Board of Supervisors Memorandum

April 17, 2018

Canoa Hills Golf Course Donation Acceptance Final Two Reports for Addendum Items Number 8 and Number 12

Background

I have transmitted to the Board a series of reports regarding the proposed donation of the Canoa Hills Golf Course to Pima County. The final two reports recently received are related to 1) inspection of the restrooms to determine if the restrooms contain any asbestos related materials and 2) structural integrity of the golf cart underpasses.

Attachment 1 is the April 12, 2018 letter and report from Environmental Services Officer James C. Faas regarding the restroom inspection and testing. In summary, there are no asbestos materials in the restrooms, which confirms the low cost of the demolition.

In addition, I asked our bridge and structural engineer to review the structural integrity of the golf cart underpasses. The April 12, 2018 report from Bridge Engineer David Zaleski is also attached for your information (Attachment 2). In summary, the bridge underpass structures are in good condition requiring very little, if any, maintenance.

Recommendation

These are the final two reports that will be produced regarding this matter. As you can see from the positive results of these reports, I continue to strongly recommend the Board of Supervisors accept the donation of the Canoa Hills Golf Course for Green Valley's first natural resource park.

Sincerely,

C.H. Huckelberry
County Administrator

CHH/lab – April 13, 2018

ATTACHMENT 1

PIMA COUNTY
DEPARTMENT OF FINANCE AND RISK MANAGEMENT

April 12, 2018

Chris Cawein
Director, Natural Resources, Parks and Recreation
3500 W. River Road
Tucson, AZ 85741

RE: Asbestos inspection – Canoa Hills Golf Course

Mr. Cawein:

Pima County Risk Management conducted an inspection for asbestos-containing materials in three buildings at the Canoa Hills Golf Course. These buildings include two free standing restroom buildings located on the golf course and a storage building located at the driving range. The storage building located at the driving range was incorrectly listed as a restroom on one of the reference maps provided to Risk Management. Inspection of the buildings was completed on April 11, 2018. The buildings inspected are shown on the map in Appendix A. Asbestos-containing materials are not present in any of the three buildings. Specific findings of the inspections are as follows.

Building 1 – Restroom

Suspect asbestos-containing materials present in this building include drywall walls and ceilings, window frame caulk and roof felt under mission tiles. Samples of these suspect materials were collected and submitted for laboratory analysis. Laboratory analysis indicates all of the materials were asbestos free. Sample collection locations and analytical results are summarized in Table 1. A copy of the report is included in Appendix B.

Building 2 – Restroom

Suspect asbestos-containing materials present in this building include drywall walls and ceilings, window frame caulk and roof felt under mission tiles. Samples of these suspect materials were collected and submitted for laboratory analysis. Laboratory analysis indicates all of the materials were asbestos free. Sample collection locations and analytical results are summarized in Table 1. A copy of the report is included in Appendix B.

Building 3 – Storage

Suspect asbestos-containing materials present in this building include drywall ceilings, exterior stucco and roof felt under mission tiles. Samples of these suspect materials were collected and submitted for laboratory analysis. Laboratory analysis indicates all of the materials were asbestos free. Sample collection locations and analytical results are summarized in Table 1. A copy of the report is included in Appendix B.

Keith Dommer, Director
130 W. Congress, 6th Floor, Tucson, Arizona 85701-1317 Ph: (520) 724-8496 Fax: (520) 770-4173

Table 1
Asbestos Sampling Location Summary

Sample#	Sample Material and Location	Asbestos Content
1	Window frame caulk, men's restroom, Bldg 1	No asbestos detected
2	Window frame caulk, women's restroom Bldg 1	No asbestos detected
3	Drywall, men's restroom, Bldg 1	No asbestos detected
4	Drywall, women's restroom, Bldg 1	No asbestos detected
5	Drywall, exterior soffit above entry, Bldg 1	No asbestos detected
6	Roof felt, under mission tiles, Bldg 1	No asbestos detected
7	Window frame caulk, men's restroom, Bldg 2	No asbestos detected
8	Window frame caulk, women's restroom Bldg 2	No asbestos detected
9	Drywall, men's restroom, Bldg 2	No asbestos detected
10	Drywall, women's restroom, Bldg 2	No asbestos detected
11	Drywall, exterior soffit above entry, Bldg 2	No asbestos detected
12	Roof felt, under mission tiles, Bldg 2	No asbestos detected
13	Exterior stucco, Bldg 3	No asbestos detected
14	Exterior stucco, Bldg 3	No asbestos detected
15	Drywall, interior room, Bldg 3	No asbestos detected
16	Drywall, interior room, Bldg 3	No asbestos detected
17	Roof felt, under mission tiles, Bldg 3	No asbestos detected

PCDEQ Notification/Permit Information

The Pima County Department of Environmental Quality (PCDEQ) requires a thorough inspection for asbestos-containing materials prior to demolition of a building. This inspection meets the thorough inspection requirement for the three buildings inspected.

PCDEQ requires a permit and at least 10 days advance notice to PCDEQ prior to demolition of a building. The permit application requires listing of the inspector and laboratory utilized for the asbestos inspection. Appendix B contains the laboratory report. Appendix C contains a copy of the inspector certification.

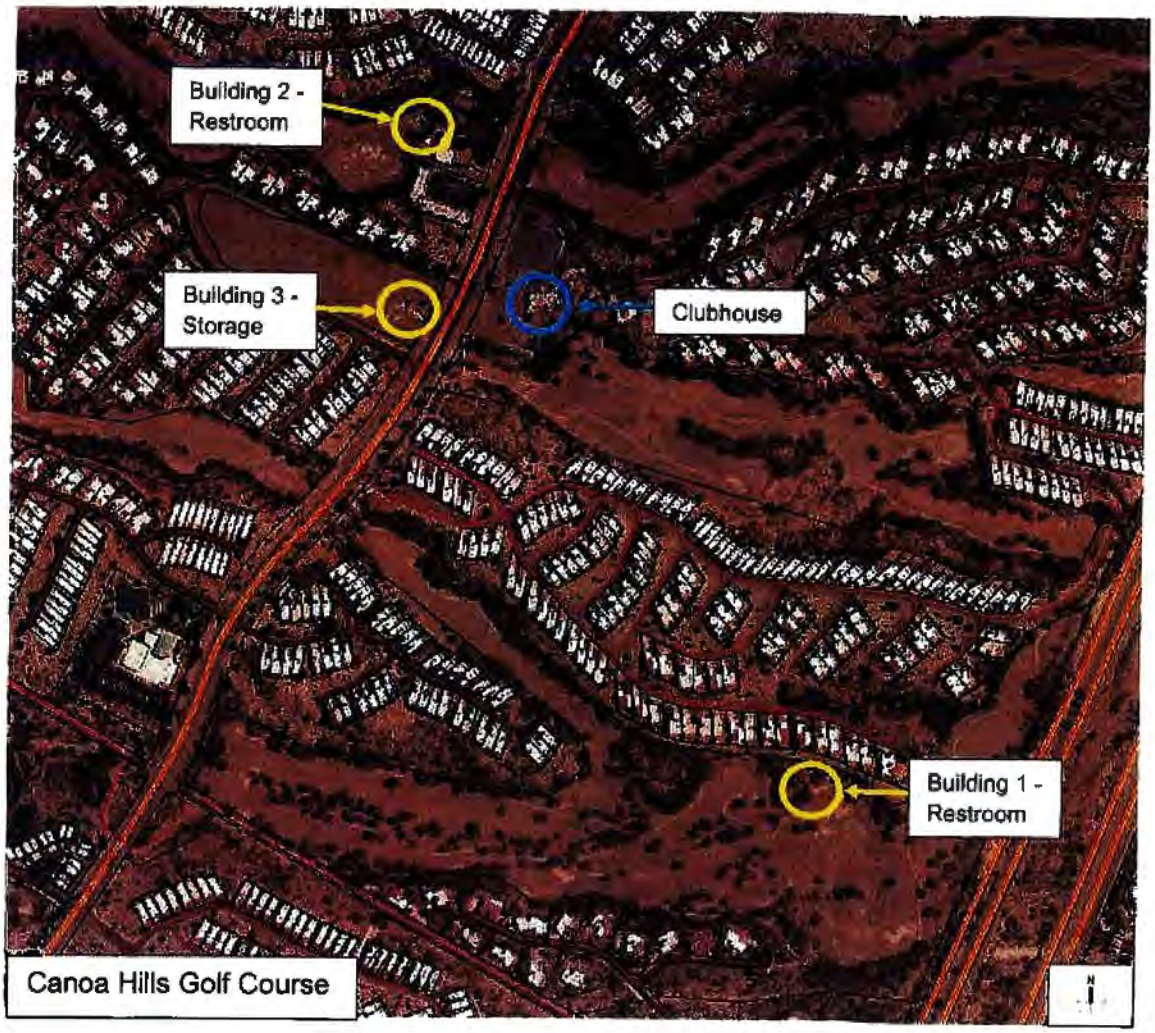
If you have any questions concerning this report, please feel free to call me at 724-3078.

Sincerely,

James C, Faas, MPH, CIH

Appendix A

Site Map



Appendix B

Laboratory Report

FIBERQUANT ANALYTICAL SERVICES

Polarized Light Microscope (PLM) Analysis for Asbestos in Bulk Sample

JobNumber: 201803589

Client: PIMA COUNTY RISK MGMT
130 W CONGRESS 9TH FLR

TUCSON, AZ 85701-0000
Office Phone: (520) 724-3078
FAX: (520) 798-1407

 # Samples: 17 PLM **Rec:** 4/12/2018 **Method:** EPA 600/R-93/116 The "New" Method; see below
Client Job: Canoa Buildings- Verification **PO Number:** MA 13*573
Report Date: 4/12/2018 **Date Analyzed:** 4/12/2018 **Routing Number:** -

Method and Analysis Information: **Fiberquant Internal SOP:** PLMn

Each bulk sample is first dissected under a 7-30x magnification stereo-microscope. This examination is used to determine the general type of sample, how many and what type of layers it has, and initial estimates of fiber types and quantities. Second, liquid media mounts are made of each layer - such mounts may be of selected fibers (used solely for identification purposes) or may be representative of the layer as a whole (used for quantitation purposes). The mounts may be made in a synthetic Canadian balsam, one of several solvents, or in refractive index oils (media of known refractive index). Generally, a variety of different mounts are made: some optimized for fiber visibility, some optimized for fiber identification, and some optimized for fiber quantitation. The mounted slides are then examined at 50-400x magnification on a Nikon Labphot-pol microscope. Optical characteristics are used to identify each observed fiber type; the optical data are contained for each sample on its detail analysis sheet, attached.

Current EPA and NESHAP regulations designate a result of <=1 % asbestos as "negative" and >1 % asbestos as "positive". Samples containing layers that have been determined to be "positive" may have to be handled differently during a renovation or demolition than samples whose layers have been determined to be "negative."

The method of fiber identification and quantitation is the "Standard Operating Procedures for the Analysis of Asbestos in Bulk Samples using Polarized Light Microscopy", Chapter 7 of the Quality Assurance and Management Manual. This SOP and its associated reporting have been designed to satisfy all requirements in both EPA Method 600/M4-82-020 (The Interim Method) and EPA Method 600/R-93/116 (The New Method). The Interim Method is the required method for AHERA (US EPA 40 CFR Pt. 763), but this method calls for the reporting of composited results of multi-layered samples that is no longer an acceptable reporting practice in most circumstances. Current EPA rules, such as NESHAP (US EPA 40CFT Pt. 61), as well as NVLAP accreditation policies, call for separate reporting for each layer of multi-layered samples. The New Method contains the same procedures for identification and quantification of asbestos as does the Interim Method, except that multi-layered samples are reported to comply with the latest US EPA rule. Fiberquant not only reports the asbestos content of each layer of multi-layered samples separately (satisfying current EPA and NVLAP reporting requirements), but Fiberquant also reports what percentage of the sample each layer comprises. Therefore, the results may be arithmetically composited to satisfy the reporting requirements of the Interim Method. The method of fiber quantitation is an estimation technique in which the analysts quantitation is routinely calibrated by reference quantitation standards, and which has been shown to be equivalent in precision and accuracy to point counting. Friability is estimated for the purposes of deciding when to point count. Friabilities determined in the field take precedence over those determined in the laboratory. Those sample layers which are friable and estimated by the analyst to contain <= 1% asbestos are point counted using 400 points. Such point counting is required by NESHAP (National Emission Standards for Hazardous Air Polutants, Nov. 1990) in order to rely on analytical results that are <=.1%. The coefficient of variation for the estimation quantitation technique is 100% in the range 0-5%. This means that PLM analysis is not capable of conclusively determining whether a layer containing close to 1% asbestos is actually "positive" or "negative". For this reason, Fiberquant refers to results where asbestos was detected but <= 1% as "borderline negative", and results where asbestos was >1 % but <= 2% as "borderline positive" to indicate the uncertainty in assigning a "positive" or "negative" label. In the sample summary, "ND" means that no asbestos was detected during the analysis. A "Tr" or "Trace" of asbestos reported is defined for our purposes as the detection of several asbestos fibers during the analysis; this level would be right at the limit of detection for the method. Trace is only reported on the analysis detail - in the summary a trace would be reported as <=1%. The limit of detection (the smallest % of asbestos that can be detected) varies greatly depending on the matrix in which the asbestos is found. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 1% stated in the method. During the analysis, the analyst, for Fiberquant identification purposes only, determines the "apparent sample type" and "apparent layer types." It must be emphasized that these types are only what is apparent. Often, different materials appear similar or identical after sampling, so the analyst may assign a type other than what was sampled.

Floor tiles present a special problem for PLM asbestos analysis. Floor tile can contain chrysotile fibers so thin that they cannot be resolved by optical methods. In such a case, we may observe a percentage of asbestos which is lower than the actual percentage, or not observe asbestos at all when some is present. For this reason, floor tiles reported as negative should be confirmed to be negative using transmission electron microscope (TEM) analysis. Likewise, vermiculite insulation materials containing traces of asbestiform asbestos present a problem for routine PLM analysis - the amphiboles are sometimes present in trace amounts inhomogeneously distributed. For this reason, loose vermiculite samples reported as negative should be confirmed to contain no amphibole using hydroseparation techniques.

The samples were analyzed under the following ongoing quality assurance program: Blank samples are routinely analyzed to maintain contamination-free materials. Each analyst has at least a bachelor's degree in physical science, and has also completed extensive training specific to asbestos analysis for 1-3 months before being allowed to analyze client samples. Qualitative reference samples are routinely analyzed to assure that analysts can identify asbestos and asbestos-look-alike fibers. Quantitative reference samples are routinely analyzed to calibrate and characterize the

estimation procedure. Microscope alignment is checked each day. Refractive index oils are calibrated at least quarterly. At least 10% of client samples are re-analyzed from scratch by a different analyst than the original, and any discrepancies are resolved for the sample and similar sample types before the results are reported. All quality checks performed for these samples were in control except as detailed in the "Analytical Notes" below. All analysts participate in interlab round robins and proficiency testing to assure competence. Fiberquant is accredited by NVLAP (Lab code #101031) for the analysis of bulk samples for asbestos using PLM. Accreditation does not imply endorsement by the EPA, any other United States governmental agency or any private agency or association. Each lab analysis refers only to the sample tested, and may not, due to the sampling process, be representative of the material sampled. This report may not be reproduced except in full, without the approval of Fiberquant Analytical Services.

Some results may have been calculated using client supplied data, such as volume or area sampled, for which Fiberquant assumes no liability for accuracy.

Job Analysis Notes:

PLM Analysis Summary: **Job Number: 201803589** Canoa Buildings- Verification

Sample Number / Layer	Color	Apparent Layer Type *	Lab Number / Asbestos Results	Apparent Sample Type *	Positive Layer Yes or No
Sample # 1			2018-03589- 1	Adhesive/caulk	Positive Layer? No
Layer # 1	gray	caulk	*no asbestos detected*		
Sample # 2			2018-03589- 2	Adhesive/caulk	Positive Layer? No
Layer # 1	gray	caulk	*no asbestos detected*		
Sample # 3			2018-03589- 3	Wall System	Positive Layer? No
Layer # 1	tan	paper/cardboard	*no asbestos detected*		
Layer # 2	white	drywall core	*no asbestos detected*		
Sample # 4			2018-03589- 4	Wall System	Positive Layer? No
Layer # 1	tan	paper/cardboard	*no asbestos detected*		
Layer # 2	white	drywall core	*no asbestos detected*		
Sample # 5			2018-03589- 5	Wall System	Positive Layer? No
Layer # 1	white	drywall core	*no asbestos detected*		
Sample # 6			2018-03589- 6	Miscellaneous	Positive Layer? No
Layer # 1	tan	wood	*no asbestos detected*		
Layer # 2	brown	coating	*no asbestos detected*		
Sample # 7			2018-03589- 7	Adhesive/caulk	Positive Layer? No
Layer # 1	gray	caulk	*no asbestos detected*		
Sample # 8			2018-03589- 8	Adhesive/caulk	Positive Layer? No
Layer # 1	gray	caulk	*no asbestos detected*		
Sample # 9			2018-03589- 9	Wall System	Positive Layer? No
Layer # 1	tan	paper/cardboard	*no asbestos detected*		
Layer # 2	white	drywall core	*no asbestos detected*		
Sample # 10			2018-03589- 10	Wall System	Positive Layer? No
Layer # 1	white	drywall core	*no asbestos detected*		
Sample # 11			2018-03589- 11	Wall System	Positive Layer? No
Layer # 1	white	drywall core	*no asbestos detected*		
Sample # 12			2018-03589- 12	Roofing	Positive Layer? No
Layer # 1	black	roof ply/bitumen	*no asbestos detected*		
Sample # 13			2018-03589- 13	Cementitious	Positive Layer? No
Layer # 1	off-white	paint	*no asbestos detected*		
Layer # 2	gray	stucco	*no asbestos detected*		
Sample # 14			2018-03589- 14	Wall System	Positive Layer? No
Layer # 1	gray	stucco	*no asbestos detected*		
Sample # 15			2018-03589- 15	Wall System	Positive Layer? No
Layer # 1	white	drywall core	*no asbestos detected*		
Sample # 16			2018-03589- 16	Wall System	Positive Layer? No
Layer # 1	white	drywall core	*no asbestos detected*		
Sample # 17			2018-03589- 17	Roofing	Positive Layer? No
Layer # 1	black	roof ply/bitumen	*no asbestos detected*		

* Apparent Sample Types and Apparent Layer Types are as they appeared to the analyst. Since many types of materials appear similar after sampling damage, the apparent type of material may not be the actual type of material.

PLM Analysis Details **Job Number:** **201803589** Canoa Buildings- Verification

Sample 1 **Lab Number** 2018-03589- 1 **Sampled:** 4/11/2018 **Condition:** acceptable
Analyzed By JCJ 4/12/2018 **An?** OK **Apparent Smp Type** Adhesive/caulk Non-fibrous Solid
Homogeneous Yes **# Layers** 1 **Pos Layer?** No
Non-Fibrous Components (in approx. decreasing order): filler, binder,

Layers

#	Layer Type	%	Color	Friability	Percents of Each Fiber: Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
1	caulk	100	gray	1	n.d.	-	-	-	-	-
	Total %	100		Overall %	n.d.	-	-	-	-	-
				Fiber Identification:	none					

Fibers

		Color	Mrph	Iso	Pleo	Bi	Elg	Ext	Refractive Index Determinations: Oil	Col Par	Col Per	RI Par	RI Per
1	none												
2													
3													
4													
5													
6													

Sample Analytical Note
Procedure: tweased apart using forceps. Procedure: dissolution of matrix using solvent.

Sample 2 **Lab Number** 2018-03589- 2 **Sampled:** 4/11/2018 **Condition:** acceptable
Analyzed By JCJ 4/12/2018 **An?** OK **Apparent Smp Type** Adhesive/caulk Non-fibrous Solid
Homogeneous Yes **# Layers** 1 **Pos Layer?** No
Non-Fibrous Components (in approx. decreasing order): filler, binder,

Layers

#	Layer Type	%	Color	Friability	Percents of Each Fiber: Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
1	caulk	100	gray	1	n.d.	-	-	-	-	-
	Total %	100		Overall %	n.d.	-	-	-	-	-
				Fiber Identification:	none					

Fibers

		Color	Mrph	Iso	Pleo	Bi	Elg	Ext	Refractive Index Determinations: Oil	Col Par	Col Per	RI Par	RI Per
1	none												
2													
3													
4													
5													
6													

Sample Analytical Note
Procedure: tweased apart using forceps. Procedure: dissolution of matrix using solvent.

Sample 3 **Lab Number** 2018-03589- 3 **Sampled:** 4/11/2018 **Condition:** acceptable
Analyzed By JCJ 4/12/2018 **An?** OK **Apparent Smp Type** Wall System Fibrous Solid
Homogeneous No **# Layers** 2 **Pos Layer?** No
Non-Fibrous Components (in approx. decreasing order): powder, binder,

Layers

#	Layer Type	%	Color	Friability	Percents of Each Fiber: Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
1	paper/cardboard	2	tan	2	90-100%	-	-	-	-	-
2	drywall core	98	white	3	<=1%	-	-	-	-	-
	Total %	100		Overall %	2-5%	-	-	-	-	-
				Fiber Identification:	cellulose fiber					

Fibers

		Color	Mrph	Iso	Pleo	Bi	Elg	Ext	Refractive Index Determinations: Oil	Col Par	Col Per	RI Par	RI Per
1	cellulose fiber	W	F	N	N	H	+	U					
2													
3													
4													
5													
6													

Sample Analytical Note
Procedure: tweased apart using forceps.

Sample 4 **Lab Number** 2018-03589- 4 **Sampled:** 4/11/2018 **Condition:** acceptable
Analyzed By JCJ 4/12/2018 **An?** OK **Apparent Smp Type** Wall System Fibrous Solid
Homogeneous No **# Layers** 2 **Pos Layer?** No
Non-Fibrous Components (in approx. decreasing order): powder, binder,

Layers

#	Layer Type	%	Color	Friability
1	paper/cardboard	5	tan	2
2	drywall core	95	white	3
	Total %	100	**Overall %**	

Percents of Each Fiber

	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
1	90-100%	-	-	-	-	-
2	<=1%	-	-	-	-	-
Overall %	5-10%	-	-	-	-	-
Fiber Identification:	cellulose fiber					

Fibers

		Color	Mrph	Iso	Pleo	Bi	Elg	Ext
1	cellulose fiber	W	F	N	N	H	+	U
2								
3								
4								
5								
6								

Refractive Index Determinations

Oil	Col Par	Col Per	RI Par	RI Per

Sample Analytical Note
Procedure: tweased apart using forceps.

Sample 5 **Lab Number** 2018-03589- 5 **Sampled:** 4/11/2018 **Condition:** acceptable
Analyzed By JCJ 4/12/2018 **An?** OK **Apparent Smp Type** Wall System Fibrous Solid
Homogeneous Yes **# Layers** 1 **Pos Layer?** No
Non-Fibrous Components (in approx. decreasing order): powder, ,

Layers

#	Layer Type	%	Color	Friability
1	drywall core	100	white	3
	Total %	100	**Overall %**	

Percents of Each Fiber

	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
1	<=1%	-	-	-	-	-
Overall %	<=1%	-	-	-	-	-
Fiber Identification:	cellulose					

Fibers

		Color	Mrph	Iso	Pleo	Bi	Elg	Ext
1	cellulose	W	F	N	N	H	+	U
2								
3								
4								
5								
6								

Refractive Index Determinations

Oil	Col Par	Col Per	RI Par	RI Per

Sample Analytical Note
Procedure: tweased apart using forceps.

Sample 6 **Lab Number** 2018-03589- 6 **Sampled:** 4/11/2018 **Condition:** acceptable
Analyzed By JCJ 4/12/2018 **An?** OK **Apparent Smp Type** Miscellaneous Fibrous Solid
Homogeneous No **# Layers** 2 **Pos Layer?** No
Non-Fibrous Components (in approx. decreasing order): wood, polymer, binder

Layers

#	Layer Type	%	Color	Friability
1	wood	98	tan	1
2	coating	2	brown	1
	Total %	100	**Overall %**	

Percents of Each Fiber

	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
1	90-100%	-	-	-	-	-
2	<=1%	-	-	-	-	-
Overall %	90-100%	-	-	-	-	-
Fiber Identification:	cellulose fiber					

Fibers

		Color	Mrph	Iso	Pleo	Bi	Elg	Ext
1	cellulose fiber	W	F	N	N	H	+	U
2								
3								
4								
5								
6								

Refractive Index Determinations

Oil	Col Par	Col Per	RI Par	RI Per

Sample Analytical Note
Procedure: tweased apart using forceps. Procedure: dissolution of polymer matrix using solvent.

PLM Analysis Details **Job Number:** **201803589** Canoa Buildings- Verification

Sample 7 **Lab Number** 2018-03589- 7 **Sampled:** 4/11/2018 **Condition:** acceptable
Analyzed By JCJ 4/12/2018 **An?** OK **Apparent Smp Type** Adhesive/caulk Non-fibrous Solid
Homogeneous Yes **# Layers** 1 **Pos Layer?** No
Non-Fibrous Components (in approx. decreasing order): filler, binder,

Layers

#	Layer Type	%	Color	Friability
1	caulk	100	gray	1
	Total %	100	**Overall %**	

Percents of Each Fiber

	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
	<=1%	-	-	-	-	-
	<=1%	-	-	-	-	-
Fiber Identification:	cellulose fiber					

Fibers

		Color	Mrph	Iso	Pleo	Bi	Elg	Ext
1	cellulose fiber	W	F	N	N	H	+	U
2								
3								
4								
5								
6								

Refractive Index Determinations

Oil	Col Par	Col Per	RI Par	RI Per

Sample Analytical Note
Procedure: tweased apart using forceps. Procedure: dissolution of matrix using solvent.

Sample 8 **Lab Number** 2018-03589- 8 **Sampled:** 4/11/2018 **Condition:** acceptable
Analyzed By JCJ 4/12/2018 **An?** OK **Apparent Smp Type** Adhesive/caulk Non-fibrous Solid
Homogeneous Yes **# Layers** 1 **Pos Layer?** No
Non-Fibrous Components (in approx. decreasing order): filler, binder,

Layers

#	Layer Type	%	Color	Friability
1	caulk	100	gray	1
	Total %	100	**Overall %**	

Percents of Each Fiber

	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
	<=1%	-	-	-	-	-
	<=1%	-	-	-	-	-
Fiber Identification:	cellulose fiber					

Fibers

		Color	Mrph	Iso	Pleo	Bi	Elg	Ext
1	cellulose fiber	W	F	N	N	H	+	U
2								
3								
4								
5								
6								

Refractive Index Determinations

Oil	Col Par	Col Per	RI Par	RI Per

Sample Analytical Note
Procedure: tweased apart using forceps. Procedure: dissolution of matrix using solvent.

Sample 9 **Lab Number** 2018-03589- 9 **Sampled:** 4/11/2018 **Condition:** acceptable
Analyzed By JCJ 4/12/2018 **An?** OK **Apparent Smp Type** Wall System Fibrous Solid
Homogeneous No **# Layers** 2 **Pos Layer?** No
Non-Fibrous Components (in approx. decreasing order): powder, binder,

Layers

#	Layer Type	%	Color	Friability
1	paper/cardboard	5	tan	2
2	drywall core	95	white	3
	Total %	100	**Overall %**	

Percents of Each Fiber

	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
	90-100%	-	-	-	-	-
	<=1%	-	-	-	-	-
	5-10%	-	-	-	-	-
Fiber Identification:	cellulose fiber					

Fibers

		Color	Mrph	Iso	Pleo	Bi	Elg	Ext
1	cellulose fiber	W	F	N	N	H	+	U
2								
3								
4								
5								
6								

Refractive Index Determinations

Oil	Col Par	Col Per	RI Par	RI Per

Sample Analytical Note
Procedure: tweased apart using forceps.

Sample 10 **Lab Number** 2018-03589- 10 **Sampled:** 4/11/2018 **Condition:** acceptable
Analyzed By JCJ 4/12/2018 **An?** OK **Apparent Smp Type** Wall System Fibrous Solid
Homogeneous Yes **# Layers** 1 **Pos Layer?** No
Non-Fibrous Components (in approx. decreasing order): powder, ,

Layers

#	Layer Type	%	Color	Friability
1	drywall core	100	white	3
	Total %	100	Overall %	

Percents of Each Fiber

	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
	<=1%	-	-	-	-	-
Overall %	<=1%	-	-	-	-	-
Fiber Identification:	cellulose					

Fibers

		Color	Mrph	Iso	Pleo	Bi	Elg	Ext
1	cellulose	W	F	N	N	H	+	U
2								
3								
4								
5								
6								

Refractive Index Determinations

Oil	Col Par	Col Per	RI Par	RI Per

Sample Analytical Note
Procedure: tweased apart using forceps.

Sample 11 **Lab Number** 2018-03589- 11 **Sampled:** 4/11/2018 **Condition:** acceptable
Analyzed By JCJ 4/12/2018 **An?** OK **Apparent Smp Type** Wall System Fibrous Solid
Homogeneous Yes **# Layers** 1 **Pos Layer?** No
Non-Fibrous Components (in approx. decreasing order): powder, ,

Layers

#	Layer Type	%	Color	Friability
1	drywall core	100	white	3
	Total %	100	Overall %	

Percents of Each Fiber

	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
	<=1%	-	-	-	-	-
Overall %	<=1%	-	-	-	-	-
Fiber Identification:	cellulose					

Fibers

		Color	Mrph	Iso	Pleo	Bi	Elg	Ext
1	cellulose	W	F	N	N	H	+	U
2								
3								
4								
5								
6								

Refractive Index Determinations

Oil	Col Par	Col Per	RI Par	RI Per

Sample Analytical Note
Procedure: tweased apart using forceps.

Sample 12 **Lab Number** 2018-03589- 12 **Sampled:** 4/11/2018 **Condition:** acceptable
Analyzed By JCJ 4/12/2018 **An?** OK **Apparent Smp Type** Roofing Fibrous Solid
Homogeneous Yes **# Layers** 1 **Pos Layer?** No
Non-Fibrous Components (in approx. decreasing order): filler, bitumen, rock

Layers

#	Layer Type	%	Color	Friability
1	roof ply/bitumen	100	black	1
	Total %	100	Overall %	

Percents of Each Fiber

	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
	20-30%	-	-	-	-	-
Overall %	20-30%	-	-	-	-	-
Fiber Identification:	cellulose fiber					

Fibers

		Color	Mrph	Iso	Pleo	Bi	Elg	Ext
1	cellulose fiber	W	F	N	N	H	+	U
2								
3								
4								
5								
6								

Refractive Index Determinations

Oil	Col Par	Col Per	RI Par	RI Per

Sample Analytical Note
Procedure: tweased apart using forceps. Procedure: dissolution of matrix using solvent.

Sample 13 **Lab Number** 2018-03589- 13 **Sampled:** 4/11/2018 **Condition:** acceptable
Analyzed By JCJ 4/12/2018 **An?** OK **Apparent Smp Type** Cementitious Non-fibrous Solid
Homogeneous No **# Layers** 2 **Pos Layer?** No
Non-Fibrous Components (in approx. decreasing order): powder, rock, binder

Layers

#	Layer Type	%	Color	Friability
1	paint	3	off-white	1
2	stucco	97	gray	2
	Total %	100	**Overall %**	

Percents of Each Fiber	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
	n.d.	-	-	-	-	-
	n.d.	-	-	-	-	-
Overall %	n.d.	-	-	-	-	-
Fiber Identification:	none					

Fibers

		Color	Mrph	Iso	Pleo	Bi	Elg	Ext
1	none							
2								
3								
4								
5								
6								

Refractive Index Determinations	Oil	Col Par	Col Par	RI Par	RI Par

Sample Analytical Note
Procedure: tweased apart using forceps. Procedure: dissolution of polymer matrix using solvent. Procedure: dissolution of stucco matrix using acid.

Sample 14 **Lab Number** 2018-03589- 14 **Sampled:** 4/11/2018 **Condition:** acceptable
Analyzed By JCJ 4/12/2018 **An?** OK **Apparent Smp Type** Wall System Non-fibrous Solid
Homogeneous Yes **# Layers** 1 **Pos Layer?** No
Non-Fibrous Components (in approx. decreasing order): powder, rock,

Layers

#	Layer Type	%	Color	Friability
1	stucco	100	gray	2
	Total %	100	**Overall %**	

Percents of Each Fiber	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
	n.d.	-	-	-	-	-
Overall %	n.d.	-	-	-	-	-
Fiber Identification:	none					

Fibers

		Color	Mrph	Iso	Pleo	Bi	Elg	Ext
1	none							
2								
3								
4								
5								
6								

Refractive Index Determinations	Oil	Col Par	Col Par	RI Par	RI Par

Sample Analytical Note
Procedure: tweased apart using forceps. Procedure: dissolution of matrix using dilute HCl acid.

Sample 15 **Lab Number** 2018-03589- 15 **Sampled:** 4/11/2018 **Condition:** acceptable
Analyzed By JCJ 4/12/2018 **An?** OK **Apparent Smp Type** Wall System Fibrous Solid
Homogeneous Yes **# Layers** 1 **Pos Layer?** No
Non-Fibrous Components (in approx. decreasing order): powder, ,

Layers

#	Layer Type	%	Color	Friability
1	drywall core	100	white	3
	Total %	100	**Overall %**	

Percents of Each Fiber	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
	<=1%	-	-	-	-	-
Overall %	<=1%	-	-	-	-	-
Fiber Identification:	cellulose					

Fibers

		Color	Mrph	Iso	Pleo	Bi	Elg	Ext
1	cellulose	W	F	N	N	H	+	U
2								
3								
4								
5								
6								

Refractive Index Determinations	Oil	Col Par	Col Par	RI Par	RI Par

Sample Analytical Note
Procedure: tweased apart using forceps.

Sample 16 **Lab Number** 2018-03589- 16 **Sampled:** 4/11/2018 **Condition:** acceptable

Analyzed By JCJ 4/12/2018 **An?** OK **Apparent Smp Type** Wall System Fibrous Solid

Homogeneous Yes **# Layers** 1 **Pos Layer?** No

Non-Fibrous Components (in approx. decreasing order): powder, ,

Layers

#	Layer Type	%	Color	Friability
1	drywall core	100	white	3
	Total %	100	**Overall %**	

Percents of Each Fiber	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
	<=1%	-	-	-	-	-
Overall %	<=1%	-	-	-	-	-
Fiber Identification:	cellulose					

Fibers

		Color	Mrph	Iso	Pleo	Bi	Elg	Ext
1	cellulose	W	F	N	N	H	+	U
2								
3								
4								
5								
6								

Refractive Index Determinations	Oil	Col Par	Col Per	RI Par	RI Per

Sample Analytical Note

Procedure: tweased apart using forceps.

Sample 17 **Lab Number** 2018-03589- 17 **Sampled:** 4/11/2018 **Condition:** acceptable

Analyzed By JCJ 4/12/2018 **An?** OK **Apparent Smp Type** Roofing Fibrous Solid

Homogeneous Yes **# Layers** 1 **Pos Layer?** No

Non-Fibrous Components (in approx. decreasing order): filler, bitumen,

Layers

#	Layer Type	%	Color	Friability
1	roof ply/bitumen	100	black	1
	Total %	100	**Overall %**	

Percents of Each Fiber	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
	20-30%	-	-	-	-	-
Overall %	20-30%	-	-	-	-	-
Fiber Identification:	cellulose fiber					

Fibers

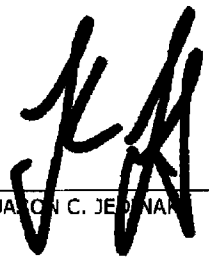
		Color	Mrph	Iso	Pleo	Bi	Elg	Ext
1	cellulose fiber	W	F	N	N	H	+	U
2								
3								
4								
5								
6								

Refractive Index Determinations	Oil	Col Par	Col Per	RI Par	RI Per

Sample Analytical Note

Procedure: tweased apart using forceps. Procedure: dissolution of matrix using solvent.

Fr=Friability: 1=very non-friable; 2= non-friable; 3=friable; 4=highly friable
Colors: B=black;BL=blue;BR=brown;CL=clear;G=Green;GY=gray;OR=orange;OW=off-white;PN=pink;PU=purple;R=red;TN=tan;W=white;Y=yellow;V=various
Fiber Morphology: A=fine fibers/bundles, white, sinewy, flexible; B=fine fibers/buncles, w-br, straight, broomed ends; C=fine fibers/bundles, blue, straight, broomed ends; D=fine to coarse fibers, CL-B, brittle; E=coarse fibers,CL or dyed, striated; F=coarse fibers or splinters, W-BR, ribbon-like; G=lath-like or shards, low aspect ratio, may taper
Iso=isotropism - may be yes or no; Pleo=pleochroism - may be yes or no; Bi=birefringence - may be None, Low, Medium or High
Elg=sign of elongation - may be +, - or B (both); Ext=extinction - may be Parallel, Oblique, None or Undulating; Oil=medium used to for dispersion staining
Col Par=dispersion staining colors parallel to the fiber (fiber/halo): b/w=black/white; dg/py=dark gray/pale yellow; vg/y=violet gray/yellow; db/ly=dark blue/lemon yellow; vb/g= vivid blue/gold; sb/o=sky blue/orange; pb/r=pale blue/red; gb/dr=gray blue/dark red; w/b=white/black. Col Perp=same only perpendicular to fiber.
RI Par=refractive index parallel to fiber; RI Perp=refractive index perpendicular to fiber



Analyst: JASON C. JEDNAK

Printed: 12-Apr-18

Original Print Date: 12-Apr-18

Larry S. Pierce, Approved Accreditation Signatory

FIBERQUANT ANALYTICAL SERVICES

Fiberquant Analytical Services 5025 S. 33rd St.; Phoenix, AZ 85040; Phone: 602-276-6139; FAX: 602-276-4558; info@fiberquant.com

Analysis Request/Chain-of-Custody Form

Submitted by (Company)	Pima County Risk Management
Address	130 W. Congress, 9th Floor
City, State, Zip Code	Tucson, AZ 85701
Phone	520-724-3078
FAX	520-222-1407
Email	jim.faas@pima.gov

Invoice to (Company)	Same
Address	
City, State, Zip Code	
Phone	FAX

Contact (print)	Jim Faas
Sampled by (signature)	
Job Number or Project Name	Canoa Buildings - Verification
PO Number	

URGENT

<Analysis Method Requested> ONLY ONE METHOD PER COC			Turn-around-time (Choose one) Rush		Norm	Ext.
Asbestos by PLM	Method > Improved [X] or Modified [ ] Analyze > Bulk [X] or ATPF [ ] If ATPF then > by Layer: [ ] or by Sample [ ] Single Layer Protocol > Yes [ ] or No [ ]		Urg. Rush <4 hr [X]	<8 hrs [ ]	1-3 days [ ]	15-30 days [ ]
Fibers by PCM	Method > 7400 (Airborne) [ ] ORM (Personal) [ ]		<4 hr [ ]		24hr [ ]	
Asbestos by TEM	In Air > [illegible]		[illegible]		[illegible]	3-5d [ ]
	In Wipe > [illegible]		[illegible]		[illegible]	N/A
	In Bulk (Annex2) > Chatfield [ ] Fall Dwell [ ]					
	In Dust > Vacuum Dust (ASTM D-5755) [ ]		3-5d [ ]		5-10d [ ]	N/A
Pb by FLAA	Analyte > Pb [ ] Other [ ]		<8 hrs [ ]		2-3 days [ ]	N/A
	Matrix > Filter > MCE [ ]					
	Paint > by Area (mg/cm2) [ ] by Weight (ppm) [ ]					
	Soil > [ ]					
	Wipe > [ ]					
	Check here certifying wipes used are ASTM E1792 compliant [ ]					
Fungi	Air Sample > Zef [ ] Aller [ ] Oth [ ]		<8 hrs [ ]		1-2 days [ ]	N/A
	Bulk > Sample [ ] Swab [ ]					
	Tape Lift > Qualitative (Mat type) [ ] or Quantitative (type/cm2) [ ]					
Soot	ASTM D6602-03B	Optical	<8 hrs [ ]		1-2 days [ ]	N/A
		Optical & TEM	1-2 days [ ]		3-5 days [ ]	N/A
Other			Call		Call	

Sample # (1 per line)		Description/Location	Sample Date	Sample Time	Vol. or Area
1)	1	Bldg 1 Mens room window caulk	4/6/18		
2)	2	" Womens " " "			
3)	3	" Mens room drywall			
4)	4	" Womens " "			
5)	5	" Ext. Soffit "			
6)	6	" Roof under mission tile			
7)	7	Bldg 2 Mens room window caulk			
8)	8	" Womens " " "			
9)	9	" Mens room drywall			
10)	10	" Womens " "			
11)	11	" Exterior Soffit "			
12)	12	" Roof under mission tile			
13)	13	Bldg 3 Ext. Stucco			
14)	14	" " "			
15)	15	" Drywall - boat room			
16)	16	" " "			
17)	17	" Roof - under mission tile	↓		
18)					
19)					
20)					

1)Relinquished by:	Date: 4/11/18	Time: 10:30	3)Relinquished by:	Date:	Time:
2)Received by:	Date: 4/12/18	Time: 7:00	4)Received by:	Date:	Time:
* TEN Water: Sampler's name Required by State of Arizona	Print Name	FIX	Fiberquant assigned Job Number>	20180358	
Review of Analysis Request (Initials): KLH				Page of	

Note: Data completed by client (including number and identity of samples) is assumed to be correct until it is verified at time of sample preparation.

Appendix C

Asbestos Building Inspector Certification

A 2072

Certifies that

James Faas

has attended the EPA approved course

Building Inspector Refresher
October 6, 2017

and successfully passed the competency exam.

Date of Examination: October 6, 2017

Date of Expiration: October 6, 2018

Director

Approved Instructor

TTi
TECHNICAL TRAINING INSTITUTE

2122 W. Lone Cactus Dr. Suite 6, Phoenix, AZ 85027 - (760) 930-9966

A division of **MC** Consultants Inc.

This training meets all requirements for asbestos accreditation under TSCA Title II

ATTACHMENT 2

PIMA COUNTY
TRANSPORTATION

MEMORANDUM

DATE: April 12, 2018

TO: Jim Cunningham, P.E., S.E., R.L.S.
Deputy Director

FROM: David M. Zaleski, P.E., S.E.
Bridge Engineer

SUBJECT: Golf Cart Underpasses at Canoa Hills Golf Course

As requested, I conducted field inspections of two, concrete golf cart underpasses along Camino del Sol for the Canoa Hills Golf Course in the Green Valley area. These two golf cart underpasses convey traffic using cast-in-place concrete box culverts which conform to older ADOT standard drawings. They convey both cart and pedestrian traffic, but also serve to convey drainage flows through the structures. Based on review of plans obtained, it appears they were built sometime in the 1980's.

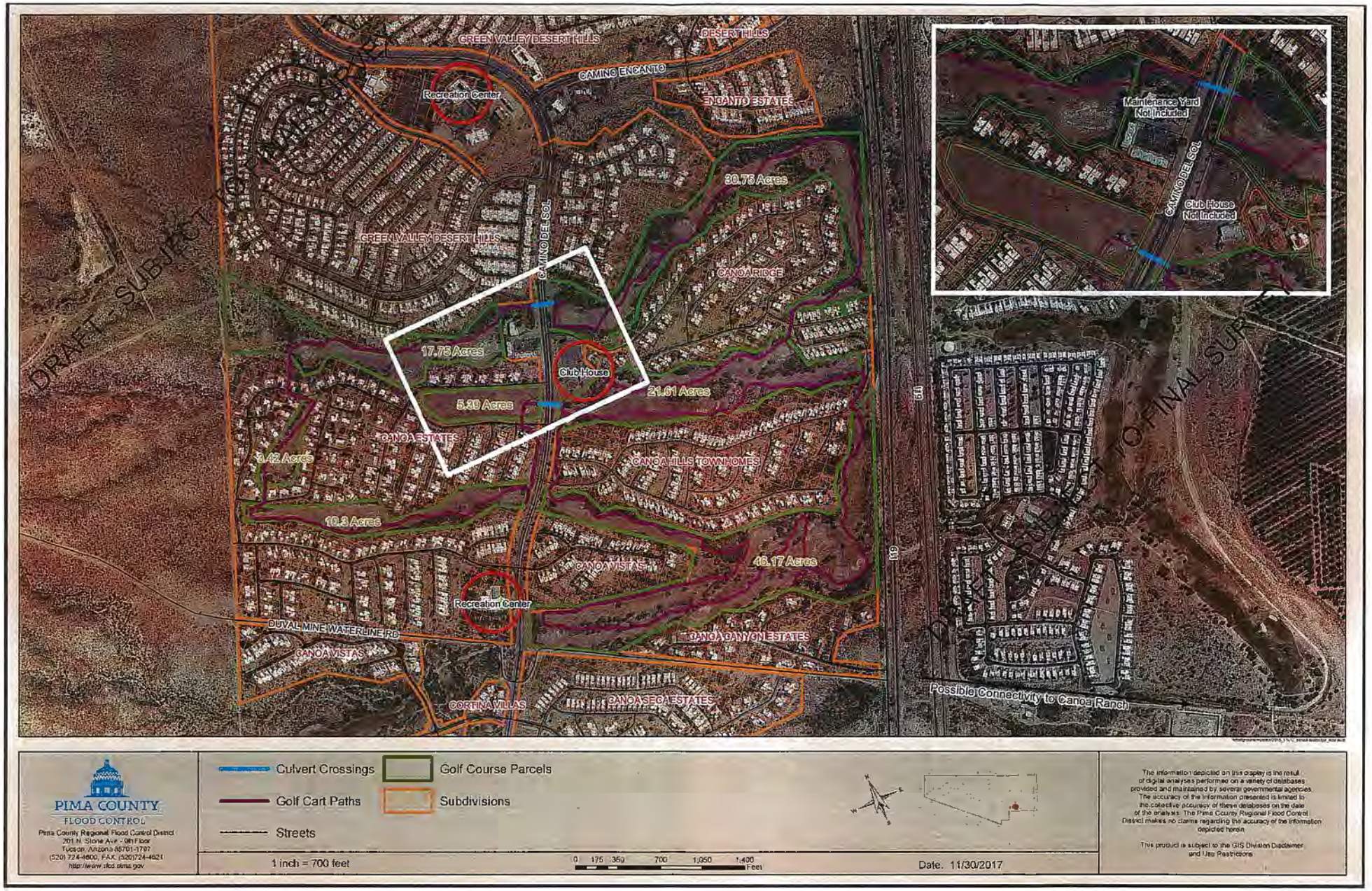
The structure to the northern area of the golf course is a 10x10 reinforced concrete box culvert. There are some cracks with small sections of exposed steel reinforcing at the interface between the headwall and wingwalls. This defect occurs at one location on the west side and one on the east side of the structure. There are also some minor horizontal cracks in a wingwall at the east end of the structure. There are very few, minor vertical shrinkage cracks in the walls of the culvert, and many scattered shrinkage cracks in the floor of the structure. The construction joints are in good condition with no signs of water seepage, efflorescence or corrosion passing through the joints. There is a metal conduit at the top of the interior wall and passes through the entire structure. The structure overall is in good condition and requires little or no repairs or maintenance at this time, except for patching the cracks and exposed reinforcing by the wingwall/headwall interface.

The structure located to the south along Camino del Sol is a two barrel, 10x10 reinforced concrete box culvert. This structure has a couple vertical cracks in the wingwalls on the west entrance, and has very few vertical shrinkage cracks in the walls or cracks in the floor. There is some efflorescence and corrosion present at the construction joints throughout the structure, but there is not active water seepage at this time. The structure overall is in good condition and requires little or no repairs or maintenance at this time. However, the entrance at the west side of this structure has wood planking embedded into earthen areas (fills) with a maximum height of about five feet, and the wooden planks are splitting and many sections have broken and have failed allowing earthen fills to drop out. Additionally, the concrete cart path has many large, scattered cracks, and there is some sediment buildup in the barrels from local drainage activity. These wooden earth retention planks will need to be replaced with some type of soil retention system, and the cart path may require replacement to remove these cracks which could create tripping hazards.

One other general observation is that the asphaltic concrete cart paths at both locations have many scattered, large cracks and potholes. An assessment of the total path system in the golf course would be required to ascertain corrective work. Inspection of the asphalt paving for Camino del Sol above both of these structures show no signs of settlement and that paving is in good condition.

Overall, these two structures are in good condition and will require very little repairs initially, and should not require any longterm maintenance. Please see the attached photos and let me know if you require further action on my part at this time.

xc: Robert Young



PIMA COUNTY
FLOOD CONTROL

Pima County Regional Flood Control District
201 N. Stone Ave - 9th Floor
Tucson, Arizona 85701-1797
(520) 724-4600, FAX (520)724-4621
http://www.sfcd.pima.gov

Culvert Crossings
Golf Cart Paths
Streets
Golf Course Parcels
Subdivisions

1 inch = 700 feet

0 175 350 700 1,050 1,400 Feet

Date. 11/30/2017