	20,22,23	No	HH,MM,NN HH	Yes	Yes	>0.50	No No
6662 1662	Val Vista Tanner	Tucson Yuma	Pinal Yuma	4	05 S 08 S	06 E 21 W	23 9	I-10 95	187 38		111-43-04.41 114-25-33.55	120 25	1499 1442	22,23	Yes Yes	HH,II,JJ	No Yes	Yes Yes	On-site On-site	No
2979	Vicksburg	Yuma	La Paz	4	05 N	15 W	23	72	44		113-47-39.44	60	1499	20,22,24	Yes	HH	Yes	Yes	<0.25	No
3547	Gila Bend North	Yuma	Maricopa	4	06 S	03 W	7	I-8	124		112-35-53.80	19	1499	20.22	Yes	HH	Yes	Yes	On-site	No
5474	Castle Dome	Yuma	Yuma	9	06 S	20 W	3	95	53		114-18-32.26	14	1442	20,22	No	HH	Yes	Yes	0.25	No
	sources are used less th				ucted at lea				- 00	02 00 10.10				LU,LL	.,,				0.20	
8135	Warm Springs	Globe	Apache	3	07 N	30 E	5	180	411	34-01-33.25	109-11-53.27	42	1429	20,24	Yes	HH	Yes	Yes	On-site	No
8706	Yucca	Kingman	Mohave	1,2,4,7	18 N	17 W	30	I-40	29	34-55-04.24	114-07-02.16	133	1442	20,23	Yes	HH,MM	Yes	Yes	On-site	No
8569	Dugas	Prescott	Yavapai	3	12 N	03 E	27	I-17	270	34-23-29.20	112-02-26.61	40	1429	20	Yes	HH	Yes	Yes	<0.25	No
6022	Bowie	Safford	Cochise	2,4	13 S	28 E	32	I-10	365		109-30-02.93	134	1442	20,23	Yes	HH,MM	Yes	Yes	On-site	No
5058	Picacho	Tucson	Pinal	1	08 S	08 E	15	87	115		111-30-43.93	52	1429	20	No	HH,MM	Yes	Yes	On-site	No
5643	Gila Bend South	Yuma	Maricopa	4	06 S	03 W	19	I-8	123		112-36-42.77	256	1442	20,23	Yes	HH,MM	Yes	Yes	On-site	No
8268	Tiger Wash West	Yuma	Maricopa	4	04 N	10 W	16	I-10	73	33-41-29.35	113-18-02.48	69	1442	20,23	Yes	HH	Yes	Yes	On-site	No
TOTAL SITES IN GROUP A = 17  GROUP B: A material source in this group will include a site or portion of a site where mining occurred in the past but is not an active facility. A site that is no longer being used will remain in this group until it can be reclaimed, at which time it would be																				
moved to		ils group w	ili include a s	site or porti	on or a site	wnere minii	ng occurred	in the past	Dut is not a	an active racilit	y. A site that is	no longer	being used v	wiii remain i	n this grou	p unui it can	be recialme	d, at whic	in time it wou	id be
3044	Board Tree Saddle	Globe	Gila	3	07 N	14 E	7	288	295	33-57-37 32	110-57-11.80	3	1499	1.20	Yes	НН	Yes	Yes	<0.25	No
7225	Connor Canyon	Globe	Gila	3	06 N	13 E	36	288	280		110-58-31.83	9	1499	1,20	Yes	HH	Yes	Yes	< 0.25	No
8763	Fish Creek	Globe	Maricopa	3	02 N	11 E	5	88	227		111-15-15.76	4	1429	1.20	Yes	HH,JJ	Yes	Yes	0.25	No
7810	Crabtree	Safford	Greenlee	3	02 N	29 E	14	191	217	33-31-04.55	109-18-59.02	10	1429	1,20,22	Yes	HH	Yes	Yes	0.25	No
478	Mohawk	Yuma	Yuma	4	08 S	14 W	17	I-8	54	32-43-55.92	113-43-53.95	20	1499	26	Yes	N/A	No	Yes	On-site	No
	SITES IN GROUP B =	5																		
GROUP	C: Includes activities inte	nded to ret	urn the land	to its pre-m	nining state.	. (Once a si	te is reclaim	ned, it will b	e removed	from this Grou	p)									
		<u> </u>																		
8629	Sevenmile Wash	Globe	Gila	3	03 N	16 E	23	60	268	33-35-09.99	110-38-51.68	1	Not 14XX	1,19	Yes	HH,MM	Yes	Yes	On-site	No
TOTAL	SITES IN GROUP C =	1																		
GROUP	: NON-MINING SITES:	Includes sit	tes on origina	al ADOT in	ventory that	t are not mi	ning sites.													
3593	Spring Creek	Flagstaff	Yavapai	3	16 N	04 E	9	89A	362	34-48-00 2	111-55-23.8	5	Not 14XX	20,22	Yes	HH,LL,MM	Yes	Yes	<0.25	No
5781	Blue Grade	Flagstaff	Yavapai	3	16 N	06 E	35	I-17	304		111-40-58.62	9	Not 14XX	20,22	Yes	HH,LL,MM	Yes	Yes	0.25	No
7625	Fort Tuthill	Flagstaff	Coconino	1,3	21 N	07 E	31	89A	400		111-41-33.75	80	Not 14XX	20,22	No	HH,LL,MM	Yes	Yes	On-site	No
1061	Second Knoll	Globe	Navajo	3	10 N	23 E	18	60	347		109-56-19.91	6	Not 14XX	20,22	Yes	HH,LL	Yes	Yes	0.25	No
3591	Carol Spring Mountain	Globe	Gila	3	04 N	17 E	33	60	278	33-39-05.12	110-34-06.08	6	Not 14XX	20,22	No	HH,LL,MM	Yes	Yes	<0.25	No
7525	Defiance	Globe	Pinal	3	2 S	12 E	11	177	167		111-05-38.06	7	Not 14XX	20	Yes	HH,MM	Yes	Yes	< 0.25	No
1245	Sunset Pass	Holbrook		2,7	17 N	13 E	13	87	325		110-54-29.34	10	Not 14XX	20,22	No	HH,LL,MM	Yes	Yes	On-site	No
8400	Sunflower	Phoenix	Maricopa	3	06 N	09 E	19	87	217		111-28-30.29	2	Not 14XX	20	Yes	HH	Yes	Yes	<0.25	No
999	Tubac	Tucson	Santa Cruz	1	20 S	13 E	31	I-19	24		111-03-19.16	14	Not 14XX	20,22	No	HH,MM	Yes	Yes	On-site	No
7885	Sahuarita	Tucson	Pima	1	17 S	13 E	27	I-19	44		111-00-01.88	37	Not 14XX	20,22	No	HH,MM	Yes	Yes	<0.25	No
5002	Fortuna/Blaisdell	Yuma	Yuma	1	08 S	21 W	33	95	33		114-25-34.73	40	Not 14XX	20,26	No	HH,MM	Yes	Yes	On-site	No
6183 7287	Dateland Centennial	Yuma Yuma	Yuma La Paz	1	06 S 03 N	13 W	36 27	I-8 I-10	67 68		113-33-07.68 113-22-48.65	85 40	Not 14XX Not 14XX	20,22	Yes No	HH,MM HH.MM	Yes Yes	Yes Yes	On-site On-site	No No
	SITES IN GROUP I =	Yuma 13	La PaZ	I	U3 IN	I I VV	21	1-10	00	33-34-34.62	113-22-48.65	40	NOL 14XX	20	INO	nn,iviivi	res	res	On-site	INO
IOIAL	5.1.25 IN GROOT 1 =																			

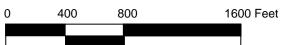
#### **ADOT-Licensed Material Sources Inventory**

_							
Definitions:	may also include a site or porti mining permit issued by the lar A1. These sources are expect A2. These sources are used le GROUP B: A material source group until it can be reclaimed,	e in this group will include a place where work or other activities rela on of a site where mining has occurred in the past, yet currently mindowner(s), applicable State or Federal government agency. Bed to be used at least annually. Inspewctions are conducted at least sess than annually. Inspections are conducted at least annually. In this group will include a site or portion of a site where mining occi, at which time it would be moved to Group C.  Intended to return the land to its pre-mining state. (Once a site is re	ning is not being actively undertake t quarterly. urred in the past but is not an activ	en and re facil	the facility man	ay or may not be cov	ered by an active
	GROUP I: Non-Mining Sites. In	ncludes sites on original ADOT inventory that are not mining sites.					
	Waters of the US:	Based on review of topographic maps and/or on-site review	ew				
	Latitude/Longitude:	Latitude/Longitude are expressed in NAD 83					
	N/A:	Not Applicable					
Site Use	1 Expired permit o 2 Never used - will 18 Undergoing recla 19 Requires revegel 20 Stockpiles prese 21 Released from si 22 Maintenance onl 23 Construction onl 24 Multiple permited 25 To be sold 26 Requires further	not be inspected until pit is developed amation tation or contouring in the by land owner/manager by land owne	ı	1 2 3 4 5 7 9 Free Co	Tribal Private Departmen odes:	est Service Land Management  at of the Army  Water for dust cont Uncontaminated gr Diverted stream flo Coring and drilling Delcing chemicals - Petroleum-containi	w water - without additives or products
Globe D Holbroo Kingma Phoenix	f District 1801 : istrict P.O. E k District 2407 i n District 3660 i Construction 4550 i Maintenance 2140 v t District 1109 i District 2082 i District 1221 :	SS:  S. Milton Road, Flagstaff, AZ 86001 Sox 2717, Globe, AZ 85502-2717 E. Navajo Blvd., Holbrook, AZ 86025 E. Andy Devine, Kingman, AZ 86401 N. Black Canyon Hwy., Phoenix, AZ 85017 W. Hilton Ave., Phoenix, AZ 8509-3740 Commerce Drive, Prescott, AZ 86305 U.S. Hwy. 70, Safford, AZ 85546 South 2nd Ave., Tucson, AZ 85713-1602 East Gila Ridge Road, Yuma, AZ 85585-2101	District Engineers:  Audra Merrick Jesus (Jesse) Gutierrez Lynn Johnson Mike Kondelis Madhu Reddy James Windsor Alvin Stump Bill Harmon Roderick Lane Paul Patane			Phone: 928-774-1491 928-402-5600 928-524-5408 928-681-6010 602-712-6550 928-777-5861 928-428-5470 928-429-5470 928-777-5861	E - Mail:  amerrick@azdot.gov jgutierrez@azdot.gov jjohnson@azdot.gov mkondelis@azdot.gov mreddy@azdot.gov jwindsor@azdot.gov astump@azdot.gov bharmon@azdot.gov patane@azdot.gov ppatane@azdot.gov ppatane@azdot.gov

# Appendix C

**Municipal Separate Storm Sewer System Monitoring Location Maps** 





# <u>Legend</u>

Stormwater Sampling Location

# Vicinity Map FLDEN BUELO FLORITUM Thorpe Park Flagstaff Flags

**Photograph**: Looking south at sampling location along north bank of Rio de Flag in Flagstaff, AZ



MS4 Sampling Location Flagstaff, Arizona





ARIZONA DEPARTMENT OF TRANSPORTATION AZPDES STORM WATER MONITORING SITE

Engineering and Environmental Consultants, Inc. 7740 North 16<sup>th</sup> Street, Suite 135, Phoenix, AZ 85020



0 600 1,200 Feet

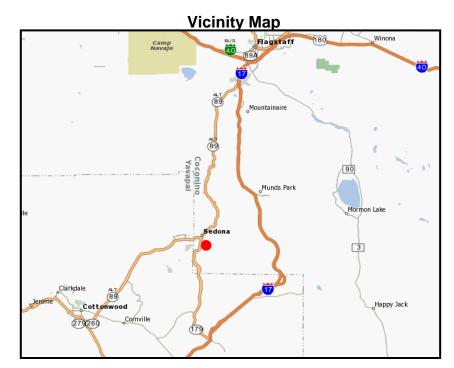


#### **Legend**

Stormwater Sampling Location

Oak Creek

State Routes 89 & 179



**Photograph**: Looking southwest at west bank of Oak Creek beneath SR179 Bridge over Oak Creek, Sedona, AZ



MS4 Sampling Location Sedona, AZ

Engineering and Environmental Consultants, Inc. 7740 North 16<sup>th</sup> Street, Suite 135, Phoenix, AZ 85020



ARIZONA DEPARTMENT OF TRANSPORTATION STORMWATER MONITORING SITE

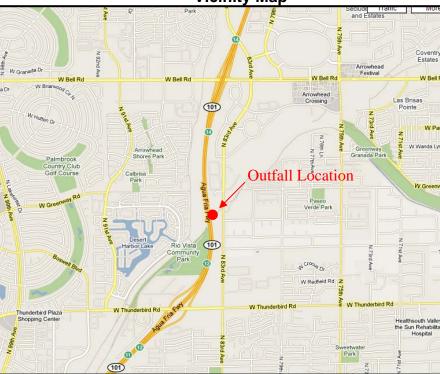


Northeast Corner of Loop 101 and Skunk Creek Bridge, Peoria, Arizona



ARIZONA DEPARTMENT OF TRANSPORTATION STORMWATER MONITORING SITE

**Vicinity Map** 



Photograph: Looking south along north bank of Skunk Creek



MS4 Sampling Location Phoenix. Arizona

Engineering and Environmental Consultants, Inc. 7740 North 16<sup>th</sup> Street, Suite 135, Phoenix, AZ 85020

**ADOT Outfall 101-13.68** 

**Legend** 

Stormwater Sampling Location



0 400 800 1600 Feet

V E

1444 West Grant Road Tucson, Arizona 85745

Arizona Department of Transportation MS4 Stormwater Monitoring Site

## <u>Legend</u>

- Stormwater Sampling Location
- ---- Santa Cruz
- Stormwater Conveyance
- ..... ADOT Grant Road Maintenance Yard

Silverbell Golf Course

W Prince Rd W Prince Rd W Prince Rd Golf Course

W Glenn St Golf Course

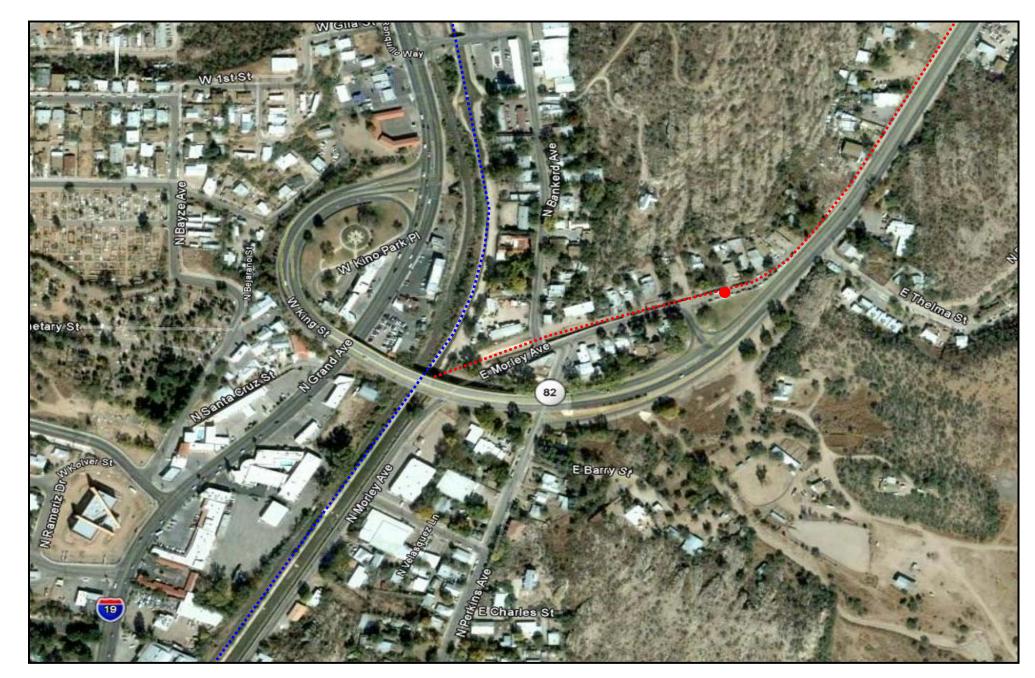
W River We W

**Photograph**: Looking north at sampling location located within ADOT Grant Road Maintenance Yard in Tucson, AZ



MS4 Sampling Location Tucson, Arizona

Engineering and Environmental Consultants, Inc. 7740 North 16<sup>th</sup> Street, Suite 135, Phoenix, AZ 85020









ARIZONA DEPARTMENT OF TRANSPORTATION STORMWATER MONITORING SITE

# <u>Legend</u>

- Stormwater Sampling Location
- ..... Nogales Wash
- ..... Stormwater Conveyance

# **Vicinity Map**



**Photograph**: Looking north at sampling location along north side of SR 82 in Nogales, AZ



MS4 Sampling Location Nogales, Arizona

Engineering and Environmental Consultants, Inc. 7740 North 16<sup>th</sup> Street, Suite 135, Phoenix, AZ 85020

# Appendix D

**Municipal Separate Storm Sewer System Monitoring Data and Lab Reports** 

## Appendix D - Monitoring Data Legend

NA – not analyzed by lab

NS – no sample

NR – not required

IS – insufficient sample

IF – insufficient flow

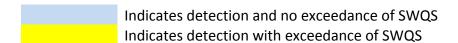
EF – equipment failure

\* - collected from basin near 32<sup>nd</sup> St and Loop 202

\*\* - matrix interference

\*\*\* - estimated values

Color coded cells



#### FLAGSTAFF MS4

#### Monitoring Data ADOT Flagstaff Area MS4

OUTFALL ID: B40-196.14		MONITORING SEASONS										
RECEIVING WATER: Rio De Flag							ner: June 1- O					
WATERSHED: Little Colorado							r: November					
DESIGNATED USES: Aquatic & Wildlife EDW, PBC		Ye	ear 1	Yea	ır 2		ear 3		ar 4	Ye	ar 5	Year 6
AUTOSAMPLER STARTUP DATE: August 11, 2011		Winter 2008-09	Summer 2009	Winter 2009-10	Summer 2010	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14
CAN	/PLING DATE	2008-09		2009-10			_					
-							NS/Sys. Start	NS/EF	10/12/12	1/25/13	8/21/13	IF
MONITORING PARAMETERS	WQS	ND	ND	l ND	ND	ND	NG	NC/FF	45.5	40.05	24.24	
Flow 	NNS	NR	NR	NR	NR	NR	NS	NS/EF	45.5	18.35	84.34	IF
pH	5.0-9.0	NR	NR	NR	NR	NR	NS	NS/EF	7.36	7.62	7	IF.
Temperature (F°)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	68.4	52.4	72.23	IF.
Hardness	NNS	NR	NR	NR	NR	NR	NS	NS/EF	67	120	34	IF.
Specific conductance (umhos/cm)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	160	220	120	IF
Total Dissolved Solids (TDS) (mg/L)	500.00	NR	NR	NR	NR	NR	NS	NS/EF	100	120	110	IF
Total Suspended Solids (TSS) (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	95	260	65	IF
Turbidity (NTU)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	33	180	96	IF
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	<5.00	15	28	IF
Chemical Oxygen Demand (COD) (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	44	200	100	IF
Surfactants (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	0.13	<0.10	0.45	IF
Inorganics												
Cyanide (mg/L)	0.20	NR	NR	NR	NR	NR	NS	NS/EF	<0.0050	0.016	<0.0050	IF
Sulfates (mg/L)	250.00	NR	NR	NR	NR	NR	NS	NS/EF	<5.0	<5.0	8.8	IF
Nutrients												
Nitrate (mg/L)	10.00	NR	NR	NR	NR	NR	NS	NS/EF	0.63	0.08***	0.05***	IF
Nitrite (mg/L)	1.00	NR	NR	NR	NR	NR	NS	NS/EF	0.19	0.08***	0.05***	IF
Total Ammonia (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	0.12	0.34	0.73	IF
Total Kjeldahl Nitrogen (TKN) (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	1.1	3.2	2.8	IF
Total Phosphorous (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	0.34	2	0.31	IF
Phosphate, Ortho (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	0.18	0.36	NA/IS	IF
Sodium (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	13	30	13	IF
Calcium (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	18	31	9.8	IF
Chloride (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	14	36	11	IF
Microbiological								-,				
Coliform, fecal (MPN/100 ml)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	<9700	120	23000	IF
E.Coli (MPN/100 ml)	100.00	NR	NR	NR	NR	NR	NS	NS/EF	<9700	140	3900	IF
Total Metals								,				
Antimony (mg/L)	0.006	NR	NR	NR	NR	NR	NS	NS/EF	<0.020	<0.020	<0.020	IF
Arsenic (mg/L)	0.050	NR	NR	NR	NR	NR	NS	NS/EF	<0.020	<0.020	<0.020	IF
Barium (mg/L)	2.000	NR	NR	NR	NR	NR	NS	NS/EF	0.070	0.260	0.044	IF
Beryllium (mg/L)	0.004	NR	NR	NR	NR	NR	NS	NS/EF	<0.0020	<0.0040	<0.0020	IF
Cadmium (mg/L)	0.004	NR	NR	NR	NR	NR	NS NS	NS/EF	<0.0020	<0.0040	<0.0020	IF.
Caumum (mg/L)	0.005	INL	IAL	INL	IAL	141/	11/2	IND/EF	\U.UU3U	\U.UU3U	\U.UU3U	IF.

#### Monitoring Data ADOT Flagstaff Area MS4

RECEIVING WATER: Rio De Flag		Summer: June 1- October 31										
WATERSHED: Little Colorado						Winte	r: November	1- May 31				
DESIGNATED USES: Aquatic & Wildlife EDW, PBC		Ye	ear 1	Yea	ar 2	Ye	ear 3	Yea	ar 4	Ye	ear 5	Year 6
AUTOSAMPLER STARTUP DATE: August 11, 2011		Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
AOTOSAWIFEER STARTOF DATE. August 11, 2011		2008-09	2009	2009-10	2010	2010-11	2011	2011-12	2012	2012-13	2013	2013-14
SAN	MPLING DATE						NS/Sys. Start	NS/EF	10/12/12	1/25/13	8/21/13	IF
Chromium (mg/L)	0.100	NR	NR	NR	NR	NR	NS	NS/EF	<0.010	0.015	<0.010	IF
Copper (mg/L)	1.300	NR	NR	NR	NR	NR	NS	NS/EF	<0.020	0.044	<0.020	IF
Lead (mg/L)	0.015	NR	NR	NR	NR	NR	NS	NS/EF	<0.0050	0.037	0.0063	IF
Mercury (mg/L)	0.002	NR	NR	NR	NR	NR	NS	NS/EF	<0.00020	<0.00020	<0.0020	IF
Nickel (mg/L)	0.140	NR	NR	NR	NR	NR	NS	NS/EF	<0.020	<0.020	<0.020	IF
Selenium (mg/L)	0.020	NR	NR	NR	NR	NR	NS	NS/EF	<0.020	<0.020	<0.020	IF
Silver (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	<0.010	<0.010	<0.010	IF
Zinc (mg/L)	2.10	NR	NR	NR	NR	NR	NS	NS/EF	0.085	<0.30	0.089	IF
Organic Toxic Pollutants												
Total Petroleum Hydrocarbons (TPH) (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	0.86	0.14	1.6	IF
Oil & Grease (Hexane Extr) (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	<5.0	7.6	19	IF
Chlorine (mg/L)	0.70000	NR	NR	NR	NR	NR	NS	NS/EF	<0.10	0.14	0.34	IF
VOCs, Semi-VOCs and Pesticides												
Benzene (mg/L)	0.0050	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.00050	NR	NR
Ethylbenzene (mg/L)	0.0050	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.00050	NR	NR
Toluene (mg/L)	1.00	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.0050	NR	NR
Total Xylene (mg/L)	10.00	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.0015	NR	NR
Acid Compounds												
2-Chlorophenol (mg/L)	0.035	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.010	NR	NR
2,4-Dichlorophenol (mg/L)	0.021	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.010	NR	NR
2,4-Dimethylphenol (mg/L)	0.140	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.010	NR	NR
4,6-Dinitrocreosol (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	NA	NR	NR
2,4-Dinitrophenol (mg/L)	0.014	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.010	NR	NR
2-Nitrophenol (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.010	NR	NR
4-Nitrophenol (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.010	NR	NR
P-Chloro-m-cresol (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	NA	NR	NR
Pentachlorophenol (mg/L)	0.001	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.010	NR	NR
Phenol (mg/L)	4.20	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.010	NR	NR
2,4,6-Trichlorophenol (mg/L)	0.00320	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.010	NR	NR
Bases/Neutrals	0.42			1	1		1	110/55	l			
Acenaphthene (mg/L)	0.42	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.0010	NR	NR
Acenaphthylene (mg/L)	NNS 2.10	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.0010	NR	NR
Anthracene (mg/L)	0.00190	NR	NR	NR	NR	NR	NS NS	NS/EF	IS	<0.0010	NR	NR NB
Benzo(a)anthracene (mg/L)	0.00190	NR	NR	NR	NR	NR	NS NS	NS/EF	IS	<0.0010	NR	NR NB
Benzo(a)pyrene (mg/L) Benzo(b)fluoranthene (mg/L)	0.00020 NNS	NR NB	NR NR	NR NR	NR NR	NR	NS NS	NS/EF	IS IS	<0.0010	NR	NR NB
Delizo(b)liuorantnene (mg/L)	CNINI	NR	NK	NK	NK	NR	NS	NS/EF	15	<0.0010	NR	NR

#### Monitoring Data ADOT Flagstaff Area MS4

RECEIVING WATER: Rio De Flag						Sumn	ner: June 1- Od	tober 31				
WATERSHED: Little Colorado						Winte	r: November 1	L- May 31				
DESIGNATED USES: Aquatic & Wildlife EDW, PBC		Ye	ear 1	Yea	ar 2	Y	ear 3	Yea	ar 4	Ye	ar 5	Year 6
AUTOCAMADI ED STADTUD DATE: Accessed 11, 2011		Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
AUTOSAMPLER STARTUP DATE: August 11, 2011		2008-09	2009	2009-10	2010	2010-11	2011	2011-12	2012	2012-13	2013	2013-14
SAN	/IPLING DATE						NS/Sys. Start	NS/EF	10/12/12	1/25/13	8/21/13	IF
Benzo(g,h,i)perylene (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.0010	NR	NR
Benzo(k)fluoranthene (mg/L)	0.0480	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.0010	NR	NR
Chrysene (mg/L)	0.00479	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.0010	NR	NR
Dibenzo(a,h)anthracene (mg/L)	0.00190	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.0010	NR	NR
Diethyl phthalate (mg/L)	5.60	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.0030	NR	NR
Dimethyl phthalate (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.0030	NR	NR
Di-n-butyl phthalate (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.0030	NR	NR
Di-n-octyl phthalate (mg/L)	2.80	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.0030	NR	NR
1,2-Diphenylhydrazine (Azobenzene) (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	NA	NR	NR
Fluoranthene (mg/L)	0.28	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.0010	NR	NR
Fluorene (mg/L)	0.28	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.0010	NR	NR
Indeno(1,2,3-cd)pyrene (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.0010	NR	NR
Naphthalene (mg/L)	0.14	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.0010	NR	NR
Phenanthrene (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.0010	NR	NR
Pyrene (mg/L)	0.21	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.0010	NR	NR
Pesticides												
Aldrin (mg/L)	0.0020	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.000050	NR	NR
Alpha BHC (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.000050	NR	NR
Beta BHC (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.000050	NR	NR
Delta BHC (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.000050	NR	NR
Gamma BHC (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.000050	NR	NR
Chlordane (mg/L)	0.0020	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.000050	NR	NR
4,4-DDD (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.000050	NR	NR
4,4-DDE (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.000050	NR	NR
4,4-DDT (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.000050	NR	NR
Dieldrin (mg/L)	0.0020	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.000050	NR	NR
Alpha-endenosulfan (mg/L); Endenosulfan I	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.000050	NR	NR
Beta-endenosulfan (mg/L); Endenosulfan II	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.000050	NR	NR
Endosulfan sulfate (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.000050	NR	NR
Endrin (mg/L)	0.0020	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.000050	NR	NR
Endrin aldehyde (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.000050	NR	NR
Heptachlor (mg/L)	0.00040	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.000050	NR	NR
Heptachlor epoxide (mg/L)	0.00020	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.000050	NR	NR
Toxaphene (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	IS	<0.00050	NR	NR



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John Burton Engineering & Env. Consultants, INC. -AZ 7878 N. 16th Street, Suite 140 Phoenix, AZ 85020

#### Report Summary

Wednesday August 28, 2013

Report Number: L653812 Samples Received: 08/23/13

Client Project:

Description:

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Daphne Richards , ESC Representative

#### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

August 28,2013

Engineering & Env. Consultants, INC 7878 N. 16th Street, Suite 140

Phoenix, AZ 85020

ESC Sample # : L653812-01

Date Received : August 23, 2013

Description

Site ID : FLAGSTAFF MSF

Project # :

Sample ID : FLAG082113

Collected By : Kirk Creswick Collection Date : 08/21/13 14:08

Parameter	Result	Det. Limi	t Units	Method	Date/Time	Analyst	Dil.
Coliform, fecal	23000		col/100ml	9222D	08/24/13 1424	KMR	100
E.Coli Coliform,Total	3900 3000000	100 10000			08/24/13 1426 08/24/13 1426	KMR KMR	100 10000

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Notes:

The reported analytical results relate only to the sample submitted
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All samples analyzed in accordance with 40 CFR, Part 136.3
Reported: 08/28/13 10:25 Printed: 08/28/13 10:25

# Summary of Remarks For Samples Printed 08/28/13 at 10:25:21

TSR Signing Reports: 288 R5 - Desired TAT

Baker Exxon Proj 105022.01 Ken & Mel's Proj 105022.02 MCAA Proj 305007.05 -ALL require TO-15+GRO on ALL AIR SAMPLES ENGENVPAZ-122012S NO CHARGE TBs

Sample: L653812-01 Account: ENGENVPAZ Received: 08/23/13 09:30 Due Date: 08/30/13 00:00 RPT Date: 08/28/13 10:25



Engineering & Env. Consultants, INC. -AZ John Burton 7878 N. 16th Street, Suite 140  $\,$ 

Phoenix, AZ 85020

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Est. 1970

Quality Assurance Report Level II

L653812

August 28, 2013

Batch number /Run number / Sample number cross reference

WG679038: R2793252: L653812-01 WG679042: R2793685: L653812-01

 $<sup>^{\</sup>star}$  \* Calculations are performed prior to rounding of reported values.

<sup>\*</sup> Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



Engineering & Env. Consultants, INC. -AZ John Burton 7878 N. 16th Street, Suite 140  $\,$ 

Phoenix, AZ 85020

Quality Assurance Report Level II

L653812

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

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August 28, 2013

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Phoenix AZ 85020								ds Lab								LIA-B SIC	1.E.N.C.E	
Report to:			Email To:				q	Legends								12065 Lebanon Rd Mount Juliet, TN 371	22 1	
John Burton			jburton@	eecphx.com			La S	Leç		Through the property of the control						Phone: 615-758-5858 Phone: 800-767-5859	17/6	
Project Description:				City/State Collected:			gend	Sub to				a. /		#		Fax: 615-758-5859	812	
Phone: Fax:	Client Project	#		Lab Project # ENGENVPA	Z071013S	IC.	Sub to Legends Lab									100		
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John Burton Engineering & Env. Consultants, INC. -AZ 7878 N. 16th Street, Suite 140 Phoenix, AZ 85020

#### Report Summary

Wednesday September 04, 2013

Report Number: L653657

Samples Received: 08/23/13

Client Project:

Description:

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Daphne Richards , ESC Representative

#### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

September 04, 2013

Engineering & Env. Consultants, INC 7878 N. 16th Street, Suite 140

Phoenix, AZ 85020

ESC Sample # : L653657-01 Date Received : August 23, 2013

Description

Site ID : FLAGSTAFF MSU Sample ID : FLAG082113

Project # :

Collected By : Kirk Creswick Collection Date : 08/21/13 14:08

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	4500CN E-2011	08/31/13	1
Oil & Grease (Hexane Extr)	19.	5.6	mg/l	1664A	08/29/13	1
TPH (GC/FID) High Fraction	1.6	0.10	mg/l	3511/8015	08/30/13	1
Surrogate recovery(%) o-Terphenyl	103.		% Rec.	3511/8015	08/30/13	1

BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 09/04/13 09:22 Printed: 09/04/13 09:23



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REPORT OF ANALYSIS

September 04, 2013

Engineering & Env. Consultants, INC 7878 N. 16th Street, Suite 140 Phoenix, AZ 85020

Date Received : August 23, 2013

Description

Sample ID : FLAG082113

Collec Collec ESC Sample # : L653657-02

Site ID : FLAGSTAFF MSU Project # :

ected By	:	Kirk Creswick
ection Date	:	08/21/13 14:08

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride Sulfate	11. 8.8	1.0 5.0	mg/l mg/l	300.0	08/24/13 08/24/13	1 1
BOD	28.0	5.00	mg/l	5210 B-2011	08/28/13	1
Chlorine, residual	0.34	0.10	mg/l	4500Cl G-2011	08/28/13	1
COD	100	10.	mg/l	410.4	08/29/13	1
Hardness, Total (mg/L as CaCO3)	34.	30.	mg/l	130.1	08/29/13	1
MBAS	0.45	0.10	mg/l	5540 C-2011	08/23/13	1
Ammonia Nitrogen	0.73	0.10	mg/l	350.1	08/31/13	1
рН	7.0		su	4500H+ B-2011	08/29/13	1
Nitrate-Nitrite	BDL	0.10	mg/l	353.2	08/29/13	1
Phosphorus, Total	0.31	0.10	mg/l	365.4	08/29/13	1
Specific Conductance	120		umhos/cm	120.1	08/30/13	1
Kjeldahl Nitrogen, TKN	2.8	0.10	mg/l	351.2	09/03/13	1
Turbidity	96.	0.10	NTU	2130 B-2011	08/23/13	1
Dissolved Solids	110	10.	mg/l	2540 C-2011	08/27/13	1
Suspended Solids	65.	2.5	mg/l	2540 D-2011	08/27/13	1
Mercury	BDL	0.00020	mg/l	245.1	08/26/13	1
Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Copper Lead Nickel Selenium	BDL BDL 0.044 BDL BDL 9.8 BDL BDL 0.0063 BDL BDL	0.020 0.020 0.0050 0.0020 0.0050 0.50 0.	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	200.7 200.7 200.7 200.7 200.7 200.7 200.7 200.7 200.7 200.7 200.7	08/30/13 08/30/13 08/30/13 08/30/13 08/30/13 08/30/13 08/30/13 08/31/13 08/30/13	1 1 1 1 1 1 1 1 1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L653657-02 (PH) - 7.0@18.7c



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REPORT OF ANALYSIS

September 04, 2013

Project # :

Engineering & Env. Consultants, INC 7878 N. 16th Street, Suite 140

Phoenix, AZ 85020

ESC Sample # : L653657-02

Date Received : August 23, 2013

Description

Site ID : FLAGSTAFF MSU

Sample ID : FLAG082113

Collected By : Kirk Creswick Collection Date: 08/21/13 14:08

Parameter	Result	Det. Limit	Units	Method	Date	Dil.	
Silver	BDL	0.010	mg/l	200.7	08/30/13	1	
Sodium	13.	0.50	mg/l	200.7	08/30/13	1	
Zinc	0.089	0.030	mg/l	200.7	08/30/13	1	

BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 09/04/13 09:22 Printed: 09/04/13 09:23 L653657-02 (PH) - 7.0@18.7c

#### Attachment A List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte Run ID		Qualifier
L653657-01 L653657-02	WG679445 WG679060 WG679066 WG678562	SAMP SAMP SAMP SAMP	TPH (GC/FID) High Fraction Chlorine,residual pH Suspended Solids	R2799542 R2794943 R2795420 R2792824	WT8 T8 T8 J3

# Attachment B Explanation of QC Qualifier Codes

Qualifier	Meaning							
J3	The associated batch QC was outside the established quality control range for precision. $\  \  \  \  \  \  \  \  \  \  \  \  \ $							
Т8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.							
W	(ESC)-The laboratory analysis was from a sample collected in an improper container							

#### Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

#### Definitions

- Accuracy The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision The agreement between a set of samples or between duplicate samples.

  Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

# Summary of Remarks For Samples Printed 09/04/13 at 09:23:10

TSR Signing Reports: 288 R5 - Desired TAT

Baker Exxon Proj 105022.01 Ken & Mel's Proj 105022.02 MCAA Proj 305007.05 -ALL require TO-15+GRO on ALL AIR SAMPLES ENGENVPAZ-122012S NO CHARGE TBs

Sample: L653657-01 Account: ENGENVPAZ Received: 08/23/13 09:30 Due Date: 08/30/13 00:00 RPT Date: 09/04/13 09:22

Sample: L653657-02 Account: ENGENVPAZ Received: 08/23/13 09:30 Due Date: 08/30/13 00:00 RPT Date: 09/04/13 09:22 Added pH per DR. AV 8/26



Engineering & Env. Consultants, INC. -AZ John Burton 7878 N. 16th Street, Suite 140

Phoenix, AZ 85020

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Quality Assurance Report Level II

L653657

		Laboratory B	Blank		
Analyte	Result	Units	% Rec	Limit	Batch Date Analyze
Turbidity	< .1	NTU			WG678519 08/23/13 12:
MBAS	< .1	mg/l			WG678539 08/23/13 13:
Chloride Sulfate	< 1 < 5	mg/l mg/l			WG678636 08/24/13 07: WG678636 08/24/13 07:
Mercury	< .0002	mg/l			WG678544 08/26/13 10:
Dissolved Solids	< 10	mg/l			WG678564 08/27/13 13:
Suspended Solids	< 2.5	mg/l			WG678562 08/27/13 13:
BOD	0.0600	mg/l			WG678495 08/28/13 10:
Chlorine, residual	< .1	mg/l			WG679060 08/28/13 16:
Hardness, Total (mg/L as CaCO3)	< 30	mg/l			WG679336 08/29/13 15:
COD	< 10	mg/l			WG679328 08/29/13 13:
Phosphorus, Total	< .1	mg/l			WG679322 08/29/13 17:
Oil & Grease (Hexane Extr)	< 5	mg/l			WG679365 08/29/13 15:
Nitrate-Nitrite	< .1	mg/l			WG679544 08/29/13 23:
Nickel Sodium	< .02 < .5	mg/l mg/l			WG679107 08/30/13 02: WG679107 08/30/13 02:
Cyanide	< .005	mg/l			WG679316 08/31/13 05
Ammonia Nitrogen	< .1	mg/l			WG679561 08/31/13 07:
Specific Conductance	1.10	umhos/cm			WG679582 08/30/13 18:
TPH (GC/FID) High Fraction o-Terphenyl	< .1	mg/l % Rec.	95.30	50-150	WG679445 08/30/13 15:
Kjeldahl Nitrogen, TKN	< .1	mg/l			WG679574 09/03/13 13:

<sup>\*</sup> Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



Engineering & Env. Consultants, INC. -AZ John Burton 7878 N. 16th Street, Suite 140  $\,$ 

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Quality Assurance Report Level II

L653657

			Duplicate				
Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Turbidity	NTU	5.50	5.60	1.98	20	L653620-01	WG67851
MBAS	mg/l	0.0420	0.0410	2.41	20	L653604-01	WG678539
Chloride	mg/l	20.0	20.0	0	20	L653760-05	WG678636
Sulfate Chloride	mg/l mg/l	19.0 62.0	19.0 61.0	0 1.63	20 20	L653760-05 L653760-10	WG67863
Sulfate	mg/l	0	0	0	20	L653760-10	WG678636
Mercury	mg/l	0	0.0000489	1.73	20	L653624-01	WG67854
Dissolved Solids	mg/l	320.	320.	0.313	5	L653616-01	WG678564
Suspended Solids	mg/l	71.0	65.2	8.24*	5	L653657-02	WG678562
BOD	mg/l	0	0	0	5	L653526-01	WG678495
BOD	mg/l	5.20	0	NA	5	L653645-02	WG67849
BOD	mg/l	790.	890.	11.7*	5	L653653-01	WG678495
BOD	mg/l	0	0	0	5	L653670-01	WG678495
Chlorine, residual	mg/l	0.460	0.450	2.20	20	L653108-05	WG679060
рН	su	8.60	8.60	0.116	1	L653480-02	WG679066
рН	su	7.90	8.00	1.01*	1	L654094-02	WG679066
Hardness, Total (mg/L as CaCO3)	mg/l	87.0	94.9	8.69	20	L653581-02	WG679336
Hardness, Total (mg/L as CaCO3)	mg/l	230.	241.	4.67	20	L652748-03	WG679336
COD	mg/l	94.0	85.0	10.1*	5	L653692-02	WG679328
COD	mg/l	46.0	45.0	2.20	5	L653898-01	WG679328
Phosphorus, Total	mg/l	2.80	3.10	10.2	20	L653655-01	WG679322
Phosphorus, Total	mg/l	3.50	3.80	8.22	20	L653717-01	WG679322
Nitrate-Nitrite	mg/l	0	0	0	20	L653983-01	WG67954
Nickel	mg/l	0	-0.00154	75.6*	20	L654089-10	WG67910
Sodium	mg/l	1.80	1.92	4.13	20	L654089-10	WG67910
Nitrate-Nitrite	mg/l	0.130	0.140	7.41	20	L653075-01	WG67954
Cyanide	mg/l	0	0	0	20	L653646-07	WG679316
Cyanide	mg/l	0	0	0	20	L653700-02	WG679316

<sup>\*</sup> Performance of this Analyte is outside of established criteria.
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12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

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Quality Assurance Report Level II

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		Dı	plicate				
Analyte	Units	Result	Duplicate	e RPD	Limit	Ref Samp	Batch
Ammonia Nitrogen	mg/l	0	0.170	NA	20	L654063-03	WG679561
Ammonia Nitrogen	mg/l	2.80	2.80	0	20	L653640-01	WG679561
Specific Conductance	umhos/cm	2300	2300	0	20	L653625-01	WG679582
Specific Conductance	umhos/cm		540.	0.557	20	L654647-01	WG679582
_							
Kjeldahl Nitrogen, TKN Kjeldahl Nitrogen, TKN	mg/l mg/l	3.60	3.40	4.32 0.590	20 20	L653719-01 L653128-03	WG679574 WG679574
Kjerdani Nitrogen, ikh	IIIG/I	34.0	34.0	0.590	20	ьозэтие-оз	WG6/95/4
_		Laboratory			_		_
Analyte	Units	Known Val	_	Result	% Rec	Limit	Batch
Turbidity	NTU	40	3:	9.0	97.5	90-110	WG678519
MBAS	mg/l	1	0	.882	88.2	85-115	WG678539
Chloride	mg/l	40	3	9.9	99.8	90-110	WG678636
Sulfate	mg/l	40		9.8	99.5	90-110	WG678636
Mercury	mg/l	.003	0	.00293	97.6	85-115	WG678544
Dissolved Solids	mg/l	8800	8	500	96.6	85-115	WG678564
Guran and add Gallida		777	0.1	72.	112	05 115	149670560
Suspended Solids	mg/l	773	8	12.	113.	85-115	WG678562
BOD	mg/l	198		16.	109.	84.6-115.4	WG678495
BOD	mg/l	198		20.	111.	84.6-115.4	WG678495
BOD	mg/l	198		13.	108.	84.6-115.4	WG678495
BOD	mg/l	198		21.	112.	84.6-115.4	WG678495
BOD	mg/l	198		14.	108.	84.6-115.4	WG678495
BOD	mg/l	198	۷	08.	105.	84.6-115.4	WG678495
Chlorine, residual	mg/l	1.74	1	.60	92.0	85-115	WG679060
рН	su	6.96	6	.90	99.1	98.3-101.7	WG679066
Hardness, Total (mg/L as CaCO3)	mg/l	200	2	11.	106.	85-115	WG679336
COD	mg/l	183	1:	95.	107.	90-110	WG679328
Phosphorus, Total	mg/l	1	1	.03	103.	90-110	WG679322
Oil & Grease (Hexane Extr)	mg/l	40	3	5.5	88.8	78-114	WG679365

<sup>\*</sup> Performance of this Analyte is outside of established criteria.
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		Labor	atory Cont	rol Sample				
Analyte	Units	Know	m Val	Result	% Rec	Lit	nit	Batch
Nitrate-Nitrite	mg/l	5		5.05	101.	90-	-110	WG67954
Nickel Sodium	mg/l mg/l	1 10		0.925 10.7	92.5 107.		-115 -115	WG67910 WG67910
Cyanide	mg/l	.1		0.0957	95.7	90-	-110	WG67931
Ammonia Nitrogen	mg/l	7.5		8.16	109.	90	-110	WG67956
Specific Conductance	umhos/	cm 878		890.	101.	85-	-115	WG67958
TPH (GC/FID) High Fraction o-Terphenyl	mg/l	1.5		1.62	108. 103.0		-150 -150	WG67944 WG67944
Kjeldahl Nitrogen, TKN	mg/l	5.5		5.75	105.	90-	-110	WG67957
Analyte		Laboratory Result	Control S	ample Duplicate	e Limit	RPD	Limit	Batch
Turbidity	NTU	39.0	39.0	98.0	90-110	0	20	WG67851
MBAS	mg/l	0.868	0.882	87.0	85-115	1.60	20	WG67853
Chloride Sulfate	mg/l mg/l	39.9 40.0	39.9 39.8	100. 100.	90-110 90-110	0 0.501	20 20	WG67863 WG67863
Dissolved Solids	mg/l	8480	8500	96.0	85-115	0.236	5	WG67856
Suspended Solids	mg/l	832.	872.	108.	85-115	4.69	5	WG67856
Chlorine, residual	mg/l	1.70	1.60	98.0	85-115	6.06	20	WG67906
рН	su	6.90	6.90	99.0	98.3-101.7	0	20	WG67906
Hardness, Total (mg/L as CaCO3)	mg/l	209.	211.	104.	85-115	0.952	20	WG67933
COD	mg/l	192.	195.	105.	90-110	1.55	5	WG67932
Phosphorus, Total	mg/l	1.02	1.03	102.	90-110	0.976	20	WG67932
Oil & Grease (Hexane Extr)	mg/l	35.8	35.5	90.0	78-114	0.842	20	WG67936

<sup>\*</sup> Performance of this Analyte is outside of established criteria.
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		-	Control Sam		icate				
Analyte	Units	Result	Ref	%Rec		Limit	RPD	Limit	Batch
Nitrate-Nitrite	mg/l	5.00	5.05	100.		90-110	0.995	20	WG67954
Cyanide	mg/l	0.0971	0.0957	97.0		90-110	1.45	20	WG6793
Ammonia Nitrogen	mg/l	8.17	8.16	109.		90-110	0.122	20	WG67956
Specific Conductance	umhos/	890.	890.	101.		85-115	0	20	WG67958
TPH (GC/FID) High Fraction o-Terphenyl	mg/l	1.65	1.62	110. 104.0		50-150 50-150	2.25	20	WG67944 WG67944
Kjeldahl Nitrogen, TKN	mg/l	5.28	5.75	96.0		90-110	8.52	20	WG67957
			Matrix Spik	e					
Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit		Ref Samp	Batch
MBAS	mg/l	1.07	0	1	107.	80-120		L653620-01	WG67853
Chloride	mg/l	76.9	28.0	50	97.8	80-120		L653760-03	WG67863
Sulfate	mg/l	53.4	0	50	107.	80-120		L653760-03	WG6786
Mercury	mg/l	0.00311	0.0000489	.003	102.	70-130		L653624-01	WG67854
Chlorine, residual	mg/l	2.10	0.450	1.74	94.8	85-115		L653108-05	WG67906
Hardness, Total (mg/L as CaCO3)	mg/l	251.	89.4	150	108.	80-120		L653581-01	WG67933
COD	mg/l	473.	86.0	400	96.8	90-110		L653692-03	WG6793
Phosphorus, Total	mg/l	4.32	1.60	2.5	109.	90-110		L653658-01	WG67932
Oil & Grease (Hexane Extr)	mg/l	70.8	31.7	40	97.8	78-114		L653702-01	WG67936
Nickel	mg/l	0.906	-0.00154	1	90.6	75-125		L654089-10	WG6791
Sodium	mg/l	12.4	1.92	10	105.	75-125		L654089-10	WG67910
Nitrate-Nitrite	mg/l	6.67	0.220	5	129.*	90-110		L653088-01	WG67954
Cyanide	mg/l	0.192	0	. 2	96.0	90-110		L653624-02	WG6793
Ammonia Nitrogen	mg/l	5.60	0.0670	5	111.*	90-110		L654063-02	WG67956

<sup>\*</sup> Performance of this Analyte is outside of established criteria.
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Analyte	Units	MS Res	Matrix Ref R	-	% Rec	Limit		Ref Samp	Batch
Kjeldahl Nitrogen, TKN	mg/l	6.73	1.70	5	101.	90-110		L653192-04	WG679574
_			-	Duplicate				_	_
Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
MBAS	mg/l	1.04	1.07	104.	80-120	2.84	20	L653620-01	WG678539
Chloride	mg/l	76.5	76.9	97.0	80-120	0.522	20	L653760-03	WG678636
Sulfate	mg/l	53.0	53.4	106.	80-120	0.752	20	L653760-03	WG678636
Mercury	mg/l	0.00308	0.00311	101.	70-130	1.22	30	L653624-01	WG678544
Chlorine,residual	mg/l	2.10	2.10	94.8	85-115	0	20	L653108-05	WG679060
Hardness, Total (mg/L as CaCO3)	mg/l	251.	251.	108.	80-120	0	20	L653581-01	WG679336
COD	mg/l	490.	473.	101.	90-110	3.53	5	L653692-03	WG679328
Phosphorus, Total	mg/l	4.21	4.32	104.	90-110	2.58	20	L653658-01	WG679322
Oil & Grease (Hexane Extr)	mg/l	70.9	70.8	98.0	78-114	0.157	18	L653702-01	WG679365
Nitrate-Nitrite	mg/l	6.08	6.67	117.*	90-110	9.25	20	L653088-01	WG679544
Nickel Sodium	mg/l mg/l	0.931 12.5	0.906 12.4	93.2 106.	75-125 75-125	2.74 0.585	20 20	L654089-10 L654089-10	WG679107 WG679107
Cyanide	mg/l	0.198	0.192	99.0	90-110	3.08	20	L653624-02	WG679316
Ammonia Nitrogen	mg/l	5.29	5.60	104.	90-110	5.69	20	L654063-02	WG679561
Kjeldahl Nitrogen, TKN	mg/l	6.68	6.73	99.6	90-110	0.746	20	L653192-04	WG679574

Serial Dilution

Batch number /Run number / Sample number cross reference

WG678519: R2790100: L653657-02 WG678539: R2790641: L653657-02 WG678636: R2791284: L653657-02 WG678544: R2791601: L653657-02 WG678564: R2792823: L653657-02 WG678562: R2792824: L653657-02

\* Performance of this Analyte is outside of established criteria.

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WG678495: R2794300: L653657-02 WG679060: R2794943: L653657-02

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WG679066: R2795420: L653657-02
WG679336: R2795822: L653657-02
WG679322: R2795863: L653657-02
WG679322: R2796063: L653657-02
WG679365: R2796120: L653657-01
WG679544: R2796401: L653657-02
WG679107: R2796880 R2798480: L653657-02
WG679316: R2798001: L653657-01
WG679561: R2798100: L653657-02
WG679582: R2799153: L653657-02
WG679545: R2799542: L653657-01
WG679574: R2799707: L653657-02

<sup>\* \*</sup> Calculations are performed prior to rounding of reported values.

<sup>\*</sup> Performance of this Analyte is outside of established criteria.
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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

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September 04, 2013

### SEDONA MS4

# Monitoring Data ADOT Sedona Area MS4

OUTFALL ID: SR179 Bridge Over Oak Creek		MONITORING SEASONS										
RECEIVING WATER: Oak Creek					s		ne 1- Octob					
WATERSHED: Verde River							ember 1- Ma					
DESIGNATED USES: Outstanding Arizona Water (	ΩΔW)		4					í	4	V-	5	V
DESIGNATED OSES. Outstanding Arizona Water (	JAW,	Winter	ear 1 Summer	Yea Winter	Summer	Winter	ar 3 Summer	Yea Winter	Summer	Winter	ar 5 Summer	Year 6 Winter
AUTOSAMPLER STARTUP DATE: Jan 17, 2012		2008-09	2009	2009-10	2010	2010-11	2011	2011-12	2012	2012-13	2013	2013-14
SA	AMPLING DATE							NS/Sys. Start	NS/EF	1/25/13	NS/IF	NS/IF
MONITORING PARAMETERS	wqs						l .		-			-
Flow	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<5	NS/IF	NS/IF
pH	5.0-9.0	NR	NR	NR	NR	NR	NR	NS	NS/IF	7.47	NS/IF	NS/IF
Temperature (F°)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	54.3	NS/IF	NS/IF
Hardness	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	190	NS/IF	NS/IF
Specific conductance (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	160	NS/IF	NS/IF
Total Dissolved Solids (TDS) (mg/L)	500.00	NR	NR	NR	NR	NR	NR	NS	NS/IF	180	NS/IF	NS/IF
Total Suspended Solids (TSS) (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	1200	NS/IF	NS/IF
Turbidity (NTU)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	1100	NS/IF	NS/IF
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<5	NS/IF	NS/IF
Chemical Oxygen Demand (COD) (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	84	NS/IF	NS/IF
Surfactants (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.10	NS/IF	NS/IF
Inorganics												
Cyanide (mg/L)	0.20	NR	NR	NR	NR	NR	NR	NS	NS/IF	0.16	NS/IF	NS/IF
Sulfates (mg/L)	250.00	NR	NR	NR	NR	NR	NR	NS	NS/IF	8	NS/IF	NS/IF
Nutrients												
Nitrate (mg/L)	10.00	NR	NR	NR	NR	NR	NR	NS	NS/IF	0.85***	NS/IF	NS/IF
Nitrite (mg/L)	1.00	NR	NR	NR	NR	NR	NR	NS	NS/IF	0.85***	NS/IF	NS/IF
Total Ammonia (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	0.85	NS/IF	NS/IF
Total Kjeldahl Nitrogen (TKN) (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	2.5	NS/IF	NS/IF
Total Phosphorous (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	5.7	NS/IF	NS/IF
Phosphate, Ortho (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	0.21	NS/IF	NS/IF
Sodium (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	3.5	NS/IF	NS/IF
Calcium (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	53	NS/IF	NS/IF
Chloride (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	11	NS/IF	NS/IF
Microbiological												
Coliform, fecal (col/100 ml)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<9	NS/IF	NS/IF
E.Coli (cfu/100 ml)	100.00	NR	NR	NR	NR	NR	NR	NS	NS/IF	4	NS/IF	NS/IF
Total Metals												
Antimony (mg/L)	0.006	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.020	NS/IF	NS/IF
Arsenic (mg/L)	0.050	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.020	NS/IF	NS/IF
Barium (mg/L)	2.000	NR	NR	NR	NR	NR	NR	NS	NS/IF	0.08	NS/IF	NS/IF
Beryllium (mg/L)	0.004	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0020	NS/IF	NS/IF

# Monitoring Data ADOT Sedona Area MS4

RECEIVING WATER: Oak Creek		Summer: June 1- October 31										
WATERSHED: Verde River					W	/inter: Nove	ember 1- Ma	ay 31				
DESIGNATED USES: Outstanding Arizona Water (O.	AW)	Ye	ar 1	Yea	r 2	Ye	ar 3	Yea	r 4	Ye	ar 5	Year 6
AUTOCAMOLED STADTUD DATE: log 47, 2012	-	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
AUTOSAMPLER STARTUP DATE: Jan 17, 2012		2008-09	2009	2009-10	2010	2010-11	2011	2011-12	2012	2012-13	2013	2013-14
SAF	MPLING DATE							NS/Sys. Start	NS/EF	1/25/13	NS/IF	NS/IF
Cadmium (mg/L)	0.005	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0050	NS/IF	NS/IF
Chromium (mg/L)	0.100	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.010	NS/IF	NS/IF
Copper (mg/L)	1.300	NR	NR	NR	NR	NR	NR	NS	NS/IF	0.046	NS/IF	NS/IF
Lead (mg/L)	0.015	NR	NR	NR	NR	NR	NR	NS	NS/IF	0.83	NS/IF	NS/IF
Mercury (mg/L)	0.002	NR	NR	NR	NR	NR	NR	NS	NS/IF	0.00037	NS/IF	NS/IF
Nickel (mg/L)	0.140	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.020	NS/IF	NS/IF
Selenium (mg/L)	0.020	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.020	NS/IF	NS/IF
Silver (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.010	NS/IF	NS/IF
Zinc (mg/L)	2.10	NR	NR	NR	NR	NR	NR	NS	NS/IF	0.36	NS/IF	NS/IF
Organic Toxic Pollutants												
Total Petroleum Hydrocarbons (TPH) (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	0.13	NS/IF	NS/IF
Oil & Grease (Hexane Extr) (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<5.0	NS/IF	NS/IF
Chlorine, residual (mg/L)	0.70000	NR	NR	NR	NR	NR	NR	NS	NS/IF	1.5	NS/IF	NS/IF
VOCs, Semi-VOCs and Pesticides												
Benzene (mg/L)	0.0050	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.00050	NS/IF	NS/IF
Ethylbenzene (mg/L)	0.0050	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.00050	NS/IF	NS/IF
Toluene (mg/L)	1.00	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0050	NS/IF	NS/IF
Total Xylene (mg/L)	10.00	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0015	NS/IF	NS/IF
Acid Compounds												
2-Chlorophenol (mg/L)	0.035	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.010	NS/IF	NS/IF
2,4-Dichlorophenol (mg/L)	0.021	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.010	NS/IF	NS/IF
2,4-Dimethylphenol (mg/L)	0.140	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.010	NS/IF	NS/IF
4,6-Dinitrocreosol (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	NA	NS/IF	NS/IF
2,4-Dinitrophenol (mg/L)	0.014	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.010	NS/IF	NS/IF
2-Nitrophenol (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.010	NS/IF	NS/IF
4-Nitrophenol (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.010	NS/IF	NS/IF
P-Chloro-m-cresol (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	NA	NS/IF	NS/IF
Pentachlorophenol (mg/L)	0.001	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.010	NS/IF	NS/IF
Phenol (mg/L)	4.20	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.010	NS/IF	NS/IF
2,4,6-Trichlorophenol (mg/L)	0.00320	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.010	NS/IF	NS/IF
Bases/Neutrals	0.42			l				1				
Acenaphthene (mg/L)	0.42	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0010	NS/IF	NS/IF
Acenaphthylene (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0010	NS/IF	NS/IF
Anthracene (mg/L)	2.10	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0010	NS/IF	NS/IF
Benzo(a)anthracene (mg/L)	0.00190	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0010	NS/IF	NS/IF
Benzo(a)pyrene (mg/L)	0.00020	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0010	NS/IF	NS/IF

# Monitoring Data ADOT Sedona Area MS4

RECEIVING WATER: Oak Creek		Summer: June 1- October 31										
WATERSHED: Verde River					W	/inter: Nove	ember 1- Ma	y 31				
DESIGNATED USES: Outstanding Arizona Water (O	AW)	Ye	ar 1	Yea	r 2	Ye	ar 3	Yea	r 4	Ye	ear 5	Year 6
AUTOSAMPLER STARTUP DATE: Jan 17, 2012		Winter 2008-09	Summer 2009	Winter 2009-10	Summer 2010	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14
SAN	IPLING DATE							NS/Sys. Start	NS/EF	1/25/13	NS/IF	NS/IF
Benzo(b)fluoranthene (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0010	NS/IF	NS/IF
Benzo(g,h,i)perylene (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0010	NS/IF	NS/IF
Benzo(k)fluoranthene (mg/L)	0.0480	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0010	NS/IF	NS/IF
Chrysene (mg/L)	0.00479	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0010	NS/IF	NS/IF
Dibenzo(a,h)anthracene (mg/L)	0.00190	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0010	NS/IF	NS/IF
Diethyl phthalate (mg/L)	5.60	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0030	NS/IF	NS/IF
Dimethyl phthalate (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0030	NS/IF	NS/IF
Di-n-butyl phthalate (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0030	NS/IF	NS/IF
Di-n-octyl phthalate (mg/L)	2.80	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0030	NS/IF	NS/IF
1,2-Diphenylhydrazine (Azobenzene) (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	NA	NS/IF	NS/IF
Fluoranthene (mg/L)	0.28	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0010	NS/IF	NS/IF
Fluorene (mg/L)	0.28	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0010	NS/IF	NS/IF
Indeno(1,2,3-cd)pyrene (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0010	NS/IF	NS/IF
Naphthalene (mg/L)	0.14	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0010	NS/IF	NS/IF
Phenanthrene (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0010	NS/IF	NS/IF
Pyrene (mg/L)	0.21	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0010	NS/IF	NS/IF
Pesticides												
Aldrin (mg/L)	0.0020	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.00005	NS/IF	NS/IF
Alpha BHC (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.00005	NS/IF	NS/IF
Beta BHC (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.00005	NS/IF	NS/IF
Delta BHC (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.00005	NS/IF	NS/IF
Gamma BHC (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.00005	NS/IF	NS/IF
Chlordane (mg/L)	0.0020	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0005	NS/IF	NS/IF
4,4-DDD (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.00005	NS/IF	NS/IF
4,4-DDE (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.00005	NS/IF	NS/IF
4,4-DDT (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.00005	NS/IF	NS/IF
Dieldrin (mg/L)	0.0020	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.00005	NS/IF	NS/IF
Alpha-endenosulfan (mg/L); Endenosulfan I	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.00005	NS/IF	NS/IF
Beta-endenosulfan (mg/L); Endenosulfan II	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.00005	NS/IF	NS/IF
Endosulfan sulfate (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.00005	NS/IF	NS/IF
Endrin (mg/L)	0.0020	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.00005	NS/IF	NS/IF
Endrin aldehyde (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.00005	NS/IF	NS/IF
Heptachlor (mg/L)	0.00040	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.00005	NS/IF	NS/IF
Heptachlor epoxide (mg/L)	0.00020	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.00005	NS/IF	NS/IF
Toxaphene (mg/L)	NNS	NR	NR	NR	NR	NR	NR	NS	NS/IF	<0.0005	NS/IF	NS/IF

### PHOENIX MS4

OUTFALL ID: 101-13.68						мо	NITORING SI	EASONS				
RECEIVING WATER: Skunk Creek (a reach of Cave	Creek)					Sumn	ner: June 1- C	october 31				
WATERSHED: Middle Gila						Winte	r: November	1- May 31				
DESIGNATED USES: A&We, PBC						William	i. November	1- Way 51				
,	(previous	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
sampling conducted with passive samplers)	<b>u</b>	2008-09	2009	2009-10	2010	2010-11	2011	2011-12	2012	2012-13	2013	2013-14
SA	MPLING DATE	12/17/2008*	7/21/2009*	2/28/2010*	NS	NS	NS	11/5/11	Sys. Start	12/14/12	9/8/13	11/22/13
MONITORING PARAMETERS	wqs											
Flow (gpm)	NNS	1.7	1.4	1.5	NS	NS	NS	42	NS/EF	24.5	72.5	39.5
рН	5.0-9.0	7.75	7.21	8.52	NS	NS	NS	7.23	NS/EF	7.2	7.2	7.6
Temperature (F°)	NNS	54.4	96.9	56.5	NS	NS	NS	57.2	NS/EF	56.2	82.9	55.6
Hardness	NNS	180	NA	60	NS	NS	NS	IS	NS/EF	130.0	67.0	41.0
Specific conductance (mg/L)	NNS	550	900	1500	NS	NS	NS	IS	NS/EF	320.0	200.0	100.0
Total Dissolved Solids (TDS) (mg/L)	500.00	290	720*	97	NS	NS	NS	IS	NS/EF	310.0	230.0	80.0
Total Suspended Solids (TSS) (mg/L)	NNS	85	NA	76	NS	NS	NS	IS	NS/EF	53.0	24.0	26.0
Turbidity (NTU)	NNS	49	21	100	NS	NS	NS	IS	NS/EF	130.0	30.0	16.0
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	13	40	<5.0	NS	NS	NS	IS	NS/EF	68.0	22.0	9.3
Chemical Oxygen Demand (COD) (mg/L)	NNS	110	350	70	NS	NS	NS	IS	NS/EF	420.0	220.0	72.0
Surfactants (mg/L)	NNS	0.30	1.1	<1.0	NS	NS	NS	IS	NS/EF	0.9	1.0	0.4
Inorganics												
Cyanide (mg/L)	0.20	<0.0050	<0.0050	<0.0050	NS	NS	NS	<0.0080	NS/EF	<0.0050	<0.0050	<0.0050
Sulfates (mg/L)	250.00	56	69	7.6	NS	NS	NS	IS	NS/EF	26.0	31.0	6.2
Nutrients												
Nitrate (mg/L)	10.00	3.3	4.00	1.1	NS	NS	NS	IS	NS/EF	2.5	2.8	0.5
Nitrite (mg/L)	1.00	0.19	0.77	<0.10	NS	NS	NS	IS	NS/EF	0.3	0.4	<0.10
Total Ammonia (mg/L)	NNS	0.66	2.6	0.48	NS	NS	NS	IS	NS/EF	4.1	1.0	0.8
Total Kjeldahl Nitrogen (TKN) (mg/L)	NNS	3.0	12	1.5	NS	NS	NS	IS	NS/EF	9.1	3.5	1.9
Total Phosphorous (mg/L)	NNS	NS	1.1	0.25	NS	NS	NS	IS	NS/EF	0.9	0.2	0.1
Phosphate, Ortho (mg/L)	NNS	<0.12	0.46	0.48	NS	NS	NS	IS	NS/EF	1.8	<0.12	0.1
Sodium (mg/L)	NNS	49	85	1.3	NS	NS	NS	IS	NS/EF	15.0	10.0	5.6
Calcium (mg/L)	NNS	46	64	150	NS	NS	NS	IS	NS/EF	41.0	22.0	12.0
Chloride (mg/L)	NNS	69	130	6.9	NS	NS	NS	IS	NS/EF	16.0	10.0	2.4
Microbiological												
Coliform, fecal (col/100 ml)	NNS	>1,200	>200	>200	NS	NS	NS	IS	NS/EF	>400	1100000.0	>600
E.Coli (MPN/100 ml)	100.00	>24,200	1600	2000	NS	NS	NS	170	NS/EF	>2400	63.0	1100

RECEIVING WATER: Skunk Creek (a reach of Cave	Creek)	Summer: June 1- October 31										
WATERSHED: Middle Gila						Winte	r: November	1- May 31				
DESIGNATED USES: A&We, PBC								•				
AUTOSAMPLER STARTUP DATE: July 13, 2011	(previous	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
sampling conducted with passive samplers)		2008-09	2009	2009-10	2010	2010-11	2011	2011-12	2012	2012-13	2013	2013-14
SA	MPLING DATE	12/17/2008*	7/21/2009*	2/28/2010*	NS	NS	NS	11/5/11	Sys. Start	12/14/12	9/8/13	11/22/13
Total Metals												
Antimony (mg/L)	0.006	<0.020	0.0037	<0.020	NS	NS	NS	IS	NS/EF	<0.020	<0.020	<0.020
Arsenic (mg/L)	0.050	<0.020	0.0064	<0.020	NS	NS	NS	IS	NS/EF	<0.020	<0.020	<0.020
Barium (mg/L)	2.000	0.098	0.14	0.074	NS	NS	NS	IS	NS/EF	0.1	0.042	0.022
Beryllium (mg/L)	0.004	<0.0020	<0.0020	<0.0020	NS	NS	NS	IS	NS/EF	<0.0020	<0.0020	<0.0020
Cadmium (mg/L)	0.005	<0.0050	<0.0050	<0.0050	NS	NS	NS	IS	NS/EF	<0.0050	<0.0050	<0.0050
Chromium (mg/L)	0.100	<0.010	<0.010	<0.010	NS	NS	NS	IS	NS/EF	0.023	<0.010	<0.010
Copper (mg/L)	1.300	0.023	0.073	<0.020	NS	NS	NS	IS	NS/EF	0.1	0.045	<0.020
Lead (mg/L)	0.015	0.0084	0.0060	0.0064	NS	NS	NS	IS	NS/EF	0.0084	<0.0050	<0.0050
Mercury (mg/L)	0.002	<0.00020	<0.00020	<0.00020	NS	NS	NS	IS	NS/EF	<0.00020	<0.00020	<0.00020
Nickel (mg/L)	0.140	<0.020	<0.020	<0.020	NS	NS	NS	IS	NS/EF	0.025	<0.020	<0.020
Selenium (mg/L)	0.020	<0.020	<0.020	<0.020	NS	NS	NS	IS	NS/EF	<0.020	<0.020	<0.020
Silver (mg/L)	NNS	<0.010	<0.010	<0.010	NS	NS	NS	IS	NS/EF	<0.010	<0.010	<0.010
Zinc (mg/L)	2.10	0.053	0.14	4.7	NS	NS	NS	IS	NS/EF	0.25	0.08	0.061
Organic Toxic Pollutants												
Total Petroleum Hydrocarbons (TPH) (mg/L)	NNS	0.73	2.7	0.32	NS	NS	NS	0.29	NS/EF	<5.0	6	2.2
Oil & Grease (Hexane Extr) (mg/L)	NNS	<5.0	<5.9	<5.3	NS	NS	NS	7.3	NS/EF	<5.0	<5.3	<5.7
Chlorine, residual (mg/L)	0.70000	0.20	<0.10	<0.10	NS	NS	NS	IS	NS/EF	NS	<0.10	<0.10
VOCs, Semi-VOCs and Pesticides												
Benzene (mg/L)	0.0050	<0.00050	<0.00050	<0.0010	NS	NS	NS	<0.50**	NS/EF	<0.00050	NR	NR
Ethylbenzene (mg/L)	0.0050	0.00068	<0.00050	<0.0010	NS	NS	NS	<1.0**	NS/EF	<0.00050	NR	NR
Toluene (mg/L)	1.00	<0.0050	<0.0050	<0.0050	NS	NS	NS	<1.0**	NS/EF	<0.0050	NR	NR
Total Xylene (mg/L)	10.00	0.0039	<0.0015	<0.0030	NS	NS	NS	<1.5**	NS/EF	<0.0015	NR	NR

RECEIVING WATER: Skunk Creek (a reach of Cave	e Creek)					Summ	ner: June 1- C	ctober 31				
WATERSHED: Middle Gila						Winte	r: November	1- May 31				
DESIGNATED USES: A&We, PBC												
AUTOSAMPLER STARTUP DATE: July 13, 2011	(previous	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
sampling conducted with passive samplers)		2008-09	2009	2009-10	2010	2010-11	2011	2011-12	2012	2012-13	2013	2013-14
S	AMPLING DATE	12/17/2008*	7/21/2009*	2/28/2010*	NS	NS	NS	11/5/11	Sys. Start	12/14/12	9/8/13	11/22/13
Acid Compounds												
2-Chlorophenol (mg/L)	0.035	<0.010	<0.010	<0.010	NS	NS	NS	IS	NS/EF	<0.010	NR	NR
2,4-Dichlorophenol (mg/L)	0.021	<0.010	<0.010	<0.010	NS	NS	NS	IS	NS/EF	<0.010	NR	NR
2,4-Dimethylphenol (mg/L)	0.140	<0.010	<0.010	<0.010	NS	NS	NS	IS	NS/EF	<0.010	NR	NR
4,6-Dinitrocreosol (mg/L)	NNS	NA	NA	NA	NS	NS	NS	IS	NS/EF	<0.010	NR	NR
2,4-Dinitrophenol (mg/L)	0.014	<0.010	<0.010	<0.010	NS	NS	NS	IS	NS/EF	<0.010	NR	NR
2-Nitrophenol (mg/L)	NNS	<0.010	<0.010	<0.010	NS	NS	NS	IS	NS/EF	<0.010	NR	NR
4-Nitrophenol (mg/L)	NNS	<0.010	<0.010	<0.010	NS	NS	NS	IS	NS/EF	<0.010	NR	NR
P-Chloro-m-cresol (mg/L)	NNS	NA	NA	NA	NS	NS	NS	IS	NS/EF	<0.010	NR	NR
Pentachlorophenol (mg/L)	0.001	<0.010	<0.010	<0.010	NS	NS	NS	IS	NS/EF	<0.010	NR	NR
Phenol (mg/L)	4.20	<0.010	<0.010	<0.010	NS	NS	NS	IS	NS/EF	<0.010	NR	NR
2,4,6-Trichlorophenol (mg/L)	0.00320	<0.010	<0.010	<0.010	NS	NS	NS	IS	NS/EF	<0.010	NR	NR
Bases/Neutrals									•			
Acenaphthene (mg/L)	0.42	<0.0010	<0.010	<0.0010	NS	NS	NS	IS	NS/EF	<0.0010	NR	NR
Acenaphthylene (mg/L)	NNS	<0.0010	< 0.010	<0.0010	NS	NS	NS	IS	NS/EF	<0.0010	NR	NR
Anthracene (mg/L)	2.10	<0.0010	<0.010	<0.0010	NS	NS	NS	IS	NS/EF	<0.0010	NR	NR
Benzo(a)anthracene (mg/L)	0.00190	<0.0010	< 0.010	<0.0010	NS	NS	NS	IS	NS/EF	<0.0010	NR	NR
Benzo(a)pyrene (mg/L)	0.00020	<0.0010	< 0.010	<0.0010	NS	NS	NS	IS	NS/EF	<0.0010	NR	NR
Benzo(b)fluoranthene (mg/L)	NNS	<0.0010	<0.010	<0.0010	NS	NS	NS	IS	NS/EF	<0.0010	NR	NR
Benzo(g,h,i)perylene (mg/L)	NNS	<0.0010	<0.010	<0.0010	NS	NS	NS	IS	NS/EF	<0.0010	NR	NR
Benzo(k)fluoranthene (mg/L)	0.0480	<0.0010	<0.010	<0.0010	NS	NS	NS	IS	NS/EF	<0.0010	NR	NR
Chrysene (mg/L)	0.00479	<0.0010	< 0.010	<0.0010	NS	NS	NS	IS	NS/EF	<0.0010	NR	NR
Dibenzo(a,h)anthracene (mg/L)	0.00190	<0.0010	<0.010	<0.0010	NS	NS	NS	IS	NS/EF	<0.0010	NR	NR
Diethyl phthalate (mg/L)	5.60	<0.010	<0.010	<0.0010	NS	NS	NS	IS	NS/EF	0.0012	NR	NR
Dimethyl phthalate (mg/L)	NNS	<0.010	<0.010	<0.0010	NS	NS	NS	IS	NS/EF	<0.0010	NR	NR
Di-n-butyl phthalate (mg/L)	NNS	<0.010	<0.010	<0.0010	NS	NS	NS	IS	NS/EF	<0.0010	NR	NR
Di-n-octyl phthalate (mg/L)	2.80	<0.010	<0.010	<0.0010	NS	NS	NS	IS	NS/EF	<0.0010	NR	NR
1,2-Diphenylhydrazine (Azobenzene) (mg/L)	NNS	NA	NA	NA	NA	NA	NA	IS	NS/EF	NA	NR	NR
Fluoranthene (mg/L)	0.28	<0.0010	<0.010	<0.0010	NS	NS	NS	IS	NS/EF	<0.0010	NR	NR
Fluorene (mg/L)	0.28	<0.0010	<0.010	<0.0010	NS	NS	NS	IS	NS/EF	<0.0010	NR	NR
Indeno(1,2,3-cd)pyrene (mg/L)	NNS	<0.0010	<0.010	<0.0010	NS	NS	NS	IS	NS/EF	<0.0010	NR	NR
Naphthalene (mg/L)	0.14	<0.0010	<0.010	<0.0010	NS	NS	NS	IS	NS/EF	<0.0010	NR	NR
Phenanthrene (mg/L)	NNS	<0.0010	<0.010	<0.0010	NS	NS	NS	IS	NS/EF	<0.0010	NR	NR
Pyrene (mg/L)	0.21	<0.0010	<0.010	<0.0010	NS	NS	NS	IS	NS/EF	<0.0010	NR	NR

RECEIVING WATER: Skunk Creek (a reach of Ca	ve Creek)											
WATERSHED: Middle Gila						Winte	r: November	1- May 31				
DESIGNATED USES: A&We, PBC												
AUTOSAMPLER STARTUP DATE: July 13, 2011	(previous	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
sampling conducted with passive samplers)		2008-09	2009	2009-10	2010	2010-11	2011	2011-12	2012	2012-13	2013	2013-14
	SAMPLING DATE	12/17/2008*	7/21/2009*	2/28/2010*	NS	NS	NS	11/5/11	Sys. Start	12/14/12	9/8/13	11/22/13
Pesticides												
Aldrin (mg/L)	0.0020	<0.00050	<0.00050	<0.000050	NS	NS	NS	IS	NS/EF	<0.000050	NR	NR
Alpha BHC (mg/L)	NNS	<0.00050	<0.000050	<0.000050	NS	NS	NS	IS	NS/EF	<0.000050	NR	NR
Beta BHC (mg/L)	NNS	<0.00050	<0.000050	<0.000050	NS	NS	NS	IS	NS/EF	<0.000050	NR	NR
Delta BHC (mg/L)	NNS	<0.00050	<0.000050	<0.000050	NS	NS	NS	IS	NS/EF	<0.000050	NR	NR
Gamma BHC (mg/L)	NNS	<0.00050	<0.000050	<0.000050	NS	NS	NS	IS	NS/EF	<0.000050	NR	NR
Chlordane (mg/L)	0.0020	<0.0050	<0.00050	<0.00050	NS	NS	NS	IS	NS/EF	<0.00050	NR	NR
4,4-DDD (mg/L)	NNS	<0.00050	<0.000050	<0.000050	NS	NS	NS	IS	NS/EF	<0.000050	NR	NR
4,4-DDE (mg/L)	NNS	<0.00050	<0.000050	<0.000050	NS	NS	NS	IS	NS/EF	<0.000050	NR	NR
4,4-DDT (mg/L)	NNS	<0.00050	<0.000050	<0.000050	NS	NS	NS	IS	NS/EF	<0.000050	NR	NR
Dieldrin (mg/L)	0.0020	<0.00050	<0.000050	<0.000050	NS	NS	NS	IS	NS/EF	<0.000050	NR	NR
Alpha-endenosulfan (mg/L); Endenosulfan I	NNS	<0.00050	<0.000050	<0.000050	NS	NS	NS	IS	NS/EF	<0.000050	NR	NR
Beta-endenosulfan (mg/L); Endenosulfan II	NNS	<0.00050	<0.000050	<0.000050	NS	NS	NS	IS	NS/EF	<0.000050	NR	NR
Endosulfan sulfate (mg/L)	NNS	<0.00050	<0.000050	<0.000050	NS	NS	NS	IS	NS/EF	<0.000050	NR	NR
Endrin (mg/L)	0.0020	<0.00050	<0.000050	<0.000050	NS	NS	NS	IS	NS/EF	<0.000050	NR	NR
Endrin aldehyde (mg/L)	NNS	<0.00050	0.000088	<0.000050	NS	NS	NS	IS	NS/EF	<0.000050	NR	NR
Heptachlor (mg/L)	0.00040	<0.00050	<0.000050	<0.000050	NS	NS	NS	IS	NS/EF	<0.000050	NR	NR
Heptachlor epoxide (mg/L)	0.00020	<0.00050	<0.000050	<0.000050	NS	NS	NS	IS	NS/EF	<0.000050	NR	NR
Toxaphene (mg/L)	NNS	<0.010	<0.00050	<0.00050	NS	NS	NS	IS	NS/EF	<0.00050	NR	NR



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Tax I.D. 62-0814289

Est. 1970

John Burton Engineering & Env. Consultants, INC. -AZ 7878 N. 16th Street, Suite 140 Phoenix, AZ 85020

## Report Summary

Thursday September 26, 2013

Report Number: L656427 Samples Received: 09/10/13 Client Project: 308032.23

Description: ADOT PHX MS4 Sampler

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Daphne Richards , ESC Representative

### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

This report may not be reproduced, except in full, without written approval from ESC Lab Sciences. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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308032.23

REPORT OF ANALYSIS

September 26, 2013

Site ID :

Project # :

ESC Sample # : L656427-01

Engineering & Env. Consultants, INC 7878 N. 16th Street, Suite 140 Phoenix, AZ 85020

FIIOCIIIX, AZ 03020

Date Received : September 10, 2013

Description : ADOT PHX MS4 Sampler

Sample ID : PHX 90813-C

Collected By : John Burton Collection Date : 09/08/13 11:15

Det. Limit Dil. Parameter Result Units Method Date Chloride 10. 2.0 300.0 09/10/13 2 mq/1 $mg/\bar{1}$ 2.8 2 Nitrate 0.20 300.0 09/10/13 mg/1300.0 Nitrite 0.35 0.20 09/10/13 2 mg/12 10. 300.0 09/10/13 Sulfate 31. BOD 22.0 5.00 5210 B-2011 mg/109/15/13 1 0.10 4500Cl G-2011 Chlorine-free BDL mg/109/20/13 1 COD 220 10. mg/1410.4 09/14/13 1 0.0050 4500CN E-2011 Cyanide BDL mg/109/16/13 1 Hardness, Total (mg/L as CaCO3) 67. 30. mg/1130.1 09/18/13 1 MBAS 0.98 0.10 mg/15540 C-2011 09/10/13 1 Ammonia Nitrogen 0.99 0.10 mg/1350.1 09/17/13 1 Oil & Grease (Hexane Extr) BDL 5.3 mg/11664A 09/11/13 1 Phosphate,Ortho BDL 4500P-E 09/10/13 5 0.12 ma/1Phosphorus, Total 0.23 0.10 mg/1365.4 09/17/13 1 Specific Conductance 200 120.1 09/14/13 umhos/cm 1 351.2 Kjeldahl Nitrogen, TKN 3.5 0.10 mg/109/17/13 1 Turbidity 2130 B-2011 30. 0.10 NTU 09/12/13 1 Dissolved Solids 2540 C-2011 230 10. mg/109/12/13 1 Suspended Solids 24. 2.5 mg/12540 D-2011 09/12/13 1 Mercury BDL 0.00020 mg/1245.1 09/13/13 1 200.7 Antimony BDL 0.020 mg/109/15/13 0.020 200.7 09/15/13 Arsenic BDL mg/1Barium 0.042 0.0050 mg/1200.7 09/15/13 1 200.7 mg/1Beryllium BDL 0.0020 09/15/13 1 mg/109/15/13 Cadmium 0.0050 1 BDL 200.7 09/15/13 Calcium 22. 0.50 mg/11 mg/1Chromium BDL 0.010 200.7 09/15/13 1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

L656427-01 (PORTHO) - Diluted due to sample color interference.



John Burton

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REPORT OF ANALYSIS

September 26, 2013

Engineering & Env. Consultants, INC 7878 N. 16th Street, Suite 140

Phoenix, AZ 85020

ESC Sample # : L656427-01

Date Received : September 10, 2013 Description : ADOT PHX MS4 Sampler

Site ID :

Sample ID : PHX 90813-C

Project # : 308032.23

Collected By : John Burton Collection Date : 09/08/13 11:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Copper Lead Nickel Selenium Silver	0.045 BDL BDL BDL BDL	0.020 0.0050 0.020 0.020 0.010	mg/l mg/l mg/l mg/l mg/l	200.7 200.7 200.7 200.7 200.7	09/15/13 09/15/13 09/15/13 09/15/13 09/15/13	1 1 1 1
Sodium Zinc	10. 0.080	0.50	mg/l mg/l	200.7 200.7	09/15/13 09/15/13	1 1
TPH (GC/FID) Low Fraction Surrogate Recovery-%	BDL	0.10	mg/l	8015D/GRO	09/11/13	1
a,a,a-Trifluorotoluene(FID)  TPH (GC/FID) High Fraction	96.0 6.0	0.50	$% Rec. \\ mg/l$	8015D/GRO 3511/8015	09/11/13 09/12/13	5
Surrogate recovery(%) o-Terphenyl	107.		% Rec.	3511/8015	09/12/13	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 09/20/13 18:25 Revised: 09/26/13 11:02

L656427-01 (PORTHO) - Diluted due to sample color interference.



John Burton

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Project #: 308032.23

REPORT OF ANALYSIS

September 26, 2013

Engineering & Env. Consultants, INC 7878 N. 16th Street, Suite 140

Phoenix, AZ 85020

ESC Sample # : L656427-03

Date Received : September 10, 2013 : ADOT PHX MS4 Sampler Description

Site ID : Sample ID : PHX 90813-G

Collected By : John Burton

Collection Date : 09/08/13 11:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Coliform, fecal	1100000		col/100ml	SM9222D	09/11/13	10
E.Coli Coliform,Total	63. 4800	2.0	MPN/100ml MPN/100ml	9223B-2004 9223B-2004	09/11/13 09/11/13	2 1

BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 09/20/13 18:25 Revised: 09/26/13 11:02

### Attachment A List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L656427-01	WG681255 WG681117 WG682113 WG681152 WG681047 WG681047	SAMP SAMP SAMP SAMP SAMP SAMP	Phosphate,Ortho BOD Chlorine-free MBAS Nitrate Nitrite	R2812741 R2817757 R2821720 R2812862 R2812421 R2812421	O B1Q T8 T8 T8
L656427-03	WG681662 WG681647 WG681647	SAMP SAMP SAMP	Coliform,fecal E.Coli Coliform,Total	R2815241 R2815231 R2815231	T8 T8 T8

### Attachment B Explanation of QC Qualifier Codes

Qualifier	Meaning
В1	(ESC) - The blank depletion was greater than the recommended maximum depletion of $0.2 \text{mg/L}$ .
0	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
Q	(ESC) Sample held beyond the accepted holding time.
Т8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

### Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

- true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.
- Surrogate Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

# Summary of Remarks For Samples Printed 09/26/13 at 11:02:48

TSR Signing Reports: 288 R5 - Desired TAT

Baker Exxon Proj 105022.01 Ken & Mel's Proj 105022.02 MCAA Proj 305007.05 -ALL require TO-15+GRO on ALL AIR SAMPLES ENGENVPAZ-122012S NO CHARGE TBs

Sample: L656427-01 Account: ENGENVPAZ Received: 09/10/13 09:00 Due Date: 09/17/13 00:00 RPT Date: 09/20/13 18:25 Added PORTHO per DR. Run OOH. AV 9/10 Sample: L656427-03 Account: ENGENVPAZ Received: 09/10/13 09:00 Due Date: 09/17/13 00:00 RPT Date: 09/20/13 18:25 Use bottle from -01



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Phoenix, AZ 85020

Quality Assurance Report Level II

L656427

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Tax I.D. 62-0814289

September 26, 2013

Est. 1970

		Laboratory Bla	ank			
Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chloride	< 1	mg/l				09/10/13 06:56
Nitrate	< .1	mg/l				09/10/13 06:56
Nitrite	< .1	mg/l				09/10/13 06:56
Sulfate	< 5	mg/l			WG681047	09/10/13 06:56
Phosphate,Ortho	< .025	mg/l			WG681255	09/10/13 17:52
MBAS	< .1	mg/l			WG681152	09/10/13 13:43
Oil & Grease (Hexane Extr)	< 5	mg/l			WG681260	09/11/13 16:52
		/3				00/11/12 10:00
TPH (GC/FID) Low Fraction	< .1	mg/l	06.01	60 100		09/11/13 12:22
a,a,a-Trifluorotoluene(FID)		% Rec.	96.01	62-128	WG681271	09/11/13 12:22
Turbidity	< .1	NTU			WG681509	09/12/13 08:59
Suspended Solids	< 2.5	mg/l			WC601176	09/12/13 14:51
Suspended Solids	< 2.5	IIIg/I			WG0011/0	09/12/13 14.51
Dissolved Solids	< 10	mg/l			WG681177	09/12/13 14:58
Mercury	< .0002	mg/l			WG681295	09/13/13 10:42
COD	< 10	mg/l			WC691946	09/14/13 14:27
COD	< 10	1119/1			WG001040	09/14/13 14.2/
Specific Conductance	0.990	umhos/cm			WG681642	09/14/13 12:35
Antimony	< .02	mg/l			WC601720	09/15/13 03:06
Arsenic	< .02	mg/l				09/15/13 03:06
Barium	< .02	mg/l				09/15/13 03:06
Beryllium	< .003	mg/l				09/15/13 03:06
Cadmium	< .002	mg/l				09/15/13 03:06
Calcium	< .5	mg/l				09/15/13 03:06
Chromium	< .01	mg/l				09/15/13 03:06
	< .01	J.				
Copper		mg/l				09/15/13 03:06
Nickel	< .02	mg/l				09/15/13 03:06
Selenium	< .02	mg/l				09/15/13 03:06
Silver	< .01	mg/l				09/15/13 03:06
Zinc	< .03	mg/l				09/15/13 03:06
Lead	< .005	mg/l				09/15/13 22:24
Sodium	< .5	mg/l			WG681730	09/15/13 22:24
BOD	0.540	mg/l			WG681117	09/15/13 10:15
BOD	0.540	mg/l				09/15/13 10:15
202	0.510	5 / 1				0,,10,10 10.10
TPH (GC/FID) High Fraction	< .1	mg/l			WG681037	09/12/13 11:54
o-Terphenyl		% Rec.	93.30	50-150	WG681037	09/12/13 11:54

<sup>\*</sup> Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Quality Assurance Report Level II

L656427

September 26, 2013

		Labora	tory Blank					
Analyte	Result	Units	-	ec	Limit	Batch	Date A	Analyzed
Cyanide	< .005	mg/l				WG681632	09/16,	/13 09:27
Phosphorus, Total	< .1	mg/l				WG681955	09/17	/13 09:08
Ammonia Nitrogen	< .1	mg/l				WG681837	09/17	/13 12:09
Kjeldahl Nitrogen, TKN	< .1	mg/l				WG681956	09/17,	/13 11:57
Hardness, Total (mg/L as CaCO3)	< 30	mg/l				WG682365	09/18	/13 09:27
Chlorine-free	< .1	mg/l				WG682113	09/20,	/13 14:48
		Du	plicate					
Analyte	Units	Result	Duplicate	RPD	Limit	Ref Sam	р	Batch
Nitrate	mg/l	0.0	0.0	0.0	20	L656373	-01	WG681047
Nitrite	mg/l	0.0	0.0	0.0	20	L656373		WG681047
Chloride	mg/l	47.0	46.0	2.15	20	L656445		WG681047
Nitrate	mg/l	0.0	0.0	0.0	20	L656445		WG681047
Nitrite	mg/l	0.0	0.0	0.0	20	L656445		WG681047
	_							
Sulfate	mg/l	11.0	11.0	0.0	20	L656445	-01	WG681047
Phosphate, Ortho	mg/l	0.0	0.0	0.0	20	L656427	-01	WG681255
MBAS	mg/l	0.0	0.0	0.0	20	L656426	-01	WG681152
Turbidity	NTU	30.0	30.0	0.664	20	L656427	0.1	WG681509
Turbiaity	NIU	30.0	30.0	0.004	20	1050427	-01	WG001309
Suspended Solids	mg/l	64.4	61.2	5.10*	5	L656358	-02	WG681176
Suspended Solids	mg/l	2050	2100	2.12	5	L656414		WG681176
Suspended Solids	IIIg/I	2030	2100	2.12	5	T0204T4	-01	WG0011/0
Dissolved Solids	mg/l	437.	430.	1.61	5	L656460	-02	WG681177
Mercury	mg/l	0.0	0.0000404	10.6	20	L656381	-02	WG681295
COD	mg/l	200.	200.	0.0	5	L656652	-01	WG681846
COD	mg/l	43.0	45.0	4.55	5	L656684		WG681846
	_							
Specific Conductance	umhos/cm	680.	680.	0.442	20	L656321	-03	WG681642
Specific Conductance	umhos/cm	530.	530.	0.564	20	L656597	-02	WG681642
_								
Antimony	mg/l	0.0200	0.0167	20.0	20	L656437	-01	WG681730
Arsenic	mg/l	0.0	0.00101	80.6*	20	L656437		WG681730
Barium	mg/l	0.0250	0.0244	2.30	20	L656437		WG681730
Beryllium	mg/l	0.0250	0.0244	2.30 31.9*	20	L656437		WG681730 WG681730
				31.9"	<b>∠</b> U	тозо#3/	-01	WG001/30
* Performance of this Analyte is o	ourside OI	estabilished	criteria.					

<sup>\*</sup> Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Est. 1970

Quality Assurance Report Level II

L656427

September 26, 2013

	1.		Duplicate		-1.1.		
Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Cadmium	mq/l	0.0	0.0000845	485.*	20	L656437-01	WG6817
Calcium	mg/l	160.	156.	1.69	20	L656437-01	WG6817
Chromium	mq/l	0.0	0.000948	68.0*	20	L656437-01	WG6817
Copper	mg/l	0.0	0.00104	418.*	20	L656437-01	WG6817
Vickel	mq/l	0.0	0.00377	42.5*	20	L656437-01	WG6817
Selenium	mg/l	0.0260	0.0441	50.6*	20	L656437-01	WG6817
Silver	mg/l	0.0	-0.000170	120.*	20	L656437-01	WG6817
Zinc	mg/l	0.0	0.0154	15.7	20	L656437-01	WG6817
Lead	mg/1	0.0	0.00445	10.6	20	L656437-01	WG6817
Sodium	mq/l	13.0	12.9	2.17	20	L656437-01	WG6817
	5/ -	13.0	12.7	2.17	20	2000107 01	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
BOD	mg/l	0.00	0.00	0.00	5	L656371-01	WG6811
BOD	mg/l	0.00	0.00	0.00	5	L656390-02	WG6811
BOD	mg/l	0.00	0.00	0.00	5	L656461-02	WG6811
	3.						
Cyanide	mg/l	0.0	0.0	0.0	20	L655847-02	WG68163
- Cyanide	mg/l	0.0	0.0	0.0	20	L656472-02	WG6816
Phosphorus, Total	mg/l	0.220	0.210	4.65	20	L656591-02	WG6819
Phosphorus, Total	mg/l	1.60	1.60	0.0	20	L655867-01	WG6819
Ammonia Nitrogen	mg/l	0.0	0.0	0.0	20	L656378-07	WG6818
Ammonia Nitrogen	mg/l	2.80	2.80	0.0	20	L655896-01	WG6818
Kjeldahl Nitrogen, TKN	mg/l	16.6	17.0	2.38	20	L656559-01	WG6819
Kjeldahl Nitrogen, TKN	mg/l	1.26	1.00	23.0*	20	L655917-02	WG6819
Hardness, Total (mg/L as CaCO3)	mg/l	67.0	66.0	1.50	20	L656418-02	WG6823
Hardness, Total (mg/L as CaCO3)	mg/l	180.	179.	0.557	20	L656330-02	WG6823
Chlorine-free	mg/l	0.0	0.0	0.0	20	L656427-01	WG6821
		T - 1 t	0	1 -			
Analyte	Units	Known V	ry Control Sa	mpie esult	% Rec	Limit	Batch
Alialyte	UIIILS	KIIOWII V	aı K	ESUIL	o Rec	TIMIT	Batten
Chloride	mq/l	40	39.4	1	98.5	90-110	WG68104
Nitrate	mg/l	8	8.1		101.	90-110	WG68104
Nitrite	mg/l	8	7.8		98.4	90-110	WG68104
Sulfate	mg/l	40	40.0		100.	90-110	WG68104
Juliace	mg/ I	40	10.1	,	100.	JU 110	WGOOTO
Phosphate,Ortho	mg/l	.75	0.7	L1	94.8	85-115	WG6812
<u> </u>	<u> </u>						
MBAS	mg/l	1	0.9	39	93.9	85-115	WG6811
Oil & Grease (Hexane Extr)	mg/l	40	38.	3	95.8	78-114	WG6812
TPH (GC/FID) Low Fraction	mg/1	5.5	5.19	9	94.3	67-132	WG6812
a,a,a-Trifluorotoluene(FID)					92.95	62-128	WG6812

a,a,a-Trifluorotoluene(FID)

\* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



Engineering & Env. Consultants, INC. -AZ John Burton 7878 N. 16th Street, Suite 140

Phoenix, AZ 85020

Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

12065 Lebanon Rd.

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Est. 1970

Quality Assurance Report Level II

L656427

September 26, 2013

		7 - la	the sale Committee			
Analyte	Units	Laboratory Con Known Val	Result	% Rec	Limit	Batch
Turbidity	NTU	40	37.0	92.5	90-110	WG6815
Suspended Solids	mg/l	773	852.	110.	85-115	WG6811
Dissolved Solids	mg/l	8800	8230	93.5	85-115	WG6811
Mercury	mg/l	.003	0.00318	106.	85-115	WG6812
COD	mg/l	183	193.	105.	90-110	WG6818
Specific Conductance	umhos/cm	878	880.	100.	85-115	WG6816
Antimony	mg/l	1	1.05	105.	85-115	WG6817
Arsenic Barium	mg/l mg/l	1 1	1.06 1.04	106. 104.	85-115 85-115	WG6817 WG6817
Beryllium	mg/l	1	1.01	101.	85-115	WG6817
Cadmium	mg/l	1	1.03	103.	85-115	WG6817
Calcium	mg/l	10	10.3	103.	85-115	WG6817
Chromium	mg/l	1	1.07	107.	85-115	WG6817
Copper	mg/l	1	1.04	104.	85-115	WG6817
Nickel	mg/l	1	0.980	98.0	85-115	WG6817
Selenium	mg/l	1	1.09	109.	85-115	WG6817
Silver	mg/l	1	1.01	101.	85-115	WG6817
Zinc	mg/l	1	1.02	102.	85-115	WG6817
Lead	mg/l	1	0.996	99.6	85-115	WG6817
Sodium	mg/l	10	9.63	96.3	85-115	WG6817
BOD	mg/l	198	187.	94.4	84.6-115.4	WG6811
BOD	mg/l	198	179.	90.4	84.6-115.4	WG6811
BOD	mg/l	198	171.	86.4	84.6-115.4	WG6811
TPH (GC/FID) High Fraction o-Terphenyl	mg/l	1.5	1.54	103. 96.50	50-150 50-150	WG6810 WG6810
Cyanide	mg/l	.1	0.0961	96.1	90-110	WG6816
Phosphorus, Total	mg/l	1	0.900	90.0	90-110	WG6819
Ammonia Nitrogen	mg/l	7.5	8.21	109.	90-110	WG6818
Kjeldahl Nitrogen, TKN	mg/l	5.5	5.81	106.	90-110	WG6819
Hardness, Total (mg/L as CaCO3)	mg/l	200	212.	106.	85-115	WG6823
Chlorine-free	mg/l	1.74	1.80	103.	85-115	WG6821

<sup>\*</sup> Performance of this Analyte is outside of established criteria.
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Phoenix, AZ 85020

12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

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		Laboratory	Control Sam	mple Duplio	cate				
Analyte	Units	Result	Ref	%Rec		Limit	RPD	Limit	Batch
Chloride	mq/l	40.1	39.4	100.		90-110	1.76	20	WG681047
Nitrate	mg/l	8.24	8.10	103.		90-110	1.71	20	WG681047
Nitrite	mg/l	8.01	7.87	100.		90-110	1.76	20	WG681047
Sulfate	mg/l	40.7	40.0	102.		90-110	1.73	20	WG681047
Phosphate,Ortho	mg/l	0.731	0.711	97.0		85-115	2.77	20	WG681255
MBAS	mg/l	0.951	0.939	95.0		85-115	1.27	20	WG681152
Oil & Grease (Hexane Extr)	mg/l	38.0	38.3	95.0		78-114	0.786	20	WG681260
TPH (GC/FID) Low Fraction	mq/l	5.21	5.19	95.0		67-132	0.420	20	WG681271
a,a,a-Trifluorotoluene(FID)	mg/ I	3.21	3.19	93.59		62-128	0.120	20	WG681271
Turbidity	NTU	38.0	37.0	95.0		90-110	2.67	20	WG681509
Suspended Solids	mg/l	880.	852.	114.		85-115	3.23	5	WG681176
Dissolved Solids	mg/l	8510	8230	97.0		85-115	3.35	5	WG681177
COD	mg/l	194.	193.	106.		90-110	0.517	5	WG681846
TPH (GC/FID) High Fraction	mg/l	1.61	1.54	107.		50-150	4.10	20	WG681037
o-Terphenyl				96.60		50-150			WG681037
Cyanide	mg/l	0.0958	0.0961	96.0		90-110	0.313	20	WG681632
Specific Conductance	umhos/	880.	880.	100.		85-115	0.0	20	WG681642
Phosphorus, Total	mg/l	0.931	0.900	93.0		90-110	3.39	20	WG681955
Ammonia Nitrogen	mg/l	8.10	8.21	108.		90-110	1.35	20	WG681837
Kjeldahl Nitrogen, TKN	mg/l	5.61	5.81	102.		90-110	3.50	20	WG681956
Hardness, Total (mg/L as CaCO3)	mg/l	213.	212.	106.		85-115	0.471	20	WG682365
Chlorine-free	mg/l	1.80	1.80	103.		85-115	0.0	20	WG682113
			Matrix Spik	re					
Analyte	Units	MS Res	Ref Res		% Rec	Limit		Ref Samp	Batch
Nitrate	mq/l	5.20	0.0	5 1	100.	80-120	)	L656373-04	WG681047

the mg/l 5.20 0.0 5 100. 80-120 L656373-04 WG681047  $^{\star}$  Performance of this Analyte is outside of established criteria. For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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			Matrix Spik					
Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Nitrite	mg/l	5.15	0.0	5	100.	80-120	L656373-04	WG681
Phosphate,Ortho	mg/l	2.61	0.0	.5	100.	80-120	L656427-01	WG681
MBAS	mg/l	1.90	0.980	1	92.0	80-120	L656427-01	WG681
Oil & Grease (Hexane Extr)	mg/l	43.2	0.778	40	106.	78-114	L656407-01	WG681
TPH (GC/FID) Low Fraction	mg/l	5.43	0.0915	5.5	97.0	50-143	L655932-03	WG681
a,a,a-Trifluorotoluene(FID)					93.40	62-128		WG681
Mercury	mg/l	0.00302	0.0000404	.003	99.0	70-130	L656381-02	WG681
COD	mg/l	458.	56.0	400	100.	90-110	L656725-01	WG681
Antimony	mg/l	1.02	0.0167	1	100.	75-125	L656437-01	WG681
Arsenic	mg/l	1.05	0.00101	1	100.	75-125	L656437-01	WG681
Barium	mg/l	1.04	0.0244	1	100.	75-125	L656437-01	WG681
Beryllium	mg/l	1.02	0.000231	1	100.	75-125	L656437-01	WG681
admium	mg/l	0.989	0.0000845	1	99.0	75-125	L656437-01	WG681
Calcium	mg/l	168.	156.	10	120.	75-125	L656437-01	WG681
Chromium	mg/l	1.03	0.000948	1	100.	75-125	L656437-01	WG681
Copper	mq/l	1.04	0.00104	1	100.	75-125	L656437-01	WG681
Jickel	mg/l	0.961	0.00377	1	96.0	75-125	L656437-01	WG681
Selenium	mg/l	1.11	0.0441	1	110.	75-125	L656437-01	WG681
Silver	mg/l	1.00	-0.000170	1	100.	75-125	L656437-01	WG681
Zinc	mg/l	1.02	0.0154	1	100.	75-125	L656437-01	WG681
ead	mg/l	0.976	0.00445	1	97.0	75-125	L656437-01	WG681
Sodium	mg/l	23.2	12.9	10	100.	75-125	L656437-01	WG681
Cyanide	mg/l	0.185	0.0	.2	92.0	90-110	L656394-01	WG681
Phosphorus, Total	mg/l	2.46	0.0	2.5	98.0	90-110	L655896-01	WG681
Ammonia Nitrogen	mg/l	10.4	5.00	5	110.	90-110	L655867-01	WG681
Kjeldahl Nitrogen, TKN	mg/l	4.49	0.170	5	86.4*	90-110	L656209-02	WG681
Hardness, Total (mg/L as CaCO3)	mg/l	363.	170.	150	130.*	80-120	L656330-03	WG682
Chlorine-free	mg/l	1.40	0.0	1.74	80.0*	0-0	L656427-01	WG682
		Matri	x Spike Dup	licate				
Analyte	Units	MSD R	ef %Re	С	Limit	RPD Lin	nit Ref Samp	Batch
Nitrate	mg/l	5.03 5	.20 101		80-120	3.32 20	L656373-04	WG681

\* Performance of this Analyte is outside of established criteria.

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Phoenix, AZ 85020

12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

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		Mat	rix Spike	Duplicate					
Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Nitrite	mg/l	4.99	5.15	99.8	80-120	3.16	20	L656373-04	WG681047
Phosphate, Ortho	mg/l	2.61	2.61	104.	80-120	0.0384	20	L656427-01	WG681255
MBAS	mg/l	1.97	1.90	99.0	80-120	3.62	20	L656427-01	WG681152
Oil & Grease (Hexane Extr)	mg/l	42.9	43.2	105.	78-114	0.774	18	L656407-01	WG681260
TPH (GC/FID) Low Fraction a,a,a-Trifluorotoluene(FID)	mg/l	5.30	5.43	94.6 93.02	50-143 62-128	2.45	20	L655932-03	WG681271 WG681271
Mercury	mg/l	0.00284	0.00302	93.2	70-130	6.33	30	L656381-02	WG681295
COD	mg/l	453.	458.	99.2	90-110	1.10	5	L656725-01	WG681846
Antimony	mg/l	1.00	1.02	98.4	75-125	1.85	20	L656437-01	WG681730
Arsenic	mg/l	1.02	1.05	102.	75-125	2.14	20	L656437-01	WG681730
Barium	mg/l	1.05	1.04	103.	75-125	1.42	20	L656437-01	WG681730
Beryllium	mg/l	1.01	1.02	101.	75-125	1.02	20	L656437-01	WG681730
Cadmium	mg/l	1.01	0.989	100.	75-125	1.60	20	L656437-01	WG681730
Calcium	mg/l	167.	168.	116.	75-125	0.522	20	L656437-01	WG681730
Chromium	mg/l	1.01	1.03	101.	75-125	1.91	20	L656437-01	WG681730
Copper	mg/l	1.05	1.04	105.	75-125	1.30	20	L656437-01	WG681730
Nickel	mg/l	0.945	0.961	94.2	75-125	1.64	20	L656437-01	WG681730
Selenium	mg/1	1.08	1.11	104.	75-125	2.88	20	L656437-01	WG681730
Silver	mg/l	1.01	1.00	101.	75-125	1.30	20	L656437-01	WG681730
Zinc	mg/l	1.03	1.02	101.	75-125	1.18	20	L656437-01	WG681730
Lead	mg/1	0.943	0.976	93.9	75-125	3.38	20	L656437-01	WG681730
Sodium	mg/l	22.9	23.2	100.	75-125	1.12	20	L656437-01	WG681730
Cyanide	mg/l	0.183	0.185	91.5	90-110	1.09	20	L656394-01	WG681632
Phosphorus, Total	mg/l	2.41	2.46	96.4	90-110	2.05	20	L655896-01	WG681955
Ammonia Nitrogen	mg/l	11.0	10.4	120.*	90-110	5.61	20	L655867-01	WG681837
Kjeldahl Nitrogen, TKN	mg/l	4.65	4.49	89.6*	90-110	3.50	20	L656209-02	WG681956
Hardness, Total (mg/L as CaCO3)	mg/l	363.	363.	129.*	80-120	0.0	20	L656330-03	WG682365
Chlorine-free	mg/l	1.40	1.40	80.5*	-	0.0	0	L656427-01	WG682113

Post Spike

<sup>\*</sup> Performance of this Analyte is outside of established criteria.

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> September 26, 2013 L656427

Post Spike

Serial Dilution

Batch number /Run number / Sample number cross reference

WG681047: R2812421: L656427-01 WG681255: R2812741: L656427-01 WG681152: R2812862: L656427-01 WG681260: R2813261: L656427-01 WG681271: R2813484: L656427-01 WG681509: R2813707: L656427-01 WG681176: R2814260: L656427-01 WG681177: R2814280: L656427-01 WG681647: R2815231: L656427-03 WG681662: R2815241: L656427-03 WG681295: R2815643: L656427-01 WG681846: R2816622: L656427-01 WG681642: R2817523: L656427-01 WG681730: R2817623 R2817664: L656427-01 WG681117: R2817757: L656427-01 WG681037: R2817760: L656427-01 WG681632: R2817789: L656427-01 WG681955: R2818200: L656427-01 WG681837: R2818369: L656427-01 WG681956: R2818520: L656427-01 WG682365: R2818793: L656427-01 WG682113: R2821720: L656427-01

- $^{\star}$  \* Calculations are performed prior to rounding of reported values.
- \* Performance of this Analyte is outside of established criteria.
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Phoenix, AZ 85020

Quality Assurance Report Level II

L656427

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

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Company Name/Address: Billing Information: Analysis / Container / Preservative Chain of Custody Page \_\_\_ of \_ **EEC** \*48 hr hold Phosphore ENGENVPAZ071013S 7740 B 16th St Suite 135 Q Pres Turbidity/ 1L HDPE/ No Pres Phoenix AZ 85020 ammonia Nitrogen, TKN, Total HDPE/ No PRes 1L HDPE/ No / 500mL HDPE/ HNO3 HDPE/ No Pres amber HDPE/ NaOH BOD/ 1L HDPE/ No Pres \*48hr hold time\* Report to: clear glass/ HCl amber/ HCI Mount Juliet, TN 37122 John Burton iburton@eecphx.com Phone: 615-758-5858 Phone: 800-767-5859 Project City/State Fax: 615-758-5859 Description: ADOT PLY NSY Sample Collected: 656427 Phone: 602-248-7702 Lab Project # TPH AZ (ORO&DRO)/ 40ml Surfactants (MBAS)/ 250mL Solids/1L Chlor J059 ENGENVPAZ071013S Fax: 602 - 248 - 7851 308032,23 Total Oil and Grease/ 1L Collected by (print): Site/Facility ID # Total Cyanide/ 250mL Metals\* P.O. # COD Acctnum: ENGENVPAZ John Bulton Suspended Chloride, Template: Collected by (signature): Date Results Needed Rush? (Lab MUST Be Notified) Nitrate, Nitrite, TDS, Hardness and Prelogin: Same Day .. Next Day . Email? \_\_\_No 🗶 Yes TSR: Daphne Richards Immediately SPCON, No. FAX? 🛂 No \_\_\_Yes Cooler: Packed on ice N \_\_\_\_ Y X Three Day .... Total Shipped Via: Sample ID Comp/Grab Matrix \* Depth Time Rem./Contaminant | Sample # (lab only) 9/8/13 Phx 90813 - C Comp OT a collatin 7.15 \* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other Stormuate Remarks: Metals include: Na, Ca, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, and Zn Hold# Time: Samples returned via: DUPS Condition: auch 0917 **V**FedEx □ Courier □ Received by: (Signature) Time: °C Bottles Received: 1110 COC Seal Intact: Time: pH Checked: 1830 2900 42,>12

# ADOT Stormwater Analyses (Permit Years 1-3-5)

		potrie/ Preservative	100 ml micra hottle w/sroce	250ml plastic amber/Nool	A's will or	ar w/HC		100 ml micro bottle w/presonication	and who each valive		2504			preservative		servative				_				()	e m por withing preservative											10 preservative				servative	
C-C-T 6122.	# <b>C</b> 8		100 ml micro	250ml plastic	2 - 40 ml V/04's(10)	1 Liter glass iar w/HC!		100 ml micro	***************************************	500 ml poly	accilii polyinzs04			23Uml poly/nd preservative		1L poly/no preservative								500 ml noty w/m	ilia kind ilia		•						-			2 – 1 Liter polys/no preservative	•			1 Liter poly/no preservative	
	Method	20000	3223B-2004	4500NC E-2011	8015	1664A	20000	3222 D-1997	350.1	710 7	410.4 365.4	1.000	353.2		5540 C-2011	1020							200.7								130.1	120.1	2540 C-2011	2540 D-2011	2130 B-2011	300.0	4500P F-2011	300.0	=	5210 B-2011	
	Analyses	E. Coli	Cyanide	TPH (ORO/DRO Range)	Total Oil & Greace	00000	Fecal Coliform	Ammonia as N	TKN	COD	I otal Phosphorus	Nitrite	Nitrate		ouraciants	Metals, total	Antimony	Arsenic	Danuri Rozuli:	Solmium	Chromium	Ciriomium	Coppei	Merciny	Nickel	Selenium	Silver	Zinc	Calcium	Sodium	Hardness	Specific Conductance	<u>.                                    </u>	Turbidit	Sulfate	- Carparon		free			
Sample	Туре		rah	3											<u></u>								Composite					_	<u>ပိ</u> ြ	တ် :		3 1	103	0 E	In S	0	- G	chic	BOD		



	を E E E E	
	NON-CONFORMANCE FORM	
656427 Login No.: (65654	ON-CONFORMANCE FORM	
Date: 09/10/13		
Evaluated by: Mike Lowe		
Client: ENGENVPAZ		
Non-Conformance (check applicable items)	icable items)	
$X$ Parameter(s) past holding time $\square$ Improper temperature	☐ Login Clarification Needed ☐ Chain of custody is incomplete	
☐ Improper container type	☐ Chain of Custody is missing (see below)	
□ Improper preservation	☐ Broken container(s) (See below)	
☐ Container lid not intact	☐ Broken container: sufficient sample volume remains for analysis requested (See below)	below,
If no COC: Received by	Insufficient packing material around container	ier
Date:Time:Temp:DH:	g material inside cooler by carrier (FedEx / UPS	/ Courier
□ Fedex □ UPS □SWA □ Other Tracking #	ample was frozen	
Comments: Received ECOI/FC OOH		
Login Instructions:	TSR Initials:DR	
Client informed by call / email / fax / voice mail Client contact: JB	date:9/11 time:8:	20
Run OOH		



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John Burton Engineering & Env. Consultants, INC. -AZ 7740 N. 16th Street, Ste 135 Phoenix, AZ 85020

## Report Summary

Wednesday December 04, 2013

Report Number: L670506 Samples Received: 11/23/13 Client Project: 308032.23

Description: ADOT PHX MS4

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Daphne Richards , ESC Representative

### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

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ESC Sample # : L670506-01

Site ID : ADOT PHX MS4

Project # : 308032.23

REPORT OF ANALYSIS

December 04, 2013

Engineering & Env. Consultants, INC 7740 N. 16th Street, Ste 135 Phoenix, AZ 85020

Date Received : November 23, 2013 Description : ADOT PHX MS4

Sample ID : PHX112213

Collected By : JPB

Collection Date : 11/22/13 05:32

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride Nitrate Nitrite Sulfate	2.4 0.54 BDL 6.2	1.0 0.10 0.10 5.0	mg/l mg/l mg/l mg/l	300.0 300.0 300.0 300.0	11/23/13 11/23/13 11/23/13 11/23/13	1 1 1
BOD	9.30	5.00	mg/l	5210 B-2011	11/29/13	1
Chlorine-free	BDL	0.10	mg/l	4500Cl G-2011	11/29/13	1
COD	72.	10.	mg/l	410.4	12/03/13	1
Cyanide	BDL	0.0050	mg/l	4500CN E-2011	12/01/13	1
Hardness, Total (mg/L as CaCO3)	41.	30.	mg/l	130.1	12/01/13	1
MBAS	0.40	0.10	mg/l	5540 C-2011	11/23/13	1
Ammonia Nitrogen	0.78	0.10	mg/l	350.1	12/03/13	1
Oil & Grease (Hexane Extr)	BDL	5.7	mg/l	1664A	11/29/13	1
Phosphate,Ortho	0.11	0.025	mg/l	4500P E-2011	11/23/13	1
Phosphorus, Total	0.14	0.10	mg/l	365.4	12/03/13	1
Specific Conductance	100		umhos/cm	120.1	11/29/13	1
Kjeldahl Nitrogen, TKN	1.9	0.10	mg/l	351.2	12/03/13	1
Turbidity	16.	0.10	NTU	2130 B-2011	11/23/13	1
Dissolved Solids	80.	10.	mg/l	2540 C-2011	11/27/13	1
Suspended Solids	26.	2.5	mg/l	2540 D-2011	11/26/13	1
Mercury	BDL	0.00020	mg/l	245.1	11/29/13	1
Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium	BDL BDL 0.022 BDL BDL 12. BDL	0.020 0.020 0.0050 0.0020 0.0050 0.50 0.	mg/l mg/l mg/l mg/l mg/l mg/l mg/l	200.7 200.7 200.7 200.7 200.7 200.7 200.7	12/01/13 12/01/13 12/01/13 12/01/13 12/01/13 12/01/13 12/01/13	1 1 1 1 1 1

BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit(PQL)



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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

December 04, 2013

John Burton Engineering & Env. Consultants, INC 7740 N. 16th Street, Ste 135

Phoenix, AZ 85020

ESC Sample # : L670506-01

Date Received : November 23, 2013 Description : ADOT PHX MS4

Site ID : ADOT PHX MS4

Sample ID : PHX112213 Project #: 308032.23

Collected By : JPB

Collection Date : 11/22/13 05:32

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Copper	BDL	0.020	mq/l	200.7	12/01/13	1
Lead	BDL	0.0050	mg/l	200.7	12/01/13	1
Nickel	BDL	0.020	mg/l	200.7	12/01/13	1
Selenium	BDL	0.020	mg/l	200.7	12/01/13	1
Silver	BDL	0.010	mg/l	200.7	12/01/13	1
Sodium	5.6	0.50	mg/1	200.7	12/01/13	1
Zinc	0.061	0.030	mg/1	200.7	12/01/13	1
TPH (GC/FID) Low Fraction Surrogate Recovery-%	BDL	0.10	mg/l	8015D/GRO	11/28/13	1
a,a,a-Trifluorotoluene(FID)	103.		% Rec.	8015D/GRO	11/28/13	1
TPH (GC/FID) High Fraction Surrogate recovery(%)	2.2	0.10	mg/l	3511/8015	11/27/13	1
o-Terphenyl	108.		% Rec.	3511/8015	11/27/13	1

BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 12/04/13 09:24 Printed: 12/04/13 09:24

#### Attachment A List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L670506-01	WG694957	SAMP	Oil & Grease (Hexane Extr)	R2861126	L3
	WG694180	SAMP	BOD	R2860909	B1Q
	WG694727	SAMP	Chlorine-free	R2861061	T8

# Attachment B Explanation of QC Qualifier Codes

Qualifier	Meaning
B1	(ESC) - The blank depletion was greater than the recommended maximum depletion of $0.2 mg/L$ .
L3	(ESC) Sample reanalysis and/or spiking could not be performed due to lack of additional volume.
Q	(ESC) Sample held beyond the accepted holding time.
Т8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

#### Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

#### Definitions

- Accuracy The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision The agreement between a set of samples or between duplicate samples.

  Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

# Summary of Remarks For Samples Printed 12/04/13 at 09:24:49

TSR Signing Reports: 288 R5 - Desired TAT

Baker Exxon Proj 105022.01 Ken & Mel's Proj 105022.02 MCAA Proj 305007.05 -ALL require TO-15+GRO on ALL AIR SAMPLES ENGENVPAZ-122012S NO CHARGE TBs

Sample: L670506-01 Account: ENGENVPAZ Received: 11/23/13 09:00 Due Date: 12/02/13 00:00 RPT Date: 12/04/13 09:24 Refer to L670514



Engineering & Env. Consultants, INC. -AZ John Burton 7740 N. 16th Street, Ste 135

Phoenix, AZ 85020

Quality Assurance Report Level II

L670506

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Analyte  Phosphate,Ortho  MBAS  Chloride Nitrate Nitrite Sulfate  Turbidity  Suspended Solids  Dissolved Solids	Result < .025 < .1 < 1 < .1 < .1 < .1 < .1 < .5 < .1 < .2.5 < .10	Laboratory Bl Units  mg/l  mg/l  mg/l  mg/l  mg/l  mg/l  mg/l  NTU  mg/l  mg/l	% Rec	Limit	WG694151 WG694044 WG694044 WG694044 WG694152	Date Analy 11/23/13 2 11/23/13 2 11/23/13 0 11/23/13 0 11/23/13 0 11/23/13 2 11/23/13 1
MBAS Chloride Nitrate Nitrite Sulfate Turbidity Suspended Solids	< .1 < 1 < .1 < .1 < .1 < .5 < .1 < 2.5 < 10	mg/l mg/l mg/l mg/l mg/l NTU mg/l			WG694151 WG694044 WG694044 WG694044 WG694152	11/23/13 2 11/23/13 0 11/23/13 0 11/23/13 0 11/23/13 0
Chloride Nitrate Nitrite Sulfate Turbidity Suspended Solids	< 1 < .1 < .1 < .5 < .1 < 2.5 < 10	mg/l mg/l mg/l mg/l MTU			WG694044 WG694044 WG694044 WG694044	11/23/13 ( 11/23/13 ( 11/23/13 ( 11/23/13 ( 11/23/13 2
Nitrate Nitrite Sulfate Turbidity Suspended Solids	< .1 < .1 < 5 < .1 < 2.5 < 10	mg/l mg/l mg/l NTU			WG694044 WG694044 WG694044 WG694152	11/23/13 ( 11/23/13 ( 11/23/13 ( 11/23/13 2
Nitrate Nitrite Sulfate Turbidity Suspended Solids	< .1 < .1 < 5 < .1 < 2.5 < 10	mg/l mg/l mg/l NTU			WG694044 WG694044 WG694044 WG694152	11/23/13 ( 11/23/13 ( 11/23/13 ( 11/23/13 2
Sulfate Turbidity Suspended Solids	< 5 < .1 < 2.5 < 10	mg/l mg/l NTU mg/l			WG694044 WG694152	11/23/13 0
Turbidity Suspended Solids	< .1 < 2.5 < 10	NTU mg/l			WG694152	11/23/13 2
Suspended Solids	< 2.5	mg/l				
-	< 10	5.			WG694179	11/26/13 1
Dissolved Solids		mg/l				
DIDDOIVER DOITED	< 1				WG694358	11/27/13 1
TPH (GC/FID) High Fraction		mg/l			WG694083	11/26/13 2
o-Terphenyl		% Rec.	102.0	50-150		11/26/13 2
BOD	0.350	mg/l			WG694180	11/29/13 0
TPH (GC/FID) Low Fraction	< .1	mg/l			WG694260	11/28/13 1
a,a,a-Trifluorotoluene(FID)		% Rec.	102.0	62-128	WG694260	11/28/13 1
Mercury	< .0002	mg/l			WG694662	11/29/13 1
Specific Conductance	1.30	umhos/cm			WG694765	11/29/13 1
Chlorine-free	< .1	mg/l			WG694727	11/29/13 1
Oil & Grease (Hexane Extr)	< 5	mg/l			WG694957	11/29/13 2
Hardness, Total (mg/L as CaCO3)	< 30	mg/l			WG694818	12/01/13 1
Cyanide	< .005	mg/l			WG694937	12/01/13 1
Antimony	< .02	mg/l			WG694352	11/30/13 2
Arsenic	< .02	mg/l			WG694352	11/30/13 2
Barium	< .005	mg/l				11/30/13 2
Beryllium	< .002	mg/l				11/30/13 2
Cadmium	< .005	mg/l				11/30/13 2
Calcium Chromium	< .5 < .01	mg/l				11/30/13 2
Copper	< .01	mg/l				11/30/13 2 11/30/13 2
Lead	< .02	mg/l mg/l				11/30/13 2

<sup>\*</sup> Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Phoenix, AZ 85020

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L670506

Laboratory Blank

December 04, 2013

		Labora	tory Blank				
Analyte	Result	Units	% Re	C	Limit	Batch	Date Analyzed
Nickel	< .02	mg/l				WG694352	11/30/13 21:57
Selenium	< .02	mg/l				WG694352	11/30/13 21:57
Silver	< .01	mg/l				WG694352	11/30/13 21:57
Sodium	< .5	mg/l				WG694352	11/30/13 21:57
Zinc	< .03	mg/1				WG694352	11/30/13 21:57
		<u> </u>					
Kjeldahl Nitrogen, TKN	< .1	mg/l				WG694763	12/02/13 15:28
5 ,		5.					
Phosphorus, Total	< .1	mg/l				WG695014	12/03/13 10:29
		5,					, ,
Ammonia Nitrogen	< .1	mg/l				WG695008	12/03/13 22:14
ramionia wierogen	` • ±	1119/1				110033000	12/03/13 22-11
COD	< 10	mg/l				WG694898	12/03/13 19:22
_			plicate			_	_
Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	<u>Batch</u>
71 1	/ 3	0 110	0 110	0 0	0.0	- (50.50.6	01 110004154
Phosphate,Ortho	mg/l	0.110	0.110	0.0	20	L670506-	-01 WG694154
MBAS	mg/l	0.0	0.0	0.0	20	L670527-	-03 WG694151
Chloride	mg/1	1.30	1.30	0.0	20	L670499-	
Nitrate	mg/l	0.120	0.120	0.0	20	L670499-	
Nitrite	mg/l	0.0	0.0	0.0	20	L670499-	-02 WG694044
Sulfate	mg/l	0.0	0.0	0.0	20	L670499-	-02 WG694044
Chloride	mg/l	2.40	2.40	0.0	20	L670506-	-01 WG694044
Nitrate	mg/l	0.540	0.540	0.0	20	L670506-	-01 WG694044
Nitrite	mg/l	0.0	0.0	0.0	20	L670506-	-01 WG694044
Sulfate	mg/l	6.20	6.20	0.0	20	L670506-	-01 WG694044
	5, =						
Turbidity	NTU	17.0	16.0	4.28	20	L670506-	-01 WG694152
141514101	1110	17.0	20.0	1.20	20	2070500	01 110071101
Suspended Solids	mg/l	33.2	34.8	4.71	5	L670384-	-01 WG694179
Suspended Solids	mg/l	352.	372.	5.52*	5	L670522-	
Suspended Solids	1119/1	332.	372.	3.32	5	1070322	OI WGOJ4175
Dissolved Solids	mg/l	2180	2180	0.00	5	L670594-	-07 WG694358
Dissolved Solids	IIIG/I	2100	2100	0.00	5	Б070394-	-U/ WG094330
DOD	/ T	117.	120.	2.53	30	T 670F0F	01 ₩0604100
BOD	mg/l			2.53		L670505-	
BOD	mg/l	7.90	7.70	2.56	30	L670542-	-01 WG694180
Mercury	mg/l	0.0	0.0000320	8.00	20	L670474-	01 WG694662
Specific Conductance	umhos/cm		1800	0.557	20	L670266-	
Specific Conductance	umhos/cm	960.	960.	0.104	20	L670762-	-04 WG694765
Chlorine-free	mg/l	0.0	0.0	0.0	20	L670506-	-01 WG694727
* Performance of this Analyte is	outside of	established	criteria				

<sup>\*</sup> Performance of this Analyte is outside of established criteria.

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Quality Assurance Report

L670506

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Est. 1970

December 04, 2013

_			Duplicate			_	
Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Hardness, Total (mg/L as CaCO3)	mg/l	92.0	97.6	5.91	20	L670297-01	WG6948
Hardness, Total (mg/L as CaCO3)	mg/l	92.0	98.5	6.82	20	L670297-03	WG6948
Cyanide	mg/l	0.0	0.0	0.0	20	L670566-04	WG6949
Cyanide	mg/l	0.0	0.0	0.0	20	L670194-02	WG6949
Antimony	mg/l	0.0	0.00222	185.*	20	L670509-01	WG6943
Arsenic	mg/l	0.0	0.00511	43.0*	20	L670509-01	WG6943
Barium	mg/1	0.100	0.0978	4.00	20	L670509-01	WG6943
Beryllium	mg/l	0.0	0.00111	28.0*	20	L670509-01	WG6943
Cadmium	mg/l	0.0	0.00122	22.0*	20	L670509-01	WG6943
Calcium	mg/1	5.90	5.77	3.00	20	L670509-01	WG6943
Chromium	mg/l	0.0	0.00129	10.0	20	L670509-01	WG6943
Copper	mg/1	0.0	0.00530	17.0	20	L670509-01	WG6943
Lead	mg/1	0.0	-0.00111	15.0	20	L670509-01	WG6943
Nickel	mg/1	0.0	0.00403	22.0*	20	L670509-01	WG6943
Selenium	mg/1	0.0	0.00373	5.00	20	L670509-01	WG6943
Silver	mg/1	0.0	0.00283	14.0	20	L670509-01	WG6943
Sodium	mg/l	7.00	7.06	1.00	20	L670509-01	WG6943
Zinc	mg/l	0.0	0.000272	756.*	20	L670509-01	WG6943
Kjeldahl Nitrogen, TKN	mg/l	0.976	0.870	11.5	20	L670512-05	WG6947
Kjeldahl Nitrogen, TKN	mg/l	0.00	0.00	0.00	20	L670457-08	WG6947
Phosphorus,Total	mg/l	0.850	0.880	3.47	20	L669634-02	WG6950
Phosphorus,Total	mg/l	0.880	0.910	3.35	20	L669634-01	WG6950
Ammonia Nitrogen	mg/l	0.140	0.160	13.3	20	L670500-01	WG6950
Ammonia Nitrogen	mg/l	0.850	0.790	7.32	20	L670247-01	WG6950
COD	mg/l	0.0	0.0	0.0	5	L670500-01	WG6948
COD	mg/l	220.	220.	0.0	5	L670522-02	WG6948
			ry Control Sar				
Analyte	Units	Known Va	al Re	esult	% Rec	Limit	Batch
Phosphate,Ortho	mg/l	.75	0.70	)4	93.9	85-115	WG6941
MBAS	mg/l	1	0.90	)1	90.1	85-115	WG6941
Chloride	mg/l	40	41.0		103.	90-110	WG6940
Nitrate	mg/l	8	8.39		105.	90-110	WG6940
Nitrite	mg/l	8	8.22		103.	90-110	WG6940
Sulfate	mg/l	40	40.8	3	102.	90-110	WG6940
Turbidity	NTU	40	38.0	)	95.0	90-110	WG6941

ended Solids mg/l 773 868. 112.

\* Performance of this Analyte is outside of established criteria.

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L670506

Analyte	Units	Laboratory Cor Known Val	Result	% Rec	Limit	Batch
inaryce	011100	Idiowii vai	REBUIE	0 Rec	BIMIC	Baccii
Dissolved Solids	mg/l	8800	8460	96.1	85-115	WG694358
TPH (GC/FID) High Fraction	mg/l	1.5	1.47	98.2	50-150	WG694083
o-Terphenyl				108.0	50-150	WG694083
BOD	mg/l	198	212.	107.	84.6-115.4	WG694180
BOD	mg/l	198	219.	111.	84.6-115.4	WG694180
TPH (GC/FID) Low Fraction	mg/l	5.5	5.42	98.5	67-132	WG694260
a,a,a-Trifluorotoluene(FID)	_			103.0	62-128	WG694260
Mercury	mg/l	.003	0.00307	102.	85-115	WG694662
Specific Conductance	umhos/cm	510	510.	100.	85-115	WG694765
Chlorine-free	mg/l	2.27	2.20	96.9	85-115	WG694727
	_					
Oil & Grease (Hexane Extr)	mg/l	40	34.4	86.0	78-114	WG694957
Hardness, Total (mg/L as CaCO3)	mg/l	200	176.	88.0	85-115	WG694818
Cyanide	mg/l	.1	0.101	101.	90-110	WG694937
Antimony	mg/l	1	1.05	105.	85-115	WG694352
Arsenic	mg/l	1	1.10	110.	85-115	WG694352
Barium	mg/l	1	1.10	110.	85-115	WG694352
Beryllium	mg/l	1	1.07	107.	85-115	WG694352
Cadmium	mg/l	1	1.12	112.	85-115	WG694352
Calcium	mg/l	10	11.1	111.	85-115	WG694352
Chromium	mg/l	1	1.10	110.	85-115	WG694352
Copper	mg/l	1	1.03	103.	85-115	WG694352
Lead	mg/l	1	1.13	113.	85-115	WG694352
Nickel	mg/l	1	0.980	98.0	85-115	WG694352
Selenium	mq/l	1	1.11	111.	85-115	WG694352
Silver	mg/l	1	1.04	104.	85-115	WG694352
Sodium	mg/l	10	10.8	108.	85-115	WG694352
Zinc	mg/l	1	1.08	108.	85-115	WG694352
Kjeldahl Nitrogen, TKN	mg/l	7.73	7.24	93.7	90-110	WG694763
Phosphorus, Total	mg/l	1	0.927	92.7	90-110	WG695014
Ammonia Nitrogen	mg/l	7.5	8.01	107.	90-110	WG695008

<sup>\*</sup> Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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L670506

		Labora	tory Contro	ol Sample				
Analyte	Units	Known	ı Val	Result	% Rec	Limit		<u>Batch</u>
COD	mg/l	183		188.	103.	90-11	.0	WG694898
		Laboratory	Control Sam	ple Duplicate				
Analyte		Result	Ref	%Rec	Limit	RPD	Limit	Batch
Phosphate,Ortho	mg/l	0.705	0.704	94.0	85-115	0.142	20	WG694154
MBAS	mg/l	0.910	0.901	91.0	85-115	0.994	20	WG694151
Chloride	mg/l	41.1	41.0	103.	90-110	0.244	20	WG694044
Nitrate	mg/l	8.44	8.39	106.	90-110	0.594	20	WG694044
Nitrite	mg/l	8.22	8.22	103.	90-110	0.0	20	WG694044
Sulfate	mg/l	40.8	40.8	102.	90-110	0.0	20	WG694044
Turbidity	NTU	38.0	38.0	95.0	90-110	0.0	20	WG694152
Suspended Solids	mg/l	872.	868.	113.	85-115	0.460	5	WG694179
Dissolved Solids	mg/l	8520	8460	97.0	85-115	0.707	5	WG694358
TPH (GC/FID) High Fraction	mg/l	1.57	1.47	105.	50-150	6.55	20	WG694083
o-Terphenyl				109.0	50-150			WG694083
TPH (GC/FID) Low Fraction	mg/l	5.21	5.42	95.0	67-132	3.91	20	WG694260
a,a,a-Trifluorotoluene(FID)				103.0	62-128			WG694260
Specific Conductance	umhos/	510.	510.	100.	85-115	0.0	20	WG694765
Chlorine-free	mg/l	2.20	2.20	97.0	85-115	0.0	20	WG694727
Oil & Grease (Hexane Extr)	mg/l	35.2	34.4	88.0	78-114	2.30	20	WG694957
Hardness, Total (mg/L as CaCO3)	mg/l	177.	176.	88.0	85-115	0.567	20	WG694818
Cyanide	mg/l	0.0990	0.101	99.0	90-110	2.00	20	WG694937
Kjeldahl Nitrogen, TKN	mg/l	7.65	7.24	99.0	90-110	5.51	20	WG694763
Phosphorus, Total	mg/l	0.942	0.927	94.0	90-110	1.61	20	WG695014
Ammonia Nitrogen	mg/l	8.23	8.01	110.	90-110	2.71	20	WG695008
COD	mg/l	187.	188.	102.	90-110	0.533	5	WG694898

<sup>\*</sup> Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



Engineering & Env. Consultants, INC. -AZ John Burton 7740 N. 16th Street, Ste 135

Phoenix, AZ 85020

12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Quality Assurance Report Level II

L670506

			Matrix Spil						
Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	]	Ref Samp	Batch
Phosphate,Ortho	mg/l	0.618	0.110	.5	100.	80-120	) ]	L670506-01	WG694
IBAS	mg/l	1.05	0.0	1	100.	80-120	) ]	L670527-03	WG694
				_					
Jitrate	mg/l	5.71	0.790	5	98.0	80-120	) ]	L670508-01	WG69
TPH (GC/FID) Low Fraction	mg/l	5.68	0.0429	5.5	100.	50-143		L670517-02	WG69
,a,a-Trifluorotoluene(FID)					104.0	62-128			WG69
ercury	mg/l	0.00268	0.000032	0 .003	88.0	70-130	) ]	L670474-01	WG69
hlorine-free	mg/l	2.30	0.0	2.27	100.	80-120	) ]	L670506-01	WG69
(ardness, Total (mg/L as CaCO3)	mg/l	215.	91.4	150	82.0	80-120	) ]	L670297-02	WG69
	_								
yanide	mg/l	0.202	0.0	. 2	100.	90-110	) ]	L670498-01	WG69
antimony	mg/l	1.08	0.00222	1	110.	75-125		L670509-01	WG69
rsenic	mq/l	1.15	0.00511	1	120.	75-125		L670509-01	WG69
arium	mq/l	1.22	0.0978	1	110.	75-125		L670509-01	WG69
eryllium	mg/l	1.10	0.00111	1	110.	75-125		L670509-01	WG69
admium	mg/l	1.14	0.00122	1	110.	75-125		L670509-01	WG69
alcium	mg/l	17.2	5.77	10	110.	75-125		L670509-01	WG69
hromium	mg/l	1.14	0.00129	1	110.	75-125		L670509-01	WG69
	_	1.07	0.00129	1	110.	75-125		L670509-01	WG69
opper ead	mg/l		-0.00111		120.	75-125		L670509-01	WG69
	mg/l	1.16							
ickel	mg/l	1.02	0.00403	1	100.	75-125		L670509-01	WG69
elenium	mg/l	1.15	0.00373	1	120.	75-125		L670509-01	WG69
ilver	mg/l	1.07	0.00283	1	110.	75-125		L670509-01	WG69
odium	mg/l	17.8	7.06	10	110.	75-125		L670509-01	WG69
inc	mg/l	1.10	0.000272	1	110.	75-125	]	L670509-01	WG69
jeldahl Nitrogen, TKN	mg/l	5.53	0.00	5	111.*	90-110		L670461-05	WG69
hosphorus,Total	mg/l	4.78	0.0	5	96.0	90-110	) ]	L670512-03	WG69
mmonia Nitrogen	mg/l	12.3	1.80	10	100.	90-110	) ]	L670498-01	WG69
COD	mg/l	415.	8.60	400	100.	90-110		L670500-02	WG69
.00	mg/ i	413.	0.00	400	100.	JU 110	<u> </u>	<u> </u>	WGOD
			ix Spike Du <sub>l</sub>						
nalyte	Units	MSD I	Ref %R	ec	Limit	RPD	Limit 1	Ref Samp	Batc
hosphate,Ortho	mg/l	0.613	0.618 10	1.	80-120	0.812	20	L670506-01	WG69
		1.02	1.05 10	2.	80-120	2.90	20 1	L670527-03	WG69

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Tax I.D. 62-0814289

Est. 1970

Quality Assurance Report Level II

L670506

		Mat	rix Spike	Duplicate					
Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limi	t Ref Samp	Batch
Nitrate	mg/l	5.76	5.71	99.4	80-120	0.872	20	L670508-01	WG69404
TPH (GC/FID) Low Fraction a,a,a-Trifluorotoluene(FID)	mg/l	5.80	5.68	105. 104.0	50-143 62-128	2.17	20	L670517-02	WG69426 WG69426
Mercury	mg/l	0.00258	0.00268	84.8	70-130	4.00	30	L670474-01	WG69466
Chlorine-free	mg/l	2.40	2.30	106.	80-120	4.26	20	L670506-01	WG69472
Hardness, Total (mg/L as CaCO3)	mg/l	216.	215.	83.1	80-120	0.464	20	L670297-02	WG69481
Cyanide	mg/l	0.195	0.202	97.5	90-110	3.53	20	L670498-01	WG69493
Antimony Arsenic	mg/l mg/l	1.07	1.08	107. 112.	75-125 75-125	1.00	20 20	L670509-01 L670509-01	WG69435
Barium Beryllium	mg/l mg/l	1.23	1.22	113. 110.	75-125 75-125	0.0	20 20	L670509-01 L670509-01	WG69435
Cadmium Calcium	mg/l mg/l	1.14 17.2	1.14 17.2	114. 115.	75-125 75-125	0.0	20 20	L670509-01 L670509-01	WG69435
Chromium Copper	mg/l mg/l	1.12	1.14	112. 107.	75-125 75-125	1.00	20 20	L670509-01 L670509-01	WG69435
Lead Nickel	mg/l mg/l	1.14	1.16	114. 100.	75-125 75-125	2.00	20 20	L670509-01 L670509-01	WG69435
Selenium Silver	mg/l mg/l	1.13	1.15	112. 108.	75-125 75-125	2.00	20 20	L670509-01 L670509-01	WG69435 WG69435
Sodium Zinc	mg/l mg/l	18.1 1.10	17.8 1.10	111. 110.	75-125 75-125	2.00	20 20	L670509-01 L670509-01	WG6943! WG6943!
Kjeldahl Nitrogen, TKN	mg/l	5.20	5.53	104.	90-110	6.15	20	L670461-05	WG69476
Phosphorus,Total	mg/l	4.75	4.78	95.0					

		-	Billing Infor	mation:		- 1			Ar	alysis /	Contain	er / Pre	servativo	e	- 99		hain of Custody	Page Lot 2
740 B 16th St Suite 135				VPAZ071013	S		SS		Surfactants (MBAS)/ 250mL HDPE/ No PRes *48 hr holi	Gab	Nitrate, Nitrite, ammonia Nitrogen, TKN, Total Phosphore	Grab	Grab S	8 V	Turbidity/ 1L HDPE/ No Pres	/ No Pres	ELA B S.C.	SC
eport to:			Email To:	eecphx.com			No Pre	time	No PF	/NaO	KN, T	모	HG/	EHI	DPE/	HDPE/	Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859	
ohn Burton roject description: ADOT PLX	MSY		por torne	City/State Collected:			HDPE/ No Pres	Pres *48hr hold time*	HDPE/	HDPE	ogen, T	amber/	ar glass	nL HDP	ty/1LH	7	LH 6705	OC.
hone: 602-248-7702 ax: 602-248-7851	Client Project #	32, 23	3	Lab Project # ENGENVPA	Z071013S		7	res *48	250mL	- amber	nia Nitr	V 40mL	11 cles	* / 500r	Turbidii		A179	
ollected by (print):	Site/Facility ID	#		P.O. #			/spilos pe	No P	BAS)/2	250mL	ammo	&DRO)	srease/	Metals	COD,	Chloride, and	Acctnum: ENG Template:	SENVPAZ
Collected by (signature):  Your Buts  mmediately	Same D Next Do Two Do	ab MUST Be l	200% 100% 50%	Email? _	_No Yes	No.	Total Suspended	3OD/ 1L HDPE/ No	actants (Mi	Total Cyanide/ 250mL amber HDPE/ NaOH	ste, Nitrite,	TPH AZ (ORO&DRO)/ 40mL amber/ HCI	Total Oil and Grease/ 1L clear glass/ HCI	Hardness and Metals* / 500mL HDPE/ HNO3	SPCON, TDS,	Sulfate, Chlori	Prelogin: TSR: Daphi Cooler: Shipped Via:	ne Richard
Packed on Ice N YX Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Entrs	Tota	ВОГ	Surf	Tota	Z Z	트	Tota	Har	SP(	Sull	Rem./Contaminant	Sample # (lab on)
PHX/12213	Com 16 ra	bot	-	11/22/13	0532	11	X	X	X	X	X	X	X	X	X	X		-0)
E (1)																		
	1			100000		1												
* Matrix: SS - Soil GW - Groundwal	ter WW - Wastel	7051° Nater DW-	Brinking Wa	ater OT - Other	Stormwater			,		pН			mp			5435 fold #	5 5513	8724
Remarks: Metals include: N Relinquished by : (Signature)	la, Ca, Sb, A	11/2	1	0754 C	Regelved by: (Sig	Ci		1			FedEx	rned vis	: Ou			Condition	Olt) (lab	use only)
Relinguished by (Signature)  Relinguished by : (Signature)	,	/1/2	2/13	9:2d	Comula Received for lab	Do	nature)	~	>	Date	2.4		III	00	(	OC Sea	the second second second	NN/ F:

# ADOT Stormwater Analyses (Permit Years 1-3-5)

E. Coli   9223B-2004	Type	Analyses	Method	Bottle/Preservative
Cyanide		E. Coli	9223B-2004	100 ml micro bottle w/presen
Total Oil & Grease   1664A   Total Phosphorus   350.1   410.4   10.0   410.4   10.0   1	Grab	Cyanide	4500NC E-2011	250ml plastic amber/NaOH
Fecal Coliform   9222 D-1997		IPH (ORO/DRO Range)	8015	2 - 40 ml VOA's w/HCL
Fecal Coliform         9222 D-1997           Ammonia as N         350.1           TKN         350.1           COD         410.4           Total Phosphorus         365.4           Nitrate         353.2           Surfactants         353.2           Antimony         410.4           Antimony         470.1           Antimony         5540 C-2011           Barlum         200.7           Barlum         200.7           Capper         200.7           Lead         Mercury           Mercury         Nickel           Selentum         Silver           Zinc         280.1           Calcium         130.1           Hardness         2540 C-2011           TS         2540 D-2011           TS         2540 D-2011           TS         2550 D-2011           TS         2550 D-2011           TS         2550 D-2011           TS         2550 D-2011           Chloride         4500Cl G-2011           Chloride         4500Cl G-2011		Total Oil & Grease	1664A	1 Liter glass jar w/HCL
Ammonia as N  TKN COD Total Phosphorus  Surfactants  Metals, total Antimony Arsenic Barlum Cadmium Copper Copper Copper Copper Lead Mercury Nickel Selentum Silver Zinc Calcium Sodium Hardness Sodium Turbidity Sulfate Ortho-Phosphate Chlorine-free Sulfate Colorid Sodium Sodiu		Fecal Coliform	9222 D-1997	100 ml micro hottle worsesson
TKN   351.2   410.4   10.4		Ammonia as N	350.1	TOO III IIII O PONG WILIOSOIX
COD         410.4           Total Phosphorus         365.4           Nitrate         353.2           Surfactants         5540 C-2011           Metals, total         5540 C-2011           Arsenic         5540 C-2011           Arsenic         5540 C-2011           Barlum         200.7           Barlum         200.7           Copper         200.7           Lead         Mercury           Nickel         200.7           Selentium         200.7           Silver         200.7           Silver         200.7           Sodium         120.1           Hardness         2540 C-2011           TDS         2540 C-2011           TDS         2540 C-2011           TS         2540 D-2011           Chlorine-free         4500Cl G-2011           Chlorine-free         4500Cl G-2011		TKN	351.2	I
Total Phosphorus   365.4     Nitrate   Nitrate   353.2     Surfactants   5540 C-2011     Metals, total   Antimony   Arsenic     Barlum   Beryllium   Cadmium   Cadmium   Chromium   Chromium   Chromium   Chromium   Copper   Lead   Mercury   Nickel   Selentium   Silver   Zinc   Calcium   Sodium   Hardness   120.1     Specific Conductance   120.1   130.1     Tos   2540 C-2011   10.5   130.0     Tos   2540 C-2011   10.0   10.0     Tos   2540 C-2011   10.0     Total Total Total   200.0   10.0     Chlorine-free   300.0   10.0     Chlorine-free   4500 F-2011   10.		COD	410.4	500 ml poly/H2SO4
Nitrate         353.2           Surfactants         5540 C-2011           Metals, total         5540 C-2011           Antimony         Arsenic           Barlum         Barlum           Barlum         Cademium           Copper         Copper           Lead         Mercury           Nickel         200.7           Selenium         Silver           Zinc         Zinc           Calcium         Sodium           Sodium         130.1           Hardness         120.1           Specific Conductance         120.1           TS         2540 D-2011           TSS         2540 D-2011           TSS         2540 D-2011           TSS         2540 D-2011           Assorting         4500P F-2011           Chloride-Phosphate         4500P F-2011           Chloride-free         4500C G-2011		Total Phosphorus	365.4	
Surfactants         353.2           Surfactants         5540 C-2011           Metals, total         Antimony           Arsenic         Barlum           Beryllium         200.7           Copper         200.7           Lead         Mercury           Nickel         200.7           Selenium         200.7           Silver         200.7           Zinc         2540 D-2011           TDS         2540 D-2011           TDS         2540 D-2011           TS         2540 D-2011           TSS         2540 D-2011           TSS         2540 D-2011           TSS         2540 D-2011           Chloride         4500P F-2011           Chloride         4500C F-2011           Achloride         4500C G-2011		Nitrite		
Surfactants         5540 C-2011           Metals, total         Antimony           Arsenic         Barlum           Beryllium         Cadmium           Capper         200.7           Lead         Mercury           Nickel         Selentum           Silver         250.7           Zinc         2540 C-2011           Calcium         120.1           Specific Conductance         120.1           TDS         2540 D-2011           TDS         2540 D-2011           TDS         2540 D-2011           TS         2550 D-2011           TSS         2550 D-2011           Chloride         4500P F-2011           Chloride         4500C G-2011           Chloride         4500C G-2011		Nitrate	353.2	250ml poly/no preservative
Metals, total Antimony Arsenic Barlum Beryllium Cadmium Copper Lead Mercury Nickel Selenium Silver Zinc Calcium Sodlum Hardness Sodlum TDS TDS TDS TUbS TUBS TUBS TUBS TUBS TUBS TUBS TUBS TUB		Surfactants	5540 C-2011	11 policino presentativo
Antimony Arsenic Barlum Cadmium Copper Copper Lead Mercury Nickel Selenium Silver Zinc Calcium Sodium Hardness Sodium TDS Sodium TDS TDS TS TS TS TS Tabidity TSS TS Tabidity TSS TSS TSS TSS TSS TSS TSS TSS TSS TS		Metals total		- Polytic preservative
rer c c c c c c c c c c c c c c c c c c	mposite	Antimony Arsenic Barlum Beryllium Cadmium Chromium Copper Lead Mercury Nickel Selenium	200.7	500 ml poly w/nitric preservative
ific Conductance 120.1 2540 C-2011 2540 D-2011 2540 D-2011 te 300.0 4500P F-2011 de 300.0 ne-free 4500Cl G-2011	200	Silver Zinc Calcium Sodlum Hardness	130.1	
dity 2540 D-2011 2540 D-2011 2540 D-2011 2550 D-2011		Specific Conductance	1204	
dity 2540 D-2011 te 300.0 -Phosphate 300.0 de 300.0 ne-free 4500Cl G-2011		TDS	2540 C.2011	T
dity 2130 B-2011 te 300.0 -Phosphate 4500P F-2011 de 300.0 ne-free 4500Cl G-2011		TSS	2540 D-2011	
Thosphate 300.0 4500P F-2011 de 300.0 ne-free 4500Cl G-2011		Turbidity	2130 B-2011	
A500P F-2011 de 300.0 ne-free 4500Cl G-2011		Sulfate	300.0	2 - 1 Liter polys/no preservativ
ne-free		Ortho-Phosphate	4500P F-2011	
2		Chlorine-frae	300.0	
			4500CI G-2011	

## **TUCSON MS4**

**OUTFALL ID: Tucson MS4 Grant Road** 

RECEIVING WATER: Santa Cruz WATERSHED: Sanata Cruz

**DESIGNATED USES: A&We, PBC** 

MONITORING SEASONS Summer: June 1 - October 31 Winter: November 1 - May 31

AUTOSAMPLER STARTUP DATE: March 21, 2011 sampling conducted with passive samplers)	(previous	Winter 2008-09	Summer 2009	Winter 2009-10	Summer 2010	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012 13	Summer 2013	Winter 2013-14
s	AMPLING DATE	12/1/08	6/30/09	4/23/10	NS	NS	NS	11/7/2011 Sys. Start	8/22/12	12/13/12	/19/13 & 8/2/201	11/26/13
MONITORING PARAMETERS	wqs	==4=4==	2/22/22	1==1==					<u> </u>	_ ==/==/==	<u>,,,, -,</u>	==/==/
Flow	NNS	<10	<12	<10	NS	NS	NS	276	27.0	<10	<10 (both)	<10
рН	6.5-8.5	7.35	7.88	7.3	NS	NS	NS	7.1	8.57	7.54	7.46	7.86
Temperature (F°)	NNS	62.3	88.1	64.4	NS	NS	NS	65.1	81.6	61.22	83.47	64.7
Hardness	NNS	250	IS	470	NS	NS	NS	IS	35.0	28	IS	IS
Specific conductance (umhos/cm)	500	720	690	1000	NS	NS	NS	235	92.0	89	59	IS
Total Dissolved Solids (TDS) (mg/L)	500	680	680*	910	NS	NS	NS	IS	72.0	66	82	IS
Total Suspended Solids (TSS) (mg/L)	NNS	110	160	130	NS	NS	NS	IS	65.0	69	350	IS
Turbidity (NTU)	NNS	94	IS	58	NS	NS	NS	IS	82.0	46	230	IS
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	65	44	90	NS	NS	NS	IS	<5.0	5.8	7.2	IS
Chemical Oxygen Demand (COD) (mg/L)	NNS	560	640	490	NS	NS	NS	IS	62.0	95	IS	IS
Surfactants (mg/L)	NNS	IS	11	IS	NS	NS	NS	IS	0.1	0.122	<.05	IS
Inorganics												
Cyanide, total (mg/L)	0.2	0.0059	<0.0050	<0.10	NS	NS	NS	<0.0080	IS	<0.050	<0.050	<0.010
Sulfates (mg/L)	250	110	68	IS	NS	NS	NS	IS	4.2	7.5	2.2	IS
Nutrients												
Nitrate (mg/L)	1	<0.10	0.21	9.9	NS	NS	NS	IS	1.0	IS	0.50	IS
Nitrite (mg/L)	10	<0.10	<0.10	1.9	NS	NS	NS	IS	<0.20	IS	<0.2	IS
Total Ammonia (mg/L)	NNS	6.2	6.7	<0.50	NS	NS	NS	IS	<0.50	<0.50	IS	IS
Total Kjeldahl Nitrogen (TKN) (mg/L)	NNS	12	14	7.8	NS	NS	NS	IS	1.0	1.6	IS	IS
Total Phosphorous (mg/L)	NNS	0.42	0.36	0.58	NS	NS	NS	IS	0.2	0.18	IS	IS
Phosphate, Ortho (mg/L)	NNS	0.62	<0.12	310	NS	NS	NS	IS	<0.20	<0.20	<0.20	IS
Sodium (mg/L)	NNS	IS	18	18	NS	NS	NS	IS	3.5	4.9	IS	IS
Calcium (mg/L)	NNS	IS	100	150	NS	NS	NS	IS	14.0	11	IS	IS
Chloride (mg/L)	10	26	19	14	NS	NS	NS	IS	<2.0	2.8	<2	IS
Microbiological												
Coliform, fecal (CFU/100 ml)	NNS	IS	IS	2400*	NS	NS	NS	IS	<1	2200	IS	IS
E.Coli (MPN/100 ml)	100.00	IS	IS	390	NS	NS	NS	<2	300	300	IS	650
Total Metals												
Antimony (mg/L)	0.00600	NA	0.0046	<0.20	NS	NS	NS	IS	<0.0030	0.0045	IS	IS
Arsenic (mg/L)	0.05000	<0.020	0.003	<0.040	NS	NS	NS	IS	<0.10	<0.10	IS	IS
Barium (mg/L)	2.0T	0.20	0.2	0.2	NS	NS	NS	IS	0.1	0.070	IS	IS

RECEIVING WATER: Santa Cruz WATERSHED: Sanata Cruz

Summer: June 1 - October 31
Winter: November 1 - May 31

WATERSHED: Sanata Cruz			Winter: November 1 - May 31									
DESIGNATED USES: A&We, PBC												
AUTOSAMPLER STARTUP DATE: March 21, 2011 (p sampling conducted with passive samplers)	revious	Winter 2008-09	Summer 2009	Winter 2009-10	Summer 2010	Winter 2010-11	Summer 2011	Winter 2011-12 11/7/2011	Summer 2012	Winter 2012 13	Summer 2013	Winter 2013-14
SAI	MPLING DATE	12/1/08	6/30/09	4/23/10	NS	NS	NS	Sys. Start	8/22/12	12/13/12	/19/13 & 8/2/201	11/26/13
Beryllium (mg/L)	0.00400	IS	<0.0020	<0.0020	NS	NS	NS	IS	<0.0010	<0.0010	IS	IS
Cadmium (mg/L)	0.00500	<0.0050	<0.0050	<0.0020	NS	NS	NS	IS	<0.0010	<0.0010	IS	IS
Chromium (mg/L)	0.1T	<0.010	<0.010	<0.030	NS	NS	NS	IS	<0.010	<0.010	IS	IS
Copper (mg/L)	1.3T	IS	0.033	0.13	NS	NS	NS	IS	0.050	0.080	IS	IS
Lead (mg/L)	0.015T	0.015	<0.0050	<0.040	NS	NS	NS	IS	<0.015	<0.015	IS	IS
Magnesium (mg/L)	-	IS	NA	20	NS	NS	NS	IS	2.0	<2.0	IS	IS
Mercury (mg/L)	0.00200	<0.00020	<0.00020	<0.0010	NS	NS	NS	IS	<0.00020	<0.00020	IS	IS
Nickel (mg/L)	0.14000	IS	<0.020	<0.050	NS	NS	NS	IS	<0.010	<0.010	IS	IS
Selenium (mg/L)	0.02000	<0.020	0.02	<0.040	NS	NS	NS	IS	<0.0020	<0.0030	IS	IS
Silver (mg/L)	NNS	<0.010	<0.010	<0.010	NS	NS	NS	IS	<0.010	<0.010	IS	IS
Zinc (mg/L)	2.1T	IS	0.18	0.41	NS	NS	NS	IS	0.1	0.13	IS	IS
Organic Toxic Pollutnats												
Total Petroleum Hydrobarbons (TPH) (mg/L)	NNS	6.2	24	24	NS	NS	NS	1.8	IS	IS	IS	4200
Oil & Grease (Hexane Extr) (mg/L)	NNS	<5.6	<6.7	9.2	NS	NS	NS	9.9	11	<5.0	8.5	<5
Chlorine, residual (mg/L)	0.7	<0.10	IS	<0.10	NS	NS	NS	IS	0.13	<0.050	IS	IS
VOCs, Semi-VOCs and Pesticides												
Benzene (ug/L)	0.005	<0.0010	<0.00050	<0.50	NS	NS	NS	<0.50	<2.0	<2.0	NR	NR
Ethylbenzene (ug/L)	0.70000	<0.0010	<0.00050	<0.50	NS	NS	NS	<1.0	<2.0	<2.0	NR	NR
Toluene (ug/L)	1.00000	<0.0050	<0.0050	<0.50	NS	NS	NS	<1.0	<2.0	<2.0	NR	NR
Total Xylene (ug/L)	10.00000	<0.0030	<0.0015	<0.50	NS	NS	NS	<1.5	<2.0	<2.0	NR	NR
Acid Compounds												
2-Chlorophenol (ug/L)	0.03500	IS	<0.010	<96	NS	NS	NS	IS	<10	IS	NR	NR
2,4-Dichlorophenol (mg/L)	0.02100	IS	<0.010	<96	NS	NS	NS	IS	<10	IS	NR	NR
2,4-Dimethylphenol (ug/L)	0.14000	IS	<0.010	<96	NS	NS	NS	IS	<10	IS	NR	NR
4,6-Dinitrocreosol (mg/L)	NNS	IS	NA	NA	NA	NS	NS	IS	NA	IS	NR	NR
2,4-Dinitrophenol (ug/L)	0.01400	IS	<0.010	<480	NS	NS	NS	IS	<50	IS	NR	NR
2-Nitrophenol (ug/L)	NNS	IS	<0.010	<96	NS	NS	NS	IS	<15	IS	NR	NR
4-Nitrophenol (ug/L)	NNS	IS	<0.010	<480	NS	NS	NS	IS	<25	IS	NR	NR
P-Chloro-m-cresol (mg/L)	NNS	IS	NA	NA	NA	NS	NS	IS	NA	IS	NR	NR
Pentachlorophenol (ug/L)	0.00100	IS	<0.010	<290	NS	NS	NS	IS	<50	IS	NR	NR
Phenol (ug/L)	4.20000	IS	<0.010	<96	NS	NS	NS	IS	<10	IS	NR	NR
2,4,6-Trichlorophenol (ug/L)	0.00320	IS	<0.010	<96	NS	NS	NS	IS	<10	IS	NR	NR
Bases/Neutrals								1				
Acenaphthene(ug/L)	0.42000	IS	<0.010	<48	NS	NS	NS	IS	<10	IS	NR	NR

RECEIVING WATER: Santa Cruz WATERSHED: Sanata Cruz DESIGNATED USES: A&We. PBC

Summer: June 1 - October 31 Winter: November 1 - May 31

AUTOSAMPLER STARTUP DATE: March 21, 2011 (previous

Winter Summer Winter Summer Winter Summer Winter Summer Winter 2012 Winter sampling conducted with passive samplers) 2008-09 2009 2009-10 2010 2010-11 2011 2011-12 2012 Summer 2013 2013-14 13 11/7/2011 SAMPLING DATE 12/1/08 6/30/09 4/23/10 NS Sys. Start 8/22/12 12/13/12 /19/13 & 8/2/201 11/26/13 NS NS Acenaphthylene (ug/L) NNS IS < 0.010 <48 NS NS NR NS <10 Anthracene (ug/L) 2.10000 IS < 0.010 <48 NS NS NS IS <10 IS NR NR Benzo(a)anthracene (ug/L) 0.00190 IS < 0.010 <48 NS NS NS IS <10 IS NR NR Benzo(a)pyrene (ug/L) 0.00020 IS < 0.010 NS NS IS <10 IS NR NR <48 NS Benzo(b)fluoranthene (ug/L) NNS IS < 0.010 <96 NS NS NS IS <10 IS NR NR IS Benzo(g,h,i)perylene (ug/L) NNS < 0.010 <48 NS NS NS IS <10 IS NR NR Benzo(k)fluoranthene (ug/L) 0.04800 NS IS < 0.010 <96 NS NS IS <10 IS NR NR Chrysene (ug/L) 0.00479 IS < 0.010 <48 NS NS NS IS <10 IS NR NR Dibenzo(a,h)anthracene (ug/L) 0.00190 IS NS NS IS IS < 0.010 <48 NS <10 NR NR Diethyl phthalate (ug/L) 5.60000 NS IS < 0.010 <96 NS NS IS <10 IS NR NR Dimethyl phthalate (ug/L) IS <96 NS NS IS IS NNS < 0.010 NS <20 NR NR Di-n-butyl phthalate (ug/L) NNS IS NS < 0.010 <96 NS NS IS <10 IS NR NR Di-n-octyl phthalate (ug/L) 2.80000 IS < 0.010 <96 NS NS NS IS <10 IS NR NR 1,2-Diphenylhydrazine (Azobenzene) (mg/L) NNS IS NA NR NR NA NS NS NS IS NA IS Fluoranthene (ug/L) 0.28000 IS < 0.010 <48 NS NS NS IS <10 IS NR NR Fluorene (ug/L) 0.28000 IS < 0.010 <48 NS <10 IS NR NS NS IS NR Indeno(1,2,3-cd)pyrene (ug/L) 0.00048 IS < 0.010 <48 NS NS NS IS <10 IS NR NR Naphthalene (ug/L) 0.14000 IS NS NS < 0.010 <48 NS IS <10 IS NR NR Phenanthrene (ug/L) NNS IS < 0.010 <48 NS NS NS IS <10 IS NR NR IS Pyrene (ug/L) 0.21000 < 0.010 <48 NS <10 NR NR Pesticides < 0.000050 Aldrin (ug/L) 0.00200 IS <.96 NS NS NS IS < 0.50 <1.0 NR NR Alpha BHC (ug/L) IS < 0.000050 <.96 NS < 0.50 <1.0 NNS NS NS IS NR NR Beta BHC (ug/L) IS NNS < 0.000050 <.96 NS < 0.50 <1.0 NR IS Delta BHC (ug/L) NNS < 0.000050 <.96 NS NS NS IS < 0.50 NR NR <1.0 Gamma BHC (ug/L) NNS IS < 0.000050 <.96 NS NS NS IS < 0.50 <1.0 NR NR Chlordane (ug/L) 0.00200 IS < 0.00050 <.96 NS NS NS IS <5.0 <10 NR NR 4,4-DDD (ug/L) IS < 0.000050 NS NS IS NR NNS <.96 NS < 0.50 <1.0 NR 4,4-DDE (ug/L) < 0.000050 NNS IS <.96 NS NS NS IS < 0.50 <1.0 NR NR <.96 NS IS < 0.50 4,4-DDT (ug/L) NNS IS < 0.000050 NS NS <1.0 NR NR 0.00200 IS < 0.000050 Dieldrin (ug/L) <.96 NS NS NS IS < 0.50 <1.0 NR NR Alpha-endenosulfan (mg/L); Endenosulfan I IS <.96 NS IS < 0.50 NNS < 0.000050 NS NS <1.0 NR NR Beta-endenosulfan (mg/L); Endenosulfan II IS < 0.000050 < 0.50 NNS <.96 NS NS NS IS <1.0 NR NR Endosulfan sulfate (ug/L) < 0.000050 NNS IS <.96 NS NS NS IS < 0.50 <1.0 NR NR

RECEIVING WATER: Santa Cruz
WATERSHED: Sanata Cruz

0.00040

0.00020

NNS

Heptachlor (ug/L)

Toxaphene (ug/L)

Heptachlor epoxide (ug/L)

Summer: June 1 - October 31 Winter: November 1 - May 31

NS

NS

NS

IS

IS

IS

< 0.50

< 0.50

<10

<1.0

<1.0

<20

NR

NR

NR

NR

NR

NR

DESIGNATED USES: A&We, PBC												
AUTOSAMPLER STARTUP DATE: March 21, 201 sampling conducted with passive samplers)	(previous	Winter 2008-09	Summer 2009	Winter 2009-10	Summer 2010	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012 13	Summer 2013	Winter 2013-14
	SAMPLING DATE							11/7/2011				
	SAIVIF LING DATE	12/1/08	6/30/09	4/23/10	NS	NS	NS	Sys. Start	8/22/12	12/13/12	/19/13 & 8/2/201	11/26/13
Endrin (ug/L)	0.00200	IS	<0.000050	<.96	NS	NS	NS	IS	<0.50	<1.0	NR	NR
Endrin aldehyde (ug/L)	NNS	IS	<0.000050	<.96	NS	NS	NS	IS	<0.50	<1.0	NR	NR

NS

NS

NS

NS

NS

NS

<.96

<.96

<0.00096

<0.000050

<0.000050

<0.00050

IS

IS

IS

# THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica** 

# **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc.

TestAmerica Phoenix 4625 East Cotton Ctr Blvd Suite 189 Phoenix, AZ 85040 Tel: (602)437-3340

TestAmerica Job ID: 550-8220-1

#### For:

Engineering & Environmental Consultants 7740 N 16th Street Suite 135 Phoenix, Arizona 85020

Attn: Mr. John Burton



Authorized for release by: 8/22/2013 11:02:42 AM

Kylie Emily, Project Manager II kylie.emily@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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# **Definitions/Glossary**

Client: Engineering & Environmental Consultants

Toxicity Equivalent Quotient (Dioxin)

TestAmerica Job ID: 550-8220-1

## **Qualifiers**

## **General Chemistry**

Qualifier	Qualifier Description
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.

# Glossary

TEQ

Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)

#### **Case Narrative**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-8220-1

Job ID: 550-8220-1

Laboratory: TestAmerica Phoenix

Narrative

#### **CASE NARRATIVE**

**Client: Engineering & Environmental Consultants** 

**Project: ADOT Stormwater** 

Report Number: 550-8220-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica Phoenix attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

#### **RECEIPT**

The samples were received on 08/06/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.9 C.

#### SGT-HEM

Method(s) 1664A: Analysis for Hexane Extractable Material (HEM) was performed for the following sample(s): ADOT-Grant-G (550-8220-1). Since the HEM result(s) was below the reporting limit (RL), the result(s) for Silica Gel Treated - Hexane Extractable Material (SGT-HEM) was reported as a non-detect. All HEM quality control criteria were met.

Method(s) 1664A: The batch quality control (QC) samples provided for SGT-HEM are reported from the untreated HEM determination because all samples were found to be non-detect for this fraction for the following samples:ADOT-Grant-G (550-8220-1).

#### **TOTAL CYANIDE**

Method(s) SM 4500 CN E: The reference method requires samples to be preserved to a pH of >12. The following sample(s) was received with insufficient preservation at a pH of 6:550-8220-1. The sample(s) was preserved to the appropriate pH in the laboratory.

2

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4

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6

8

13

# **Sample Summary**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-8220-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-8220-1	ADOT-Grant-G	Water	08/02/13 15:30	08/06/13 16:00

3

А

5

7

8

4.0

11

12

# **Detection Summary**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-8220-1

Client Sample ID: ADOT-Grant-G

Lab Sample ID: 550-8220-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	Method	Prep Type
HEM	8.5		5.1	mg/L	1	1664A	Total/NA

4

6

8

9

11

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# **Client Sample Results**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-8220-1

**Client Sample ID: ADOT-Grant-G** 

Lab Sample ID: 550-8220-1

Matrix: Water

Date Collected: 08/02/13 15:30 Date Received: 08/06/13 16:00

١	General Chemistry								
١	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	HEM	8.5		5.1	mg/L		08/14/13 11:44	08/19/13 07:52	1
١	SGT-HEM	ND		10	mg/L		08/14/13 11:44	08/19/13 07:52	1
	Cyanide, Total	ND		0.050	mg/L		08/09/13 13:00	08/09/13 16:30	1

5

7

8

10

11

13

%Rec.

78 - 114

78 - 114

86

98

90 - 110

RPD

Limit

RPD

10

## Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 550-12692/1-A Matrix: Water Analysis Batch: 12898									Client Sa	ample ID: Meth Prep Type: Prep Bate	
		MB	_	_			_	_	_		
Analyte	Result	Qualifier	R	L	Unit		D	P	repared	Analyzed	Dil Fac
HEM	ND		5	0	mg/L			08/1	4/13 11:44	08/19/13 07:52	1
SGT-HEM	ND		1	0	mg/L			08/1	4/13 11:44	08/19/13 07:52	1
Lab Sample ID: LCS 550-12692/2-A							С	lient	Sample	ID: Lab Contro	ol Sample
Matrix: Water									•	Prep Type:	Total/NA
Analysis Batch: 12898										Prep Bate	ch: 12692
			Spike	LCS	LCS					%Rec.	
Analyte			Added	Result	Qualifier	Unit		D	%Rec	Limits	
HEM			40.0	35.0		mg/L		_	88	78 - 114	
Lab Sample ID: LCSD 550-12692/3-A						C	lient	Sam	ple ID: L	ab Control Sar	nple Dup
Matrix: Water									•	Prep Type:	
Analysis Batch: 12898											ch: 12692
Analysis Daton: 12000										i icp batt	J 12032

Lab Sample ID: 550-8297-B-8-A MS								Client	Sample ID: Matrix Spike
Matrix: Water									Prep Type: Total/NA
Analysis Batch: 12898									Prep Batch: 12692
-	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits

LCSD LCSD

38.5

52.9

Result Qualifier

ND

Unit

mg/L

Result Qualifier

Unit

mg/L

mg/L

Spike

Added

40.0

48.8

# Method: SM 4500 CN E - Cyanide, Total

11

HEM

HEM

Analyte

Cyanide, Total

Lab Sample ID: MB 550-12322/1-A Matrix: Water Analysis Batch: 12342										Client Sa	mple ID: Metho Prep Type: T Prep Batc	Γotal/NA
	MB	MB									•	
Analyte	Result	Qualifier		RL		Unit		D	P	repared	Analyzed	Dil Fac
Cyanide, Total	ND			0.050		mg/L			08/0	9/13 13:00	08/09/13 16:30	1
Lab Sample ID: LCS 550-12322/2-A								CI	ient	Sample I	ID: Lab Control	Sample
Matrix: Water											Prep Type: 7	Γotal/NA
Analysis Batch: 12342											Prep Batc	h: 12322
			Spike		LCS	LCS					%Rec.	
Analyte			Added		Result	Qualifier	Unit		D	%Rec	Limits	
Cyanide, Total			0.0500		ND		mg/L		_	91	90 - 110	
Lab Sample ID: LCSD 550-12322/14-A							С	lient :	Sam	ple ID: La	ab Control Sam	ple Dup
Matrix: Water											Prep Type: 1	Γotal/NA
Analysis Batch: 12342											Prep Batc	
-			Spike		LCSD	LCSD					%Rec.	RPD

Added

0.0500

Limit

# **QC Sample Results**

Client: Engineering & Environmental Consultants TestAmerica Job ID: 550-8220-1

Method: SM 4500 CN E - Cyanide, Total (Continued)

Lab Sample ID: 550-7815-AF-1-B I	MS		Client Sample ID: Matrix Spike
Matrix: Water			Prep Type: Total/NA
Analysis Batch: 12342			Prep Batch: 12322
		<b>-</b>	 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Cyanide, Total	ND		0.100	ND	M2	mg/L	_	48	80 - 120	

Lab Sample ID: 550-7815-AF-1	-C MSD			Client Sample ID: Matrix Spike	Duplicate
Matrix: Water				Prep Type:	Total/NA
Analysis Batch: 12342				Prep Bate	ch: 12322
	Sample Sample	Spike	MSD MSD	%Rec.	RPD

Analyte Result Qualifier Added Result Qualifier Unit Limits RPD Limit %Rec 0.0537 M2 Cyanide, Total ND 0.100 mg/L 80 - 120 12 20

# **QC Association Summary**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-8220-1

## **General Chemistry**

## Prep Batch: 12322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-8220-1	ADOT-Grant-G	Total/NA	Water	SM 4500 CN C	
550-7815-AF-1-B MS	Matrix Spike	Total/NA	Water	SM 4500 CN C	
550-7815-AF-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CN C	
LCS 550-12322/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN C	
LCSD 550-12322/14-A	Lab Control Sample Dup	Total/NA	Water	SM 4500 CN C	
MB 550-12322/1-A	Method Blank	Total/NA	Water	SM 4500 CN C	

## Analysis Batch: 12342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-8220-1	ADOT-Grant-G	Total/NA	Water	SM 4500 CN E	12322
550-7815-AF-1-B MS	Matrix Spike	Total/NA	Water	SM 4500 CN E	12322
550-7815-AF-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CN E	12322
LCS 550-12322/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	12322
LCSD 550-12322/14-A	Lab Control Sample Dup	Total/NA	Water	SM 4500 CN E	12322
MB 550-12322/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	12322

## Prep Batch: 12692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-8220-1	ADOT-Grant-G	Total/NA	Water	1664A	_
550-8297-B-8-A MS	Matrix Spike	Total/NA	Water	1664A	
LCS 550-12692/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 550-12692/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	
MB 550-12692/1-A	Method Blank	Total/NA	Water	1664A	

## Analysis Batch: 12898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-8220-1	ADOT-Grant-G	Total/NA	Water	1664A	12692
550-8297-B-8-A MS	Matrix Spike	Total/NA	Water	1664A	12692
LCS 550-12692/2-A	Lab Control Sample	Total/NA	Water	1664A	12692
LCSD 550-12692/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	12692
MB 550-12692/1-A	Method Blank	Total/NA	Water	1664A	12692

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## **Lab Chronicle**

**Client Sample ID: ADOT-Grant-G** 

Lab Sample ID: 550-8220-1 Date Collected: 08/02/13 15:30 Matrix: Water

Date Received: 08/06/13 16:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SM 4500 CN C			12322	08/09/13 13:00	TAS	TAL PHX
Total/NA	Analysis	SM 4500 CN E		1	12342	08/09/13 16:30	TAS	TAL PHX
Total/NA	Prep	1664A			12692	08/14/13 11:44	KRA	TAL PHX
Total/NA	Analysis	1664A		1	12898	08/19/13 07:52	LRB	TAL PHX

#### Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

# **Certification Summary**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-8220-1

## **Laboratory: TestAmerica Phoenix**

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	<b>Expiration Date</b>
AIHA	IHLAP		154268	07-01-15
Arizona	State Program	9	AZ0728	06-09-14
California	NELAP	9	01109CA	11-30-13
Nevada	State Program	9	AZ01030	07-31-14
New York	NELAP	2	11898	04-01-14
Oregon	NELAP	10	AZ100001	03-09-14
USDA	Federal		P330-09-00024	06-09-15

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# **Method Summary**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-8220-1

Method	Method Description	Protocol	Laboratory
1664A	HEM and SGT-HEM	1664A	TAL PHX
SM 4500 CN E	Cyanide, Total	SM	TAL PHX

Protocol References:

1664A = EPA-821-98-002

SM = "Standard Methods For The Examination Of Water And Wastewater",

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

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FAX (602	[ ] Tucson - 1870 W. Prince Road, Suite 59, Tucson, AZ 85705 (520) 807-3801 FAX (520) 807-3803	
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[ ] Las Vegas - 6000 S Eastern Ave., Suite 5E, Las Vegas, NV 89119 (702) 429-1264

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Client Name/Address:			Project	Project/PO Number:	er:			7	-9 -9		Analy	Analysis Required	De 3d		
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Project Manager:			Phone	Phone Number:	٨	-	22.1 C		2.4	<del></del>					
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Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project Rayment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

# **Login Sample Receipt Checklist**

Client: Engineering & Environmental Consultants

Job Number: 550-8220-1

Login Number: 8220 List Source: TestAmerica Phoenix

List Number: 1 Creator: Hamel, Alan

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

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THE LEADER IN ENVIRONMENTAL TESTING

# **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc.

TestAmerica Phoenix 4625 East Cotton Ctr Blvd Suite 189 Phoenix, AZ 85040 Tel: (602)437-3340

TestAmerica Job ID: 550-7151-1

#### For:

Engineering & Environmental Consultants 7740 N 16th Street Suite 135 Phoenix, Arizona 85020

Attn: Mr. John Burton



Authorized for release by: 8/30/2013 3:22:25 PM

Kylie Emily, Project Manager II kylie.emily@testamericainc.com

.....LINKS .....

Review your project results through

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**Have a Question?** 



Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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# **Definitions/Glossary**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7151-1

## **Qualifiers**

## HPLC/IC

Qualifier	Qualifier Description
E2	Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to sample matrix.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated
MO	blank spike was acceptable.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.

## **General Chemistry**

Qualifier	Qualifier Description
K5	The dilution water D.O. depletion was > 0.2 mg/L.
H1	Sample analysis performed past holding time.
D2	Sample required dilution due to high concentration of analyte.

# **Glossary**

RPD

TEF

TEQ

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

TestAmerica Phoenix

#### **Case Narrative**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7151-1

Job ID: 550-7151-1

Laboratory: TestAmerica Phoenix

Narrative

#### **CASE NARRATIVE**

Client: Engineering & Environmental Consultants

**Project: ADOT Stormwater** 

Report Number: 550-7151-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica Phoenix attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

#### **RECEIPT**

The samples were received on 07/20/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.6 C.

#### SGT-HEM

Method(s) 1664A: Analysis for Hexane Extractable Material (HEM) was performed for the following sample(s): ADOT 71913C (550-7151-1). Since the HEM result(s) was below the reporting limit (RL), the result(s) for Silica Gel Treated - Hexane Extractable Material (SGT-HEM) was reported as a non-detect. All HEM quality control criteria were met.

#### **TURBIDITY**

Method(s) 180.1: The following sample(s) was prepared and/or analyzed outside the method defined holding time because the request for the test was made after the holding time for the sample expired: ADOT 71913C (550-7151-1).

#### **TOTAL DISSOLVED SOLIDS**

Method(s) SM 2540C: The following sample(s) was prepared and/or analyzed outside the method defined holding time because the request for the test was made after the holding time for the sample expired: ADOT 71913C (550-7151-1).

#### TOTAL SUSPENDED SOLIDS

Method(s) SM 2540D: The following sample was prepared and analyzed outside the method defined holding time because the request for

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7454.4

TestAmerica Phoenix 8/30/2013

# **Case Narrative**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7151-1

Job ID: 550-7151-1 (Continued)

Laboratory: TestAmerica Phoenix (Continued)

the test was made after the holding time for the sample expired: ADOT 71913C (550-7151-1).

### **BIOCHEMICAL OXYGEN DEMAND**

Method(s) SM 5210B: The method blank result associated with batch 10555 was higher than the method-required limit of 0.20mg/L.

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# **Sample Summary**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7151-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-7151-1	ADOT 71913C	Water	07/19/13 14:30	07/20/13 09:40

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# **Detection Summary**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7151-1

Lab Sample ID: 550-7151-1

# Client Sample ID: ADOT 71913C

Analyte	Result Qualifier	RL	Unit	Dil Fac D	Method	Prep Type
Nitrate as N	0.50	0.20	mg/L		300.0	Total/NA
Sulfate	2.2	2.0	mg/L	1	300.0	Total/NA
Turbidity	230 H1	2.0	NTU	10	180.1	Total/NA
Specific Conductance	59	2.0	umhos/cm	1	SM 2510B	Total/NA
Total Dissolved Solids	82 H1	20	mg/L	1	SM 2540C	Total/NA
Total Suspended Solids	350 D2 H1	20	mg/L	1	SM 2540D	Total/NA
Biochemical Oxygen Demand	7.2 K5	5.0	mg/L	1	SM 5210B	Total/NA

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# **Client Sample Results**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7151-1

**Client Sample ID: ADOT 71913C** Lab Sample ID: 550-7151-1

Date Collected: 07/19/13 14:30 Matrix: Water

Date Received: 07/20/13 09:40

Method: 300.0 - Anions, Ion Cl	nromatography						
Analyte	Result Qual	ifier RL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.50	0.20	mg/L			07/20/13 16:09	1
Nitrite as N	ND	0.20	mg/L			07/20/13 16:09	1
Orthophosphate as P	ND	0.20	mg/L			07/20/13 16:09	1
Chloride	ND	2.0	mg/L			07/20/13 16:09	1
Sulfate	2.2	2.0	mg/L			07/20/13 16:09	1

General Chemistry								
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		5.2	mg/L		07/31/13 12:39	08/01/13 11:16	1
SGT-HEM	ND		10	mg/L		07/31/13 12:39	08/01/13 11:16	1
Turbidity	230	H1	2.0	NTU			07/31/13 18:00	10
Specific Conductance	59		2.0	umhos/cm			08/01/13 14:25	1
Total Dissolved Solids	82	H1	20	mg/L			08/01/13 07:30	1
Total Suspended Solids	350	D2 H1	20	mg/L			08/01/13 12:10	1
Biochemical Oxygen Demand	7.2	K5	5.0	mg/L			07/21/13 13:59	1

# Method: 300.0 - Anions, Ion Chromatography

ND

ND

Lab Sample ID: MB 550-10546/2

**Matrix: Water** 

Analyte

Nitrate as N

Nitrite as N

Chloride

Sulfate

Orthophosphate as P

Analysis Batch: 10546

Client Sample ID: Method Blank

07/20/13 10:29

07/20/13 10:29

Client Sample ID: Lab Control Sample Dup

90 - 110

Client Sample ID: Matrix Spike Duplicate

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Type: Total/NA

100

Prep Type: Total/NA

Prep Type: Total/NA

мв мв Result Qualifier RL Unit Prepared Analyzed Dil Fac ND 0.20 mg/L 07/20/13 10:29 ND 0.20 mg/L 07/20/13 10:29 ND 0.20 07/20/13 10:29 mg/L

mg/L

mg/L

mg/L

Lab Sample ID: LCS 550-10546/5 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

2.0

2.0

**Matrix: Water** 

Analysis Batch: 10546

		Spike	LCS	LCS				%Rec.	
	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
l	Nitrate as N	4.00	4.08		mg/L	_	102	90 - 110	
l	Nitrite as N	4.00	4.01		mg/L		100	90 - 110	
١	Orthophosphate as P	2.00	2.15		mg/L		107	90 - 110	
ı	Chloride	20.0	20.3		mg/L		101	90 - 110	
İ	Sulfate	20.0	20.3		mg/L		101	90 - 110	

Lab Sample ID: LCSD 550-10546/6

**Matrix: Water** 

Analysis Batch: 10546

•	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Nitrate as N	4.00	4.08		mg/L		102	90 - 110	0	20
Nitrite as N	4.00	3.99		mg/L		100	90 - 110	0	20
Orthophosphate as P	2.00	1.95		mg/L		98	90 - 110	10	20
Chloride	20.0	20.3		ma/L		101	90 - 110	0	20

20.0

20.0

Lab Sample ID: 550-7120-A-1 MS

**Matrix: Water** 

Sulfate

**Analysis Batch: 10546** 

- 1	7 mining 0.10 = miles 1.00 1.0									
ı	-	Sample	Sample	Spike	MS	MS				%Rec.
	Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
	Nitrate as N	9.7		4.00	13.5		mg/L		96	80 - 120
l	Nitrite as N	0.62		4.00	4.60		mg/L		99	80 - 120
ı	Orthophosphate as P	ND	M2	2.00	ND	M2	mg/L		0	80 - 120
١	Chloride	120	E2 M3	20.0	133	E2 M3	mg/L		65	80 - 120
١	Sulfate	360	E2 M3	20.0	369	E2 M3	mg/L		22	80 - 120

Lab Sample ID: 550-7120-A-1 MSD

**Matrix: Water** 

Analysis Batch: 10546

Analysis Batom 10040	Camania	Cample	Cuilea	MCD	MCD				0/ Dag		DDD
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Nitrate as N	9.7		4.00	13.6		mg/L		96	80 - 120	0	20
Nitrite as N	0.62		4.00	4.64		mg/L		101	80 - 120	1	20
Orthophosphate as P	ND	M2	2.00	ND	M2	mg/L		0	80 - 120	NC	20
Chloride	120	E2 M3	20.0	133	E2 M3	mg/L		65	80 - 120	0	20
Sulfate	360	E2 M3	20.0	369	E2 M3	mg/L		24	80 - 120	0	20

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8/30/2013

# Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 550-11416/1-A	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 11531	Prep Batch: 11416
MB MB	

	IVID	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		5.0	mg/L		07/31/13 12:39	08/01/13 11:16	1
SGT-HEM	ND		10	mg/L		07/31/13 12:39	08/01/13 11:16	1

Lab Sample ID: LCS 550-11416/2-A		Client Sample ID: Lab Control Sample
Matrix: Water		Prep Type: Total/NA
Analysis Batch: 11531		Prep Batch: 11416
Spike	LCS LC	S %Rec.

ı		Spike	LCS	LCS				%Rec.	
	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
	HEM	40.0	39.0		mg/L		98	78 - 114	
ı	SGT-HEM	20.0	17.2		mg/L		86	64 - 132	

Lab Sample ID: LCSD 550-11416/3-A				Clie	ent Sam	iple ID:	Lab Contro	ol Sampl	e Dup
Matrix: Water							Prep 1	ype: To	tal/NA
Analysis Batch: 11531							Prep	Batch:	11416
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
HEM	40.0	40.5		mg/L		101	78 - 114	4	18
SGT-HEM	20.0	18.2		ma/L		91	64 - 132	6	34

Lab Sample ID: 550-7204-B-2-A N	/IS			Client Sample ID: Matrix	Spike
Matrix: Water				Prep Type: To	tal/NA
Analysis Batch: 11531				Prep Batch:	11416
	Sample S	Sample Spil	ce MS M	S %Rec.	

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
HEM	ND		44.0	38.6		mg/L		88	78 - 114	
SGT-HEM	ND		22.0	16.6		mg/L		75	64 - 132	

# Method: 180.1 - Turbidity, Nephelometric

Lab Sample ID: MB 550-11477/3	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Ratch: 11477	

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	ND		0.20	MTU			07/31/13 18:00	1

Lab Sample ID: LCS 550-11477/4	Client Sample ID: Lab Control Sample
Matrix: Water	Prep Type: Total/NA

Analysis Batch: 11477							
-	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Turbidity	20.0	18.8		NTU		94	90 - 110

Lab Sample ID: LCSD 550-11477/5 Matrix: Water Analysis Batch: 11477				Clie	ent Sam	ple ID: I	Lab Contro Prep 1	ol Sampl Type: To	
Analysis batch. 11477	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added 20.0	Result 18.8	Qualifier	Unit NTU	D	%Rec 94	90 <sub>-</sub> 110	<b>RPD</b> 0	Limit 20

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Lab Sample ID: 550-7748-A-1 DU **Client Sample ID: Duplicate** Prep Type: Total/NA

**Matrix: Water** 

Turbidity

**Analysis Batch: 11477** DU DU RPD Sample Sample Result Qualifier Result Qualifier Analyte Unit Limit

2.85

NTU

Method: SM 2510B - Conductivity, Specific Conductance

3.0

Lab Sample ID: MB 550-11633/7 Client Sample ID: Method Blank Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 11633** 

мв мв Result Qualifier RL Unit D Dil Fac Prepared Analyzed 2.0 08/01/13 13:59 Specific Conductance ND umhos/cm

Client Sample ID: Lab Control Sample Lab Sample ID: LCS 550-11633/5 **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 11633** 

LCS LCS %Rec. Spike Added Analyte Result Qualifier Unit %Rec I imits Specific Conductance 994 992 umhos/cm 100 90 - 110

Lab Sample ID: LCSD 550-11633/19 Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 11633** 

Spike LCSD LCSD %Rec. RPD Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit Specific Conductance 994 959 umhos/cm

Lab Sample ID: 550-7677-O-1 DU

**Matrix: Water** 

**Analysis Batch: 11633** 

DU DU Sample Sample RPD Analyte Result Qualifier Result Qualifier Limit Unit Specific Conductance 1100 1100 umhos/cm 20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 550-11409/1 Client Sample ID: Method Blank Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 11409** 

мв мв Analyte Result Qualifier RL Unit Dil Fac Prepared Analyzed 20 Total Dissolved Solids 08/01/13 07:30 ND mg/L

Lab Sample ID: LCS 550-11409/2 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 11409** 

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Total Dissolved Solids	1000	984		mg/L		98	80 - 115	

TestAmerica Phoenix

**Client Sample ID: Duplicate** 

Prep Type: Total/NA

**Client Sample ID: Lab Control Sample Dup** 

Prep Type: Total/NA

Limit

# Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Result Qualifier

1000

Lab Sample ID: LCSD 550-114 Matrix: Water Analysis Batch: 11409	09/3				Clie	nt Sam	iple ID: I	Lab Contro Prep T	l Sampl ype: To	
		Spike	LCSD	LCSD				%Rec.		RPD
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Total Dissolved Solids		1000	995		mg/L		100	80 - 115	1	10
Lab Sample ID: 550-7738-A-4 Matrix: Water	DU						Clie	ent Sample Prep T	ID: Dup	
Analysis Batch: 11409	Sample Sample		DU	DU						RPD

Result Qualifier

1030

Unit

mg/L

	Method: SM 2540D - Solids	s, Total Sus	pended	(TSS)
--	---------------------------	--------------	--------	-------

Analyte

Total Dissolved Solids

Lab Sample ID: MB 550-11547/1 Matrix: Water Analysis Batch: 11547						Client Sa	ample ID: Metho Prep Type: 1	
7 maryono Batonii 110 m	МВ	МВ						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		10	mg/L			08/01/13 12:10	

Lab Sample ID: LCS 550-11547/2			Client Sample ID: Lab Control Sample
Matrix: Water			Prep Type: Total/NA
Analysis Batch: 11547			
	Spike	LCS LCS	%Rec.

		Opino	200	LUU				/01100.		
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits		
Total Suspended Solids		200	190		mg/L	_	95	90 - 110		

Analysis Batch: 11547							•		
_	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Total Suspended Solids	 200	190		mg/L		95	90 - 110	0	10

Lab Sample ID: 550-7681-A-2 DU Matrix: Water			Client Sample ID: Duplicate Prep Type: Total/NA
Analysis Batch: 11547			
Sample	Sample	DU DU	RPD

İ	•	Sample	Sample	DU	DU				RPD
	Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
	Total Suspended Solids	79	D2	 72.0	D2	mg/L		 9	10

# Method: SM 5210B - BOD, 5-Day

Lab Sample ID: LCSD 550-11547/3

**Matrix: Water** 

Lab Sample ID: MB 550-10555/1 Matrix: Water					Client S	ample ID: Metho	
Analysis Batch: 10555							
М	3 MB						
Analyte Resu	t Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand N	K5	5.0	mg/L			07/21/13 13:59	1

TestAmerica Phoenix

# **QC Sample Results**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7151-1

Method: SM 5210B - BOD, 5-Day (Continued)

Lab Sample ID: LCS 550-10555/2 **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA** 

Analysis Batch: 10555

Spike LCS LCS %Rec. Added Result Qualifier Unit D %Rec Limits Biochemical Oxygen Demand 198 192 K5 mg/L 97 84.6 - 115.

Lab Sample ID: 550-7149-A-1 DU Client Sample ID: Duplicate **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 10555** 

	Sample	Sample	DU	DU					RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D		RPD	Limit
Biochemical Oxygen Demand	1200	K5	1130	K5	mg/L		_	7	20

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7151-1

# HPLC/IC

# Analysis Batch: 10546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7120-A-1 MS	Matrix Spike	Total/NA	Water	300.0	<u> </u>
550-7120-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
550-7151-1	ADOT 71913C	Total/NA	Water	300.0	
LCS 550-10546/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-10546/6	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 550-10546/2	Method Blank	Total/NA	Water	300.0	

# **General Chemistry**

# Analysis Batch: 10555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7149-A-1 DU	Duplicate	Total/NA	Water	SM 5210B	
550-7151-1	ADOT 71913C	Total/NA	Water	SM 5210B	
LCS 550-10555/2	Lab Control Sample	Total/NA	Water	SM 5210B	
MB 550-10555/1	Method Blank	Total/NA	Water	SM 5210B	

# **Analysis Batch: 11409**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7151-1	ADOT 71913C	Total/NA	Water	SM 2540C	
550-7738-A-4 DU	Duplicate	Total/NA	Water	SM 2540C	
LCS 550-11409/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-11409/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 550-11409/1	Method Blank	Total/NA	Water	SM 2540C	

# Prep Batch: 11416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7151-1	ADOT 71913C	Total/NA	Water	1664A	
550-7204-B-2-A MS	Matrix Spike	Total/NA	Water	1664A	
LCS 550-11416/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 550-11416/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	
MB 550-11416/1-A	Method Blank	Total/NA	Water	1664A	

# **Analysis Batch: 11477**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
550-7151-1	ADOT 71913C	Total/NA	Water	180.1	
550-7748-A-1 DU	Duplicate	Total/NA	Water	180.1	
LCS 550-11477/4	Lab Control Sample	Total/NA	Water	180.1	
LCSD 550-11477/5	Lab Control Sample Dup	Total/NA	Water	180.1	
MB 550-11477/3	Method Blank	Total/NA	Water	180.1	

# Analysis Batch: 11531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7151-1	ADOT 71913C	Total/NA	Water	1664A	11416
550-7204-B-2-A MS	Matrix Spike	Total/NA	Water	1664A	11416
LCS 550-11416/2-A	Lab Control Sample	Total/NA	Water	1664A	11416
LCSD 550-11416/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	11416
MB 550-11416/1-A	Method Blank	Total/NA	Water	1664A	11416

# Analysis Batch: 11547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7151-1	ADOT 71913C	Total/NA	Water	SM 2540D	

TestAmerica Phoenix

Page 14 of 23

# **QC Association Summary**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7151-1

# **General Chemistry (Continued)**

# Analysis Batch: 11547 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Prep Batch
550-7681-A-2 DU	Duplicate	Total/NA	Water	SM 2540D
LCS 550-11547/2	Lab Control Sample	Total/NA	Water	SM 2540D
LCSD 550-11547/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D
MB 550-11547/1	Method Blank	Total/NA	Water	SM 2540D

# Analysis Batch: 11633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7151-1	ADOT 71913C	Total/NA	Water	SM 2510B	
550-7677-O-1 DU	Duplicate	Total/NA	Water	SM 2510B	
LCS 550-11633/5	Lab Control Sample	Total/NA	Water	SM 2510B	
LCSD 550-11633/19	Lab Control Sample Dup	Total/NA	Water	SM 2510B	
MB 550-11633/7	Method Blank	Total/NA	Water	SM 2510B	

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# **Lab Chronicle**

Client Sample ID: ADOT 71913C

Lab Sample ID: 550-7151-1 Date Collected: 07/19/13 14:30 Date Received: 07/20/13 09:40

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0			10546	07/20/13 16:09	МНН	TAL PHX
Total/NA	Analysis	SM 5210B		1	10555		ВСВ	TAL PHX
					(Start)	07/21/13 13:59		
					(End)	07/26/13 12:56		
Total/NA	Analysis	SM 2540C		1	11409		JAE	TAL PHX
					(Start)	08/01/13 07:30		
					(End)	08/02/13 10:10		
Total/NA	Analysis	180.1		10	11477	07/31/13 18:00	TAS	TAL PHX
Total/NA	Prep	1664A			11416	07/31/13 12:39	KRA	TAL PHX
Total/NA	Analysis	1664A		1	11531	08/01/13 11:16	LRB	TAL PHX
Total/NA	Analysis	SM 2540D		1	11547		JAE	TAL PHX
					(Start)	08/01/13 12:10		
					(End)	08/02/13 09:00		
Total/NA	Analysis	SM 2510B		1	11633	08/01/13 14:25	DGS	TAL PHX

### Laboratory References:

AQ&T = Aquatic Consulting and Testing, 1525 W University Dr. Ste 106, Tempe, AZ 85281

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

# **Certification Summary**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7151-1

# **Laboratory: TestAmerica Phoenix**

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	<b>Expiration Date</b>
AIHA	IHLAP		154268	07-01-15
Arizona	State Program	9	AZ0728	06-09-14
California	NELAP	9	01109CA	11-30-13
Nevada	State Program	9	AZ01030	07-31-14
New York	NELAP	2	11898	04-01-14
Oregon	NELAP	10	AZ100001	03-09-14
USDA	Federal		P330-09-00024	06-09-15

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# **Method Summary**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7151-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
1664A	HEM and SGT-HEM	1664A	TAL PHX
180.1	Turbidity, Nephelometric	MCAWW	TAL PHX
SM 2510B	Conductivity, Specific Conductance	SM	TAL PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PHX
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL PHX
SM 5210B	BOD, 5-Day	SM	TAL PHX
Surfactants	General Sub Contract Method	NONE	AQ&T

### **Protocol References:**

1664A = EPA-821-98-002

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

NONE = NONE

SM = "Standard Methods For The Examination Of Water And Wastewater",

### Laboratory References:

AQ&T = Aquatic Consulting and Testing, 1525 W University Dr. Ste 106, Tempe, AZ 85281

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

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# AQUATIC CONSULTING & TESTING, INC.

1525 W. University Drive, Suite 106 P.O. Box 1510 Tempe, Arizona 85281 Phone: (480) 921-8044 • Fax: (480) 921-0049

Lic. No. AZ0003

# LABORATORY REPORT

Client: TestAmerica

4625 E. Cotton Center Blvd.

Building 3, Suite 189 Phoenix, AZ 85040

Attn: Kylie Emily

Date Submitted: 07/22/13 Date Reported: 08/27/13

Project: 55003193

## **RESULTS**

Client ID: 550-7151-1

ACT Lab No.: BV06594

<u>Parameter</u>

**MBAS Surfactants** 

Sample Type: Water

Sample Time: 07/19/13 14:30

**Analysis Date** 

07/23/13 07/23/13

Start

End Method No.

MDL

0.05

Result <0.05 \*

Unit **Analyst** mg/L as LAS

FAA

ba-

\* H3 - sample received and analyzed past hold time. Insufficient sample volume

Reviewed by:

Frederick A. Amalfi, **Laboratory Director** 

SM5540 C

Page 1 of 1

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# AQUATIC CONSULTING & TESTING, INC.

1525 W. University Drive, Suite 106 P.O. Box 1510 Tempe, Arizona 85281 Phone: (480) 921-8044 • Fax: (480) 921-0049

Lic. No. AZ0003

# **QC** Report

QC Parameter	Sample	Method Blank	QCS	Duplicate	Duplicate	Spike	Spike
	Result	Result	% Rec	Result	RPD	Result	% Rec
Batch ID: MBAS-64855 (	QC ID: BV0659 <0.05 *	4 Samples: BV065	94 <b>96</b> .	<0.05	0.0	NA	NA

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	Samular	I ab PM:		Carrier Tracking No(s);	COC No:	Omer Control of the C
Cilent Information (Sub Contract Lab)	- Carl 1   1   1   1   1   1   1   1   1   1	Emily, Kyli	g),	•	550-1976.1	
Cilinit Contact: Shipping/Recelving	Prone:	E-Mall: kylie.emlly	E-Mail: kylie.emily@testamericainc.com		Page 1 of 1	
Company: A resident Consulting and Testing	n de de desconnen en especiales (se tendres en en desconnen en		alysis	Requested	Job #. 550-7151-1	
	Due Date Requested:				Preservation Codes:	
University Dr. Ste 106,	7/30/2013					ne
- Address of the state of the s	TAT Requested (days):					8
Tentyou Sinto Zipt A. Z. octood					D - Mitric Acid P - Na2C	45 O3
74, 0320 I Phone:	PO#					2503 14 Indecahydrafa
Email:	WO #.	\$5000000000000000000000000000000000000			- ice   J - DI Water	na
Project Name:	Project#:	980000000000000000000000000000000000000			K-EDTA L-EDA	W - ph 4-5 Z - other (specify)
	SSOV#				con Other:	
			w.2000.00012		(A)	
Samule Idaniffication - Client ID (I ah ID)	Sample Type Sample C=comp, Sample Time G=comp,	Matrix (Versier, Control & Matrix & Second & Sec	SUBCONTRAC		Committee Special Instructions/Note:	ns/Note:
	X	fron Code				
ADOT 71913C (550-7151-1)	7/19/13 14:30	Water	×		1 8V-01591	7
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	-					AND DESCRIPTION OF THE PROPERTY OF THE PROPERT
Preside Harard Identification			Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	ssessed If samples are rel	tained longer than 1 month)	
Possing next of the confidence		•	Return To Client Disposal By Lab	isposal By Lab	Archive For Months	hs
Deliverable Requested: I, II, III, IV, Other (specify)		S	secial Instructions/QC Requiremen	ાંક:		
Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:		
glass -	Date/Time: 840	Company	Beenful by Ohnson	Data/Time:	13 @68:40	8/2/2
Relinquishedty	Date/Ime:	Company	Kedelved by	L'aka   III 6.		
Relinquished by:	Date/Time;	Company	Received by:	Date/Time:	Company	*
			Cooler Temperature(s) "C and Other Remarks	marks ( 2 )		
A Yes A No					TATAN CANADA MANAGA MA	

Chan, of Custody Record

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	100		
K	3/10	100	(50%)

THE LEADER IN ENVIRONMENTAL TESTING

# CHAIN OF CUSTODY FORM

[ ] Phoenix - 4625 E. Cotton Center Blvd., Suite 189, Phoenix, AZ 85040 (602) 437-3340 FAX (60. [ ] Tucson - 1870 W. Prince Road, Suite 59, Tucson, AZ 85705 (520) 807-3801 FAX (520) 807-3803 [ ] Las Vegas - 6000 S Eastern Ave., Suite 5E, Las Vegas, NV 89119 (702) 429-1264

550-7151 Chain of Custody

TAL-0013-550 (10/10)  Slient Name / Address: EEC  7740 M 16 tst. Swite 135  Dingle Mix Az 8502- Project Manager: John Burlton	4 13 8g	Project/PO Number:  Phone Number:  Phone Number:	Phone Number:  Phone Number:  Phone Number:	Rd MS4	12,130 D, 8	, N	9 (102) 429-1204	, i	Analysis Required	red ·	Page.	of	
Sample Description	Sample Container Matrix Type	# of Sampl	#of Sampling Sampling Pres	ervatives	5W							Special Instructions	ľ
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Relinquished By:	Date / Time:	1/2 15%		A BY	y H	Date/Time	Time:	L 3	Turnarour  Same day	Turnaround Time: (Check) same day 7	); (Checl	72 hours	3
K	Date/Time:	0	Received by	N. S.		Date/	Date / Timé:	100	24 hours 48 hours	\$ \$   	  -	5 days normal	
Relinquished By:	Date/Time:		AREceived In Lab By:	My Lab By:		Date	70] (3	02450		Sample Integrity: (Check) intact o	(Check)	on ice	11
The state of the s		1	_	<u>`</u>							ĺ		

Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this Project Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

8/30/2013

# **Login Sample Receipt Checklist**

Client: Engineering & Environmental Consultants

Job Number: 550-7151-1

Login Number: 7151 List Source: TestAmerica Phoenix

List Number: 1

Creator: DeShazo, Brittany

•		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

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17 December 2013

John Burton EEC, Inc. 7740 N. 16th Street Phoenix, AZ 85020

**RE: ADOT Stormwater Analyses** 

Laboratory Work Order No.: 3112068

Legend Technical Services of Arizona, Inc. is pleased to provide the enclosed analytical results for the aforementioned project. These results relate only to the items tested. This cover letter and the accompanying pages represent the full report for these analyses and should only be reproduced in full. Samples for this project were received by the laboratory on 11/26/13 14:05.

The samples were processed in accordance with the Chain of Custody document and the results presented relate only to the samples tested. The Chain of Custody is considered part of this report.

All samples will be retained by LEGEND for 30 days from the date of this report and then discarded unless other arrangements are made.

This entire report was reviewed and approved for release by the undersigned. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

LEGEND TECHNICAL SERVICES OF ARIZONA, INC.

P. Brian Merritt

Client Services Representative

P. Bin Mewill

(602) 324-6100

This laboratory report is confidential and is intended for the sole use of LEGEND and it's client.

EEC, Inc.

Project: ADOT Stormwater Analyses

7740 N. 16th Street Project Number: ADOT Grant Road 11/25/13 Reported:
Phoenix, AZ 85020 Project Manager: John Burton 12/17/13 10:12

### **ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Туре	Date Sampled	Date Received
ADOT - Grant (Grant Road ADOT Yard)	3112068-01	Wastewater	Grab	11/25/13 16:00	11/26/13 14:05

### **Sample Condition Upon Receipt:**

Temperature: 4.80 C

All samples were received in acceptable condition unless noted otherwise in the case

narrative.

Case Narrative:

**Holding Times:** All holding times were met unless otherwise qualified.

QA/QC Criteria: All analyses met method requirements unless otherwise qualified. Certifications: AZ(PHX)0004, AZ(TUC)OOO4, AIHA#102982, CDC ELITE Member.

Accreditation is applicable only to the test methods specified on each scope of accreditation held by LEGEND.

Comments: There were no problems encountered during the processing of the samples, unless otherwise noted.

All samples were analyzed on a "wet" basis unless designated as "dry weight".

This report contains data that were produced by a subcontracted laboratory certified for the

fields of testing performed.

**Legend Technical Services, St. Paul AZ0557** 

Bach Pham 651.221.4062

Legend Technical Services of Arizona, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Laboratory Work Order No.: 3112068

Project: ADOT Stormwater Analyses
6th Street Project Number: ADOT Grant Road 11/25/13

EEC, Inc.

7740 N. 16th Street Project Number: ADOT Grant Road 11/25/13 Reported:
Phoenix, AZ 85020 Project Manager: John Burton 12/17/13 10:12

ADOT - Grant (Grant Road ADOT Yard) ( 14:05	3112068-01) Wa	stewater	(Grab)	San	npled: 11/2	25/13 16:00	Received	1: 11/26/13	
Analyte	Result	PQL	Units	Dilutio	on Batch	Prepared	Analyzed	Method	Notes
	Legend	Technical	Service	es, Inc	. #AZ0557	,			
DRO/8015D									
TPH as Fuel Oil (C10-C22)	1200	250	ug/L	1	B3L0201	12/02/13 06:44	12/09/13 22:16	EPA 8015D	Q9
Surrogate: Triacontane (C-30)		81.0 %	62.	2.2-130	B3L	.0201 12/02	2/13 12/09	<b>9/13</b> <i>EPA</i> 8015D	)
TPH as Motor Oil (C22-C32)	3000	250	ug/L	1	B3L0201	12/02/13 06:44	12/09/13 22:16	EPA 8015D	Q9
·	Legend	Technical	Service	es of A	rizona, Inc	<b>:</b> _			
Microbiology									
E. coli, MPN (WW-Colilert)	650	1 N	MPN/100 mL	1	B3L0001	11/26/13 14:26	11/26/13 14:26	SM 9223B	H3
Inorganic Chemistry									
Cyanide, Total	<0.010	0.010	mg/L	1	B3L0068	12/03/13 10:00	12/03/13 11:10	SM 4500 CN E	
Semi-Volatile Organic Compounds									
HEM (Oil & Grease)	<5.00	5.00	mg/L	1	B3L0082	12/03/13 10:00	12/03/13 10:00	EPA 1664B	

EEC, Inc. Project: ADOT Stormwater Analyses 7740 N. 16th Street Project Number: ADOT Grant Road 11/25/13

Project Manager: John Burton

Reported: 12/17/13 10:12

Microbiology - Quality Control
Legend Technical Services of Arizona, Inc.

		Reporting		Spike	Source		%REC		RPD		l
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes	ı

Batch B3L0001 - micro\_prep

Phoenix, AZ 85020

Blank (B3L0001-BLK1) Prepared: 10/26/13 Analyzed: 11/26/13

E. coli, MPN (WW-Colilert) <1 1 MPN/100 mL

EEC, Inc. Project: ADOT Stormwater Analyses Project Number: ADOT Grant Road 11/25/13 7740 N. 16th Street Phoenix, AZ 85020

Project Manager: John Burton

Reported: 12/17/13 10:12

# **Inorganic Chemistry - Quality Control** Legend Technical Services of Arizona, Inc.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B3L0068 - NO PREP										
Blank (B3L0068-BLK1)				Prepared 8	& Analyzed:	12/03/13				
Cyanide, Total	<0.010	0.010	mg/L							
LCS (B3L0068-BS1)				Prepared 8	& Analyzed:	12/03/13				
Cyanide, Total	0.052	0.010	mg/L	0.0500		104	80-120			
LCS Dup (B3L0068-BSD1)				Prepared 8	& Analyzed:	12/03/13				
Cyanide, Total	0.050	0.010	mg/L	0.0500		100	80-120	4	25	
Matrix Spike (B3L0068-MS1)	Sour	ce: 3111975	5-03	Prepared 8	& Analyzed:	12/03/13				
Cyanide, Total	0.050	0.010	mg/L	0.0500	<0.010	100	80-120			
Matrix Spike Dup (B3L0068-MSD1)	Sour	ce: 3111975	5-03	Prepared 8	& Analyzed:	12/03/13				
Cyanide, Total	0.049	0.010	mg/L	0.0500	<0.010	98	80-120	2	25	

EEC, Inc. Project: ADOT Stormwater Analyses Project Number: ADOT Grant Road 11/25/13 7740 N. 16th Street Phoenix, AZ 85020

Project Manager: John Burton

Reported: 12/17/13 10:12

# **Semi-Volatile Organic Compounds - Quality Control** Legend Technical Services of Arizona, Inc.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B3L0082 - NO PREP										
Blank (B3L0082-BLK1)				Prepared 6	& Analyzed:	12/03/13				
HEM (Oil & Grease)	<5.00	5.00	mg/L							
LCS (B3L0082-BS1)				Prepared 6	& Analyzed:	12/03/13				
HEM (Oil & Grease)	37.2	5.00	mg/L	40.0		93	78-114			
LCS Dup (B3L0082-BSD1)				Prepared 6	& Analyzed:	12/03/13				
HEM (Oil & Grease)	36.9	5.00	mg/L	40.0		92	78-114	0.8	20	
Matrix Spike (B3L0082-MS1)	So	urce: 3111678	-02	Prepared of	& Analyzed:	12/03/13				
HEM (Oil & Grease)	36.5	5.00	mg/L	40.0	2.00	86	78-114			

EEC, Inc. 7740 N. 16th Street Phoenix, AZ 85020 Project: ADOT Stormwater Analyses
Project Number: ADOT Grant Road 11/25/13

Project Manager: John Burton

Reported: 12/17/13 10:12

# DRO/8015D - Quality Control Legend Technical Services, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3L0201 - EPA 3510C (Sep F	unnel)									
Blank (B3L0201-BLK1)				Prepared:	12/02/13 Ai	nalyzed: 12	/09/13			
TPH as Fuel Oil (C10-C22)	<250	250	ug/L							
TPH as Motor Oil (C22-C32)	<250	250	ug/L							
LCS (B3L0201-BS1)				Prepared:	12/02/13 A	nalyzed: 12	/09/13			
TPH as Fuel Oil (C10-C22)	1780	250	ug/L	2000		89.0	70-120			
LCS Dup (B3L0201-BSD1)				Prepared:	12/02/13 Ai	nalyzed: 12	/10/13			
TPH as Fuel Oil (C10-C22)	1810	250	ug/L	2000	<u> </u>	90.5	70-120	1.69	20	
Matrix Spike (B3L0201-MS1)	Sou	ırce: 1305920	)-01	Prepared:	12/02/13 Ai	nalyzed: 12	/09/13			
TPH as Fuel Oil (C10-C22)	5020	250	ug/L	2050	2780	109	70-130			

EEC, Inc.

Project: ADOT Stormwater Analyses

7740 N. 16th Street Project Number: ADOT Grant Road 11/25/13 Reported:
Phoenix, AZ 85020 Project Manager: John Burton 12/17/13 10:12

### **Notes and Definitions**

Q9 Insufficient sample received to meet method QC requirements.

H3 Sample was received and /or anlaysis was requested past holding time.

BLK Method Blank

LCS/Dup Laboratory Control Sample/Laboratory Fortified Blank/Duplicate

MS/Dup Matrix Spike/Duplicate

Dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

EEC, Inc. 7740 N. 16th Street Phoenix, AZ 85020 Project: ADOT Stormwater Analyses Project Number: ADOT Grant Road 11/25/13

Project Manager: John Burton

Reported: 12/17/13 10:12

Legend Technical Services of Arizona, Inc	. PO Number: <u>3112068</u>	
	SUBCONTRACT ORDER	· .
	3112068	
SENDING LABORATORY:	RECEIVING LABORATORY:	
Legend Technical Services of Arizona, Inc.	Legend Technical Services, St. Paul AZ0557	
17631 North 25th Avenue	88 Empire Drive	
Phoenix, AZ 85023 Phone: 602-324-6100	Saint Paul, MN 55103 Phone :(800) 826-8553	.*
Fax: 602-324-6101	Fax: (651) 642-1239	
Project Manager: P. Brian Merritt		
Project: ADOT Stormwater Analyses		
Client: EEC, Inc.%Tucson		
Analysis Due	Expires Leach Date & Time Sample Comments	
	:11/25/13 16:00	
8015D Water (DRO/ORO C-12/09/13 09:00	12/02/13 16:00	
Containers Supplied: 13_1000mL Amber Glass pH <2 w/ HCl (B)		
13_1000mL Amber Glass pH <2 w/ HCl (C)		
Special Instructions:		•
		i r
		III
**For matrices other than Drinking Water requiring	MN laboratory reflects the matrix of the original sample received by LEGEND AZ. drinking water methods (such as EPA 505, etc.), a 10x dilution is acceptable. Appropriate	
**For matrices other than Drinking Water requiring data qualifiers are to be used.	drinking water methods (such as EPA 505, etc.), a 10x dilution is acceptable. Appropriate  Track # 7972 5953 16 75	
**For matrices other than Drinking Water requiring data qualifiers are to be used.	drinking water methods (such as EPA 505, etc.), a 10x dilution is acceptable. Appropriate  Tock # 7972 5953 16 75  26/15 1700 FACK X 11/26/13 1700	
**For matrices other than Drinking Water requiring data qualifiers are to be used.	drinking water methods (such as EPA 505, etc.), a 10x dilution is acceptable. Appropriate  Track # 7972 5953 16 75	

EEC, Inc. 7740 N. 16th Street Phoenix, AZ 85020 Project: ADOT Stormwater Analyses Project Number: ADOT Grant Road 11/25/13

Project Manager: John Burton

Reported: 12/17/13 10:12

Please Print Clearly CLIENT INFORMATION			∐ 17631 N. 25th Avenue • Ph ☐ 4585 S. Palo Verde Rd, Ste	5th Avenue • Phoenix, AZ 85023 • (602) 324-6100 • Fax (602) 324-6101 lo Verde Rd, Ste 423 • Tucson, AZ 85714 • (520) 327-1234 • Fax (520) 327-05								518	518 Page									
Client Name		Address				ity																
EEC			N. 16th St, STE 135		1	ւս Phoer	nix			State	- 1	Zip <b>8502</b> (	- 1	Phone	248-	702					nail Acdr	
Project Name		Project	Number	0	Contact						P.O. 1				Result						Phx.co	m
ADOT Stormwater Analyses SAMPLE TYPE CODES			TUDN ADOUGH THE	٠	John	Burt	on							Em:	ail Resu	lts 🗌					on Limits	7
DW=Drinking S=Soil/Solid			TURN AROUND TIME  Laboratory Authorization				-			_	7	7 7	RI	EQUI	STE		LYSE	S				
Water T=Travel Blank F=Food WW=Surface Water G=Groundwater O=Other	1 (	Standard 1	Required for Rush	site		Type	rance Containers	(Lab Use Only!)	coilos los	/   		Fecal Grease	TKN O'M, M	100 Sold	Surfact Nitrite	s (es	ctivity notes	SSTurbid	/ /	Pe-free		
Client's Sample Identification	Date	Time	Sample Location	Composite	Grab	Sample Type	Compliance No. of Conta	K	00   4j	Cyanide		1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	NH3 1	Nitral F		"Metals	To Sold I	Sulfate	Chloride	Boomine		AB O.
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					П	$\top$	T		+	+	1	$\vdash$	+	$\vdash$	+	+	$\vdash$	+	+	+		-
					П	$\top$	+		$\neg$	+	+	H	+	$\vdash$	$\dashv$	+	H	+	+	+		-
						$\top$	+-		$\vdash$	+	+	$\vdash$	+	$\vdash$	+	+	Н	-	+	$\vdash$		-
TO ENSURE CO	OMPLETIC	N OF A	NALYSIS, SAMPLES MUST BE RECI	ΙV	ED A	TLE	AST	3 HC	URS	PRIC	OR T	O TH	E HO	LD 1	IME	EXPI	RATIO	)N			200000	
Comments / Special Instructions:	OK	to vu	E/c post Hold-Time	_														20.70	9032-7030		22200000	882
SAMPLE CONDITION UPON RECEIPT	(I ah I Iso)				2000	LEECONE CO.	i servicioni															7
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Preserved P	N	3	Signature Signature					-	7/13	-	Signature	-	1 1	10-					Time	10	100	4
/HITE-LAB YELLOW-CLIENT			Printed Name CTULLUL					Time			rinted N	1		go.					Tim	11/1	1/13	
												1		J/	<u> </u>				1			_
FORM GEN-170 (05/06)																						

# **NOGALES MS4**

# Monitoring Data ADOT Nogales Area MS4

OUTFALL ID: 82-0.57						MC	NITORING S	SEASONS				
RECEIVING WATER: Nogales Wash							ner: June 1-					
WATERSHED: Santa Cruz								r 1- May 31				
DESIGNATED USES: A&Ww, PBC		Ye	ear 1	Yea	ır 2		ar 3	Yea	r 4	Ye	ar 5	Year 6
AUTOSAMPLER STARTUP DATE: October 6, 2011		Winter 2008-09	Summer 2009	Winter 2009-10	Summer 2010	Winter 2010-11	Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14
SAL	MPLING DATE						NS	NS/Sys. Start	NS	12/14/12	7/19/2013	NS/IF
MONITORING PARAMETERS	wqs			<u> </u>			NS	15,575.50	143	12/14/12	7/13/2013	143/11
Flow	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	<10	<10	NS/IF
Н	5.0-9.0	NR	NR	NR	NR	NR	NS	NS/EF	NS	7.33	7.21	NS/IF
Temperature (F°)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	64.7	81.3	NS/IF
Hardness	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Specific conductance (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	59	NS/IF
Total Dissolved Solids (TDS) (mg/L)	500.00	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	82	NS/IF
Total Suspended Solids (TSS) (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	350	NS/IF
Turbidity (NTU)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	230	NS/IF
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	7.2	NS/IF
Chemical Oxygen Demand (COD) (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Surfactants (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	<0.05	NS/IF
Inorganics				•	,							
Cyanide (mg/L)	0.20	NR	NR	NR	NR	NR	NS	NS/EF	NS	<0.050	<0.050	NS/IF
Sulfates (mg/L)	250.00	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	2.2	NS/IF
Nutrients				•								
Nitrate (mg/L)	10.00	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	0.5	NS/IF
Nitrite (mg/L)	1.00	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Total Ammonia (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Total Kjeldahl Nitrogen (TKN) (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Total Phosphorous (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Phosphate, Ortho (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Sodium (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Calcium (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Chloride (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Microbiological												
Coliform, fecal (CFU/100 ml)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	20000	IS	NS/IF
E.Coli (MPN/100 ml)	100.00	NR	NR	NR	NR	NR	NS	NS/EF	NS	9000	2400	NS/IF
Total Metals												
Antimony (mg/L)	0.006	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Arsenic (mg/L)	0.050	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Barium (mg/L)	2.000	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Beryllium (mg/L)	0.004	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Cadmium (mg/L)	0.005	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF

# Monitoring Data ADOT Nogales Area MS4

RECEIVING WATER: Nogales Wash						Sumn	ner: June 1-	October 31				ĺ
WATERSHED: Santa Cruz						Winte	r: Novembe	r 1- May 31				
DESIGNATED USES: A&Ww, PBC		Ye	ar 1	Yea	r 2	Ye	ar 3	Yea	ır 4	Ye	ar 5	Year 6
AUTOCAMADI ED CTADTUD DATE: October C 2044		Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
AUTOSAMPLER STARTUP DATE: October 6, 2011		2008-09	2009	2009-10	2010	2010-11	2011	2011-12	2012	2012-13	2013	2013-14
SAI	MPLING DATE						NS	NS/Sys. Start	NS	12/14/12	7/19/2013	NS/IF
Chromium (mg/L)	0.100	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Copper (mg/L)	1.300	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Lead (mg/L)	0.015	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Mercury (mg/L)	0.002	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Nickel (mg/L)	0.140	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Selenium (mg/L)	0.020	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Silver (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Zinc (mg/L)	2.10	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	IS	NS/IF
Organic Toxic Pollutants												
Total Petroleum Hydrocarbons (TPH) (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	<5.2	NS/IF
Oil & Grease (Hexane Extr) (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	5.7	<5	NS/IF
Chlorine, residual (mg/L)	0.70000	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	<0.050	NS/IF
VOCs, Semi-VOCs and Pesticides												
Benzene (mg/L)	0.0050	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Ethylbenzene (mg/L)	0.0050	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Toluene (mg/L)	1.00	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Total Xylene (mg/L)	10.00	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Acid Compounds												
2-Chlorophenol (mg/L)	0.035	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
2,4-Dichlorophenol (mg/L)	0.021	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
2,4-Dimethylphenol (mg/L)	0.140	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
4,6-Dinitrocreosol (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
2,4-Dinitrophenol (mg/L)	0.014	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
2-Nitrophenol (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
4-Nitrophenol (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
P-Chloro-m-cresol (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Pentachlorophenol (mg/L)	0.001	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Phenol (mg/L)	4.20	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
2,4,6-Trichlorophenol (mg/L)	0.00320	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Bases/Neutrals	0 12				1			1 ' 1	•/-			
Acenaphthene (mg/L)	0.42	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Acenaphthylene (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Anthracene (mg/L)	2.10	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Benzo(a)anthracene (mg/L)	0.00190	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Benzo(a)pyrene (mg/L)	0.00020	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Benzo(b)fluoranthene (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR

# Monitoring Data ADOT Nogales Area MS4

RECEIVING WATER: Nogales Wash						Sumn	ner: June 1-	October 31				
WATERSHED: Santa Cruz						Winte	r: Novembe	r 1- May 31				
DESIGNATED USES: A&Ww, PBC		Ye	ar 1	Yea	r 2	Ye	ar 3	Yea	ır 4	Ye	ear 5	Year 6
		Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
AUTOSAMPLER STARTUP DATE: October 6, 2011		2008-09	2009	2009-10	2010	2010-11	2011	2011-12	2012	2012-13	2013	2013-14
SAF	MPLING DATE	-					NS	NS/Sys. Start	NS	12/14/12	7/19/2013	NS/IF
Benzo(g,h,i)perylene (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Benzo(k)fluoranthene (mg/L)	0.0480	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Chrysene (mg/L)	0.00479	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Dibenzo(a,h)anthracene (mg/L)	0.00190	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Diethyl phthalate (mg/L)	5.60	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Dimethyl phthalate (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Di-n-butyl phthalate (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Di-n-octyl phthalate (mg/L)	2.80	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
1,2-Diphenylhydrazine (Azobenzene) (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Fluoranthene (mg/L)	0.28	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Fluorene (mg/L)	0.28	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Indeno(1,2,3-cd)pyrene (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Naphthalene (mg/L)	0.14	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Phenanthrene (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Pyrene (mg/L)	0.21	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Pesticides												
Aldrin (mg/L)	0.0020	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Alpha BHC (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Beta BHC (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Delta BHC (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Gamma BHC (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Chlordane (mg/L)	0.0020	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
4,4-DDD (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
4,4-DDE (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
4,4-DDT (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Dieldrin (mg/L)	0.0020	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Alpha-endenosulfan (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Beta-endenosulfan (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Endosulfan sulfate (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Endrin (mg/L)	0.0020	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Endrin aldehyde (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Heptachlor (mg/L)	0.00040	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Heptachlor epoxide (mg/L)	0.00020	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR
Toxaphene (mg/L)	NNS	NR	NR	NR	NR	NR	NS	NS/EF	NS	NS	NR	NR



THE LEADER IN ENVIRONMENTAL TESTING

# **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc.

TestAmerica Phoenix 4625 East Cotton Ctr Blvd Suite 189 Phoenix, AZ 85040 Tel: (602)437-3340

TestAmerica Job ID: 550-7153-1

## For:

Engineering & Environmental Consultants 7878 N 16th Street Suite 140 Phoenix, Arizona 85020

Attn: Mr. John Burton



Authorized for release by: 8/10/2013 1:58:46 PM

Kylie Emily, Project Manager II kylie.emily@testamericainc.com

.....LINKS .....

Review your project results through

Total Access

**Have a Question?** 



Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# 2

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# 12

# **Definitions/Glossary**

Client: Engineering & Environmental Consultants

Toxicity Equivalent Quotient (Dioxin)

TestAmerica Job ID: 550-7153-1

# **Qualifiers**

# **Biology**

TEQ

Qualifier	Qualifier Description
<u>⊓3</u>	Sample was received and/ or analysis requested nost holding time

Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)

TestAmerica Phoenix

#### **Case Narrative**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7153-1

Job ID: 550-7153-1

Laboratory: TestAmerica Phoenix

Narrative

#### **CASE NARRATIVE**

Client: Engineering & Environmental Consultants

**Project: ADOT Stormwater** 

Report Number: 550-7153-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica Phoenix attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

#### **RECEIPT**

The samples were received on 07/20/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.6 C.

#### **SGT-HEM**

Method(s) 1664A: Analysis for Hexane Extractable Material (HEM) was performed for the following sample(s): ADOT 71913 G (550-7153-1). Since the HEM result(s) was below the reporting limit (RL), the result(s) for Silica Gel Treated - Hexane Extractable Material (SGT-HEM) was reported as a non-detect. All HEM quality control criteria were met.

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#### **Sample Summary**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7153-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-7153-1	ADOT 71913 G	Water	07/19/13 13:00	07/20/13 09:40

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#### **Detection Summary**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7153-1

Client Sample ID: ADOT 71913 G

Lab Sample ID: 550-7153-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac D	Method	Prep Type
Escherichia coli	2400	H3	20	MPN/100mL	10	SM 9221F	Total/NA

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#### **Client Sample Results**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7153-1

Client Sample ID: ADOT 71913 G

Lab Sample ID: 550-7153-1

Date Collected: 07/19/13 13:00 Date Received: 07/20/13 09:40

	Matrix:	Water

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND ND	5.2	mg/L		07/31/13 12:39	08/01/13 11:16	1
SGT-HEM	ND	10	mg/L		07/31/13 12:39	08/01/13 11:16	1
Chlorine, Total Residual	ND	0.050	mg/L			07/20/13 12:37	1
Cyanide, Total	ND	0.050	mg/L		07/29/13 12:35	07/29/13 16:40	1

Method: SM 9221F - E.Coli (Multiple-Tube Fermentation; EC-MUG)										
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac		
Escherichia coli	2400	H3	20	MPN/100mL			07/20/13 15:15	10		

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#### Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 550-11416/1-A	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 11531	Prep Batch: 11416
MB MB	

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		5.0	mg/L		07/31/13 12:39	08/01/13 11:16	1
SGT-HEM	ND		10	mg/L		07/31/13 12:39	08/01/13 11:16	1

Lab Sample ID: LCS 550-11416/2-A		CI	ient Sample ID: Lab Control Sample
Matrix: Water			Prep Type: Total/NA
Analysis Batch: 11531			Prep Batch: 11416
Spike	LCS	LCS	%Rec.

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
HEM	40.0	39.0		mg/L		98	78 - 114	
SGT-HEM	20.0	17.2		mg/L		86	64 - 132	

Lab Sample ID: LCSD 550-11416/3-A	Client Sample ID: Lab Control Sample Dup									
Matrix: Water							Prep T	ype: To	tal/NA	
Analysis Batch: 11531							Prep	Batch:	11416	
_	Spike	LCSD	LCSD				%Rec.		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
HEM	40.0	40.5		mg/L		101	78 - 114	4	18	
SGT-HFM	20.0	18.2		ma/l		91	64 132	6	34	

Lab Sample ID: 550-7204-B-2-A MS	Client Sample ID: Matrix Spike
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 11531	Prep Batch: 11416

	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
HEM	ND		44.0	38.6		mg/L		88	78 - 114		_
SGT-HEM	ND		22.0	16.6		mg/L		75	64 - 132		

#### Method: 8167 - Chlorine, Total Residual

Lab Sample ID: MB 550-10532/3	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 10532	

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorine Total Residual	ND		0.050	ma/l			07/20/13 12:37	

Analyto	result	Qualifici	- 112	Oilit	rrepared	Analyzea	Diriac
Chlorine, Total Residual	ND		0.050	mg/L		07/20/13 12:37	1

Lab Sample ID: LCS 550-10532/4	Client Sample ID: Lab Control Sample
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 10532	

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chlorine, Total Residual	 0.978	1.07		mg/L		110	90 - 110	

Lab Sample ID: LCSD 550-10532/5				Clie	nt Sam	ıple ID: I	_ab Contro	I Sampl	e Dup
Matrix: Water							Prep T	ype: To	al/NA
Analysis Batch: 10532									
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chlorine, Total Residual	0.978	1.02		mg/L		105	90 - 110	5	20

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#### Method: 8167 - Chlorine, Total Residual (Continued)

Lab Sample ID: 550-7152-B-1 DU	Client Sample ID: Duplicate
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 10532	

ı		Sample	Sample	DU	DU				RPD
	Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
	Chlorine, Total Residual	0.27		0.278		mg/L		 3	20

#### Method: SM 4500 CN E - Cyanide, Total

	Lab Sample ID: MB 550-11142/1-A	Client Sample ID: Method Blank
	Matrix: Water	Prep Type: Total/NA
	Analysis Batch: 11193	Prep Batch: 11142
1	MD MD	

Analyte Result Qualifier RL Unit D Prepared Dil Fac Analyzed 0.050 07/29/13 12:35 07/29/13 16:40 Cyanide, Total ND mg/L

Lab Sample ID: LCS 550-11142/2-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA **Analysis Batch: 11193** Prep Batch: 11142 Spike LCS LCS %Rec. Added Analyte Result Qualifier Unit D %Rec Limits Cyanide, Total 0.100 0.106 mg/L 106 90 - 110

Lab Sample ID: LCSD 550-11142/19-A Client Sample ID: Lab Control Sample Dup **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 11193** Prep Batch: 11142 Spike LCSD LCSD %Rec. RPD Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit Cyanide, Total 0.100 0.106 106 90 - 110 mg/L

Lab Sample ID: 550-7098-J-1-B MS Client Sample ID: Matrix Spike **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 11193** Prep Batch: 11142 Sample Sample Spike MS MS %Rec.

Analyte Result Qualifier Added Result Qualifier Unit Limits 80 - 120 Cyanide, Total ND 0.100 0.112 mg/L 112

Lab Sample ID: 550-7098-J-1-C MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 11193** Prep Batch: 11142 MSD MSD Sample Sample Spike %Rec. **RPD** Qualifier Added Limit Analyte Result Result Qualifier Unit %Rec Limits **RPD** Cyanide, Total ND 0.100 0.114 114 80 - 120 20 mg/L

#### **General Chemistry**

#### Analysis Batch: 10532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7152-B-1 DU	Duplicate	Total/NA	Water	8167	
550-7153-1	ADOT 71913 G	Total/NA	Water	8167	
LCS 550-10532/4	Lab Control Sample	Total/NA	Water	8167	
LCSD 550-10532/5	Lab Control Sample Dup	Total/NA	Water	8167	
MB 550-10532/3	Method Blank	Total/NA	Water	8167	

#### Prep Batch: 11142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7098-J-1-B MS	Matrix Spike	Total/NA	Water	SM 4500 CN C	
550-7098-J-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CN C	
550-7153-1	ADOT 71913 G	Total/NA	Water	SM 4500 CN C	
LCS 550-11142/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN C	
LCSD 550-11142/19-A	Lab Control Sample Dup	Total/NA	Water	SM 4500 CN C	
MB 550-11142/1-A	Method Blank	Total/NA	Water	SM 4500 CN C	

#### Analysis Batch: 11193

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7098-J-1-B MS	Matrix Spike	Total/NA	Water	SM 4500 CN E	11142
550-7098-J-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CN E	11142
550-7153-1	ADOT 71913 G	Total/NA	Water	SM 4500 CN E	11142
LCS 550-11142/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	11142
LCSD 550-11142/19-A	Lab Control Sample Dup	Total/NA	Water	SM 4500 CN E	11142
MB 550-11142/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	11142

#### Prep Batch: 11416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7153-1	ADOT 71913 G	Total/NA	Water	1664A	
550-7204-B-2-A MS	Matrix Spike	Total/NA	Water	1664A	
LCS 550-11416/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 550-11416/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	
MB 550-11416/1-A	Method Blank	Total/NA	Water	1664A	

#### Analysis Batch: 11531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7153-1	ADOT 71913 G	Total/NA	Water	1664A	11416
550-7204-B-2-A MS	Matrix Spike	Total/NA	Water	1664A	11416
LCS 550-11416/2-A	Lab Control Sample	Total/NA	Water	1664A	11416
LCSD 550-11416/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	11416
MB 550-11416/1-A	Method Blank	Total/NA	Water	1664A	11416

#### **Biology**

#### Analysis Batch: 10494

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7153-1	ADOT 71913 G	Total/NA	Water	SM 9221F	

TestAmerica Phoenix

#### **Lab Chronicle**

Client Sample ID: ADOT 71913 G

Lab Sample ID: 550-7153-1 Date Collected: 07/19/13 13:00

Matrix: Water

Date Received: 07/20/13 09:40

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8167		1	10532	07/20/13 12:37	RLH	TAL PHX
Total/NA	Prep	SM 4500 CN C			11142	07/29/13 12:35	TAS	TAL PHX
Total/NA	Analysis	SM 4500 CN E		1	11193	07/29/13 16:40	TAS	TAL PHX
Total/NA	Prep	1664A			11416	07/31/13 12:39	KRA	TAL PHX
Total/NA	Analysis	1664A		1	11531	08/01/13 11:16	LRB	TAL PHX
Total/NA	Analysis	SM 9221F		10	10494		KLH	TAL PHX
					(Start)	07/20/13 15:15		
					(End)	07/23/13 13:10		

#### Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

#### **Certification Summary**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7153-1

#### **Laboratory: TestAmerica Phoenix**

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	<b>Expiration Date</b>
AIHA	IHLAP		154268	07-01-15
Arizona	State Program	9	AZ0728	06-09-14
California	NELAP	9	01109CA	11-30-13
Nevada	State Program	9	AZ01030	07-31-14
New York	NELAP	2	11898	04-01-14
Oregon	NELAP	10	AZ100001	03-09-14
USDA	Federal		P330-09-00024	06-09-15

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#### **Method Summary**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7153-1

Method	Method Description	Protocol	Laboratory
1664A	HEM and SGT-HEM	1664A	TAL PHX
8167	Chlorine, Total Residual	Hach	TAL PHX
SM 4500 CN E	Cyanide, Total	SM	TAL PHX
SM 9221F	E.Coli (Multiple-Tube Fermentation; EC-MUG)	SM	TAL PHX

#### Protocol References:

1664A = EPA-821-98-002

Hach = Hach Company

SM = "Standard Methods For The Examination Of Water And Wastewater",

#### Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

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# TestAmericc

THE LEADER IN ENVIRONMENTAL TESTING
TAL-0013-550 (10/10)

# CHAIN OF CUSTODY FORM

[] Phoenix - 4625 E. Cotton Center Blvd., Suite 189, Phoenix, AZ 85040 (602) 437-3340 FAX (60) [] Tucson - 1870 W. Prince Road, Suite 59, Tucson, AZ 85705 (520) 807-3801 FAX (520) 807-3806 [] Las Vegas - 6000 S Eastern Ave., Suite 5E, Las Vegas, NV 89119 (702) 429-1264

550-7153 Chain of Custody	
Å	

8/10/2013

Relinquished By: Date/Time:	Care/nime:			Relinquished By: Date/													HMH COMMINIC HAMPH	Sample Description Sample Container Matrix Type	Sampler LOSS	roject Manager: John Bunten	phoenix Az 85,020	けるできない。	lient Name /Address: 🔊 🕶
7	nime:		د//2 د	Time/		-	-			-	•						اللاح کا		Fax Number:	Phone Number		ADATA	Project / PO Number:
Becelyporn Lab By:	Necelve Poy			Received By	)	-			-			•		-	-		7-1913 1300	ling Sampling Preservatives	Fax Number: 1000-248-7851	Phone Number:	OGNIFES FI	ADAT NIACALICE MEL	lumber:
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Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

X

#### **Login Sample Receipt Checklist**

Client: Engineering & Environmental Consultants

Job Number: 550-7153-1

Login Number: 7153 List Source: TestAmerica Phoenix

List Number: 1 Creator: DeShazo, Brittany

Oreator: Deonazo, Britany		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

TestAmerica Phoenix

#### Appendix E

**Discharge Monitoring Reports** 

#### **AZCON 532057 DMRS**

ATTACHMENTS: Y \( \Backslash \ \mathbb{\backslash} \) IF "YES,"LIST:

VII. CERTIFICATION:



Authorization # AZCON-532057 Project/Site Name: SP 188 Punkin Center Stormwater & General Permits Unit, Mailstop 5415A-1 1110 West Washington Street Monitoring Period (yr/mo/day): 11 1201 13 to 11 1301 13 Phoenix, Arizona 85007 Use this form for reporting analytical and visual monitoring anytime a pollutant is known or suspected to discharge from the construction site (Permit Parts 4, 7 & 8). V. Pollutants / Parameters Monitored II. Person making the Inspection/Sampling Cerptried A. Visual Assessment: **B.** Analytical Monitoring: Solids Odor TSS Turbidity pH Sheen Color Foam Other Other Other Other (Susp. (Units) (Units = NTU) (specify) (specify) (specify) (specify) (specify) Settled) III. Monitoring Location IV. Sample Date/Time

information, including the possibility of fine and imprisonment for knowing violations."

Printed Name: William Leits Fried Title: SR ScientsT Phone: 018 853 175 8

Signature: Date: 12 6 13

Page 1 of

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage this system, or those persons directly responsible for gathering the information. I believe the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false



Discharge Monitoring Report (DMR) Form

1. Authorization # AZCON-532057 Project/Site Name: SR 188 PUNKIN Conter

Monitoring Period (yr/mo/day): 12 1113 to 12 1311 13

Arizona Department of Environmental Quality Stormwater & General Permits Unit, Mailstop 5415A-1 1110 West Washington Street Phoenix. Arizona 85007

Use this form for reporting analytical and visual monitoring anytime a pollutant is known or suspected to discharge from the construction site (Permit Parts 4, 7 & 8).

II. Person making the	he Inspection/Sampling					٧	. Polluta	ants / Par	rameters	Monitored				
Name: Bill Ca				A. Visu	ial Asses	sment:			B. Analytical Monitoring:					
Address: 16361 FLAGSTAFF	Lomestend Pd Az 86005	Sheen	Color	Foam	Solids (Susp.	Odor	Other	Other	TSS (Units)	Turbidity	рН	Other	Other	
Phone Number: 0128					or Settled)	(specify)	(specify)	(specify)	(or me)	NTU)		(specify)	(specify)	
III. Monitoring Location	IV. Sample Date/Time													
NA	No Discharge													
	0													
VII. CERTIFICATION "I certify under penalty qualified personnel propresponsible for gatherin information, including th	of law that this document and perly gather and evaluate the g the information, I believe the possibility of fine and impris	d all attac information in information	on submition subm	itted. Bas nitted is t	ed on my rue, accu ns."	rate, and	of the per complete	rson or po e. I am av	ersons wi ware that	ho manage there are s	this sys	stem, or thos	e persons directlor submitting fals	

## Stormwater Construction General Permit AZG2013-001



Discharge Monitoring Report (DMR) Form

Authorization # AZCON-532057 Project/Site Name: SR 188 PUNKIN Conter Arizona Department of Environmental Quality Stormwater & General Permits Unit, Mailstop 5415A-1

i. Ferson making	the Inspection/Sampling	V. Pollutants / Parameters Monitored												
Name: Bill C			A. Visual Assessment: B. Analytic											
Address: 1636 FUAGSTAFE	Homester 1 Pd Az 86005	Sheen	Color	Foam	Solids (Susp.	Odor	Other	Other	TSS (Units)	Turbidity	рН	Other	Other	
Phone Number: 💁					or Settled)	(specify)	(specify)	(specify)		NTU)		(specify)	(specify)	
II. Monitoring Location	n IV. Sample Date/Time													
NA	No dischar	se												
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## Stormwater Construction General Permit AZG2013-001

Signature

June 2013



Page 1 of \_

Discharge Monitoring Report (DMR) Form

Authorization # AZCON-53205 7 Project/Site Name: SR 188 Public Conter

Monitoring Period (yr/mo/day): 2 1/114 to 2 12814 Arizona Department of Environmental Quality Stormwater & General Permits Unit, Mailstop 5415A-1 1110 West Washington Street Phoenix, Arizona 85007

II. Person making the Inspection/Sampling	V. Pollutants / Parameters Monitored												
Name: Bill CEIBFRIEP Title: SR. Scientist			A. Vist	ıal Asse	ssment:	B. Analytical Monitoring:							
Address: 1636 Homes Fen d Rd FLAGSTAFF AZ 86005	Sheen	Color	Foam	Solids (Susp.	Odor	Other	Other	TSS (Units)	Turbidity	рН	Other	Other	
Phone Number: 938 853 1758				or Settled)	(specify)	(specify)	(specify)	15,55	NTU)		(specify)	(specify)	
III. Monitoring Location IV. Sample Date/Time													
NA No discharge													
or rain ever	1												
70.5in.												•	
	-	-				-					-		

Date:



1.	Authorization # AZCON-532057 Project/S	ite Name: SR 188 Pulvkin Conter
	Monitoring Period (yr/mo/day): 3/1/	140 3 1311 14

Arizona Department of Environmental Quality Stormwater & General Permits Unit, Mailstop 5415A-1 1110 West Washington Street Phoenix, Arizona 85007

l. Person making t	the Inspection/Sampling	V. Pollutants / Parameters Monitored												
lame: Bill Co	entist			A. Vist	ial Asses	sment:			B. Analytical Monitoring:					
Address: 16361	Lomesten d Rd Az 86005	Sheen	Color	Foam	Solids (Susp.	Odor	Other	Other	TSS (Units)	Turbidity	рН	Other	Other	
hone Number: 💁	853 1758				Settled)	(specify)	(specify)	(specify)		NTU)		(specify)	(specify)	
I. Monitoring Location	IV. Sample Date/Time	-												
mP1	70.5 inch													
mpa	3/1/14													
MP3	flow cease	d											•	
	before SAM	06												
	could be													
	taken													
I. CERTIFICATION certify under penalty calified personnel pro sponsible for gatheric formation, including the	S:Y N IF "YES,"LIS N: of law that this document ar perly gather and evaluate the ing the information, I believe the he possibility of fine and impri	nd all attac informatione informa sonment fo	on submi tion subm or knowin	itted. Bas nitted is t ng violatio	ed on my rue, accu ns." lle:	inquiry orate, and	of the per complete	son or pe a. I am av	ersons ware that	ho manage there are s	this sys ignificar	stem, or thos	e persons o or submitting	

## Stormwater Construction General Permit AZG2013-001



Discharge Monitoring Report (DMR) Form

Authorization # AZCON- 53205 Project/Site Name: SR 188 PUNKIN Arizona Department of Environmental Quality
Stormwater & General Permits Unit, Mailstop 5415A-1 1110 West Washington Street Monitoring Period (yr/mo/day): 2014/41 Phoenix, Arizona 85007

Am	the Inspection/Sampling					٧	. Polluta	ants / Par	rameters	Monitored																			
lame: Bill title: S.Z. So	Celtred ,			A. Vist	al Asses	sment:			B. Analytical Monitoring:																				
FLAGSDA	Glonistand F FF, AZ 8005	Sheen	Color	Foam	Solids (Susp. or Settled)	Odor Other (specify)				Other (specify)		TSS (Units)	Turbidity (Units = NTU)	рН	Other (specify)	Other (specify)													
II. Monitoring Location	on IV. Sample Date/Time				Settled)				(apouty)	(apocity)	(specify)	(specify)	(apecity)	(apocity)			(-1)	(-1)		(-13)	(apecity)	(specify)	(apecity)	(-15)	(abacily)	(appenty)	ecily) (specily)		
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#### **AZCON 532819 DMRS**

Authorization # AZCON- 532019 Project/Site Name: 

Stormwater & General Permits Unit, Mailstop 5415A-1 Arizona Department of Environmental Quality 1110 West Washington Street

of Environmental Quality

Phoenix, Arizona 85007

Jse this form for reporting analytical and visual monitoring anytime a pollutant is known or suspected to discharge from the construction site (Permit Parts 4, 7 & 8).

	uð:	Other	(specify)									
,	B. Analytical Monitoring:	Other	(sbedity)									
_	nalytic	됩					_	<u> </u>	_			_
V. Pollutants / Parameters Monitored	B. A	Turbidity	UTN ()		ange							
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. Polluta		Other	(specify)		<u>.</u> . <u>.</u>							
>	sment:	Oder	(specify)		<u>(-)</u>							
	A. Visual Assessment:	Solids	(Susp. or Settled)									
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		Color			<u>~</u>							
		Sheen									<u> </u>	<u> </u>
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Inspectiv	という		129	V. Sam	May 7014							
ing the			3	ation		_		+				
II. Person making the Inspection/Sampling	Name: Movific Coloring	Address: # # 2 C 2 C	Phone Number 190-67-508	III. Monitoring Location IV. Sample Date/Time	۱.							
. Per	vame:	Address	hone A	II. Monit	1	-						

ATTACHMENTS: Y X N IF "YES,"LIST: **CERTIFICATION:** 

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

\_itle: Printed Name:  $L^{J_{\perp}} \subset$ 

Date:

Signature: June 2013

Page 1 of

二月状で

Phone:

(X

Authorization # AZCON-5318/9 Project/Site Name: US-60 Silver | City

1110 West Washington Street

Stormwater & General Permits Unit, Mailstop 5415A-1 Arizona Department of Environmental Quality

of Environmental Quality

Phoenix, Arizona 85007

Phoenix, Arizona 85007	ected to discharge from the construction site (Permit Parts 4, 7 & 8).
Monitoring Period (yr/mo/day): 2014/6/10 10 2014/10/31	e this form for reporting analytical and visual monitoring anytime a pollutant is known or susp

qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage this system, or those persons directly responsible for gathering the information, I believe the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that N | IF "YES,"LIST:\_ ATTACHMENTS: Y [X] **CERTIFICATION:** 

information, including the possibility of fine and imprisonment for knowing violations."

Printed Name: M Signature: 🔏 June 2013

ECC - CPESC Date: 10-9-14

Title:

Phone: 480-671-908

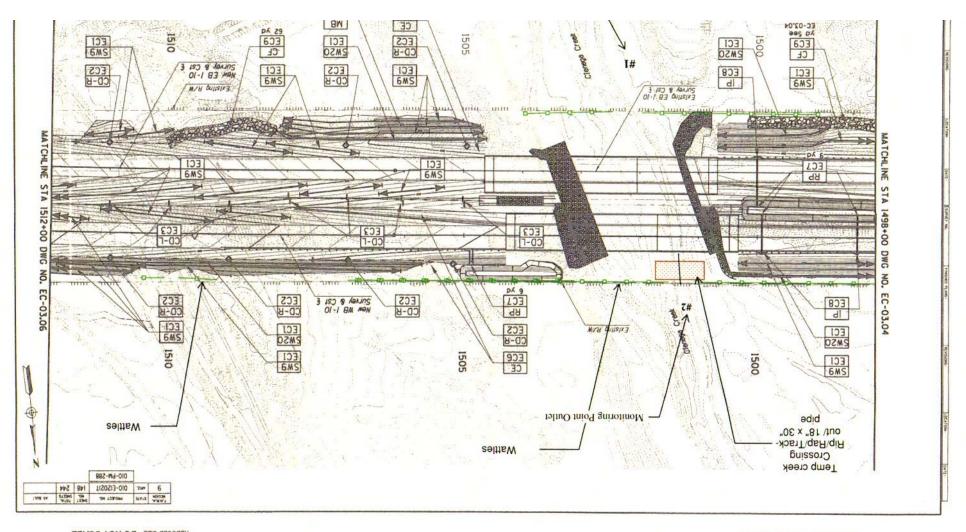
Page 1 of

#### AZCON 73798 DMRS

AD	EQ	
Arizona Depar of Environmen	tment	
of Environmen	ntai Quali	ty will

Page 1 of **2** 

I. Authorization	# AZCON- 73798	Project/	Site Nar	ne: <u>I-</u>	10 Ma:	rsh St	atio	n		Stormwater	& Gene		ental Quality .it, Mailstop 5415A
Monitoring Per	riod (yr/mo/day): 201	3 <u>/</u> 6 /	1 to	201	3 <sub>/</sub> 10 /3	1				1110 West 'Phoenix, Ar	_		
se this form for reporti	ng analytical and visual m	onitoring	anytime	a poliuta	ınt is kno	wn or su	spected	to disch	arge fro	m the cons	tructio	n site (Permi	it Parts 4, 7 & 8).
II. Person making th Name: John J Baker	e Inspection/Sampling				. eg	V	. Polluta	ants / Par	ameters	Monitored	l		
Title: Environmental			. 42.	A. Visi	ual Asses	ssment:	alia Bamba			B. A	nalytica	al Monitoring	j:
Address: 8333 E Ha	rtford Dr.				0.11			0.11				O.I.	
Scottsdale	e, AZ 85255	Sheen	Color	Foam	Solids (Susp.	Odor	Other	Other	TSS (Units)	Turbidity (Units =	pН	Other	Other
Phone Number: 602	370-6387				or Settled)	(specify)	(specify)	(specify)		NTU)		(specify)	(specify)
III. Monitoring Location	IV. Sample Date/Time												
1	8/02/2013 12:00 PM	No	Disch	arge	at ti	me of	Moni	torin	a	None			
2	8/02/2013 12:30 PM	No	Disch	arge	at Ti	me of	Moni	torin	a	None			
						ļ							
					,								
"I certify under penalty qualified personnel propresponsible for gatherin information, including the	of law that this document a perly gather and evaluate th g the information, I believe the possibility of fine and imp	and all atta ne informat the informa	chments ion subm ation subi	were pre itted. Bas nitted is	sed on m true, acci	y inquiry	of the pe	erson or p	ersons w	tho manage t there are	e this sy significa	ystem, or thos ant penalties f	se persons directi
Printed Name: John J E	Baker A			Т		onmental !				_ Phone: _6	02 370-6	387	
Signature:	700				Dat	e:8/07/1	3						

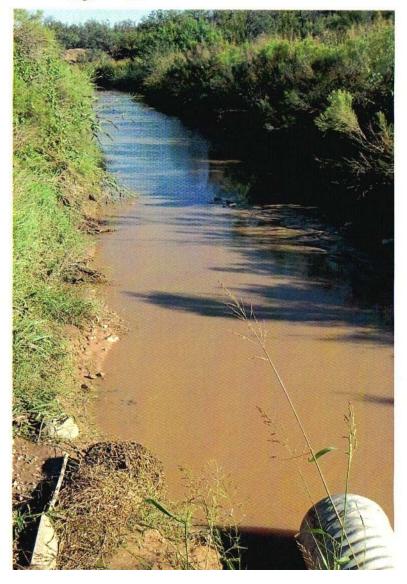


REDUCED SIZE DO NOT SCALE

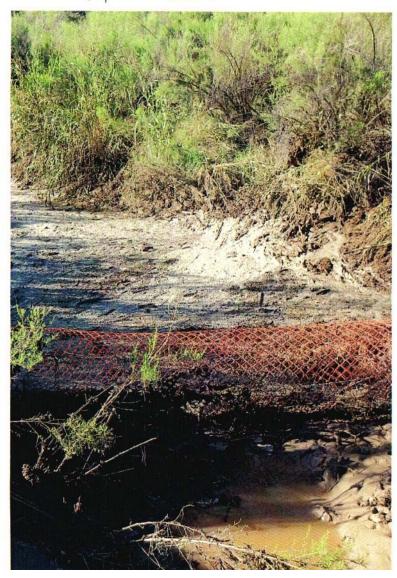
<b>ADEQ</b>	
Arizona Department of Environmental Quality	

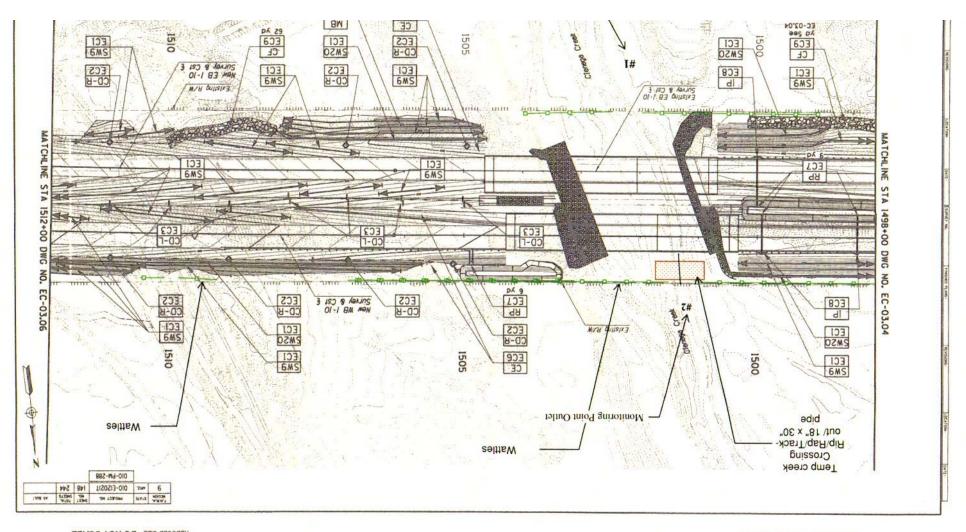
Person making th <sub>ame:</sub> John J Baker	ne Inspection/Sampling	V. Pollutants / Parameters Monitored													
tle: Environmental		A. Visual Assessment:								B. Ar	alytica	I Monitoring:	Autoriation		
ddress: 8333 E Ha		Sheen	Color	Foam	Solids (Susp.	Odor	Other	Other	TSS (Units)	Turbidity (Units =	pН	Other	Other		
one Number: 602	370-6387				or Settled)	(specify)	(specify)	(specify)		NTU)		(specify)	(specify)		
Monitoring Location	IV. Sample Date/Time														
1	9/21/13 7:45 AM	No I	ischa	rge a	t Tin	e of	Monit	oring		None					
2	9/21/13 8:15 AM	No I	ischa	irge a	at Tir	ne of	Monit	oring	3	None			****		
	1														

#2 Outlet



#/ Inlet





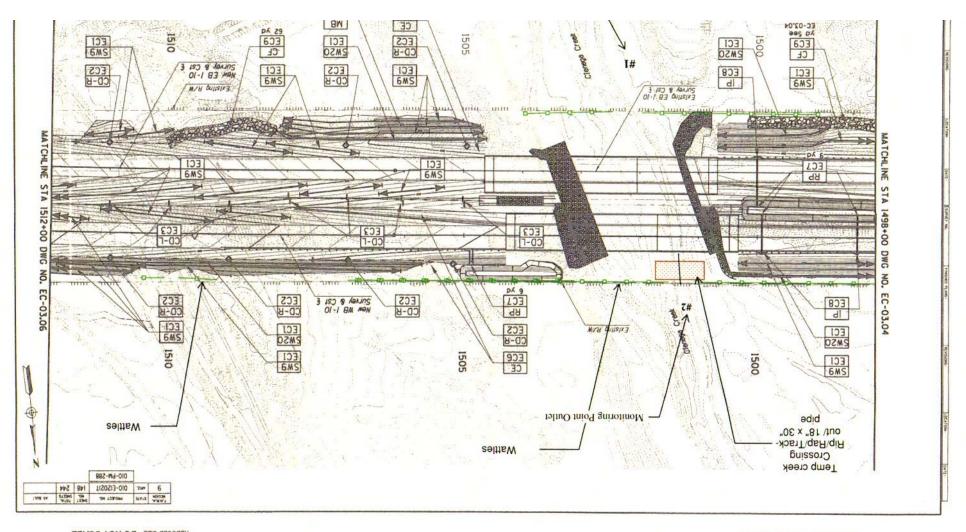
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I.

<b>ADEO</b>	
Arizona Donostmont	
Arizona Department of Environmental Qual	

Arizona Department of Environmental Quality Authorization # AZCON- 73798 Project/Site Name: 1-10 Marsh Station Stormwater & General Permits Unit, Mailstop 5415A-1 1110 West Washington Street Monitoring Period (yr/mo/day): 2013 / 11 / 1 to 2014/ 5 / 31 Phoenix Arizona 85007

me: John J Baker, le: Environmental M ddress: 8333 E Har Scottsdale, one Number: 602 3  Monitoring Location	Manager tford Dr. AZ 85255 70-6387  IV. Sample Date/Time	Sheen	Color	A. Visu	ial Asses	sment:			3	B. Ar	nalytica	al Monitoring	*					
ddress: 8333 E Har Scottsdale, one Number: 602 3  Monitoring Location	tford Dr. AZ 85255 70-6387  IV. Sample Date/Time	Sheen	Color	Foam		- 1	-		4	The second secon			B. Analytical Monitoring:					
Scottsdale, one Number: 602 3	AZ 85255 70-6387 IV. Sample Date/Time	Sheen	Color	Foam	اییا	***************************************	e e			<u> </u>	Ť	· · · · · · · · · · · · · · · ·						
one Number: 602 3	70-6387  IV. Sample Date/Time				Solids (Susp. or Settled)	Odor (specify)	Other  (specify)	Other (specify)	TSS (Units)	Turbidity (Units = NTU)	Нq	Other ——— (specify)	Other (specify)					
Monitoring Location	IV. Sample Date/Time																	
_				[	Seided)	(,	(wp-sensy)	(0,000.37)				(specify)	(specity)					
1																		
t t	3/2/14 11:00 AM	No D	ischar	ge at T	ime of	Monit	oring			None								
2	3/2/14 11:15 AM	No Di	scharç	e at T	me of	Monito	ring			None		*						
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					····	•					<u></u>						
	Note: No other	rain ev	vents d	ccurre	d duri	ng this	wet s	eason	(Nove	mber 20	13 th	rough Ma	v 2014)					
essentia.												J						
<u></u>	victoria de la companya de la compan								****									
		]																
CERTIFICATION: ertify under penalty of lified personnel prope consible for gathering rmation, including the	N IF "YES," LIS  f law that this document an  erly gather and evaluate the  the information, I believe th  possibility of fine and impris  AGR. CPESC, CESSWI, CPSW	d all attac informati e informa conment fo	chments on submi tion subm	itted. Bas nitted is t g violatio	ed on my rue. accu	rinquiry i rate, and	of the per complete	rson or pe e. I am av	ersons w ware that	ho manage	this sy ignifica	rstem, or those ont penalties fo	e nersons di					

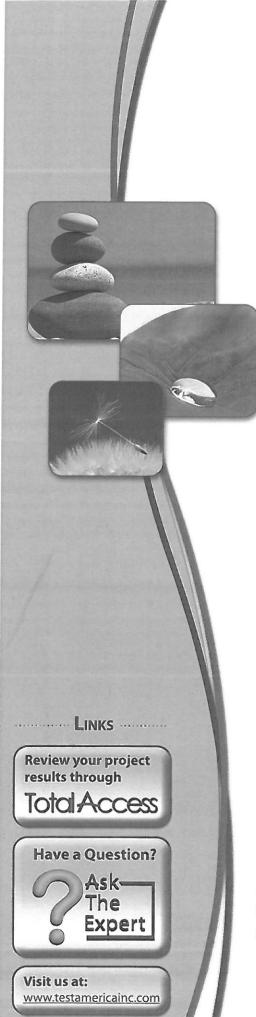


REDUCED SIZE DO NOT SCALE

#### **AZCON 72275 DMRS**



III. Person making the Inspection/Sampling Name: John Baker Title: ECC/CPESC Address: Scottsdale, AZ  Phone Number:			V. Pollutants / Parameters Monitored												
		A. Visual Assessment:								B. Analytical Monitoring:					
		Sheen	Color	Foam	Solids (Susp. or Settled)	Odor (specify)	Other (specify)	Other (specify)	TSS (Units)	Turbidity (Units = NTU)	рН	Other E. coli	Other Cu (specify)		
														Bridge	7-18-13/8:30 AM
911 ISS ICS - HEAR - 1200 - 10	Note: Due to s	evere v	eathe	cond	itions	and flo	oding	( the S	an Ped	Iro Rive	r was	15 ft ove	r flood st		
	the normal mo existing Bridge	<del>nitorin</del>	<del>g point</del>	<del>s cou</del>	<del>d not l</del>	<del>be reac</del>	hed. A	<del>Samp</del>	<del>le was</del>	<del>-taken f</del>	<del>fom 1</del>	<del>he middle</del>	of the		



## <u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

#### **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc. TestAmerica Phoenix 4625 East Cotton Ctr Blvd Suite 189 Phoenix, AZ 85040

Tel: (602)437-3340

TestAmerica Job ID: 550-7035-1 Client Project/Site: SR 90 San Padro

For: AMES Construction 8333 E Hartford Road Scottsdale, Arizona 85255

Attn: John Baker



Authorized for release by: 7/31/2013 7:54:11 AM

Kylie Emily, Project Manager II kylie.emily@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

#### **Table of Contents**

Cover Page	1
Table of Contents	
Definitions/Glossary	3
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Detection Summary	
Client Sample Results	
QC Sample Results	8
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Name of the Control o	13
	14

#### **Definitions/Glossary**

Client: AMES Construction Project/Site: SR 90 San Padro

TestAmerica Job ID: 550-7035-1

#### Qualifiers

#### Biology

Qualifier

**Qualifier Description** 

H1

Sample analysis performed past holding time.

Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
п	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
POL	Practical Quantitation Limit

QC

Quality Control

RER

Relative error ratio

RL

Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

#### **Case Narrative**

Client: AMES Construction Project/Site: SR 90 San Padro

TestAmerica Job ID: 550-7035-1

Job ID: 550-7035-1

Laboratory: TestAmerica Phoenix

Narrative

#### CASE NARRATIVE

**Client: AMES Construction** 

Project: SR 90 San Padro

Report Number: 550-7035-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica Phoenix attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

#### RECEIPT

The samples were received on 07/18/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.1 C.

#### METALS

Method(s) Filtration: The following samples requested dissolved metals and were not filtered in the field: 1B (550-7035-2). These samples were filtered and preserved upon receipt to the laboratory.

#### **ESCHERICHIA COLI**

Method(s) SM 9221F: The following sample(s) was analyzed outside of analytical holding time due to sample being received with insufficient time left to run the sample: 1A (550-7035-1). IT was analyzed 5mins past hold time.

#### **Sample Summary**

Client: AMES Construction Project/Site: SR 90 San Padro

TestAmerica Job ID: 550-7035-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-7035-1	1A	Water	07/18/13 08:30	07/18/13 14:46
550-7035-2	1B	Water	07/18/13 08:30	07/18/13 14:46

#### **Detection Summary**

Client: AMES Construction Project/Site: SR 90 San Padro

TestAmerica Job ID: 550-7035-1

Client Sample ID: 1A

Lab Sample ID: 550-7035-1

 Analyte
 Result
 Qualifier
 RL
 Unit
 Dil Fac
 D
 Method
 Prep Type

 Escherichia coli
 490
 H1
 20
 MPN/100mL
 10
 SM 9221F
 Total/NA

Client Sample ID: 1B Lab Sample ID: 550-7035-2

No Detections.

This Detection Summary does not include radiochemical test results.

#### **Client Sample Results**

Client: AMES Construction Project/Site: SR 90 San Padro TestAmerica Job ID: 550-7035-1

Client Sample ID: 1A

Lab Sample ID: 550-7035-1

Date Collected: 07/18/13 08:30 Date Received: 07/18/13 14:46

Matrix: Water

Method: SM 9221F - E.Coli (Multiple-Tube Fermentation; EC-MUG)

Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac Escherichia coli 20 MPN/100mL 490 H1 07/18/13 16:35

Client Sample ID: 1B Lab Sample ID: 550-7035-2

Date Collected: 07/18/13 08:30 Date Received: 07/18/13 14:46

Matrix: Water

Method: 200.7 - Dissolved Metals by ICP - Dissolved

Analyte Unit Dil Fac Prepared Analyzed

Copper ND 0.010 mg/L 07/22/13 12:42 07/24/13 13:51

#### **QC Sample Results**

Client: AMES Construction Project/Site: SR 90 San Padro

Copper

TestAmerica Job ID: 550-7035-1

Lab Sample ID: MB 550-10543/1-A											Client Sa	ample ID: N	lethod	Blank
Matrix: Water												Prep Ty	pe: To	tal/NA
Analysis Batch: 10944												Prep	Batch:	10543
			МВ											
Analyte	R		Qualifier		RL		Unit		D		repared	Analyze		Dil Fac
Copper		ND			0.010		mg/L			07/2	2/13 12:42	07/24/13 1	3:29	1
Lab Sample ID: LCS 550-10543/3-A									С	lient	Sample	ID: Lab Co	ntrol S	ample
Matrix: Water												Prep Ty	pe: To	tal/NA
Analysis Batch: 10944												Prep I	Batch:	10543
				Spike		LCS	LCS					%Rec.		
Analyte				Added		Result	Qualifier	Unit		D	%Rec	Limits		
Copper				1.00		0.981		mg/L		_	98	85 - 115		
Lab Sample ID: LCSD 550-10543/4-/	Δ.							CI	ient	Sam	ple ID: L	ab Control	Samp	le Dup
Matrix: Water												Prep Ty		
Analysis Batch: 10944													Batch:	
Constitution of the Consti				Spike		LCSD	LCSD					%Rec.		RPD
Analyte				Added		Result	Qualifier	Unit		D	%Rec	Limits	RPD	Limit
Copper		1		1.00		0.970		mg/L	7.00	-	97	85 - 115	1	20
Lab Sample ID: MB 550-10458/1-B											Client Sa	ımple ID: M	lethod	Blank
Matrix: Water												Prep Typ		
Analysis Batch: 10944														10543
		MB	MB									50 1003.51		
Analyte	R	esult	Qualifier		RL		Unit		D	P	repared	Analyze	d	Dil Fac
Copper		ND	×		0.010		mg/L			07/2	2/13 12:42	07/24/13 13	3:32	1
Lab Sample ID: 550-7108-A-2-B MS											Client S	Sample ID:	Matrix	Spike
Matrix: Water												Prep Typ		1.0
Analysis Batch: 10944														10543
	Sample	Sam	ple	Spike		MS	MS					%Rec.		
Analyte	Result	Qual	ifier	Added		Result	Qualifier	Unit		D	%Rec	Limits		
Copper	0.83	-		1.00		1.82		mg/L			99	70 - 130	10	
Lab Sample ID: 550-7108-A-2-C MSI	)								Clier	nt Sa	mple ID:	Matrix Spi	ke Dui	olicate
Matrix: Water										NO 545		Prep Typ		
Analysis Batch: 10944														10543
1990 (1991 <b>-</b> 1993) - 1993 (1993) (1993) (1997) (1997) (1997)														
	Sample	Sam	ple	Spike		MSD	MSD					%Rec.		RPD

2

20

1.00

1.78

mg/L

95

70 - 130

0.83

#### **QC Association Summary**

Client: AMES Construction Project/Site: SR 90 San Padro

Lab Sample ID

550-7035-1

Client Sample ID

TestAmerica Job ID: 550-7035-1

Vietals					
Cleanup Batch: 10458					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Bato
550-7035-2	1B	Dissolved	Water	Filtration	_
MB 550-10458/1-B	Method Blank	Dissolved	Water	Filtration	
Prep Batch: 10543					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Bato
550-7035-2	1B	Dissolved	Water	200.7	1045
550-7108-A-2-B MS	Matrix Spike	Dissolved	Water	200.7	
550-7108-A-2-C MSD	Matrix Spike Duplicate	Dissolved	Water	200.7	
LCS 550-10543/3-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-10543/4-A	Lab Control Sample Dup	Total/NA	Water	200.7	
MB 550-10458/1-B	Method Blank	Dissolved	Water	200.7	1045
MB 550-10543/1-A	Method Blank	Total/NA	Water	200.7	
Analysis Batch: 10944					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
550-7035-2	1B	Dissolved	Water	200.7	1054
550-7108-A-2-B MS	Matrix Spike	Dissolved	Water	200.7	1054
550-7108-A-2-C MSD	Matrix Spike Duplicate	Dissolved	Water	200.7	1054
LCS 550-10543/3-A	Lab Control Sample	Total/NA	Water	200.7	1054
LCSD 550-10543/4-A	Lab Control Sample Dup	Total/NA	Water	200.7	1054
MB 550-10458/1-B	Method Blank	Dissolved	Water	200.7	1054
MB 550-10543/1-A	Method Blank	Total/NA	Water	200.7	1054
Biology					

Prep Type

Total/NA

Matrix

Water

Method

SM 9221F

Prep Batch

#### Lab Chronicle

Client: AMES Construction Project/Site: SR 90 San Padro

TestAmerica Job ID: 550-7035-1

Client Sample ID: 1A

Date Collected: 07/18/13 08:30 Date Received: 07/18/13 14:46 Lab Sample ID: 550-7035-1

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 9221F		10	10334		KLH	TAL PHX
					(Start)	07/18/13 16:35		
					(End)	07/20/13 14:40		

Client Sample ID: 1B

Date Collected: 07/18/13 08:30 Date Received: 07/18/13 14:46 Lab Sample ID: 550-7035-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Cleanup	Filtration			10458	07/19/13 16:03	SGO	TAL PHX
Dissolved	Prep	200.7			10543	07/22/13 12:42	JRC	TAL PHX
Dissolved	Analysis	200.7		1	10944	07/24/13 13:51	CCT	TAL PHX

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

#### **Certification Summary**

Client: AMES Construction Project/Site: SR 90 San Padro TestAmerica Job ID: 550-7035-1

#### Laboratory: TestAmerica Phoenix

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	uthority Program		Certification ID	Expiration Date	
AIHA	IHLAP		154268	07-01-15	
Arizona	State Program	9	AZ0728	06-09-14	
California	NELAP	9	01109CA	11-30-13	
Nevada	State Program	9	AZ01030	07-31-13	
New York	NELAP	2	11898	04-01-14	
Oregon	NELAP	10	AZ100001	03-09-14	
USDA	Federal		P330-09-00024	06-09-15	

#### **Method Summary**

Client: AMES Construction Project/Site: SR 90 San Padro TestAmerica Job ID: 550-7035-1

Method	Method Description	Protocol	Laboratory
200.7	Dissolved Metals by ICP	EPA	TAL PHX
SM 9221F	E.Coli (Multiple-Tube Fermentation; EC-MUG)	SM	TAL PHX

#### Protocol References:

EPA = US Environmental Protection Agency
SM = "Standard Methods For The Examination Of Water And Wastewater",

#### Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

#### Sampler: >hn bake/@emesco.com Relinquished By: Relinquished By: Relinquistres By: Project Manager: Baker Client Name / Address: TAL-0013-550 (10/10) THE LEADER IN ENVIRONMENTAL TESTING Describations & Sample Description 55528 Sample Container Matrix Type 7-18-15 Id:46 Date/Time: Date/Time: ∑-] Phoenix - 4625 E. Cotton [ ] Tucson - 1870 W. Prince Fax Number: Cont. [ ] Las Vegas - 6000 S East Phone Number: 370-6383 Project/PO Number: SR 90 Saw Padro Sampling Sampling Date Time 7/18 8//8 Received in Lab By: 87.8 Received By: Received By: 8.130 Preservatives 550-7035 Chain of Custody X £ co! X 2 Date/Time: Date/Time: Date / Time: 437-3340 FAX (602) 454-9303 | FAX (520) 807-3803 9-1264 $\leq$ Analysis Required 24 hours intact\_ Sample Integrity: 48 hours same day Turnaround Time: (Check) (Check) Page\_ on ice l 5 days normal 72 hours Special Instructions 7/31/20

1

Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project, Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

#### Login Sample Receipt Checklist

Client: AMES Construction

Job Number: 550-7035-1

Login Number: 7035

List Number: 1

Creator: Baker, Elizabeth

List Source: TestAmerica Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

# Stormwater Construction General Permit AZG2013-001 Discharge Monitoring Report (DMR) Form

AN	FC	DEL	
Arizona Dor	retment		
Arizona Dep of Environm	ental Qua	ality	

Authorization # AZCON72275	Project/Site Name: SR 90 San Pedro Bridge	Arizona Department of Environmental Quality Stormwater & General Permits Unit, Mailstop 5415A-1
Monitoring Period (yr/mo/day): 2013	/6 /1 to 2013 //0 \(\beta\)1	1110 West Washington Street Phoenix, Arizona 85007

II. Person making the Name: John Bake	V. Pollutants / Parameters Monitored												
Title: ECC/CPESO		A. Visual Assessment:								B. Analytical Monitoring:			
Address: Scottsdal		Sheen	Color	Foam	Solids (Susp.	Odor	Other	Other	TSS (Units)	Turbidity (Units =	Hq	Other E coli	Other Cu
Phone Number:			-		or Settled)	(specify)	(specify)	(specify)	(0.111.0)	NTU)		(specify)	(specify)
II. Monitoring Location	IV. Sample Date/Time						2						
MP #1	9-10-13/5:00 PM	None	Brown	None	Susp	None				911		3500	.023 mg/l
MP #2	9-10-13/5:30 PM	None	Brown	None	Susp	None				903		1100	.023 mg/l
									-				
											-		
-	Annual Control of the				=								

"I certify under penalty of law that this document and all att	achments were prepared under my direction or supe	envision in accordance with a system designed to	0 0001150 fb-1
qualified personnel property gather and evaluate the informa-	NUON SUDMITTED. Based on my inquiry of the person o	r nersons who manage this system or those so	rooma dius sti.
responsible for gathering the information, I believe the inform	nation submitted is true, accurate, and complete I an	a aware that there are significant penalties for sul	bmitting folce
information, including the possibility of fine and imprisonment	for knowing violations."	aware that there are significant penalties for sur	milling raise
Printed Name: John J Baker	Title: ECC/CPESC	Phone: 602 370-6387	
Signature:	Date: 9-23-		
· — ////	Date	<u> </u>	

Signature: June 2013

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# **TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

### **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc. TestAmerica Phoenix 4625 East Cotton Ctr Blvd Suite 189 Phoenix, AZ 85040 Tel: (602)437-3340

TestAmerica Job ID: 550-10382-1

Client Project/Site: SR 90 San Pedro River

For:

AMES Construction 8333 E Hartford Road Scottsdale, Arizona 85255

Attn: John Baker



Authorized for release by: 9/22/2013 5:36:55 PM

Kylie Emily, Project Manager II kylie.emily@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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#### **Definitions/Glossary**

Client: AMES Construction

Project/Site: SR 90 San Pedro River

TestAmerica Job ID: 550-10382-1

#### Qualifiers

#### Biology

Qualifier

**Qualifier Description** 

НЗ

Sample was received and/ or analysis requested past holding time.

#### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
--------------	---

n

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R

Percent Recovery

CNF

Contains no Free Liquid

DER

Duplicate error ratio (normalized absolute difference)

Dil Fac

Dilution Factor

DL, RA, RE, IN

Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC

Decision level concentration Minimum detectable activity

MDA

Estimated Detection Limit

EDL MDC

Minimum detectable concentration

MDL ML Method Detection Limit Minimum Level (Dioxin)

NC

Not Calculated

ND

Not detected at the reporting limit (or MDL or EDL if shown)

PQL

Practical Quantitation Limit

QC

Quality Control Relative error ratio

RER

Reporting Limit or Requested Limit (Radiochemistry)

RL RPD

Relative Percent Difference, a measure of the relative difference between two points

TEF

Toxicity Equivalent Factor (Dioxin)

TEQ

Toxicity Equivalent Quotient (Dioxin)

#### **Case Narrative**

Client: AMES Construction

Project/Site: SR 90 San Pedro River

TestAmerica Job ID: 550-10382-1

Job ID: 550-10382-1

Laboratory: TestAmerica Phoenix

Narrative

#### **CASE NARRATIVE**

**Client: AMES Construction** 

Project: SR 90 San Pedro River

Report Number: 550-10382-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica Phoenix attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

#### RECEIPT

The samples were received on 09/11/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.2 C.

#### TOTAL METALS (ICP)

Due to a laboratory error the samples were preserved prior to filtration; therefore the samples are reported as total.

#### **Sample Summary**

Client: AMES Construction

Project/Site: SR 90 San Pedro River

TestAmerica Job ID: 550-10382-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-10382-1	1a 1b	Water	09/10/13 17:00	09/11/13 13:14
550-10382-2	2a 2b	Water	09/10/13 17:00	09/11/13 13:14

#### **Detection Summary**

Client: AMES Construction

Project/Site: SR 90 San Pedro River

TestAmerica Job ID: 550-10382-1

Client Sample ID: 1a 1b	a 1b			Lab Sample ID: 550-10382-1			
Analyte	Result	Qualifier	RL	Unit	Dil Fac	O Method	Prep Type
Copper	0.023		0.010	mg/L	1	200.7	Total/NA
Escherichia coli	3500	Н3	20	MPN/100mL	10	SM 9221F	Total/NA

Client Sample ID: 2a 2b	Lab Sample ID: 550-10382-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Copper	0.023		0.010	mg/L	1		200.7	Total/NA
Escherichia coli	1100	H3	20	MPN/100mL	10		SM 9221F	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Phoenix

#### Client Sample Results

Client: AMES Construction

Project/Site: SR 90 San Pedro River

TestAmerica Job ID: 550-10382-1

Client Sample ID: 1a 1b Lab Sample ID: 550-10382-1

Date Collected: 09/10/13 17:00 Date Received: 09/11/13 13:14

Matrix: Water

Method: 200.7 - Total Recoverable Metals by ICP Analyte Result Qualifier RL Unit Prepared Analyzed

Dil Fac Copper 0.023 0.010 mg/L 09/18/13 07:11 09/19/13 18:10

Method: SM 9221F - E.Coli (Multiple-Tube Fermentation; EC-MUG)

Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac Escherichia coli 3500 H3 20 MPN/100mL 09/11/13 17:05 10

Client Sample ID: 2a 2b Lab Sample ID: 550-10382-2

Date Collected: 09/10/13 17:00

Matrix: Water Date Received: 09/11/13 13:14

Method: 200.7 - Total Recoverable Metals by ICP

Analyte RL Unit Prepared Analyzed Dil Fac Copper 0.023 0.010 mg/L 09/18/13 07:11 09/19/13 18:08

Method: SM 9221F - E.Coli (Multiple-Tube Fermentation; EC-MUG)

Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac Escherichia coli 1100 H3 20 MPN/100mL 09/11/13 17:05 10

#### QC Sample Results

Client: AMES Construction

Project/Site: SR 90 San Pedro River

TestAmerica Job ID: 550-10382-1

Method: 200.7 - Total Recoverable Metals by I
---

Lab Sample ID: MB 550-15597/1-A

Matrix: Water

Analysis Batch: 15802

Client Sample ID: Method Blank Prep Type: Total/NA

Prep Batch: 15597

MB MB

Analyte Result Qualifier RL Unit Prepared Dil Fac Analyzed Copper ND 0.010 mg/L 09/18/13 07:11 09/19/13 16:42

Lab Sample ID: LCS 550-15597/2-A Client Sample ID: Lab Control Sample

Matrix: Water

Analysis Batch: 15802

Prep Type: Total/NA

Prep Batch: 15597

Spike LCS LCS Analyte Added Result Qualifier Unit D %Rec Limits Copper 1.00 0.977 mg/L 98 85 - 115

Lab Sample ID: LCSD 550-15597/3-A Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

Matrix: Water

Analysis Batch: 15802 Prep Batch: 15597 Spike LCSD LCSD %Rec.

Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit Copper 1.00 0.979 mg/L 98 85 - 115 20

Lab Sample ID: 550-10697-F-18-A MS

Matrix: Water

Analysis Batch: 15802

Client Sample ID: Matrix Spike Prep Type: Total/NA

Prep Batch: 15597

RPD

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Copper ND 1.00 0.973 mg/L 70 - 130

Lab Sample ID: 550-10697-F-18-B MSD

Matrix: Water

Analysis Batch: 15802

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 15597 RPD

Sample Sample Spike MSD MSD %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Limit Copper ND 1.00 0.969 mg/L 97 70 - 130 0 20

#### **QC Association Summary**

Client: AMES Construction

Project/Site: SR 90 San Pedro River

TestAmerica Job ID: 550-10382-1

#### Metals

Prep Batch: 15597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-10382-1	1a 1b	Total/NA	Water	200.7	
550-10382-2	2a 2b	Total/NA	Water	200.7	
550-10697-F-18-A MS	Matrix Spike	Total/NA	Water	200.7	
550-10697-F-18-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7	
LCS 550-15597/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-15597/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
MB 550-15597/1-A	Method Blank	Total/NA	Water	200.7	

#### Analysis Batch: 15802

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-10382-1	1a 1b	Total/NA	Water	200.7	15597
550-10382-2	2a 2b	Total/NA	Water	200.7	15597
550-10697-F-18-A MS	Matrix Spike	Total/NA	Water	200.7	15597
550-10697-F-18-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7	15597
LCS 550-15597/2-A	Lab Control Sample	Total/NA	Water	200.7	15597
LCSD 550-15597/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	15597
MB 550-15597/1-A	Method Blank	Total/NA	Water	200.7	15597

#### Biology

Analysis Batch: 15028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-10382-1	1a 1b	Total/NA	Water	SM 9221F	
550-10382-2	2a 2b	Total/NA	Water	SM 9221F	

#### Lab Chronicle

Client: AMES Construction

Project/Site: SR 90 San Pedro River

TestAmerica Job ID: 550-10382-1

Lab Sample ID: 550-10382-1

Matrix: Water

Client Sample ID: 1a 1b

Date Collected: 09/10/13 17:00

Date Received: 09/11/13 13:14

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	200.7	* · · · · · · · · · · · · · · · · · · ·		15597	09/18/13 07:11	JRC	TAL PHX
Total/NA	Analysis	200.7		1	15802	09/19/13 18:10	HLK	TAL PHX
Total/NA	Analysis	SM 9221F		10	15028		RLH	TAL PHX
					(Start)	09/11/13 17:05		
					(End)	09/13/13 15:00		

Client Sample ID: 2a 2b

Date Collected: 09/10/13 17:00

Date Received: 09/11/13 13:14

Lab Sample ID: 550-10382-2

Matrix: Water

Batch	Batch		Dilution	Batch	Prepared		
Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Prep	200.7		2	15597	09/18/13 07:11	JRC	TAL PHX
Analysis	200.7		1	15802	09/19/13 18:08	HLK	TAL PHX
Analysis	SM 9221F		10	15028		RLH	TAL PHX
				(Start)	09/11/13 17:05		
				(End)	09/13/13 15:00		
	Prep Analysis	Type         Method           Prep         200.7           Analysis         200.7	Type         Method         Run           Prep         200.7           Analysis         200.7	Type         Method         Run         Factor           Prep         200.7         1           Analysis         200.7         1	Type         Method         Run         Factor         Number           Prep         200.7         15597           Analysis         200.7         1         15802           Analysis         SM 9221F         10         15028           (Start)         (Start)         (Start)	Type         Method         Run         Factor         Number         or Analyzed           Prep         200.7         15597         09/18/13 07:11           Analysis         200.7         1 15802         09/19/13 18:08	Type         Method         Run         Factor         Number         or Analyzed         Analyst           Prep         200.7         15597         09/18/13 07:11         JRC           Analysis         200.7         1         15802         09/19/13 18:08         HLK           Analysis         SM 9221F         10         15028         RLH           (Start)         09/11/13 17:05         RLH

#### Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

#### **Certification Summary**

Client: AMES Construction

Project/Site: SR 90 San Pedro River

TestAmerica Job ID: 550-10382-1

#### Laboratory: TestAmerica Phoenix

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	<b>Expiration Date</b>
AIHA	IHLAP		154268	07-01-15
Arizona	State Program	9	AZ0728	06-09-14
California	NELAP	9	01109CA	11-30-13
Nevada	State Program	9	AZ01030	07-31-14
New York	NELAP	2	11898	04-01-14
Oregon	NELAP	10	AZ100001	03-09-14
USDA	Federal		P330-09-00024	06-09-15

#### **Method Summary**

Client: AMES Construction

Project/Site: SR 90 San Pedro River

TestAmerica Job ID: 550-10382-1

Method	Method Description	Protocol	Laboratory
200.7	Total Recoverable Metals by ICP	EPA	TAL PHX
SM 9221F	E.Coli (Multiple-Tube Fermentation; EC-MUG)	SM	TAL PHX

#### Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

#### Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix

TAL-0013-550 (10/10)

THE LEADER IN ENVIRONMENTAL TESTING

# SSU- 11382 CHAIN OF CUSTODY FORM

[ ] Phoenix - 4625 E. Cotton Center Blvd., Suite 189, Phoenix, AZ 85040 (602) 437-3340 FAX (f [ ] Tucson - 1870 W. Prince Road, Suite 59, Tucson, AZ 85705 (520) 807-3801 FAX (520) 807-3 [ ] Las Vegas - 6000 S Eastern Ave., Suite 5E, Las Vegas, NV 89119 (702) 429-1264

550-10382 Chain of Custody

9/22/2013

Client Name / Address:		Project/PO Number:	Number:						
Ames Construction		0					Analysis Hequired	equired	
8355 E Hartford A7		N 72 22 22 22 22 22 22 22 22 22 22 22 22	SAN PORIORINA	たじゅう		<u>ں</u>			
Project Manager:		Phone Num	iber:						
Sampler: John Baker		Fax Number:	602 370-638 7 Fax Number:	87	Coli	o Ive a			
Sample Description	Sample Container Matrix Type	Cont.	Sampling Sampling Date Time	Preservatives	E,	V,55			,
/a /b		-	10 17:00	16.00	× +				7. Open
24 26		-		-	x x				
4	1001	-			1	1			
24	10001	1			k		,		
					-				
Te de de la constante de la co	Date / Time:	me:	Received By:	By:		Date/Time:	Tu	d Time:	(Check)
Relinquished By:	Date/Time:	me:	Received By:	Ву:		Date/Time:	24	24 hours	5 days
Relinquished By:	Date / Time:	me:	Received in Late	in Lag By:		Date / Time:	48 S <sub>3</sub>	48 hours	normal
			H	W/	)	CI Jul 13	(3114 inta	intact	on ice
Note: By relinquishing samples to TestAmerica, client agrees to nay for the services requested on this object.	merica client a	arees to nay to	ir the conices	de potoctor on the	1 2 2 2 2 2 2				

z [ Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

#### Login Sample Receipt Checklist

Client: AMES Construction

Job Number: 550-10382-1

Login Number: 10382 List Number: 1

List Source: TestAmerica Phoenix

Creator: Gravlin, Andrea

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

# Stormwater Construction General Permit AZG2013-001 Discharge Monitoring Report (DMR) Form

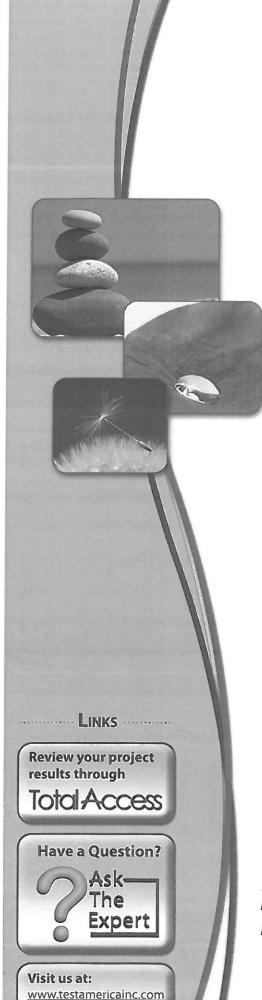
<b>ADEO</b>	N. W.
Arizona Department of Environmental Qual	ity

i.	Authorization # AZCON- 72275 P	roject/Site Name: SR 90 San Pedro Bridge	Arizona Depa Stormwater &
	Monitoring Period (yr/mo/day): 2013	111 1 to 2014 15 131	1110 West War Phoenix, Ariz

artment of Environmental Quality General Permits Unit, Mailstop 5415A-1 ashington Street

II. Person maki Name: John E	ng the Inspection/Sampling Saker			-		٧	. Polluta	ants / Par	ameters	Monitored			
Title: ECC/CP	PESC			A. Vis	ual Asse	ssment:				B. Ar	nalytica	l Monitoring	:
Address: Scott	tsdale, AZ	Sheen	Color	Foam	Solids (Susp.	Odor	Other	Other	TSS (Units)	Turbidity	рН	Other E. coli	Other
Phone Number: _					or Settled)	(specify)	(specify)	(specify)	(Units)	(Units = NTU)		(specify)	Cu (specify)
	tion IV. Sample Date/Time								Q.				
MP #1	3-2-14/10:30 AM	None	Clear	None	None	None				37		ND	ND
MP #2	3-2-14/10:45 AM	None	Clear	None	None	None				45		ND	ND
					,								
Z ATTAQUES	NTO VIVI NICE IT (STORE)												
II. CERTIFICAT certify under pen ualified personnel esponsible for gath	NTS: Y X N IF "YES," LISTION: alty of law that this document as properly gather and evaluate the pering the information, I believe the gather possibility of fine and impring the possibility of fine and impring the possibility of fine and impring the possibility of the possibility of the and impring the possibility of the and impring the possibility of the and impring the possibility of the possibility of the and impring the possibility of the and impring the possibility of the and impring the possibility of the and impring the and impri	nd all attac informati	chments on subm	nitted is t	rue accu	/ Indilini	ומת מתז זר	read or no	TECONO 14/	an manaa	thin	-4 tt	
rinted Name: _Joh	n J Baker					/CPESC				Phone: 60	2 370-6	387	
ignature:/							3-17	14		* 11 P 1 P 1 P 1 P 1 P 1 P 1 P 1 P 1 P 1		-	

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# <u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

## **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc. TestAmerica Phoenix 4625 East Cotton Ctr Blvd Suite 189 Phoenix, AZ 85040

Tel: (602)437-3340

TestAmerica Job ID: 550-20384-1 Client Project/Site: San Pedro

For:

AMES Construction 8333 E Hartford Road Scottsdale, Arizona 85255

Attn: John Baker



Authorized for release by: 3/10/2014 12:51:47 PM

Kylie Emily, Client Relations Manager (602)659-7622 kylie.emily@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# **Table of Contents**

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Receipt Checklists	14

#### **Definitions/Glossary**

Client: AMES Construction Project/Site: San Pedro

TestAmerica Job ID: 550-20384-1

#### Qualifiers

#### **Biology**

Qualifier **Qualifier Description** 

НЗ Sample was received and/ or analysis requested past holding time.

#### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
--------------	---

n Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery CNF Contains no Free Liquid

DER Duplicate error ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision level concentration MDA Minimum detectable activity EDL **Estimated Detection Limit** 

MDC Minimum detectable concentration

MDL Method Detection Limit ML Minimum Level (Dioxin) NC Not Calculated

ND Not detected at the reporting limit (or MDL or EDL if shown)

PQL Practical Quantitation Limit

QC Quality Control RER Relative error ratio

RL Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points RPD

TEF Toxicity Equivalent Factor (Dioxin) TEQ Toxicity Equivalent Quotient (Dioxin)

#### **Case Narrative**

Client: AMES Construction Project/Site: San Pedro TestAmerica Job ID: 550-20384-1

Job ID: 550-20384-1

Laboratory: TestAmerica Phoenix

**Narrative** 

#### CASE NARRATIVE

**Client: AMES Construction** 

Project: San Pedro

Report Number: 550-20384-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica Phoenix attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

#### RECEIPT

The samples were received on 03/03/2014; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.2 C.

#### **METALS**

Method(s) Filtration: The following samples requested dissolved metals and were not filtered in the field: 1a (550-20384-1), 2a (550-20384-3). These samples were filtered and preserved upon receipt to the laboratory.

#### **Sample Summary**

Client: AMES Construction Project/Site: San Pedro

TestAmerica Job ID: 550-20384-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-20384-1	1a	Water		3/03/14 08:06
550-20384-2	1b	Water		3/03/14 08:06
550-20384-3	2a	18		
		Water		/03/14 08:06
550-20384-4	2b	Water	03/02/14 10:45 03	/03/14 08:06

#### **Detection Summary**

Client: AMES Construction Project/Site: San Pedro

TestAmerica Job ID: 550-20384-1

Client Sample ID: 1a

Lab Sample ID: 550-20384-1

No Detections.

Client Sample ID: 1b

Lab Sample ID: 550-20384-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Coliform, Total	Present	H3		No Unit	1	_	SM 9223B	Total/NA
Escherichia coli	Present	H3		No Unit	1		SM 9223B	Total/NA

Client Sample ID: 2a Lab Sample ID: 550-20384-3

No Detections.

Client Sample ID: 2b Lab Sample ID: 550-20384-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Coliform, Total	Present	H3		No Unit	1	_	SM 9223B	Total/NA
Escherichia coli	Present	НЗ		No Unit	1		SM 9223B	Total/NA

#### Client Sample Results

Client: AMES Construction Project/Site: San Pedro

TestAmerica Job ID: 550-20384-1

Client Sample ID: 1a

Date Collected: 03/02/14 10:30 Date Received: 03/03/14 08:06

Lab Sample ID: 550-20384-1

Matrix: Water

Method: 200.7 - Dissolved Metals by ICP - Dissolved

Analyte Result Qualifier RL Unit Dil Fac D Prepared Analyzed Copper ND 0.010 mg/L 03/04/14 08:10 03/05/14 16:06

Client Sample ID: 1b

Date Collected: 03/02/14 10:30

Date Received: 03/03/14 08:06

Lab Sample ID: 550-20384-2

Matrix: Water

Method: SM 9223B - Coliforms, Total, and E.Coli (Presence/Absence) Analyte Result Qualifier

Unit Prepared Analyzed Dil Fac Coliform, Total Present H3 No Unit 03/03/14 18:00 Escherichia coli Present H3 No Unit 03/03/14 18:00

Client Sample ID: 2a Lab Sample ID: 550-20384-3

Date Collected: 03/02/14 10:45

Date Received: 03/03/14 08:06

Matrix: Water

Method: 200.7 - Dissolved Metals by ICP - Dissolved Analyte Result Qualifier

RL Unit Prepared Analyzed Dil Fac Copper ND 0.010 mg/L 03/04/14 08:10 03/05/14 16:09

Client Sample ID: 2b Lab Sample ID: 550-20384-4

Date Collected: 03/02/14 10:45

Date Received: 03/03/14 08:06

Matrix: Water

Method: SM 9223B - Coliforms, Total, and E.Coli (Presence/Absence)

Analyte Result Qualifier Unit D Prepared Analyzed Dil Fac Coliform, Total Present H3 No Unit 03/03/14 18:00 Escherichia coli Present H3

No Unit 03/03/14 18:00 Client: AMES Construction Project/Site: San Pedro

TestAmerica Job ID: 550-20384-1

Lab Sample ID: MB 550-29109/1-A											Client Sa	ample ID: I	Viethod	Blan
Matrix: Water												Prep T	ype: To	tal/N/
Analysis Batch: 29350												Prep	Batch:	2910
Austral		МВ					500 900							
Analyte Copper		Result	Qualifier		0.010		Unit mg/L		D .		repared 04/14 08:10	03/05/14 1		Dil Fa
-		115			0.010		mg/L			03/0	14/14 00.10	03/03/14	15.51	
Lab Sample ID: LCS 550-29109/3-A Matrix: Water	A								C	ient	Sample	ID: Lab Co Prep Ty		
Analysis Batch: 29350												7	Batch:	
				Spike		LCS	LCS					%Rec.		
Analyte				Added		Result	Qualifier	Unit		D	%Rec	Limits		
Copper				1.00		1.00		mg/L			100	85 - 115		
Lab Sample ID: LCSD 550-29109/4-	-A							C	ient	Sam	ple ID: La	ab Control		
Matrix: Water												Prep Ty		
Analysis Batch: 29350				Spike		LCSD	LCSD					Prep %Rec.	Batch:	
Analyte				Added			Qualifier	Unit		D	%Rec	Limits	RPD	RPI Limi
Copper				1.00		0.997	- Countries	mg/L		Ľ	100	85 <sub>-</sub> 115	1	2
													82.8	3.70
Lab Sample ID: MB 550-28979/1-B											Client Sa	mple ID: N	/lethod	Blani
Matrix: Water												Prep Typ		
Analysis Batch: 29350		мв	MD									Prep	Batch:	29109
Analyte	R		Qualifier		RL		Unit		D	P	repared	Analyze	·d	Dil Fa
Copper		ND		<del>-</del> -	0.010		mg/L				4/14 08:10	03/05/14 1		- Jan Tuk
Lab Sample ID: 550-20362-A-2-B M	S										Client S	ample ID:	Matrix	Spike
Matrix: Water												Prep Typ		
Analysis Batch: 29350	Cample	Como	la.	Cuiles		мо						AND STATE OF THE PARTY OF THE P	Batch:	29109
Analyte	Sample Result	17.		Spike Added		MS	พอ Qualifier	Unit		_	0/ D	%Rec.		
Copper	ND	Quali		1.00		1.06	Qualifier	mg/L		<u>D</u>	%Rec 106	70 - 130		
						1100		mg/L			100	70 - 130		
									Clien	t Sa	mple ID:	Matrix Spi	ke Dup	licate
	SD													
Lab Sample ID: 550-20362-A-2-C M	SD											Prep Typ	v. Dioc	
Lab Sample ID: 550-20362-A-2-C M Matrix: Water													Batch:	29109
Lab Sample ID: 550-20362-A-2-C M Matrix: Water Analysis Batch: 29350	Sample			Spike		MSD	MSD							29109 RPD
Lab Sample ID: 550-20362-A-2-C M Matrix: Water Analysis Batch: 29350	Sample Result			Added		Result	MSD Qualifier	Unit		D	%Rec	Prep I		
Lab Sample ID: 550-20362-A-2-C M Matrix: Water Analysis Batch: 29350	Sample									<u>D</u> .	%Rec	Prep I %Rec.	Batch:	RPD Limit
	Sample Result ND	Qualif	ier	Added 1.00	nce/ <i>P</i>	Result 1.05	Qualifier	Unit		<u>D</u> .		Prep I %Rec. Limits	Batch:	RPD Limit
Lab Sample ID: 550-20362-A-2-C M: Matrix: Water Analysis Batch: 29350  Analyte Copper  lethod: SM 9223B - Coliforms  Lab Sample ID: MB 550-29079/1	Sample Result ND	Qualif	ier	Added 1.00	nce/A	Result 1.05	Qualifier	Unit			105	Prep I %Rec. Limits 70 - 130	RPD 2	RPE Limit 20
Lab Sample ID: 550-20362-A-2-C M: Matrix: Water Analysis Batch: 29350  Analyte Copper  Lethod: SM 9223B - Coliforms  Lab Sample ID: MB 550-29079/1  Matrix: Water	Sample Result ND	Qualif	ier	Added 1.00	nce/A	Result 1.05	Qualifier	Unit			105	Prep I %Rec. Limits 70 - 130	RPD 2	Limi 20
Lab Sample ID: 550-20362-A-2-C M: Matrix: Water Analysis Batch: 29350  Analyte Copper  Lethod: SM 9223B - Coliforms  Lab Sample ID: MB 550-29079/1  Matrix: Water	Sample Result ND	Qualif	E.Coli	Added 1.00	nce/A	Result 1.05	Qualifier	Unit			105	Prep I %Rec. Limits 70 - 130	RPD 2	RPD Limit 20
Lab Sample ID: 550-20362-A-2-C M Matrix: Water Analysis Batch: 29350 Analyte Copper	Sample Result ND	Qualif	E.Coli	Added 1.00	nce/A	Result 1.05	Qualifier	Unit	D		105 Client Sai	Prep I %Rec. Limits 70 - 130 mple ID: M Prep Ty	RPD 2	RPD Limit 20 Blank al/NA
Lab Sample ID: 550-20362-A-2-C MS Matrix: Water Analysis Batch: 29350  Analyte Copper  ethod: SM 9223B - Coliforms  Lab Sample ID: MB 550-29079/1 Matrix: Water Analysis Batch: 29079	Sample Result ND 6, Total	Qualif	ier   E.Coli	Added 1.00		Result 1.05	Qualifier Ce)	Unit mg/L			105	Prep I %Rec. Limits 70 - 130	RPD 2	RPD Limit 20

TestAmerica Phoenix

#### **QC Association Summary**

Client: AMES Construction Project/Site: San Pedro

TestAmerica Job ID: 550-20384-1

N	VI	e	ta	Į	S

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-20362-A-2-B MS	Matrix Spike	Dissolved	Water	Filtration	
550-20362-A-2-C MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	
550-20384-1	1a	Dissolved	Water	Filtration	
550-20384-3	2a	Dissolved	Water	Filtration	
MB 550-28979/1-B	Method Blank	Dissolved	Water	Filtration	

#### Prep Batch: 29109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-20362-A-2-B MS	Matrix Spike	Dissolved	Water	200.7	28979
550-20362-A-2-C MSD	Matrix Spike Duplicate	Dissolved	Water	200.7	28979
550-20384-1	1a	Dissolved	Water	200.7	28979
550-20384-3	2a	Dissolved	Water	200.7	28979
LCS 550-29109/3-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-29109/4-A	Lab Control Sample Dup	Total/NA	Water	200.7	
MB 550-28979/1-B	Method Blank	Dissolved	Water	200.7	28979
MB 550-29109/1-A	Method Blank	Total/NA	Water	200.7	

#### Analysis Batch: 29350

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-20362-A-2-B MS	Matrix Spike	Dissolved	Water	200.7	29109
550-20362-A-2-C MSD	Matrix Spike Duplicate	Dissolved	Water	200.7	29109
550-20384-1	1a	Dissolved	Water	200.7	29109
550-20384-3	2a	Dissolved	Water	200.7	29109
LCS 550-29109/3-A	Lab Control Sample	Total/NA	Water	200.7	29109
LCSD 550-29109/4-A	Lab Control Sample Dup	Total/NA	Water	200.7	29109
MB 550-28979/1-B	Method Blank	Dissolved	Water	200.7	29109
MB 550-29109/1-A	Method Blank	Total/NA	Water	200.7	29109

#### Biology

#### Analysis Batch: 29079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-20384-2	1b	Total/NA	Water	SM 9223B	<u> </u>
550-20384-4	2b	Total/NA	Water	SM 9223B	
MB 550-29079/1	Method Blank	Total/NA	Water	SM 9223B	

### Lab Chronicle

Client: AMES Construction Project/Site: San Pedro

TestAmerica Job ID: 550-20384-1

Client Sample ID: 1a

Date Collected: 03/02/14 10:30 Date Received: 03/03/14 08:06 Lab Sample ID: 550-20384-1

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			28979	03/03/14 08:45	JRC	TAL PHX
Dissolved	Prep	200.7			29109	03/04/14 08:10	JRC	TAL PHX
Dissolved	Analysis	200.7		1	29350	03/05/14 16:06	HLK	TAL PHX

Client Sample ID: 1b

Date Collected: 03/02/14 10:30 Date Received: 03/03/14 08:06 Lab Sample ID: 550-20384-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 9223B		1	29079		BND	TAL PHX
					(Start)	03/03/14 18:00		
					(End)	03/04/14 12:10		

Client Sample ID: 2a

Date Collected: 03/02/14 10:45

Date Received: 03/03/14 08:06

Lab Sample ID: 550-20384-3

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			28979	03/03/14 08:45	JRC	TAL PHX
Dissolved	Prep	200.7			29109	03/04/14 08:10	JRC	TAL PHX
Dissolved	Analysis	200.7		1	29350	03/05/14 16:09	HLK	TAL PHX

Client Sample ID: 2b

Date Collected: 03/02/14 10:45

Date Received: 03/03/14 08:06

Lab Sample ID: 550-20384-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 9223B		1	29079		BND	TAL PHX
					(Start)	03/03/14 18:00		
					(End)	03/04/14 12:10		

### Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

### **Certification Summary**

Client: AMES Construction Project/Site: San Pedro

TestAmerica Job ID: 550-20384-1

Laboratory: TestAmerica Phoenix

The certifications listed below are applicable to this report.

AuthorityProgramEPA RegionCertification IDExpiration DateArizonaState Program9AZ072806-09-14

# **Method Summary**

Client: AMES Construction Project/Site: San Pedro

TestAmerica Job ID: 550-20384-1

Wethod	Method Description	Protocol	Laboratory
200.7	Dissolved Metals by ICP	EPA	TAL PHX
SM 9223B	Coliforms, Total, and E.Coli (Presence/Absence)	SM	TAL PHX

### Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

### Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix

	Relindusted by:	Reimoushed by:	Kelindusyeady:	Custody Seals Intact: Yes No	Special Instructions/QC Requirements & Comments:	Non-Hazard Flammable Skin Irritant	rd Identification: as from a listed EPA Hazardous stion if the lab is to dispose of th		M 3/3/14	VI			25	25	15	/a	Sample Identification	PO#	Project Name: San Ped (7)	Fax:	INZID: SCOTTS A	353 E Hackback	Company Name:	Client Control	Phoenix, 02 85040 Fax: 050-	Suite 189
	Company:		Dimes Construction	Custody Seal No.:		☐ Polson B ☐ Unknown	ase List any EPA Waste Codes fo						1 10:45	10,45	1 10:50	2.5 /0%	Sample Sample Co-Comp.  Date Time G-Grab)	. 20	1 week	2 weeks	CALENDAR DAYS W	Añalysis Turna	Tel/Fax: / AZ 37/	ءَ ا	Mu-Jusey	
	Date/Time: Rec	Date/Time:	3-3-14 8:06														Watrix Cont. 9. Filtered S.	ample	( <u>Y</u> )	1) 7/ N	AYS		12KG	L DW L NPDES		
181	Received in Laboratory by:	Received by:	Received by:	Cooler Temp. ("C): Obs'd:		Return to Clent Disposa by Lab	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7					X	*.	<b>X</b>	× .	550.2	oli			<u> </u>	-		Others		Actory I tooola
7	Company:	Company:	Company:	Con'd:		by Lab Archive for	essed if samples are retain										50-20384 Chain of Custody						Carner:		019314	
માન જુલ	Date(S) ne:	Date/Time:	Date/Time:	Therm ID No.:		Months	ed longer than 1 month)						٠- ٢	·-	خر	1	Sample Specific Notes:			<b>1</b>	nly:	יו יו	of COCs	TAL-8210 (07)	THE LEADER IN ENVIRONMENTAL TESTIN	

### Login Sample Receipt Checklist

Client: AMES Construction

Job Number: 550-20384-1

Login Number: 20384

List Number: 1

Creator: Shoemaker, Cory M

List Source: TestAmerica Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

### AZCON 57907 DMRS

# Stormwater Construction General Permit AZG2013-001 Discharge Monitoring Report (DMR) Form

Project/Site Name: SR 260 Doubfful Canyon Authorization # AZCON- 57907

Monitoring Period (yr/mo/day): 2013 / 6 / 1 to 2013 / 10 / 31

Phoenix, Arizona 85007

Stormwater & General Permits Unit, Mailstop 5415A-1 Arizona Department of Environmental Quality 1110 West Washington Street

of Environmental Quality

Use this form for reporting analytical and visual monitoring anytime a pollutant is known or suspected to discharge from the construction site (Permit Parts 4, 7 & 8).

II. Person making the Name: John Baker	<ol> <li>Person making the Inspection/Sampling Name: John Baker CPESC, ECC</li> </ol>					γ.	. Polluta	nts / Par	ameters	V. Pollutants / Parameters Monitored			
Reg	ronmental Manager			A. Visu	A. Visual Assessment:	sment:		12.		B. An	ıalytica	B. Analytical Monitoring:	
Address: 8333 E Hartford Dr Scottsdale, AZ 85255	rtford Dr 255	Sheen	Color	Foam	Solids	Odör	Other	Other	TSS	Turbidity	퓜	Other	Other
Phone Number: 602 3	602 370-6387				(susp. or Settled)	(specify)	(specify)	(specify)	(Units)	(Units = NTU)		(specify)	(specify)
III. Monitoring Location	IV. Sample Date/Time												
MP #1		No	Rain E	vents	Occur	red Du	ring th	e Mon	ths of	June, Jı	ıly, A	No Rain Events Occurred During the Months of June, July, August, September,	ptember,
MP #2		and	Octol	and October 2013.	3.								
MP#3		Do	to no F	3ain E	vents	No Dis	charge	s Occ	urred c	luring th	lat sa	Do to no Rain Events No Discharges Occurred during that same Time Period.	Period.
MP # 4													
MP #5													
MP #6													
MP #7/MP #8				,									

ATTACHMENTS: Y □ N X IF "YES,"LIST: **CERTIFICATION:** 

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

Regional Environmental Manager
EE:
-
l, ECC
PESC, CPSWQ, CESSWI, E
CPESC, (
<u>\</u>
Ba
윗
Printed Name:

Signature:

Date: 11/1/13

\_Phone: 602 370-6387

Page 1 of 1

# Stormwater Construction General Permit AZG2013-001 Discharge Monitoring Report (DMR) Form

Project/Site Name: SR 260 Doubfful Canyon Authorization # AZCON- 57907

Stormwater & General Permits Unit, Mailstop 5415A-1 Arizona Department of Environmental Quality 1110 West Washington Street

of Environmental Quality

Arizona Department

Phoenix, Arizona 85007

Use this form for reporting analytical and visual monitoring anytime a pollutant is known or suspected to discharge from the construction site (Permit Parts 4, 7 & 8).

2014, 5/31

Monitoring Period (yr/mo/day): 2013 / 11 / 1 to\_

II. Person making the Inspection/Sampling Name. John Baker CPESC, ECC	Inspection/Sampling					٧.	Polluta	nts / Par	ameters	V. Pollutants / Parameters Monitored			
Title: Regional Environmental Manager	onmental Manager	:		A. Visu	A. Visual Assessment:	sment:				B. Ar	nalytica	B. Analytical Monitoring:	
Address: 8333 E Hartford Dr	ford Dr												
Scottsdale, AZ 85255	:55	Sheen	rolo Color	Foam	Solids (Susp.	Odor	Other	Offiner	TSS (Units)	Turbidity (Units =	표	Other	Other
Phone Number: 602 37	602 370-6387				or Settled)	(specify)	(specify)	(specify)		NTU)		(specify)	(specify)
III. Monitoring Location	IV. Sample Date/Time				ŀ						ļ		
MP #1		No	Rain E	vents	Occur	ed Du	ring th	e Mon	th of N	No Rain Events Occurred During the Month of November 2013.	ar 201	<sub>ئ</sub>	
MP #2		Do	to no	Rain E	vents N	lo Disc	harge	s Occ	urred o	luring ti	nat sa	o to no Rain Events No Discharges Occurred during that same Time Period	Period.
MP#3		Pro	ject re	ach fin	ıal stab	ilizatik	ın and	a NO	was	Project reach final stabilization and a NOT was finalized 11/25/13	11/2	5/13	
MP # 4													
MP #5													
MP #6													
MP #7/MP #8													

ATTACHMENTS: Y □ N 🕅 IF "YES,"LIST: CERTIFICATION:

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

anager Phone: 602 370-6387
Phone:
egional Environmental M
Title: Re
John J Baker, CPESC, CPSWQ, CESSWI, ECC
inted Name

Signature: June 2013

Date: 11/26/13

Page 1 of 1

### **DURANGO SIGN FACTORY DISCHARGE MONITORING & LAB REPORTS**



# AZS000018 DISCHARGE MONITORING REPORT (DMR)

(Complete a separate form for each monitoring point)

Facility Name: Durango Sign Factory				Monitoring Po	` ,		nor of Sid	gn Factory building	(202,000 & 4.6)
Facility Address:				Year:	iujaceni io s	outheast con	ilei oi siş	gn ractory bunding	(202,000  sq.  11 = 4.6  ac)
2104 South 22 <sup>nd</sup> Avenue, 1	Phoenix, Ariz	ona 85009		2013/2014 R	eporting Ye	ear – Summe	r Storm l	Event	
<b>Monitoring Personnel Name(s</b>	s):			Date/Time Col					
Kirk Creswick, EEC				September 9	, 2013 at 2:	*		imple collected from inst	alled Nalgene bottle
<b>Time Rainfall Began:</b> Approx. 10:00 pm on 9/8/13	<b>Duration of R</b> Approximately					<b>Rainfall Amo</b> 0.47 (0.039	•	es):	
Runoff Source:  ☐ Rainfall ☐ Snowmelt	<b>Time Elapsed</b> 13 days	Since Last 0.1	inch Rainfall	Event:		Qualifying R		ent: YES NO	
Estimated Total Volume of Di 202,000 ft <sup>2</sup> X 0.039 ft <sup>2</sup> of rain	ischarge (Includ = 7,878 ft³ X 95	le units; gal, ft <sup>2</sup> % runoff = 7,4	<sup>3</sup> , etc.):  84.10 <u>ft<sup>3</sup></u> ( 7.4	8) = <u>55,981 gallo</u>	ons	NO DISCHA	RGE 🗌		
Parameter		antity or Loadi			or Concentr	1	No Ex	Frequency of Analysis	Sample Type
	Average	Maximum	Units	Minimum	Average	Units		Tildiy 515	
Total Aluminum		0.13	Lbs	0.27		mg/L		Once each season	Grab
Total Iron		0.13	Lbs	0.26		mg/L		Once each season	Grab
Total Zinc		0.14	Lbs	0.29		mg/L		Once each season	Grab
Total Nitrate + Nitrite		0.34	Lbs	0.69		mg/L		Once each season	Grab



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

John Burton Engineering & Env. Consultants, INC. -AZ 7878 N. 16th Street, Suite 140 Phoenix, AZ 85020

### Report Summary

Thursday September 19, 2013

Report Number: L656417
Samples Received: 09/10/13
Client Project:

Description: Durango Sign Factory

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Daphne Richards , ESC Representative

### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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John Burton

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

September 19, 2013

Site ID :

Project # :

Engineering & Env. Consultants, INC 7878 N. 16th Street, Suite 140

Phoenix, AZ 85020

ESC Sample # : L656417-01

Date Received : September 10, 2013 : Durango Sign Factory Description

: DUR90913 Sample ID

Collected By : Kirk Creswick Collection Date : 09/09/13 14:16

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Nitrate-Nitrite	0.69	0.10	mg/l	353.2	09/17/13	1
Suspended Solids	5.9	2.5	mg/l	2540 D-2011	09/12/13	1
Aluminum Iron Zinc	0.27 0.26 0.29	0.10 0.10 0.030	mg/l mg/l mg/l	200.7 200.7 200.7	09/18/13 09/18/13 09/18/13	1 1 1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 09/19/13 08:24 Printed: 09/19/13 08:24

# Summary of Remarks For Samples Printed 09/19/13 at 08:24:18

TSR Signing Reports: 288 R5 - Desired TAT

Baker Exxon Proj 105022.01 Ken & Mel's Proj 105022.02 MCAA Proj 305007.05 -ALL require TO-15+GRO on ALL AIR SAMPLES ENGENVPAZ-122012S NO CHARGE TBs

Sample: L656417-01 Account: ENGENVPAZ Received: 09/10/13 09:00 Due Date: 09/17/13 00:00 RPT Date: 09/19/13 08:24



Engineering & Env. Consultants, INC. -AZ John Burton 7878 N. 16th Street, Suite 140

Phoenix, AZ 85020

12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

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Quality Assurance Report Level II

L656417

September 19, 2013

		Ta	aboratory 1	Dlank						-
Analyte	Result		Inits	% Rec		Limit		Batch	Date Analy	yzed
Suspended Solids	< 2.5	n	ng/l					WG681176	09/12/13 1	14:5
Aluminum	< .1		ng/l						09/16/13 1	
Iron Zinc	< .1		ng/l ng/l						09/16/13 1 09/16/13 1	
			9/ =							
Nitrate-Nitrite	< .1	n	ng/l					WG682162	09/17/13 1	16:40
			Duplica							
Analyte	Units	Result	Dupl	icate	RPD	Limit		Ref Sam	np Bato	ch
Suspended Solids	mg/l	64.4	61.2		5.10*	5		L656358	-02 WG68	81176
Suspended Solids	mg/l	2050	2100		2.12	5		L656414	-01 WG68	8117
Aluminum	mg/l	0.900	0.91	2	0.669	20		L656411	01 WG68	8165
Iron	mg/l	0.0	-0.0		30.1*	20		L656411		81652
Zinc	mg/l	0.0	0.00	489	27.2*	20		L656411	01 WG68	81652
Nitrate-Nitrite	mg/l	8.00	8.00		0.0	20		L656393		82162
Nitrate-Nitrite	mg/l	0.150	0.14	0	6.90	20		L655843	-01 WG68	82162
		Labora	atory Cont	rol Samp	le					
Analyte	Units	Known	n Val	Res	ult	% Rec		Limit	Bato	<u>c</u> h
Suspended Solids	mg/l	773		852.		110.		85-115	WG68	81176
Aluminum	mg/l	1		1.03		103.		85-115		81652
Iron	mg/l	1		1.04		104.		85-115		81652
Zinc	mg/l	1		1.01		101.		85-115	WG68	8165
Nitrate-Nitrite	mg/l	5		4.88		97.6		90-110	WG68	82162
		Laboratory	Control S	ample Du	plicate					
Analyte		Result	Ref	%Rec		Limit	RPD	Li	mit Batc	<u>c</u> h
Suspended Solids	mg/l	880.	852.	114.		85-115	3.23	5	WG68	81176
Nitrate-Nitrite	mg/l	4.90	4.88	98.0		90-110	0.409	20	WG68	82162
			Matrix Sp.	ike						
Analyte	Units	MS Res	Ref Res		% Rec	Limit		Ref Samp	Bato	ch
Aluminum	mg/l	1.96	0.912	1	100.	75-125	5	L656411-	01 WG68	8165
Iron	mg/l	1.03	-0.0121	1	100.	75-125		L656411-		81652
Zinc	mg/l	1.01	0.00489	1	100.	75-125	5	L656411-	01 WG68	81652

<sup>\*</sup> Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



Engineering & Env. Consultants, INC. -AZ John Burton 7878 N. 16th Street, Suite 140

Phoenix, AZ 85020

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Quality Assurance Report Level II

L656417

September 19, 2013

			Matrix Spik	ce Duplicate					
Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limi	t Ref Samp	Batch
Aluminum Iron	mg/l mg/l	1.95	1.96	104. 105.	75-125 75-125	0.567	20 20	L656411-01 L656411-01	WG681652 WG681652
Zinc	mg/1	1.02	1.01	101.	75-125	0.123	20	L656411-01	WG681652
Nitrate-Nitrite	mg/l	18.7	21.0	94.0	90-110	11.6	20	L656209-02	WG682162

Batch number /Run number / Sample number cross reference

WG681176: R2814260: L656417-01 WG681652: R2817844: L656417-01 WG682162: R2818522: L656417-01

 $<sup>^{\</sup>star}$  \* Calculations are performed prior to rounding of reported values.

<sup>\*</sup> Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Phoenix, AZ 85020

Quality Assurance Report Level II

L656417

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

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Est. 1970

September 19, 2013

			Billing Information:				Analysis / Container / Preservative							Chain of Custody Page of				
ompany Name/Address:		#	Billing Infor	nation.													*F	SC
740 B 16th St Suite 135 Phoenix AZ 85020							9		d								L-A-B S-C-	I-E-N-C-E-S
eport to:			Email To:	eecphx.com			> 40	No Pres	33 <								12065 Lebanon Rd Mount Juliet, TN 3712 Phone: 615-758-5858 Phone: 800-767-5859	
ohn Burton roject Durango Sign Fact	tory		partone	City/State Collected:			E/ H2S(	IDPE/ I	HDPE/. HNO3								Fax: 615-758-5859	
	Client Project #			Lab Project #			HDPE	IS/ 1L H	L HDPI								J057	
Collected by (print):	Site/Facility ID	# ab MUST Be	Notified)	P.O. # Date R	esults Needed		Nitrate + Nitrite/ 250mL HDPE/ H2SO4	Total Suspended Solids/ 1L HDPE/ No Pres	Zn/ 500mL							No.	Acctnum: ENG Template: Prelogin:	
Immediately Packed on Ice N Y	Next Di	ay	50%	4 . OBM	_NoYes NoYes	No. of	ate + Nit	al Suspe	Total Al, Fe,								TSR: Daph Cooler: Shipped Via:	ne Richards
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Cntrs	喜	Tot	100000000000000000000000000000000000000								Rem./Contaminant	100
DURGOG13		SW		9/9/13	1416	3	×	X	×									0(
				1 2														
	-	-		-		+						900						
																		75.65
													- 59					
												- 48						
* Matrix: SS - Soil GW - Groundwate	er <b>WW</b> - Waste	Water DW -	Drinking W	ater OT - Other						pH Flow		Ten			Hol	ld#		
Remarks: Relinquistred by (Signature)		Date:	2/13	Time: /44	Received by: (Si	gnature)	0602	w		Samp	les returi FedEx	□ Cour	ier 🗆	-	Coi	ndition	n: (lat	use only)
Religguished by : (Signature)		Date:		Time: 1830	Received by: (8)	gnature	)	/	100	Tem	: f	°C B	ottles Re	cerved:			I Intact:Y	N VNA

- 10 to 10 t



# AZS000018 DISCHARGE MONITORING REPORT (DMR)

(Complete a separate form for each monitoring point)

Facility Name:				Monitoring Point (Outfall): Stormdrain adjacent to southeast corner of Sign Factory building (202,000 sq. ft = 4.6 ac)									
Durango Sign Factory					ajacent to s	outneast cor	ner of Sig	gn Factory building	(202,000  sq. ft = 4.6  ac)				
Facility Address: 2104 South 22 <sup>nd</sup> Avenue, I	Ohooniy Ariz	ona 95000		Year:	2013/2014 Reporting Year – Winter Storm Event								
		0118 83009		Date/Time Collected:									
Monitoring Personnel Name(s Kirk Creswick, EEC	s):			Nov. 22, 201		n S.	ماله مماله	cted from installed Nalgo	ona hattla				
<u> </u>				1107. 22, 201	3 at 6.33 at								
Time Rainfall Began: Approximately 3:30am	<b>Duration of R</b> Approximately			Rainfall Amount (inches): 1.46 (0.12 feet)									
Runoff Source:  ☐ Rainfall ☐ Snowmelt	<b>Time Elapsed</b> 73 days	Since Last 0.1	inch Rainfall	Event:	Qualifying Rainfall Event:       ☑ YES ☐ NO								
Estimated Total Volume of Di 202,000 ft <sup>2</sup> X 0.12 ft <sup>2</sup> of rain =	scharge (Includ 24,240 ft <sup>3</sup> X 95	le units; gal, ft <sup>2</sup> % runoff =23,	<sup>3</sup> , etc.): 028 <u>ft<sup>3</sup></u> (7.48)	= <u>172,249 gallor</u>	<u>1S</u>	NO DISCHA	ARGE						
Parameter	Qua	ntity or Loadi	ng		or Concentr	ation	No Ex	Frequency of Analysis	Sample Type				
	Average	Maximum	Units	Minimum	Average	Units		Anarysis					
<b>Total Aluminum</b>		0.53	Lbs	0.35		mg/L		Once each season	Grab				
Total Iron		0.61	Lbs	0.40		mg/L		Once each season	Grab				
Total Zinc		0.15	Lbs	0.096		mg/L		Once each season	Grab				
Total Nitrate + Nitrite		2.88	Lbs	1.90		mg/L		Once each season	Grab				



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

John Burton Engineering & Env. Consultants, INC. -AZ 7740 N. 16th Street, Ste 135 Phoenix, AZ 85020

### Report Summary

Wednesday December 04, 2013

Report Number: L670635 Samples Received: 11/23/13 Client Project: 308032.24

Description: Durango Sign Factory

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Daphne Richards , ESC Representative

### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Sample ID

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REPORT OF ANALYSIS

December 04, 2013

Engineering & Env. Consultants, INC 7740 N. 16th Street, Ste 135

Phoenix, AZ 85020

ESC Sample # : L670635-01

Date Received : November 23, 2013
Description : Durango Sign Factory

: DUR112213

Site ID :

Project #: 308032.24

Collected By : Kirk Creswick Collection Date : 11/22/13 08:53

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Nitrate-Nitrite	1.9	0.10	mg/l	353.2	12/03/13	1
Suspended Solids	19.	2.5	mg/l	2540 D-2011	11/27/13	1
Aluminum Iron Zinc	0.35 0.40 0.096	0.10 0.10 0.030	mg/l mg/l mg/l	6010B 6010B 6010B	11/29/13 11/29/13 11/29/13	1 1 1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 12/04/13 10:48 Printed: 12/04/13 10:49

# Summary of Remarks For Samples Printed 12/04/13 at 10:49:10

TSR Signing Reports: 288 R5 - Desired TAT

Baker Exxon Proj 105022.01 Ken & Mel's Proj 105022.02 MCAA Proj 305007.05 -ALL require TO-15+GRO on ALL AIR SAMPLES ENGENVPAZ-122012S NO CHARGE TBs

Sample: L670635-01 Account: ENGENVPAZ Received: 11/23/13 09:00 Due Date: 12/02/13 00:00 RPT Date: 12/04/13 10:48



Engineering & Env. Consultants, INC. -AZ John Burton 7740 N. 16th Street, Ste 135

Phoenix, AZ 85020

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Quality Assurance Report Level II

L670635

December 04, 2013

		Labo	oratory Bl	ank						
Analyte	Result			% Rec	!	Limit		Batch	Date	Analyzed
Suspended Solids	< 2.5	mg/	/1					WG694355	11/27	7/13 10:1
Aluminum	< .1	mg/	/1					WG694625	11/29	7/13 10:5
Iron	< .1	mg/	/1					WG694625	11/29	9/13 10:5
Zinc	< .03	mg/	/1					WG694625	11/29	9/13 10:5
Nitrate-Nitrite	< .1	mg/	/1					WG695060	12/03	3/13 20:5
			Duplicate	9						
Analyte	Units	Result	Duplio	cate	RPD	Limit		Ref Sam	р	Batch
Suspended Solids	mg/l	318.	290.		9.21*	5		L670568	-01	WG69435
Suspended Solids	mg/l	27.2	29.5		7.93*	5		L670682	-02	WG69435
Aluminum	mg/l	0.0	0.0231		18.0	20		L670600	-16	WG69462
Iron	mg/1	0.0	0.0787	7	3.00	20		L670600	-16	WG69462
Zinc	mg/l	0.0	0.0148	3	1.00	20		L670600	-16	WG69462
Nitrate-Nitrite	mg/l	0.200	0.210		4.88	20		L670248	-01	WG69506
Nitrate-Nitrite	mg/l	0.440	0.400		9.52	20		L670704	-01	WG69506
Analyte	Units	Laborato Known V	ory Contro Val	ol Samp Res		% Rec		Limit		Batch
Suspended Solids	mg/l	773		848.		110.		85-115		WG69435
Aluminum	mg/l	1		1.06		106.		85-115		WG69462
Iron	mg/l	1		1.10		110.		85-115		WG69462
Zinc	mg/l	1		1.02		102.		85-115		WG69462
Nitrate-Nitrite	mg/l	5		5.11		102.		90-110		WG69506
		Laboratory Co	ontrol Sam	mple Du	plicate					
Analyte	Units	Result F	Ref	%Rec		Limit	RPD	Li	mit	Batch
Suspended Solids	mg/l	852.	348.	110.		85-115	0.471	. 5		WG69435
Nitrate-Nitrite	mg/l	4.77	5.11	95.0		90-110	6.88	20		WG69506
		Ma	atrix Spik	ie.						
Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit		Ref Samp		Batch
Aluminum	mq/l	1.06	0.0231	1	100.	75-125		L670600-	16	WG69462
Iron	mg/1	1.16	0.0787	1	110.	75-125		L670600-		WG69462
Zinc	mg/1	1.02	0.0148	1	100.	75-125		L670600-		WG69462
Nitrate-Nitrite	mq/l	80.5	33.0	5	95.0	90-110		L670219-	01	WG69506
	37 -			-						

<sup>\*</sup> Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



Engineering & Env. Consultants, INC. -AZ John Burton 7740 N. 16th Street, Ste 135

Phoenix, AZ 85020

Quality Assurance Report Level II

L670635

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December 04, 2013

			Matrix Spik	e Duplicate					
Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limi	t Ref Samp	Batch
Aluminum	mg/l	1.08	1.06	106.	75-125	1.00	20	L670600-16	WG694625
Iron	mg/l	1.17	1.16	109.	75-125	1.00	20	L670600-16	WG694625
Zinc	mg/l	1.03	1.02	101.	75-125	1.00	20	L670600-16	WG694625
Nitrate-Nitrite	mg/l	78.5	80.5	91.0	90-110	2.52	20	L670219-01	WG695060

Post Spike

Serial Dilution

Batch number /Run number / Sample number cross reference

WG694355: R2860291: L670635-01

WG694625: R2861038 R2861626 R2862194: L670635-01

WG695060: R2862321: L670635-01

<sup>\* \*</sup> Calculations are performed prior to rounding of reported values.
\* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



Engineering & Env. Consultants, INC. -AZ John Burton 7740 N. 16th Street, Ste 135

Phoenix, AZ 85020

Quality Assurance Report Level II

L670635

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

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Est. 1970

December 04, 2013

Company Name/Address:			Billing Information:				Analysis / Container / Preservative							Chain of Custody Page of		
<b>EEC</b> 7740 B 16th St Suite 135 Phoenix AZ 85020			олеманорозорозорозорозоро				~/	,	7					<b>**</b>	FSC	
Prioenix AZ 85020			000000000000000000000000000000000000000				N	-	Y	8		AND THE PROPERTY OF THE PROPER	Winds and a second a second and	L·A·B	S-C-I-E-N-C-E-	
Report to:	\$1.00.00 <b>000</b> 0000000000000000000000000000	**************************************	Email To:		**************************************	name vocations								12065 Lebano	n Rd	
John Burton	***		jburton(	@eecphx.com	1		7	norman	က					Mount Juliet, 1 Phone: 615-75	8-5858	
Project Description: Durango Sign Fa	ctory		#1 <b>0</b>	City/State P/	4×,A7	***************************************	H2SO4		HNO3	200000000000000000000000000000000000000				Phone: 800-76 Fax: 615-758-5	859	
Phone:	Client Project			Lab Project #	**************************************	erieto	PE/		PE					L# L67	5635	
Fax: Collected by (print):	A	032.	24			**************************************	L HDPI	Pres	L HDPE/			00000000000000000000000000000000000000	***************************************	<b>A</b>	180	
4112KCRRSWick	Site/Facility II	U#		P.O. #			250mL	No Pr	500mL		N. CONTRACTOR CONTRACT				ENGENVPAZ	
Collected by (signature)	8	Lab MUST Be I		Date F	Results Needed	ROPUS SUbsidencesor .	Nitrate + Nitrite/	TSS/ 1L HDPE/	Zn/					Template: Prelogin:		
Immediately	Next (	Day ay	100%	Email?	_NoYes	· ·	ž	무	Fe,					TSR:		
Packed on Ice N YY		Day		FAX?	NoYes	No. of	+ •	7						Cooler:		
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Cntrs	trat	SS/	Total AI,					Shipped Via	3:	
N. 0 1/2 0 /					The second contract of the second contract of	make to the second control	Z	Ľ	12					Rem./Contam	inant Sample # (lab only)	
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* Matrix: SS - Soil GW - Groundwater	ww - wastew	ater <b>DW</b> - Dri	nking Wate	er OT - Other	570RM~1	RK		= nĀ	p	ьн	Ten	np	5435	<b>5</b> 513	8724	
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### **NOGALES MAINTENANCE YARD DISCHARGE MONITORING & LAB REPORTS**



# AZS000018 DISCHARGE MONITORING REPORT (DMR)

(Complete a separate form for each monitoring point)

Facility Name: Nogales Maintenance Yard				Monitoring Po		Vond is 100 00	0 ag ft (2.5 agres)						
Facility Address:				Year:	ijaceni io ra	ichny gate		1 ard is 108,90	0 sq ft (2.5 acres)				
1340 North Hohokam Drive	e Nogales. A	rizona		2013 – Summer Storm Event									
Monitoring Personnel Name(s):		1120114		Date/Time Collected:									
Tom Ross, EEC					July 19, 2013 at 2:00 pm Sample collected from installed Nalgene bo								
Time Rainfall Began: Approximately 8:00am	<b>Duration of</b> Approximate	Rainfall Event ely 4.5 hr	•		Rainfall Amount (inches): 0.28 (0.02 feet)								
Runoff Source:  ☐ Rainfall ☐ Snowmelt	Time Elapse Approximate	ed Since Last 0. ely 65 days	.1 inch Rainfa	ll Event:		Qualifying R		ent: YES NO					
Estimated Total Volume of Disc $108,900 \text{ ft}^2 \text{ X } 0.02 \text{ ft}^2 \text{ of rain} = 2$	charge (Includ ,178 ft <sup>3</sup> X 95%	de units; gal, ft % runoff = 2,00	<sup>3</sup> , etc.): 69 <u>ft<sup>3</sup></u> (7.48) =	15,477 gallons		NO DISCHA							
Parameter	Qu	antity or Load	ing	Quality	or Concentr	ation	No Ex	Frequency of	Sample Type				
	Average	Maximum	Units	Minimum	Average	Units		Analysis					
Total Dissolved Solids		91.76	Lbs	580		mg/L		Once each season	Grab				
Total Suspended Solids		15.82	Lbs	100		mg/L		Once each season	Grab				
		13.02	~	100		IIIg/L		Office cach season	Giub				
Total Petroleum Hydrocarbons		0.81	Lbs	5.10*		mg/L		Once each season	Grab				
Hydrocarbons		0.81	Lbs	5.10*		mg/L		Once each season	Grab				
Hydrocarbons  Total Copper		0.81	Lbs Lbs	5.10* 0.050		mg/L		Once each season Once each season	Grab Grab				
Hydrocarbons  Total Copper  Ammonia		0.81 0.01 0.08	Lbs Lbs	5.10* 0.050 0.50*		mg/L mg/L		Once each season Once each season Once each season	Grab Grab				
Hydrocarbons  Total Copper  Ammonia		0.81 0.01 0.08	Lbs Lbs	5.10* 0.050 0.50*		mg/L mg/L		Once each season Once each season Once each season	Grab Grab				

<sup>\*</sup> Detection limit used for concentration

# <u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

# **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc.

TestAmerica Phoenix 4625 East Cotton Ctr Blvd Suite 189 Phoenix, AZ 85040

Tel: (602)437-3340

TestAmerica Job ID: 550-7152-1

### For:

Engineering & Environmental Consultants 7878 N 16th Street Suite 140 Phoenix, Arizona 85020

Attn: Mr. John Burton



Authorized for release by: 8/10/2013 1:41:50 PM

Kylie Emily, Project Manager II kylie.emily@testamericainc.com

.....LINKS .....

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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### **Definitions/Glossary**

Client: Engineering & Environmental Consultants

Relative error ratio

Toxicity Equivalent Factor (Dioxin)
Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

TestAmerica Job ID: 550-7152-1

### **Qualifiers**

### Metals

Qualifier	Qualifier Description
МЗ	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated
	blank spike was acceptable.

### **General Chemistry**

Qualifier	Qualifier Description
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.
D2	Sample required dilution due to high concentration of analyte.
Biology	
Qualifier	Qualifier Description
H3	Sample was received and/ or analysis requested past holding time.

### Glossary

RER

RPD TEF

TEQ

RL

Abbreviation	These commonly used abbreviations may or may not be present in this report.
n	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control

### **Case Narrative**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7152-1

Job ID: 550-7152-1

Laboratory: TestAmerica Phoenix

Narrative

### **CASE NARRATIVE**

**Client: Engineering & Environmental Consultants** 

**Project: ADOT Stormwater** 

Report Number: 550-7152-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica Phoenix attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

### RECEIPT

The samples were received on 07/20/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.6 C.

### SGT-HEM

Method(s) 1664A: Analysis for Hexane Extractable Material (HEM) was performed for the following sample(s): ADOT 71913 Y (550-7152-1). Since the HEM result(s) was below the reporting limit (RL), the result(s) for Silica Gel Treated - Hexane Extractable Material (SGT-HEM) was reported as a non-detect. All HEM quality control criteria were met.

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# **Sample Summary**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7152-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-7152-1	ADOT 71913 Y	Water	07/19/13 14:00	07/20/13 09:40

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# **Detection Summary**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7152-1

Client Sample ID: ADOT 71913 Y

Lab Sample ID: 550-7152-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D Method	Prep Type
Barium	0.15		0.10	mg/L	1	200.7	Total/NA
Calcium	51		2.0	mg/L	1	200.7	Total/NA
Copper	0.050		0.010	mg/L	1	200.7	Total/NA
Lead	0.025		0.015	mg/L	1	200.7	Total/NA
Magnesium	12		2.0	mg/L	1	200.7	Total/NA
Sodium	26		2.0	mg/L	1	200.7	Total/NA
Zinc	0.15		0.050	mg/L	1	200.7	Total/NA
Hardness as calcium carbonate	180		13	mg/L	1	SM 2340B	Total/NA
Chlorine, Total Residual	0.27		0.050	mg/L	1	8167	Total/NA
Total Dissolved Solids	580		20	mg/L	1	SM 2540C	Total/NA
Total Suspended Solids	100	D2	20	mg/L	1	SM 2540D	Total/NA
Escherichia coli	3500	H3	20	MPN/100mL	10	SM 9221F	Total/NA

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### **Client Sample Results**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7152-1

Client Sample ID: ADOT 71913 Y

Lab Sample ID: 550-7152-1

Date Collected: 07/19/13 14:00 Matrix: Water

Date Received: 07/20/13 09:40

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Arsenic	ND		0.10	mg/L		07/22/13 18:39	07/26/13 04:55	-
Barium	0.15		0.10	mg/L		07/22/13 18:39	07/26/13 04:55	
Beryllium	ND		0.0010	mg/L		07/22/13 18:39	07/26/13 04:55	
Cadmium	ND		0.0010	mg/L		07/22/13 18:39	07/26/13 04:55	
Calcium	51		2.0	mg/L		07/22/13 18:39	07/26/13 04:55	
Chromium	ND		0.010	mg/L		07/22/13 18:39	07/26/13 04:55	
Copper	0.050		0.010	mg/L		07/22/13 18:39	07/26/13 04:55	
Lead	0.025		0.015	mg/L		07/22/13 18:39	07/26/13 04:55	
Magnesium	12		2.0	mg/L		07/22/13 18:39	07/26/13 04:55	
Nickel	ND		0.010	mg/L		07/22/13 18:39	07/26/13 04:55	
Silver	ND		0.010	mg/L		07/22/13 18:39	07/26/13 04:55	
	26		2.0	mg/L		07/22/13 18:39	07/26/13 04:55	
Sodium	20							
Sodium Zinc Method: SM 2340B - Total Hardne Analyte	0.15	s) by calculat Qualifier	RL	mg/L Unit	D	07/22/13 18:39  Prepared	07/26/13 04:55  Analyzed	Dil Fa
Zinc Method: SM 2340B - Total Hardne	0.15		ion	ū	_ <u>D</u>			Dil Fa
Zinc  Method: SM 2340B - Total Hardne Analyte  Hardness as calcium carbonate  General Chemistry	0.15 ss (as CaCO3 Result 180		ion RL	Unit	_ D _ D		Analyzed	
Zinc  Method: SM 2340B - Total Hardne Analyte Hardness as calcium carbonate  General Chemistry Analyte	0.15 ss (as CaCO3 Result 180	Qualifier	RL	Unit mg/L		Prepared	Analyzed 07/31/13 18:24	
Zinc Method: SM 2340B - Total Hardne Analyte Hardness as calcium carbonate	0.15 ss (as CaCO3 Result 180 Result	Qualifier	RL RL	Unit mg/L		Prepared Prepared	Analyzed 07/31/13 18:24 Analyzed	Dil Fa
Method: SM 2340B - Total Hardne Analyte Hardness as calcium carbonate General Chemistry Analyte HEM	0.15 ss (as CaCO3 Result 180 Result ND	Qualifier	RL	Unit mg/L  Unit mg/L		Prepared  Prepared  07/26/13 14:06	Analyzed 07/31/13 18:24  Analyzed 07/29/13 10:52	
Method: SM 2340B - Total Hardne Analyte Hardness as calcium carbonate  General Chemistry Analyte HEM SGT-HEM	0.15 ss (as CaCO3 Result 180 Result ND ND	Qualifier	RL 5.6 11	Unit mg/L  Unit mg/L  mg/L  mg/L		Prepared  Prepared  07/26/13 14:06	Analyzed 07/31/13 18:24  Analyzed 07/29/13 10:52 07/29/13 10:52	
Method: SM 2340B - Total Hardne Analyte Hardness as calcium carbonate  General Chemistry Analyte HEM SGT-HEM Chlorine, Total Residual	0.15  SS (aS CaCO3  Result  180  Result  ND  ND  0.27	Qualifier  Qualifier	RL 5.6 11 0.050	Unit mg/L  Unit mg/L mg/L mg/L mg/L		Prepared  Prepared  07/26/13 14:06	Analyzed 07/31/13 18:24  Analyzed 07/29/13 10:52 07/29/13 10:52 07/20/13 12:37	
Method: SM 2340B - Total Hardne Analyte Hardness as calcium carbonate  General Chemistry Analyte HEM GGT-HEM Chlorine, Total Residual Total Dissolved Solids Total Suspended Solids	0.15  SS (aS CaCO3  Result  180  Result  ND  ND  0.27  580	Qualifier  Qualifier	RL 5.6 11 0.050 20	Unit mg/L  Unit mg/L  mg/L  mg/L  mg/L  mg/L  mg/L		Prepared  Prepared  07/26/13 14:06	Analyzed 07/31/13 18:24  Analyzed 07/29/13 10:52 07/29/13 10:52 07/29/13 12:37 07/25/13 07:35	
Method: SM 2340B - Total Hardne Analyte Hardness as calcium carbonate  General Chemistry Analyte HEM SGT-HEM Chlorine, Total Residual Total Dissolved Solids	0.15  SS (aS CaCO3  Result  180  Result  ND  ND  0.27  580  100  ND	Qualifier  Qualifier  D2	RL 13  RL 5.6 11 0.050 20 20 0.50	Unit mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L		Prepared  Prepared  07/26/13 14:06	Analyzed 07/31/13 18:24  Analyzed 07/29/13 10:52 07/29/13 10:52 07/20/13 12:37 07/25/13 07:35 07/24/13 13:50	

### Method: 200.7 - Total Recoverable Metals by ICP

Lab Sample ID: MB 550-10592/1-A

**Matrix: Water** 

Analysis Batch: 10988

Client Sample ID: Method Blank

**Prep Type: Total/NA** 

Prep Batch: 10592

	MB MI	В					
Analyte	Result Qu	ualifier RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	0.10	mg/L		07/22/13 18:39	07/26/13 04:14	1
Barium	ND	0.10	mg/L		07/22/13 18:39	07/26/13 04:14	1
Beryllium	ND	0.0010	mg/L		07/22/13 18:39	07/26/13 04:14	1
Cadmium	ND	0.0010	mg/L		07/22/13 18:39	07/26/13 04:14	1
Calcium	ND	2.0	mg/L		07/22/13 18:39	07/26/13 04:14	1
Chromium	ND	0.010	mg/L		07/22/13 18:39	07/26/13 04:14	1
Copper	ND	0.010	mg/L		07/22/13 18:39	07/26/13 04:14	1
Lead	ND	0.015	mg/L		07/22/13 18:39	07/26/13 04:14	1
Magnesium	ND	2.0	mg/L		07/22/13 18:39	07/26/13 04:14	1
Nickel	ND	0.010	mg/L		07/22/13 18:39	07/26/13 04:14	1
Silver	ND	0.010	mg/L		07/22/13 18:39	07/26/13 04:14	1
Sodium	ND	2.0	mg/L		07/22/13 18:39	07/26/13 04:14	1
Zinc	ND	0.050	mg/L		07/22/13 18:39	07/26/13 04:14	1

Lab Sample ID: LCS 550-10592/2-A

**Matrix: Water** 

Analysis Batch: 10988

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 10592

Analysis Batch: 10988							Prep Ba	itcn: 10594
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Arsenic	1.00	0.996		mg/L		100	85 _ 115	
Barium	1.00	0.987		mg/L		99	85 - 115	
Beryllium	1.00	0.983		mg/L		98	85 _ 115	
Cadmium	1.00	0.994		mg/L		99	85 <sub>-</sub> 115	
Calcium	21.0	21.0		mg/L		100	85 - 115	
Chromium	1.00	0.983		mg/L		98	85 _ 115	
Copper	1.00	0.973		mg/L		97	85 - 115	
Lead	1.00	1.01		mg/L		101	85 _ 115	
Magnesium	21.0	20.7		mg/L		98	85 - 115	
Nickel	1.00	1.00		mg/L		100	85 <sub>-</sub> 115	
Silver	0.0750	0.0696		mg/L		93	85 _ 115	
Sodium	20.0	19.6		mg/L		98	85 - 115	
Zinc	1.00	1.03		mg/L		103	85 <sub>-</sub> 115	

Lab Sample ID: LCSD 550-10592/3-A

**Matrix: Water** 

**Analysis Batch: 10988** 

Client Sample ID: La	b Control Sample Dup
	Prep Type: Total/NA

Prep Batch: 10592

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	1.00	0.973		mg/L		97	85 - 115	2	20
Barium	1.00	0.970		mg/L		97	85 - 115	2	20
Beryllium	1.00	0.979		mg/L		98	85 - 115	0	20
Cadmium	1.00	0.976		mg/L		98	85 - 115	2	20
Calcium	21.0	20.9		mg/L		100	85 - 115	0	20
Chromium	1.00	0.966		mg/L		97	85 - 115	2	20
Copper	1.00	0.955		mg/L		96	85 - 115	2	20
Lead	1.00	0.992		mg/L		99	85 - 115	2	20
Magnesium	21.0	20.6		mg/L		98	85 - 115	0	20
Nickel	1.00	0.982		mg/L		98	85 - 115	2	20
Silver	0.0750	0.0684		mg/L		91	85 - 115	2	20

TestAmerica Phoenix

### Method: 200.7 - Total Recoverable Metals by ICP (Continued)

Lab Sample ID: LCSD 550-10592/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 10988** Prep Batch: 10592 Spike LCSD LCSD RPD %Rec. Limit Analyte Added Result Qualifier Unit %Rec Limits **RPD** Sodium 20.0 19.5 98 85 - 115 0 20 mg/L 1.00 Zinc 1.00 mg/L 100 85 - 115 2

Lab Sample ID: 550-7160-D-1-A MS

**Matrix: Water** 

**Analysis Batch: 10988** 

Client Sample ID: Matrix Spike Prep Type: Total/NA

Prep Batch: 10592

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Arsenic	ND		1.00	1.02		mg/L		102	70 - 130	
Barium	ND		1.00	1.00		mg/L		96	70 - 130	
Beryllium	ND		1.00	0.988		mg/L		99	70 - 130	
Cadmium	ND		1.00	0.990		mg/L		99	70 - 130	
Calcium	110		21.0	128	M3	mg/L		86	70 - 130	
Chromium	ND		1.00	0.959		mg/L		96	70 - 130	
Copper	0.020		1.00	1.01		mg/L		99	70 - 130	
Lead	ND		1.00	1.00		mg/L		100	70 - 130	
Magnesium	41		21.0	60.8		mg/L		95	70 - 130	
Nickel	ND		1.00	0.958		mg/L		96	70 - 130	
Silver	ND		0.0750	0.0693		mg/L		92	70 - 130	
Sodium	480	M3	20.0	492	M3	mg/L		57	70 - 130	
Zinc	ND		1.00	0.997		mg/L		96	70 - 130	

Lab Sample ID: 550-7160-D-1-B MSD

**Matrix: Water** 

**Client Sample ID: Matrix Spike Duplicate** 

Prep Type: Total/NA

Analysis Batch: 10988								Prep	Batch:	10592	
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	ND		1.00	1.03		mg/L		103	70 - 130	1	20
Barium	ND		1.00	1.01		mg/L		97	70 - 130	1	20
Beryllium	ND		1.00	0.984		mg/L		98	70 - 130	0	20
Cadmium	ND		1.00	1.00		mg/L		100	70 - 130	1	20
Calcium	110		21.0	128	M3	mg/L		88	70 - 130	0	20
Chromium	ND		1.00	0.972		mg/L		97	70 - 130	1	20
Copper	0.020		1.00	1.02		mg/L		100	70 - 130	1	20
Lead	ND		1.00	1.01		mg/L		101	70 - 130	1	20
Magnesium	41		21.0	60.8		mg/L		94	70 - 130	0	20
Nickel	ND		1.00	0.972		mg/L		97	70 - 130	2	20
Silver	ND		0.0750	0.0699		mg/L		93	70 - 130	1	20
Sodium	480	M3	20.0	493	M3	mg/L		65	70 - 130	0	20
Zinc	ND		1.00	1.02		mg/L		98	70 - 130	2	20

### Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 550-11016/1-A

**Matrix: Water** 

**Analysis Batch: 11127** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 11016

	MB	MB							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
HEM	ND		5.0	mg/L		07/26/13 14:06	07/29/13 10:52	1	
SGT-HEM	ND		10	mg/L		07/26/13 14:06	07/29/13 10:52	1	

TestAmerica Phoenix

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# Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: LCS 550-1101	16/2-A						Client	Sample	ID: Lab Co		
Matrix: Water									Prep T	ype: Tot	tal/NA
Analysis Batch: 11127									Prep	Batch:	11016
			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
HEM			40.0	34.9		mg/L		87	78 - 114		
SGT-HEM			20.0	13.8		mg/L		69	64 - 132		
Lab Sample ID: LCSD 550-110	016/3-A					Clie	nt Sam	ple ID:	Lab Contro	l Sampl	e Dup
Matrix: Water									Prep T	ype: Tot	tal/NA
Analysis Batch: 11127										Batch:	
-			Spike	LCSD	LCSD				%Rec.		RPE
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limi
HEM			40.0	37.1		mg/L		93	78 - 114	6	18
SGT-HEM			20.0	17.2		mg/L		86	64 - 132	22	34
Lab Sample ID: 550-7044-B-1	-A MS							Client	Sample ID	: Matrix	Spike
Matrix: Water									Prep T	ype: Tot	tal/NA
Analysis Batch: 11127										Batch:	
-	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
HEM	ND	M2	41.2	28.9	M2	mg/L		70	78 - 114		
SGT-HEM	ND	M2	20.6	12.5	M2	mg/L		60	64 - 132		

Method: 8167 - 0	Chlorine.	Total	Residual
------------------	-----------	-------	----------

Chlorine, Total Residual

Lab Sample ID: 550-7152-1 DU

Lab Sample ID: MB 550-10532/3								Client S	Sample ID: Metho	od Blank
Matrix: Water									Prep Type:	Total/NA
Analysis Batch: 10532										
	MB	MB								
Analyte	Result	Qualifier	R	L	Unit		D	Prepared	Analyzed	Dil Fac
Chlorine, Total Residual	ND		0.05	0	mg/L				07/20/13 12:37	1
Lab Sample ID: LCS 550-10532/4							Clie	ent Sample	ID: Lab Control	Sample
Matrix: Water								•	Prep Type:	Total/NA
Analysis Batch: 10532										
•			Spike	LCS	LCS				%Rec.	
Analyte			Added	Result	Qualifier	Unit	ı	D %Rec	Limits	
Chlorine, Total Residual			0.978	1.07		mg/L		110	90 - 110	
Lab Sample ID: LCSD 550-10532/5						С	lient Sa	ample ID:	Lab Control San	nple Dup
Matrix: Water								•	Prep Type:	Total/NA
Analysis Batch: 10532										
-			Spike	LCSD	LCSD				%Rec.	RPD
Analyte			Added	Result	Qualifier	Unit		D %Rec	Limits RP	D Limit

Matrix: Water							Prep T	ype: Tot	lal/NA
Analysis Batch: 10532									
	Sample	Sample	DU	DU					RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D		RPD	Limit
Chlorine, Total Residual	0.27		0.278		mg/L			3	20

1.02

mg/L

0.978

TestAmerica Phoenix

90 - 110

Client Sample ID: ADOT 71913 Y

# Method: SM 2540C - Solids, Total Dissolved (TDS)

MR MR

Lab Sample ID: MB 550-10775/1 Client Sample ID: Method Blank **Matrix: Water** 

**Analysis Batch: 10775** 

Prep Type: Total/NA

Result Qualifier Unit Dil Fac RL Prepared Analyzed Total Dissolved Solids ND 20 mg/L 07/25/13 07:35

**Client Sample ID: Lab Control Sample** Lab Sample ID: LCS 550-10775/2 **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 10775** 

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit D %Rec Limits Total Dissolved Solids 1000 1010 101 80 - 115 mg/L

Lab Sample ID: LCSD 550-10775/3 Client Sample ID: Lab Control Sample Dup **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 10775** 

Spike LCSD LCSD %Rec. RPD Added Result Qualifier %Rec Limits RPD Limit Analyte Unit D 1000 101 80 - 115 **Total Dissolved Solids** 1010 mg/L 0

Lab Sample ID: 550-7152-1 DU Client Sample ID: ADOT 71913 Y Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 10775** 

DU DU RPD Sample Sample Result Qualifier Analyte Result Qualifier Unit RPD Limit **Total Dissolved Solids** 580 618 mg/L

# Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 550-10792/1 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 10792** 

MR MR

Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac Total Suspended Solids ND 10 mg/L 07/24/13 13:50

Lab Sample ID: LCS 550-10792/2 Client Sample ID: Lab Control Sample Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 10792** 

LCS LCS Spike %Rec. Added Result Qualifier Unit %Rec Limits 200 194 Total Suspended Solids 90 - 110 mg/L

Lab Sample ID: LCSD 550-10792/3 Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 10792** 

Spike LCSD LCSD %Rec. RPD Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Total Suspended Solids 200 187 mg/L 90 - 110

TestAmerica Phoenix

TestAmerica Job ID: 550-7152-1

Client: Engineering & Environmental Consultants

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: 550-7092-J-1 DU **Client Sample ID: Duplicate** 

**Matrix: Water** 

Analysis Batch: 10792

Prep Type: Total/NA

Sample Sample DU DU RPD Result Qualifier Result Qualifier Limit Unit Total Suspended Solids 170 D2 179 D2 mg/L 10

Method: SM 4500 NH3 D - Ammonia

Lab Sample ID: MB 550-11006/42 Client Sample ID: Method Blank Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 11006** 

MB MB

Result Qualifier RL Unit D Prepared Dil Fac Analyte Analyzed 0.50 07/25/13 22:26 Ammonia ND mg/L

Lab Sample ID: LCS 550-11006/43 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 11006

Spike LCS LCS %Rec. Added Result Qualifier I imits Analyte Unit D %Rec Ammonia 25.0 25.1 mg/L 100 80 - 120

Lab Sample ID: LCSD 550-11006/44 Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 11006** 

Spike LCSD LCSD %Rec. RPD Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit Ammonia 25.0 25.9 103 80 - 120 mg/L

Lab Sample ID: 550-7093-K-1 MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 11006** 

%Rec. Sample Sample Spike MS MS Analyte Result Qualifier Added Result Qualifier Unit Limits Ammonia 49 M2 25.0 67.1 M2 mg/L 73 80 - 120

Lab Sample ID: 550-7093-K-1 MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Water** 

**Analysis Batch: 11006** 

MSD MSD RPD Sample Sample Spike %Rec. Result Qualifier Added Analyte Result Qualifier Unit %Rec Limits **RPD** Limit 49 M2 25.0 65.8 M2 Ammonia 67 80 - 120 20 mg/L

TestAmerica Phoenix

8/10/2013

Prep Type: Total/NA

TestAmerica Job ID: 550-7152-1

# **Metals**

# Prep Batch: 10592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7152-1	ADOT 71913 Y	Total/NA	Water	200.7	
550-7160-D-1-A MS	Matrix Spike	Total/NA	Water	200.7	
550-7160-D-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7	
LCS 550-10592/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-10592/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
MB 550-10592/1-A	Method Blank	Total/NA	Water	200.7	

# **Analysis Batch: 10988**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7152-1	ADOT 71913 Y	Total/NA	Water	200.7	10592
550-7160-D-1-A MS	Matrix Spike	Total/NA	Water	200.7	10592
550-7160-D-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7	10592
LCS 550-10592/2-A	Lab Control Sample	Total/NA	Water	200.7	10592
LCSD 550-10592/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	10592
MB 550-10592/1-A	Method Blank	Total/NA	Water	200.7	10592

# Analysis Batch: 11476

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7152-1	ADOT 71913 Y	Total/NA	Water	SM 2340B	

# **General Chemistry**

# Analysis Batch: 10532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7152-1	ADOT 71913 Y	Total/NA	Water	8167	
550-7152-1 DU	ADOT 71913 Y	Total/NA	Water	8167	
LCS 550-10532/4	Lab Control Sample	Total/NA	Water	8167	
LCSD 550-10532/5	Lab Control Sample Dup	Total/NA	Water	8167	
MB 550-10532/3	Method Blank	Total/NA	Water	8167	

# **Analysis Batch: 10775**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7152-1	ADOT 71913 Y	Total/NA	Water	SM 2540C	_
550-7152-1 DU	ADOT 71913 Y	Total/NA	Water	SM 2540C	
LCS 550-10775/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-10775/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 550-10775/1	Method Blank	Total/NA	Water	SM 2540C	

# Analysis Batch: 10792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7092-J-1 DU	Duplicate	Total/NA	Water	SM 2540D	
550-7152-1	ADOT 71913 Y	Total/NA	Water	SM 2540D	
LCS 550-10792/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 550-10792/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
MB 550-10792/1	Method Blank	Total/NA	Water	SM 2540D	

# Analysis Batch: 11006

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7093-K-1 MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 D	
550-7093-K-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 D	
550-7152-1	ADOT 71913 Y	Total/NA	Water	SM 4500 NH3 D	

TestAmerica Phoenix

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# **QC Association Summary**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7152-1

# **General Chemistry (Continued)**

# Analysis Batch: 11006 (Continued)

İ	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
	LCS 550-11006/43	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	
ı	LCSD 550-11006/44	Lab Control Sample Dup	Total/NA	Water	SM 4500 NH3 D	
	MB 550-11006/42	Method Blank	Total/NA	Water	SM 4500 NH3 D	

# Prep Batch: 11016

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7044-B-1-A MS	Matrix Spike	Total/NA	Water	1664A	
550-7152-1	ADOT 71913 Y	Total/NA	Water	1664A	
LCS 550-11016/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 550-11016/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	
MB 550-11016/1-A	Method Blank	Total/NA	Water	1664A	

# **Analysis Batch: 11127**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7044-B-1-A MS	Matrix Spike	Total/NA	Water	1664A	11016
550-7152-1	ADOT 71913 Y	Total/NA	Water	1664A	11016
LCS 550-11016/2-A	Lab Control Sample	Total/NA	Water	1664A	11016
LCSD 550-11016/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	11016
MB 550-11016/1-A	Method Blank	Total/NA	Water	1664A	11016

# **Biology**

# Analysis Batch: 10494

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-7152-1	ADOT 71913 Y	Total/NA	Water	SM 9221F	

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# **Lab Chronicle**

Client Sample ID: ADOT 71913 Y

Lab Sample ID: 550-7152-1 Date Collected: 07/19/13 14:00

Matrix: Water

Date Received: 07/20/13 09:40

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			10592	07/22/13 18:39	SGO	TAL PHX
Total/NA	Analysis	200.7		1	10988	07/26/13 04:55	HLK	TAL PHX
Total/NA	Analysis	SM 2340B		1	11476	07/31/13 18:24	SLS	TAL PHX
Total/NA	Analysis	8167		1	10532	07/20/13 12:37	RLH	TAL PHX
Total/NA	Analysis	SM 2540C		1	10775		JAE	TAL PHX
					(Start)	07/25/13 07:35		
					(End)	07/26/13 13:05		
Total/NA	Analysis	SM 2540D		1	10792		JAE	TAL PHX
					(Start)	07/24/13 13:50		
					(End)	07/25/13 09:10		
Total/NA	Analysis	SM 4500 NH3 D		1	11006	07/25/13 23:15	LAS	TAL PHX
Total/NA	Prep	1664A			11016	07/26/13 14:06	KRA	TAL PHX
Total/NA	Analysis	1664A		1	11127	07/29/13 10:52	LRB	TAL PHX
Total/NA	Analysis	SM 9221F		10	10494		KLH	TAL PHX
					(Start)	07/20/13 15:15		
					(End)	07/23/13 13:10		

# **Laboratory References:**

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

# **Certification Summary**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7152-1

# **Laboratory: TestAmerica Phoenix**

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	<b>Expiration Date</b>
AIHA	IHLAP		154268	07-01-15
Arizona	State Program	9	AZ0728	06-09-14
California	NELAP	9	01109CA	11-30-13
Nevada	State Program	9	AZ01030	07-31-14
New York	NELAP	2	11898	04-01-14
Oregon	NELAP	10	AZ100001	03-09-14
USDA	Federal		P330-09-00024	06-09-15

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# **Method Summary**

Client: Engineering & Environmental Consultants

TestAmerica Job ID: 550-7152-1

Method	Method Description	Protocol	Laboratory
200.7	Total Recoverable Metals by ICP	EPA	TAL PHX
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	TAL PHX
1664A	HEM and SGT-HEM	1664A	TAL PHX
8167	Chlorine, Total Residual	Hach	TAL PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PHX
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL PHX
SM 4500 NH3 D	Ammonia	SM	TAL PHX
SM 9221F	E.Coli (Multiple-Tube Fermentation; EC-MUG)	SM	TAL PHX

# **Protocol References:**

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

Hach = Hach Company

SM = "Standard Methods For The Examination Of Water And Wastewater",

# Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

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THE LEADER IN ENVIRONMENTAL TESTING TAL-0013-550 (10/10)

# CHAIN OF CUSTODY FORM

550-7152 Chain of Custody

Client Name / Address:	i	_	Project/PO Number:	er:				Ì		A	nalysis	Analysis Required	۵		
7740 MIG TO STREET, SWITE TOS	Swite 100		T NOGA	ES Ma	ADOT NOGALES Maint. YARD	101	S		34					3	
Sampler: Town Pass	3	Phone Fax Nu	Number: 6	8he-1	Phone Number: 6 02-248-7851	mon	25,75	2	etals nànese pv		इं. ७	ptt	KN	2 XIVC	
	Sample Container Matrix Type	# of	Sampling Date	Sampling	Sampling Sampling Preservatives	An	T	CI	No.	W	0	7	1	X+6	Special Instructions
400+ 7+3+47M13/		20	dide:	(480)		<	<	<	<	<	<	1	0	Y.	And the second
	tan september														
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Relinquished By:	Date/Time:	16	100 X	Cocking to	STATE OF THE PARTY	1	10	Date/Tim	2.	15%	Q	Turnaround Time: same day	nd Tim	e: (Check)	eck) 72 hours
Refligiblished By:	Date/Time	2 /- S	15451	Received By:	18		G	Date/Time:	6.		M A	24 hours 48 hours			5 days normal
Belinquished By	Date/Time:	e.	Se la	Received i	Mage in Haps		2	Date/Time:	Q.	CAR.		Sample Integrity:	ntegrity	: (Check)	on ice
Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form	merica, client ad	ees to r	ak for the s	services re	quested on t	his chair	of custo	dv form	and any	additio	nal ana	and any additional analyses performed on this project	rformed	on this	project
The state of the s		00000	100	DEL ALCOS 10			CI CUUIC		2110	20000		1000 00	2	200	

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8/10/2013

# **Login Sample Receipt Checklist**

Client: Engineering & Environmental Consultants

Job Number: 550-7152-1

Login Number: 7152 List Source: TestAmerica Phoenix

List Number: 1

Creator: DeShazo, Brittany

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

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# AZS000018 DISCHARGE MONITORING REPORT (DMR)

(Complete a separate form for each monitoring point)

Facility Name:				Monitoring Po						
Nogales Maintenance Yard				Low point ac	ljacent to fa	cility gate		Yard is 108,90	0 sq ft (2.5 acres)	
Facility Address:				Year:						
2104 South 22 <sup>nd</sup> Avenue, Ph		ona 85009		2013/2014 R		ear – Winter	Storm Ev	rent		
Monitoring Personnel Name(s):	:			Date/Time Col						
Tom Ross, EEC				Nov. 25, 201	3/ 12:00pm	ı (noon)				
Time Rainfall Began:	Duration of	Rainfall Event	:			Rainfall Am	,	es):		
Approximately 7:30am	Approximate	ely 4 hrs				0.19 (0.015 ft	<b>(1)</b>			
Runoff Source:	Time Elapse	ed Since Last 0.	.1 inch Rainfa	ll Event:		Qualifying R				
☐ Rainfall ☐ Snowmelt	Approximate	ely 30 days				⊠ YES □ NO				
Estimated Total Volume of Disc 108,900 ft <sup>2</sup> X 0.015 ft <sup>2</sup> of rain =	charge (Includ 16334 ft <sup>3</sup> X 95	de units; gal, ft	<sup>3</sup> , etc.): .552 ft <sup>3</sup> (7.48)	= 11.608 gallons	1	NO DISCHA	CHARGE			
200,5 00 20 21 00020 20 02 2022	1000 110 11 70	-,01411011 1,	(	21,000 54110115						
Parameter	Qu	antity or Load	ing	Quality	or Concentr	I No Ev I			Sample Type	
T ut utilicités	Average	Maximum	Units	Minimum	Average	Units	110 22	Analysis	Sumple Type	
W ( 1 D) 1 1 C 11 1		42.40		205		· ·		0 1	<b>a</b> 1	
Total Dissolved Solids		42.40	Lbs	395		mg/L		Once each season	Grab	
Total Dissolved Solids  Total Suspended Solids		42.40 1.18	Lbs	395 11		mg/L		Once each season Once each season	Grab Grab	
Total Suspended Solids										
Total Suspended Solids Total Petroleum		1.18	Lbs	11		mg/L		Once each season	Grab	
Total Suspended Solids Total Petroleum Hydrocarbons		1.18 300.58	Lbs Lbs	11 2800		mg/L		Once each season Once each season	Grab Grab	
Total Suspended Solids Total Petroleum Hydrocarbons Total Copper		1.18 300.58 0.00	Lbs Lbs Lbs	2800 0.03		mg/L mg/L		Once each season Once each season Once each season	Grab Grab	
Total Suspended Solids Total Petroleum Hydrocarbons  Total Copper Ammonia		1.18 300.58 0.00 0.11	Lbs Lbs Lbs Lbs	11 2800 0.03 1.0*		mg/L mg/L mg/L		Once each season Once each season Once each season Once each season	Grab Grab Grab	
Total Suspended Solids Total Petroleum Hydrocarbons  Total Copper Ammonia		1.18 300.58 0.00 0.11	Lbs Lbs Lbs Lbs	11 2800 0.03 1.0*		mg/L mg/L mg/L		Once each season Once each season Once each season Once each season	Grab Grab Grab	

<sup>\*</sup> Detection limit used for concentration; \*\*Sample past holding time



17 December 2013

John Burton EEC, Inc. 7740 N. 16th Street Phoenix, AZ 85020

RE: Nogales Maintenance Yard

Laboratory Work Order No.: 3112070

Legend Technical Services of Arizona, Inc. is pleased to provide the enclosed analytical results for the aforementioned project. These results relate only to the items tested. This cover letter and the accompanying pages represent the full report for these analyses and should only be reproduced in full. Samples for this project were received by the laboratory on 11/26/13 14:05.

The samples were processed in accordance with the Chain of Custody document and the results presented relate only to the samples tested. The Chain of Custody is considered part of this report.

All samples will be retained by LEGEND for 30 days from the date of this report and then discarded unless other arrangements are made.

This entire report was reviewed and approved for release by the undersigned. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

LEGEND TECHNICAL SERVICES OF ARIZONA, INC.

P. Brian Merritt

Client Services Representative

P. Bin Mewill

(602) 324-6100

This laboratory report is confidential and is intended for the sole use of LEGEND and it's client.

7740 N. 16th Street Project Number: Nogales Maintenance Yard 11/25/13 Reported:
Phoenix, AZ 85020 Project Manager: John Burton 12/17/13 10:26

# **ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Туре	Date Sampled	Date Received
Nogales Yard 112513 (ADOT Yard Nogales)	3112070-01	Wastewater	Grab	11/25/13 12:00	11/26/13 14:05

# **Sample Condition Upon Receipt:**

Temperature: 4.80 C

All samples were received in acceptable condition unless noted otherwise in the case

**Case Narrative:** 

**Holding Times:** All holding times were met unless otherwise qualified.

QA/QC Criteria: All analyses met method requirements unless otherwise qualified. Certifications: AZ(PHX)0004, AZ(TUC)OOO4, AIHA#102982, CDC ELITE Member.

Accreditation is applicable only to the test methods specified on each scope of accreditation held by LEGEND.

Comments: There were no problems encountered during the processing of the samples, unless otherwise noted.

All samples were analyzed on a "wet" basis unless designated as "dry weight".

This report contains data that were produced by a subcontracted laboratory certified for the

fields of testing performed.

Legend Technical Services, St. Paul AZ0557

Bach Pham 651.221.4062

Legend Technical Services of Arizona, Inc.

3112070

Laboratory Work Order No.:

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Page 2 of 13

Project Number: Nogales Maintenance Yard 11/25/13 7740 N. 16th Street Phoenix, AZ 85020

Reported: Project Manager: John Burton 12/17/13 10:26

Nogales Yard 112513 (ADOT Yard Noga 11/26/13 14:05	les) (3112070-01)	Wastew	ater (G	rab)	Sampled:	11/25/13 1	2:00 Rece	eived:	
Analyte	Result	PQL	Units	Dilutio	n Batch	Prepared	Analyzed	Method	Notes
	Legend	Technical	Service	es, Inc	. #AZ0557	,			
DRO/8015D									
TPH as Fuel Oil (C10-C22)	2800	250	ug/L	1	B3L0201	12/02/13 06:44	12/10/13 00:16	EPA 8015D	Q9
Surrogate: Triacontane (C-30)		82.2 %	62	.2-130	B3L	0201 12/02	2/13 12/10	0/13 EPA 80151	)
TPH as Motor Oil (C22-C32)	3700	250	ug/L	1	B3L0201	12/02/13 06:44	12/10/13 00:16	EPA 8015D	Q9
	Legend <sup>-</sup>	Technical	Service	s of A	rizona, Inc	i.			
Microbiology									
E. coli, MPN (WW-Colilert)	2400	1 N	MPN/100 mL	1	B3L0001	11/26/13 14:26	11/26/13 14:26	SM 9223B	H3
Total Metals									
Calcium	55	1	mg/L	1	B3L0045	12/02/13 16:30	12/03/13 21:29	EPA 200.7	
Copper	0.03	0.01	mg/L	1	B3L0045	12/02/13 16:30	12/03/13 21:29	EPA 200.7	
Magnesium	15	1	mg/L	1	B3L0045	12/02/13 16:30	12/03/13 21:29	EPA 200.7	
Calcium Hardness as CaCO3	137	2	mg/L	1	[CALC]	12/02/13 16:30	12/03/13 21:29	SM2340B	
Magnesium Hardness as CaCO:	61	4	mg/L	1	[CALC]	12/02/13 16:30	12/03/13 21:29	SM2340B	
Total Hardness as CaCO3	198	4	mg/L	1	[CALC]	12/02/13 16:30	12/03/13 21:29	SM2340B	
Inorganic Chemistry									
Residual Chlorine	0.01	0.04	mg/L	1	B3K0708	11/27/13 13:35	11/27/13 13:35	HACH 8167	H5, M2, N1
Ammonia as N	<1.00	1.00	mg/L	1	B3K0699	11/27/13 10:31	11/27/13 10:31	EPA 350.1	
Total Dissolved Solids	395	1	mg/L	1	B3L0006	12/01/13 12:15	12/01/13 12:15	SM 2540 C	
Total Suspended Solids	11	1	mg/L	1	B3K0690	11/27/13 07:30	11/27/13 07:30	SM 2540 D	

7740 N. 16th Street Project Number: Nogales Maintenance Yard 11/25/13 Reported:
Phoenix, AZ 85020 Project Manager: John Burton 12/17/13 10:26

# Microbiology - Quality Control Legend Technical Services of Arizona, Inc.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch B3L0001 - micro\_prep

Blank (B3L0001-BLK1) Prepared: 10/26/13 Analyzed: 11/26/13

E. coli, MPN (WW-Colilert) <1 1 MPN/100 mL

7740 N. 16th Street Project Number: Nogales Maintenance Yard 11/25/13
Phoenix, AZ 85020 Project Manager: John Burton

Reported: 12/17/13 10:26

# Total Metals - Quality Control Legend Technical Services of Arizona, Inc.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Analyte	rtesuit	Lilling	Office	Level	resuit	70TCLO	Liiiilo	INID	LIIIII	140163
Batch B3L0045 - EPA 200.7										
Blank (B3L0045-BLK1)				Prepared:	12/02/13 A	Analyzed: 12	/03/13			
Calcium	<1	1	mg/L							
Copper	<0.01	0.01	mg/L							
Magnesium	<1	1	mg/L							
LCS (B3L0045-BS1)				Prepared:	12/02/13 A	Analyzed: 12	/03/13			
Calcium	19	1	mg/L	20.0		97	85-115			
Copper	0.97	0.01	mg/L	1.00		97	85-115			
Magnesium	19	1	mg/L	20.0		97	85-115			
LCS Dup (B3L0045-BSD1)				Prepared:	12/02/13 A	Analyzed: 12	/03/13			
Calcium	20	1	mg/L	20.0		98	85-115	0.2	20	
Copper	0.97	0.01	mg/L	1.00		97	85-115	0.07	20	
Magnesium	19	1	mg/L	20.0		97	85-115	0.3	20	
Matrix Spike (B3L0045-MS1)	Sour	ce: 3111975	-02	Prepared:	12/02/13 A	Analyzed: 12	/03/13			
Calcium	46	1	mg/L	20.0	27	97	70-130			
Copper	0.99	0.01	mg/L	1.00	<0.01	99	70-130			
Magnesium	23	1	mg/L	20.0	4	95	70-130			
Matrix Spike Dup (B3L0045-MSD1)	Sour	ce: 3111975	-02	Prepared:	12/02/13 A	Analyzed: 12	/03/13			
Calcium	46	1	mg/L	20.0	27	98	70-130	0.3	20	
Copper	0.98	0.01	mg/L	1.00	<0.01	98	70-130	1	20	
Magnesium	23	1	mg/L	20.0	4	96	70-130	0.2	20	
=										

7740 N. 16th Street Project Number: Nogales Maintenance Yard 11/25/13
Phoenix, AZ 85020 Project Manager: John Burton

Reported: 12/17/13 10:26

Inorganic Chemistry - Quality Control Legend Technical Services of Arizona, Inc.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B3K0690 - NO PREP										
Blank (B3K0690-BLK1)				Prepared &	& Analyzed:	11/27/13				
Total Suspended Solids	<1	1	mg/L							
Duplicate (B3K0690-DUP1)	Source	e: 3111706	6-02	Prepared &	& Analyzed:	11/27/13				
Total Suspended Solids	4	1	mg/L		4			0	5	
Duplicate (B3K0690-DUP2)	Source	e: 3111753	3-02	Prepared & Analyzed: 11/27/13						
Total Suspended Solids	<1	1	mg/L	0				5		
Duplicate (B3K0690-DUP3)	Sourc	e: 3111928	3-03	Prepared 8	& Analyzed:	11/27/13				
Total Suspended Solids	<1	1	mg/L		0				5	
Duplicate (B3K0690-DUP4)	Source	e: 3111950	0-02	Prepared 8	& Analyzed:	11/27/13				
Total Suspended Solids	<1	1	mg/L		0				5	
Duplicate (B3K0690-DUP5)	Source	e: 3111979	-02	Prepared 8	Analyzed:	11/27/13				
Total Suspended Solids	<1	1	mg/L		0				5	
Duplicate (B3K0690-DUP6)	Source	e: 3112043	3-02	Prepared 8	& Analyzed:	11/27/13				
Total Suspended Solids	<1	1	mg/L		0				5	
Duplicate (B3K0690-DUP7)	Sourc	e: 3112082	2-03	Prepared 8	& Analyzed:	11/27/13				
Total Suspended Solids	<1	1	mg/L		0				5	
Batch B3K0699 - NO PREP										
Blank (B3K0699-BLK1)				Prepared 8	& Analyzed:	11/27/13				
Ammonia as N	<1.00	1.00	mg/L							

7740 N. 16th Street Phoenix, AZ 85020 Project Number: Nogales Maintenance Yard 11/25/13

Project Manager: John Burton

Reported: 12/17/13 10:26

# Inorganic Chemistry - Quality Control Legend Technical Services of Arizona, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3K0699 - NO PREP										
Blank (B3K0699-BLK2)				Prepared 6	& Analyzed:	11/27/13				
Ammonia as N	<1.00	1.00	mg/L							
Blank (B3K0699-BLK3)				Prepared 6	& Analyzed:	11/27/13				
Ammonia as N	<1.00	1.00	mg/L							
LCS (B3K0699-BS1)				Prepared of	& Analyzed:	11/27/13				
Ammonia as N	10.1	1.00	mg/L	10.0		101	90-110			
LCS (B3K0699-BS2)				Prepared 6	& Analyzed:	11/27/13				
Ammonia as N	9.91	1.00	mg/L	10.0		99	90-110			
LCS Dup (B3K0699-BSD1)				Prepared of	& Analyzed:	11/27/13				
Ammonia as N	10.0	1.00	mg/L	10.0		100	90-110	1	20	
LCS Dup (B3K0699-BSD2)				Prepared 6	& Analyzed:	11/27/13				
Ammonia as N	9.99	1.00	mg/L	10.0		100	90-110	0.8	20	
Matrix Spike (B3K0699-MS1)	Source	e: 3111672	-03	Prepared of	& Analyzed:	11/27/13				
Ammonia as N	10.0	1.00	mg/L	10.0	<1.00	100	90-110			
Matrix Spike (B3K0699-MS2)	Source	e: 3111709	-02	Prepared of	& Analyzed:	11/27/13				
Ammonia as N	9.89	1.00	mg/L	10.0	<1.00	99	90-110			
Matrix Spike (B3K0699-MS3)	Source	e: 3111997	-02	Prepared 6	& Analyzed:	11/27/13				
Ammonia as N	9.98	1.00	mg/L	10.0	0.102	99	90-110			
Matrix Spike Dup (B3K0699-MSD1)	Sourc	e: 3111672	-03	Prepared 6	& Analyzed:	11/27/13				
Ammonia as N	9.98	1.00	mg/L	10.0	<1.00	100	90-110	0.2	20	

7740 N. 16th Street Phoenix, AZ 85020 Project Number: Nogales Maintenance Yard 11/25/13

Project Manager: John Burton

Reported: 12/17/13 10:26

# Inorganic Chemistry - Quality Control Legend Technical Services of Arizona, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3K0699 - NO PREP	rtodat	Liiik	O'iito	20701	rtocuit	701120	Limito	- 111 5		110100
Matrix Spike Dup (B3K0699-MSD2)	Sour	ce: 3111709	)-02	Prepared	& Analyzed:	11/27/13				
Ammonia as N	9.97	1.00	mg/L	10.0	<1.00	100	90-110	0.8	20	
Matrix Spike Dup (B3K0699-MSD3)	Sour	ce: 3111997	'- <b>0</b> 2	Prepared	& Analyzed:	11/27/13				
Ammonia as N	10.1	1.00	mg/L	10.0	0.102	100	90-110	1	20	
Batch B3K0708 - NO PREP										
Blank (B3K0708-BLK1)				Prepared	& Analyzed:	11/27/13				
Residual Chlorine	<0.04	0.04	mg/L							
LCS (B3K0708-BS1)				Prepared	& Analyzed:	11/27/13				
Residual Chlorine	0.75	0.04	mg/L	0.748		100	80-120			
LCS Dup (B3K0708-BSD1)				Prepared	& Analyzed:	11/27/13				
Residual Chlorine	0.76	0.04	mg/L	0.748		101	80-120	0.8	20	
Matrix Spike (B3K0708-MS1)	Sour	ce: 3112070	)-01	Prepared	& Analyzed:	11/27/13				
Residual Chlorine	0.04	0.04	mg/L	0.748	0.01	4	80-120			N
Matrix Spike Dup (B3K0708-MSD1)	Sour	ce: 3112070	)-01	Prepared	& Analyzed:	11/27/13				
Residual Chlorine	0.04	0.04	mg/L	0.748	0.01	3	80-120	10	20	N
Batch B3L0006 - NO PREP										
Blank (B3L0006-BLK1)				Prepared	& Analyzed:	12/01/13				
Total Dissolved Solids	<1	1	mg/L							

7740 N. 16th Street Project Number: Nogales Maintenance Yard 11/25/13
Phoenix, AZ 85020 Project Manager: John Burton

Reported: 12/17/13 10:26

Inorganic Chemistry - Quality Control Legend Technical Services of Arizona, Inc.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch B3L0006 - NO PREP

•							
Duplicate (B3L0006-DUP1)	Source	. 3112070	-01	Prepared & Analyzed: 12/01/13			
Total Dissolved Solids	399	1	mg/L	395	1	5	

7740 N. 16th Street Project Number: Nogales Maintenance Yard 11/25/13 Phoenix, AZ 85020

Reported: Project Manager: John Burton 12/17/13 10:26

# DRO/8015D - Quality Control Legend Technical Services, Inc.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B3L0201 - EPA 3510C (Sep	Funnel)									
Blank (B3L0201-BLK1)				Prepared:	12/02/13 Ai	nalyzed: 12	/09/13			
TPH as Fuel Oil (C10-C22)	<250	250	ug/L							
TPH as Motor Oil (C22-C32)	<250	250	ug/L							
LCS (B3L0201-BS1)				Prepared:	12/02/13 Ai	nalyzed: 12	/09/13			
TPH as Fuel Oil (C10-C22)	1780	250	ug/L	2000		89.0	70-120			
LCS Dup (B3L0201-BSD1)				Prepared:	12/02/13 Ai	nalyzed: 12	/10/13			
TPH as Fuel Oil (C10-C22)	1810	250	ug/L	2000		90.5	70-120	1.69	20	
Matrix Spike (B3L0201-MS1)	Soi	urce: 3112070	-01	Prepared:	12/02/13 Ai	nalyzed: 12	/09/13			
TPH as Fuel Oil (C10-C22)	5020	250	ug/L	2050	2780	109	70-130			

7740 N. 16th Street Project Number: Nogales Maintenance Yard 11/25/13 Reported:
Phoenix, AZ 85020 Project Manager: John Burton 12/17/13 10:26

# **Notes and Definitions**

Q9 Insufficient sample received to meet method QC requirements.

N1 See case narrative.

M2 Matrix spike recovery was low; the associated blank spike recovery was acceptable.

H5 This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the

regulatory holding time.

H3 Sample was received and /or anlaysis was requested past holding time.

BLK Method Blank

LCS/Dup Laboratory Control Sample/Laboratory Fortified Blank/Duplicate

MS/Dup Matrix Spike/Duplicate

Dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

EEC, Inc. 7740 N. 16th Street Phoenix, AZ 85020 Project: Nogales Maintenance Yard

Project Number: Nogales Maintenance Yard 11/25/13

Project Manager: John Burton

Reported: 12/17/13 10:26

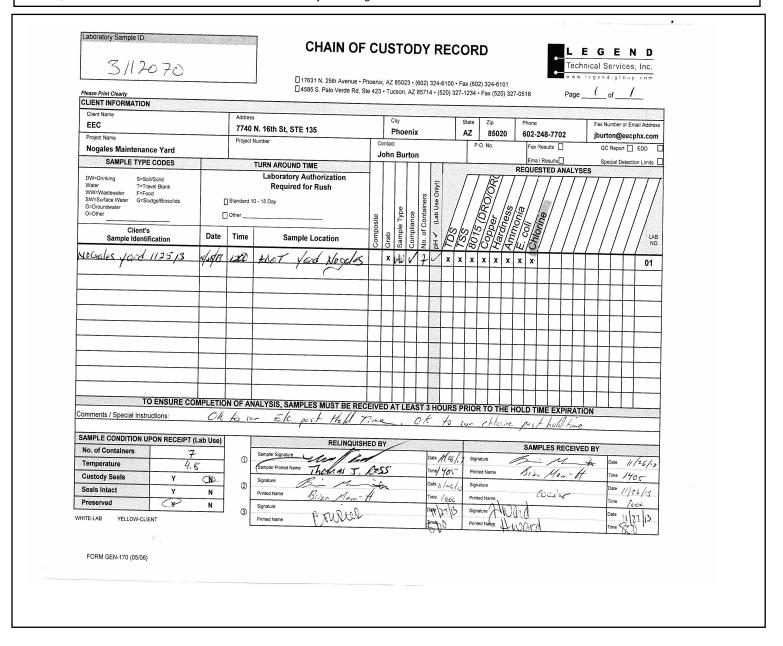
	Arizona Inc	DO Number 3	2112070	
Legena reclinical dervices of			5112070	
			,	
		NG LABORATORY:		
Phoenix, AZ 85023				
Phone: 602-324-6100				
		1) 642-1239		
			,	
Client: FEC Inc %1	liceon			
		ste & Time Sample Commente		
		no a rime oumple comments		
8015D Water (DRO/ORO C-12/09/			The second secon	
Containers Supplied: 13 1000mL Amber Glass pH <2 w/ HCI (	c)			
13_1000mL Amber Glass pH <2 w/ HCl (	o)			
Special Instructions:				
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	Phone: 602-324-6100 Fax: 602-324-6101 Fax: 602-324-6101 Fax: 602-324-6101 Fax: 602-324-6101 Fax: 602-324-6101 Fax: 602-324-6101 Fax: 602-324-6101 Fax: 602-324-6101 Fax: 602-324-6101 Fax: 602-324-6101 Fax: 602-324-6101 Fax: 602-324-6101 Fax: 602-324-6101 Fax: 602-324-6101 Fax: 602-324-6101 Fax: 602-324-6101 Fax: 602-324-6101 Fax: 602-324-6101 Fax: 602-324-6102 Fax: 602-3		ability and a second a second and	
* The sample matrix for leachates su	oplied to the MN laboratory reflects the mater requiring drinking water methods (su	ch as EPA 505, etc.), a 10x dilution is ac	ceptable. Appropriate	
* The sample matrix for leachates su **For matrices other than Drinking W data qualifiers are to be used.	atter requiring drinking water methods (su	ch as EPA 505, etc.), a 10x dilution is ac	ceptable. Appropriate	
* The sample matrix for leachates su **For matrices other than Drinking W data qualifiers are to be used.	Il/26/13 1700	ch as EPA 505, etc.), a 10x dilution is ac Track # 7972 < X Feltx 11/66/2	ceptable. Appropriate	

EEC, Inc. 7740 N. 16th Street Phoenix, AZ 85020 Project: Nogales Maintenance Yard

Project Number: Nogales Maintenance Yard 11/25/13

Project Manager: John Burton

Reported: 12/17/13 10:26



# SUPERIOR FUEL DISCHARGE MONITORING AND LAB REPORTS



# AZS000018 DISCHARGE MONITORING REPORT (DMR)

(Complete a separate form for each monitoring point)

Facility Name:				Monitoring Po		:					
Superior Fuel Yard				South central por	rtion of yard			Yard is 108,9	00 sq ft (2.5 acres)		
Facility Address:				Year:							
952/953 Main Street, Super	ior, AZ			2013 Report	ing Year –	Summer Stor	rm Event				
Monitoring Personnel Name(s)	:			Date/Time Co							
Kirk Creswick, EEC				September 9	, 2013 1	2:54pm					
Time Rainfall Began:	<b>Duration of</b>	Rainfall Event	:	<u>'</u>		Rainfall Am	ount (inch	es):			
Approximately 4 am	Approximate	ely 6 hrs				0.51 (0.04	ft)	Nalgene bottles at south	central portion of yard		
Runoff Source:	Time Elapse	ed Since Last 0	.1 inch Rainfa	all Event:		Qualifying R					
☐ Rainfall ☐ Snowmelt	Approximate	ely 31 days					$\boxtimes$	YES NO			
Estimated Total Volume of Disc 108,900 ft <sup>2</sup> X 0.04 ft <sup>2</sup> of rain = 4	charge (Includ	de units; gal, ft	³, etc.):			NO DISCHA	RGE 🗆				
$108,900 \text{ ft}^2 \text{ X } 0.04 \text{ ft}^2 \text{ of rain} = 4$	1,356 ft <sup>3</sup> X 95%	% runoff = 4,1.	38 <u>ft</u> <sup>3</sup> (7.48) =	= <u>30,954 gallons</u>		NO DISCHARGE					
Parameter	Qu	antity or Load	ing	Quality	or Concentr	ation	No Ex	Frequency of	Sample Type		
	Average	Maximum	Units	Minimum	Average	Units		Analysis			
W 4 1 D: 1 1 G 1:1		04.05	T 1	<b>510</b>		/T		0 1	C 1		
Total Dissolved Solids		94.05	Lbs	510		mg/L		Once each season	Grab		
Total Suspended Solids		2.03	Lbs	11		mg/L		Once each season	Grab		
Total Petroleum											
Hydrocarbons		0.98	Lbs	5.3*		mg/L		Once each season	Grab		
Total Copper		0.01	Lbs	0.07		mg/L		Once each season	Grab		
					1	1	1				

<sup>\*</sup> Detection limit used for concentration



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

John Burton Engineering & Env. Consultants, INC. -AZ 7878 N. 16th Street, Suite 140 Phoenix, AZ 85020

# Report Summary

Wednesday September 18, 2013

Report Number: L656420 Samples Received: 09/10/13 Client Project:

Description: Superior Fuel Yard

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Daphne Richards , ESC Representative

# Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

This report may not be reproduced, except in full, without written approval from ESC Lab Sciences. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



John Burton

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

September 18, 2013

Site ID :

Project # :

ESC Sample # : L656420-01

Engineering & Env. Consultants, INC 7878 N. 16th Street, Suite 140

Phoenix, AZ 85020

Date Received : September 10, 2013 Description : Superior Fuel Yard

Sample ID SUPFUEL90913

Collected By : Kirk Creswick Collection Date : 09/09/13 12:54

00110001011 Date 1 007 007 10 12 101							
Parameter	Result	Det. Limit	Units	Method	Date	Dil.	
Hardness, Total (mg/L as CaCO3)	160	30.	mg/l	130.1	09/18/13	1	
Dissolved Solids	510	10.	mg/l	2540 C-2011	09/12/13	1	
Suspended Solids	11.	2.5	mg/l	2540 D-2011	09/12/13	1	
TPH - Oil & Grease	BDL	5.3	mg/l	1664A	09/11/13	1	
Copper	0.073	0.020	mg/l	200.7	09/15/13	1	

BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 09/18/13 11:13 Printed: 09/18/13 11:13

# Attachment A List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L656420-01	WG681264	SAMP	TPH - Oil & Grease	R2813282	

# Attachment B Explanation of QC Qualifier Codes

Qualifier	Meaning
L3	(ESC) Sample reanalysis and/or spiking could not be performed due to lack of additional volume.

# Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

## Definitions

- Accuracy The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision The agreement between a set of samples or between duplicate samples.

  Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

# Summary of Remarks For Samples Printed 09/18/13 at 11:13:56

TSR Signing Reports: 288 R5 - Desired TAT

Baker Exxon Proj 105022.01 Ken & Mel's Proj 105022.02 MCAA Proj 305007.05 -ALL require TO-15+GRO on ALL AIR SAMPLES ENGENVPAZ-122012S NO CHARGE TBs

Sample: L656420-01 Account: ENGENVPAZ Received: 09/10/13 09:00 Due Date: 09/17/13 00:00 RPT Date: 09/18/13 11:13



Engineering & Env. Consultants, INC. -AZ John Burton 7878 N. 16th Street, Suite 140

Phoenix, AZ 85020

12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Quality Assurance Report Level II

L656420

September 18, 2013

_		Laho	oratory Blank					
Analyte	Result	Uni	_	lec	Limit	Ва	atch Da	ate Analyzed
TPH - Oil & Grease	< 5	mg/	1			WC	G681264 0:	9/11/13 17:24
Suspended Solids	< 2.5	mg/	1			WC	G681176 0:	9/12/13 14:51
Dissolved Solids	< 10	mg/	1			WC	G681177 0	9/12/13 14:58
Copper	< .02	mg/	1			WC	G681730 0	9/15/13 03:06
Hardness, Total (mg/L as CaCO3)	< 30	mg/	1			WC	G682365 0	9/18/13 09:27
			Duplicate					
Analyte	Units	Result	Duplicate	RPD	Limit	F	Ref Samp	Batch
Suspended Solids	mg/l	64.4	61.2	5.10*	5	I	L656358-0	2 WG681176
Suspended Solids	mg/1	2050	2100	2.12	5	I	L656414-0	1 WG681176
Dissolved Solids	mg/l	437.	430.	1.61	5	I	L656460-0	2 WG681177
Copper	mg/l	0.0	0.00104	418.*	20	I	L656437-0	1 WG681730
Hardness, Total (mg/L as CaCO3) Hardness, Total (mg/L as CaCO3)	mg/l mg/l	67.0 180.	66.0 179.	1.50 0.557	20 20		L656418-0: L656330-0:	
		Laborato	ory Control Sa	ample				
Analyte	Units	Known V	al R	Result	% Rec	Li	imit	Batch
TPH - Oil & Grease	mg/l	20	20.	. 3	102.	78	8-114	WG681264
Suspended Solids	mg/l	773	852	2.	110.	85	5-115	WG681176
Dissolved Solids	mg/l	8800	823	30	93.5	85	5-115	WG681177
Copper	mg/l	1	1.0	)4	104.	85	5-115	WG681730
Hardness, Total (mg/L as CaCO3)	mg/l	200	212	2.	106.	85	5-115	WG682365
	I	aboratory Co	ontrol Sample	Duplicate				
Analyte	Units	Result F	Ref %Re	eC .	Limit	RPD	Limi	t Batch
TPH - Oil & Grease	mg/l	20.2	20.3 101	- •	78-114	0.494	18	WG681264
Suspended Solids	mg/l	880. 8	352. 114	١.	85-115	3.23	5	WG681176
Dissolved Solids	mg/l	8510 8	3230 97.	0	85-115	3.35	5	WG681177

<sup>\*</sup> Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Phoenix, AZ 85020

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Quality Assurance Report Level II

L656420

September 18, 2013

		Laborator	y Control Sa	ample Dup	licate				
Analyte	Units	Result	Ref	%Rec		Limit	RPD	Limit	Batch
Hardness, Total (mg/L as CaCO3)	mg/l	213.	212.	106.		85-115	0.471	20	WG68236
			Matrix Sp:	ike					
Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit		Ref Samp	Batch
Copper	mg/l	1.04	0.00104	1	100.	75-125	5	L656437-01	WG68173
Hardness, Total (mg/L as CaCO3)	mg/l	363.	170.	150	130.*	80-120	0	L656330-03	WG68236
		Mat	rix Spike Du	uplicate					
Analyte	Units	MSD	Ref %I	Rec	Limit	RPD	Limit	Ref Samp	Batch
Copper	mg/l	1.05	1.04 10	05.	75-125	1.30	20	L656437-01	WG68173
Hardness, Total (mg/L as CaCO3)	mg/l	363.	363. 12	29.*	80-120	0.0	20	L656330-03	WG68236
			Post Spil	ce					
			Serial Dil	ıtion					

Batch number /Run number / Sample number cross reference

WG681264: R2813282: L656420-01 WG681176: R2814260: L656420-01 WG681177: R2814280: L656420-01

WG681730: R2817623 R2817664: L656420-01 WG682365: R2818793: L656420-01

 $<sup>^{\</sup>star}$   $^{\star}$  Calculations are performed prior to rounding of reported values.

<sup>\*</sup> Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Phoenix, AZ 85020

Quality Assurance Report Level II

L656420

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

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September 18, 2013

ompany Name/Address:		В	illing Inform	nation:		-			An	arysis / CO	ntainer / Pre			Les .	mad T	CO	
EC									1			- 1			37 F		
740 B 16th St Suite 135 Phoenix AZ 85020		7 . 1895 1938	Annual Control				Pers	Se.	E/ HN03	7					L.A.B. S.C.	I E N C E	
			jburton@eecphx.com  City/State Collected:				HDPE/ No	Total Suspended Solids/ 1L HDPE/ No Pres  Total Copper and Hardness/ 500mL HDPE/ HNO3	HDP				236		Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859		
							НОР		00mL	IS I					L# LISTG470		
Phone:  Client Project #				Lab Project #			/ 250mL	Is/ 1L H	dness/5	glass/					J05	8	
Fax:  Collected by (print):  Site/Facility ID #				P.O. #			Solids/	od Solic	nd Han	L clear					Acctnum: ENGENVP		
K IZ C C B S TO L C Collected by (signature):		Same Day200%			sults Needed		Total Dissolved	pende		TPHOGHEX/ 1L	EX/ 1					Daphne Richards	
Immediately Packed on ice N Y Y	Next Do Two Da Three D	yy	100% 50% 25%	Email?N	NoYes oYes	No. of	al Dis	al Sus	Total Copper	HOGH					Cooler: Shipped Via:		
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Entrs	- Designation of the	Name and Address of the Owner, where the Owner, which is the Owner, where the Owner, which is the Owner, where the Owner, which is the Owner, whic	-	-		-			Rem./Contaminant	Sample # (lab only	
SUPFUEL90913		Sw		9/9/13	1254	4	×	×	×	X							
		200c	10%													17.6	
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Matrix: SS - Soil GW - Groundwate  Remarks:	er ww - Waste	water Dw.	Dimking vi		5704	60	55	168	55	Flow	es returned	Other	UPS	- 100	ld# ndition: (la	b use only)	
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# AZS000018 DISCHARGE MONITORING REPORT (DMR)

(Complete a separate form for each monitoring point)

Facility Name:	Monitoring Point (Outfall):											
Superior Fuel Yard				South central portion of yard Yard is 108,900 sq ft (2.5 acres								
Facility Address:				Year:								
952/953 Main Street, Super	2013/2014 Reporting Year – Winter Storm Event											
Monitoring Personnel Name(s):	Date/Time Collected:											
Kirk Creswick, EEC		11/25/13 12:	11/25/13 12:00pm (noon) Nalgene bottles at south central portion									
Time Rainfall Began:	<b>Duration of</b>	Rainfall Event	:			Rainfall Am	ount (inch	es):				
Approximately 3:30 am	Approximate	ely 7.5 hrs				0.33 (0.027 ft	<b>(1)</b>					
Runoff Source:	Time Elapse	ed Since Last 0	.1 inch Rainfa	ll Event:		Qualifying R	ainfall Ev	ent:				
□ Rainfall □ Snowmelt	Approximate	ely 70 days						YES NO				
Estimated Total Volume of Discharge (Include units; gal, $ft^3$ , etc.): 108,900 ft <sup>2</sup> X 0.027 ft <sup>2</sup> of rain = 2,940 ft <sup>3</sup> X 95% runoff = 2,793 ft <sup>3</sup> ( 7.48)				= <b>20,894</b> <u>gallons</u>		NO DISCHARGE						
Parameter	Quantity or Loading			Quality	or Concentr	ration No Ex		Frequency of	Sample Type			
	Average	Maximum	Units	Minimum	Average	Units		Analysis	1 11			
T-4-1 Disselsed Calida		45.34	T b	200		/T		0	C1			
Total Dissolved Solids		43.34	Lbs	380		mg/L		Once each season	Grab			
Total Suspended Solids		35.80	Lbs	300		mg/L		Once each season	Grab			
Total Petroleum												
Hydrocarbons		0.74	Lbs	6.2*		mg/L		Once each season	Grab			
Total Copper		0.02	Lbs	0.15		mg/L		Once each season	Grab			

<sup>\*</sup> Detection limit used for concentration



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John Burton Engineering & Env. Consultants, INC. -AZ 7740 N. 16th Street, Ste 135 Phoenix, AZ 85020

#### Report Summary

Wednesday December 04, 2013

Report Number: L670768 Samples Received: 11/26/13 Client Project: 308032.24

Description: Superiour Fuel Yard

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Daphne Richards , ESC Representative

#### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

This report may not be reproduced, except in full, without written approval from ESC Lab Sciences. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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REPORT OF ANALYSIS

December 04, 2013

John Burton Engineering & Env. Consultants, INC 7740 N. 16th Street, Ste 135

Phoenix, AZ 85020

Date Received : November 26, 2013 Description : Superiour Fuel Yard

SUPF112513 Sample ID

Collected By : Sean Doctor Collection Date : 11/25/13 12:00 ESC Sample # : L670768-01

Project #: 308032.24

Site ID : ADOT-SUPERIOR FUEL

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hardness, Total (mg/L as CaCO3)	130	30.	mg/l	130.1	12/03/13	1
Dissolved Solids	380	10.	mg/l	2540 C-2011	11/29/13	1
Suspended Solids	300	2.5	mg/l	2540 D-2011	11/29/13	1
TPH - Oil & Grease	BDL	6.2	mg/l	1664A	12/02/13	1
Copper Copper,Dissolved	0.15 0.10	0.020 0.020	mg/l mg/l	200.7 200.7	11/30/13 12/02/13	1 1

BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 12/04/13 09:39 Printed: 12/04/13 09:41

#### Attachment A List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L670768-01	WG694948	SAMP	TPH - Oil & Grease	R2861603	

## Attachment B Explanation of QC Qualifier Codes

Qualifier	Meaning
L3	(ESC) Sample reanalysis and/or spiking could not be performed due to lack of additional volume.

#### Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

#### Definitions

- Accuracy The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision The agreement between a set of samples or between duplicate samples.

  Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

## Summary of Remarks For Samples Printed 12/04/13 at 09:41:52

TSR Signing Reports: 288 R5 - Desired TAT

Baker Exxon Proj 105022.01 Ken & Mel's Proj 105022.02 MCAA Proj 305007.05 -ALL require TO-15+GRO on ALL AIR SAMPLES ENGENVPAZ-122012S NO CHARGE TBs

Sample: L670768-01 Account: ENGENVPAZ Received: 11/26/13 09:30 Due Date: 12/04/13 00:00 RPT Date: 12/04/13 09:39



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L670768

December 04, 2013

-							<del></del>
Analyte	Result	Labora Units	atory Blank	e	Limit	Batch Da	te Analyzed
Suspended Solids	< 2.5	mg/l					/29/13 14:10
Suspended Solids	< 2.5	IIIg/I				WG094518 II	/29/13 14:10
Dissolved Solids	< 10	mg/l				WG694520 11	/29/13 16:48
Copper	< .02	mg/l				WG694515 11	/30/13 08:13
TPH - Oil & Grease	< 5	mg/l				WG694948 12	/02/13 11:23
Copper,Dissolved	< .02	mg/l				WG695064 12	/02/13 03:32
Hardness, Total (mg/L as CaCO3)	< 30	mg/l				WG695059 12	/03/13 22:05
		Dı	uplicate				
Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Suspended Solids	mq/l	35.2	38.0	7.51*	5	L670771-01	WG694518
Suspended Solids	mg/l	16.0	15.5	3.17	5	L670832-01	WG694518
Dissolved Solids	mg/l	524.	512.	2.32	5	L670760-03	WG694520
Copper	mg/l	0.0	-0.0000942	160.*	20	L670837-02	WG694515
Copper,Dissolved	mg/l	0.100	0.101	3.00	20	L670768-01	WG695064
Hardness, Total (mg/L as CaCO3)	mg/l	90.0	95.9	6.35	20	L670696-02	
Hardness, Total (mg/L as CaCO3)	mg/l	91.0	95.8	5.14	20	L670697-02	WG695059
Analyte	Units	Laboratory Known Val	y Control Samp	ple sult	% Rec	Limit	Batch
Suspended Solids	mg/l	773	780.		101.	85-115	WG694518
_	_						
Dissolved Solids	mg/l	8800	9050		103.	85-115	WG694520
Copper	mg/l	1	1.01		101.	85-115	WG694515
TPH - Oil & Grease	mg/l	20	17.6		88.0	78-114	WG694948
Copper, Dissolved	mg/l	1	1.02		102.	85-115	WG695064
Hardness, Total (mg/L as CaCO3)	mg/l	200	187.		93.5	85-115	WG695059

<sup>\*</sup> Performance of this Analyte is outside of established criteria.
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L670768

December 04, 2013

		-		Sample Dup					
Analyte	Units	Result	Ref	%Rec		Limit	RPD	Limit	Batch
Suspended Solids	mg/l	760.	780.	98.0		85-115	2.60	5	WG69451
Dissolved Solids	mg/l	9030	9050	103.		85-115	0.221	5	WG69452
TPH - Oil & Grease	mg/l	17.4	17.6	87.0		78-114	1.14	18	WG69494
Hardness, Total (mg/L as CaCO3)	mg/l	185.	187.	92.0		85-115	1.08	20	WG69505
			Matrix S	Spike					
Analyte	Units	MS Res	Ref Re	_	% Rec	Limit		Ref Samp	Batch
Copper	mg/l	1.01	-0.000	0094 1	100.	75-12	15	L670837-02	WG69451
Copper,Dissolved	mg/l	1.08	0.101	1	98.0	75-12	15	L670768-01	WG69506
Hardness, Total (mg/L as CaCO3)	mg/l	215.	91.2	150	82.0	80-12	10	L670696-01	WG69505
		Mata	rix Spike	Duplicate					
Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Copper	mg/l	1.02	1.01	102.	75-125	1.00	20	L670837-02	WG69451
Copper,Dissolved	mg/l	1.10	1.08	99.8	75-125	2.00	20	L670768-01	WG69506
Hardness, Total (mg/L as CaCO3)	mg/l	212.	215.	80.5	80-120	1.41	20	L670696-01	WG69505
			Post Sp	oike					

Serial Dilution

Batch number /Run number / Sample number cross reference

WG694518: R2860971: L670768-01 WG694520: R2861060: L670768-01 WG694515: R2861587: L670768-01 WG694948: R2861603: L670768-01 WG695064: R2861893: L670768-01 WG695059: R2862325: L670768-01

 $<sup>^{\</sup>star}$   $^{\star}$  Calculations are performed prior to rounding of reported values.

<sup>\*</sup> Performance of this Analyte is outside of established criteria. For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Quality Assurance Report Level II

L670768

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Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

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December 04, 2013

Company Name/Address:	entral commence of the commenc		illing Info	rmation:	- Constitution of the cons	economismography (CC)		**************************************		Analysis /	Contair	ner / Preservative	winestern on organization or the state of th	Chain of Cu	ustody	Page \_ of _
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John Burton		1		eecphx.com					巨工	Pres		***************************************		12065 Leban Mount Juliet	t, TN 37122	
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Phone: 662 - 248 - 7702	Client Project	#		Lab Project #	When the second distribution and second 0.000000000	ω,		ĬĘ	Dissolved Copper/ 500mL HDPE/	η.		#14	L# LG	7071	8	
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#### SUPERIOR YARD DISCHARGE MONITORING AND LAB REPORTS



# AZS000018 DISCHARGE MONITORING REPORT (DMR)

(Complete a separate form for each monitoring point)

Facility Name:					Monitoring Point (Outfall):								
Superior Maintenance Yard				Low point at	southwest	corner of yar	rd	Yard is 41	,818 sq ft (0.96 acres)				
Facility Address:	0.7.7.0			Year:		~	~	_					
951 Main St., Superior, AZ					2013/2014 Reporting Year – Summer Storm Event								
Monitoring Personnel Name(s):	•				Date/Time Collected:								
Kirk Creswick, EEC				September 9, 2	eptember 9, 2013 12:40am								
Time Rainfall Began:	<b>Duration of</b>	Rainfall Event	:			Rainfall Am	,	es):					
Approximately 4 am	Approximate	ely 6 hrs				0.51 (0.04)	ft)	Nalgene bottles installed	at SW corner of yard				
Runoff Source:	Time Elapse	ed Since Last 0.	.1 inch Rainfa	ıll Event:		Qualifying R							
⊠ Rainfall ☐ Snowmelt	Approximate	ely 31 days					$\boxtimes$	YES NO					
<b>Estimated Total Volume of Disc</b>	charge (Includ	de units; gal, ft	³, etc.):			NO DISCHA	RCF 🗆						
$41,818 \text{ ft}^2 \text{ X } 0.04 \text{ ft}^2 \text{ of rain} = 1,0$	673 ft <sup>3</sup> X 95%	runoff = 1,589	$9 \underline{\text{ft}^3} (7.48) = \underline{1}$	<u>11,886 gallons</u>		NO DISCHA	KGE _						
Parameter	Qu	Quantity or Loading			or Concentr	ation No Ex		Frequency of	Sample Type				
	Average	Maximum	Units	Minimum	Average	Units		Analysis	1 11				
T-4-1 Disselsed Calida		70.77	T b	720		/T		0	Cl				
Total Dissolved Solids		79.67	Lbs	720		mg/L		Once each season	Grab				
Total Suspended Solids		232.36	Lbs	2100		mg/L		Once each season	Grab				
Total Petroleum													
Hydrocarbons		0.59	Lbs	5.3*		mg/L		Once each season	Grab				
Total Copper		0.04	Lbs	0.32		mg/L		Once each season	Grab				

<sup>\*</sup> Detection limit used for concentration



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Est. 1970

John Burton Engineering & Env. Consultants, INC. -AZ 7878 N. 16th Street, Suite 140 Phoenix, AZ 85020

#### Report Summary

Thursday September 19, 2013

Report Number: L656414 Samples Received: 09/10/13 Client Project:

Description: Superior Maintance Yard

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Daphne Richards , ESC Representative

#### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

September 19, 2013

Engineering & Env. Consultants, INC 7878 N. 16th Street, Suite 140

Phoenix, AZ 85020

Date Received : September 10, 2013

: Superior Maintance Yard Description

Sample ID SUPMAINT90913

Collected By : Kirk Creswick Collection Date : 09/09/13 12:40 ESC Sample # : L656414-01

Site ID : Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hardness, Total (mg/L as CaCO3)	110	30.	mg/l	130.1	09/18/13	1
Dissolved Solids	720	10.	mg/l	2540 C-2011	09/12/13	1
Suspended Solids	2100	2.5	mg/l	2540 D-2011	09/12/13	1
TPH - Oil & Grease	BDL	5.3	mg/l	1664A	09/11/13	1
Copper	0.32	0.020	mg/l	200.7	09/18/13	1

BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 09/19/13 08:23 Printed: 09/19/13 08:24

#### Attachment A List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L656414-01	WG681264	SAMP	TPH - Oil & Grease	R2813282	

## Attachment B Explanation of QC Qualifier Codes

Qualifier	Meaning
L3	(ESC) Sample reanalysis and/or spiking could not be performed due to lack of additional volume.

#### Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

#### Definitions

- Accuracy The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision The agreement between a set of samples or between duplicate samples.

  Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

## Summary of Remarks For Samples Printed 09/19/13 at 08:24:16

TSR Signing Reports: 288 R5 - Desired TAT

Baker Exxon Proj 105022.01 Ken & Mel's Proj 105022.02 MCAA Proj 305007.05 -ALL require TO-15+GRO on ALL AIR SAMPLES ENGENVPAZ-122012S NO CHARGE TBs

Sample: L656414-01 Account: ENGENVPAZ Received: 09/10/13 09:00 Due Date: 09/17/13 00:00 RPT Date: 09/19/13 08:23



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L656414

September 19, 2013

		I.ah	oratory Blank					
Analyte	Result		its % R	lec	Limit	Ва	atch D	ate Analyzed
TPH - Oil & Grease	< 5	mg	/1			Mo	G681264 0	9/11/13 17:24
Suspended Solids	< 2.5	mg	/1			Mo	G681176 0	9/12/13 14:51
Dissolved Solids	< 10	mg	/1			Mo	G681177 0	9/12/13 14:58
Copper	< .02	mg	/1			W	G681652 0	9/16/13 15:44
Hardness, Total (mg/L as CaCO3)	< 30	mg	/1			Wo	G682365 0	9/18/13 09:27
			Duplicate					
Analyte	Units	Result	Duplicate	RPD	Limit	I	Ref Samp	Batch
Suspended Solids	mg/l	64.4	61.2	5.10*	5	]	L656358-0	2 WG681176
Suspended Solids	mg/l	2050	2100	2.12	5	]	L656414-0	1 WG681176
Dissolved Solids	mg/l	437.	430.	1.61	5	1	L656460-0	2 WG681177
Copper	mg/l	0.0	0.000464	22.7*	20	]	L656411-0	1 WG681652
Hardness, Total (mg/L as CaCO3) Hardness, Total (mg/L as CaCO3)	mg/l mg/l	67.0 180.	66.0 179.	1.50 0.557	20 20		L656418-0 L656330-0	
		Laborat	ory Control Sa	elamn				
Analyte	Units	Known '	_	tesult	% Rec	L	imit	Batch
TPH - Oil & Grease	mg/l	20	20.	3	102.	78	8-114	WG681264
Suspended Solids	mg/l	773	852	١.	110.	8!	5-115	WG681176
Dissolved Solids	mg/l	8800	823	0	93.5	8!	5-115	WG681177
Copper	mg/l	1	1.0	13	103.	8!	5-115	WG681652
Hardness, Total (mg/L as CaCO3)	mg/l	200	212	l	106.	8!	5-115	WG682365
	I	aboratory C	ontrol Sample	Duplicate				
Analyte	Units	Result 1	Ref %Re	eC .	Limit	RPD	Limi	t Batch
TPH - Oil & Grease	mg/l	20.2	20.3 101		78-114	0.494	18	WG681264
Suspended Solids	mg/l	880.	852. 114		85-115	3.23	5	WG681176
Dissolved Solids	mg/l	8510	8230 97.	0	85-115	3.35	5	WG681177

<sup>\*</sup> Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



Engineering & Env. Consultants, INC. -AZ John Burton 7878 N. 16th Street, Suite 140

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Quality Assurance Report Level II

L656414

September 19, 2013

		Tabaratar	y Control :	Cample Dup	lianto				
Analyte	Units	Result	Ref	%Rec	IICace	Limit	RPD	Limit	Batch
Hardness, Total (mg/L as CaCO3)	mg/l	213.	212.	106.		85-115	0.471	. 20	WG682365
			Matrix S	pike					
Analyte	Units	MS Res	Ref Re	s TV	% Rec	Limit		Ref Samp	Batch
Copper	mg/l	1.04	0.0004	64 1	100.	75-125		L656411-01	WG681652
Hardness, Total (mg/L as CaCO3)	mg/l	363.	170.	150	130.*	80-120		L656330-03	WG682365
		Mat	rix Spike 1	Duplicate					
Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Copper	mg/l	1.03	1.04	103.	75-125	0.455	20	L656411-01	WG681652
Hardness, Total (mg/L as CaCO3)	mg/l	363.	363.	129.*	80-120	0.0	20	L656330-03	WG682365

Batch number /Run number / Sample number cross reference

WG681264: R2813282: L656414-01 WG681176: R2814260: L656414-01 WG681177: R2814280: L656414-01 WG681652: R2817844: L656414-01 WG682365: R2818793: L656414-01

 $<sup>^{\</sup>star}$  \* Calculations are performed prior to rounding of reported values.

<sup>\*</sup> Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



Engineering & Env. Consultants, INC. -AZ John Burton 7878 N. 16th Street, Suite 140

Phoenix, AZ 85020

Quality Assurance Report Level II

L656414

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

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September 19, 2013

			Billing Infor	mation:		T			Ar	nalysis / C	ontainer	/ Prese	rvative	ALC: U		Chain of Custody	Page of
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740 B 16th St Suite 135 Phoenix AZ 85020							Pers	ιo.	HN03	8				/		L.A.B S.	C-I-E-N-C-E-
eport to:	Angler Fred	A second	Email To: jburton@	eecphx.com			E/ No P	1L HDPE/ No Pres	500mL HDPE/ HNO3	٧						12065 Lebanon Ro Mount Juliet, TN 3 Phone: 615-758-5 Phone: 800-767-5 Fax: 615-758-585	7122 858 A 3 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4
roject Superior Maintend	aintence Yard		City/State Collected:				250mL HDPE/ No	IDPE/	500mL	豆						L# L651	
hone:	Client Project #			Lab Project #			250m	IS/ 1L F		glass/ HCI						Jo	56
Collected by (print):	Site/Facility ID	#	18-1	P.O.#			Total Dissolved Solids/	Total Suspended Solids/	Total Copper and Hardness/	1L clear						Acctnum: El Template:	NGENVPAZ
Collected by (signature)	Rush? (L.		Notified) 200%	Date Re	sults Needed  No Yes		solved	spende	pper ar	HEX/ 1						Prelogin: TSR:	
Immediately Packed on Ice N Y	Two Da	ıy	50%	FAX?N		No. of	tal Dis	ital Su	tal Co	TPHOGHEX						Cooler: Shipped Via:	
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Cntrs	The same	20027	-	-						Rem./Contamin	ant Sample # (lab on)
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Matrix: SS - Soil GW - Groundwate	r WW - Waste	Water <b>DW</b> -	Drinking Wa	ater OT - Other	5704	1 6	56	168	5	pH .		_ Tem			Hold #		
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# AZS000018 DISCHARGE MONITORING REPORT (DMR)

(Complete a separate form for each monitoring point)

Facility Name:				Monitoring Po					
Superior Maintenance Yard				Low point at	southwest	corner of yar	rd	Yard is 41	,818 sq ft (0.96 acres)
Facility Address:				Year:					
951 Main St., Superior, AZ	85273			2013/2014 R	eporting Y	ear – Winter	Storm E	vent	
Monitoring Personnel Name(s)	•			Date/Time Co	llected:				
Sean Doctor, EEC				11/25/13 12:	00pm (noo	n)			
Time Rainfall Began:	<b>Duration of</b>	Rainfall Event	•	1		es):			
Approximately 3:30 am	Approximate	ely 7.5 hrs				0.21 (0.02 ft)		,	
Runoff Source:	Time Elapse	ed Since Last 0	.1 inch Rainfa	ll Event:		Qualifying R	Rainfall Ev	ent:	
□ Rainfall    □ Snowmelt	Approximate							YES NO	
Estimated Total Volume of Disc 41,818 ft <sup>2</sup> X $0.01$ ft <sup>2</sup> of rain = 83	charge (Include 66 ft <sup>3</sup> X 95% r	de units; gal, ft unoff = 795 <u>ft</u> ³	<sup>3</sup> , etc.): <sup>3</sup> ( 7.48) = 5,94	,943 gallons NO DISCHARGE					
Parameter	Qu	antity or Load	ing	Quality	or Concentr	ration No Ex		Frequency of	Sample Type
T ut utilicated	Average	Maximum	Units	Minimum	Average	Units	110 221	Analysis	Sumple Type
				250				_	
Total Dissolved Solids		25.06	Lbs	350		mg/L		Once each season	Grab
Total Suspended Solids		2.72	Lbs	38		mg/L		Once each season	Grab
Total Petroleum									
Hydrocarbons		0.41	Lbs	5.7*		mg/L		Once each season	Grab
Total Copper		0.11	Lbs	1.5		mg/L		Once each season	Grab

<sup>\*</sup> Detection limit used for concentration



**Quality Control Summary** SDG: L670771

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For: Engineering & Env. Consultants, INC. -AZ Superior Maintenance Yard

L670771

Lab SampleID.

L670771-01

**Client ID** 

SUPM112513



12065 Lebanon Rd Mt. Juliet, TN 37122 (615) 758-5858 (800) 767-5859 Fax (615) 758-5859 Tax I.D 62-0814289 Est. 1970

### Quality Control Summary SDG: L670771

For: Engineering & Env. Consultants, INC. -AZ

**Project: Superior Maintenance Yard** 

December 04, 2013

#### **Sample Receiving and Handling**

All sample aliquots were received at the correct temperature, in the proper containers, and with the appropriate preservatives. All method specified holding times were met.

#### **Total Suspended Solids by Method 2540 D-2011**

#### **Laboratory Control Sample**

Sample L670771-01 was analyzed in analytical batch WG694518. The laboratory control sample associated with this sample was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

#### Sample Duplicate Analysis

For analytical batch WG694518 sample duplicate analysis was performed on sample L670771-01. The relative percent difference exceeded the method limits for Suspended Solids.

For analytical batch WG694518 sample duplicate analysis was performed on sample L670832-01. The relative percent differences were within the method limits for target analytes reported from this batch.

#### Matrix Spike/Matrix Spike Duplicate

Precision for batch WG694518 was evaluated using the LCS/LCSD. The RPDs were within method limits.

#### **Blank Analysis**

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

#### Total Dissolved Solids by Method 2540 C-2011

#### **Laboratory Control Sample**

Sample L670771-01 was analyzed in analytical batch WG694520. The laboratory control sample associated with this sample was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

#### Sample Duplicate Analysis

For analytical batch WG694520 sample duplicate analysis was performed on sample L670760-03. The relative percent differences were within the method limits for target analytes reported from this batch.

#### Matrix Spike/Matrix Spike Duplicate

Precision for batch WG694520 was evaluated using the LCS/LCSD. The RPDs were within method limits.

#### **Blank Analysis**

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

#### TPH - Oil and Grease by Method 1664A

#### **Laboratory Control Sample**

Sample L670771-01 was analyzed in analytical batch WG694948. The laboratory control sample associated with this sample was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.



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12065 Lebanon Rd

Quality Control Summary SDG: L670771

For: Engineering & Env. Consultants, INC. -AZ

**Project: Superior Maintenance Yard** 

December 04, 2013

#### Matrix Spike/Matrix Spike Duplicate

Precision for batch WG694948 was evaluated using the LCS/LCSD. The RPDs were within method limits.

#### **Blank Analysis**

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

#### **Hardness by Method 130.1**

#### **Laboratory Control Sample**

Sample L670771-01 was analyzed in analytical batch WG695059. The laboratory control sample associated with this sample was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

#### Sample Duplicate Analysis

For analytical batch WG695059 sample duplicate analysis was performed on sample L670696-02. The relative percent differences were within the method limits for target analytes reported from this batch.

For analytical batch WG695059 sample duplicate analysis was performed on sample L670697-02. The relative percent differences were within the method limits for target analytes reported from this batch.

#### Matrix Spike/Matrix Spike Duplicate

For analytical batch WG695059 matrix spike/matrix spike duplicate analysis was performed on sample L670696-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

#### **Blank Analysis**

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

#### **Trace Metals by Method 200.7**

#### **Laboratory Control Sample**

Sample L670771-01 was analyzed in analytical batch WG694515. The laboratory control sample associated with this sample was within the laboratory control limits for all target analytes reported from this batch.

Sample L670771-01 was analyzed in analytical batch WG695064. The laboratory control sample associated with this sample was within the laboratory control limits for all target analytes reported from this batch.

#### Sample Duplicate Analysis

For analytical batch WG694515 sample duplicate analysis was performed on sample L670837-02. The relative percent differences were within the method limits for target analytes reported from this batch.

For analytical batch WG695064 sample duplicate analysis was performed on sample L670768-01. The relative percent differences were within the method limits for target analytes reported from this batch.



Quality Control Summary SDG: L670771 Mt. Juliet, TN 37122 (615) 758-5858 (800) 767-5859 Fax (615) 758-5859 Tax I.D 62-0814289 Est. 1970

12065 Lebanon Rd

For: Engineering & Env. Consultants, INC. -AZ

**Project: Superior Maintenance Yard** 

December 04, 2013

#### Matrix Spike/Matrix Spike Duplicate

For analytical batch WG694515 matrix spike/matrix spike duplicate analysis was performed on sample L670837-02. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

For analytical batch WG695064 matrix spike/matrix spike duplicate analysis was performed on sample L670768-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

#### **Blank Analysis**

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Nancy F. McLain ESC Representative ESC Lab Sciences



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

John Burton Engineering & Env. Consultants, INC. -AZ 7740 N. 16th Street, Ste 135 Phoenix, AZ 85020

#### Report Summary

Wednesday December 04, 2013

Report Number: L670771 Samples Received: 11/26/13 Client Project: 308032.24

Description: Superior Maintenance Yard

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Daphne Richards , ESC Representative

#### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Page 1 of 7



**Quality Control Summary** SDG: L670771

12065 Lebanon Rd Mt. Juliet, TN 37122 (615) 758-5858 (800) 767-5859 Fax (615) 758-5859 Tax I.D 62-0814289 Est. 1970

# For: Engineering & Env. Consultants, INC. -AZ Superior Maintenance Yard

L670771

Lab SampleID.

L670771-01

**Client ID** 

SUPM112513



12065 Lebanon Rd Mt. Juliet, TN 37122 (615) 758-5858 (800) 767-5859 Fax (615) 758-5859 Tax I.D 62-0814289 Est. 1970

#### **SAMPLE NUMBER**

Preparation Date: 11/27/2013 11:26

**38** 

SUPM112513

Customer: Engineering & Env. Consultants, INC. - Project: 308032.24

ADOT-SUPERIOR MAINT Source: Date Sampled: 11/25/2013 12:00 PM

Superior Maintenance Yard Sampled By: Sean Doctor Location: Lab Sample ID: **L670771-01** Date Received: 11/26/2013

130.1

Analytic Batch: WG695059 Analysis Date: 12/3/2013 Analysis Time: 10:26

Instrument: LACHAT2 Analyst: 183 Preparation Date: 12/1/2013 4:45

Method: 130.1 Dilution: 1

RL CAS NO **Analyte RESULTS FLAG** mg/l mg/l 471-34-1 Hardness, Total (mg/L as CaCO3) 30 91

2540 C-2011

Analytic Batch: WG694520 Analysis Date: 11/29/2013 Analysis Time: 4:49 PM

Instrument: WETBAL1 Analyst: 036 Preparation Date: 11/27/2013 9:13

Method: 2540 C-2011 Dilution: 1

RL**RESULTS CAS NO** Analyte **FLAG** mg/l mg/l **DSOLIDS** Dissolved Solids 10 **350** 

2540 D-2011

Analytic Batch: WG694518 Analysis Date: 11/29/2013 Analysis Time: 2:13 PM

Instrument: WETBAL1 Analyst: 036 Dilution: 1 Method: 2540 D-2011

**CAS NO** RL Analyte **RESULTS FLAG** mg/l mg/l SSOLIDS Suspended Solids R8

2.5

Comments: 1) Sample results are reported as rounded values.

2) These results are applicable only to the items tested.



12065 Lebanon Rd Mt. Juliet, TN 37122 (615) 758-5858 (800) 767-5859 Fax (615) 758-5859 Tax I.D 62-0814289

Est. 1970

#### **SAMPLE NUMBER**

SUPM112513

Customer: Engineering & Env. Consultants, INC. - Project: 308032.24

ADOT-SUPERIOR MAINT Source: Date Sampled: 11/25/2013 12:00 PM

Superior Maintenance Yard Sampled By: Location: Sean Doctor <u>Lab Sample ID</u>: **L670771-01** Date Received: 11/26/2013

1664A

Analytic Batch: WG694948 Analysis Date: 12/2/2013 Analysis Time: 11:31

Instrument: EXTBAL1 Analyst: 597 Preparation Date: 12/2/2013 8:51

Method: 1664A Dilution: 1

RL RESULTS CAS NO **Analyte FLAG** mg/l mg/l TPH - Oil & Grease 5.7 < 5.7 L3

200.7

Analytic Batch: WG694515 Analysis Date: 11/30/2013 Analysis Time: 9:35

Instrument: ICP5 Analyst: 178 Preparation Date: 11/26/2013 8:26

Method: 200.7 Dilution: 1

RL **RESULTS CAS NO** Analyte **FLAG** mg/l mg/l 7440-50-8 0.020 1.5 Copper

200.7

Analytic Batch: WG695064 Analysis Date: 12/2/2013 Analysis Time: 4:05

Analyst: 167 Instrument: ICP6 Dilution: 1 Method: 200.7

Preparation Date: 12/1/2013 11:58

RL CAS NO Analyte

**RESULTS FLAG** mg/l mg/l 7440-50-8 Copper, Dissolved 0.020 0.18

**LEGEND** 

RL -Reporting Limit

**QUALIFIERS** 

R8 -Sample RPD exceeded the method acceptance limit

(ESC) Sample reanalysis and/or spiking could not be performed due to lack of additional volume. L3

Comments: 1) Sample results are reported as rounded values.

2) These results are applicable only to the items tested.



12065 Lebanon Rd Mt. Juliet, TN 37122 (615) 758-5858 (800) 767-5859 Fax (615) 758-5859 Tax I.D 62-0814289 Est. 1970

## Quality Control Summary SDG: L670771

Engineering & Env. Consultants, INC. -AZ

Test: Hardness by Method 130.1

Project No: 308032.24
Project: Superior Maintenance Yard

Collection Date: 11/25/2013

Analysis Date: 12/3/2013 10:26:00 PM

Instrument ID: LACHAT2 Sample Numbers: L670771-01

Analyte Hardness Matrix: Water - mg/L EPA ID: TN00003 Analytic Batch: WG695059

183

Method Blank

CAS RDL Qualifier

471-34-1 < 30.0

Analyst:

Laboratory Control Sample (LCS)									
Control Analyte Dil True Value Found % Rec Limits Qual									
Hardness	1	200	187	93.5	85 - 115	Quui			

Laboratory Control Sample Duplicate (LCSD)										
Control Analyte Dil True Value Found % Rec Limits Qual										
Hardness										

Laboratory Control Sample / Laboratory Control Sample Duplicate											
							Control	% Rec		Control	RPD
Analyte	<b>D</b> i	il Spike	LCS	% Rec	LCSD	% Rec	Limits	Qual	% RPD	Limits	Qual
Hardness	1	200	187	93.5	185	92.5	85 - 115		1.08	20	



12065 Lebanon Rd Mt. Juliet, TN 37122 (615) 758-5858 (800) 767-5859 Fax (615) 758-5859 Tax I.D 62-0814289 Est. 1970

Water - mg/L

TN00003

183

Analyst:

### Quality Control Summary SDG: L670771

Engineering & Env. Consultants, INC. -AZ

Test: Hardness by Method 130.1

Project No: 308032.24 Matrix:
Project: Superior Maintenance Yard EPA ID:

12/3/2013 10:26:00 PM

Collection Date: 11/25/2013 Analytic Batch: WG695059

Instrument ID: LACHAT2 Sample Numbers: L670771-01

Analysis Date:

#### **Sample Duplicate**

L670696-02

AnalyteDilSample ResultDUP Result% RPDLimitQualifierHardness195.990.16.3520

#### **Sample Duplicate**

L670697-02

AnalyteDilSample ResultDUP Result% RPDLimitQualifierHardness195.890.85.1420

Mat	rix Spike / Matrix Spike Duplic	cate
	L670696-01	

		Spike						Control	% Rec		Control	RPD
Analyte	Dil	Value	Sample	MS	% Rec	MSD	% Rec	Limits	Qual	RPD	Limits	Qual
Hardness	1	150	91.2	215	82.5	212	80.5	80 - 120		1.41	20	



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## **Quality Control Summary SDG: L670771**

Engineering & Env. Consultants, INC. -AZ

Test: TPH - Oil and Grease by Method 1664A

Project No: 308032.24 Matrix: Water - mg/L
Project: Superior Maintenance Yard EPA ID: TN00003
Collection Date: 11/25/2013 Analytic Batch: WG694948

Analysis Date: 12/2/2013 11:31:00 AM Analyst: 597

	Method Blank		
Analyte	CAS	RDL	Qualifier
TPH - Oil & Grease		< 5.00	

Laboratory Control Sample (LCS)									
Control Analyte Dil True Value Found % Rec Limits Qual									
TPH - Oil & Grease	1	20	17.6	88	78 - 114				

Laboratory Control Sample Duplicate (LCSD)										
Control Analyte Dil True Value Found % Rec Limits Qual										
<b>TPH - Oil &amp; Grease</b> 1 20 17.4 87 78 - 114										

Laboratory Control Sample / Laboratory Control Sample Duplicate											
							Control	% Rec		Control	RPD
Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Limits	Qual	% RPD	Limits	Qual
TPH - Oil & Grease	1	20	17.6	88	17.4	87	78 - 114		1.14	18	



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## **Quality Control Summary SDG: L670771**

Engineering & Env. Consultants, INC. -AZ

Test: Total Dissolved Solids by Method 2540 C-2011

Project No: 308032.24 Matrix: Water - mg/L
Project: Superior Maintenance Yard EPA ID: TN00003
Collection Date: 11/25/2013 Analytic Batch: WG694520

Analysis Date: 11/29/2013 4:49:00 PM Analyst: 036

	Method Blank		
Analyte	CAS	RDL	Qualifier
Dissolved Solids	DSOLIDS	< 10.0	

	Laborato	ry Control Sai	mple (LCS)	)		
Analyte	Dil	True Value	Found	% Rec	Control Limits	Oual
Dissolved Solids	1	8800	9050	103	85 - 115	Quui

	Laboratory Control Sample Duplicate (LCSD)								
Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual			
Dissolved Solids	1	8800	9030	103	85 - 115				

Laboratory Control Sample / Laboratory Control Sample Duplicate											
							Control	% Rec		Control	RPD
Analyte	Di	il Spike	LCS	% Rec	LCSD	% Rec	Limits	Qual	% RPD	Limits	Qual
Dissolved Solids	1	8800	9050	103	9030	103	85 - 115		0.22	5	



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### Quality Control Summary SDG: L670771

Engineering & Env. Consultants, INC. -AZ

Test: Total Dissolved Solids by Method 2540 C-2011

Project No: 308032.24 Matrix: Water - mg/L
Project: Superior Maintenance Yard EPA ID: TN00003
Collection Date: 11/25/2013 Analytic Batch: WG694520

Analysis Date: 11/29/2013 4:49:00 PM Analyst: 036

Sample Duplicate									
	L670760-03								
Analyte	alyte Dil Sample Result DUP Result % RPD Limit Qualifier								
Dissolved Solids	1	512	524	2.32	5	_			



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## Quality Control Summary SDG: L670771

Engineering & Env. Consultants, INC. -AZ

Test: Total Suspended Solids by Method 2540 D-2011

Project No: 308032.24 Matrix: Water - mg/L
Project: Superior Maintenance Yard EPA ID: TN00003
Collection Date: 11/25/2013 Analytic Batch: WG694518

Analysis Date: 11/29/2013 2:13:00 PM Analyst: 036

	Method Blank		
Analyte	CAS	RDL	Qualifier
Suspended Solids	SSOLIDS	< 2.5	

	Laborato	ry Control Sai	mple (LCS)	)		
A., . J., A.	D9	T X7-1	E1	0/ D	Control	01
Analyte	Dil	True Value	Found	% Rec	Limits	Qual
Suspended Solids	1	773	780	101	85 - 115	

	Laboratory Control Sample Duplicate (LCSD)								
Analyte	Dil	True Value	Found	% Rec	Control Limits	Oual			
Suspended Solids	1	773	760	98.3	85 - 115				

Laboratory Control Sample / Laboratory Control Sample Duplicate												
								Control	% Rec		Control	RPD
Analyte	D	il Spi	ke L(	CS	% Rec	LCSD	% Rec	Limits	Qual	% RPD	Limits	Qual
Suspended Solids	1	1 77	3 78	80	101	760	98.3	85 - 115		2.6	5	



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## **Quality Control Summary SDG: L670771**

Engineering & Env. Consultants, INC. -AZ

Test: Total Suspended Solids by Method 2540 D-2011

Project No: 308032.24 Matrix: Water - mg/L
Project: Superior Maintenance Yard EPA ID: TN00003
Collection Date: 11/25/2013 Analytic Batch: WG694518

Analysis Date: 11/29/2013 2:13:00 PM Analyst: 036

Sample Duplicate								
L670771-01								
Analyte	Dil	Sample Result	<b>DUP Result</b>	% RPD	Limit	Qualifier		
Suspended Solids	1	38	35.25	7.51	5	R8		

		Sample D	uplicate			
		L67083	32-01			
Analyte	Dil	Sample Result	<b>DUP Result</b>	% RPD	Limit	Qualifier
Suspended Solids	1	15.5	16	3.17	5	•



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# Quality Control Summary SDG: L670771

Engineering & Env. Consultants, INC. -AZ

Test: Trace Metals by Method 200.7

Project No: 308032.24 Matrix: Water - mg/L
Project: Superior Maintenance Yard EPA ID: TN00003
Collection Date: 11/25/2013 Analytic Batch: WG694515

Analysis Date: 11/30/2013 9:35:00 AM Analyst: 178

Instrument ID: ICP5 Prep Date: 11/26/2013

Sample Numbers: L670771-01

	Method Blank		
Analyte	CAS	RDL	Qualifier
Copper	7440-50-8	< 0.0200	

	Laborato	ry Control Sar	mple (LCS)			
	D.I	70 <b>3</b> 7 1	17. 1	0/ <b>D</b>	Control	0. 1
Analyte	Dil	True Value	Found	% Rec	Limits	Qual
Copper	1	1	1.0148	101	85 - 115	



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# Quality Control Summary SDG: L670771

## Engineering & Env. Consultants, INC. -AZ

Test: Trace Metals by Method 200.7

Project No: 308032.24 Matrix: Water - mg/L
Project: Superior Maintenance Yard EPA ID: TN00003
Collection Date: 11/25/2013 Analytic Batch: WG695064

Analysis Date: 12/2/2013 4:05:00 AM Analyst: 167

Instrument ID: ICP6 Prep Date: 12/1/2013

Sample Numbers: L670771-01

	Method Blank		
Analyte	CAS	RDL	Qualifier
Copper, Dissolved	7440-50-8	< 0.0200	

	Laborato	ory Control Sai	mple (LCS)			
Analyte	Dil	True Value	Found	% Rec	Control Limits	Oual
Analyte	ווע	True value	rouna	70 Nec	Lillius	Quai
Copper.Dissolved	1	1	1.0160	102	85 - 115	



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# Quality Control Summary SDG: L670771

Engineering & Env. Consultants, INC. -AZ

Test: Trace Metals by Method 200.7

Project No: 308032.24 Matrix: Water - mg/L
Project: Superior Maintenance Yard EPA ID: TN00003
Collection Date: 11/25/2013 Analytic Batch: WG694515

Analysis Date: 11/30/2013 9:35:00 AM Analyst: 178

Instrument ID: ICP5 Prep Date: 11/26/2013

Sample Numbers: L670771-01

Samp	de	Dir	nlics	ıte
Samp		νu	$\mu m c$	uc

L670837-02

AnalyteDilSample ResultDUP Result% RPDLimitQualifierCopper1<0.02</td><0.02</td>20

#### **Serial Dilution**

L670837-02

AnalyteDilSample ResultSD Result% RPDLimitQualifierCopper5<0.02</td><0.1</td>10

### Matrix Spike / Matrix Spike Duplicate

L670837-02

		Spike						Control	% Rec		Control	RPD
Analyte	Dil	Value	Sample	MS	% Rec	MSD	% Rec	Limits	Qual	RPD	Limits	Qual
Copper	1	1	.0000	1.0086	101	1.0181	102	75 - 125		1	20	

### **Post Digest Spike**

L670837-02

						Control	
Analyte	Dil	Spike Value	Sample	Result	% Rec	Limits	Qualifier
Copper	1	1.11	.0000	1.1237	101	75-125	



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# Quality Control Summary SDG: L670771

Engineering & Env. Consultants, INC. -AZ

Test: Trace Metals by Method 200.7

Project No: 308032.24 Matrix: Water - mg/L
Project: Superior Maintenance Yard EPA ID: TN00003
Collection Date: 11/25/2013 Analytic Batch: WG695064

Analysis Date: 12/2/2013 4:05:00 AM Analyst: 167

Instrument ID: ICP6 Prep Date: 12/1/2013

Sample Numbers: L670771-01

Samp	le D	unl	icate
		CL PI	1 Cut

L670768-01

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Copper, Dissolved	1	0.1008	0.1039	3	20	

#### **Serial Dilution**

L670768-01

Analyte	Dil	Sample Result	SD Result	% RPD	Limit	Qualifier
Copper, Dissolved	5	0.1008	0.1073	6	10	

L670768-01

				207	3,00 01	_						
		Spike						Control	% Rec		Control	<b>RPD</b>
• • • • ·			~ -	~	a / ==	~-	0 / T	<b>T</b> • • ·		-		_
Analyte	Dil	Value	Sample	MS	% Rec	MSD	% Rec	Limits	Qual	RPD	Limits	Qual

Post Digest Spike

L670768-01

						Control	
Analyte	Dil	Spike Value	Sample	Result	% Rec	Limits	Qualifier
Conner Dissolved	1	1 11	0.1008	1 1981	99	75-125	

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7740 B 16th St Suite 135 Phoenix AZ 85020			***************************************				or more disease successions and		35.2	Filter in Lab				L.A.B S.C	1) HENCE
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John Burton			1	@eecphx.com	1			of charging	E	Pre				Mount Juliet, TN 371 Phone: 615-758-5858	
Project Description: Superior Mainten	ance Yard	Michigan (Artis American (Addison Consider	•	City/State Collected:		THE PROPERTY OF THE PARTY OF TH	· · · · · · · · · · · · · · · · · · ·		. MDPE/ HNO3	E/ No Pres		Substitution and support		Phone: 800-767-5859 Fax: 615-758-5859	
Phone: 602 - 248 -7702	Client Project	#	***************************************	Lab Project #	on confirmation and confirmation and applications are also	<b>966 2000-000</b> 0 (1991-1990-1990	S		500mL	PO	$\mathcal{O}$			L# L670	771
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Collected by (signature):		Lab MUST Be			Results Needed		HDPE/	Z	lar	per				Template:	
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Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Cntrs	TDS/ 250mL ł	TSS/ 1L HDPE/ No Pres	Total Copper, Hardness/	Dissolved Copper/ 500mL HDPE/	TPHOGHEX/			Shipped Via:	
SUPM 112513	Coch	OT	·	11/25/13			-52	-	F /	ш				Rem./Contaminant	Sample # (lab only)
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Note - Filter dissolved copper in lab

## Appendix F

**Municipal Separate Storm Sewer System Pollutant Loading Calculations** 

### Miscellaneous Pollutant Loading Estimate ADOT Flagstaff MS4 2013/2014 Reporting Period

Pollutant Loading: Flagstaff MS4-Summer Season - Sample Collected 8/21/13							
			Pollutant				
	Unit Conversion	Runnoff or R value	Concentration				
Pollutant	Factor	(inches)	(mg/L)	Area (acres)	Pollutant (lbs)		
Oil & Grease (grab)	0.226	0.1197	19	20.00	10.28		
TPH (grab)	0.226	0.1197	1.6	20.00	0.87		
E. Coli (grab)	103	0.1197	3900	20.00	961,669.80		
BOD	0.226	0.1197	28	20.00	15.15		
COD	0.226	0.1197	100	20.00	54.10		
TSS	0.226	0.1197	65	20.00	35.17		
TDS	0.226	0.1197	110	20.00	59.51		
Total Nitrogen	0.226	0.1197	0.93	20.00	0.50		
TKN	0.226	0.1197	2.8	20.00	1.51		
Total Phosphorous	0.226	0.1197	0.31	20.00	0.17		
Barium	0.226	0.14	0.044	0.12	0.00		
Zinc	0.226	0.1197	0.089	20.00	0.05		
			·-				

Note - billion colonies

Drainage Area (acres)	20
Summer Runoff	0.1197
Summer Rainfall	0.14
Percent of Rainfall Runoff	0.9
Percent of Site Impervious	0.95
Runoff Factor	0.905

### Miscellaneous Pollutant Loading Estimate ADOT Flagstaff MS4 2013/2014 Reporting Period

Pollutant Loading: Flagstaff MS4-Winter Season No sample due to insufficient flow and/or equipment failure							
			Pollutant				
	Unit Conversion	Runnoff or R value	Concentration				
Pollutant	Factor	(inches)	(mg/L)	Area (acres)	Pollutant (lbs)		
Oil & Grease (grab)	0.226	0	IF/NS	20.00	0.00		
TPH (grab)	0.226	0	IF/NS	20.00	0.00		
E. Coli (grab)	103	0	IF/NS	20.00	0.00	Note - billion colonies	
BOD	0.226	0	IF/NS	20.00	0.00		
COD	0.226	0	IF/NS	20.00	0.00		
TSS	0.226	0	IF/NS	20.00	0.00		
TDS	0.226	0	IF/NS	20.00	0.00		
Total Nitrogen	0.226	0	IF/NS	20.00	0.00		
TKN	0.226	0	IF/NS	20.00	0.00		
Total Phosphorous	0.226	0	IF/NS	20.00	0.00		
Metals - varies	0.226	0	IF/NS	20.00	0.00		
						-	
Drainage Area (acres)	20						
Winter Runoff	0						
Winter Rainfall	0						
Percent of Rainfall Runoff	0.9						
Percent of Site Impervious	0.95	Simple Method Pollutant Calculation: L=0.226*R*C*A					
Runoff Factor	0.905	Simple Method Bacteria C	Calculation: L=103*F	R*C*A			

IF = Insufficient Flow; NS - No Sample

#### Miscellaneous Pollutant Loading Estimate ADOT Sedona MS4 2013/2014 Reporting Period

Pollutant Loading: Sedona MS4-Summer Season (No Sample collected due to equipment failure)								
			Pollutant					
	Unit Conversion	Runnoff or R value	Concentration					
Pollutant	Factor	(inches)	(mg/L)	Area (acres)	Pollutant (lbs)			
Oil & Grease (grab)	0.226	0	IF/NS	7.35	0.00			
TPH (grab)	0.226	0	IF/NS	7.35	0.00			
E. Coli (grab)	103	0	IF/NS	7.35	0.00			
BOD	0.226	0	IF/NS	7.35	0.00			
COD	0.226	0	IF/NS	7.35	0.00			
TSS	0.226	0	IF/NS	7.35	0.00			
TDS	0.226	0	IF/NS	7.35	0.00			
Total Nitrogen	0.226	0	IF/NS	7.35	0.00			
TKN	0.226	0	IF/NS	7.35	0.00			
Total Phosphorous	0.226	0	IF/NS	7.35	0.00			
Metals - varies	0.226	0	IF/NS	7.35	0.00			
Drainage Area (acres)	7.35							
Summer Runoff	0							
Summer Rainfall	0							
Percent of Rainfall Runoff	0.9							
Percent of Site Impervious	0.95							
Runoff Factor	0.905							

IF = Insufficient Flow; NS - No Sample

#### Miscellaneous Pollutant Loading Estimate ADOT Sedona MS4 2013/2014 Reporting Period

Pollutant Loading: Sedona N	/IS4-Winter Season	(No Sample collected du	e to equipment fa	ilure)		_
			Pollutant			
	Unit Conversion	Runnoff or R value	Concentration			
Pollutant	Factor	(inches)	(mg/L)	Area (acres)	Pollutant (lbs)	
Oil & Grease (grab)	0.226	0	IF/NS	7.35	0.00	
TPH (grab)	0.226	0	IF/NS	7.35	0.00	
E. Coli (grab)	103	0	IF/NS	7.35	0.00	Note - billion colonies
BOD	0.226	0	IF/NS	7.35	0.00	
COD	0.226	0	IF/NS	7.35	0.00	
TSS	0.226	0	IF/NS	7.35	0.00	
TDS	0.226	0	IF/NS	7.35	0.00	
Total Nitrogen	0.226	0	IF/NS	7.35	0.00	
TKN	0.226	0	IF/NS	7.35	0.00	
Total Phosphorous	0.226	0	IF/NS	7.35	0.00	
Metals - varies	0.226	0	IF/NS	7.35	0.00	
Drainage Area (acres)	7.35					
Winter Runoff	0					
Winter Rainfall	0					
Percent of Rainfall Runoff	0.9					
Percent of Site Impervious	0.95	Simple Method Pollutant (	Calculation: L=0.22	6*R*C*A		
Runoff Factor	0.905	Simple Method Bacteria C	Calculation: L=103*	R*C*A		

IF = Insufficient Flow; NS - No Sample

#### Pollutant Loading Estimate ADOT Phoenix MS4 2013/14 Reporting Period

Γ	Pollutant Loading: Phoenix MS4-Summer Season - Sample Collected 9/8/13						
	<u>-</u> _	Unit Conversion	Runnoff or R value	Pollutant Concentration			
	Pollutant	Factor	(inches)	(mg/L)	Area (acres)	Pollutant (lbs)	
	Oil & Grease (grab)	0.226	0.2052	5.3	17.50	4.30	1
	TPH (grab)	0.226	0.2052	6	17.50	4.87	
	E. Coli (grab)	103	0.2052	63	17.50	23,302.00	Note - billion colonies
	BOD	0.226	0.2052	22	17.50	17.85	
	COD	0.226	0.2052	220	17.50	178.54	
	TSS	0.226	0.905	24	17.50	85.90	
	TDS	0.226	0.2052	230	17.50	186.66	
	Total Nitrogen	0.226	0.2052	4.14	17.50	3.36	
	TKN	0.226	0.2052	3.5	17.50	2.84	
	Total Phosphorous	0.226	0.2052	0.23	17.50	0.19	
	Barium	0.226	0.2052	0.042	17.50	0.03	
	Copper	0.226	0.2052	0.045	17.50	0.04	
	Zinc	0.226	0.2052	0.08	17.50	0.06	
							-
	Drainage Area (acres)	17.5					
	Summer Runoff	0.2052					

0.24 0.9

0.95 0.905

Summer Rainfall
Percent of Rainfall Runoff

Percent of Site Impervious
Runoff Factor

#### Pollutant Loading Estimate ADOT Phoenix MS4 2013/14 Reporting Period

Pollutant Loading: Phoenix MS4-Winter Season - Sample Collected 11/22/13						
			Pollutant			
	Unit Conversion	Runnoff or R value	Concentration			
Pollutant	Factor	(inches)	(mg/L)	Area (acres)	Pollutant (lbs)	
Oil & Grease (grab)	0.226	0.72675	5.7	17.50	16.38	
TPH (grab)	0.226	0.72675	2.2	17.50	6.32	
E. Coli (grab)	103	0.72675	1100	17.50	1,440,963.56	Note - billion colonies
BOD	0.226	0.72675	9.3	17.50	26.73	
COD	0.226	0.72675	72	17.50	206.95	
TSS	0.226	0.72675	26	17.50	74.73	
TDS	0.226	0.72675	80	17.50	229.94	
Total Nitrogen	0.226	0.72675	1.42	17.50	4.08	
TKN	0.226	0.72675	1.9	17.50	5.46	
Total Phosphorous	0.226	0.72675	0.14	17.50	0.40	
Barium	0.226	0.72675	0.022	0.73	0.00	
Zinc	0.226	0.72675	0.061	17.50	0.18	
Drainage Area (acres)	17.5					
Winter Runoff	0.72675					
Winter Rainfall	0.85					
Percent of Rainfall Runoff	0.9					
Percent of Site Impervious	0.95	Simple Method Pollutant Ca	lculation: L=0.226*R*	C*A		
Runoff Factor	0.905	Simple Method Bacteria Cal	culation: L=103*R*C*	A		

#### Miscellaneous Pollutant Loading Estimate ADOT Tucson MS4 2011/2012 Reporting Period

Pollutant Loading: Tucson MS4-Summer Season - Partial Sample Collected 7/19/13 and 8/2/13							
			Pollutant				
	Unit Conversion	Runnoff or R value	Concentration				
Pollutant	Factor	(inches)	(mg/L)	Area (acres)	Pollutant (lbs)		
Oil & Grease (grab)	0.226	0.17955	5	4.80	0.97		
TPH (grab)	0.226	0.17955	IS	4.80	0.00		
E. Coli (grab)	103	0.17955	IS	4.80	0.00		
BOD	0.226	0.17955	7.2	4.80	1.40		
COD	0.226	0.17955	IS	4.80	0.00		
TSS	0.226	0.17955	82	4.80	15.97		
TDS	0.226	0.17955	66	4.80	12.86		
Total Nitrogen	0.226	0.17955	0.5	4.80	0.10		
TKN	0.226	0.17955	IS	4.80	0.00		
Total Phosphorous	0.226	0.17955	IS	4.80	0.00		
Metals - varies	0.226	0.17955	IS	4.80	0.00		

Drainage Area (acres)	4.8
Summer Runoff	0.17955
Summer Rainfall	0.21
Percent of Rainfall Runoff	0.9
Percent of Site Impervious	0.95
Runoff Factor	0.905

Rainfall amount from 8/2/13 used for calculation purposes

IS = Insufficient Sample

# Miscellaneous Pollutant Loading Estimate ADOT Tucson MS4 2011/2012 Reporting Period

Pollutant Loading: Tucson MS4-Winter Season - Partial Samples Collected 11/26/13				]		
		•	Pollutant			
	Unit Conversion	Runnoff or R value	Concentration			
Pollutant	Factor	(inches)	(mg/L)	Area (acres)	Pollutant (lbs)	
Oil & Grease (grab)	0.226	0.3078	5	4.80	1.67	
TPH (grab)	0.226	0.3078	4200	4.80	1,402.39	
E. Coli (grab)	103	0.3078	650	4.80	98,914.61	Note - billion colonies
BOD	0.226	0.3078	IS	4.80	0.00	
COD	0.226	0.3078	IS	4.80	0.00	
TSS	0.226	0.3078	IS	4.80	0.00	
TDS	0.226	0.3078	IS	4.80	0.00	
Total Nitrogen	0.226	0.3078	IS	4.80	0.00	
TKN	0.226	0.3078	IS	4.80	0.00	
Total Phosphorous	0.226	0.3078	IS	4.80	0.00	
Metals - varies	0.226	0.3078	IS	4.80	0.00	
						_
Drainage Area (acres)	4.8					
Winter Runoff	0.3078					
Winter Rainfall	0.36					

Percent of Rainfall Runoff Percent of Site Impervious Runoff Factor 0.905 IS = Insufficient Sample

0.9

0.95

#### Miscellaneous Pollutant Loading Estimate ADOT Nogales MS4 2013/2014 Reporting Period

Pollutant Loading: Nogales MS4-Summer Season - Partial Sample Collected 7/9/13						
_			Pollutant			
	Unit Conversion	Runnoff or R value	Concentration			
Pollutant	Factor	(inches)	(mg/L)	Area (acres)	Pollutant (lbs)	
Oil & Grease (grab)	0.226	0.6498	5.7	59.50	49.81	
TPH (grab)	0.226	0.6498	IS	59.50	0.00	
E. Coli (grab)	103	0.6498	9000	59.50	35,840,693.70	Note - billion colonies
BOD	0.226	0.6498	7.2	59.50	62.91	
COD	0.226	0.6498	IS	59.50	0.00	
TSS	0.226	0.6498	350	59.50	3,058.25	
TDS	0.226	0.6498	82	59.50	716.50	
Total Nitrogen	0.226	0.6498	0.5	59.50	4.37	
TKN	0.226	0.6498	IS	59.50	0.00	
Total Phosphorous	0.226	0.6498	IS	59.50	0.00	
Metals - varies	0.226	0.6498	IS	59.50	0.00	
Drainage Area (acres)	59.5					
Summer Runoff	0.6498					
Summer Rainfall	0.76					
Percent of Rainfall Runoff	0.9					
Percent of Site Impervious	0.95					

Runoff Factor
IS = Insufficient Sample

0.905

### Miscellaneous Pollutant Loading Estimate ADOT Nogales MS4 2013/2014 Reporting Period

BOD   0.226   0   NS   59.50   0.00	Pollutant Loading: Nogales MS4-Winter Season - No sample due to insufficient flow and/or equipment failure						
Pollutant         Factor         (inches)         (mg/L)         Area (acres)         Pollutant (lbs)           Oil & Grease (grab)         0.226         0         IS/NS         59.50         0.00           TPH (grab)         0.226         0         NS         59.50         0.00           E. Coli (grab)         103         0         NS         59.50         0.00           BOD         0.226         0         NS         59.50         0.00           COD         0.226         0         NS         59.50         0.00           TSS         0.226         0         NS         59.50         0.00           TDS         0.226         0         NS         59.50         0.00           Total Nitrogen         0.226         0         NS         59.50         0.00           TKN         0.226         0         NS         59.50         0.00           Total Phosphorous         0.226         0         NS         59.50         0.00           Metals - varies         0.226         0         NS         59.50         0.00           Drainage Area (acres)         59.5         0         NS         59.50         0.00							
Oil & Grease (grab)         0.226         0         IS/NS         59.50         0.00           TPH (grab)         0.226         0         NS         59.50         0.00           E. Coli (grab)         103         0         NS         59.50         0.00           BOD         0.226         0         NS         59.50         0.00           COD         0.226         0         NS         59.50         0.00           TSS         0.226         0         NS         59.50         0.00           TDS         0.226         0         NS         59.50         0.00           Total Nitrogen         0.226         0         NS         59.50         0.00           Total Phosphorous         0.226         0         NS         59.50         0.00           Metals - varies         0.226         0         NS         59.50         0.00           Drainage Area (acres)         59.5         0         NS         59.50         0.00           Winter Runoff         0         NS         59.50         0.00         0.00           Percent of Rainfall         0         NS         59.50         0.00         0.00         0.00		Unit Conversion	Runnoff or R value	Concentration			
TPH (grab)	Pollutant	Factor	(inches)	(mg/L)	Area (acres)	Pollutant (lbs)	
E. Coli (grab) 103 0 NS 59.50 0.00  BOD 0.226 0 NS 59.50 0.00  COD 0.226 0 NS 59.50 0.00  TSS 0.226 0 NS 59.50 0.00  TDS 0.226 0 NS 59.50 0.00  TOS 0.226 0 NS 59.50 0.00  TOS 0.226 0 NS 59.50 0.00  TOS 0.226 0 NS 59.50 0.00  TKN 0.226 0 NS 59.50 0.00  TKN 0.226 0 NS 59.50 0.00  Total Phosphorous 0.226 0 NS 59.50 0.00  Metals - varies 0.226 0 NS 59.50 0.00  Drainage Area (acres) 59.5  Winter Runoff 0  Winter Rainfall 0  Percent of Rainfall Runoff 0.9  Percent of Site Impervious 0.95  Simple Method Pollutant Calculation: L=0.226*R*C*A	Oil & Grease (grab)	0.226	0	IS/NS	59.50	0.00	
BOD   0.226   0   NS   59.50   0.00	TPH (grab)	0.226	0	NS	59.50	0.00	
COD         0.226         0         NS         59.50         0.00           TSS         0.226         0         NS         59.50         0.00           TDS         0.226         0         NS         59.50         0.00           Total Nitrogen         0.226         0         NS         59.50         0.00           TKN         0.226         0         NS         59.50         0.00           Total Phosphorous         0.226         0         NS         59.50         0.00           Metals - varies         0.226         0         NS         59.50         0.00           Drainage Area (acres)         59.5         0.00         NS         59.50         0.00           Winter Runoff         0         0         NS         59.50         0.00           Percent of Rainfall Runoff         0.9         0.9         Simple Method Pollutant Calculation: L=0.226*R*C*A	E. Coli (grab)	103	0	NS	59.50	0.00	Note - billion colonies
TSS 0.226 0 NS 59.50 0.00  TDS 0.226 0 NS 59.50 0.00  Total Nitrogen 0.226 0 NS 59.50 0.00  TKN 0.226 0 NS 59.50 0.00  Total Phosphorous 0.226 0 NS 59.50 0.00  Metals - varies 0.226 0 NS 59.50 0.00  Metals - varies 0.226 0 NS 59.50 0.00  Drainage Area (acres) 59.5  Winter Runoff 0  Winter Rainfall 0  Percent of Rainfall Runoff 0.9  Percent of Site Impervious 0.95 Simple Method Pollutant Calculation: L=0.226*R*C*A	BOD	0.226	0	NS	59.50	0.00	
TDS	COD	0.226	0	NS	59.50	0.00	
Total Nitrogen   0.226   0   NS   59.50   0.00	TSS	0.226	0	NS	59.50	0.00	
TKN         0.226         0         NS         59.50         0.00           Total Phosphorous         0.226         0         NS         59.50         0.00           Metals - varies         0.226         0         NS         59.50         0.00           Drainage Area (acres)         59.5         Winter Runoff         0         0         NS         59.50         0.00           Winter Rainfall         0         0         NS         59.50         0.00         0.00           Percent of Rainfall Runoff         0         0         NS         59.50         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00 </td <td>TDS</td> <td>0.226</td> <td>0</td> <td>NS</td> <td>59.50</td> <td>0.00</td> <td></td>	TDS	0.226	0	NS	59.50	0.00	
Total Phosphorous	Total Nitrogen	0.226	0	NS	59.50	0.00	
Metals - varies         0.226         0         NS         59.50         0.00           Drainage Area (acres)         59.5           Winter Runoff         0         0         Winter Rainfall         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0 <t< td=""><td>TKN</td><td>0.226</td><td>0</td><td>NS</td><td>59.50</td><td>0.00</td><td></td></t<>	TKN	0.226	0	NS	59.50	0.00	
Drainage Area (acres) 59.5  Winter Runoff 0  Winter Rainfall 0  Percent of Rainfall Runoff 0.9  Percent of Site Impervious 0.95  Simple Method Pollutant Calculation: L=0.226*R*C*A	Total Phosphorous	0.226	0	NS	59.50	0.00	
Winter Runoff  Winter Rainfall  Percent of Rainfall Runoff  Percent of Site Impervious  0.9  Simple Method Pollutant Calculation: L=0.226*R*C*A	Metals - varies	0.226	0	NS	59.50	0.00	
Winter Runoff  Winter Rainfall  Percent of Rainfall Runoff  Percent of Site Impervious  0.9  Simple Method Pollutant Calculation: L=0.226*R*C*A							_
Winter Rainfall     0       Percent of Rainfall Runoff     0.9       Percent of Site Impervious     0.95       Simple Method Pollutant Calculation: L=0.226*R*C*A	Drainage Area (acres)	59.5					
Percent of Rainfall Runoff  O.9  Percent of Site Impervious  O.95  Simple Method Pollutant Calculation: L=0.226*R*C*A	Winter Runoff	0					
Percent of Site Impervious  0.95 Simple Method Pollutant Calculation: L=0.226*R*C*A	Winter Rainfall	0					
	Percent of Rainfall Runoff	0.9					
Dunoff Fostor Cimple Method Postorio Colculation, L. 402*D*C*A	Percent of Site Impervious	0.95	Simple Method Pollutant (	Calculation: L=0.226	*R*C*A		
Runoff Factor 0.905 Simple Method Bacteria Calculation: L=103*R*C*A	Runoff Factor	0.905	Simple Method Bacteria C	Calculation: L=103*R	*C*A		

NS = No Sample

### Appendix G

**Compliance Evaluation Reports** 

# COMPREHENSIVE FACILITY INSPECTION FORM ADOT Durango Sign Factory 2104 South 22<sup>nd</sup> Avenue. Phoenix, Arizona 85009

2104 South 22. Avenue, i noema	, Alizona 00009
Inspector(s) LES TWG	Date/Time 4-21-14
TOM FRICKSON	08:30 AM
Title and Qualifications of Inspector(s)	·
STOREKEPER SIGN FIRST	
Weather information for the period since the last inspect Precipitation: (circle one) Rain Snow	<u>etion</u>
Runoff: (circle one) Yes (No)	:
Other: Unknown/Unstaffed	
Weather information and a description of discharges oc Precipitation: (circle one) Rain Snow	curring at the time of inspection
Runoff: (circle one)  Yes  No	
Location of discharges of sediment or other pollutants f	rom the site (illustrate on attached site map)
Location of BMPs that need to be maintained, that faile inadequate for a particular location (illustrate on attached s	<del>-</del>
Location where additional BMPs are needed that didn't on attached site map)	exist at the time of inspection (illustrate
Corrective action required, including any changes to the implementation dates/schedule	FPPP necessary and the anticipated
NA	

Identify all non-stormwater discharges and the associated BMPs
Identify material storage areas and evidence of or potential for pollutant discharges from these areas
No issues of non-compliance were observed during this Annual Comprehensive Facility Inspection.  Issues of non-compliance were observed during this Annual Comprehensive Facility Inspection, as noted above.
Signature:  Date: 4/21/19  Printed Name: Liss Tan G. Ton Erickson
Title: STORE KEETER SIGN FAB II

### COMPREHENSIVE FACILITY INSPECTION FORM ADOT Grand Canyon National Park Airport State Route 64, Milepost 234.5, Tusayan, Arizona 86023

·	
Inspector(s) Kent Hugerul, PE	Date/Time 4//6/14
Title and Qualifications of Inspector(s) inspections, Registered engineer in	18 yrs experience with faleral & State AZ.
Weather information for the period since Precipitation: (circle one) (Rain) Sn Runoff: (circle one) Yes No Other: Unknown/Unstaffed	e the last inspection  ow) Minimal rain & snew past quarter.  To cotfull only
Weather information and a description of Precipitation: (circle one) Rain Snow Runoff: (circle one) Yes No Other:	of discharges occurring at the time of inspection  Of CSF Light world out of SW  Fortly cloudy
Location of discharges of sediment or other Dutfall #1 discharges from Ruin Outfall #2 discharges to North Outfalls #1 & #2 clean at time No other discharges noted to off	her pollutants from the site (illustrate on attached site map) Tank. No discharge observed. (South runway) side of runway. No discharge observed. e of inspection.
- Two culvert pipes along	west utility od need repair. lial soil on north side of ARFF needs
Two soil piles t	led that didn't exist at the time of inspection (illustrate from storm drain project located at SE lized. Plans for stabilization or d.
Continue projects regarding	clain up at ADOT Mulitenance Area
Nomes of Operations Manager of	capped to the FPPP necessary and the anticipated  Air pert Minager will need to be  or appointed to these positions.
<u> </u>	(0, 0)

Identify all non-stormwater discharges and the associated BMPs  None	
Identify material storage areas and evidence of or potential for pollutant discharges from these areas. Trash, contruction debri air conditioners, empty containers should be removed from Paptllon storage area.	-
· Muverick is in the process of renovation. Locate construction storage in accordance with FPPP recommendations. (Apply from storm draw	
No issues of non-compliance were observed during this Annual Comprehensive Facility Inspection.  Issues of non-compliance were observed during this Annual Comprehensive Facility Inspection, as noted above.	
I certify that the information in this inspection report is accurate to the best of my knowledge.	
Signature:	
Printed Name: H Kent Haugerud  Title: Compliance Evaluator, North	