Janice K. Brewer
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

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Henry R. Darwin
Director

April 15, 2013

VRP 13:243

Ms. Nancy Petersen
Deputy Director - City of Tucson
Post Office Box 27210
Tucson, Arizona 85726-7210

RE: NO FURTHER ACTION (NFA) APPROVAL - SOIL
City of Tucson Old Fort Lowell Restoration Project
5460 East Fort Lowell
Tucson, Arizona 85712
Site Code: 510641-00

Dear Ms. Petersen:

The Arizona Department of Environmental Quality (ADEQ) Waste Program's Division (WPD) Voluntary Remediation Program (VRP) has reviewed the document titled Request for a No Further Action Determination. This document was prepared by SCS Engineers on behalf of City of Tucson – Environmental Services (applicant). This Request for No Further Action document was dated February 5, 2013 and was received by ADEQ on February 11, 2013. The document was submitted as a requirement under Arizona Revised Statute (A.R.S.) § 49 -181.

ADEQ has determined the Request for No Further Action meets the requirements of A.R.S. § 49 - 181 and is approved.

The Approval for No Further Action applies to the soil on all portions of the site (see Figure). Please note that the NFA is granted with the limitations described at Arizona Revised Statutes (A.R.S.) § 49-181(E) and A.R.S. § 49-181(F) and does not address any other area of land, groundwater or any other contaminants.

The soil NFA is for the area depicted on the attached figure and for the following constituents (see attached table):

- a group of compounds collectively known as Polycyclic Aromatic Hydrocarbons (PAHs)
- a group of compounds collectively known as RCRA Metals
- a group of compounds collectively known as Volatile Organic Compounds (VOCs)
- a group of compounds collectively known as Semi-Volatile Organic Compounds (SVOCs)

This NFA determination is based on the following:

1. During characterization and/or remediation activities, soil samples were collected and analyzed for the following:

- PAHs by EPA Method 8310.
- RCRA Metals by EPA Method 6010B and 7471A
- VOCs by EPA Method 8260.
- SVOCs by EPA Method 8270C.

2. Laboratory analytical results of confirmation soil samples collected after remediation confirmed that PAHs, RCRA Metals, VOCs, and SVOCs are below residential Soil Remediation Levels (SRLs) prescribed in Arizona Administrative Code (A.A.C.) R18-7-201 et seq.

3. Per A.R.S. § 49-176(B), the applicant provided general public notice of the Request for No Further Action Determination. The public notice was placed in the *Arizona Daily Star* on February 23, 2013. The public comment period ended on March 25, 2013. No comments were received by either the applicant or ADEQ.

CONDITIONS OF NO FURTHER ACTION

In accordance with A.R.S. § 49-181(E), the department may rescind or amend the determination of nor further action and require remedial action pursuant to applicable law for any of the following reasons:

1. On discovery of new information that, based on the criteria in subsection C of this section, would result in the potential denial of a no further action request.
2. That information submitted pursuant to subsection A or B of this section was inaccurate, misleading, or incomplete.
3. The reopening of an investigation or the taking of a remedial action is necessary to respond to a release or the threat of a release of a contaminant that may present an imminent and substantial danger to the public health or welfare of the environment.

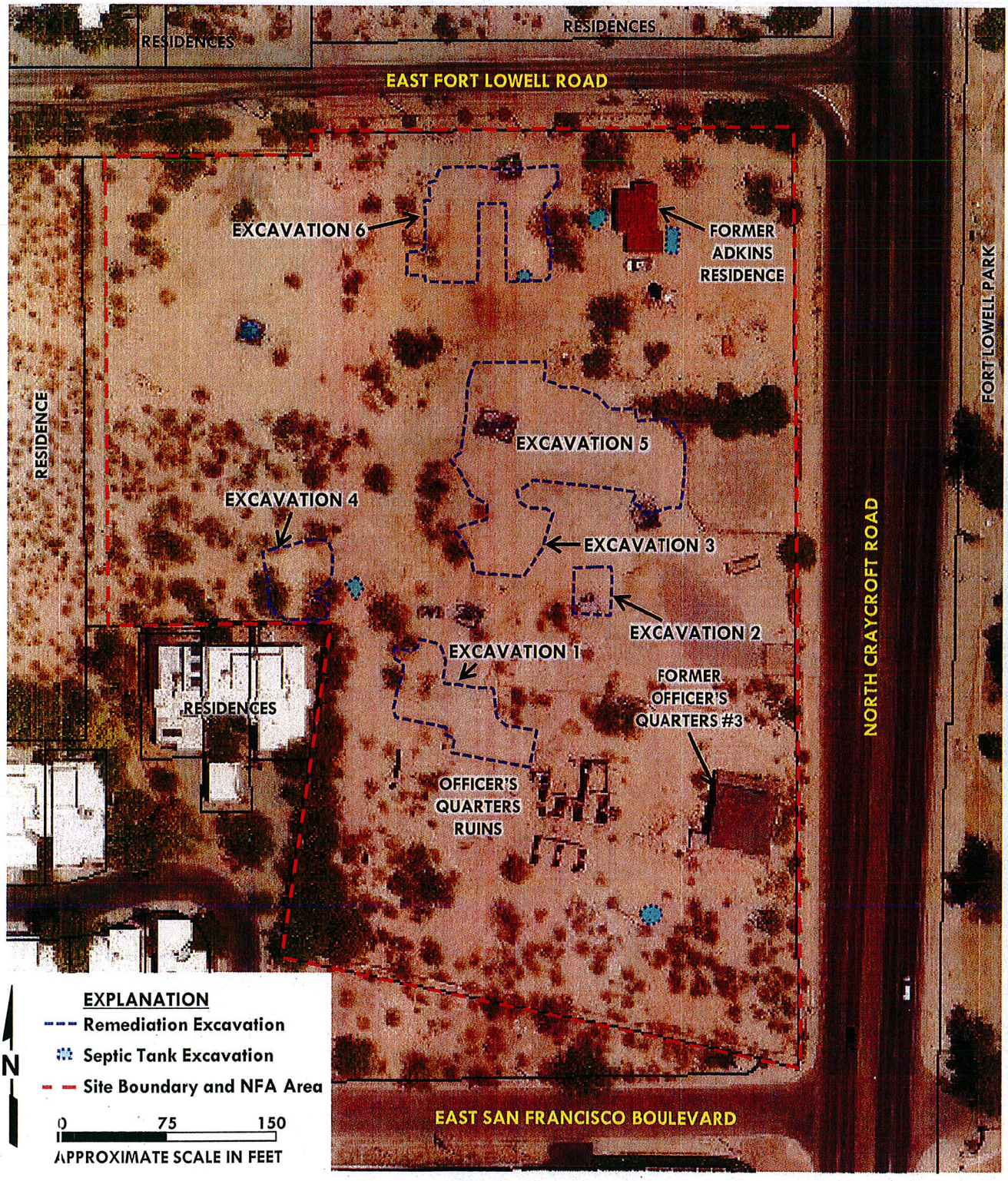
Please provide a copy of this letter to your consultant.

Sincerely,

Julie Hoskin, Manager
Voluntary Remediation Program
Remedial Projects Section

cc: Danielle Taber, ADEQ – Project Manager
Lynne Birkinbine, City of Tucson – Environmental Services
Lisa Cuestas, City of Tucson – Environmental Services

Attachments: Figure 2 – NFA Area and Site Features Map
Table 1 – Specific Contaminants for NFA Determination
Table 1 – Analytical History



Source: Pima County MapGuide website, 2012 Aerial
Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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Request for No Further Action Determination
Old Fort Lowell Restoration Project
5460 East Fort Lowell Road
Tucson, Arizona

Figure 2
NFA Area and Site Features Map

TABLE 1. SPECIFIC CONTAMINANTS FOR NFA DETERMINATION

PAHs (EPA Method 8310)
Acenaphthene
Acenaphthylene
Anthracene
Benz[a]anthracene
Benzo[a]pyrene
Benzo[b]fluoranthene
Benzo[g,h,i]perylene
Benzo[k]fluoranthene
Chrysene
Dibenz[a,h]anthracene
Fluoranthene
Fluorene
Indeno[1,2,3-cd]pyrene
Naphthalene
Phenanthrene
Pyrene

8 RCRA Metals (EPA Methods 6010B/7471A)
Arsenic
Barium
Cadmium
Chromium
Lead
Mercury
Selenium
Silver

VOCs (EPA Method 8260)	
Acetone	1,3-Dichloropropane
Benzene	2,2-Dichloropropane
Bromobenzene	1,1-Dichloropropene
Bromochloromethane	cis-1,3-Dichloropropene
Bromodichloromethane	trans-1,3-Dichloropropene
Bromoform	Ethylbenzene
Bromomethane	Hexachlorobutadiene
2-Butanone	2-Hexanone
n-Butylbenzene	Iodomethane
sec-Butylbenzene	Isopropylbenzene
tert-Butylbenzene	4-Isopropyltoluene
Carbon disulfide	Methylene chloride
Carbon tetrachloride	4-Methyl-2-pentanone (MIBK)
Chlorobenzene	Methyl tert-butyl ether (MTBE)
Chloroethane	Naphthalene
Chloroform	n-Propylbenzene
Chloromethane	Styrene
2-Chlorotoluene	1,1,1,2-Tetrachloroethane
4-Chlorotoluene	1,1,2,2-Tetrachloroethane
Dibromochloromethane	Tetrachloroethene
1,2-Dibromo-3-chloropropane	Toluene
1,2-Dibromoethane (EDB)	1,2,3-Trichlorobenzene
Dibromomethane	1,2,4-Trichlorobenzene
1,2-Dichlorobenzene	1,1,1-Trichloroethane
1,3-Dichlorobenzene	1,1,2-Trichloroethane
1,4-Dichlorobenzene	Trichloroethene
Dichlorodifluoromethane	Trichlorofluoromethane
1,1-Dichloroethane	1,2,3-Trichloropropane
1,2-Dichloroethane	1,2,4-Trimethylbenzene
1,1-Dichloroethene	1,3,5-Trimethylbenzene
cis-1,2-Dichloroethene	Vinyl acetate
trans-1,2-Dichloroethene	Vinyl chloride
1,2-Dichloropropane	Xylenes, Total

SVOCs (EPA Method 8270)	
Acenaphthene	2,4-Dinitrophenol
Acenaphthylene	2,4-Dinitrotoluene
Anthracene	2,6-Dinitrotoluene
Benzanthracene	Di-n-octyl phthalate
Benzo(a)pyrene	1,2-Diphenylhydrazine (as
Benzo(b)fluoranthene	Azobenzene)
Benzo(g,h,i)perylene	Fluoranthene
Benzo(k)fluoranthene	Fluorene
Benzoic acid	Hexachlorobenzene
Benzyl alcohol	Hexachlorobutadiene
Bis(2-chloroethoxy)methane	Hexachlorocyclopentadiene
Bis(2-chloroethyl)ether	Hexachloroethane
Bis(2-chloroisopropyl)ether	Indeno(1,2,3-cd)pyrene
Bis(2-ethylhexyl)phthalate	Isophorone
4-Bromophenyl phenyl ether	2-Methylnaphthalene
Butyl benzyl phthalate	2-Methylphenol
Chrysene	3&4-Methylphenol
4-Chloroaniline	Naphthalene
4-Chloro-3-methylphenol	2-Nitroaniline
2-Chloronaphthalene	3-Nitroaniline
2-Chlorophenol	4-Nitroaniline
4-Chlorophenyl phenyl ether	Nitrobenzene
Dibenz(a,h)anthracene	2-Nitrophenol
Dibenzofuran	4-Nitrophenol
1,2-Dichlorobenzene	n-Nitroso-di-n-propylamine
1,3-Dichlorobenzene	n-Nitrosodiphenylamine
1,4-Dichlorobenzene	Pentachlorophenol
3,3-Dichlorobenzidine	Phenanthrene
2,4-Dichlorophenol	Phenol
Diethyl phthalate	Pyrene
2,4-Dimethylphenol	Pyridine
Dimethyl phthalate	1,2,4-Trichlorobenzene
Di-n-butyl phthalate	2,4,5-Trichlorophenol
4,6-Dinitro-2-methylphenol	2,4,6-Trichlorophenol

Table 1. Analytical History
Old Fort Lowell Restoration Project, Tucson, Arizona

Data Analyzed	Analytical Method	Laboratory	Date Collected	Consultant	Field Work Associated with Sampling
Dec 1990	418.1	SCS Analytical Laboratory	12/6/90	SCS	Environmental Site Assessment (AS1-0.5 to AS6-0.5, AS8-0.5, AS9-0.5, AS11-0.5, AS12-0.5)
Dec 1990	6010 (Pb)	SCS Analytical Laboratory	12/6/90	SCS	Environmental Site Assessment (AS7-0.5)
Dec 1990	6010/7060/7471/ 7740 (8 RCRA Metals)	SCS Analytical Laboratory	12/6/90	SCS	Environmental Site Assessment (AS10-0.5)
Dec 1990	8240	SCS Analytical Laboratory	12/6/90	SCS	Environmental Site Assessment (AS1-0.5, AS3-0.5, AS4-0.5, AS-9-0.5)
Aug 2007	8015AZ	Turner Laboratories	8/16/07	SCS	UST Closure Investigation (East and West USTs, piping, dispenser)
Aug 2007	8260BTEX	Turner Laboratories	8/16/07	SCS	UST Closure Investigation (East and West USTs, piping, dispenser)
Nov-Dec 2007	6010/7471 (8 RCRA Metals)	Transwest Geochem	11/13/07	SCS	Site Characterization (AD-1-S to AD-5-S, AD-8-S to AD-12-S)
Nov-Dec 2007	8015AZ	Transwest Geochem	11/13/07	SCS	Site Characterization (AD-1-S to AD-5-S, AD-8-S to AD-12-S)
Nov-Dec 2007	8260	Transwest Geochem	11/13/07	SCS	Site Characterization (AD-1-S to AD-5-S, AD-8-S to AD-12-S)
Nov-Dec 2007	8310	Transwest Geochem	11/13/07	SCS	Site Characterization (AD-1-S to AD-5-S, AD-8-S to AD-12-S)
Nov-Dec 2007	6010/7471 (8 RCRA Metals)	Transwest Geochem	11/14/07	SCS	Site Characterization (AD-6A-S, AD-13-S to AD-18-S)
Nov-Dec 2007	8015AZ	Transwest Geochem	11/14/07	SCS	Site Characterization (AD-6A-S, AD-13-S to AD-18-S)
Nov-Dec 2007	8260	Transwest Geochem	11/14/07	SCS	Site Characterization (AD-6A-S, AD-13-S to AD-18-S)
Nov-Dec 2007	8310	Transwest Geochem	11/14/07	SCS	Site Characterization (AD-6A-S, AD-13-S to AD-18-S)
Apr 2008	6010/7471 (8 RCRA Metals)	Columbia Analytical Services	4/10/08	SCS	Site Characterization (AD-19-S to AD-39-S)
Apr 2008	8015AZ	Columbia Analytical Services	4/10/08	SCS	Site Characterization (AD-19-S to AD-39-S)
Apr 2008	8310	Columbia Analytical Services	4/10/08	SCS	Site Characterization (AD-19-S to AD-39-S)
July 2008	6010/7471 (8 RCRA Metals)	Columbia Analytical Services	7/7/08	SCS	Site Characterization (AD-1-1.5, AD-3-1.5, AD-12-1.5, AD-14-1.5, AD-16-1.5, AD-17-1.5, AD-18-1, AD-19-1.5, AD-4-S to AD-52-S)
July 2008	8015AZ	Columbia Analytical Services	7/7/08	SCS	Site Characterization (AD-1-1.5, AD-3-1.5, AD-12-1.5, AD-14-1.5, AD-16-1.5, AD-17-1.5, AD-18-1, AD-19-1.5, AD-4-S to AD-52-S)
July 2008	8260	Columbia Analytical Services	7/7/08	SCS	Site Characterization (AD-1-1.5, AD-48-S, AD-52-S)
July 2008	8310	Columbia Analytical Services	7/7/08	SCS	Site Characterization (AD-1-1.5, AD-3-1.5, AD-12-1.5, AD-14-1.5, AD-16-1.5, AD-17-1.5, AD-18-1, AD-19-1.5, AD-4-S to AD-52-S)
Aug 2008	6010/7471 (8 RCRA Metals)	Columbia Analytical Services	8/14/08	SCS	Site Characterization (AD-53-S to AD-74-S)
Aug 2008	8015AZ	Columbia Analytical Services	8/14/08	SCS	Site Characterization (AD-53-S to AD-74-S)
Aug 2008	8260	Columbia Analytical Services	8/14/08	SCS	Site Characterization (AD-73-S - steel roller trench)
Aug-Sept 2008	8270	Columbia Analytical Services	8/14/08	SCS	Site Characterization (AD-54-S, AD-58-S, AD-65-S, AD-67-S, AD-71-S, AD-73-S, AD-74-S)
Aug 2008	8310	Columbia Analytical Services	8/14/08	SCS	Site Characterization (AD-53-S to AD-74-S)
Aug 2008	6010/7471 (8 RCRA Metals)	Columbia Analytical Services	8/19/08	SCS	Push probe borings around SE Septic Tank
Aug 2008	8015AZ	Columbia Analytical Services	8/19/08	SCS	Push probe borings around SE Septic Tank (B7-10, B9-5, B9-10)
Aug 2008	8260	Columbia Analytical Services	8/19/08	SCS	Push probe borings around SE Septic Tank (B7-10, B9-5, B9-10)

Table 1. Analytical History
Old Fort Lowell Restoration Project, Tucson, Arizona

Data Analyzed	Analytical Method	Laboratory	Date Collected	Consultant	Field Work Associated with Sampling
Aug-Sept 2008	8270	Columbia Analytical Services	8/19/08	SCS	Push probe borings around SE Septic Tank (B7-10, B9-5, B9-10)
Aug 2008	8310	Columbia Analytical Services	8/19/08	SCS	Push probe borings around SE Septic Tank (B7-10, B9-5, B9-10)
Sept-Oct 2008	6010/7471 (8 RCRA Metals)	Columbia Analytical Services	9/23/08	SCS	Site Characterization (AD-1B-S, AD-19A-S, AD-75-S to AD-80-S, AD-83-S to AD-88-S)
Sept-Oct 2008	8082	Columbia Analytical Services			Site Characterization (AD-13A-S)
Sept-Oct 2008	8260	Columbia Analytical Services	9/23/08	SCS	Site Characterization (AD-75-S to AD-80-S, AD-83-S, AD-84-S, AD-87S, AD-88-S)
Sept-Oct 2008	8270	Columbia Analytical Services	9/23/08	SCS	Site Characterization (AD-75-S to AD-80-S, AD-83-S, AD-84-S, AD-87S, AD-88-S)
Sept-Oct 2008	8310	Columbia Analytical Services	9/23/08	SCS	Site Characterization (AD-1B-S, AD-19A-S, AD-75-S to AD-88-S)
Oct 2008	TCLP 6010 (Pb, As)	Columbia Analytical Services	9/23/08	SCS	Waste Characterization (AD-1A-S, AD-52-S)
Oct 2008	6010/7471 (8 RCRA Metals)	Columbia Analytical Services	9/24/08	SCS	Site Characterization (AD-89-S to AD-91-S, AD-94-S to AD-97-S) / Steel roller trench drywell (AD-98-1, AD-98-1.5)
Sept-Oct 2008	8260	Columbia Analytical Services	9/24/08	SCS	Site Characterization (AD-89-S to AD-91-S, AD-96-S, AD-97-S) / Steel roller trench drywell (AD-98-1)
Oct 2008	8270	Columbia Analytical Services	9/24/08	SCS	Site Characterization (AD-89-S to AD-91-S, AD-96-S, AD-97-S) / Steel roller trench drywell (AD-98-1)
Oct 2008	8310	Columbia Analytical Services	9/24/08	SCS	Site Characterization (AD-89-S to AD-97-S) / Steel roller trench drywell (AD-98-1, AD-98-1.5)
April 2009	6010/7471 (8 RCRA Metals)	Columbia Analytical Services	4/3/09	SCS	Site Characterization (AD-99-S, AD-105-S to AD-112-S, AD-115-S, AD-117-S, AD-120-S, AD-122-S, AD-124-S, AD-125-2, AD-130-S)
April 2009	8310	Columbia Analytical Services	4/3/09	SCS	Site Characterization (AD-99-S to AD-134-S)
Sept-Oct 2010	6010/7471 (8 RCRA Metals)	Xenco Laboratories	9/22/10	SCS	Shop Septic Pit (Septic 1)
Sept 2010	8260	Xenco Laboratories	9/22/10	SCS	Shop Septic Pit (Septic 1)
Sept-Oct 2010	8270	Xenco Laboratories	9/22/10	SCS	Shop Septic Pit (Septic 1)
Sept-Oct 2010	8310	Xenco Laboratories	9/22/10	SCS	Shop Septic Pit (Septic 1)
Jan 2012	6010 (Pb, As)	TestAmerica	1/12-20/2012	SCS	Remediation Verification Samples (FR-200 to FR-285)
Jan 2012	8310	TestAmerica	1/12-20/2012	SCS	Remediation Verification Samples (FR-200 to FR-285)
Jan 2012	6010/7471 (Pb, As, Hg)	TestAmerica	1/13/12	SCS	SE Septic Tank Excavation (FS1)
Jan 2012	8260	TestAmerica	1/13/12	SCS	SE Septic Tank Excavation (FS1)
Jan 2012	8310	TestAmerica	1/13/12	SCS	SE Septic Tank Excavation (FS1)
Jan-Feb 2012	6010/7471 (Pb, As, Hg)	TestAmerica	1/20/12	SCS	SE Septic Tank Excavations (FS2-FS6)
Jan-Feb 2012	8260	TestAmerica	1/20/12	SCS	SE Septic Tank Excavation (FS2)
Jan-Feb 2012	8310	TestAmerica	1/20/12	SCS	SE Septic Tank Excavations (FS2-FS6)
Feb 2012	6010 (Pb, As)	TestAmerica	2/13-16/2012	SCS	Remediation Verification Samples (FR-286 to FR-316)
Feb 2012	8310	TestAmerica	2/13-16/2012	SCS	Remediation Verification Samples (FR-286 to FR-316)

Table 1. Analytical History
Old Fort Lowell Restoration Project, Tucson, Arizona

Data Analyzed	Analytical Method	Laboratory	Date Collected	Consultant	Field Work Associated with Sampling
Feb 2012	6010/7471 (Pb, As, Hg)	TestAmerica	2/16/12	SCS	SE Septic Tank Excavation (FS5)
Feb 2012	8310	TestAmerica	2/16/12	SCS	SE Septic Tank Excavation (FS5)
March 2012	6010 (Pb, As)	TestAmerica	3/6-8/2012	SCS	Remediation Verification Samples (FR-316 to FR-329)
March 2012	8310	TestAmerica	3/6-8/2012	SCS	Remediation Verification Samples (FR-316 to FR-329)
Mar-Apr 2012	6010 (Pb, As)	TestAmerica	3/29/12	SCS	Remediation Verification Samples (FR-330 to FR-331)
April 2012	8310	TestAmerica	3/29/12	SCS	Remediation Verification Samples (FR-330 to FR-331)
April 2012	6010 (Pb, As)	TestAmerica	4/9/12	SCS	Remediation Verification Samples (FR-332 to FR-334)
April 2012	8310	TestAmerica	4/9/12	SCS	Remediation Verification Samples (FR-332 to FR-334)
Apr-May 2012	6010 (Pb, As)	TestAmerica	4/23/12	SCS	Remediation Verification Samples (FR-335)
Apr-May 2012	8310	TestAmerica	4/23/12	SCS	Remediation Verification Samples (FR-335)
Aug 2012	6010/7471 (8 RCRA Metals)	TestAmerica	8/9/12	SCS	Shop Septic Tank Excavation (FS2)
Aug 2012	8260	TestAmerica	8/9/12	SCS	Shop Septic Tank Excavation (FS2)
Aug 2012	8270	TestAmerica	8/9/12	SCS	Shop Septic Tank Excavation (FS2)
Aug 2012	8310	TestAmerica	8/9/12	SCS	Shop Septic Tank Excavation (FS2)