APPENDIX H
HAZARDOUS MATERIALS DOCUMENTATION

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ASBESTOS SURVEY REPORTS

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Argus Environmental Consultants, LLC

LIMITED ASBESTOS SURVEY REPORT

SAN ANTONIO INTERNATIONAL AIRPORT
BUILDING 1039 - BREAK ROOM
SAN ANTONIO, TEXAS

PREPARED FOR:

KARA MARKS
FREESE & NICHOLS
4040 BROADWAY SUITE 600
SAN ANTONIO, TEXAS 78209

PREPARED BY:

ARGUS ENVIRONMENTAL CONSULTANTS, LLC
10004 WURZBACH, # 247
SAN ANTONIO, TEXAS 78230
PHONE: (210) 493-2560

PROJECT NUMBER: 1908285ARG

CONDUCTED AND WRITTEN BY:

Elizabeth Aguilar

ELIZABETH AGUILAR
TDSHS ASBESTOS INSPECTOR LICENSE #603203 (EXP. 1/12/2021)

REVIEWED BY:

MARK D. FREEMYER, CIEC
TDSHS ASBESTOS CONSULTANT LICENSE #105695 (Exp. 6/12/2020)

DATE OF ISSUE: August 27, 2019

Indoor Air Quality

Mold

Asbestos

Lead

Industrial Hygiene

Clandestine Drug Assessment & Remediation

OSHA Compliance

Occupational & Environmental Health & Safety

Training

Expert Testimony

Pre-Purchase Inspections

Environmental Site Assessments- Phase I, II & III

Environmental Impact Assessments

Wetlands Delineation

Property Transaction Due Diligence Screening

Forensics

Thermal Imaging
Water Intrusion
Failure Analysis

HUB
•
Small Women Owned
H-3 *Business*

Introduction

Argus Environmental Consultants, LLC (Argus) performed a limited asbestos survey of the flooring and wall materials associated with the San Antonio International Airport Building 1039 Break Room located in San Antonio, Texas on August 20, 2019.

This report has been prepared for the exclusive use of Freese & Nichols and their assigned agents. It and all contents, findings, conclusions and recommendations expressed herein are not intended for any other purpose than that stated, nor is intended to be used by any other party.

Scope of Services

The following activities were included in the limited asbestos survey:

- Visual evaluation of the flooring and wall materials present within the Break Room at the time of the survey.
- Random, non-destructive collection of bulk samples from flooring and wall materials that may potentially contain asbestos.
- Laboratory analysis using Polarized Light Microscopy (PLM) following EPA Method 600 of building material samples by a third party laboratory licensed by the Texas Department of State Health Services (TDSHS).

Bulk Samples

Fifteen samples were collected from the following homogenous areas identified as potential ACM:

Homogenous Area	Description	Sample ID
1	12x12 Cream w/ Tan Streak Floor Tile and Black Mastic	H1ABC
2	Gypsum Board	H2ABC
3	Joint Compound	H3ABC
4	Wall Texture	H4ABC
5	Blue Cove Base, Brown/Cream Mastic	H5ABC

Conclusions

Within the fifteen bulk samples collected, fourteen separate construction material layers were subjected to PLM laboratory analysis.

Regulated ACM was found in the following materials:

Homogeneous Area	Description/ Location	Sample ID	Percent (%) Asbestos	Quantity	Condition	Friable/ Non-friable
1	12x12 Cream w/ Tan Streak Floor Tile and Black Mastic	H1ABC	2% Chrysotile & 2% Chrysotile	~ 485 Square Feet	Good	Non-friable

Asbestos was not identified in any other sample.

Recommendations

Inform contractors involved with all demolition, renovation and related activities that regulated ACM was identified in the floor tile and mastic

Floor tile and mastic ACM may be removed using typical wet methods within a full negative air pressure enclosure or using the Resilient Floor Covering Institute (RFCI) method. Either method must be completed by a Texas DSHS licensed Abatement Contractor in accordance with the Texas DSHS regulations as required. This will involve the submittal of a Texas DSHS Notification Form no less than 10 days prior to the commencement of work.

If the full containment method is used, the abatement project involves greater than 160 square feet of ACM and requires a written scope of work known as an Asbestos Abatement Design Specification written by an Asbestos Consultant licensed by Texas DSHS. If the RFCI method is used, a copy of the method must be on site during work.

Except for RFCI, the abatement project requires air monitoring and project management onsite by a Texas DSHS licensed Air Monitoring Technician/Project Manager (AMT/PM). Final work area clearance and a written report by a Texas DSHS licensed Consultant appointed AMT/PM will serve to complete abatement activities. All waste, regardless of abatement method, requires labeling, transportation by a licensed transporter and manifest at an authorized landfill.

Limitations

Argus' entire liability pertaining to this report and all work associated with it is limited to the invoiced amount defined within the Scope of Services.

Due to the limited nature of this survey, Argus does not verify the existence or non-existence of asbestos in areas not sampled. For example, destructive sampling, evaluation in any inaccessible areas, or any areas of the building outside the proposed evaluation has not been done. Therefore, any potential materials hidden in or behind walls, concealed by building or structural components, under the flooring, or other inaccessible areas are not included in this report. Argus only verifies the existence or non-existence of asbestos in those materials actually sampled.

Attachments

1) EMSL Analytical, Inc.'s EPA 600 PLM Test Report dated 8/23/2019
2) Bulk Sample Diagram

161916873

EMSL Analytical, Inc.
6340 Castleplace Drive
Indianapolis, IN 46205
Phone: (317) 803-2997
Fax: (317) 803- 3047

CHAIN OF CUSTO Y

Polarized Light Microscopy (PLM)
EPA method 600
*Positive Stop Count

Argus Environmental
10004 Wurzbach Rd., #247
San Antonio, Texas 78230
Phone (210) 493-2560
Fax (210) 342-9027
sarah@argusenvironmental.com
beth@argusenvironmental.com

Turnaround time: 72 hour	Project name: SAIA - Bldg. 1039 Break Room	Job number: 1908285ARG	Date of collection: 8/20/2019

Sample number	*Sample location*		*Material description*		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
H1A	Break Room	12x12		Cream w/ Tan Streak and Black	Floor Tile and Mastic Only
H1B*	Break Room	12x12		Cream w/ Tan Streak and Black	Floor Tile and Mastic Only
H1C*	Break Room	12x12		Cream w/ Tan Streak and Black	Floor Tile and Mastic Only
H2A	Break Room	Wall Systems		White	Gypsum Board Only
H2B*	Break Room	Wall Systems		White	Gypsum Board Only
H2C*	Break Room	Wall Systems		White	Gypsum Board Only
H3A	Break Room	Wall Systems		White	Joint Compound Only
H3B*	Break Room	Wall Systems		White	Joint Compound Only
H3C*	Break Room	Wall Systems		White	Joint Compound Only
H4A	Break Room	Wall Systems		White	Texture Only

Sample relinquished by:		Sample received by:	
Print name: Elizabeth Aguilar	Date: 8/20/2019	Print name: BBurn	Date: 8/21/19
Signature: Elizabeth Aguilar	Time: 3:20PM	Signature: BBurn	Time: 845 efy

- ***Email all sample results***

OrderID: 161916873

Page 1 Of 2

16873

EMSL Analytical, Inc.
6340 Castleplace Drive
Indianapolis, IN 46205
Phone: (317) 803-2997
Fax: (317) 803- 3047

CHAIN OF CUSTO Y

Polarized Light Microscopy (PLM)
EPA method 600
*Positive Stop Count

Argus Environmental
10004 Wurzbach Rd., #247
San Antonio, Texas 78230
Phone (210) 493-2560
Fax (210) 342-9027
sarah@argusenvironmental.com
beth@argusenvironmental.com

Turnaround time:	Project name:	Job number:	Date of collection:
72 hour	SAIA - Bldg. 1039 Break Room	1908285ARG	8/20/2019

Sample number	*Sample location*		*Material description*		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
H4B*	Break Room	Wall Systems		White	Texture Only
H4C*	Break Room	Wall Systems		White	Texture Only
H5A	Break Room	Blue Cove Base		Cream/Brown	Mastic Only
H5B*	Break Room	Blue Cove Base		Cream/Brown	Mastic Only
H5C*	Break Room	Blue Cove Base		Cream/Brown	Mastic Only

Sample relinquished by:		Sample received by:	
Print name: Elizabeth Aguilar	Date: 8/20/2019	Print name: BBunn	Date: 8/21/19
Signature: Elizabeth Aguilar	Time: 3:20PM	Signature: BBunn	Time: 845

- ***Email all sample results***

OrderID: 161916873

Page 2 of 2

EMSL Analytical, Inc.

6340 CastlePlace Dr. Indianapolis, IN 46250

Tel/Fax: (317) 803-2997 / (317) 803-3047

http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order:	161916873
Customer ID:	ARGU52
Customer PO:	
Project ID:	

Attention:	Beth Sharrow-Aguilar	**Phone:**	(210) 493-2560
	Argus Environmental	**Fax:**	(210) 342-9027
	10004 Wurzbach Road	**Received Date:**	08/21/2019 8:45 AM
	Suite 247	**Analysis Date:**	08/23/2019
	San Antonio, TX 78230-2214	**Collected Date:**	08/20/2019
Project:	SAIA - BLDG. 1039 BREAK ROOM 1908285ARG		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
H1A-Floor Tile *161916873-0001*	Break Room - floor tile & mastic only	Tan/White Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
H1A-Mastic *161916873-0001A*	Break Room - floor tile & mastic only	Black Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
H1B *161916873-0002*	Break Room - floor tile & mastic only				Positive Stop (Not Analyzed)
H1C *161916873-0003*	Break Room - floor tile & mastic only				Positive Stop (Not Analyzed)
H2A *161916873-0004*	Break Room - gypsum board only	Brown/White Fibrous Heterogeneous	20% Cellulose	70% Gypsum 10% Non-fibrous (Other)	None Detected
H2B *161916873-0005*	Break Room - gypsum board only	Brown/White Fibrous Heterogeneous	20% Cellulose	70% Gypsum 10% Non-fibrous (Other)	None Detected
H2C *161916873-0006*	Break Room - gypsum board only	Brown/White Fibrous Heterogeneous	20% Cellulose	70% Gypsum 10% Non-fibrous (Other)	None Detected
H3A *161916873-0007* *Inseparable paint / coating layer included in analysis*	Break Room - joint compound only	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H3B *161916873-0008* *Inseparable paint / coating layer included in analysis*	Break Room - joint compound only	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H3C *161916873-0009* *Inseparable paint / coating layer included in analysis*	Break Room - joint compound only	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H4A *161916873-0010* *Inseparable paint / coating layer included in analysis*	Break Room - texture only	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H4B *161916873-0011* *Inseparable paint / coating layer included in analysis*	Break Room - texture only	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H4C *161916873-0012* *Inseparable paint / coating layer included in analysis*	Break Room - texture only	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H5A *161916873-0013*	Break Room - mastic only	Brown/Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 08/23/2019 14:27:48

EMSL Analytical, Inc.
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http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order: 161916873
Customer ID: ARGU52
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
H5B *161916873-0014*	Break Room - mastic only	Brown/Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H5C *161916873-0015*	Break Room - mastic only	Brown/Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s)
Jadda Moffett (10)
Trevor Maggart (4)

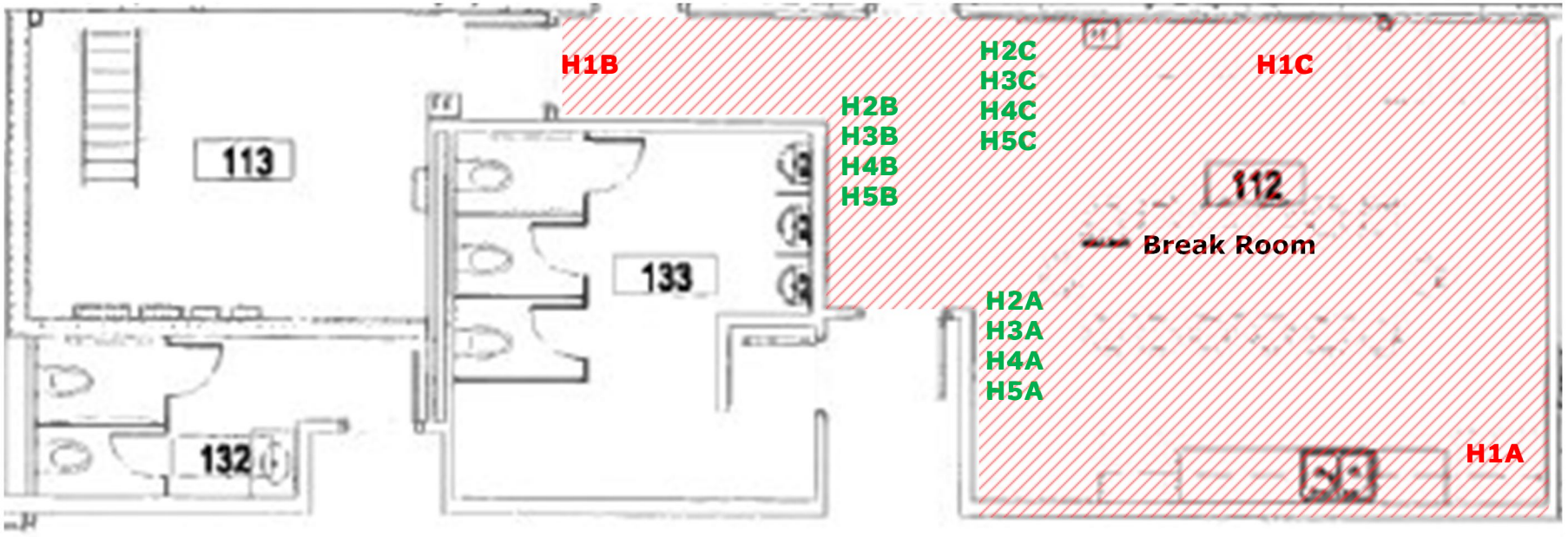
Richard Harding, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN NVLAP Lab Code 200188-0, AZ0939, CA 2575, CO AL-15132, TX 300262

Initial report from: 08/23/2019 14:27:48

Asbestos Survey Bulk Sample Diagram
San Antonio International Airport
Building 1039 - Break Room



Legend

Green - Non-Asbestos Sample Locations

Red - Asbestos Sample Locations

- ACM Floor Tile and Mastic

Environmental Consultants, LLC
10004 Wurzbach Road, Ste. 247
San Antonio, Texas 78230

Date: 8/26/19

July 26, 2018

Project No: 1805195ARG

Kara Marks
Freese & Nichols
4040 Broadway, Suite 600
San Antonio, Texas 78209

RE: LIMITED ASBESTOS SURVEY REPORT – SAN ANTONIO INTERNATIONAL AIRPORT, BUILDING 1039 AND EAST VAULT ROOF SYSTEMS

Dear Ms. Marks:

Argus Environmental Consultants, LLC (Argus) performed a limited asbestos survey of the roofing systems at the San Antonio International Airport Building 1039 and the East Vault. Building 1039 is located at 457 Sandau and the East Vault is within the operations area at the San Antonio International Airport.

The asbestos survey scope of services included the following:

- Visual evaluation of the roofing systems of Building 1039 and the East Vault at the time of the survey.
- Random, non-destructive collection of bulk samples from roofing materials that may potentially contain asbestos.
- Analysis of bulk samples by a third party laboratory licensed by the Texas Department of State Health Services (DSHS) using Polarized Light Microscopy (PLM) following EPA Method 600**.**

Argus' entire liability pertaining to this report and all work associated with it is limited to the invoiced amount defined within the Scope of Services.

This report has been prepared for the exclusive use of Freese & Nichols and their assigned agents. It and all contents, findings, conclusions, and recommendations expressed herein are not intended for any other purpose than that stated, nor are intended to be used by any other party.

Due to the limited nature of this survey, Argus does not verify the existence or non-existence of ACM in areas not sampled. For example, destructive sampling, evaluation in any inaccessible areas, or at any areas of the buildings outside the proposed roofing system evaluation has not been done. Argus only verifies the existence or non-existence of asbestos in those materials actually sampled.

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Indoor Air Quality
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Thermal Imaging
Water Intrusion
Failure Analysis

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•
Small Women Owned
H-12 *Business*

The asbestos survey was performed on July 18, 2018, by Mark D. Freemyer, Texas DSHS Asbestos Consultant License #105695.

Bulk Samples:

Building 1039

Nine samples were collected from the following homogenous areas identified as potential ACM:

Homogenous Area	Description	Sample ID
1	Black Roofing, Grey Underlay and Black Tar	R-123
2	Grey Roofing Parapet Cap Caulk	C-123
3	White Roofing Parapet Cap Sealant	S-123

East Vault

Three samples were collected from the following homogenous area identified as potential ACM:

Homogenous Area	Description	Sample ID
1	Black Roofing, Tan Underlay and Black Tar	R-123

Conclusions:

Building 1039

Within the nine bulk samples collected, fourteen separate construction material layers were subjected to PLM laboratory analysis. Asbestos was not identified in any sample.

East Vault

Within the three bulk samples collected, six separate construction material layers were subjected to PLM laboratory analysis. The roofing material and the tar materials were not separated and analyzed as a single layer. Asbestos was not identified in any sample.

Recommendations:

Inform contractors involved with all roofing removal related activities that no ACM was identified in the roofing systems of Building 1039 and the East Vault.

For Argus Environmental Consultants, LLC,

Mark D. Freemyer, CIEC
Texas DSHS Asbestos Consultant License #105695 (Exp. 6/12/2020)

Attachment: 1) EMSL Analytical, Inc.'s EPA 600 PLM Test Report 7/23/2018 – Building 1039
2) EMSL Analytical, Inc.'s EPA 600 PLM Test Report 7/23/2018 – East Vault

1618136316

OrderID: 161813631

EMSL Analytical, Inc.
2001 E 52nd Street
Indianapolis, IN 46205
Phone: (317) 803-2997
Fax: (317) 803- 3047

CHAIN OF CUSTODY

Polarized Light Microscopy (PLM)
EPA method 600
*Positive Stop Count

Argus Environmental
10004 Wurzbach Rd., #247
San Antonio, Texas 78230
Phone (210) 493-2560
Fax (210) 342-9027
mark@argusenvironmental.com
beth@argusenvironmental.com

Turnaround time: 72 Hour	Project name: Building 1039	Job number: 1807227ARG	Date of collection: 7-18-18

Sample number	*Sample location*		*Material description*		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
R-1	1039	Roofing System (~12,469 square feet)		Black + Grey + Black	Roofing + Underlay + Tar
R-2*	1039	Roofing System (~12,469 square feet)		Black + Black	Roofing + Tar
R-3*	1039	Roofing System (~12,469 square feet)		Black + Grey + Black	Roofing + Underlay + Tar
C-1	1039	Roofing System Parapet Cap		Grey	Caulk
C-2*	1039	Roofing System Parapet Cap		Grey	Caulk
C-3*	1039	Roofing System Parapet Cap		Grey	Caulk
S-1	1039	Roofing System Parapet Cap		White	Sealant
S-2*	1039	Roofing System Parapet Cap		White	Sealant
S-3*	1039	Roofing System Parapet Cap		White	Sealant

Sample relinquished by:		Sample received by:	
Print name: Mark D Freemyer	Date: 7-18-18	Print name: Carolyn McDermott	Date: 7.19.18 10:30 EFX
Signature:	Time: 1259	Signature: Carolyn McDermott	Time: 10:30 EFX

- *Email all sample results*

Page 1 Of 1

EMSL Analytical, Inc.

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http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order:	161813631
Customer ID:	ARGU52
Customer PO:	
Project ID:	

Attention:	Mark Freemyer	**Phone:**	(210) 493-2560
	Argus Environmental	**Fax:**	(210) 342-9027
	10004 Wurzbach Road	**Received Date:**	07/19/2018 10:30 AM
	Suite 247	**Analysis Date:**	07/23/2018
	San Antonio, TX 78230-2214	**Collected Date:**	07/18/2018
Project:	1807227ARG / Building 1039		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
R-1-Roofing *161813631-0001*	Bldg. 1039 - Roofing System - Black/Grey/Black Roofing, Underlay & Tar	Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
R-1-Underlay *161813631-0001A*	Bldg. 1039 - Roofing System - Black/Grey/Black Roofing, Underlay & Tar	White Non-Fibrous Homogeneous		20% Mica 80% Non-fibrous (Other)	None Detected
R-1-Tar *161813631-0001B*	Bldg. 1039 - Roofing System - Black/Grey/Black Roofing, Underlay & Tar	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-2-Roofing *161813631-0002*	Bldg. 1039 - Roofing System - Black/Black Roofing & Tar	Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
R-2-Tar *161813631-0002A*	Bldg. 1039 - Roofing System - Black/Black Roofing & Tar	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
R-3-Roofing *161813631-0003*	Bldg. 1039 - Roofing System - Black/Grey/Black Roofing, Underlay & Tar	Black Non-Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
R-3-Underlay *161813631-0003A*	Bldg. 1039 - Roofing System - Black/Grey/Black Roofing, Underlay & Tar	White Non-Fibrous Homogeneous		10% Quartz 10% Mica 80% Non-fibrous (Other)	None Detected
R-3-Tar *161813631-0003B*	Bldg. 1039 - Roofing System - Black/Grey/Black Roofing, Underlay & Tar	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-1 *161813631-0004*	Bldg. 1039 - Roofing System Parapet Cap - Grey Caulk	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-2 *161813631-0005*	Bldg. 1039 - Roofing System Parapet Cap - Grey Caulk	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-3 *161813631-0006*	Bldg. 1039 - Roofing System Parapet Cap - Grey Caulk	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
S-1 *161813631-0007*	Bldg. 1039 - Roofing System Parapet Cap - White Sealant	Gray/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 07/23/2018 16:12:17

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http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order: 161813631
Customer ID: ARGU52
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
S-2 *161813631-0008*	Bldg. 1039 - Roofing System Parapet Cap - White Sealant	White/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
S-3 *161813631-0009*	Bldg. 1039 - Roofing System Parapet Cap - White Sealant	Gray/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s)
Emily Austin (5)
Jadda Moffett (9)

Richard Harding, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN NVLAP Lab Code 200188-0, AZ0939, CA 2575, CO AL-15132, TX 300262, LA 04135

Initial report from: 07/23/2018 16:12:17

1618136 30

OrderID: 161813630

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Indianapolis, IN 46205
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CHAIN OF CUSTODY

Polarized Light Microscopy (PLM)
EPA method 600
*Positive Stop Count

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San Antonio, Texas 78230
Phone (210) 493-2560
Fax (210) 342-9027
mark@argusenvironmental.com
beth@argusenvironmental.com

Turnaround time: 72 Hour	Project name: East Vault	Job number: 1807227ARG	Date of collection: 7-18-18

Sample number	*Sample location*		*Material description*		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
R-1	East Vault	Roofing System (~2,112 square feet)		Black + Tan + Black	Roofing + Underlay + Tar
R-2*	East Vault	Roofing System (~2,112 square feet)		Black + Tan + Black	Roofing + Underlay + Tar
R-3*	East Vault	Roofing System (~2,112 square feet)		Black + Tan + Black	Roofing + Underlay + Tar

Sample relinquished by:		Sample received by:	
Print name: Mark D Freemyer	Date: 7-18-18	Print name: Carolyn McDermott	Date: 7.19.18
Signature: Mark D. Freemyer	Time: 1242	Signature: Carolyn McDermott	Time: 10:30 EFX

- *Email all sample results*

Page 1 Of 1

EMSL Analytical, Inc.

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http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order:	161813630
Customer ID:	ARGU52
Customer PO:	
Project ID:	

Attention:	Mark Freemyer	**Phone:**	(210) 493-2560
	Argus Environmental	**Fax:**	(210) 342-9027
	10004 Wurzbach Road	**Received Date:**	07/19/2018 10:30 AM
	Suite 247	**Analysis Date:**	07/23/2018
	San Antonio, TX 78230-2214	**Collected Date:**	07/18/2018
Project:	1807227ARG / East Vault		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
R-1-Roofing *161813630-0001*	East Vault - Roofing System - Black/Tan/Black Roofing, Underlay & Tar	Black Fibrous Homogeneous	20% Cellulose 10% Glass	70% Non-fibrous (Other)	None Detected
R-1-Underlay *161813630-0001A*	East Vault - Roofing System - Black/Tan/Black Roofing, Underlay & Tar	Brown Fibrous Homogeneous	85% Cellulose	10% Perlite 5% Non-fibrous (Other)	None Detected
R-2-Roofing *161813630-0002*	East Vault - Roofing System - Black/Tan/Black Roofing, Underlay & Tar	Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
R-2-Underlay *161813630-0002A*	East Vault - Roofing System - Black/Tan/Black Roofing, Underlay & Tar	Brown Fibrous Homogeneous	85% Cellulose	10% Perlite 5% Non-fibrous (Other)	None Detected
R-3-Roofing *161813630-0003*	East Vault - Roofing System - Black/Tan/Black Roofing, Underlay & Tar	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
R-3-Underlay *161813630-0003A*	East Vault - Roofing System - Black/Tan/Black Roofing, Underlay & Tar	Brown Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected

Analyst(s)

Emily Austin (2)

Jadda Moffett (4)

Richard Harding, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN NVLAP Lab Code 200188-0, AZ0939, CA 2575, CO AL-15132, TX 300262, LA 04135

Initial report from: 07/23/2018 15:54:18

Argus Environmental Consultants, LLC

LIMITED ASBESTOS SURVEY REPORT

SAN ANTONIO INTERNATIONAL AIRPORT
BUILDING 1039 – OPERATIONS AND FINANCE
SAN ANTONIO, TEXAS 78216

PREPARED FOR:

KARA MARKS
FREESE & NICHOLS
4040 BROADWAY, SUITE 600
SAN ANTONIO, TEXAS 78209

PREPARED BY:

ARGUS ENVIRONMENTAL CONSULTANTS, LLC
10004 WURZBACH, # 247
SAN ANTONIO, TEXAS 78230

PROJECT NUMBER: 1905197ARG

CONDUCTED BY:

ELIZABETH AGUILAR
TDSHS ASBESTOS INSPECTOR LICENSE #603203 (EXP. 1/12/2021)

REVIEWED BY:

MARK D. FREEMYER, CIEC
TDSHS ASBESTOS CONSULTANT LICENSE #105695 (Exp. 6/12/2020)

DATE OF ISSUE: May 7, 2019

10004 Wurzbach Rd., #247, San Antonio, TX 78230-2214
Phone: 210.493.2560 ♦ Fax: 210.342.9027
www.argusenvironmental.com

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Small
Women Owned
H-20 *Business*

Introduction

Argus Environmental Consultants, LLC (Argus) performed a limited asbestos survey of the flooring and cove base materials associated with the San Antonio International Airport Building 1039 - Operations and Finance area located at 427 Sandau in San Antonio, Texas on May 6, 2019.

This report has been prepared for the exclusive use of Freese & Nichols and their assigned agents. It and all contents, findings, conclusions and recommendations expressed herein are not intended for any other purpose than that stated, nor is intended to be used by any other party.

Scope of Services

The following activities were included in the limited asbestos survey:

- Visual evaluation of the flooring and cove base finish materials present in the Operations and Finance area at the time of the survey.
- Random, non-destructive collection of bulk samples from flooring and cove base materials that may potentially contain asbestos.
- Laboratory analysis using Polarized Light Microscopy (PLM) following EPA Method 600 of building material samples by a third party laboratory licensed by the Texas Department of State Health Services (TDSHS).

Bulk Samples

Six samples were collected from the following homogenous areas identified as potential ACM:

Homogenous Area	Description	Sample ID
1	Raised Floor Yellow Carpet Squares, Yellow Mastic	H1ABC
2	Black Cove Base, Brown Mastic	H2ABC

Conclusions

Within the six bulk samples collected, six separate construction material layers were subjected to PLM laboratory analysis. Asbestos was not identified in any sample.

Recommendations

Inform contractors involved with all demolition, renovation and related activities that no ACM was identified in the flooring and cove base within the Operations & Finance Area.

Limitations

Argus' entire liability pertaining to this report and all work associated with it is limited to the invoiced amount defined within the Scope of Services.

Due to the limited nature of this survey, Argus does not verify the existence or non-existence of asbestos in areas not sampled. For example, destructive sampling, evaluation in any inaccessible areas, or any areas of the building outside the proposed evaluation has not been done. Therefore, any potential materials hidden in or behind walls, concealed by building or structural components, under the flooring, or other inaccessible areas are not included in this report. Argus only verifies the existence or non-existence of asbestos in those materials actually sampled.

Attachments

1) EMSL Analytical, Inc.'s EPA 600 PLM Test Report dated 5/7/2019
2) Bulk Sample Diagram

161908556

EMSL Analytical, Inc.
6340 Castleplace Drive
Indianapolis, IN 46205
Phone: (317) 803-2997
Fax: (317) 803- 3047

CHAIN F CUST Y

Polarized Light Microscopy (PLM)
EPA method 600
*Positive Stop Count

Argus Environmental
10004 Wurzbach Rd., #247
San Antonio, Texas 78230
Phone (210) 493-2560
Fax (210) 342-9027
sarah@argusenvironmental.com
beth@argusenvironmental.com

Turnaround time: Same Day	Project name: SAIA - Bldg. 1039 (Operations & Finance)	Job number: 1905197ARG	Date of collection: 5/6/2019

Sample number	*Sample location*		*Material description*		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
H1A	Operations	Raised Flooring Squares - Yellow Carpet		Yellow	Mastic
H1B*	Operations	Raised Flooring Squares - Yellow Carpet		Yellow	Mastic
H1C*	Finance	Raised Flooring Squares - Yellow Carpet		Yellow	Mastic
H2A	Operations	Black Cove Base		Brown	Mastic
H2B*	Operations	Black Cove Base		Brown	Mastic
H2C*	Finance	Black Cove Base		Brown	Mastic

Sample relinquished by:		Sample received by:	
Print name: Elizabeth Aguilar	Date: 5/6/2019	Print name:	Date:
Signature: Elizabeth Aguilar	Time: 1:20PM	Signature:	Time: 840 AM

- ***Email all sample results***

OrderID: 161908556

Page 1 Of 1

EMSL Analytical, Inc.

6340 CastlePlace Dr. Indianapolis, IN 46250

Tel/Fax: (317) 803-2997 / (317) 803-3047

http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order:	161908556
Customer ID:	ARGU52
Customer PO:	
Project ID:	

Attention:	Beth Sharrow-Aguilar	**Phone:**	(210) 493-2560
	Argus Environmental	**Fax:**	(210) 342-9027
	10004 Wurzbach Road	**Received Date:**	05/07/2019 8:40 AM
	Suite 247	**Analysis Date:**	05/07/2019
	San Antonio, TX 78230-2214	**Collected Date:**	05/06/2019
Project:	SAIA - BLDG. 1039 (OPERATIONS & FINANCE) / 1905197ARG		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
H1A *161908556-0001*	Operations - mastic	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H1B *161908556-0002*	Operations - mastic	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H1C *161908556-0003*	Finance - mastic	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H2A *161908556-0004*	Operations - mastic	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H2B *161908556-0005*	Operations - mastic	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H2C *161908556-0006*	Finance - mastic	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s)

Jadda Moffett (2)

Ross Matlock (4)

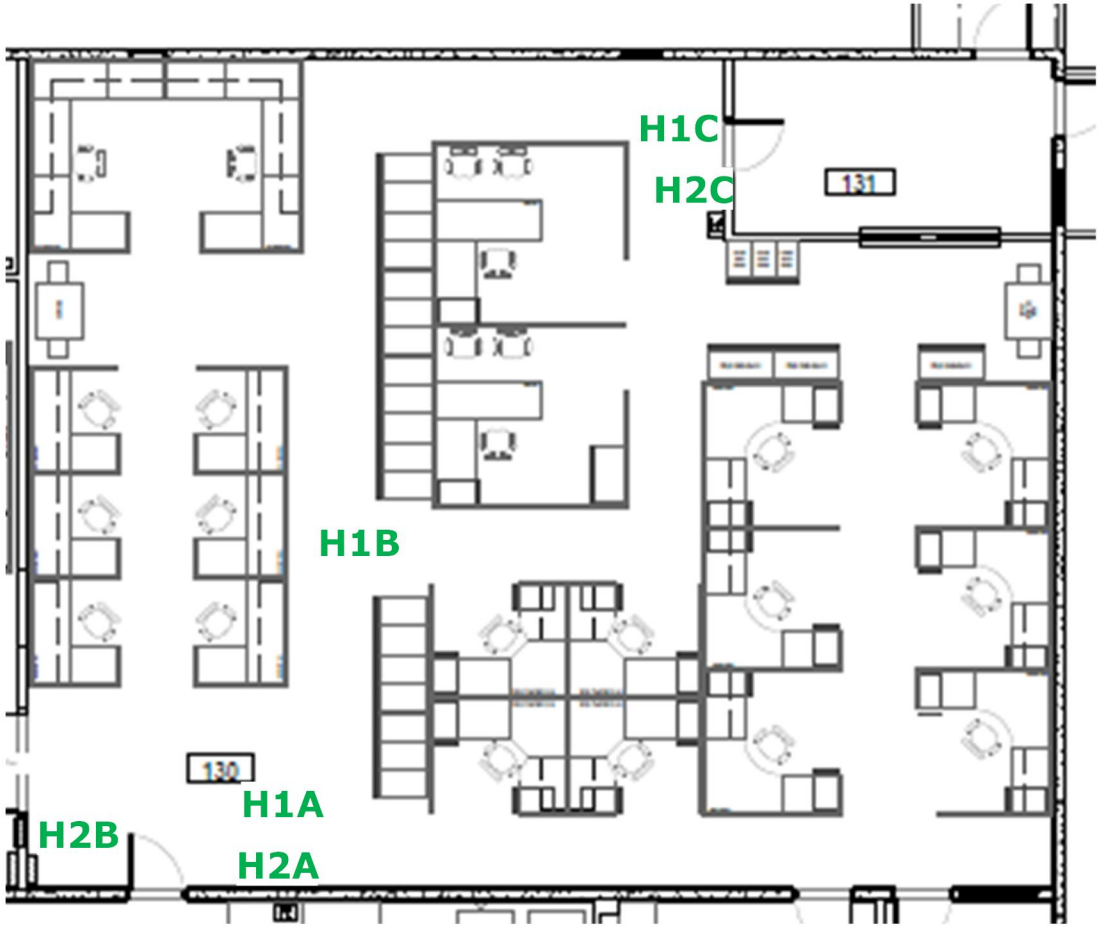
Richard Harding, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN NVLAP Lab Code 200188-0, AZ0939, CA 2575, CO AL-15132, TX 300262, LA 04135

Initial report from: 05/07/2019 11:27:15

Asbestos Survey Bulk Sample Diagram
San Antonio International Airport
Building 1039 - Operations and Finance Area



Legend

Green - Non-Asbestos Sample Locations

Argus Environmental Consultants, LLC
10004 Wurzbach Road, Ste. 247
San Antonio, Texas 78230

Date: 5/7/19

Argus Environmental Consultants, LLC

ASBESTOS SURVEY REPORT

SAN ANTONIO INTERNATIONAL AIRPORT
HANGAR 4

PREPARED FOR:

FREESE & NICHOLS
KARA MARKS
9601 MCALLISTER FREEWAY, SUITE 1008
SAN ANTONIO, TEXAS 78216

PREPARED BY:

ARGUS ENVIRONMENTAL CONSULTANTS, LLC
10004 WURZBACH, # 247
SAN ANTONIO, TEXAS 78230

PROJECT NUMBER: 2303162ARG

CONDUCTED AND WRITTEN BY:

MARK D. FREEMYER, CIEC
TDSHS ASBESTOS CONSULTANT LICENSE #105695 (Exp. 12/22/2024)

DATE OF ISSUE: MAY 6, 2023

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Property Transaction Due Diligence Screening

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Failure Analysis

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Small Women Owned Business

Introduction

Argus Environmental Consultants, LLC (Argus) performed a pre-demolition asbestos survey of the interior and exterior finish materials associated with Hangar 4 located at San Antonio International Aiport on April 13, 2023.

This report has been prepared for the exclusive use of Freese & Nichols and their assigned agents. It and all contents, findings, conclusions, and recommendations expressed herein are not intended for any other purpose than that stated, nor is intended to be used by any other party.

Scope of Services

The following activities were included in the limited asbestos survey:

- Visual evaluation of the interior and exterior finish materials present at the time of the survey.
- Identification of potential asbestos containing materials (ACM) into homogeneous areas based upon the guidelines in the United States Environmental Protection Agency's (EPA) 40 Code of Federal Regulations (CFR) Part 763 Subpart E.
- Random collection of bulk samples from building materials that may potentially contain asbestos.
- Laboratory analysis using Polarized Light Microscopy (PLM) following EPA Method 600 of building material samples by a third party laboratory licensed by the Texas Department of State Health Services (TDSHS).

Bulk Samples

Forty-two samples were collected from the following homogenous areas identified as potential ACM. A diagram of sample locations is attached for reference.

Homogenous Area	Description	Sample ID
1	Sheetrock 1	1ABC
2	12x12″ grey floor tile	2ABC
3	2x2′ rabbeted ceiling tile	3ABC
4	Sheetrock 2	4ABC
5	Sheetrock 3	5ABC
6	2x4′ ceiling tile 1	6ABC

Homogenous Area	Description	Sample ID
7	Sheetrock 4	7ABC
8	Carpet glue	8ABC
9	Sheetrock 5	9ABC
10	2x4' ceiling tile 2	10ABC
11	Window glaze	11ABC
12	Sheetrock 6	12ABC
13	Sheetrock panels	13ABC
14	Sheetrock 7	14ABC

Conclusions

Within the thirty-two bulk samples collected, one-hundred-seventeen separate construction material layers were subjected to PLM laboratory analysis and the detailed report is attached.

Asbestos was not identified in any sample.

Recommendations

Inform contractors involved with demolition related activities that asbestos was not identified in the sampled material. Debris may be handled as general construction waste.

Limitations

Due to the limited nature of this survey, Argus does not verify the existence or non-existence of asbestos in areas without access and in materials not sampled. Therefore, any potential materials hidden in or behind walls, concealed by building or structural components, under subflooring, or other inaccessible areas are not included in this report. Argus only verifies the existence or non-existence of asbestos in those materials actually sampled.

Attachments

1) Aerobiology Laboratory's EPA 600 PLM Certificate of Analysis dated 5/1/2023
2) Asbestos Bulk Sample Diagram
3) License

Attachment 1 -

Aerobiology Laboratory Certificate of Analysis

Aerobiology Laboratory Associates, Incorporated
A Pace Analytical® Laboratory

Lab Use: 2305538

ELITE — AZ, CA, CO, FL, GA, IL, VA, NJ

NVLAP — AZ, CA, CO, VA

VA - 102977 AZ - 210229 CA - 218951 CO - 192683 NJ - 102747 GA - 163063 FL - 228303 IL - 232279

Aerobiology Client	Argus Environmental Consultants, LLC				
Field Contact	Mark D.Freemyer	Collected By/Date: 3-14-23		Relinquished By/Date: 3-21-23	
Reporting Address	10004 Wurzbach #247	Relinquished By/Date:		Received By/Date: AM 4/24/23	
Billing Address	SanAntonio, Texas 78230	Sampler Type	Andersen SAS	SampleAire AeroTrap	Other Bulk BioCulture
Phone/Fax	210.493.2560	PO#/Job#: 2306126ARG			
Reporting Email (s)	mark@argusenvironmental.com	Project Name: SAIA Hangar 4			
Routine ☒	24 Hour ☐ Same Day ☐ 4 Hour ☐ 2 Hour ☐	Notes: * Positive Stop Count			
SAMPLING LOCATION ZIP CODE	78249	CC Info:			

	Sample No.	Test Code	Sample Description	Sample Location
1	1A	3002	Sheetrock wall	Ext Hall
2	1B*	3002	Sheetrock wall	Office
3	1C*	3002	Sheetrock wall	Office
4	2A	3002	12x12" grey floor tile	Hall
5	2B*	3002	12x12" grey floor tile	Office
6	2C*	3002	12x12" grey floor tile	K9 Office
7	3A	3002	2x2' rabbeted ceiling tile	Office
8	3B*	3002	2x2' rabbeted ceiling tile	K9 Office
9	3C*	3002	2x2' rabbeted ceiling tile	K9 Office
10	4A	3002	Sheetrock wall	K9 Office
11	4B*	3002	Sheetrock wall	K9 Office
12	4C*	3002	Sheetrock wall	K9 Office
13	5A	3002	Sheetrock wall	W Storage Rms
14	5B*	3002	Sheetrock wall	W Storage Rms
15	5C*	3002	Sheetrock wall	W Storage Rms

1054	Direct, Non-viable Spore Trap
1051	Direct, Qualitative- Swab/Tape
1050	Direct, Qualitative- Bulk
1005	AIR Culture - Bacterial Count w/ ID's
1030	AIR Culture - Fungal Count w/ ID's
1006	SWAB Culture - Bacterial Count w/ ID's
1031	SWAB Culture - Fungal Count w/ ID's
1008	BULK Culture - Bacterial Count w/ ID's
1033	BULK Culture - Fungal Count w/ ID's
1007	WATER Culture - Bacterial Count w/ID's
1015	Culture - WATER Legionella
1017	Culture - SWAB Legionella

LAB USE ONLY

A: SRT ✓ AG 1-12 ✓ 13-27 28-36 + 37-45 ✓ 5/1/23

V:

Q: TH 5/1/23

AEROBIOLOGY LABORATORY ASSOCIATES, INCORPORATED
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NVLAP® — AZ, CA, CO, VA

VA - 102977 AZ - 210229
CA - 218951 CO - 192683
NJ - 102747 GA - 183063
FL - 226303 IL - 232279

Aerobiology Client	Argus Environmental Consultants, LLC				
Field Contact	Mark D.Freemyer	Collected By/Date: 3-14-23		Relinquished By/Date: 3-21-23	
Reporting Address	10004 Wurzbach #247	Relinquished By/Date:		Received By/Date:	
Billing Address	SanAntonio, Texas 78230	Sampler Type	Andersen SAS	SampleAire AeroTrap	Other Bulk BioCulture
Phone/Fax	210.493.2560	PO#/Job#: 2306126ARG			
Reporting Email (s)	mark@argusenvironmental.com	Project Name: SAIA Hangar 4			
Routine ☑	24 Hour ☐ Same Day ☐ 4 Hour ☐ Other ☐	Notes: * Positive Stop Count			
SAMPLING LOCATION ZIP CODE	78249	CC Info:			

	Sample No.	Test Code	Sample Description	Sample Location
16 1	6A	3002	2x4' ceiling tile	Gym
17 2	6B*	3002	2x4' ceiling tile	Gym
18 3	6C*	3002	2x4' ceiling tile	Gym
19 4	7A	3002	Sheetrock wall	Gym
20 5	7B*	3002	Sheetrock wall	Gym
21 6	7C*	3002	Sheetrock wall	Gym
22 7	8A	3002	Carpet mastic	Gym
23 8	8B*	3002	Carpet mastic	Gym
24 9	8C*	3002	Carpet mastic	Gym
25 10	9A	3002	Sheetrock wall	Bomb Squad
26 11	9B*	3002	Sheetrock wall	Bomb Squad
27 12	9C*	3002	Sheetrock wall	Bomb Squad
28 13	10A	3002	2x4' ceiling tile	Bomb Squad
29 14	10B*	3002	2x4' ceiling tile	Bomb Squad
30 15	10C*	3002	2x4' ceiling tile	Bomb Squad

1054	Direct, Non-viable Spore Trap	1015	Culture - WATER Legionella
1051	Direct, Qualitative- Swab/Tape	1017	Culture - SWAB Legionella
1050	Direct, Qualitative- Bulk	1010	WATER - Potable - E. coli/total coliforms
1005	AIR Culture - Bacterial Count w/ ID's	1012	SWAB - E. coli/total coliforms
1030	AIR Culture - Fungal Count w/ ID's	1028	SWAB - Sewage Screen (E. coli/Entero/fecal coliforms)
1006	SWAB Culture - Bacterial Count w/ ID's	2056	WATER - Heterotrophic Plate Count
1031	SWAB Culture - Fungal Count w/ ID's	3001	ASBESTOS - Point count
1008	BULK Culture - Bacterial Count w/ ID's	3002	ASBESTOS - PLM Analysis
1033	BULK Culture - Fungal Count w/ ID's	3003	ASBESTOS - Particle characterization
1007	WATER Culture - Bacterial Count w/ID's	3004	ASBESTOS - PCM Analysis

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Lab Use: 15538

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NVLAP — AZ, CA, CO, VA

VA - 102977 AZ - 210220 CA - 218951 CO - 192683 NJ - 102747 GA - 163063 FL - 226303 IL - 232279

Aerobiology Client	Argus Environmental Consultants, LLC				
Field Contact	Mark D.Freemyer	Collected By/Date: 3-14-23		Relinquished By/Date: 3-21-23	
Reporting Address	10004 Wurzbach #247	Relinquished By/Date:		Received By/Date:	
Billing Address	SanAntonio, Texas 78230	Sampler Type	Andersen SAS	SampleAire AeroTrap	Other Bulk BioCulture
Phone/Fax	210.493.2560	PO#/Job#: 2306126ARG			
Reporting Email (s)	mark@argusenvironmental.com	Project Name: SAIA Hangar 4			
Routine ☒	24 Hour ☐ Same Day ☐ 4 Hour ☐ 2 Hour ☐	Notes: * Positive Stop Count			
SAMPLING LOCATION ZIP CODE	78249	CC Info:			

	Sample No.	Test Code	Sample Description	Sample Location
31 1	11A	3002	Glaze	NE windows
32 2	11B*	3002	Glaze	NE windows
33 3	11C*	3002	Glaze	NE windows
34 4	12A	3002	Sheetrock wall	RVWP
35 5	12B*	3002	Sheetrock wall	RVWP
36 6	12C*	3002	Sheetrock wall	RVWP
37 7	13A	3002	Sheetrock wall panels	SW offices
38 8	13B*	3002	Sheetrock wall panels	SW offices
39 9	13C*	3002	Sheetrock wall panels	SW offices
40 10	14A	3002	Sheetrock wall	SW corner office
41 11	14B*	3002	Sheetrock wall	SW corner office
42 12	14C*	3002	Sheetrock wall	SW corner office
43 13	15A		Not on Original COC -TH 5/1/23	
44 14	15B		"	
45 15	15C		"	

1054	Direct, Non-viable Spore Trap	1015	Culture - WATER Legionella
1051	Direct, Qualitative- **Swab/Tape**	1017	Culture - SWAB Legionella
1050	Direct, Qualitative- **Bulk**	1010	WATER - Potable - E. coli/total coliforms
1005	AIR Culture - Bacterial Count w/ ID's	1012	SWAB - E. coli/total coliforms
1030	AIR Culture - Fungal Count w/ ID's	1028	SWAB - Sewage Screen (E. coli/Entero/fecal coliforms)
1006	SWAB Culture - Bacterial Count w/ ID's	2056	WATER - Heterotrophic Plate Count
1031	SWAB Culture - Fungal Count w/ ID's	3001	ASBESTOS - Point count
1008	BULK Culture - Bacterial Count w/ ID's	3002	ASBESTOS - PLM Analysis
1033	BULK Culture - Fungal Count w/ ID's	3003	ASBESTOS - Particle characterization
1007	WATER Culture - Bacterial Count w/ID's	3004	ASBESTOS - PCM Analysis

Aerobiology Laboratory Associates, Incorporated
A Pace Analytical® Laboratory

780 Simms Street
Suite 104
Golden, CO, 80401
303.232.3746
www.aerobiology.net

Certificate of Analysis

Client Name	Argus Environmental Consultants, LLC	Date Collected:	3/14/2023
Street Address	10004 Wurzbach #247	Date Received:	4/24/2023
City, State ZIP	San Antonio, TX 78230	Date Analyzed:	5/1/2023
Attn:	Mark D. Freemyer	Date Reported:	5/1/2023
Client Project Name:	2306126ARG / SAIA Hangar 4	Project ID:	23015538

NVLAP® TESTING
NVLAP Lab Code 200860-0

Test Requested: **3002, Asbestos in Bulk Samples**
Method: EPA 600/R-93/116: Method for Asbestos in Bulk Building Materials, EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method for Asbestos in Bulk Insulation Samples

Sample Identification		Layer Percentage	Physical Description of Sample/Layer	Asbestos Detected	Asbestos Percentage	Non-Asbestos Fiber Percentage	Non-Fibrous Material Percentage	Matrix Material Composition	Homo-geneous (Y/N)
Client	Lab Sample Number								
1A	23015538-1A	25	White Texture with Off-White Paint	ND			100	C	N
	23015538-1B	10	Cream Tape	ND		99 CELL	1		Y
	23015538-1C	15	White Joint Compound	ND			100	C	Y
	23015538-1D	50	White/Tan Drywall	ND		40 CELL,FG	60	G	N
1B	23015538-2A	85	White Texture with Tan Paint	ND			100	C	N
	23015538-2B	5	White Mesh	ND		95 FG	5		Y
	23015538-2C	10	White/Tan Drywall	ND		12 CELL,FG	88	G	N
1C	23015538-3A	60	White Texture with Tan Paint	ND			100	C	N
	23015538-3B	5	White Mesh	ND		95 FG	5		Y
	23015538-3C	35	White/Tan Drywall	ND		25 CELL,FG	75	G	N

Anita Grigg
Laboratory Analyst

Shannon Whitmore
Asbestos Lab Supervisor

AC = Actinolite	AH = Animal Hair	B = Binder	Q = Quartz
AM = Amosite	CELL = Cellulose	C = Calcite	T = Tar
AN = Anthophyllite	FG = Fibrous Glass	D = Diatoms	V = Vermiculite
CHRY = Chrysotile	MW = Mineral Wool	G = Gypsum	
CR = Crocidolite	OT = Other	M = Mica	
TRM = Tremolite	SYN = Synthetic	OR = Organic	
Tr = Trace	TL = Talc	OP = Opaques	
ND = None Detected	W = Wollastonite	P = Perlite	

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Certificate of Analysis

Client Name	Argus Environmental Consultants, LLC	Date Collected:	3/14/2023
Street Address	10004 Wurzbach #247	Date Received:	4/24/2023
City, State ZIP	San Antonio, TX 78230	Date Analyzed:	5/1/2023
Attn:	Mark D. Freemyer	Date Reported:	5/1/2023
Client Project Name:	2306126ARG / SAIA Hangar 4	Project ID:	23015538

NVLAP® TESTING
NVLAP Lab Code 200860-0

Test Requested: **3002, Asbestos in Bulk Samples**
Method: EPA 600/R-93/116: Method for Asbestos in Bulk Building Materials, EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method for Asbestos in Bulk Insulation Samples

Sample Identification		Layer Percentage	Physical Description of Sample/Layer	Asbestos Detected	Asbestos Percentage	Non-Asbestos Fiber Percentage	Non-Fibrous Material Percentage	Matrix Material Composition	Homo-geneous (Y/N)
Client	Lab Sample Number								
2A	23015538-4A	99	Gray Tile	ND			100	B,C	N
	23015538-4B	1	Tan Mastic	ND			100	B,C	Y
2B	23015538-5A	95	Gray Tile	ND			100	B,C	N
	23015538-5B	5	Tan Mastic	ND			100	B,C	Y
2C	23015538-6A	93	Gray Tile	ND			100	B,C	N
	23015538-6B	7	Tan Mastic	ND		3 CELL	97	B,C	N
3A	23015538-7	100	White/Gray Perlitic Ceiling Tile	ND		70 CELL,MW	30	P	N
3B	23015538-8	100	White/Gray Perlitic Ceiling Tile	ND		70 CELL,MW	30	P	N
3C	23015538-9	100	White/Gray Perlitic Ceiling Tile	ND		70 CELL,MW	30	P	N
4A	23015538-10A	35	White Compound with Cream/Multicolored Paint	ND			100	C	N

Anita Grigg
Laboratory Analyst

Shannon Whitmore
Asbestos Lab Supervisor

AC = Actinolite
AM = Amosite
AN = Anthophyllite
CHRY = Chrysotile
CR = Crocidolite
TRM = Tremolite
Tr = Trace
ND = None Detected
AH = Animal Hair
CELL = Cellulose
FG = Fibrous Glass
MW = Mineral Wool
OT = Other
SYN = Synthetic
TL = Talc
W = Wollastonite
B = Binder
C = Calcite
D = Diatoms
G = Gypsum
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OR = Organic
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P = Perlite
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Client	Lab Sample Number								
4A	23015538-10B	5	White Mesh	ND		95 FG	5		Y
	23015538-10C	60	Pink/Tan Drywall	ND		20 CELL,FG	80	G	N
4B	23015538-11A	25	White Texture with Cream Paint	ND			100	C	N
	23015538-11B	10	Cream Tape	ND		99 CELL	1		Y
	23015538-11C	15	White Joint Compound	ND			100	C	Y
	23015538-11D	50	White/Tan Drywall	ND		20 CELL,FG	80	G	N
4C	23015538-12A	10	White Texture with Cream/Tan Paint	ND			100	C	N
	23015538-12B	15	White Texture with Tan Paint	ND			100	C	N
	23015538-12C	15	White Texture with White/Multicolored Paint	ND			100	C	N
	23015538-12D	60	White/Tan Drywall	ND		18 CELL	82	G	N

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Client	Lab Sample Number								
5A	23015538-13A	15	Light Gray/White Paint with White Texture	ND			100	C	N
	23015538-13B	15	White Tape	ND		95 CELL	5		Y
	23015538-13C	10	White Joint Compound	ND			100	C	Y
	23015538-13D	60	White/Brown Drywall	ND		50 CELL,FG	50	G	N
5B	23015538-14A	3	Light Gray/White Paint with White Texture	ND			100	C	N
	23015538-14B	2	White Tape	ND		95 CELL	5		Y
	23015538-14C	1	White Joint Compound	ND			100	C	Y
	23015538-14D	94	White/Brown Drywall	ND		15 CELL,FG	85	G	N
5C	23015538-15A	40	White Paint with White Texture	ND			100	C	N
	23015538-15B	15	White Tape	ND		95 CELL	5		Y

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Client	Lab Sample Number								
5C	23015538-15C	10	White Joint Compound	ND			100	C	Y
	23015538-15D	35	White/Brown Drywall	ND		40 CELL,FG	60	G	N
6A	23015538-16	100	White Drywall Plaster	ND		4 CELL,FG	96	G,M	N
6B	23015538-17	100	Pink/Brown Drywall	ND		50 CELL,FG	50	G,M	N
6C	23015538-18	100	White Drywall Plaster	ND		4 CELL,FG	96	G,M	N
7A	23015538-19A	35	Brown Paint with Gray Granular Perlitic Paint	ND			100	Q,P	N
	23015538-19B	5	White Compound	ND			100	C	Y
	23015538-19C	15	White Tape	ND		95 CELL	5		Y
	23015538-19D	45	White Compound	ND			100	C	Y
7B	23015538-20A	10	Brown/Multicolored Paint with White Texture	ND			100	C	N

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Client	Lab Sample Number								
7B	23015538-20B	10	White Tape	ND		95 CELL	5		Y
	23015538-20C	5	White Joint Compound	ND			100	C	Y
	23015538-20D	75	Pink/Brown Drywall	ND		40 CELL	60	G	N
7C	23015538-21A	15	Brown/Multicolored Paint with White Texture	ND			100	C	N
	23015538-21B	15	White Tape	ND		95 CELL	5		Y
	23015538-21C	15	White Joint Compound	ND			100	C	Y
	23015538-21D	55	Pink/Brown Drywall	ND		40 CELL	60	G	N
8A	23015538-22A	5	Yellow Resinous Material	ND			100		N
	23015538-22B	95	Gray Compound with Black Debris	ND			100	C	N
8B	23015538-23A	2	Clear Resinous Material	ND			100		N

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Client	Lab Sample Number								
8B	23015538-23B	96	Gray Compound	ND			100	C	N
	23015538-23C	2	White/Gray Compound	ND			100	G,C	N
8C	23015538-24A	2	Clear Resinous Material	ND			100		N
	23015538-24B	96	Gray Compound	ND			100	C	N
	23015538-24C	2	White/Gray Compound	ND			100	G,C	N
9A	23015538-25A	80	Gray Paint with White Compound	ND			100	C	N
	23015538-25B	7	White Tape	ND		95 CELL	5		Y
	23015538-25C	5	White Joint Compound	ND			100	C	Y
	23015538-25D	8	White/Brown Drywall	ND		50 CELL	50	G	N
9B	23015538-26A	20	Gray Paint with White Compound	ND			100	C	N

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Client	Lab Sample Number								
9B	23015538-26B	15	White Tape	ND		95 CELL	5		Y
	23015538-26C	15	White Joint Compound	ND			100	C	Y
	23015538-26D	50	White/Brown Drywall	ND		60 CELL,FG	40	G,M	N
9C	23015538-27A	15	Gray Paint with White Compound	ND			100	C	N
	23015538-27B	15	White Tape	ND		95 CELL	5		Y
	23015538-27C	15	White Joint Compound	ND			100	C	Y
	23015538-27D	55	Pink/Brown Drywall	ND		40 CELL,FG	60	G,M	N
10A	23015538-28	100	White/Gray Perlitic Ceiling Tile	ND		70 CELL,MW	30	P	N
10B	23015538-29	100	White/Gray Perlitic Ceiling Tile	ND		70 CELL,MW	30	P	N
10C	23015538-30	100	Gray Perlitic Ceiling Tile	ND		70 CELL,MW	30	P	N

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Client	Lab Sample Number								
11A	23015538-31A	40	Pink Compound	ND			100	C	N
	23015538-31B	60	Gray Granular Material	ND		2 CELL	98	C	N
11B	23015538-32	100	Pink Compound	ND			100	C	N
11C	23015538-33	100	Pink Compound with Gray Paint	ND			100	C	N
12A	23015538-34A	65	White Texture with Gray/White Paint	ND			100	C	N
	23015538-34B	10	White Mesh	ND		95 FG	5		Y
	23015538-34C	25	White/Tan Drywall	ND		85 CELL,FG	15	G	N
12B	23015538-35A	35	White Texture with Gray/White Paint	ND			100	C	N
	23015538-35B	5	White Mesh	ND		95 FG	5		Y
	23015538-35C	60	White/Tan Drywall	ND		60 CELL,FG	40	G	N

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Client	Lab Sample Number								
12C	23015538-36A	35	White Texture with Gray/White Paint	ND			100	C	N
	23015538-36B	15	White Mesh	ND		95 FG	5		Y
	23015538-36C	50	White/Tan Drywall	ND		75 CELL,FG	25	G	N
13A	23015538-37A	3	Gray/Blue/White Wall Covering with Clear Mastic	ND			100		N
	23015538-37B	97	White/Brown Drywall	ND		25 CELL	75	G	N
13B	23015538-38A	25	Gray/Blue/White Wall Covering with Clear Mastic	ND			100		N
	23015538-38B	75	White/Brown Drywall	ND		50 CELL	50	G	N
13C	23015538-39A	3	Gray/Blue/White Wall Covering with Clear Mastic	ND			100		N
	23015538-39B	97	White/Brown Drywall	ND		25 CELL	75	G	N
14A	23015538-40A	15	Gray/Multicolored Paint with Off-White/White Texture	ND			100	C,G	N

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Client	Lab Sample Number								
14A	23015538-40B	20	White Tape	ND		95 CELL	5		Y
	23015538-40C	20	White Joint Compound	ND			100	C	Y
	23015538-40D	45	White/Brown Drywall	ND		30 CELL	70	G	N
14B	23015538-41A	2	Light Gray/Multicolored Paint with White Texture	ND			100	C	N
	23015538-41B	2	White Tape	ND		95 CELL	5		Y
	23015538-41C	3	White Joint Compound	ND			100	C	Y
	23015538-41D	93	Pink/Brown Drywall	ND		20 CELL	80	G	N
14C	23015538-42A	10	Gray/Multicolored Paint with Off-White/White Texture	ND			100	C,G	N
	23015538-42B	15	White Tape	ND		95 CELL	5		Y
	23015538-42C	20	White Joint Compound	ND			100	C	Y

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AM = Amosite
AN = Anthophyllite
CHRY = Chrysotile
CR = Crocidolite
TRM = Tremolite
Tr = Trace
ND = None Detected
AH = Animal Hair
CELL = Cellulose
FG = Fibrous Glass
MW = Mineral Wool
OT = Other
SYN = Synthetic
TL = Talc
W = Wollastonite
B = Binder
C = Calcite
D = Diatoms
G = Gypsum
M = Mica
OR = Organic
OP = Opaques
P = Perlite
Q = Quartz
T = Tar
V = Vermiculite

Aerobiology Laboratory Associates, Incorporated
A Pace Analytical® Laboratory

780 Simms Street
Suite 104
Golden, CO, 80401
303.232.3746
www.aerobiology.net

Certificate of Analysis

Client Name	Argus Environmental Consultants, LLC		Date Collected: 3/14/2023
Street Address	10004 Wurzbach #247	NVLAP® TESTING	Date Received: 4/24/2023
City, State ZIP	San Antonio, TX 78230	NVLAP Lab Code 200860-0	Date Analyzed: 5/1/2023
Attn:	Mark D. Freemyer		Date Reported: 5/1/2023
Client Project Name:	2306126ARG / SAIA Hangar 4		Project ID: 23015538

Test Requested: **3002, Asbestos in Bulk Samples**
Method: EPA 600/R-93/116: Method for Asbestos in Bulk Building Materials, EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method for Asbestos in Bulk Insulation Samples

Sample Identification		Layer Percentage	Physical Description of Sample/Layer	Asbestos Detected	Asbestos Percentage	Non-Asbestos Fiber Percentage	Non-Fibrous Material Percentage	Matrix Material Composition	Homo-geneous (Y/N)
Client	Lab Sample Number								
14C	23015538-42D	55	White/Brown Drywall	ND		40 CELL	60	G	N
15A (Not on Original COC)	23015538-43A	40	Light Gray Paint	ND			100		N
	23015538-43B	60	White Granular Plaster	ND			100	Q	N
15B (Not on Original COC)	23015538-44A	25	Light Gray Paint	ND			100		N
	23015538-44B	75	White Granular Plaster	ND			100	Q	N
15C (Not on Original COC)	23015538-45A	40	Light Gray Paint	ND			100		N
	23015538-45B	60	White Granular Plaster	ND			100	Q	N

Anita Grigg
Laboratory Analyst

Shannon Whitmore
Asbestos Lab Supervisor

AC = Actinolite	AH = Animal Hair	B = Binder	Q = Quartz
AM = Amosite	CELL = Cellulose	C = Calcite	T = Tar
AN = Anthophyllite	FG = Fibrous Glass	D = Diatoms	V = Vermiculite
CHRY = Chrysotile	MW = Mineral Wool	G = Gypsum	
CR = Crocidolite	OT = Other	M = Mica	
TRM = Tremolite	SYN = Synthetic	OR = Organic	
Tr = Trace	TL = Talc	OP = Opaques	
ND = None Detected	W = Wollastonite	P = Perlite	

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Certificate of Analysis

Client Name	Argus Environmental Consultants, LLC		Date Collected: 3/14/2023
Street Address	10004 Wurzbach #247	NVLAP® TESTING	Date Received: 4/24/2023
City, State ZIP	San Antonio, TX 78230	NVLAP Lab Code 200860-0	Date Analyzed: 5/1/2023
Attn:	Mark D. Freemyer		Date Reported: 5/1/2023
Client Project Name:	2306126ARG / SAIA Hangar 4		Project ID: 23015538

Test Requested: **3002, Asbestos in Bulk Samples**
Method: EPA 600/R-93/116: Method for Asbestos in Bulk Building Materials, EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method for Asbestos in Bulk Insulation Samples

General Notes

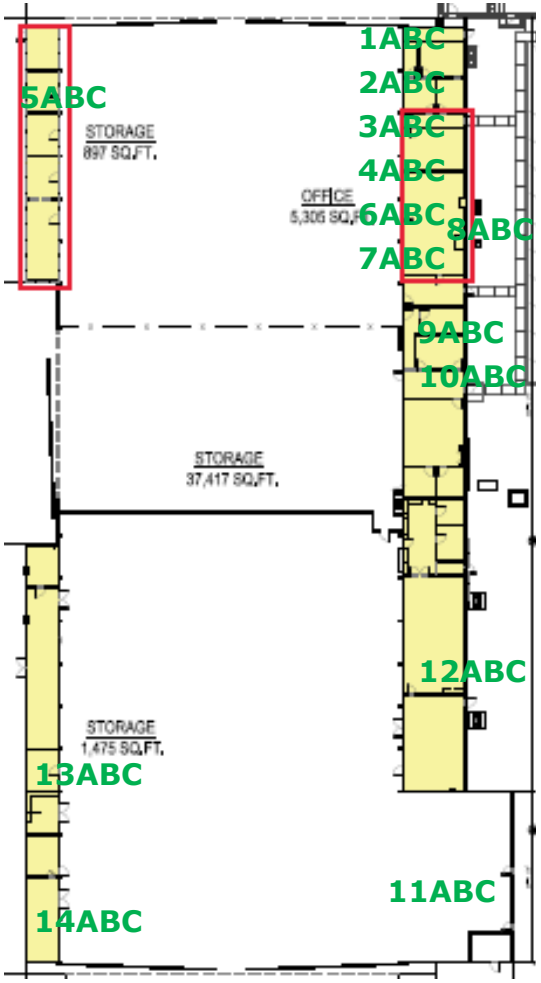
- **ND** indicates no asbestos was detected; the method detection limit is 1 %.
- **Trace** or "< 1" indicates asbestos was identified in the sample, but the concentration is less than 1% and cannot be quantified without point counting.
- Samples identified as inhomogeneous (more than one layer) are separated into individual layers, and each layer is analyzed and reported separately.
- All regulated asbestos minerals (i.e. chrysotile, amosite, crocidolite, anthophyllite, tremolite, and actinolite) were sought in every layer of each sample, but only those asbestos minerals detected are listed. Amosite is the common name for the asbestiform variety of the mineral grunerite. Crocidolite is the common name used for the asbestiform variety of the mineral riebeckite.
- Tile, vinyl, foam, plastic, and fine powder samples may contain asbestos fibers of such small diameter (< 0.25 microns in diameter) that these fibers cannot be detected by PLM. For such samples, more sensitive analytical methods (e.g. TEM, SEM, and XRD) are recommended if greater certainty about asbestos content is required. Semi-quantitative bulk TEM floor tile analysis is accepted under NESHAP regulations.
- These results are submitted pursuant to Aerobiology Laboratory Associates, Inc.'s current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted.
- Unless notified in writing to return the samples covered by this report, Aerobiology Laboratory Associates, Inc. will store the samples for a minimum period of thirty (30) days before discarding. A shipping and handling charge will be assessed for the return of any samples.
- Aerobiology does not guarantee the results of tape lifts, microvacs, wipe, and/or debris samples. Accurate analysis cannot be performed due to particle size, media used, and/or amount of material given. Analysis of these materials should be performed by a TEM. ***A result of ND does not indicate that the sample area does not contain asbestos. It means the analyst could not identify asbestos in the specific sample for the reasons listed above.***
- "When joint compound and/or tape is applied to a wallboard it becomes an integral part of the wallboard and in effect becomes one material forming a wall system." EPA 40 CFR Part 61 Aerobiology cannot distinguish joint compound from the same material used as skim coat. Therefore, it is very important that individuals collecting the samples clearly describe the sample composition so Aerobiology knows that the drywall system can be composited. If only joint sampling areas show layers with >1% asbestos, then material is joint compound. If samples from both joint sampling area and non-joint areas show layers with >1% asbestos, then the material should be considered "skim coat" or add-on material.

Notes Required by NVLAP

- This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.
- This test report relates only to the items tested or calibrated.
- This report is not valid unless it bears the name of a NVLAP-approved signatory.
- Any reproduction of this document must include the entire document in order for the report to be valid.

Attachment 2 -
Bulk Sample Diagram

Asbestos Bulk Sample Diagram
San Antonio International Airport - Hangar 4



Legend

Green - Non-Asbestos Sample Locations

Environmental Consultants, LLC
10004 Wurzbach Road, #247
San Antonio, Texas 78230

Date: 5/6/2023

Attachment 3 -
Asbestos License

Texas Department of State Health Services

Asbestos Individual Consultant

MARK D FREEMYER

License No. 105695

Control No. 98143

Expiration Date: 12-Dec-2024

Argus Environmental Consultants, LLC

LIMITED ASBESTOS AND LEAD BASED PAINT SURVEY REPORT

SAN ANTONIO INTERNATIONAL AIRPORT
POLICE HANGAR 4 STORAGE ROOMS

PREPARED FOR:

KARA MARKS
FREESE & NICHOLS, INC.
4040 BROADWAY, SUITE 600
SAN ANTONIO, TEXAS 78209

PREPARED BY:

ARGUS ENVIRONMENTAL CONSULTANTS, LLC
10004 WURZBACH, # 247
SAN ANTONIO, TEXAS 78230

PROJECT NUMBER: 2202127ARG

CONDUCTED AND WRITTEN BY:

Elizabeth Aguilar

ELIZABETH AGUILAR
TDSHS ASBESTOS INSPECTOR LICENSE #603203 (EXP. 1/12/2023)
TDSHS LEAD INSPECTOR LICENSE #2060867 (EXP. 1/9/2023)

REVIEWED BY:

MARK D. FREEMYER, CIEC
TDSHS ASBESTOS CONSULTANT LICENSE #105695 (Exp. 12/22/2022)
TDSHS LEAD RISK ASSESSOR LICENSE #2071054 (12/23/2023)

DATE OF ISSUE: FEBRUARY 23, 2022

10004 Wurzbach Rd., #247, San Antonio, TX 78230-2214
Phone: 210.493.2560 ♦ Fax: 210.342.9027
www.argusenvironmental.com

Indoor Air Quality

Mold

Asbestos

Lead

Industrial Hygiene

Clandestine Drug Assessment & Remediation

OSHA Compliance

Occupational & Environmental Health & Safety

Training

Expert Testimony

Pre-Purchase Inspections

Environmental Site Assessments- Phase I, II & III

Environmental Impact Assessments

Wetlands Delineation

Property Transaction Due Diligence Screening

Forensics

Thermal Imaging
Water Intrusion
Failure Analysis

HUB
•
Small
Women Owned
H-50 *Business*

Introduction

Argus Environmental Consultants, LLC (Argus) performed a limited asbestos and lead-based paint survey of the interior finish materials associated with the San Antonio International Airport Police Hangar 4 Storage Rooms located in San Antonio, Texas on February 17, 2022.

This report has been prepared for the exclusive use of Freese & Nichols, Inc. and their assigned agents. It and all contents, findings, conclusions, and recommendations expressed herein are not intended for any other purpose than that stated, nor is intended to be used by any other party.

Scope of Services

The following activities were included in the limited asbestos survey:

- Visual evaluation of the interior finish materials present within the Storage Rooms at the time of the survey.
- Identification of potential asbestos containing materials (ACM) into homogeneous areas based upon the guidelines in the United States Environmental Protection Agency's (EPA) 40 Code of Federal Regulations (CFR) Part 763 Subpart E.
- Random, non-destructive collection of bulk samples from building materials that may potentially contain asbestos.
- Laboratory analysis using Polarized Light Microscopy (PLM) following EPA Method 600 of building material samples by a third party laboratory licensed by the Texas Department of State Health Services (TDSHS).

The following activities were included in the limited LBP survey:

- Physical inventory of the paint by color and material type.
- Field analysis of painted building materials for lead content using an x-ray fluorescence (XRF) instrument.

Asbestos Bulk Samples

Twenty-four samples were collected from the following homogenous areas identified as potential ACM. A diagram of sample locations is attached for reference.

Homogenous Area	Description	Sample ID
1	Gypsum Board I	H1ABC
2	Joint Compound I	H2ABC
3	Wall Texture I	H3ABC
4	Brown Cove Base, Yellow Mastic	H4ABC
5	Grey Carpet, Yellow Mastic	H5ABC
6	Gypsum Board II	H6ABC
7	Joint Compound II	H7ABC
8	Ceiling and Wall Mastic	H8ABC

LBP Samples

Twenty-nine samples were taken from the following painted surfaces:

1. Walls
2. Doors
3. Doorframes
4. Doorjambs
5. Window Frames
6. Baseboards
7. Ceilings

Conclusions

Asbestos

Within the twenty-four bulk samples collected, twenty-four separate construction material layers were subjected to PLM laboratory analysis and the detailed report is attached. Asbestos was not identified in any sample.

LBP

XRF analysis indicated that, within the samples taken, no lead concentration greater than the EPA's minimum regulatory level of 1.0 milligrams per square centimeter (mg/cm^2) was present.

Recommendations

Inform contractors involved with any demolition, renovation, and related activities that no asbestos or lead based paint was not identified in the sampled materials. Debris may be handled as general construction waste.

Limitations

Due to the limited nature of this survey, Argus does not verify the existence or non-existence of asbestos and lead-based paint in areas without access and in materials not sampled. For example, destructive sampling, evaluation in any inaccessible areas, or any areas of the building outside the proposed evaluation has not been done. Therefore, any potential materials hidden in or behind walls, concealed by building or structural components, under flooring or subflooring, or other inaccessible areas are not included in this report. Argus only verifies the existence or non-existence of asbestos and lead-based paint in those materials actually sampled.

Attachments

1) EMSL Analytical, Inc.'s EPA 600 PLM Test Report dated 2/21/2022
2) XRF Lead-Based Paint Readings
3) Asbestos Bulk Sample Diagram
4) XRF Sample Diagram
5) Licenses

Attachment 1 -

Asbestos COC & Results

OrderID: 112200372

112200372

EMSL Analytical, Inc.
3310 Keller Springs, Suite 145
Carrollton, Texas 75006
Phone: (972) 892-9928
Fax: (972) 892-9929

CHAIN OF CUSTODY

Polarized Light Microscopy (PLM)
EPA method 600
*Positive Stop Count

Argus Environmental
10004 Wurzbach Rd., #247
San Antonio, Texas 78230
Phone (210) 493-2560
Fax (210) 342-9027
sarah@argusenvironmental.com
beth@argusenvironmental.com

Turnaround time:	Project name:	Job number:	Date of collection:
72 hours	SAIA – Hangar 4 Storages	2202127ARG	2/17/2022

Sample number	*Sample location*		*Material description*		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
H1A	123	Wall and Ceiling Systems I		White	Gypsum Board Only
H1B*	122	Wall and Ceiling Systems I		White	Gypsum Board Only
H1C*	121	Wall and Ceiling Systems I		White	Gypsum Board Only
H2A	123	Wall and Ceiling Systems I		White	Joint Compound Only
H2B*	122	Wall and Ceiling Systems I		White	Joint Compound Only
H2C*	121	Wall and Ceiling Systems I		White	Joint Compound Only
H3A	123	Wall and Ceiling Systems I		White	Texture Only
H3B*	122	Wall and Ceiling Systems I		White	Texture Only
H3C*	121	Wall and Ceiling Systems I		White	Texture Only
H4A	123	Brown Cove Base		Yellow	Mastic Only

Sample relinquished by:		Sample received by:	
Print name: Elizabeth Aguilar	Date: 2/17/2022	Print name:	Date:
Signature: Elizabeth Aguilar	Time: 11:20AM	Signature:	Time:

2/18/22 9:30 a FedEx 7963 4057 6462

- ***Email all sample results***

EMSL Analytical, Inc.
3310 Keller Springs, Suite 145
Carrollton, Texas 75006
Phone: (972) 892-9928
Fax: (972) 892-9929

CHAIN OF CUSTODY

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beth@argusenvironmental.com

Turnaround time:	Project name:	Job number:	Date of collection:
72 hours	SAIA – Hangar 4 Storages	2202127ARG	2/17/2022

Sample number	*Sample location*		*Material description*		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
H4B*	123	Brown Cove Base		Yellow	Mastic Only
H4C*	123	Brown Cove Base		Yellow	Mastic Only
H5A	122	Grey Carpet		Yellow	Mastic Only
H5B*	122	Grey Carpet		Yellow	Mastic Only
H5C*	122	Grey Carpet		Yellow	Mastic Only
H6A	120	Wall and Ceiling Systems II		White	Gypsum Board Only
H6B*	120	Wall and Ceiling Systems II		White	Gypsum Board Only
H6C*	120	Wall and Ceiling Systems II		White	Gypsum Board Only
H7A	120	Wall and Ceiling Systems II		White	Joint Compound Only
H7B*	120	Wall and Ceiling Systems II		White	Joint Compound Only

Sample relinquished by:		Sample received by:	
Print name: Elizabeth Aguilar	Date: 2/17/2022	Print name:	Date:
Signature: Elizabeth Aguilar	Time: 11:20AM	Signature:	Time:

- ***Email all sample results***

EMSL Analytical, Inc.
3310 Keller Springs, Suite 145
Carrollton, Texas 75006
Phone: (972) 892-9928
Fax: (972) 892-9929

CHAIN OF CUSTODY

Polarized Light Microscopy (PLM)
EPA method 600
*Positive Stop Count

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10004 Wurzbach Rd., #247
San Antonio, Texas 78230
Phone (210) 493-2560
Fax (210) 342-9027
sarah@argusenvironmental.com
beth@argusenvironmental.com

Turnaround time:	Project name:	Job number:	Date of collection:
72 hours	SAIA – Hangar 4 Storages	2202127ARG	2/17/2022

Sample number	*Sample location*		*Material description*		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
H7C*	120	Wall and Ceiling Systems II		White	Joint Compound Only
H8A	120	Ceiling and Wall		Brown	Mastic Only
H8B*	120	Ceiling and Wall		Brown	Mastic Only
H8C*	120	Ceiling and Wall		Brown	Mastic Only

Sample relinquished by:		Sample received by:	
Print name: Elizabeth Aguilar	Date: 2/17/2022	Print name:	Date:
Signature: Elizabeth Aguilar	Time: 11:20AM	Signature:	Time:

- ***Email all sample results***

EMSL Analytical, Inc.

3310 Keller Springs, Suite 145 Carrollton, TX 75006

Tel/Fax: (972) 892-9928 / (972) 892-9929

http://www.EMSL.com / dallaslab@emsl.com

EMSL Order:	112200372
Customer ID:	ARGU52
Customer PO:	
Project ID:	

Attention:	Beth Aguilar	**Phone:**	(210) 493-2560
	Argus Environmental	**Fax:**	(210) 342-9027
	10004 Wurzbach Road	**Received Date:**	02/18/2022 9:30 AM
	Suite 247	**Analysis Date:**	02/21/2022
	San Antonio, TX 78230-2214	**Collected Date:**	
Project:	SAIA- Hangar 4 Storages		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
H1A *112200372-0001*	123 - Wall and Ceiling Systems 1, White Gypsum Board Only	White Fibrous Homogeneous	12% Cellulose	88% Gypsum	None Detected
H1B* *112200372-0002*	122 - Wall and Ceiling Systems 1, White Gypsum Board Only	White Fibrous Homogeneous	10% Cellulose	8% Ca Carbonate 82% Gypsum	None Detected
H1C* *112200372-0003*	121 - Wall and Ceiling Systems 1, White Gypsum Board Only	White Fibrous Homogeneous	10% Cellulose	10% Ca Carbonate 80% Gypsum	None Detected
H2A *112200372-0004*	123 - Wall and Ceiling Systems 1, White Joint Compound Only	White Non-Fibrous Homogeneous		70% Ca Carbonate 30% Non-fibrous (Other)	None Detected
H2B* *112200372-0005*	122 - Wall and Ceiling Systems 1, White Joint Compound Only	White Non-Fibrous Homogeneous		70% Ca Carbonate 30% Non-fibrous (Other)	None Detected
H2C* *112200372-0006*	121 - Wall and Ceiling Systems 1, White Joint Compound Only	White Non-Fibrous Homogeneous		70% Ca Carbonate 30% Non-fibrous (Other)	None Detected
H3A *112200372-0007* *Inseparable paint / coating layer included in analysis*	123 - Wall and Ceiling Systems 1, White Texture Only	White Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
H3B* *112200372-0008* *Inseparable paint / coating layer included in analysis*	122 - Wall and Ceiling Systems 1, White Texture Only	White Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
H3C* *112200372-0009* *Inseparable paint / coating layer included in analysis*	121 - Wall and Ceiling Systems 1, White Texture Only	White Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
H4A *112200372-0010*	123 - Brown Cove Base, Yellow Mastic Only	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H4B* *112200372-0011*	123 - Brown Cove Base, Yellow Mastic Only	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H4C* *112200372-0012*	123 - Brown Cove Base, Yellow Mastic Only	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H5A *112200372-0013*	122 - Grey Carpet, Yellow Mastic Only	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H5B* *112200372-0014*	122 - Grey Carpet, Yellow Mastic Only	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H5C* *112200372-0015*	122 - Grey Carpet, Yellow Mastic Only	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 02/21/2022 16:07:29

EMSL Analytical, Inc.
3310 Keller Springs, Suite 145 Carrollton, TX 75006
Tel/Fax: (972) 892-9928 / (972) 892-9929
http://www.EMSL.com / dallaslab@emsl.com

EMSL Order: 112200372
Customer ID: ARGU52
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
H6A *112200372-0016*	120 - Wall and Ceiling Systems 2, White Gypsum Board Only	White Fibrous Homogeneous	20% Cellulose	80% Gypsum	None Detected
H6B* *112200372-0017*	120 - Wall and Ceiling Systems 2, White Gypsum Board Only	White Fibrous Homogeneous	20% Cellulose	80% Gypsum	None Detected
H6C* *112200372-0018*	120 - Wall and Ceiling Systems 2, White Gypsum Board Only	White Fibrous Homogeneous	20% Cellulose	80% Gypsum	None Detected
H7A *112200372-0019*	120 - Wall and Ceiling Systems 2, White Joint Compound Only	White Non-Fibrous Homogeneous		70% Ca Carbonate 30% Non-fibrous (Other)	None Detected
H7B* *112200372-0020*	120 - Wall and Ceiling Systems 2, White Joint Compound Only	White Non-Fibrous Homogeneous		70% Ca Carbonate 30% Non-fibrous (Other)	None Detected
H7C* *112200372-0021*	120 - Wall and Ceiling Systems 2, White Joint Compound Only	White Non-Fibrous Homogeneous		70% Ca Carbonate 30% Non-fibrous (Other)	None Detected
H8A *112200372-0022*	120 - Ceiling and Wall, Brown Mastic Only	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H8B* *112200372-0023*	120 - Ceiling and Wall, Brown Mastic Only	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H8C* *112200372-0024*	120 - Ceiling and Wall, Brown Mastic Only	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s)
Madison Trusnovic (16)
Sherise MacFeeley (8)

Cindy Nguyen, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 “Interim Method”) but augmented with procedures outlined in the 1993 (”final”) version of the method. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Carrollton, TX NVLAP Lab Code 600111-0, TX 300456, CO AL-25037, CA 2999

Initial report from: 02/21/2022 16:07:29

Attachment 2 - XRF Lead-Based Paint Readings

San Antonio International Airport - Hangar 4 Storages - XRF Readings

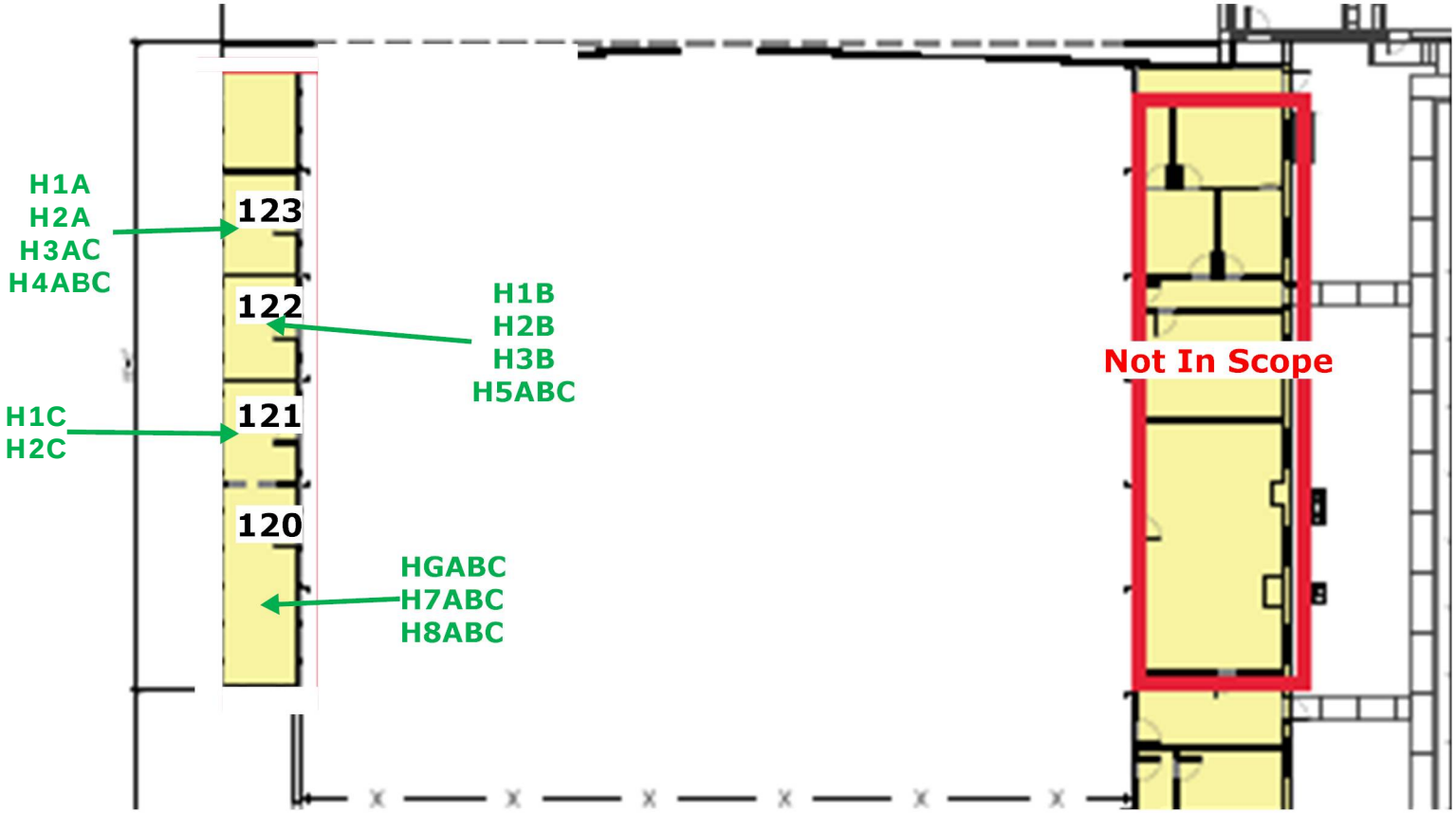
Reading No	Time	Component	Substrate	Side	Condition	Color	Room	Results	PbC	PbL
	2/17/2022 9:27								1.64	0.39
	2/17/2022 9:52					WHITE		Positive	1	1
	2/17/2022 9:52					WHITE		Positive	1.1	1.1
	2/17/2022 9:53					WHITE		Positive	1.2	1.2
1	2/17/2022 9:54	WALL	DRYWALL	A	INTACT	WHITE	123	Negative	< LOD	< LOD
2	2/17/2022 9:54	CEILING	DRYWALL	UPPER	INTACT	WHITE	123	Negative	< LOD	< LOD
3	2/17/2022 9:54	DOOR	WOOD	A	INTACT	BEIGE	123	Negative	< LOD	< LOD
4	2/17/2022 9:55	DOORFRAME	WOOD	A	INTACT	BEIGE	123	Negative	< LOD	< LOD
5	2/17/2022 9:56	DOOR	WOOD	D	PEELING	WHITE	HANGAR	Negative	< LOD	< LOD
6	2/17/2022 9:56	WINDOW FRAME	WOOD	D	PEELING	WHITE	HANGAR	Negative	< LOD	< LOD
7	2/17/2022 9:57	WALL	WOOD	D	INTACT	WHITE	HANGAR	Negative	< LOD	< LOD
8	2/17/2022 9:58	DOORFRAME	WOOD	D	INTACT	WHITE	HANGAR	Negative	< LOD	< LOD
9	2/17/2022 9:58	DOOR JAMB	WOOD	D	INTACT	WHITE	HANGAR	Negative	< LOD	< LOD
10	2/17/2022 9:58	WALL	WOOD	D	INTACT	BEIGE	HANGAR	Negative	< LOD	< LOD
11	2/17/2022 9:59	DOOR	WOOD	D	INTACT	BLUE	HANGAR	Negative	< LOD	< LOD
12	2/17/2022 9:59	WINDOW FRAME	WOOD	D	INTACT	BLUE	HANGAR	Negative	< LOD	< LOD
13	2/17/2022 10:00	DOOR	WOOD	A	INTACT	BLUE	122	Negative	< LOD	< LOD
14	2/17/2022 10:00	DOORFRAME	WOOD	A	INTACT	WHITE	122	Negative	< LOD	< LOD
15	2/17/2022 10:01	WALL	DRYWALL	A	INTACT	WHITE	122	Negative	< LOD	< LOD
16	2/17/2022 10:01	DOOR	WOOD	D	INTACT	BLUE	HANGAR	Negative	< LOD	< LOD
17	2/17/2022 10:03	DOORFRAME	WOOD	A	INTACT	WHITE	121	Negative	< LOD	< LOD
18	2/17/2022 10:03	WALL	DRYWALL	A	INTACT	WHITE	121	Negative	< LOD	< LOD
19	2/17/2022 10:04	FLOOR	CONCRETE	LOWER	INTACT	BLACK	121	Negative	< LOD	< LOD
20	2/17/2022 10:04	BASEBOARD	WOOD	A	INTACT	GREY	121	Negative	< LOD	< LOD
21	2/17/2022 10:05	DOOR	WOOD	D	INTACT	BLUE	HANGAR	Negative	< LOD	< LOD
22	2/17/2022 10:06	DOOR	WOOD	A	INTACT	WHITE	120	Negative	< LOD	< LOD
23	2/17/2022 10:06	DOORFRAME	WOOD	A	INTACT	WHITE	120	Negative	< LOD	< LOD
24	2/17/2022 10:06	DOOR JAMB	WOOD	A	INTACT	WHITE	120	Negative	< LOD	< LOD
25	2/17/2022 10:07	WALL	DRYWALL	C	INTACT	WHITE	120	Negative	< LOD	< LOD
26	2/17/2022 10:07	DOOR	WOOD	D	INTACT	BEIGE	120	Negative	< LOD	< LOD
27	2/17/2022 10:08	DOOR	WOOD	D	INTACT	WHITE	120	Negative	< LOD	< LOD
28	2/17/2022 10:08	CEILING	DRYWALL	UPPER	PEELING	WHITE	120	Negative	< LOD	< LOD

San Antonio International Airport - Hangar 4 Storages - XRF Readings

Reading No	Time	Component	Substrate	Side	Condition	Color	Room	Results	PbC	PbL
29	2/17/2022 10:09	FLOOR	CONCRETE	LOWER	INTACT	BLACK	120	Negative	< LOD	< LOD
	2/17/2022 10:42			CALIBRATE				Positive	1.1	1.1
	2/17/2022 10:43			CALIBRATE				Positive	1	1
	2/17/2022 10:44			CALIBRATE				Positive	1	1

Attachment 3 -
Bulk Sample Diagram

Asbestos Bulk Sample Diagram
San Antonio International Airport
Police Hangar 4 Storage Rooms



Legend

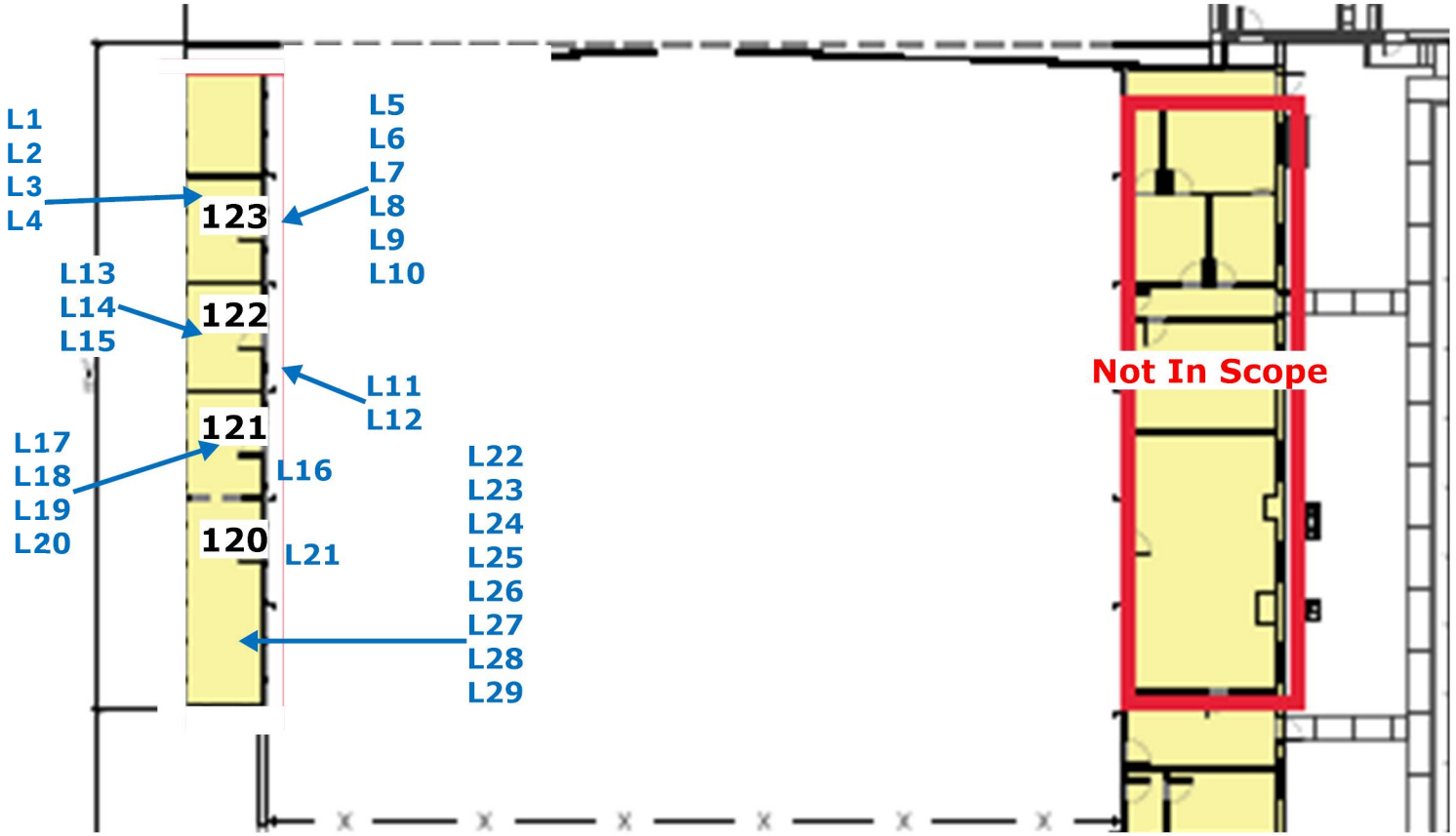
Green - Non-Asbestos Sample Locations

Environmental Consultants, LLC
10004 Wurzbach Road, Ste. 247
San Antonio, Texas 78230

Date: 2/17/2022

Attachment 4 -
XRF Lead-Based
Paint Sample Diagrams

Lead-Based Paint Sample Diagram
San Antonio International Airport
Police Hangar 4 Storage Rooms



Legend

Blue - Non-Lead Based Paint Sample Locations

Environmental Consultants, LLC
10004 Wurzbach Road, Ste. 247
San Antonio, Texas 78230

Date: 2/17/2022

Attachment 5 - Licenses

Texas Department of State Health Services

Asbestos Individual Consultant

MARK D FREEMYER

License No. 105695

Control No. 97761

Expiration Date: 12-Dec-2022


Texas Department of
State Health Services
Asbestos Inspector
ELIZABETH M AGUILAR
License No. 603203
Control No. 99847
Expiration Date: 12-Jan-2023

Argus Environmental Consultants, LLC

LIMITED ASBESTOS SURVEY REPORT

SAN ANTONIO INTERNATIONAL AIRPORT
POLICE DEPARTMENT BUILDING

PREPARED FOR:

FREESE & NICHOLS
KARA MARKS
9601 MCALLISTER FREEWAY, SUITE 1008
SAN ANTONIO, TEXAS 78216

PREPARED BY:

ARGUS ENVIRONMENTAL CONSULTANTS, LLC
10004 WURZBACH, # 247
SAN ANTONIO, TEXAS 78230

PROJECT NUMBER: 2303162ARG

CONDUCTED AND WRITTEN BY:

MARK D. FREEMYER, CIEC
TDSHS ASBESTOS CONSULTANT LICENSE #105695 (Exp. 12/22/2024)

DATE OF ISSUE: MAY 6, 2023

10004 Wurzbach Rd., #247, San Antonio, TX 78230-2214
Phone: 210.493.2560 ♦ Fax: 210.342.9027
www.argusenvironmental.com

Indoor Air Quality

Mold

Asbestos

Lead

Industrial Hygiene

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Environmental Impact Assessments

Wetlands Delineation

Property Transaction Due Diligence Screening

Forensics

Thermal Imaging
Water Intrusion
Failure Analysis

HUB
•
Small Women Owned Business

Introduction

Argus Environmental Consultants, LLC (Argus) performed a pre-demolition asbestos survey of the interior and exterior finish materials associated with the Police Department Building located at the San Antonio International Airport on April 13, 2023.

This report has been prepared for the exclusive use of Freese & Nichols and their assigned agents. It and all contents, findings, conclusions, and recommendations expressed herein are not intended for any other purpose than that stated, nor is intended to be used by any other party.

Scope of Services

The following activities were included in the limited asbestos survey:

- Visual evaluation of the interior and exterior finish materials present at the time of the survey.
- Identification of potential asbestos containing materials (ACM) into homogeneous areas based upon the guidelines in the United States Environmental Protection Agency's (EPA) 40 Code of Federal Regulations (CFR) Part 763 Subpart E.
- Random collection of bulk samples from building materials that may potentially contain asbestos.
- Laboratory analysis using Polarized Light Microscopy (PLM) following EPA Method 600 of building material samples by a third party laboratory licensed by the Texas Department of State Health Services (TDSHS).

Bulk Samples

Forty-eight samples were collected from the following homogenous areas identified as potential ACM. A diagram of sample locations is attached for reference.

Homogenous Area	Description	Sample ID
1	2x2′ & 2x4′ ceiling tile	1ABC
2	HVAC duct sealant, white	2ABC
3	12x12″ grey floor tile	3ABC
4	Exhaust flue	4ABC
5	Black felt below concrete decking	5ABC
6	Sheetrock wall 1	6ABC

Homogenous Area	Description	Sample ID
7	Limestone mortar	7ABC
8	Sink undercoat	8ABC
9	Floor tile below carpet, second floor	9ABC
10	Flooring, second floor restrooms	10ABC
11	9x9" floor tile	11ABC
12	Tile wainscot	12ABC
13	Glass block mortar	13ABC
14	Sheetrock wall 2	14ABC
15	Floor tile below wood floor, Office #210	15ABC
16	Duct wrap, second floor	16ABC

The following materials were previously tested and do not contain asbestos:

Description	Date Tested
12x12" ceiling tile	10/10/2016
12x12" ceiling tile glue	10/10/2016
Plaster walls	6/9/2017
Plaster ceiling	6/9/2017
Plaster wall texture	6/9/2017
Exterior plaster	6/18/2015
Exterior caulk	11/15/2019
Window glaze	4/25/2016

Roofing materials less than 5,580 square feet are excluded from sampling and are not regulated as per the EPA's National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulation.

Conclusions

Within the forty-eight bulk samples collected, eighty-eight separate construction material layers were subjected to PLM laboratory analysis and the detailed report is attached.

Greater than one percent (>1%) asbestos was found in the following materials:

Homogeneous Area	Description /Location	Sample ID	Percent (%) Asbestos	Quantity	Condition	Friable/ Non-friable
4	Exhaust flue / Mechanical Room	4B	10	18 linear feet	Good	Non-friable
9	Floor tile and mastic below carpet / Second floor	9A	10	~1,040 square feet	Good	Non-friable
11	9x9″ floor tile / Second floor mechanical closet	9A	10	12 square feet	Good	Non-friable
15	Floor tile below wood floor / Office #210	15A	10	~120 square feet	Good	Non-friable

The following material was previously tested and contains greater than 1% asbestos:

Date Tested	Description /Location	Percent (%) Asbestos	Quantity	Condition	Friable/ Non-friable
11/22/2019	Black mastic below 12x12″ white w/ brown floor tile	2	48 square feet	Good	Non-friable

Asbestos was not identified in any other sample.

Recommendations

Inform contractors involved with demolition related activities that regulated ACM was identified in the tile flooring and black mastic. ACM quantities are approximate and should be verified prior to abatement by the selected contractor.

Carpet and wood covered floor tile and mastic ACM may be removed using typical wet methods within a full negative air pressure enclosure by a TDSHS licensed Abatement Contractor in accordance with the TDSHS regulations as required. Single layer floor tile and mastic ACM may be removed the Resilient Floor Covering Institute (RFCI) method by a TDSHS licensed Abatement Contractor in accordance with the TDSHS regulations as required.

The exhaust flue may be abated by removing it as a component thereby not disturbing the asbestos. Work must be completed within a regulated area by a TDSHS licensed Abatement Contractor and supervised by a TDSHS licensed project manager (Argus).

The abatement project involves greater than 160 square feet of ACM and requires a written scope of work known as an Asbestos Abatement Design Specification written by an Asbestos Consultant licensed by TDSHS (Argus).

Except for RFCI, the abatement project requires air monitoring and project management onsite by a TDSHS licensed Air Monitoring Technician/Project Manager (AMT/PM) (Argus). Final work area clearance and a written report by a TDSHS licensed Consultant appointed AMT/PM will serve to complete abatement activities. Submittal of a TDSHS Notification Form no less than 10 days prior to the commencement of work is required. All waste, regardless of abatement method, requires labeling and manifest at an authorized landfill.

Limitations

Due to the limited nature of this survey, Argus does not verify the existence or non-existence of asbestos in areas without access and in materials not sampled. For example, evaluation of any potential materials hidden in or behind walls, concealed by building or structural components, under subflooring, or other inaccessible areas are not included in this report. Argus only verifies the existence or non-existence of asbestos in those materials actually sampled.

Attachments

1) Aerobiology Laboratory's EPA 600 PLM Certificate of Analysis dated 5/1/2023
2) Asbestos Bulk Sample Diagram
3) License

Attachment 1 -

Aerobiology Laboratory Certificate of Analysis

Aerobiology Laboratory Associates, Incorporated
A Pace Analytical® Laboratory

Lab Use: 23015537

ELITE Program — AZ, CA, CO, FL, GA, IL, VA, NJ

NVLAP — AZ, CA, CO, VA

VA - 102977 AZ - 210229 CA - 218951 CO - 192683 NJ - 102747 GA - 163063 FL - 228303 IL - 232279

Page 1 of 4

Aerobiology Client	Argus Environmental Consultants, LLC				
Field Contact	Mark D.Freemyer	Collected By/Date: MF 3-14-23		Relinquished By/Date: MF 3-21-23	
Reporting Address	10004 Wurzbach #247	Relinquished By/Date:		Received By/Date: MM 4/24/23	
Billing Address	SanAntonio, Texas 78230	Sampler Type	Andersen SAS	SampleAire AeroTrap	Other Bulk BioCulture
Phone/Fax	210.493.2560	PO#/Job#: 2306162ARG			
Reporting Email (s)	mark@argusenvironmental.com	Project Name: SAIA Police Department Building			
Routine ☒	24 Hour ☐ Same Day ☐ 4 Hour ☐ 2 Hour ☐	Notes: * Positive Stop Count			
SAMPLING LOCATION ZIP CODE	78249	CC Info:			

	Sample No.	Test Code	Sample Description	Sample Location
1	1A	3002	Ceiling tile	1st Floor
2	1B*	3002	Ceiling tile	1st Floor
3	1C*	3002	Ceiling tile	2nd Floor
4	2A	3002	HVAC duct sealant	Mech Rm
5	2B*	3002	HVAC duct sealant	Mech Rm
6	2C*	3002	HVAC duct sealant	Mech Rm
7	3A	3002	12x12" grey floor tile	Break Room
8	3B*	3002	12x12" grey floor tile	Break Room
9	3C*	3002	12x12" grey floor tile	Break Room
10	4A	3002	Flue	Mech Rm
11	4B*	3002	Flue	Mech Rm
12	4C*	3002	Flue	Mech Rm
13	5A	3002	Black felt	Mech Room
14	5B*	3002	Black felt	2nd Floor
15	5C*	3002	Black felt	2nd Floor

1054	Direct, Non-viable Spore Trap
1051	Direct, Qualitative- Swab/Tape
1050	Direct, Qualitative- Bulk
1005	AIR Culture - Bacterial Count w/ ID's
1030	AIR Culture - Fungal Count w/ ID's
1006	SWAB Culture - Bacterial Count w/ ID's
1031	SWAB Culture - Fungal Count w/ ID's
1008	BULK Culture - Bacterial Count w/ ID's
1033	BULK Culture - Fungal Count w/ ID's
1007	WATER Culture - Bacterial Count w/ID's

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LAB USE ONLY

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1-15 16-30 31-48 5/1/23 (+)

V:

Q: EXT 5/1/23

Aerobiology Laboratory Associates, Incorporated
A Pace Analytical® Laboratory

Lab Use: 230 15537

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NVLAP® — AZ, CA, CO, VA

VA - 102977 AZ - 210229 CA - 218951 CO - 192683 NJ - 102747 GA - 163063 FL - 228303 IL - 232279

Aerobiology Client	Argus Environmental Consultants, LLC				
Field Contact	Mark D.Freemyer	Collected By/Date: MDF 3-14-23		Relinquished By/Date: MDF 3-21-23	
Reporting Address	10004 Wurzbach #247	Relinquished By/Date:		Received By/Date:	
Billing Address	SanAntonio, Texas 78230	Sampler Type	Andersen SAS	SampleAire AeroTrap	Other Bulk BioCulture
Phone/Fax	210.493.2560	PO#/Job#: 2306162ARG			
Reporting Email (s)	mark@argusenvironmental.com	Project Name: SAIA Police Department Building			
Routine ☒	24 Hour ☐ Same Day ☐ 4 Hour ☐ 2 Hour ☐	Notes: * Positive Stop Count			
SAMPLING LOCATION ZIP CODE	78249	CC Info:			

	Sample No.	Test Code	Sample Description	Sample Location
16	6A	3002	Sheetrock wall	K9
17	6B*	3002	Sheetrock wall	K9
18	6C*	3002	Sheetrock wall	K9
19	7A	3002	Limestone mortar	Front entry
20	7B*	3002	Limestone mortar	Front entry
21	7C*	3002	Limestone mortar	Front entry
22	8A	3002	Sink undercoat	Break Room
23	8B*	3002	Sink undercoat	Break Room
24	8C*	3002	Sink undercoat	Break Room
25	9A	3002	Tile below carpet	2nd Floor
26	9B*	3002	Tile below carpet	2nd Floor
27	9C*	3002	Tile below carpet	2nd Floor
28	10A	3002	Floor	2nd Floor RR
29	10B*	3002	Floor	2nd Floor RR
30	10C*	3002	Floor	2nd Floor RR

1054	Direct, Non-viable Spore Trap	1015	Culture - WATER Legionella
1051	Direct, Qualitative- **Swab/Tape**	1017	Culture - SWAB Legionella
1050	Direct, Qualitative- **Bulk**	1010	WATER - Potable - E. coli/total coliforms
1005	AIR Culture - Bacterial Count w/ ID's	1012	SWAB - E. coli/total coliforms
1030	AIR Culture - Fungal Count w/ ID's	1028	SWAB - Sewage Screen (E. coli/Entero/fecal coliforms)
1006	SWAB Culture - Bacterial Count w/ ID's	2056	WATER - Heterotrophic Plate Count
1031	SWAB Culture - Fungal Count w/ ID's	3001	ASBESTOS - Point count
1008	BULK Culture - Bacterial Count w/ ID's	3002	ASBESTOS - PLM Analysis
1033	BULK Culture - Fungal Count w/ ID's	3003	ASBESTOS - Particle characterization
1007	WATER Culture - Bacterial Count w/ID's	3004	ASBESTOS - PCM Analysis

Aerobiology Laboratory Associates, Incorporated
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Lab Use: 230 15537

AZ, CA, CO, FL, GA, IL, VA, NJ

NVLAP® AZ, CA, CO, VA

VA - 102977 AZ - 210229 CA - 218951 CO - 192683 NJ - 102747 GA - 163063 FL - 228303 IL - 232279

Aerobiology Client	Argus Environmental Consultants, LLC				
Field Contact	Mark D.Freemyer	Collected By/Date: WBF 3-14-23		Relinquished By/Date: WBF 3-21-23	
Reporting Address	10004 Wurzbach #247	Relinquished By/Date:		Received By/Date:	
Billing Address	SanAntonio, Texas 78230	Sampler Type	Andersen SAS	SampleAire AeroTrap	Other Bulk BioCulture
Phone/Fax	210.493.2560	PO#/Job#: 2306162ARG			
Reporting Email (s)	mark@argusenvironmental.com	Project Name: SAIA Police Department Building			
Routine ☒	24 Hour ☐ Same Day ☐ 4 Hour ☐ 2 Hour ☐	Notes: * Positive Stop Count			
SAMPLING LOCATION ZIP CODE	78249	CC Info:			

	Sample No.	Test Code	Sample Description	Sample Location
31 A1	11A	3002	9x9" grey floor tile	2nd Floor Mech Rm
32 B2	11B*	3002	9x9" grey floor tile	2nd Floor Mech Rm
33 B3	11C*	3002	9x9" grey floor tile	2nd Floor Mech Rm
34 A4	12A	3002	Tile wainscot	2nd Floor RR
35 B5	12B*	3002	Tile wainscot	2nd Floor RR
36 B6	12C*	3002	Tile wainscot	2nd Floor RR
37 A7	13A	3002	Glass block mortar	2nd Floor Hall
38 B8	13B*	3002	Glass block mortar	2nd Floor Hall
39 B9	13C*	3002	Glass block mortar	2nd Floor Hall
40 10	14A	3002	Sheetrock wall	2nd Floor
41 A11	14B*	3002	Sheetrock wall	2nd Floor
42 A12	14C*	3002	Sheetrock wall	2nd Floor
43 13	15A	3002	Tile below wood floor	210
44 B14	15B*	3002	Tile below wood floor	210
45 B15	15C*	3002	Tile below wood floor	210

1054	Direct, Non-viable Spore Trap	1015	Culture - WATER Legionella
1051	Direct, Qualitative- Swab/Tape	1017	Culture - SWAB Legionella
1050	Direct, Qualitative- Bulk	1010	WATER - Potable - E. coli/total coliforms
1005	AIR Culture - Bacterial Count w/ ID's	1012	SWAB - E. coli/total coliforms
1030	AIR Culture - Fungal Count w/ ID's	1028	SWAB - Sewage Screen (E. coli/Entero/fecal coliforms)
1006	SWAB Culture - Bacterial Count w/ ID's	2056	WATER - Heterotrophic Plate Count
1031	SWAB Culture - Fungal Count w/ ID's	3001	ASBESTOS - Point count
1008	BULK Culture - Bacterial Count w/ ID's	3002	ASBESTOS - PLM Analysis
1033	BULK Culture - Fungal Count w/ ID's	3003	ASBESTOS - Particle characterization
1007	WATER Culture - Bacterial Count w/ID's	3004	ASBESTOS - PCM Analysis

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AZ, CA, CO, VA

VA - 102977 AZ - 210220 CA - 218851 CO - 192683 NJ - 102747 GA - 163063 FL - 226303 IL - 232279

Aerobiology Client	Argus Environmental Consultants, LLC				
Field Contact	Mark D.Freemyer	Collected By/Date:	3-14-23	Relinquished By/Date:	3-21-23
Reporting Address	10004 Wurzbach #247	Relinquished By/Date:		Received By/Date:	
Billing Address	SanAntonio, Texas 78230	Sampler Type	Andersen SAS	SampleAire AeroTrap	Other Bulk BioCulture
Phone/Fax	210.493.2560	PO#/Job#:	2306126ARG		
Reporting Email (s)	mark@argusenvironmental.com	Project Name:	SAIA Police Department Building		
Routine ☒	24 Hour ☐ Same Day ☐ 4 Hour ☐ 2 Hour ☐	Notes:	* Positive Stop Count		
SAMPLING LOCATION ZIP CODE	78249	CC Info:			

	Sample No.	Test Code	Sample Description	Sample Location
46 1	16A	3002	Duct wrap	2nd Floor
47 2	16B*	3002	Duct wrap	2nd Floor
48 3	16C*	3002	Duct wrap	2nd Floor
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

1054	Direct, Non-viable Spore Trap	1015	Culture - WATER Legionella
1051	Direct, Qualitative- Swab/Tape	1017	Culture - SWAB Legionella
1050	Direct, Qualitative- Bulk	1010	WATER - Potable - E. coli/total coliforms
1005	AIR Culture - Bacterial Count w/ ID's	1012	SWAB - E. coli/total coliforms
1030	AIR Culture - Fungal Count w/ ID's	1028	SWAB - Sewage Screen (E. coli/Entero/fecal coliforms)
1006	SWAB Culture - Bacterial Count w/ ID's	2056	WATER - Heterotrophic Plate Count
1031	SWAB Culture - Fungal Count w/ ID's	3001	ASBESTOS - Point count
1008	BULK Culture - Bacterial Count w/ ID's	3002	ASBESTOS - PLM Analysis
1033	BULK Culture - Fungal Count w/ ID's	3003	ASBESTOS - Particle characterization
1007	WATER Culture - Bacterial Count w/ID's	3004	ASBESTOS - PCM Analysis

Aerobiology Laboratory Associates, Incorporated
A Pace Analytical® Laboratory

780 Simms Street
Suite 104
Golden, CO, 80401
303.232.3746
www.aerobiology.net

Certificate of Analysis

NVLAP TESTING
NVLAP Lab Code 200860-0

Client Name	Argus Environmental Consultants, LLC	Date Collected:	3/14/2023
Street Address	10004 Wurzbach #247	Date Received:	4/24/2023
City, State ZIP	San Antonio, TX 78230	Date Analyzed:	5/1/2023
Attn:	Mark D. Freemyer	Date Reported:	5/1/2023
Client Project Name:	2306162ARG / SAIA Police Department Building	Project ID:	23015537

Test Requested: **3002, Asbestos in Bulk Samples**
Method: EPA 600/R-93/116: Method for Asbestos in Bulk Building Materials, EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method for Asbestos in Bulk Insulation Samples

Sample Identification		Layer Percentage	Physical Description of Sample/Layer	Asbestos Detected	Asbestos Percentage	Non-Asbestos Fiber Percentage	Non-Fibrous Material Percentage	Matrix Material Composition	Homo-geneous (Y/N)
Client	Lab Sample Number								
1A	23015537-1	100	White/Tan Ceiling Tile	ND		70 CELL,MW	30	P	N
1B	23015537-2	100	White/Tan Ceiling Tile	ND		70 CELL,MW	30	P	N
1C	23015537-3	100	White/Tan Ceiling Tile	ND		70 CELL,MW	30	P	N
2A	23015537-4A	30	White Resinous Material	ND			100	B	Y
	23015537-4B	70	Silver Wrap	ND		70 CELL,FG	30		Y
2B	23015537-5A	70	White Resinous Material	ND			100	B	Y
	23015537-5B	30	Silver Wrap	ND		70 CELL,FG	30		N
2C	23015537-6A	80	White Resinous Material	ND			100	B	Y
	23015537-6B	15	Silver Wrap	ND		70 CELL,FG	30		N
	23015537-6C	5	Yellow Insulation	ND		99FG	1		Y

AC = Actinolite
AM = Amosite
AN = Anthophyllite
CHRY = Chrysotile
CR = Crocidolite
TRM = Tremolite
Tr = Trace
ND = None Detected
AH = Animal Hair
CELL = Cellulose
FG = Fibrous Glass
MW = Mineral Wool
OT = Other
SYN = Synthetic
TL = Talc
W = Wollastonite
B = Binder
C = Calcite
D = Diatoms
G = Gypsum
M = Mica
OR = Organic
OP = Opaques
P = Perlite
Q = Quartz
T = Tar
V = Vermiculite

Thomas Harbour
Laboratory Analyst

Shannon Whitmore
Asbestos Lab Supervisor

AEROBIOLOGY LABORATORY ASSOCIATES, INCORPORATED
A Pace Analytical® Laboratory

780 Simms Street
Suite 104
Golden, CO, 80401
303.232.3746
www.aerobiology.net

Certificate of Analysis

NVLAP TESTING
NVLAP Lab Code 200860-0

Client Name	Argus Environmental Consultants, LLC	Date Collected:	3/14/2023
Street Address	10004 Wurzbach #247	Date Received:	4/24/2023
City, State ZIP	San Antonio, TX 78230	Date Analyzed:	5/1/2023
Attn:	Mark D. Freemyer	Date Reported:	5/1/2023
Client Project Name:	2306162ARG / SAIA Police Department Building	Project ID:	23015537

Test Requested: **3002, Asbestos in Bulk Samples**
Method: EPA 600/R-93/116: Method for Asbestos in Bulk Building Materials, EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method for Asbestos in Bulk Insulation Samples

Sample Identification		Layer Percentage	Physical Description of Sample/Layer	Asbestos Detected	Asbestos Percentage	Non-Asbestos Fiber Percentage	Non-Fibrous Material Percentage	Matrix Material Composition	Homo-geneous (Y/N)
Client	Lab Sample Number								
3A	23015537-7A	100	Gray Tile	ND			100		Y
	23015537-7B	Tr	Yellow Mastic	ND			100	B	Y
3B	23015537-8	100	Gray Tile	ND			100		Y
3C	23015537-9	100	Gray Tile	ND			100		Y
4A	23015537-10	100	Tan Granular Plaster with Gray Resinous Material	ND			100	Q,B	N
4B	**23015537-11**	**100**	**Gray Resinous Material**	**CHRY**	**10**		**90**	**B**	**N**
4C	23015537-12		POSITIVE STOP						
5A	23015537-13	100	Brown Fibrous Material	ND		90 CELL	10		Y
5B	23015537-14	100	Brown Fibrous Material	ND		90 CELL,FG	10	T	N
5C	23015537-15	100	Brown Fibrous Material	ND		90 CELL,FG	10	T	N

Thomas Harbour
Laboratory Analyst

Shannon Whitmore
Asbestos Lab Supervisor

AC = Actinolite	AH = Animal Hair	B = Binder	Q = Quartz
AM = Amosite	CELL = Cellulose	C = Calcite	T = Tar
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CHRY = Chrysotile	MW = Mineral Wool	G = Gypsum	
CR = Crocidolite	OT = Other	M = Mica	
TRM = Tremolite	SYN = Synthetic	OR = Organic	
Tr = Trace	TL = Talc	OP = Opaques	
ND = None Detected	W = Wollastonite	P = Perlite	

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Certificate of Analysis

NVLAP TESTING
NVLAP Lab Code 200860-0

Client Name	Argus Environmental Consultants, LLC	Date Collected:	3/14/2023
Street Address	10004 Wurzbach #247	Date Received:	4/24/2023
City, State ZIP	San Antonio, TX 78230	Date Analyzed:	5/1/2023
Attn:	Mark D. Freemyer	Date Reported:	5/1/2023
Client Project Name:	2306162ARG / SAIA Police Department Building	Project ID:	23015537

Test Requested: **3002, Asbestos in Bulk Samples**
Method: EPA 600/R-93/116: Method for Asbestos in Bulk Building Materials, EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method for Asbestos in Bulk Insulation Samples

Sample Identification		Layer Percentage	Physical Description of Sample/Layer	Asbestos Detected	Asbestos Percentage	Non-Asbestos Fiber Percentage	Non-Fibrous Material Percentage	Matrix Material Composition	Homo-geneous (Y/N)
Client	Lab Sample Number								
6A	23015537-16A	5	Gray Paint with White Texture	ND			100	C	N
	23015537-16B	7	Light Gray/White Paint with White Compound	ND			100	C	N
	23015537-16C	10	White Tape	ND		95 CELL	5		Y
	23015537-16D	7	White Joint Compound	ND			100	C	Y
	23015537-16E	71	Pink/Brown Drywall	ND		25 CELL	75	G	N
6B	23015537-17A	5	Gray Paint with White Texture	ND			100	C	N
	23015537-17B	5	Light Gray/White Paint with White Compound	ND			100	C	N
	23015537-17C	10	White Tape	ND		95 CELL	5		Y
	23015537-17D	25	White Joint Compound	ND			100	C	Y
	23015537-17E	55	Pink/Brown Drywall	ND		25 CELL	75	G	N

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Laboratory Analyst

Shannon Whitmore
Asbestos Lab Supervisor

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Sample Identification		Layer Percentage	Physical Description of Sample/Layer	Asbestos Detected	Asbestos Percentage	Non-Asbestos Fiber Percentage	Non-Fibrous Material Percentage	Matrix Material Composition	Homo-geneous (Y/N)
Client	Lab Sample Number								
6C	23015537-18A	5	Gray Paint with White Texture	ND			100	C	N
	23015537-18B	5	Light Gray/White Paint with White Compound	ND			100	C	N
	23015537-18C	10	White Tape	ND		95 CELL	5		Y
	23015537-18D	10	White Joint Compound	ND			100	C	Y
	23015537-18E	70	Pink/Brown Drywall	ND		30 CELL	70	G	N
7A	23015537-19A	1	White Debris	ND			100	Q	N
	23015537-19B	99	Gray Granular Material	ND			100	Q	N
7B	23015537-20	100	Gray Granular Material	ND			100	Q	N
7C	23015537-21	100	Gray Granular Material	ND			100	Q	N
8A	23015537-22	100	Gray Resinous Material	ND			100		N

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Client	Lab Sample Number								
8B	23015537-23	100	Gray Resinous Material	ND			100		N
8C	23015537-24	100	Gray Resinous Material	ND			100		N
9A	23015537-25A	1	White Compound	ND			100	C	N
	23015537-25B	3	Yellow/Multicolored Resinous Material	ND		5 SYN	95		N
	23015537-25C	**86**	**White/Gray Tile**	**CHRY**	**Tr**		**100**	**C**	**N**
	23015537-25D	**10**	**Black Tar**	**CHRY**	**10**		**90**	**T**	**N**
9B	23015537-26		POSTIVE STOP						
9C	23015537-27		POSTIVE STOP						
10A	23015537-28A	95	Gray/Blue/Clear Resinous Material	ND			100		N
	23015537-28B	5	White Ceramic Tile	ND			100		N

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Sample Identification		Layer Percentage	Physical Description of Sample/Layer	Asbestos Detected	Asbestos Percentage	Non-Asbestos Fiber Percentage	Non-Fibrous Material Percentage	Matrix Material Composition	Homo-geneous (Y/N)
Client	Lab Sample Number								
10B	23015537-29A	95	Gray/Blue/Clear Resinous Material	ND			100		N
	23015537-29B	5	White Ceramic Tile	ND			100		N
10C	23015537-30	100	Gray/Blue/Clear Resinous Material	ND			100		N
11A	**23015537-31A**	**98**	**Gray/Multicolored Tile**	**CHRY**	**10**		**90**	**M,C,B**	**N**
	23015537-31B	2	Black Mastic	ND			100	T	Y
11B	23015537-32		POSITIVE STOP						
11C	23015537-33		POSITIVE STOP						
12A	23015537-34A	85	White Ceramic Material	ND			100		N
	23015537-34B	15	Gray Granular Cementitious Material	ND			100	Q	N
12B	23015537-35A	90	White Ceramic Material	ND			100		N

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Sample Identification		Layer Percentage	Physical Description of Sample/Layer	Asbestos Detected	Asbestos Percentage	Non-Asbestos Fiber Percentage	Non-Fibrous Material Percentage	Matrix Material Composition	Homo-geneous (Y/N)
Client	Lab Sample Number								
12B	23015537-35B	10	Gray Granular Cementitious Material	ND			100	Q	N
12C	23015537-36A	80	White/Red Ceramic Tile	ND			100		N
	23015537-36B	20	Gray Granular Cementitious Material	ND			100	Q	N
13A	23015537-37	100	Off-White Granular Material	ND			100	Q	N
13B	23015537-38	100	Off-White Granular Material	ND			100	Q	N
13C	23015537-39	100	Off-White Granular Material	ND			100	Q	N
14A	23015537-40A	3	White Texture with Gray Paint	ND			100	C	N
	23015537-40B	15	Off-White Compound with White Paint	ND			100	C	N
	23015537-40C	2	Tan Mastic	ND			100	B	Y
	23015537-40D	15	White Compound with Beige Paint	ND			100	C	N

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Client	Lab Sample Number								
14A	23015537-40E	10	White Tape	ND		95 CELL	5		N
	23015537-40F	15	White Joint Compound	ND			100	C	Y
	23015537-40G	40	Off-White/Tan Drywall	ND		15 CELL	85	G	N
14B	23015537-41A	5	White Texture with Gray Paint	ND			100	C	N
	23015537-41B	10	Off-White Compound with White Paint	ND			100	C	N
	23015537-41C	1	Tan Mastic	ND			100	B	Y
	23015537-41D	15	White Compound with Beige Paint	ND			100	C	N
	23015537-41E	9	White Tape	ND		95 CELL	5		N
	23015537-41F	15	White Joint Compound	ND			100	C	Y
	23015537-41G	45	Tan/Off-White Drywall	ND		60 CELL	40	G	N

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Client	Lab Sample Number								
14C	23015537-42A	20	Off-White Compound with Gray/White Paint	ND			100	C	N
	23015537-42B	1	Tan Mastic	ND			100	B	Y
	23015537-42C	20	White Compound with Beige Paint	ND			100	C	N
	23015537-42D	15	White Tape	ND		95 CELL	5		N
	23015537-42E	9	White Joint Compound	ND			100	C	Y
	23015537-42F	35	Off-White/Tan Drywall	ND		25 CELL	75	G	N
15A	23015537-43A	8	Tan Mastic	ND			100	B	Y
	23015537-43B	**88**	**Gray/Multicolored Tile**	**CHRY**	**10**		**90**	**M,C,B**	**N**
	23015537-43C	4	Black Mastic	ND			100	T	Y
15B	23015537-44		POSITIVE STOP						

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Client	Lab Sample Number								
15C	23015537-45		POSITIVE STOP						
16A	23015537-46	100	Black Felt with Brown Fibrous Material	ND		70 CELL	30	T	N
16B	23015537-47A	90	Black Felt with Brown Fibrous Material	ND		70 CELL	30	T	N
	23015537-47B	10	Gray/Blue Fibrous Material	ND		95 CELL,SYN	5		N
16C	23015537-48	100	Black Felt with Brown Fibrous Material	ND		70 CELL	30	T	N

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General Notes

- **ND** indicates no asbestos was detected; the method detection limit is 1 %.
- **Trace** or "< 1" indicates asbestos was identified in the sample, but the concentration is less than 1% and cannot be quantified without point counting.
- Samples identified as inhomogeneous (more than one layer) are separated into individual layers, and each layer is analyzed and reported separately.
- All regulated asbestos minerals (i.e. chrysotile, amosite, crocidolite, anthophyllite, tremolite, and actinolite) were sought in every layer of each sample, but only those asbestos minerals detected are listed. Amosite is the common name for the asbestiform variety of the mineral grunerite. Crocidolite is the common name used for the asbestiform variety of the mineral riebeckite.
- Tile, vinyl, foam, plastic, and fine powder samples may contain asbestos fibers of such small diameter (< 0.25 microns in diameter) that these fibers cannot be detected by PLM. For such samples, more sensitive analytical methods (e.g. TEM, SEM, and XRD) are recommended if greater certainty about asbestos content is required. Semi-quantitative bulk TEM floor tile analysis is accepted under NESHAP regulations.
- These results are submitted pursuant to Aerobiology Laboratory Associates, Inc.'s current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted.
- Unless notified in writing to return the samples covered by this report, Aerobiology Laboratory Associates, Inc. will store the samples for a minimum period of thirty (30) days before discarding. A shipping and handling charge will be assessed for the return of any samples.
- Aerobiology does not guarantee the results of tape lifts, microvacs, wipe, and/or debris samples. Accurate analysis cannot be performed due to particle size, media used, and/or amount of material given. Analysis of these materials should be performed by a TEM. ***A result of ND does not indicate that the sample area does not contain asbestos. It means the analyst could not identify asbestos in the specific sample for the reasons listed above.***
- "When joint compound and/or tape is applied to a wallboard it becomes an integral part of the wallboard and in effect becomes one material forming a wall system." EPA 40 CFR Part 61 Aerobiology cannot distinguish joint compound from the same material used as skim coat. Therefore, it is very important that individuals collecting the samples clearly describe the sample composition so Aerobiology knows that the drywall system can be composited. If only joint sampling areas show layers with >1% asbestos, then material is joint compound. If samples from both joint sampling area and non-joint areas show layers with >1% asbestos, then the material should be considered "skim coat" or add-on material.

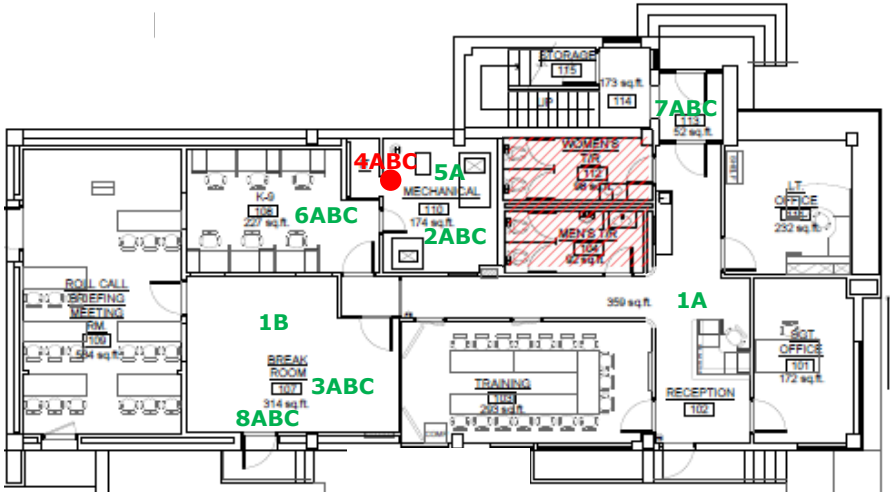
Notes Required by NVLAP

- This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.
- This test report relates only to the items tested or calibrated.
- This report is not valid unless it bears the name of a NVLAP-approved signatory.
- Any reproduction of this document must include the entire document in order for the report to be valid.

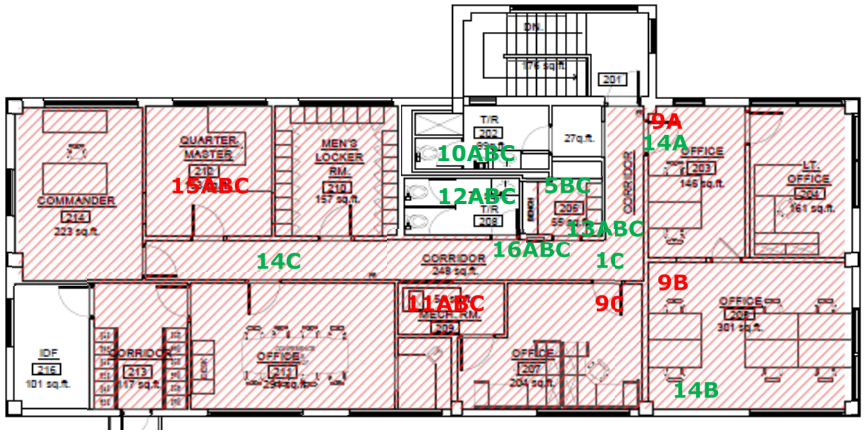
Attachment 2 -
Bulk Sample Diagram

Asbestos Bulk Sample Diagram
San Antonio International Airport - Police Department Building

First Floor



Second Floor



Legend

Green - Non-Asbestos Sample Locations

Red - Asbestos Sample Locations

- ACM flooring

- ACM exhaust flue

Environmental Consultants, LLC
10004 Wurzbach Road, #247
San Antonio, Texas 78230

Date: 5/6/2023

Attachment 3 -
Asbestos License

Texas Department of State Health Services

Asbestos Individual Consultant

MARK D FREEMYER

License No. 105695

Control No. 98143

Expiration Date: 12-Dec-2024

Argus Environmental Consultants, LLC

LIMITED ASBESTOS SURVEY REPORT

SAN ANTONIO INTERNATIONAL AIRPORT
POLICE DEPARTMENT - RESTROOMS
SAN ANTONIO, TEXAS 78216

PREPARED FOR:

KARA MARKS
FREESE & NICHOLS
4040 BROADWAY, SUITE 600
SAN ANTONIO, TEXAS 78209

PREPARED BY:

ARGUS ENVIRONMENTAL CONSULTANTS, LLC
10004 WURZBACH, # 247
SAN ANTONIO, TEXAS 78230
PHONE: (210) 493-2560

PROJECT NUMBER: 1911346ARG

CONDUCTED AND WRITTEN BY:

MARK D. FREEMYER, CIEC
TDSHS ASBESTOS CONSULTANT LICENSE #105695 (Exp. 6/12/2020)

DATE OF ISSUE: NOVEMBER 22, 2019

Indoor Air Quality

Mold

Asbestos

Lead

Industrial Hygiene

Clandestine Drug Assessment & Remediation

OSHA Compliance

Occupational & Environmental Health & Safety

Training

Expert Testimony

Pre-Purchase Inspections

Environmental Site Assessments- Phase I, II & III

Environmental Impact Assessments

Wetlands Delineation

Property Transaction Due Diligence Screening

Forensics

Thermal Imaging
Water Intrusion
Failure Analysis

HUB
•
Small Women Owned
H-95 *Business*

Introduction

Argus Environmental Consultants, LLC (Argus) performed a limited asbestos survey of the interior flooring materials associated with the Restrooms at the San Antonio International Airport Police Department on November 15, 2019.

This report has been prepared for the exclusive use of Freese & Nichols and their assigned agents. It and all contents, findings, conclusions and recommendations expressed herein are not intended for any other purpose than that stated, nor is intended to be used by any other party.

Scope of Services

The following activities were included in the limited asbestos survey:

- Visual evaluation of the interior flooring finish materials present within the Police Department Restrooms at the time of the survey.
- Identification of potential asbestos containing materials (ACM) into homogeneous areas based upon the guidelines in the United States Environmental Protection Agency's (EPA) 40 Code of Federal Regulations (CFR) Part 763 Subpart E.
- Random, non-destructive collection of bulk samples from building materials that may potentially contain asbestos.
- Laboratory analysis using Polarized Light Microscopy (PLM) following EPA Method 600 of building material samples by a third party laboratory licensed by the Texas Department of State Health Services (TDSHS).

Bulk Samples

Three samples (F123) were collected from 12x12" white with brown fleck floor tile with yellow mastic over tan floor tile with black mastic the following homogenous areas identified as potential ACM:

Conclusion

Within the three bulk samples collected, ten separate construction material layers were subjected to PLM laboratory analysis.

Regulated ACM was found in the following material:

Description/Location	Sample ID	Percent (%) Asbestos	Quantity	Condition	Friable/ Non-friable
Black Mastic / Throughout	F1A	2% Chrysotile	~240sf	Good	Non-friable

Recommendations

Inform contractors involved with all flooring renovation and related activities that regulated ACM was identified in the black mastic.

Mastic ACM may be removed using typical wet methods within a full negative air pressure enclosure by following the Resilient Floor Covering Institute (RFCI) method. Either method must be conducted by a Texas DSHS licensed Abatement Contractor in accordance with the Texas DSHS regulations as required. This will involve the submittal of a Texas DSHS Notification Form no less than 10 days prior to the commencement of work.

The abatement project involves greater than 160 square feet of ACM and, except for RFCI, requires a written scope of work known as an Asbestos Abatement Design Specification written by an Asbestos Consultant licensed by Texas DSHS.

Except for RFCI, the abatement project requires air monitoring and project management onsite by a Texas DSHS licensed Air Monitoring Technician/Project Manager (AMT/PM). Final work area clearance and a written report by a Texas DSHS licensed Consultant appointed AMT/PM will serve to complete abatement activities.

All waste, regardless of abatement method, requires labeling and manifest at an authorized landfill.

Limitations

Argus' entire liability pertaining to this report and all work associated with it is limited to the invoiced amount defined within the Scope of Services.

Due to the limited nature of this survey, Argus does not verify the existence or non-existence of asbestos in areas not sampled. For example, destructive sampling, evaluation in any inaccessible areas, or any areas of the building outside the proposed evaluation has not been done. Therefore, any potential materials hidden in or behind walls, concealed by building or structural components, under the flooring, or other inaccessible areas are not included in this

report. Argus only verifies the existence or non-existence of asbestos in those materials actually sampled.

Attachment

1) EMSL Analytical, Inc.'s EPA 600 PLM Test Report dated 11/20/19

161923891

EMSL Analytical, Inc.
2001 E 52nd Street
Indianapolis, IN 46205
Phone: (317) 803-2997
Fax: (317) 803- 3047

CHAIN OF CUSTODY

Polarized Light Microscopy (PLM)
EPA method 600
*Positive Stop Count

Argus Environmental
10004 Wurzbach Rd., #247
San Antonio, Texas 78230
Phone (210) 493-2560
Fax (210) 342-9027
mark@argusenvironmental.com
beth@argusenvironmental.com

H-99

Turnaround time: 72 Hour	Project name: SAIA PD Restrooms	Job number: 1911346ARG	Date of collection: 11-15-19

Sample number	*Sample location*		*Material description*		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
F-1	Restrooms	12x12-inch white w/ brown fleck floor tile + yellow mastic over tan floor tile + black mastic		White + Yellow & Tan + Black	Floor Tile + Mastic
F-2*	Restrooms	12x12-inch white w/ brown fleck floor tile + yellow mastic over tan floor tile + black mastic		White + Yellow & Tan + Black	Floor Tile + Mastic
F-3*	Restrooms	12x12-inch white w/ brown fleck floor tile + yellow mastic over tan floor tile + black mastic		White + Yellow & Tan + Black	Floor Tile + Mastic

Sample relinquished by:		Sample received by:	
Print name: Mark D Freemyer	Date: 11-15-19	Print name: BBurn	Date:
Signature:	Time: 1646	Signature: BBurn	Time:

RECEIVED
EMSL ANALYTICAL, INC.
INDIANAPOLIS, IN
2019 NOV 19 A 9:50

- ***Email all sample results***

OrderID: 161923891

EMSL Analytical, Inc.

6340 CastlePlace Dr. Indianapolis, IN 46250

Tel/Fax: (317) 803-2997 / (317) 803-3047

http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order:	161923891
Customer ID:	ARGU52
Customer PO:	
Project ID:	

Attention:	Mark Freemyer	**Phone:**	(210) 493-2560
	Argus Environmental	**Fax:**	(210) 342-9027
	10004 Wurzbach Road	**Received Date:**	11/19/2019 9:50 AM
	Suite 247	**Analysis Date:**	11/20/2019
	San Antonio, TX 78230-2214	**Collected Date:**	11/15/2019
Project:	SAIA PD RESTROOMS 1911346ARG		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
F-1-Floor Tile *161923891-0001*	Restrooms 12x12 inch white w/brown fleck floor tile & yellow mastic over tan floor tile & black mastic - White + Yellow & Tan + Black Floor Tile + Mastic	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
F-1-Mastic *161923891-0001A*	Restrooms 12x12 inch white w/brown fleck floor tile & yellow mastic over tan floor tile & black mastic - White + Yellow & Tan + Black Floor Tile + Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
F-1-Floor Tile *161923891-0001B*	Restrooms 12x12 inch white w/brown fleck floor tile & yellow mastic over tan floor tile & black mastic - White + Yellow & Tan + Black Floor Tile + Mastic	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
F-1-Mastic *161923891-0001C*	Restrooms 12x12 inch white w/brown fleck floor tile & yellow mastic over tan floor tile & black mastic - White + Yellow & Tan + Black Floor Tile + Mastic	Black Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
F-2-Floor Tile *161923891-0002*	Restrooms 12x12 inch white w/brown fleck floor tile & yellow mastic over tan floor tile & black mastic - White + Yellow & Tan + Black Floor Tile + Mastic	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
F-2-Mastic *161923891-0002A*	Restrooms 12x12 inch white w/brown fleck floor tile & yellow mastic over tan floor tile & black mastic - White + Yellow & Tan + Black Floor Tile + Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 11/20/2019 14:15:49

EMSL Analytical, Inc.
6340 CastlePlace Dr. Indianapolis, IN 46250
Tel/Fax: (317) 803-2997 / (317) 803-3047
http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order: 161923891
Customer ID: ARGU52
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
F-2-Floor Tile *161923891-0002B*	Restrooms 12x12 inch white w/brown fleck floor tile & yellow mastic over tan floor tile & black mastic - White + Yellow & Tan + Black Floor Tile + Mastic	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
F-2-Mastic *161923891-0002C*	Restrooms 12x12 inch white w/brown fleck floor tile & yellow mastic over tan floor tile & black mastic - White + Yellow & Tan + Black Floor Tile + Mastic				Positive Stop (Not Analyzed)
F-3-Floor Tile *161923891-0003*	Restrooms 12x12 inch white w/brown fleck floor tile & yellow mastic over tan floor tile & black mastic - White + Yellow & Tan + Black Floor Tile + Mastic	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
F-3-Mastic *161923891-0003A*	Restrooms 12x12 inch white w/brown fleck floor tile & yellow mastic over tan floor tile & black mastic - White + Yellow & Tan + Black Floor Tile + Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
F-3-Floor Tile *161923891-0003B*	Restrooms 12x12 inch white w/brown fleck floor tile & yellow mastic over tan floor tile & black mastic - White + Yellow & Tan + Black Floor Tile + Mastic	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
F-3-Mastic *161923891-0003C*	Restrooms 12x12 inch white w/brown fleck floor tile & yellow mastic over tan floor tile & black mastic - White + Yellow & Tan + Black Floor Tile + Mastic				Positive Stop (Not Analyzed)

Initial report from: 11/20/2019 14:15:49

EMSL Analytical, Inc.
6340 CastlePlace Dr. Indianapolis, IN 46250
Tel/Fax: (317) 803-2997 / (317) 803-3047
http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order:	161923891
Customer ID:	ARGU52
Customer PO:	
Project ID:	

Analyst(s)
Craig Nixon (7)
Jadda Moffett (3)

Richard Harding, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN NVLAP Lab Code 200188-0, AZ0939, CA 2575, CO AL-15132, TX 300262

Initial report from: 11/20/2019 14:15:49

Argus Environmental Consultants, LLC

LIMITED SUPPLEMENTAL ASBESTOS SURVEY REPORT

SAN ANTONIO INTERNATIONAL AIPRORT
POLICE STATION – FIRST FLOOR WINDOWS
SAN ANTONIO, TEXAS

PREPARED FOR:

KARA MARKS
FREESE & NICHOLS
4040 BROADWAY, SUITE 600
SAN ANTONIO, TEXAS 78209

PREPARED BY:

ARGUS ENVIRONMENTAL CONSULTANTS, LLC
10004 WURZBACH, # 247
SAN ANTONIO, TEXAS 78230
PHONE: (210) 493-2560

PROJECT NUMBER: 1904178ARG

WRITTEN BY:

MARK D. FREEMYER, CIEC
TDSHS ASBESTOS CONSULTANT LICENSE #105695 (Exp. 6/12/2020)

DATE OF ISSUE: April 15, 2019

Indoor Air Quality

Mold

Asbestos

Lead

Industrial Hygiene

Clandestine Drug Assessment & Remediation

OSHA Compliance

Occupational & Environmental Health & Safety

Training

Expert Testimony

Pre-Purchase Inspections

Environmental Site Assessments- Phase I, II & III

Environmental Impact Assessments

Wetlands Delineation

Property Transaction Due Diligence Screening

Forensics

Thermal Imaging
Water Intrusion
Failure Analysis

HUB
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Small Women Owned Business

Introduction

Argus Environmental Consultants, LLC (Argus) performed a limited asbestos survey of the first floor exterior window glazing materials at the San Antonio International Airport Police Station on April 11, 2019.

This report is supplemental to the Argus report on the same facility dated June 10, 2015.

This report has been prepared for the exclusive use of Freese & Nichols and their assigned agents. It and all contents, findings, conclusions and recommendations expressed herein are not intended for any other purpose than that stated, nor is intended to be used by any other party.

Scope of Services

The following activities were included in the limited asbestos survey:

- Visual evaluation of the window glazing materials present at the Police Station at the time of the survey.
- Identification of potential asbestos containing materials (ACM) into homogeneous areas based upon the guidelines in the United States Environmental Protection Agency's (EPA) 40 Code of Federal Regulations (CFR) Part 763 Subpart E.
- Random, non-destructive collection of bulk samples from building materials that may potentially contain asbestos.
- Laboratory analysis using Polarized Light Microscopy (PLM) following EPA Method 600 of building material samples by a third party laboratory licensed by the Texas Department of State Health Services (TDSHS).

Bulk Samples

Nine samples were collected from the following homogenous areas identified as potential ACM:

Homogenous Area	Description	Sample ID
13	Grey/White Exterior Window Glazing Compound	H13ABC
14	Grey Exterior Window Glazing Compound	H14ABC
15	Black Exterior Window Glazing Compound	H15ABC

Conclusion

Within the nine bulk samples collected, nine separate construction material layers were subjected to PLM laboratory analysis. Asbestos was not identified in any sample.

Recommendation

Inform contractors involved with all demolition, renovation and related activities that no ACM was identified in the Police Station's first floor window systems.

Limitations

Argus' entire liability pertaining to this report and all work associated with it is limited to the invoiced amount defined within the Scope of Services.

Due to the limited nature of this survey, Argus does not verify the existence or non-existence of asbestos in areas not sampled. For example, destructive sampling, evaluation in any inaccessible areas, or any areas of the building outside the proposed evaluation has not been done. Therefore, any potential materials hidden in or behind walls, concealed by building or structural components, under the flooring, or other inaccessible areas are not included in this report. Argus only verifies the existence or non-existence of asbestos in those materials actually sampled.

Attachments

1) EMSL Analytical, Inc.'s EPA 600 PLM Test Report dated 4/15/2019
2) Bulk Sample Diagram

16/1906723

EMSL Analytical, Inc.
2001 E 52nd Street
Indianapolis, IN 46205
Phone: (317) 803-2997
Fax: (317) 803- 3047

CHAIN OF CUSTODY

Polarized Light Microscopy (PLM)
EPA method 600
*Positive Stop Count

Argus Environmental
10004 Wurzbach Rd., #247
San Antonio, Texas 78230
Phone (210) 493-2560
Fax (210) 342-9027
mark@argusenvironmental.com
beth@argusenvironmental.com

H-106

Turnaround time: 24 Hour	Project name: SAIA Police Station	Job number: 1904178ARG	Date of collection: 4-11-19

Sample number	*Sample location*		*Material description*		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
H13A	First Floor	Exterior window system		Grey/White	Glazing Compound
H13B*	First Floor	Exterior window system		Grey/White	Glazing Compound
H13C*	First Floor	Exterior window system		Grey/White	Glazing Compound
H14A	First Floor	Exterior window system		Grey	Glazing Compound
H14B*	First Floor	Exterior window system		Grey	Glazing Compound
H14C*	First Floor	Exterior window system		Grey	Glazing Compound
H15A	First Floor	Exterior window system		Black	Glazing Compound
H15B*	First Floor	Exterior window system		Black	Glazing Compound
H15C*	First Floor	Exterior window system		Black	Glazing Compound

Sample relinquished by:		Sample received by:	
Print name: Mark D Freemyer	Date: 4-11-19	Print name:	Date: 4/12/19
Signature:	Time: 1455	Signature:	Time: 840

- ***Email all sample results***

06723

EMSL Analytical, Inc.

6340 CastlePlace Dr. Indianapolis, IN 46250

Tel/Fax: (317) 803-2997 / (317) 803-3047

http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order:	161906723
Customer ID:	ARGU52
Customer PO:	
Project ID:	

Attention:	Mark Freemyer	**Phone:**	(210) 493-2560
	Argus Environmental	**Fax:**	(210) 342-9027
	10004 Wurzbach Road	**Received Date:**	04/12/2019 8:40 AM
	Suite 247	**Analysis Date:**	04/15/2019
	San Antonio, TX 78230-2214	**Collected Date:**	04/11/2019
Project:	SAIA Police Station 1904178ARG		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
H13A *161906723-0001*	First Floor - Glazing Compound Gray/White	Gray/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H13B* *161906723-0002*	First Floor - Glazing Compound Gray/White	Gray/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H13C* *161906723-0003*	First Floor - Glazing Compound Gray/White	Gray/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H14A *161906723-0004*	First Floor - Glazing Compound Grey	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H14B* *161906723-0005*	First Floor - Glazing Compound Grey	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H14C* *161906723-0006*	First Floor - Glazing Compound Grey	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H15A *161906723-0007*	First Floor - Glazing Compound Black	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H15B* *161906723-0008*	First Floor - Glazing Compound Black	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H15C* *161906723-0009*	First Floor - Glazing Compound Black	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s)

Amanda Straw (3)

Ross Matlock (6)

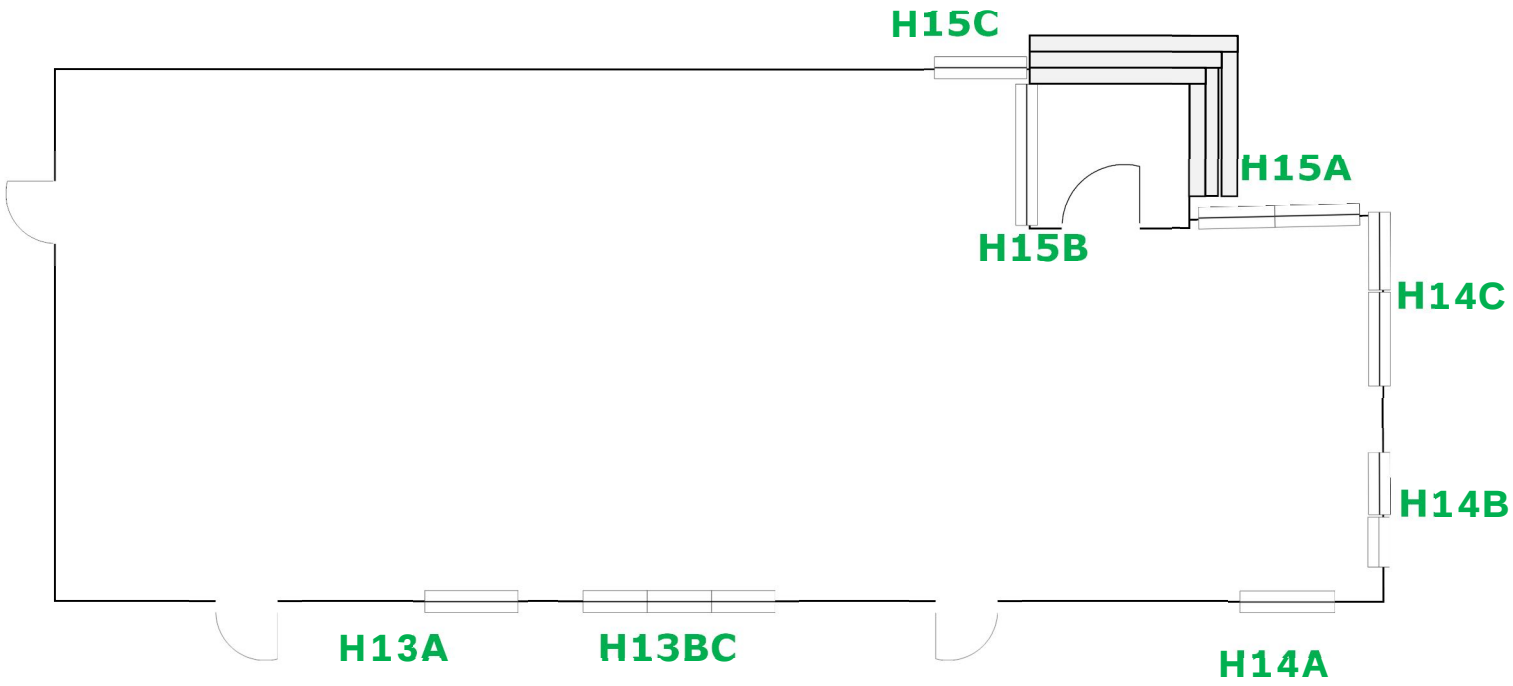
Richard Harding, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN NVLAP Lab Code 200188-0, AZ0939, CA 2575, CO AL-15132, TX 300262, LA 04135

Initial report from: 04/15/2019 12:34:11

Asbestos Survey Bulk Sample Diagram
San Antonio International Airport
Police Station - 1st Floor Windows



Legend

Green - Non-Asbestos Sample Locations

Environmental Consultants, LLC
10004 Wurzbach Road, Ste. 247
San Antonio, Texas 78230

Date: 4/15/19

Argus Environmental Consultants, LLC

ASBESTOS SURVEY REPORT

SAN ANTONIO INTERNATIONAL AIRPORT
BADGE & ID BUILDING

PREPARED FOR:

FREESE & NICHOLS
KARA MARKS
9601 MCALLISTER FREEWAY, SUITE 1008
SAN ANTONIO, TEXAS 78216

PREPARED BY:

ARGUS ENVIRONMENTAL CONSULTANTS, LLC
10004 WURZBACH, # 247
SAN ANTONIO, TEXAS 78230

PROJECT NUMBER: 2303162ARG

CONDUCTED AND WRITTEN BY:

MARK D. FREEMYER, CIEC
TDSHS ASBESTOS CONSULTANT LICENSE #105695 (Exp. 12/22/2024)

DATE OF ISSUE: MAY 6, 2023

10004 Wurzbach Rd., #247, San Antonio, TX 78230-2214
Phone: 210.493.2560 ♦ Fax: 210.342.9027
www.argusenvironmental.com

Indoor Air Quality

Mold

Asbestos

Lead

Industrial Hygiene

Clandestine Drug Assessment & Remediation

OSHA Compliance

Occupational & Environmental Health & Safety

Training

Expert Testimony

Pre-Purchase Inspections

Environmental Site Assessments- Phase I, II & III

Environmental Impact Assessments

Wetlands Delineation

Property Transaction Due Diligence Screening

Forensics

Thermal Imaging
Water Intrusion
Failure Analysis

HUB
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Small Women Owned Business

Introduction

Argus Environmental Consultants, LLC (Argus) performed a pre-demolition asbestos survey of the interior and exterior finish materials associated with the Badge & ID Building located at the San Antonio International Airport on April 13, 2023.

This report has been prepared for the exclusive use of Freese & Nichols and their assigned agents. It and all contents, findings, conclusions, and recommendations expressed herein are not intended for any other purpose than that stated, nor is intended to be used by any other party.

Scope of Services

The following activities were included in the limited asbestos survey:

- Visual evaluation of the interior and exterior finish materials present at the time of the survey.
- Identification of potential asbestos containing materials (ACM) into homogeneous areas based upon the guidelines in the United States Environmental Protection Agency's (EPA) 40 Code of Federal Regulations (CFR) Part 763 Subpart E.
- Random, non-destructive collection of bulk samples from building materials that may potentially contain asbestos.
- Laboratory analysis using Polarized Light Microscopy (PLM) following EPA Method 600 of building material samples by a third party laboratory licensed by the Texas Department of State Health Services (TDSHS).

Bulk Samples

Thirty-six samples were collected from the following homogenous areas identified as potential ACM. A diagram of sample locations is attached for reference.

Homogenous Area	Description	Sample ID
1	Wall panels, brown	1ABC
2	Plaster ceiling	2ABC
3	Wall panels, grey	3ABC
4	Floor compound below blue carpet	4ABC
5	2x2' Ceiling tile	5ABC
6	HVAC duct sealant, white	6ABC

Homogenous Area	Description	Sample ID
7	1x2′ grey ceramic tile	7ABC
8	2x2″ ceramic tile	8ABC
9	2x2″ wall tile	9ABC
10	12x12″ off-white floor tile	10ABC
11	HVAC duct sealant, black	11ABC
12	Exterior wall panels	12ABC

The following materials were previously tested and do not contain asbestos:

Description	Date Tested
Terrazo flooring	2/6/2019
Sheetrock	9/23/2014
Surface texture	9/23/2014

Roofing materials less than 5,580 square feet are excluded from sampling and are not regulated as per the EPA's National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulation.

Conclusions

Within the thirty-six bulk samples collected, sixty-seven separate construction material layers were subjected to PLM laboratory analysis and the detailed report is attached.

Greater than one percent (>1%) asbestos was found in the following material:

Homogeneous Area	Description /Location	Sample ID	Percent (%) Asbestos	Quantity	Condition	Friable/ Non-friable
11	HVAC duct, black sealant / Mechanical Room	11A	12	10 square feet	Good	Non-friable

Asbestos was not identified in any other sample.

Recommendations

Inform contractors involved with demolition related activities that regulated ACM was identified in the black HVAC duct sealant. ACM quantity is approximate and should be verified prior to abatement by the selected contractor.

ACM HVAC duct sealant may be abated using typical wet methods within a full negative air pressure enclosure or using the glove bag method by a TDSHS licensed Abatement Contractor and supervised by a TDSHS licensed project manager (Argus) in accordance with the TDSHS regulations as required. This will involve the submittal of a TDSHS Notification Form no less than 10 days prior to the commencement of work.

All waste, regardless of abatement method, requires labeling and manifest at an authorized landfill.

Limitations

Due to the limited nature of this survey, Argus does not verify the existence or non-existence of asbestos in areas without access and in materials not sampled. For example, evaluation in any inaccessible areas, of materials hidden in or behind walls, concealed by building or structural components, under subflooring, or other inaccessible areas are not included in this report. Argus only verifies the existence or non-existence of asbestos in those materials actually sampled.

Attachments

1) Aerobiology Laboratory's EPA 600 PLM Certificate of Analysis dated 5/1/2023
2) Asbestos Bulk Sample Diagram
3) License

Attachment 1 -

Aerobiology Laboratory Certificate of Analysis

Aerobiology Laboratory Associates, Incorporated
A Pace Analytical® Laboratory

Lab Use: 23015539

ELITE Program

NVLAP

AZ, CA, CO, FL, GA, IL, VA, NJ

AZ, CA, CO, VA

VA - 102977 AZ - 210220
CA - 218951 CO - 192683
NJ - 102747 GA - 163063
FL - 228303 IL - 232279

Aerobiology Client	Argus Environmental Consultants, LLC						
Field Contact	Mark D.Freemyer				Collected By/Date: MDF 3-14-23	Relinquished By/Date: MDF 3-21-23	
Reporting Address	10004 Wurzbach #247				Relinquished By/Date:	Received By/Date: nm 4/24/23	
Billing Address	SanAntonio, Texas 78230				Sampler Type: Andersen / SAS	SampleAire / AeroTrap	Other Bulk / BioCulture
Phone/Fax	210.493.2560				PO#/Job#: 2306126ARG		
Reporting Email (s)	mark@argusenvironmental.com				Project Name: SAIA Badge & ID Building		
Routine ☒	24 Hour ☐	Same Day ☐	4 Hour ☐	2 Hour ☐	Notes: * Positive Stop Count		
SAMPLING LOCATION ZIP CODE	78249				CC Info:		

	Sample No.	Test Code	Sample Description	Sample Location
1	1A	3002	Wall panels	Reception
2	1B*	3002	Wall panels	Reception
3	1C*	3002	Wall panels	Reception
4	2A	3002	Ceiling plaster	Break Room
5	2B*	3002	Ceiling plaster	Break Room
6	2C*	3002	Ceiling plaster	Break Room
7	3A	3002	Wall panels	Break Room
8	3B*	3002	Wall panels	Break Room
9	3C*	3002	Wall panels	Break Room
10	4A	3002	Floor compound below carpet	Office
11	4B*	3002	Floor compound below carpet	Office
12	4C*	3002	Floor compound below carpet	Office
13	5A	3002	2x2' ceiling tile	Office
14	5B*	3002	2x2' ceiling tile	Office
15	5C*	3002	2x2' ceiling tile	Office

1054	Direct, Non-viable Spore Trap
1051	Direct, Qualitative- **Swab/Tape**
1050	Direct, Qualitative- **Bulk**
1005	AIR Culture - Bacterial Count w/ ID's
1030	AIR Culture - Fungal Count w/ ID's
1006	SWAB Culture - Bacterial Count w/ ID's
1031	SWAB Culture - Fungal Count w/ ID's
1008	BULK Culture - Bacterial Count w/ ID's
1033	BULK Culture - Fungal Count w/ ID's
1007	WATER Culture - Bacterial Count w/ID's
1015	Culture - WATER Legionella

LAB USE ONLY

A: pcm 4.28.23

V: ———

Q: ERT 5/1/23

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Aerobiology Laboratory Associates, Incorporated
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Lab Use: 230 15539

ELITE Program

NVLAP® AZ, CA, CO, VA

VA - 102977 AZ - 210229 CA - 218951 CO - 192683 NJ - 102747 GA - 163063 FL - 228303 IL - 232279

AZ, CA, CO, FL, GA, IL, VA, NJ

Aerobiology Client	Argus Environmental Consultants, LLC				
Field Contact	Mark D.Freemyer	Collected By/Date: 3-14-23		Relinquished By/Date: 3-21-23	
Reporting Address	10004 Wurzbach #247	Relinquished By/Date:		Received By/Date:	
Billing Address	SanAntonio, Texas 78230	Sampler Type	Andersen SAS	SampleAire AeroTrap	Other Bulk BioCulture
Phone/Fax	210.493.2560	PO#/Job#: 2306126ARG			
Reporting Email (s)	mark@argusenvironmental.com	Project Name: SAIA Badge & ID Building			
Routine ☒	24 Hour ☐ Same Day ☐ 4 Hour ☐ 2 Hour ☐	Notes: * Positive Stop Count			
SAMPLING LOCATION ZIP CODE	78249	CC Info:			

	Sample No.	Test Code	Sample Description	Sample Location
16 1	6A	3002	Duct sealant	Mech Room
17 2	6B*	3002	Duct sealant	Mech Room
18 3	6C*	3002	Duct sealant	Mech Room
19 4	7A	3002	1x2' floor tile	Hall
20 5	7B*	3002	1x2' floor tile	Hall
21 6	7C*	3002	1x2' floor tile	Hall
22 7	8A	3002	2x2' ceiling tile	Restrooms
23 8	8B*	3002	2x2' ceiling tile	Restrooms
24 9	8C*	3002	2x2' ceiling tile	Restrooms
25 10	9A	3002	12x12" floor tile	IT Room
26 11	9B*	3002	12x12" floor tile	IT Room
27 12	9C*	3002	12x12" floor tile	IT Room
28 13	10A	3002	Duct sealant	Mech Room
29 14	10B*	3002	Duct sealant	Mech Room
30 15	10C*	3002	Duct sealant	Mech Room

1054	Direct, Non-viable Spore Trap	1015	Culture - WATER Legionella
1051	Direct, Qualitative- **Swab/Tape**	1017	Culture - SWAB Legionella
1050	Direct, Qualitative- **Bulk**	1010	WATER - Potable - E. coli/total coliforms
1005	AIR Culture - Bacterial Count w/ ID's	1012	SWAB - E. coli/total coliforms
1030	AIR Culture - Fungal Count w/ ID's	1028	SWAB - Sewage Screen (E. coli/Entero/fecal coliforms)
1006	SWAB Culture - Bacterial Count w/ ID's	2056	WATER - Heterotrophic Plate Count
1031	SWAB Culture - Fungal Count w/ ID's	3001	ASBESTOS - Point count
1008	BULK Culture - Bacterial Count w/ ID's	3002	ASBESTOS - PLM Analysis
1033	BULK Culture - Fungal Count w/ ID's	3003	ASBESTOS - Particle characterization
1007	WATER Culture - Bacterial Count w/ID's	3004	ASBESTOS - PCM Analysis

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ELITE Program

NVLAP

AZ, CA, CO, FL, GA, IL, VA, NJ

AZ, CA, CO, VA

VA - 102977 AZ - 210220
CA - 218951 CO - 192683
NJ - 102747 GA - 163063
FL - 228303 IL - 232279

Aerobiology Client	Argus Environmental Consultants, LLC				
Field Contact	Mark D.Freemyer	Collected By/Date: WF 3-14-23		Relinquished By/Date: MD 3-21-23	
Reporting Address	10004 Wurzbach #247	Relinquished By/Date:		Received By/Date:	
Billing Address	SanAntonio, Texas 78230	Sampler Type	Andersen SAS	SampleAire AeroTrap	Other Bulk BioCulture
Phone/Fax	210.493.2560	PO#/Job#: 2306126ARG			
Reporting Email (s)	mark@argusenvironmental.com	Project Name: SAIA Badge & ID Building			
Routine ☒	24 Hour ☐ Same Day ☐ 4 Hour ☐ 2 Hour ☐	Notes: * Positive Stop Count			
SAMPLING LOCATION ZIP CODE	78249	CC Info:			

	Sample No.	Test Code	Sample Description	Sample Location
31 1	11A	3002	Wall plaster	Mech Room
32 2	11B*	3002	Wall plaster	Mech Room
33 3	11C*	3002	Wall plaster	Mech Room
34 4	12A	3002	Wall panels	Exterior
35 5	12B*	3002	Wall panels	Exterior
36 6	12C*	3002	Wall panels	Exterior
7				
8				
9				
10				
11				
12				
13				
14				
15				

1054	Direct, Non-viable Spore Trap	1015	Culture - WATER Legionella
1051	Direct, Qualitative- **Swab/Tape**	1017	Culture - SWAB Legionella
1050	Direct, Qualitative- **Bulk**	1010	WATER - Potable - E. coli/total coliforms
1005	AIR Culture - Bacterial Count w/ ID's	1012	SWAB - E. coli/total coliforms
1030	AIR Culture - Fungal Count w/ ID's	1028	SWAB - Sewage Screen (E. coli/Entero/fecal coliforms)
1006	SWAB Culture - Bacterial Count w/ ID's	2056	WATER - Heterotrophic Plate Count
1031	SWAB Culture - Fungal Count w/ ID's	3001	ASBESTOS - Point count
1008	BULK Culture - Bacterial Count w/ ID's	3002	ASBESTOS - PLM Analysis
1033	BULK Culture - Fungal Count w/ ID's	3003	ASBESTOS - Particle characterization
1007	WATER Culture - Bacterial Count w/ID's	3004	ASBESTOS - PCM Analysis

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Certificate of Analysis

NVLAP TESTING
NVLAP Lab Code 200860-0

Client Name	Argus Environmental Consultants, LLC	Date Collected:	3/14/2023
Street Address	10004 Wurzbach #247	Date Received:	4/24/2023
City, State ZIP	San Antonio, TX 78230	Date Analyzed:	4/28/2023
Attn:	Mark D. Freemyer	Date Reported:	5/1/2023
Client Project Name:	2306126ARG / SAIA Badge & ID Building	Project ID:	23015539

Test Requested: **3002, Asbestos in Bulk Samples**
Method: EPA 600/R-93/116: Method for Asbestos in Bulk Building Materials, EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method for Asbestos in Bulk Insulation Samples

Sample Identification		Layer Percentage	Physical Description of Sample/Layer	Asbestos Detected	Asbestos Percentage	Non-Asbestos Fiber Percentage	Non-Fibrous Material Percentage	Matrix Material Composition	Homo-geneous (Y/N)
Client	Lab Sample Number								
1A	23015539-1A	99	White Granular Plaster with Beige Paint	ND			100	Q	N
	23015539-1B	1	White Paper	ND		95 CELL,SYN	5		N
1B	23015539-2A	98	White Granular Plaster with Beige Paint	ND			100	Q	N
	23015539-2B	2	White Paper	ND		95 CELL,SYN	5		N
1C	23015539-3A	99	White Granular Plaster with Beige Paint	ND			100	Q	N
	23015539-3B	1	White Paper	ND		95 CELL,SYN	5		N
2A	23015539-4	100	Tan Granular Plaster with White Paint	ND		Tr CELL	100	Q	N
2B	23015539-5	100	Tan Granular Plaster with White Paint	ND		Tr CELL	100	Q	N
2C	23015539-6	100	Tan Granular Plaster with White Paint	ND		Tr CELL,AH	100	Q	N
3A	23015539-7	100	Tan/Multicolored Granular Material	ND			100	Q,C	N

Piper-Lenore Murphy
Laboratory Analyst

Shannon Whitmore
Asbestos Lab Supervisor

AC = Actinolite
AM = Amosite
AN = Anthophyllite
CHRY = Chrysotile
CR = Crocidolite
TRM = Tremolite
Tr = Trace
ND = None Detected
AH = Animal Hair
CELL = Cellulose
FG = Fibrous Glass
MW = Mineral Wool
OT = Other
SYN = Synthetic
TL = Talc
W = Wollastonite
B = Binder
C = Calcite
D = Diatoms
G = Gypsum
M = Mica
OR = Organic
OP = Opaques
P = Perlite
Q = Quartz
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V = Vermiculite

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Sample Identification		Layer Percentage	Physical Description of Sample/Layer	Asbestos Detected	Asbestos Percentage	Non-Asbestos Fiber Percentage	Non-Fibrous Material Percentage	Matrix Material Composition	Homo-geneous (Y/N)
Client	Lab Sample Number								
3B	23015539-8	100	Tan/Multicolored Granular Material	ND		Tr CELL	100	Q,C	N
3C	23015539-9A	99	Tan/Multicolored Granular Material	ND			100	Q,C	N
	23015539-9B	1	Off-White Compound	ND			100	Q	N
4A	23015539-10A	3	Green Resinous Material	ND			100	B,C	N
	23015539-10B	97	Gray Leveling Compound	ND		5 CELL	95	C	N
4B	23015539-11A	40	Green Resinous Material	ND			100	B,C	N
	23015539-11B	60	Gray Granular Material	ND		2 CELL	98	C,Q	N
4C	23015539-12	100	Gray Leveling Compound	ND		7 CELL	93	C	N
5A	23015539-13	100	Gray Perlitic Ceiling Tile with White Paint	ND		70 CELL,MW,FG	30	P	N
5B	23015539-14	100	Gray Perlitic Ceiling Tile with White Paint	ND		70 CELL,MW,FG	30	P	N

Piper-Lenore Murphy
Laboratory Analyst

Shannon Whitmore
Asbestos Lab Supervisor

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AM = Amosite	CELL = Cellulose	C = Calcite	T = Tar
AN = Anthophyllite	FG = Fibrous Glass	D = Diatoms	V = Vermiculite
CHRY = Chrysotile	MW = Mineral Wool	G = Gypsum	
CR = Crocidolite	OT = Other	M = Mica	
TRM = Tremolite	SYN = Synthetic	OR = Organic	
Tr = Trace	TL = Talc	OP = Opaques	
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Client	Lab Sample Number								
5C	23015539-15	100	Gray Perlitic Ceiling Tile with White Paint	ND		70 CELL,MW,FG	30	P	N
6A	23015539-16	100	White Sealant with Silver/Brown Wrap	ND		30 CELL,MW,FG	70	C	N
6B	23015539-17	100	White Sealant with Silver/Brown Wrap	ND		30 CELL,MW,FG	70	C	N
6C	23015539-18	100	White Sealant with Silver/Brown Wrap	ND		10 CELL,MW,FG	90	C	N
7A	23015539-19A	15	Gray/Black Tile	ND			100	Q	N
	23015539-19B	62	Gray Granular Grout	ND			100	Q	Y
	23015539-19C	6	Gray Compound	ND		5 CELL	95	C	N
	23015539-19D	1	Yellow Mastic	ND		1 CELL	99	B,C	N
	23015539-19E	10	Off-White Leveling Compound	ND			100	C	Y
	23015539-19F	4	Black Mastic	ND		1 CELL	99	T	N

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Street Address	10004 Wurzbach #247	Date Received:	4/24/2023
City, State ZIP	San Antonio, TX 78230	Date Analyzed:	4/28/2023
Attn:	Mark D. Freemyer	Date Reported:	5/1/2023
Client Project Name:	2306126ARG / SAIA Badge & ID Building	Project ID:	23015539

NVLAP® TESTING
NVLAP Lab Code 200860-0

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Sample Identification		Layer Percentage	Physical Description of Sample/Layer	Asbestos Detected	Asbestos Percentage	Non-Asbestos Fiber Percentage	Non-Fibrous Material Percentage	Matrix Material Composition	Homo-geneous (Y/N)
Client	Lab Sample Number								
7A	23015539-19G	2	Gray/White Fibrous Compound	ND		5 CELL	95	G	N
7B	23015539-20A	67	Gray/Black Tile	ND		Tr CELL	100	Q	N
	23015539-20B	15	Gray Granular Grout	ND			100	Q	Y
	23015539-20C	3	Yellow Mastic	ND		1 CELL	99	B,C	N
	23015539-20D	10	Off-White Leveling Compound	ND			100	C	Y
	23015539-20E	5	Black Mastic	ND		1 CELL	99	T	N
7C	23015539-21A	20	Gray/Black Tile	ND			100	Q	N
	23015539-21B	62	Gray Granular Grout	ND			100	Q	N
	23015539-21C	3	Yellow Mastic	ND		1 CELL,SYN	99	B,C	N
	23015539-21D	10	Off-White Leveling Compound	ND			100	C	Y

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City, State ZIP	San Antonio, TX 78230	Date Analyzed:	4/28/2023
Attn:	Mark D. Freemyer	Date Reported:	5/1/2023
Client Project Name:	2306126ARG / SAIA Badge & ID Building	Project ID:	23015539

Test Requested: **3002, Asbestos in Bulk Samples**
Method: EPA 600/R-93/116: Method for Asbestos in Bulk Building Materials, EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method for Asbestos in Bulk Insulation Samples

Sample Identification		Layer Percentage	Physical Description of Sample/Layer	Asbestos Detected	Asbestos Percentage	Non-Asbestos Fiber Percentage	Non-Fibrous Material Percentage	Matrix Material Composition	Homo-geneous (Y/N)
Client	Lab Sample Number								
7C	23015539-21E	5	Black Mastic	ND		Tr CELL	100	T	N
8A	23015539-22A	1	Gray Fibrous Resinous Material	ND		3 CELL	97	B,C	N
	23015539-22B	86	Off-White/Black Ceramic Tile	ND			100		Y
	23015539-22C	10	Gray Grout	ND			100	Q	Y
	23015539-22D	3	Yellow Mastic	ND			100	B,C	N
8B	23015539-23A	1	Gray Fibrous Resinous Material	ND		4 CELL	96	B,C	N
	23015539-23B	87	Off-White/Black Ceramic Tile	ND			100		N
	23015539-23C	5	Gray Grout	ND			100	Q	Y
	23015539-23D	7	Yellow Mastic	ND			100	B,C	N
8C	23015539-24A	1	Gray Fibrous Resinous Material	ND		5 CELL,SYN	95	B,C	N

Piper-Lenore Murphy
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City, State ZIP	San Antonio, TX 78230	Date Analyzed:	4/28/2023
Attn:	Mark D. Freemyer	Date Reported:	5/1/2023
Client Project Name:	2306126ARG / SAIA Badge & ID Building	Project ID:	23015539

Test Requested: **3002, Asbestos in Bulk Samples**
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Sample Identification		Layer Percentage	Physical Description of Sample/Layer	Asbestos Detected	Asbestos Percentage	Non-Asbestos Fiber Percentage	Non-Fibrous Material Percentage	Matrix Material Composition	Homo-geneous (Y/N)
Client	Lab Sample Number								
8C	23015539-24B	87	Off-White/Black Ceramic Tile	ND			100		N
	23015539-24C	10	Gray Grout	ND			100	Q	Y
	23015539-24D	2	Yellow Mastic	ND			100	B,C	N
9A	23015539-25A	90	Gray Tile	ND			100	Q	N
	23015539-25B	10	Gray Leveling Compound with Black Mastic	ND		5 CELL	95	B,C	N
9B	23015539-26A	45	Gray Tile	ND			100	Q	N
	23015539-26B	55	Gray Leveling Compound with Black Mastic	ND		5 CELL	95	B,C	N
9C	23015539-27A	85	Gray Floor Tile	ND			100	Q	N
	23015539-27B	15	Gray Leveling Compound with Black Mastic	ND		5 CELL	95	B,C	N
10A	**23015539-28A**	**60**	**Black Resinous Material**	**CHRY**	**12**	**2 TL,CELL**	**86**	**T**	**N**

Piper-Lenore Murphy
Laboratory Analyst

Shannon Whitmore
Asbestos Lab Supervisor

AC = Actinolite	AH = Animal Hair	B = Binder	Q = Quartz
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AN = Anthophyllite	FG = Fibrous Glass	D = Diatoms	V = Vermiculite
CHRY = Chrysotile	MW = Mineral Wool	G = Gypsum	
CR = Crocidolite	OT = Other	M = Mica	
TRM = Tremolite	SYN = Synthetic	OR = Organic	
Tr = Trace	TL = Talc	OP = Opaques	
ND = None Detected	W = Wollastonite	P = Perlite	

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Client Name	Argus Environmental Consultants, LLC	Date Collected:	3/14/2023
Street Address	10004 Wurzbach #247	Date Received:	4/24/2023
City, State ZIP	San Antonio, TX 78230	Date Analyzed:	4/28/2023
Attn:	Mark D. Freemyer	Date Reported:	5/1/2023
Client Project Name:	2306126ARG / SAIA Badge & ID Building	Project ID:	23015539

Test Requested: **3002, Asbestos in Bulk Samples**
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Sample Identification		Layer Percentage	Physical Description of Sample/Layer	Asbestos Detected	Asbestos Percentage	Non-Asbestos Fiber Percentage	Non-Fibrous Material Percentage	Matrix Material Composition	Homo-geneous (Y/N)
Client	Lab Sample Number								
10A	23015539-28B	40	Silver Foil	ND			100		Y
10B	23015539-29		POSITIVE STOP						
10C	23015539-30		POSITIVE STOP						
11A	23015539-31	100	Tan Granular Plaster with Gray Paint	ND			100	Q	N
11B	23015539-32	100	Tan Granular Plaster with Gray Paint	ND		Tr CELL,FG, SYN	100	Q	N
11C	23015539-33	100	Tan Granular Plaster with Gray Paint	ND		Tr SYN,CELL	100	Q	N
12A	23015539-34	100	Off-White Stone Tile	ND			100	C,Q	N
12B	23015539-35	100	Off-White Stone Tile	ND			100	C,Q	N
12C	23015539-36	100	Off-White Stone Tile	ND			100	C,Q	N

Piper-Lenore Murphy
Laboratory Analyst

Shannon Whitmore
Asbestos Lab Supervisor

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Golden, CO, 80401
303.232.3746
www.aerobiology.net

Certificate of Analysis

Client Name	Argus Environmental Consultants, LLC		Date Collected: 3/14/2023
Street Address	10004 Wurzbach #247	NVLAP® TESTING	Date Received: 4/24/2023
City, State ZIP	San Antonio, TX 78230	NVLAP Lab Code 200860-0	Date Analyzed: 4/28/2023
Attn:	Mark D. Freemyer		Date Reported: 5/1/2023
Client Project Name:	2306126ARG / SAIA Badge & ID Building		Project ID: 23015539

Test Requested: **3002, Asbestos in Bulk Samples**
Method: EPA 600/R-93/116: Method for Asbestos in Bulk Building Materials, EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method for Asbestos in Bulk Insulation Samples

General Notes

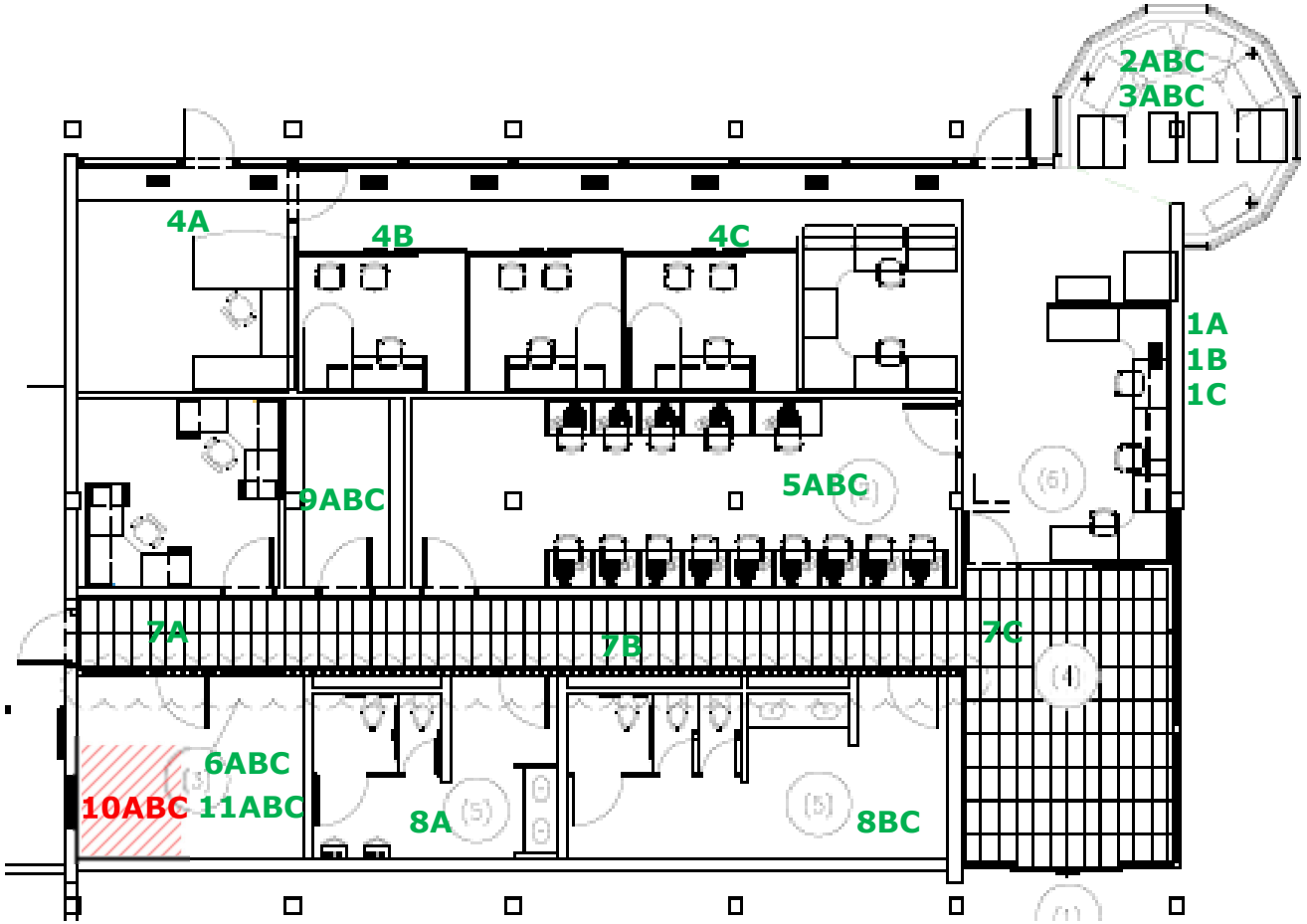
- **ND** indicates no asbestos was detected; the method detection limit is 1 %.
- **Trace** or "< 1" indicates asbestos was identified in the sample, but the concentration is less than 1% and cannot be quantified without point counting.
- Samples identified as inhomogeneous (more than one layer) are separated into individual layers, and each layer is analyzed and reported separately.
- All regulated asbestos minerals (i.e. chrysotile, amosite, crocidolite, anthophyllite, tremolite, and actinolite) were sought in every layer of each sample, but only those asbestos minerals detected are listed. Amosite is the common name for the asbestiform variety of the mineral grunerite. Crocidolite is the common name used for the asbestiform variety of the mineral riebeckite.
- Tile, vinyl, foam, plastic, and fine powder samples may contain asbestos fibers of such small diameter (< 0.25 microns in diameter) that these fibers cannot be detected by PLM. For such samples, more sensitive analytical methods (e.g. TEM, SEM, and XRD) are recommended if greater certainty about asbestos content is required. Semi-quantitative bulk TEM floor tile analysis is accepted under NESHAP regulations.
- These results are submitted pursuant to Aerobiology Laboratory Associates, Inc.'s current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted.
- Unless notified in writing to return the samples covered by this report, Aerobiology Laboratory Associates, Inc. will store the samples for a minimum period of thirty (30) days before discarding. A shipping and handling charge will be assessed for the return of any samples.
- Aerobiology does not guarantee the results of tape lifts, microvacs, wipe, and/or debris samples. Accurate analysis cannot be performed due to particle size, media used, and/or amount of material given. Analysis of these materials should be performed by a TEM. ***A result of ND does not indicate that the sample area does not contain asbestos. It means the analyst could not identify asbestos in the specific sample for the reasons listed above.***
- "When joint compound and/or tape is applied to a wallboard it becomes an integral part of the wallboard and in effect becomes one material forming a wall system." EPA 40 CFR Part 61 Aerobiology cannot distinguish joint compound from the same material used as skim coat. Therefore, it is very important that individuals collecting the samples clearly describe the sample composition so Aerobiology knows that the drywall system can be composited. If only joint sampling areas show layers with >1% asbestos, then material is joint compound. If samples from both joint sampling area and non-joint areas show layers with >1% asbestos, then the material should be considered "skim coat" or add-on material.

Notes Required by NVLAP

- This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.
- This test report relates only to the items tested or calibrated.
- This report is not valid unless it bears the name of a NVLAP-approved signatory.
- Any reproduction of this document must include the entire document in order for the report to be valid.

Attachment 2 -
Bulk Sample Diagram

Asbestos Bulk Sample Diagram
San Antonio International Airport - Badge & ID Building



Legend

Green - Non-Asbestos Sample Locations

Red - Asbestos Sample Locations

- ACM: Black HVAC Duct Sealant

Environmental Consultants, LLC
10004 Wurzbach Road, #247
San Antonio, Texas 78230

Date: 5/3/2023

Attachment 3 - Asbestos License

Texas Department of State Health Services

Asbestos Individual Consultant

MARK D FREEMYER

License No. 105695

Control No. 98143

Expiration Date: 12-Dec-2024

November 20, 2018

Project No: 1811291ARG

Kara Marks
Freese & Nichols
4040 Broadway, Suite 600
San Antonio, Texas 78209

RE: LIMITED PRE-DEMOLITION ASBESTOS SURVEY REPORT – SAN ANTONIO INTERNATIONAL AIRPORT SECURITY MODULAR BUILDING

Dear Ms. Marks:

Argus Environmental Consultants, LLC (Argus) performed a limited asbestos survey of the interior and exterior finish materials within the San Antonio International Airport's Security Modular Building.

The asbestos survey scope of services included the following:

- Visual evaluation of the interior and exterior finish materials present within the Airport's Security Modular Building at the time of the survey.
- Identification of potential asbestos containing materials (ACM) into homogeneous areas based upon the guidelines in the United States Environmental Protection Agency's (EPA) 40 Code of Federal Regulations (CFR) Part 763 Subpart E.
- Random, non-destructive collection of bulk samples from building materials that may potentially contain asbestos.
- Analysis of building material samples by a third party laboratory licensed by the Texas Department of State Health Services (DSHS) using Polarized Light Microscopy (PLM) following EPA Method 600**.**

Argus' entire liability pertaining to this report and all work associated with it is limited to the invoiced amount defined within the Scope of Services.

This report has been prepared for the exclusive use of Freese & Nichols and their assigned agents. It and all contents, findings, conclusions, and recommendations expressed herein are not intended for any other purpose than that stated, nor are intended to be used by any other party.

Due to the limited nature of this survey, Argus does not verify the existence or non-existence of ACM in areas not sampled. Therefore, any potential materials hidden in or behind walls, under

Indoor Air Quality
Mold
Asbestos
Lead
Industrial Hygiene
Clandestine Drug Assessment & Remediation
OSHA Compliance
Occupational & Environmental Health & Safety
Training
Expert Testimony
Pre-Purchase Inspections
Environmental Site Assessments- Phase I, II & III
Environmental Impact Assessments
Wetlands Delineation
Property Transaction Due Diligence Screening
Forensics
Thermal Imaging
Water Intrusion
Failure Analysis

HUB
•
Small
Women Owned
Business

the flooring or other inaccessible areas are not included in this report. Argus only verifies the existence or non-existence of asbestos in those materials actually sampled.

The asbestos survey was performed on November 13, 2018, 2018, by Elizabeth Aguilar, Texas DSHS Asbestos Inspector License #603203.

Bulk Samples:

Twenty-one samples were collected from the following homogenous areas identified as potential ACM:

Homogenous Area	Description	Sample ID
1	2x4 Ceiling Tile	H1ABC
2	12x12 White w/ Brown Speck Floor Tile and Yellow Mastic	H2ABC
3	Gypsum Board Wall Panels	H3ABC
4	Restroom Caulk	H4ABC
5	12x12 Cream Marbled w/ Red & Blue Floor Tile and Yellow Mastic	H5ABC
6	12x12 Peach Marbled Floor Tile and Floor Tile	H6ABC
7	Exterior Window Caulk	H7ABC

Conclusions:

Within the twenty-one bulk samples collected, thirty separate construction material layers were subjected to PLM laboratory analysis. Asbestos was not identified in any sample.

Recommendations:

Inform contractors involved with all demolition related activities that no ACM was identified.

For Argus Environmental Consultants, LLC,

Elizabeth Aguilar
Texas DSHS Asbestos Inspector License #603203 (Exp. 12/12/2018)

Mark D. Freemyer, CIEC
Texas DSHS Asbestos Consultant License #105695 (Exp. 6/12/2020)

Attachments: 1) EMSL Analytical, Inc.'s EPA 600 PLM Test Report 11/19/2018
2) Bulk Sample Diagram

161822650

EMSL Analytical, Inc.
6340 Castleplace Drive
Indianapolis, IN 46205
Phone: (317) 803-2997
Fax: (317) 803- 3047

CHAIN OF CUSTODY

Polarized Light Microscopy (PLM)
EPA method 600
*Positive Stop Count

Argus Environmental
10004 Wurzbach Rd., #247
San Antonio, Texas 78230
Phone (210) 493-2560
Fax (210) 342-9027
sarah@argusenvironmental.com
beth@argusenvironmental.com

Turnaround time: 72 hours	Project name: SAIA - Airport Security Modular Bldg.	Job number: 1811291ARG	Date of collection: 11/13/2018

Sample number	*Sample location*		*Material description*		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
H1A	Conference Room	2x4 - Fissure and Hole		White	Ceiling Tile
H1B*	Hall	2x4 - Fissure and Hole		White	Ceiling Tile
H1C*	Break Room	2x4 - Fissure and Hole		White	Ceiling Tile
H2A	Conference Room	12x12		White w/ Brown Speck and Yellow	Floor Tile and Mastic
H2B*	Storage	12x12		White w/ Brown Speck and Yellow	Floor Tile and Mastic
H2C*	Break Room	12x12		White w/ Brown Speck and Yellow	Floor Tile and Mastic
H3A	Conference Room	Wall Panels		White	Gypsum Board
H3B*	Hall	Wall Panels		White	Gypsum Board
H3C*	Break Room	Wall Panels		White	Gypsum Board
H4A	Women's Restroom	Restroom		White	Caulk

Sample relinquished by:		Sample received by:	
Print name: Elizabeth Aguilar	Date: 11/13/2018	Print name: S Wilson	Date: 11/14/18
Signature: Elizabeth Aguilar	Time: 12:15PM	Signature:	Time: 955

- ***Email all sample results***

OrderID: 161822650

Page 1 Of 3

22650

EMSL Analytical, Inc.
6340 Castleplace Drive
Indianapolis, IN 46205
Phone: (317) 803-2997
Fax: (317) 803- 3047

CHAIN OF CUSTODY

Polarized Light Microscopy (PLM)
EPA method 600
*Positive Stop Count

Argus Environmental
10004 Wurzbach Rd., #247
San Antonio, Texas 78230
Phone (210) 493-2560
Fax (210) 342-9027
sarah@argusenvironmental.com
beth@argusenvironmental.com

Turnaround time: 72 hours	Project name: SAIA - Airport Security Modular Bldg.	Job number: 1811291ARG	Date of collection: 11/13/2018

Sample number	*Sample location*		*Material description*		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
H4B*	Women's Restroom	Restroom		White	Caulk
H4C*	Men's Restroom	Restroom		White	Caulk
H5A	Conference Room	12x12		Cream Marbled w/ Red/Blue and Yellow	Floor Tile and Mastic
H5B*	Conference Room	12x12		Cream Marbled w/ Red/Blue and Yellow	Floor Tile and Mastic
H5C*	Conference Room	12x12		Cream Marbled w/ Red/Blue and Yellow	Floor Tile and Mastic
H6A	Break Room	12x12		Peach Marbled and Yellow	Floor Tile and Mastic
H6B*	Break Room	12x12		Peach Marbled and Yellow	Floor Tile and Mastic
H6C*	Break Room	12x12		Peach Marbled and Yellow	Floor Tile and Mastic
H7A	Exterior	Window		Tan	Caulk
H7B*	Exterior	Window		Tan	Caulk

Sample relinquished by:		Sample received by:	
Print name: Elizabeth Aguilar	Date: 11/13/2018	Print name: [illegible]	Date: 11/14/18
Signature: Elizabeth Aguilar	Time: 12:15PM	Signature: [illegible]	Time: 955

- ***Email all sample results***

OrderID: 161822650

22650

EMSL Analytical, Inc.
6340 Castleplace Drive
Indianapolis, IN 46205
Phone: (317) 803-2997
Fax: (317) 803- 3047

CHAIN OF CUSTODY

Polarized Light Microscopy (PLM)
EPA method 600
*Positive Stop Count

Argus Environmental
10004 Wurzbach Rd., #247
San Antonio, Texas 78230
Phone (210) 493-2560
Fax (210) 342-9027
sarah@argusenvironmental.com
beth@argusenvironmental.com

Turnaround time: 72 hours	Project name: SAIA - Airport Security Modular Bldg.	Job number: 1811291ARG	Date of collection: 11/13/2018

Sample number	*Sample location*		*Material description*		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
H7C*	Exterior	Window		Tan	Caulk

Sample relinquished by:		Sample received by:	
Print name: Elizabeth Aguilar	Date: 11/13/2018	Print name:	Date: 11/14/18
Signature: Elizabeth Aguilar	Time: 12:15PM	Signature:	Time: 755

- ***Email all sample results***

OrderID: 161822650

Page 3 of 3

EMSL Analytical, Inc.

6340 CastlePlace Dr. Indianapolis, IN 46250

Tel/Fax: (317) 803-2997 / (317) 803-3047

http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order:	161822650
Customer ID:	ARGU52
Customer PO:	
Project ID:	

Attention:	Sarah Akeroyd	**Phone:**	(210) 493-2560
	Argus Environmental	**Fax:**	(210) 342-9027
	10004 Wurzbach Road	**Received Date:**	11/14/2018 9:55 AM
	Suite 247	**Analysis Date:**	11/17/2018
	San Antonio, TX 78230-2214	**Collected Date:**	11/13/2018
Project:	1811291ARG / SAIA - Airport Security Modular Bldg.		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
H1A *161822650-0001*	Conference Room - 2x4 Fissure & Hole White CT	Gray/White Fibrous Homogeneous	50% Cellulose 30% Min. Wool	15% Perlite 5% Non-fibrous (Other)	None Detected
H1B *161822650-0002*	Hall - 2x4 Fissure & Hole White CT	Gray/White Fibrous Homogeneous	50% Cellulose 30% Min. Wool	15% Perlite 5% Non-fibrous (Other)	None Detected
H1C *161822650-0003*	Break Room - 2x4 Fissure & Hole White CT	Gray/White Fibrous Homogeneous	50% Cellulose 30% Min. Wool	15% Perlite 5% Non-fibrous (Other)	None Detected
H2A-Floor Tile *161822650-0004*	Conference Room - 12x12 White w/Brown Speck & Yellow FT & Mastic	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H2A-Mastic *161822650-0004A*	Conference Room - 12x12 White w/Brown Speck & Yellow FT & Mastic	Black/Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H2B-Floor Tile *161822650-0005*	Storage - 12x12 White w/Brown Speck & Yellow FT & Mastic	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H2B-Mastic *161822650-0005A*	Storage - 12x12 White w/Brown Speck & Yellow FT & Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H2C-Floor Tile *161822650-0006*	Break Room - 12x12 White w/Brown Speck & Yellow FT & Mastic	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H2C-Mastic *161822650-0006A*	Break Room - 12x12 White w/Brown Speck & Yellow FT & Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H3A *161822650-0007*	Conference Room - Wall Panels White Gypsum Board	White Non-Fibrous Homogeneous	2% Cellulose 2% Glass	90% Gypsum 6% Non-fibrous (Other)	None Detected
H3B *161822650-0008*	Hall - Wall Panels White Gypsum Board	White Non-Fibrous Homogeneous	2% Cellulose 2% Glass	90% Gypsum 6% Non-fibrous (Other)	None Detected
H3C *161822650-0009*	Break Room - Wall Panels White Gypsum Board	White Non-Fibrous Homogeneous	2% Cellulose 2% Glass	90% Gypsum 6% Non-fibrous (Other)	None Detected
H4A *161822650-0010*	Women's Restroom - White Caulk	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H4B *161822650-0011*	Women's Restroom - White Caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H4C *161822650-0012*	Men's Restroom - White Caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 11/19/2018 06:29:02

EMSL Analytical, Inc.
6340 CastlePlace Dr. Indianapolis, IN 46250
Tel/Fax: (317) 803-2997 / (317) 803-3047
http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order: 161822650
Customer ID: ARGU52
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
H5A-Floor Tile *161822650-0013*	Conference Room - 12x12 Cream Marbled w/Red/Blue & Yellow FT & Mastic	White/Red/Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H5A-Mastic *161822650-0013A*	Conference Room - 12x12 Cream Marbled w/Red/Blue & Yellow FT & Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H5B-Floor Tile *161822650-0014*	Conference Room - 12x12 Cream Marbled w/Red/Blue & Yellow FT & Mastic	White/Red/Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H5B-Mastic *161822650-0014A*	Conference Room - 12x12 Cream Marbled w/Red/Blue & Yellow FT & Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H5C-Floor Tile *161822650-0015*	Conference Room - 12x12 Cream Marbled w/Red/Blue & Yellow FT & Mastic	White/Red/Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H5C-Mastic *161822650-0015A*	Conference Room - 12x12 Cream Marbled w/Red/Blue & Yellow FT & Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H6A-Floor Tile *161822650-0016*	Break Room - 12x12 Peach Marbled & Yellow FT & Mastic	Gray/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H6A-Mastic *161822650-0016A*	Break Room - 12x12 Peach Marbled & Yellow FT & Mastic	Brown/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H6B-Floor Tile *161822650-0017*	Break Room - 12x12 Peach Marbled & Yellow FT & Mastic	Gray/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H6B-Mastic *161822650-0017A*	Break Room - 12x12 Peach Marbled & Yellow FT & Mastic	Brown/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H6C-Floor Tile *161822650-0018*	Break Room - 12x12 Peach Marbled & Yellow FT & Mastic	Gray/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H6C-Mastic *161822650-0018A*	Break Room - 12x12 Peach Marbled & Yellow FT & Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H7A *161822650-0019*	Exterior - Window Tan Caulk	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H7B *161822650-0020*	Exterior - Window Tan Caulk	Tan/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H7C *161822650-0021*	Exterior - Window Tan Caulk	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 11/19/2018 06:29:02

EMSL Analytical, Inc.
6340 CastlePlace Dr. Indianapolis, IN 46250
Tel/Fax: (317) 803-2997 / (317) 803-3047
http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order:	161822650
Customer ID:	ARGU52
Customer PO:	
Project ID:	

Analyst(s)
Paul Rihm (30)

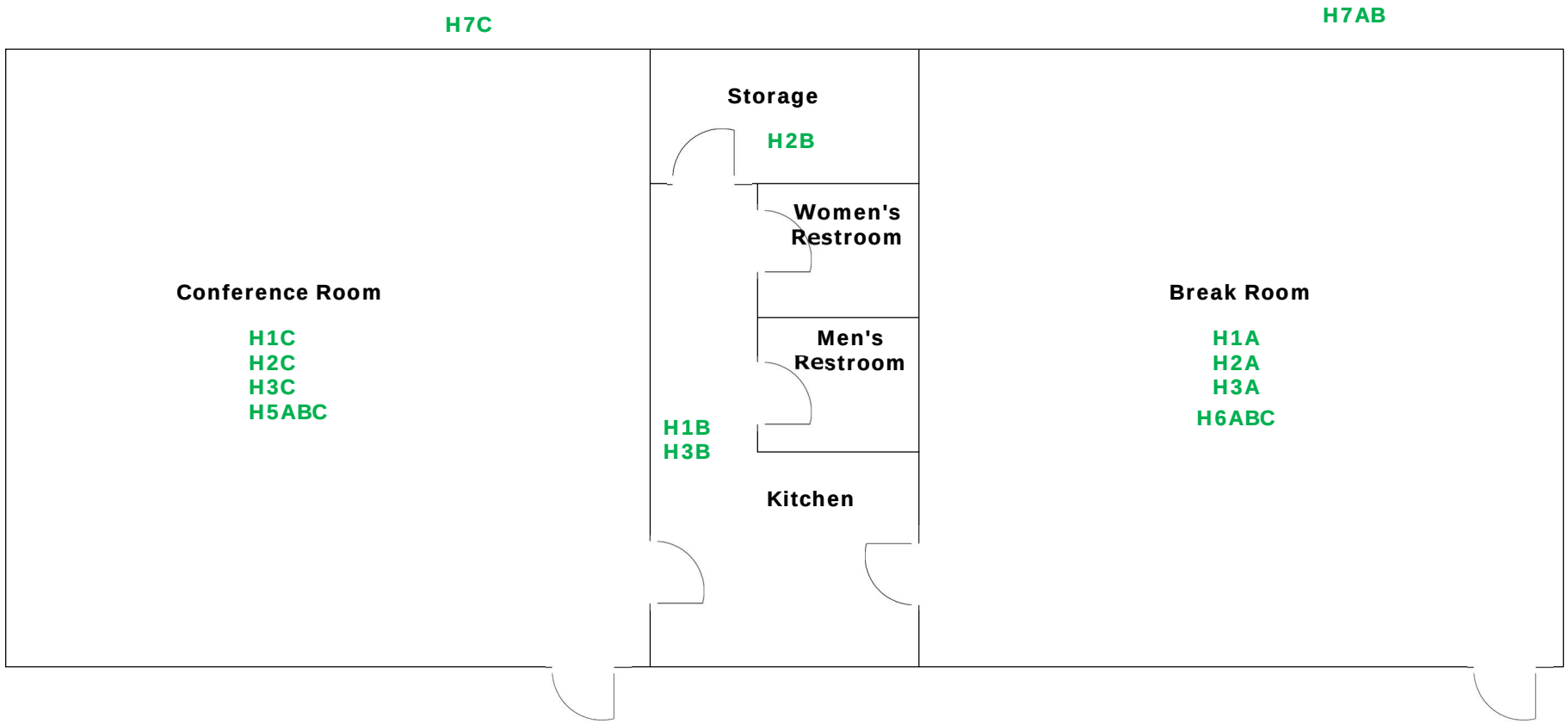
Richard Harding, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN NVLAP Lab Code 200188-0, AZ0939, CA 2575, CO AL-15132, TX 300262, LA 04135

Initial report from: 11/19/2018 06:29:02

Asbestos Survey Bulk Sample Diagram
San Antonio International Airport
Airport's Security Modular Building



Legend

Green - Non-Asbestos Sample Locations

Environmental Consultants, LLC
10004 Wurzbach Road, Ste. 247
San Antonio, Texas 78230

Date: 11/19/18

August 20, 2015

Project No: 1508254ARG

Kara Marks
Freese and Nichols
4040 Broadway, Ste. 600
San Antonio, Texas 78209

Phone: (817) 735-7217

RE: LIMITED ASBESTOS SURVEY FOR THE SAN ANTONIO INTERNATIONAL AIRPORT CONSTRUCTION TRAILER OFFICE 2

Dear Ms. Marks:

Argus Environmental Consultants, LLC was contacted to perform a limited asbestos survey of the wall and ceiling materials within the San Antonio International Airport Construction Trailer Office 2 in San Antonio, Texas.

The Scope of Services included in the limited Asbestos Survey consisted of the following:

- Visual evaluation of the interior finish materials present within the structure at the time of the survey.
- Identification of suspect asbestos containing materials (ACM) into homogeneous areas based upon the guidelines in the United States Environmental Protection Agency's (EPA) 40 Code of Federal Regulations (CFR) Part 763 Subpart E.
- Random non-destructive collection of bulk samples from building materials that potentially contain asbestos.
- Laboratory analysis of building material samples by a third party lab licensed by the Texas Department of State Health Services (DSHS).
- Analysis by Polarized Light Microscopy (PLM) using EPA Method 600.

Argus Environmental Consultant, LLC's entire liability pertaining to this report and all work associated with it is limited to the INVOICED amount defined within the Scope of Services.

The asbestos survey was performed on August 14, 2015 by Elizabeth Aguilar, Texas DSHS Asbestos Inspector License #603203.

Indoor Air Quality
Mold
Asbestos
Lead
Industrial Hygiene
Clandestine Drug Assessment & Remediation
OSHA Compliance
Occupational & Environmental Health & Safety
Training
Expert Testimony
Pre-Purchase Inspections
Environmental Site Assessments- Phase I, II & III
Environmental Impact Assessments
Wetlands Delineation
Property Transaction Due Diligence Screening
Forensics
Thermal Imaging
Water Intrusion
Failure Analysis

HUB
•
Small Women Owned Business

Bulk Samples:

Nine samples were collected from inside the Construction Trailer Office 2.

The following homogenous areas were identified and bulk samples collected:

Homogenous Area	Description	Sample IDs
1	Gypsum Board	H1ABC
2	Tan Wallpaper	H2ABC
3	2x4 Ceiling Tile	H3ABC

Conclusions:

Within the nine collected bulk samples, nine construction material layers were subjected to PLM laboratory analysis.

Asbestos was not identified in any sample.

Recommendations:

Inform contractors involved with any construction, demolition, renovation or related activities that no ACM was identified.

Due to the limited nature of this survey, Argus Environmental Consultants, LLC does not warrant the existence or non-existence of ACM in areas not sampled. For example, destructive sampling, evaluation in any inaccessible areas, or any areas of the building outside the proposed evaluation has not been done. Therefore, any suspect materials hidden in or behind walls, under the flooring or other inaccessible areas are not included in this report. Argus Environmental Consultants, LLC only warrants the existence or non-existence of asbestos in those materials actually sampled.

During all future renovation, demolition or construction activities, any material(s) suspected to contain asbestos that has not been previously sampled should be evaluated and bulk samples collected for appropriate laboratory analysis prior to disturbance/removal.

This report has been prepared for the exclusive use of Freese and Nichols and their assigned agents. It and all contents, findings, conclusions and recommendations expressed herein

are not intended for any other purpose than that stated nor is intended to be used by any other party.

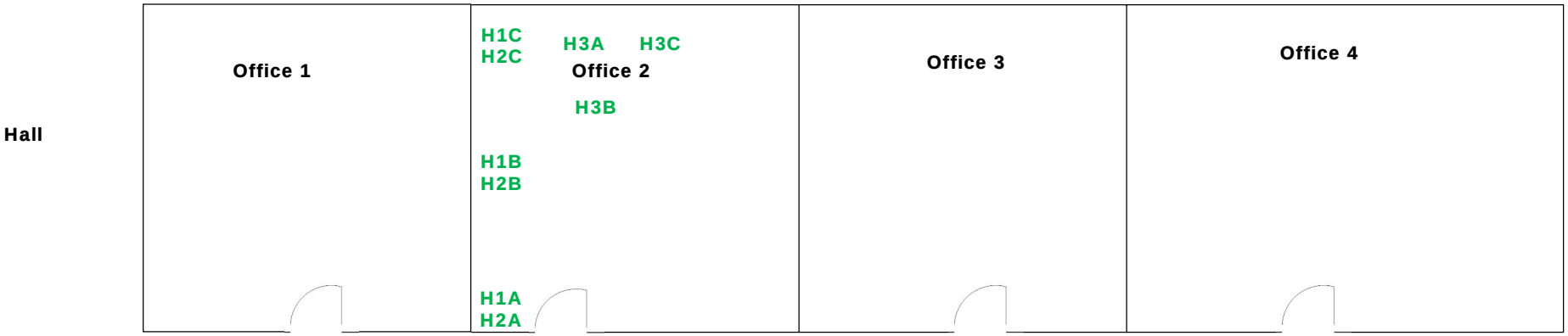
For Argus Environmental Consultants, LLC

Elizabeth Aguilar
Texas DSHS Asbestos Inspector License #603203 (Exp. 12/12/2016)

Robert W. Miller, CIH
Texas DSHS Asbestos Consultant License #105237 (Exp. 8/19/2017)

Attachments: 1) EMSL Analytical, Inc.'s EPA 600 PLM Test Dated 8-20-2015
2) Bulk Sample Diagram

San Antonio Airport (Construction Trailer) - Bulk Sample Diagram



Legend

Green - Non-Asbestos Sample Locations

Environmental Consultants, LLC
10004 Wurzbach Road, Ste. 247
San Antonio, Texas 78230

Date: 8/20/2015

EMSL Analytical, Inc.
2001 East 52nd St., Indianapolis, IN 46205
Phone/Fax: (317) 803-2997 / (317) 803-3047
http://www.EMSL.com indianapolislab@emsl.com

EMSL Order:	161513757
CustomerID:	ARGU52
CustomerPO:	
ProjectID:	

Attn: **Elizabeth Aguilar**
Argus Environmental
10004 Wurzbach Road
Suite 247
San Antonio, TX 78230-2214

Phone:	(210) 493-2560
Fax:	(210) 342-9027
Received:	08/17/15 8:35 PM
Analysis Date:	8/20/2015
Collected:	

Project: **SAIA - Construction Trailer Office 2**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos			Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**		**% Non-Fibrous**	**% Type**
H1A *161513757-0001*	Gypsum Board	White Fibrous Homogeneous	15%	Cellulose	70% Gypsum 15% Non-fibrous (other)	**None Detected**
H1B* *161513757-0002*	Gypsum Board	Brown/White Fibrous Homogeneous	15%	Cellulose	70% Gypsum 15% Non-fibrous (other)	**None Detected**
H1C* *161513757-0003*	Gypsum Board	Brown/White Fibrous Heterogeneous	45% 2%	Cellulose Glass	53% Non-fibrous (other)	**None Detected**
H2A *161513757-0004*	Wallpaper	Brown/White Fibrous Homogeneous	85%	Cellulose	15% Non-fibrous (other)	**None Detected**
H2B* *161513757-0005*	Wallpaper	Brown/White Fibrous Homogeneous	85%	Cellulose	15% Non-fibrous (other)	**None Detected**
H2C* *161513757-0006*	Wallpaper	White Fibrous Heterogeneous	20%	Cellulose	80% Non-fibrous (other)	**None Detected**
H3A *161513757-0007*	Ceiling Tile	White/Beige Fibrous Homogeneous	40% 40%	Cellulose Min. Wool	15% Perlite 5% Non-fibrous (other)	**None Detected**
H3B* *161513757-0008*	Ceiling Tile	White/Beige Fibrous Homogeneous	40% 40%	Cellulose Min. Wool	15% Perlite 5% Non-fibrous (other)	**None Detected**

Analyst(s)
Craig Nixon (3)
Melissa Newkirk (6)

Richard Harding, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN NVLAP Lab Code 200188-0, AZ0939, CA 2575, CO AL-15132, TX 300262

Initial report from 08/20/2015 13:16:55

EMSL Analytical, Inc.
2001 East 52nd St., Indianapolis, IN 46205
Phone/Fax: (317) 803-2997 / (317) 803-3047
http://www.EMSL.com indianapolislab@emsl.com

EMSL Order:	161513757
CustomerID:	ARGU52
CustomerPO:	
ProjectID:	

Attn: **Elizabeth Aguilar**
Argus Environmental
10004 Wurzbach Road
Suite 247
San Antonio, TX 78230-2214

Phone:	(210) 493-2560
Fax:	(210) 342-9027
Received:	08/17/15 8:35 PM
Analysis Date:	8/20/2015
Collected:	

Project: **SAIA - Construction Trailer Office 2**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
H3C*	Ceiling Tile	White/Beige	50%	Cellulose	15%	Perlite	**None Detected**
161513757-0009		Fibrous Homogeneous	30%	Min. Wool	5%	Non-fibrous (other)	

Analyst(s)

Craig Nixon (3)
Melissa Newkirk (6)

Richard Harding, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN NVLAP Lab Code 200188-0, AZ0939, CA 2575, CO AL-15132, TX 300262

Initial report from 08/20/2015 13:16:55

1615137 57

CHAIN OF CUSTODY

Polarized Light Microscopy (PLM)
EPA method 600
*Positive Stop Count

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beth@argusenvironmental.com

Turn around time: 72 hours	Project name: SAIA – Construction Trailer Office 2	Job number: 1508254ARG	Date of collection: 8-15-15

Sample number	*Sample location*		*Material description*		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
H1A	Office 2			Grey	Gypsum Board
H1B*	Office 2			Grey	Gypsum Board
H1C*	Office 2			Grey	Gypsum Board
H2A	Office 2			Tan	Wallpaper
H2B*	Office 2			Tan	Wallpaper
H2C*	Office 2			Tan	Wallpaper
H3A	Office 2	2x4		White	Ceiling Tile
H3B*	Office 2	2x4		White	Ceiling Tile
H3C*	Office 2	2x4		White	Ceiling Tile

Sample relinquished by:		Sample received by:	
Print name: Elizabeth Aguilar	Date: 8-14-15	Print name: SWilson	Date: 8/17/15
Signature: Elizabeth Aguilar	Time: 9:55AM	Signature:	Time: 9317

- *Email all sample results*

OrderID: 161513757

Page 1 Of 1

October 24, 2017

Project No: 1709279ARG

Kara Marks
Freese & Nichols
4040 Broadway, Ste. 600
San Antonio, Texas 78209

Phone: 817.735.7217

RE: LIMITED ASBESTOS AND LEAD-BASED PAINT SURVEY REPORT - SAN ANTONIO INTERNATIONAL AIRPORT PARKING ADMINISTRATIVE BUILDING

Dear Ms. Marks:

Argus Environmental Consultants, LLC (Argus) performed a limited asbestos and lead-based paint (LBP) survey of the interior finish materials within the San Antonio International Airport Parking Administrative Building.

The Scope of Services included in the Limited Asbestos Survey consisted of the following:

- Visual evaluation of the interior finish materials present within the facility at the time of the survey
- Identification of suspect asbestos containing materials (ACM) into homogeneous areas based upon the guidelines in the United States Environmental Protection Agency's (EPA) 40 Code of Federal Regulations (CFR) Part 763 Subpart E
- Random, non-destructive collection of bulk samples from the water damaged building materials that potentially contain asbestos
- Laboratory analysis of building material samples by a third party laboratory licensed by the Texas Department of State Health Services (DSHS)
- Analysis by Polarized Light Microscopy (PLM) using EPA Method 600

The Scope of Services included in the LBP Survey consisted of the following:

- Physical inventory of the interior paint by color and surface type.
- Field analysis of painted materials using an x-ray fluorescence (XRF) instrument.

Indoor Air Quality
Mold
Asbestos
Lead
Industrial Hygiene
Clandestine Drug Assessment & Remediation
OSHA Compliance
Occupational & Environmental Health & Safety
Training
Expert Testimony
Pre-Purchase Inspections
Environmental Site Assessments- Phase I, II & III
Environmental Impact Assessments
Wetlands Delineation
Property Transaction Due Diligence Screening
Forensics
Thermal Imaging
Water Intrusion
Failure Analysis

HUB
•
Small
Women Owned
Business

Argus' entire liability pertaining to this report and all work associated with it is limited to the invoiced amount defined within the Scope of Services.

This report has been prepared for the exclusive use of Freese & Nichols and its assigned agents. It and all contents, findings, conclusions and recommendations expressed herein are not intended for any other purpose than that stated, nor is intended to be used by any other party.

The asbestos and lead-based paint survey was performed on September 27, 2017 by Elizabeth Aguilar, Texas DSHS Asbestos Inspector License #603203 and Texas DSHS Lead Inspector License #2060867.

Bulk Samples:

Asbestos

Eighty-one samples were collected from the following homogenous areas identified as potential ACM:

Homogenous Area	Description	Sample IDs
1	12x12 Grey w/ Red & Blue Floor Tile and Yellow Mastic	H1ABC
2	Grey Cove Base, Cream Mastic	H2ABC
3	Gypsum Board I	H3ABC
4	Joint Compound I	H4ABC
5	Pancake Wall Texture	H5ABC
6	Blue/Red Carpet, Yellow Mastic	H6ABC
7	Black/Brown Deco Carpet, Yellow Mastic	H7ABC
8	Brown/Black Stripe Carpet, Yellow Mastic	H8ABC
9	Brown Cove Base, Cream Mastic	H9ABC
10	Popcorn Wall Texture	H10ABC
11	2x4 Fissure and Hole Ceiling Tile	H11ABC
12	2x4 Small Fissure and Hole Ceiling Tile	H12ABC
13	Blue/Red/Cream Carpet, Yellow Mastic	H13ABC
14	Restroom Caulk	H14ABC
15	Grey Ceramic Tile Grout	H15ABC
16	Red/Cream/Black Stripe Carpet Tiles, Yellow Mastic	H16ABC
17	Black/Cream Carpet, Yellow Mastic	H17ABC
18	Grey w/ Black Speck Carpet, Yellow Mastic	H18ABC
19	Grey Sink Undercoat	H19ABC
20	Grey Window/Door Caulk	H20ABC
21	Red Fireproofing	H21ABC
22	Cream Heating, Ventilating and Air Conditioning (HVAC) Duct Mastic	H22ABC
23	Stipple Wall Texture	H23ABC

Homogenous Area	Description	Sample IDs
24	Gypsum Board II	H24ABC
25	Joint Compound II	H25ABC
26	HVAC/Wall Caulk	H26ABC
27	12x12 Grey w/ Black Speck Floor Tile and Yellow Mastic	H27ABC

LBP

Fourteen samples were taken from the following painted surfaces identified as potentially containing lead:

Sample ID	Description
L1	Beige Drywall Wall
L2	Teal Wood Windowsill
L3	Teal Wood Door
L4	White Drywall Wall
L5	Grey Metal Doorframe
L6	Beige Drywall Wall
L7	White Concrete Wall
L8	Grey Metal Doorframe
L9	White Drywall Wall
L10	White Metal Pipe
L11	Red Metal Floor
L12	Teal Wood Door
L13	Grey Metal Doorframe
L14	White Metal Rail

Conclusions:

Asbestos

Within the eighty-one bulk samples collected, ninety separate construction material layers were subjected to PLM laboratory analysis. Asbestos was not identified in any sample.

LBP

No lead greater than the EPA's minimum regulatory level of 1.0 milligrams per square centimeter (mg/cm^2) was identified by XRF analysis in any paint samples.

Recommendations:

Asbestos

Inform contractors involved with any interior maintenance or renovation related activities that no ACM was identified.

Lead

Inform contractors involved with interior maintenance or renovation related activities that no LBP was identified.

Due to the limited nature of this survey, Argus does not verify the existence or non-existence of ACM or LBP in areas not sampled. For example, destructive sampling, evaluation in any inaccessible areas, or any areas of the building outside the proposed evaluation has not been done. Therefore, any suspect materials hidden in or behind walls, under the flooring or other inaccessible areas are not included in this report. Argus only verifies the existence or non-existence of asbestos and lead in those materials actually sampled.

For Argus Environmental Consultants, LLC,

Elizabeth Aguilar
Texas DSHS Asbestos Inspector License #603203 (Exp. 12/12/2018)
Texas DSHS Lead Inspector License #2060867 (Exp. 1/9/2019)

Mark D. Freemyer, CIEC
Texas DSHS Asbestos Consultant License #105695 (Exp. 6/12/2018)
Texas DSHS Lead Risk Assessor License #2071054 (Exp. 11/23/2019)

Attachments: 1) EMSL Analytical, Inc.'s EPA 600 PLM Test Report 10/3/2017
2) XRF Lead-Based Paint Readings 9/27/2017
3) Sample Diagram

161718438

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Fax: (317) 803- 3047

CHAIN F CU T DY

Polarized Light Microscopy (PLM)
EPA method 600
*Positive Stop Count

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Fax (210) 342-9027
sarah@argusenvironmental.com
beth@argusenvironmental.com

Turnaround time: 72 hours	Project name: SAIA - Parking Admin Bldg.	Job number: 1709279ARG	Date of collection: 9-27-17

Sample number	Sample location		Material description		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
H1A	Hall O/S 103	12x12		Grey w/ Red & Blue and Yellow	Floor Tile and Mastic
H1B*	Hall O/S Men's Restroom	12x12		Grey w/ Red & Blue and Yellow	Floor Tile and Mastic
H1C*	Break Room	12x12		Grey w/ Red & Blue and Yellow	Floor Tile and Mastic
H2A	Hall O/S 103	Grey Cove Base		Cream	Mastic
H2B*	Hall O/S Men's Restroom	Grey Cove Base		Cream	Mastic
H2C*	Break Room	Grey Cove Base		Cream	Mastic
H3A	Break Room	Wall Systems		White	Gypsum Board
H3B*	Hall	Wall Systems		White	Gypsum Board
H3C*	109A	Wall Systems		White	Gypsum Board
H4A	Break Room	Wall Systems		White	Joint Compound

Sample relinquished by:		Sample received by:	
Print name: Elizabeth Aguilar	Date: 9-27-2017	Print name: SWILSON	Date: 9/28/17
Signature: Elizabeth Aguilar	Time: 3:25PM	Signature:	Time: 1005

- ***Email all sample results***

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OrderID: 161718438

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Turnaround time: 72 hours	Project name: SAIA - Parking Admin Bldg.	Job number: 1709279ARG	Date of collection: 9-27-17

Sample number	*Sample location*		*Material description*		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
H4B*	Hall	Wall Systems		White	Joint Compound
H4C*	109A	Wall Systems		White	Joint Compound
H5A	Break Room	Wall - Pancake		White	Texture
H5B*	Hall	Wall - Pancake		White	Texture
H5C*	109A	Wall - Pancake		White	Texture
H6A	105	Blue/Red Carpet		Yellow	Mastic
H6B*	105	Blue/Red Carpet		Yellow	Mastic
H6C*	105	Blue/Red Carpet		Yellow	Mastic
H7A	O/S 103	Black/Brown Deco Carpet		Yellow	Mastic
H7B*	O/S 103	Black/Brown Deco Carpet		Yellow	Mastic

Sample relinquished by:		Sample received by:	
Print name: Elizabeth Aguilar	Date: 9-27-2017	Print name: WILSON	Date: 9/28/17
Signature: Elizabeth Aguilar	Time: 3:25PM	Signature:	Time: 1005

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Turnaround time: 72 hours	Project name: SAIA - Parking Admin Bldg.	Job number: 1709279ARG	Date of collection: 9-27-17

Sample number	Sample location		Material description		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
H7C*	O/S 103	Black/Brown Deco Carpet		Yellow	Mastic
H8A	Annex to Funds Room	Brown/Black Stripe Carpet		Yellow	Mastic
H8B*	Annex to Funds Room	Brown/Black Stripe Carpet		Yellow	Mastic
H8C*	Annex to Funds Room	Brown/Black Stripe Carpet		Yellow	Mastic
H9A	Annex to Funds Room	Brown Cove Base		Cream	Mastic
H9B*	Annex to Funds Room	Brown Cove Base		Cream	Mastic
H9C*	Annex to Funds Room	Brown Cove Base		Cream	Mastic
H10A	Annex to Funds Room	Wall - Popcorn		White	Texture
H10B*	Annex to Funds Room	Wall - Popcorn		White	Texture
H10C*	Annex to Funds Room	Wall - Popcorn		White	Texture

Sample relinquished by:		Sample received by:	
Print name: Elizabeth Aguilar	Date: 9-27-2017	Print name: SWILSON	Date: 9/28/17
Signature: Elizabeth Aguilar	Time: 3:25PM	Signature: SW	Time: 1005

- ***Email all sample results***

OrderID: 161718438

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Turnaround time: 72 hours	Project name: SAIA - Parking Admin Bldg.	Job number: 1709279ARG	Date of collection: 9-27-17

Sample number	*Sample location*		*Material description*		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
H11A	Break Room	2x4 Fissure and Hole		White	Ceiling Tile
H11B*	120	2x4 Fissure and Hole		White	Ceiling Tile
H11C*	116	2x4 Fissure and Hole		White	Ceiling Tile
H12A	O/S 103	2x4 Small Fissure and Hole		White	Ceiling Tile
H12B*	O/S 103	2x4 Small Fissure and Hole		White	Ceiling Tile
H12C*	O/S 103	2x4 Small Fissure and Hole		White	Ceiling Tile
H13A	109B	Blue/Red/Cream Carpet		Yellow	Mastic
H13B*	116	Blue/Red/Cream Carpet		Yellow	Mastic
H13C*	118	Blue/Red/Cream Carpet		Yellow	Mastic
H14A	Men's Restroom	Restroom		White	Caulk

Sample relinquished by:		Sample received by:	
Print name: Elizabeth Aguilar	Date: 9-27-2017	Print name: [illegible]	Date: 9/28/17
Signature: Elizabeth Aguilar	Time: 3:25PM	Signature: [illegible]	Time: 10:05

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Turnaround time: 72 hours	Project name: SAIA - Parking Admin Bldg.	Job number: 1709279ARG	Date of collection: 9-27-17

Sample number	Sample location		Material description		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
H14B*	Women's Restroom	Restroom		White	Caulk
H14C*	Women's Restroom	Restroom		White	Caulk
H15A	Women's Restroom	Ceramic Tile		Grey	Grout
H15B*	Women's Restroom	Ceramic Tile		Grey	Grout
H15C*	Men's Restroom	Ceramic Tile		Grey	Grout
H16A	109B	Red/Cream/Black Stripe Carpet Tiles		Yellow	Mastic
H16B*	109B	Red/Cream/Black Stripe Carpet Tiles		Yellow	Mastic
H16C*	120	Red/Cream/Black Stripe Carpet Tiles		Yellow	Mastic
H17A	109A	Black/Cream Carpet		Yellow	Mastic
H17B*	109A	Black/Cream Carpet		Yellow	Mastic

Sample relinquished by:		Sample received by:	
Print name: Elizabeth Aguilar	Date: 9-27-2017	Print name: [illegible]	Date: 9/20/17
Signature: Elizabeth Aguilar	Time: 3:25PM	Signature: [signature]	Time: 1005

- ***Email all sample results***

OrderID: 161718438

Page 5 of 9

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beth@argusenvironmental.com

Turnaround time: 72 hours	Project name: SAIA - Parking Admin Bldg.	Job number: 1709279ARG	Date of collection: 9-27-17

Sample number	Sample location		Material description		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
H17C*	109A	Black/Cream Carpet		Yellow	Mastic
H18A	114	Grey w/ Black Speck Carpet		Yellow	Mastic
H18B*	114	Grey w/ Black Speck Carpet		Yellow	Mastic
H18C*	114	Grey w/ Black Speck Carpet		Yellow	Mastic
H19A	Break Room	Sink		Grey	Undercoat
H19B*	Break Room	Sink		Grey	Undercoat
H19C*	Break Room	Sink		Grey	Undercoat
H20A	Break Room	Interior - Window/Door		Grey	Caulk
H20B*	Break Room	Interior - Window/Door		Grey	Caulk
H20C*	Break Room	Interior - Window/Door		Grey	Caulk

Sample relinquished by:		Sample received by:	
Print name: Elizabeth Aguilar	Date: 9-27-2017	Print name: SW, (SOW	Date: 9-28-17
Signature: Elizabeth Aguilar	Time: 3:25PM	Signature:	Time: 1005

- ***Email all sample results***

OrderID: 161718438

Page 6 Of 9

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Turnaround time:	Project name:	Job number:	Date of collection:
72 hours	SAIA - Parking Admin Bldg.	1709279ARG	9-27-17

Sample number	*Sample location*		*Material description*		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
H21A	Mech Room 115			Red	Fireproofing
H21B*	Mech Room 115			Red	Fireproofing
H21C*	Mech Room 115			Red	Fireproofing
H22A	Mech Room 115	HVAC Duct		White and Cream	Wrap and Mastic
H22B*	Mech Room 115	HVAC Duct		White and Cream	Wrap and Mastic
H22C*	Mech Room 115	HVAC Duct		White and Cream	Wrap and Mastic
H23A	Mech Room 115	Wall - Stipple		White	Texture
H23B*	Mech Room 115	Wall - Stipple		White	Texture
H23C*	Mech Room 115	Wall - Stipple		White	Texture
H24A	Mech Room 115	Wall Systems		White	Gypsum Board

Sample relinquished by:		Sample received by:	
Print name: Elizabeth Aguilar	Date: 9-27-2017	Print name: SWILSON	Date: 9/28/17
Signature: Elizabeth Aguilar	Time: 3:25PM	Signature:	Time: 1005

- ***Email all sample results***

OrderID: 161718438

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Turnaround time: 72 hours	Project name: SAIA - Parking Admin Bldg.	Job number: 1709279ARG	Date of collection: 9-27-17

Sample number	Sample location		Material description		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
H24B*	Mech Room 115	Wall Systems		White	Gypsum Board
H24C*	Mech Room 115	Wall Systems		White	Gypsum Board
H25A	Mech Room 115	Wall Systems		White	Joint Compound
H25B*	Mech Room 115	Wall Systems		White	Joint Compound
H25C*	Mech Room 115	Wall Systems		White	Joint Compound
H26A	Mech Room 115	HVAC/Wall		Cream	Caulk
H26B*	Mech Room 115	HVAC/Wall		Cream	Caulk
H26C*	Mech Room 115	HVAC/Wall		Cream	Caulk
H27A	O/S 103	12x12		Grey w/ Black Speck and Yellow	Floor Tile and Mastic
H27B*	O/S 103	12x12		Grey w/ Black Speck and Yellow	Floor Tile and Mastic

Sample relinquished by:		Sample received by:	
Print name: Elizabeth Aguilar	Date: 9-27-2017	Print name:	Date: 9/28/17
Signature: Elizabeth Aguilar	Time: 3:25PM	Signature:	Time: 1005

- *Email all sample results*

OrderID: 161718438

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Argus Environmental
10004 Wurzbach Rd., #247
San Antonio, Texas 78230
Phone (210) 493-2560
Fax (210) 342-9027
sarah@argusenvironmental.com
beth@argusenvironmental.com

Turnaround time: 72 hours	Project name: SAIA - Parking Admin Bldg.	Job number: 1709279ARG	Date of collection: 9-27-17

Sample number	*Sample location*		*Material description*		
	Building or Room number	Other description, material is *in good condition* unless otherwise noted	Size	Color	Type of material
H27C*	O/S 103	12x12		Grey w/ Black Speck and Yellow	Floor Tile and Mastic

Sample relinquished by:		Sample received by:	
Print name: Elizabeth Aguilar	Date: 9-27-2017	Print name: [illegible]	Date: 9-28-17
Signature: Elizabeth Aguilar	Time: 3:25PM	Signature: [illegible]	Time: 1005

- ***Email all sample results***

OrderID: 161718438

Page 9 Of 9

EMSL Analytical, Inc.

6340 CastlePlace Dr. Indianapolis, IN 46250

Tel/Fax: (317) 803-2997 / (317) 803-3047

http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order:	161718438
Customer ID:	ARGU52
Customer PO:	
Project ID:	

Attention:	Beth Sharrow-Aguilar	**Phone:**	(210) 493-2560
	Argus Environmental	**Fax:**	(210) 342-9027
	10004 Wurzbach Road	**Received Date:**	09/28/2017 10:05 AM
	Suite 247	**Analysis Date:**	10/03/2017
	San Antonio, TX 78230-2214	**Collected Date:**	09/27/2017
Project:	SAIA - Parking Admin Bldg. 1709279ARG		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
H1A-Floor Tile *161718438-0001*	Hall O/S 103 - 12x12 Grey w/Red Blue And Yellow Floor Tile And Mastic	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H1A-Mastic *161718438-0001A*	Hall O/S 103 - 12x12 Grey w/Red Blue And Yellow Floor Tile And Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H1B-Floor Tile *161718438-0002*	Hall O/S Men's Restroom - 12x12 Grey w/Red Blue And Yellow Floor Tile And Mastic	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H1B-Mastic *161718438-0002A*	Hall O/S Men's Restroom - 12x12 Grey w/Red Blue And Yellow Floor Tile And Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H1C-Floor Tile *161718438-0003*	Break Room - 12x12 Grey w/Red Blue And Yellow Floor Tile And Mastic	Gray/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H1C-Mastic *161718438-0003A*	Break Room - 12x12 Grey w/Red Blue And Yellow Floor Tile And Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H2A *161718438-0004*	Hall O/S 103 - Grey Cove Base - Cream Mastic	Tan/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H2B *161718438-0005*	Hall O/S Men's Restroom - Grey Cove Base - Cream Mastic	Tan/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H2C *161718438-0006*	Break Room - Grey Cove Base - Cream Mastic	Tan/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H3A *161718438-0007*	Break Room - Wall Systems - White Gypsum Board	White Non-Fibrous Homogeneous	5% Cellulose	90% Gypsum 5% Non-fibrous (Other)	None Detected
H3B *161718438-0008*	Hall - Wall Systems - White Gypsum Board	White Non-Fibrous Homogeneous	5% Cellulose	90% Gypsum 5% Non-fibrous (Other)	None Detected
H3C *161718438-0009*	109A - Wall Systems - White Gypsum Board	White Non-Fibrous Homogeneous	2% Cellulose	90% Gypsum 8% Non-fibrous (Other)	None Detected
H4A *161718438-0010*	Break Room - Wall Systems - White Joint Compound	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 10/03/2017 12:07:12

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EMSL Order: 161718438
Customer ID: ARGU52
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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
H4B *161718438-0011*	Hall - Wall Systems - White Joint Compound	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H4C *161718438-0012*	109A - Wall Systems - White Joint Compound	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H5A *161718438-0013*	Break Room - Wall - Pancake - White Texture	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
Inseparable paint / coating layer included in analysis					
H5B *161718438-0014*	Hall - Wall - Pancake - White Texture	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
Inseparable paint / coating layer included in analysis					
H5C *161718438-0015*	109A - Wall - Pancake - White Texture	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
Inseparable paint / coating layer included in analysis					
			HA: W		
H6A *161718438-0016*	105 - Blue/Red Carpet - Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H6B *161718438-0017*	105 - Blue/Red Carpet - Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H6C *161718438-0018*	105 - Blue/Red Carpet - Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H7A *161718438-0019*	O/S 103 - Black/Brown Deco Carpet - Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H7B *161718438-0020*	O/S 103 - Black/Brown Deco Carpet - Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H7C *161718438-0021*	O/S 103 - Black/Brown Deco Carpet - Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H8A *161718438-0022*	Annex To Funds Room - Brown/Black Stripe Carpet - Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H8B *161718438-0023*	Annex To Funds Room - Brown/Black Stripe Carpet - Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H8C *161718438-0024*	Annex To Funds Room - Brown/Black Stripe Carpet - Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H9A *161718438-0025*	Annex To Funds Room - Brown Cove Base - Cream Mastic	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H9B *161718438-0026*	Annex To Funds Room - Brown Cove Base - Cream Mastic	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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EMSL Order: 161718438
Customer ID: ARGU52
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
H9C *161718438-0027*	Annex To Funds Room - Brown Cove Base - Cream Mastic	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H10A *161718438-0028*	Annex To Funds Room - Wall - Popcorn - White Texture	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
Inseparable paint / coating layer included in analysis					
H10B *161718438-0029*	Annex To Funds Room - Wall - Popcorn - White Texture	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
Inseparable paint / coating layer included in analysis					
H10C *161718438-0030*	Annex To Funds Room - Wall - Popcorn - White Texture	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
Inseparable paint / coating layer included in analysis					
H11A *161718438-0031*	Break Room - 2x4 Fissure And Hole - White Ceiling Tile	Gray/White Fibrous Homogeneous	60% Cellulose 20% Min. Wool	15% Perlite 5% Non-fibrous (Other)	None Detected
H11B *161718438-0032*	120 - 2x4 Fissure And Hole - White Ceiling Tile	Gray/White Fibrous Homogeneous	60% Cellulose 20% Min. Wool	15% Perlite 5% Non-fibrous (Other)	None Detected
H11C *161718438-0033*	116 - 2x4 Fissure And Hole - White Ceiling Tile	Gray/White Fibrous Homogeneous	60% Cellulose 20% Min. Wool	15% Perlite 5% Non-fibrous (Other)	None Detected
H12A *161718438-0034*	O/S 103 - 2x4 Small Fissure And Hole - White Ceiling Tile	Gray/White Fibrous Homogeneous	50% Cellulose 30% Min. Wool	15% Perlite 5% Non-fibrous (Other)	None Detected
H12B *161718438-0035*	O/S 103 - 2x4 Small Fissure And Hole - White Ceiling Tile	Gray/White Fibrous Homogeneous	50% Cellulose 30% Min. Wool	15% Perlite 5% Non-fibrous (Other)	None Detected
H12C *161718438-0036*	O/S 103 - 2x4 Small Fissure And Hole - White Ceiling Tile	Gray/White Fibrous Homogeneous	50% Cellulose 30% Min. Wool	15% Perlite 5% Non-fibrous (Other)	None Detected
H13A *161718438-0037*	109B - Blue/Red/Cream Carpet - Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H13B *161718438-0038*	116 - Blue/Red/Cream Carpet - Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H13C *161718438-0039*	118 - Blue/Red/Cream Carpet - Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H14A *161718438-0040*	Men's Restroom - Restroom - White Caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H14B *161718438-0041*	Women's Restroom - Restroom - White Caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H14C *161718438-0042*	Women's Restroom - Restroom - White Caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H15A *161718438-0043*	Women's Restroom - Ceramic Tile - Grey Grout	Gray Non-Fibrous Homogeneous		5% Quartz 95% Non-fibrous (Other)	None Detected

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
H15B *161718438-0044*	Women's Restroom - Ceramic Tile - Grey Grout	Gray Non-Fibrous Homogeneous		5% Quartz 95% Non-fibrous (Other)	None Detected
H15C *161718438-0045*	Men's Restroom - Ceramic Tile - Grey Grout	Gray Non-Fibrous Homogeneous		10% Quartz 90% Non-fibrous (Other)	None Detected
H16A *161718438-0046*	109B - Red/Cream/Black Stripe Carpet Tiles - Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H16B *161718438-0047*	109B - Red/Cream/Black Stripe CarpetTiles - Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H16C *161718438-0048*	120 - Red/Cream/Black Stripe Carpet Tiles - Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H17A *161718438-0049*	109A - Black/Cream Carpet - Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H17B *161718438-0050*	109A - Black/Cream Carpet - Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H17C *161718438-0051*	109A - Black/Cream Carpet - Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H18A *161718438-0052*	114 - Grey w/Black Speck Carpet - Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H18B *161718438-0053*	114 - Grey w/Black Speck Carpet - Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H18C *161718438-0054*	114 - Grey w/Black Speck Carpet - Yellow Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H19A *161718438-0055*	Break Room - Sink - Grey Undercoat	Gray Fibrous Homogeneous	30% Cellulose	70% Non-fibrous (Other)	None Detected
H19B *161718438-0056*	Break Room - Sink - Grey Undercoat	Gray Fibrous Homogeneous	30% Cellulose	70% Non-fibrous (Other)	None Detected
H19C *161718438-0057*	Break Room - Sink - Grey Undercoat	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H20A *161718438-0058*	Break Room - Interior - Window/Door - Grey Caulk	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H20B *161718438-0059*	Break Room - Interior - Window/Door - Grey Caulk	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H20C *161718438-0060*	Break Room - Interior - Window/Door - Grey Caulk	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H21A *161718438-0061*	Mech Room 115 - Red Fireproofing	Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
H21B *161718438-0062*	Mech Room 115 - Red Fireproofing	Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H21C *161718438-0063*	Mech Room 115 - Red Fireproofing	Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H22A-Wrap *161718438-0064*	Mech Room 115 - HVAC Duct - White And Cream Wrap And Mastic	White/Silver Fibrous Homogeneous	20% Cellulose 40% Glass	40% Non-fibrous (Other)	None Detected
H22A-Mastic *161718438-0064A*	Mech Room 115 - HVAC Duct - White And Cream Wrap And Mastic	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H22B-Wrap *161718438-0065*	Mech Room 115 - HVAC Duct - White And Cream Wrap And Mastic	White/Silver Fibrous Homogeneous	20% Cellulose 40% Glass	40% Non-fibrous (Other)	None Detected
H22B-Mastic *161718438-0065A*	Mech Room 115 - HVAC Duct - White And Cream Wrap And Mastic	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H22C-Wrap *161718438-0066*	Mech Room 115 - HVAC Duct - White And Cream Wrap And Mastic	White/Silver Fibrous Homogeneous	20% Cellulose 40% Glass	40% Non-fibrous (Other)	None Detected
H22C-Mastic *161718438-0066A*	Mech Room 115 - HVAC Duct - White And Cream Wrap And Mastic	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H23A *161718438-0067*	Mech Room 115 - Wall - Stipple - White Texture	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H23B *161718438-0068*	Mech Room 115 - Wall - Stipple - White Texture	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H23C *161718438-0069* *Inseparable paint / coating layer included in analysis*	Mech Room 115 - Wall - Stipple - White Texture	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H24A *161718438-0070*	Mech Room 115 - Wall Systems - White Gypsum Board	White Non-Fibrous Homogeneous	5% Cellulose	90% Gypsum 5% Non-fibrous (Other)	None Detected
H24B *161718438-0071*	Mech Room 115 - Wall Systems - White Gypsum Board	White Non-Fibrous Homogeneous	5% Cellulose	90% Gypsum 5% Non-fibrous (Other)	None Detected
H24C *161718438-0072*	Mech Room 115 - Wall Systems - White Gypsum Board	White Non-Fibrous Homogeneous	2% Cellulose	90% Gypsum 8% Non-fibrous (Other)	None Detected
H25A *161718438-0073*	Mech Room 115 - Wall Systems - White Joint Compound	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H25B *161718438-0074*	Mech Room 115 - Wall Systems - White Joint Compound	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H25C *161718438-0075*	Mech Room 115 - Wall Systems - White Joint Compound	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
H26A *161718438-0076*	Mech Room 115 - HVAC/Wall - Cream Caulk	Gray/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H26B *161718438-0077*	Mech Room 115 - HVAC/Wall - Cream Caulk	Gray/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H26C *161718438-0078*	Mech Room 115 - HVAC/Wall - Cream Caulk	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H27A-Floor Tile *161718438-0079*	O/S 103 - 12x12 Grey w/Black Speck And Yellow Floor Tile And Mastic	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H27A-Mastic *161718438-0079A*	O/S 103 - 12x12 Grey w/Black Speck And Yellow Floor Tile And Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H27B-Floor Tile *161718438-0080*	O/S 103 - 12x12 Grey w/Black Speck And Yellow Floor Tile And Mastic	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H27B-Mastic *161718438-0080A*	O/S 103 - 12x12 Grey w/Black Speck And Yellow Floor Tile And Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H27C-Floor Tile *161718438-0081*	O/S 103 - 12x12 Grey w/Black Speck And Yellow Floor Tile And Mastic	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H27C-Mastic *161718438-0081A*	O/S 103 - 12x12 Grey w/Black Speck And Yellow Floor Tile And Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s)
Jadda Moffett (30)
Ross Matlock (60)

Richard Harding, Laboratory Manager
or Other Approved Signatory

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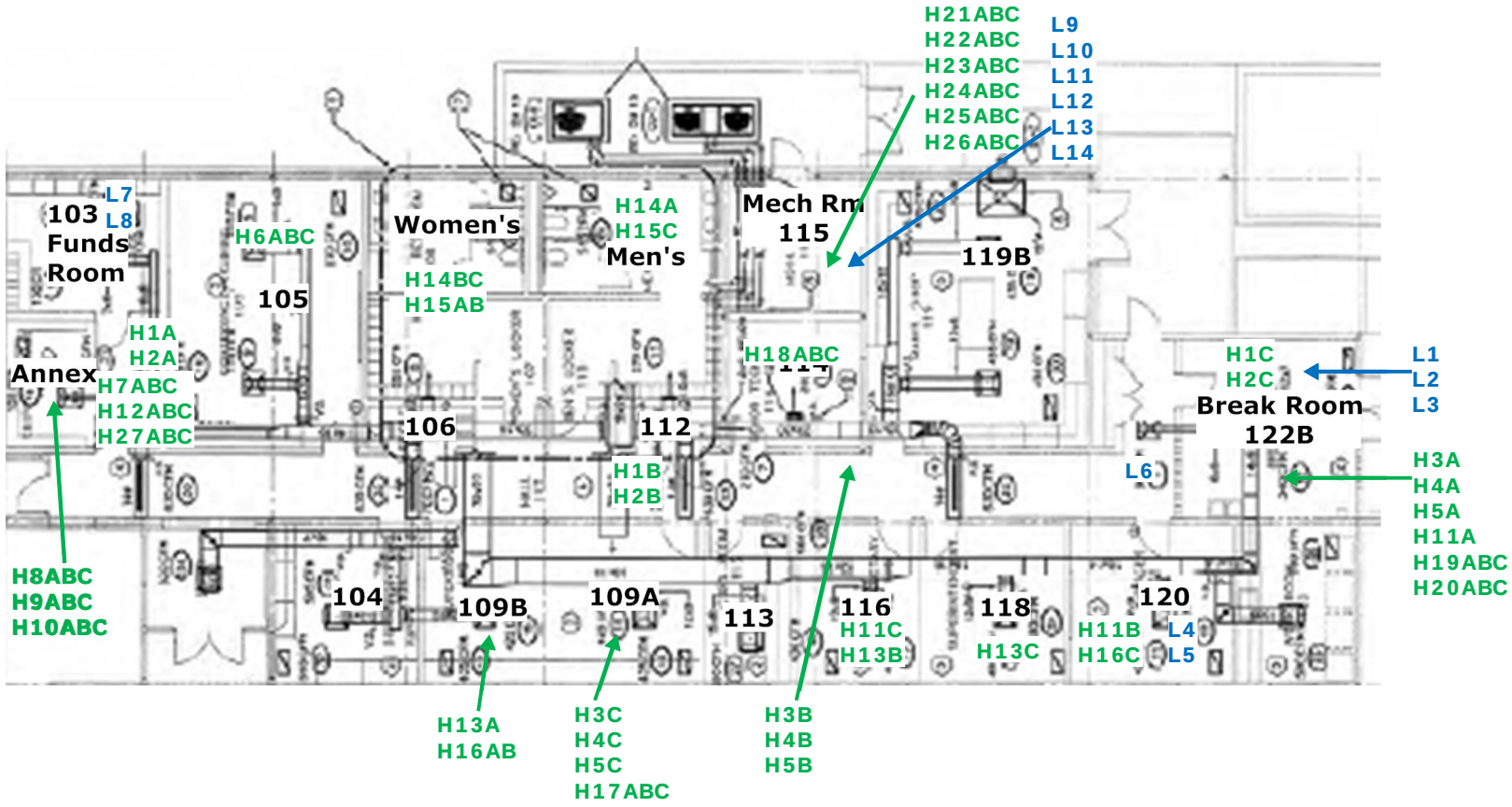
Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN NVLAP Lab Code 200188-0, AZ0939, CA 2575, CO AL-15132, TX 300262

Initial report from: 10/03/2017 12:07:12

San Antonio International Airport - Parking Administrative Building - XRF Readings

Reading No	Time	Component	Substrate	Side	Condition	Color	Site	Room	Results	PbC	PbL
	9/27/2017 9:41									0.75	0.14
	9/27/2017 10:33			CALIBRATE			PARK ADMIN BLDG		Negative	0.9	0.9
	9/27/2017 10:35			CALIBRATE			PARK ADMIN BLDG		Positive	1	1
	9/27/2017 10:38			CALIBRATE			PARK ADMIN BLDG		Positive	1	1
1	9/27/2017 10:56	WALL	DRYWALL	A	INTACT	BEIGE	PARK ADMIN BLDG	BREAK RM	Negative	< LOD	< LOD
2	9/27/2017 10:56	WINDOWSILL	WOOD	A	INTACT	TEAL	PARK ADMIN BLDG	BREAK RM	Negative	< LOD	< LOD
3	9/27/2017 10:57	DOOR	WOOD	D	INTACT	TEAL	PARK ADMIN BLDG	BREAK RM	Negative	< LOD	< LOD
4	9/27/2017 10:58	WALL	DRYWALL	C	INTACT	WHITE	PARK ADMIN BLDG	120	Negative	< LOD	< LOD
5	9/27/2017 10:59	DOORFRAME	METAL	A	INTACT	GREY	PARK ADMIN BLDG	120	Negative	< LOD	< LOD
6	9/27/2017 11:00	WALL	DRYWALL	C	INTACT	BEIGE	PARK ADMIN BLDG	HALL	Negative	< LOD	< LOD
7	9/27/2017 11:02	WALL	CONCRETE	C	INTACT	WHITE	PARK ADMIN BLDG	103	Negative	< LOD	< LOD
8	9/27/2017 11:02	DOORFRAME	METAL	A	INTACT	GREY	PARK ADMIN BLDG	103	Negative	< LOD	< LOD
9	9/27/2017 11:27	WALL	DRYWALL	C	INTACT	WHITE	PARK ADMIN BLDG	115	Negative	0	0
10	9/27/2017 11:28	PIPE	METAL	C	INTACT	WHITE	PARK ADMIN BLDG	115	Negative	0	0
11	9/27/2017 11:28	FLOOR	METAL	LOWER	INTACT	RED	PARK ADMIN BLDG	115	Negative	0	0
12	9/27/2017 11:29	DOOR	WOOD	B	INTACT	TEAL	PARK ADMIN BLDG	115	Negative	0	0
13	9/27/2017 11:30	DOORFRAME	METAL	B	INTACT	GREY	PARK ADMIN BLDG	115	Negative	0	0
14	9/27/2017 11:30	RAIL	METAL	D	INTACT	WHITE	PARK ADMIN BLDG	115	Negative	0	0

Asbestos & Lead-Based Paint Survey Floor Plan
San Antonio International Airport
Parking Administrative Building



Legend

Green - Non-Asbestos Sample Locations

Blue - Non-Lead Based Paint Sample Locations

Environmental Consultants, LLC
10004 Wurzbach Road, Ste. 247
San Antonio, Texas 78230

Date: 9/29/17

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LANDFILL WASTE ASSESSMENT INVENTORY

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LANDFILL WASTE ASSESSMENT INVENTORY REPORT
SAN ANTONIO INTERNATIONAL AIRPORT
LAND RECLAMATION MASTER PLAN
SAN ANTONIO, TEXAS

Prepared for

DANNEBAUM ENGINEERING CORPORATION

By

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SUMMARY CONCLUSIONS

The 660 acre project area known as the San Antonio Airport Land Reclamation Master Plan Area lies north of San Antonio International Airport. The project area includes approximately 457 acres of unaffected land, 123 acres of waste fill affected land, and 80 acres of land affected by past quarrying operations. A maximum volume of approximately 4,526,000 cu yds of waste fill of various types occur in four locations. The Mahone Property contains an approximate maximum volume of 180,000 cu yds of rubbish. The Bitters Landfill Site contains an approximate maximum volume of 640,000 cu yds of rubbish, 570,000 cu yds of brush waste, and 250,000 cu yds of modified brush waste. Four pits along Old Bitters Road contain an approximate maximum volume of 5,900 cu yds of construction-demolition waste and an approximate maximum volume of 80,000 cu yds of rubbish. The Wetmore Road Municipal Landfill contains an approximate maximum volume of 2,800,000 cu yds of rubbish. Additionally, two locations in the southern portion of the project area have been affected by promiscuous surface dumping along Salado Creek.

A combustible gas survey shows that combustible gases and vapors occur across the project area, but are highly variable. Areas of waste fill have high settlement potential and low strength. The waste fill is generally highly corrosive to steel and not corrosive to concrete. The soil below the waste generally does not contain leachable heavy metal from leachate. The leachate below the waste fill at the Mahone Property, Bitters Landfill Site, Bitters Strip Pits, and Wetmore Road Landfill has elevated levels of heavy metals such as arsenic, barium, cadmium, chromium, lead. Some compounds are present in the leachate at the Mahone Property, Bitters Strip Pit, and Wetmore Road Landfill which indicate the presence of petroleum hydrocarbons in the waste fill.

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1.0 INTRODUCTION

This report concerns areas north of the San Antonio International Airport (SAIAP) which contain various types of waste fill. This report was written by Raba-Kistner Consultants, Inc. (R-KCI) to fulfill the scope of work for Tasks 1 through 4 contained in our proposal PSB90-058-00, dated September 28, 1990, authorized by Mr. Mike Strech of Dannenbaum Engineering Corporation (DEC). This report of data fulfills Task 4.0 and a subsequent report to fulfill Task 5.0 will contain interpretations of this data. This report is intended for use by DEC and the City of San Antonio Department of Aviation (CSDA) in preparing a Land Reclamation Master Plan (LRMP) for the project area shown on Plate 1 and Plate 2 in the Illustration section of this report. This report may not contain sufficient information for other parties or uses.

Several terms will be used in this report to describe waste fill materials. The Texas Department of Health (TDH), who has authority to regulate municipal solid waste in the state of Texas, has specific definitions for terms associated with municipal waste materials. The terms that will be used in this report are defined below using the wording contained in the TDH Municipal Solid Waste Management Regulations, Subchapter A, Section 325.5 (TDH, 1990).

- Brush - The cuttings or trimmings from trees, shrubs, or lawns and similar materials.

- Construction-Demolition Waste - Waste which typically results from construction or demolition projects and includes all materials which are directly or indirectly the by-products of construction work or which result from demolition of buildings and other structures, including, but not limited to paper, cartons, gypsum board, wood, excelsior, rubber, and plastics.

- Rubbish - Nonputrescible solid waste (excluding ashes), consisting of both combustible and noncombustible waste materials; combustible rubbish includes paper, rags, cartons, wood, excelsior, furniture, rubber, plastics, yard trimmings, leaves, used or scrap tires and similar materials; noncombustible rubbish includes glass, crockery, tin cans, aluminum cans, metal furniture, and the like materials which will not burn at ordinary incinerator temperatures (1600^{o} Fahrenheit to 1800^{o} Fahrenheit).

- Garbage - Solid waste consisting of putrescible animal and vegetable waste materials resulting from the handling, preparation, cooking, and consumption of food, including waste materials from markets, storage facilities, handling, and sale of produce and other food products.

The terms brush, construction-demolition waste (CDW) and rubbish will be used in this report where the waste could be identified by observation. The use of the term rubbish in this report does not exclude the possible presence of garbage waste, but garbage as defined above was not generally visible in the waste fill due to decomposition. One of the definitions of the term "waste" is material which is useless, superfluous, or discarded. This more general term will be used when a material could not be placed within one of the four categories.

2.0 BACKGROUND AND REPORT ORGANIZATION

The project area shown on Plates 1 and 2 includes approximately 660 acres near Salado Creek, north of SAIAP. This area is affected by past gravel quarrying, promiscuous surface dumping, permitted and unpermitted waste landfilling, and brush burning and brush landfilling activities. CSDA wishes to develop the project area, and a LRMP was required prior to development to address reclamation of the area. As part of this LRMP, this report delineates waste filled areas, characterizes their chemical, geotechnical and combustible gas characteristics, and addresses their effect on immediately adjacent native soils and groundwater.

Several areas within the project area are labeled on Plate 2 and will be referred to throughout this report. These include the Wetmore Road Municipal Landfill, the Bitters Landfill Site, the Mahone Property, the Old Bitters Strip Pits, and the Airport Fire Practice Area. The Airport Fire Practice Area was excluded from this study at the direction of CSDA.

This report is organized into two major sections concerning Data Acquisition and Summary of Findings. These sections describe office and field data acquisition, types, distribution, volume, and characteristics of waste.

3.0 DATA ACQUISITION

3.1 GEOLOGY AND HYDROGEOLOGY

3.1.1 Objectives

The objective of the study of the geologic and hydrogeologic conditions was to locate any geologic features within the project area which could affect recharge to the Edwards aquifer. Surficial geologic mapping, boring logs, and temporary piezometers were used to evaluate the geologic and hydrogeologic conditions of the project area.

3.1.2 Geologic Conditions

The entire project area is underlain by Pleistocene age Fluviatile Terrace Deposits and the Leona Formation (Barnes, 1982). These formations consist of gravel, sand, silt, and clay alluvial deposits of various thickness associated with Salado Creek and its predecessors.

The bedrock underlying the alluvium in most of the project area is the Cretaceous age Pecan Gap Chalk formation. The Pecan Gap Chalk consists of chalk and chalky marl, is bluish gray in the subsurface and weathers to tan, gray, and buff, and is approximately 140 ft thick in the San Antonio area. The Pecan Gap Chalk has a blocky structure with closely spaced joints, often filled with calcite and gypsum.

The Cretaceous age Austin Chalk Formation outcrops along the extreme northern edge of the project area in the streambed of Mud Creek just south of where it crosses Starcrest Boulevard (Plate 2). The Austin Chalk is composed of limestone, argillaceous chalky limestone and calcareous shale, and is locally bentonitic. The Austin Chalk averages 200 ft thick in the San Antonio area.

A small closed depression was found on the streambed of Mud Creek just south of Starcrest Road (Plate 2). This closed depression is approximately 10 ft in diameter and 2.5 ft deep. The closed depression appears to be due to karstic collapse in the underlying Austin Chalk Formation or settlement due to infilling of voids along an underlying fault plane.

The Fluviatile Terrace Deposits, Leona Formation, Pecan Gap Chalk, and associated Cretaceous age formations are presented on the stratigraphic column, Plate 3. The geology of the project area is further discussed in a later section of this report.

3.1.3 Hydrogeologic Conditions

The principal aquifer in the San Antonio area is the Edwards Aquifer, which is composed of the Edwards Group of limestones. The depth to the Edwards Aquifer is a minimum of 340 ft at the Austin Chalk exposure discussed above. Across the remainder of the project area, the depth to the Edwards Aquifer probably exceeds 340 ft.

The Edwards Aquifer Recharge Zone (EARZ) lies 1250 ft north-northeast of the northern edge of the project area. A portion of the southern limit of the official Edwards Aquifer Transition Zone (EATZ) lies along the northwestern end of the project area (Plate 1). There is also a geologic definition of the EATZ contained in the Edwards Rules. This geologic definition is as follows:

> Transition Zone - Generally, that area where geologic formations crop out in proximity to and south and southeast of the recharge zone and where faults, fractures and other geologic features present a possible avenue for recharge of surface water to the Edwards Aquifer, and including portions of the Del Rio Clay, Buda Limestone, Eagle Ford group, Austin Chalk, Pecan Gap Chalk, and Anacacho Limestone. The transition zone is identified as that area designated as such on official maps in the offices of the Texas Water Commission.

This geologic definition of the EATZ would apply to the small outcrop of Austin Chalk Formation along the northern edge of the project area.

According to Garza (1962), well yields in Cretaceous formations above the Edwards in the San Antonio area (Plate 3) are generally small and often of poor quality. The low well yields and poor water quality in these formations generally prevents their extensive development as aquifers. Garza (1962) also states that the Leona Formation is important as an aquifer only in the Leona River valley near Uvalde, where the gravels of the Leona Formation are hydraulically connected to and receive discharge from the Edwards Aquifer. Hydrogeologic conditions in the project area are further discussed in a later section of this report.

3.2 PROJECT AREA RECONNAISSANCE

3.2.1 Observation of Surficial Dumping

A reconnaissance of the project area showed evidence of scattered surficial (above ground) dumping, former quarrying activity, and former landfilling activity. Locations of surficial dumping are shown on Plate 4. These areas contain various sized, small dumps of construction-demolition waste, lumber, and general rubbish. A partial list of materials observed in these small dumps includes rock, concrete, asphaltic concrete, lumber, signs, paint cans, and general rubbish.

3.3 LITERATURE SEARCH

3.3.1 Objectives

The objective of the literature search was to gather as much information as practical on waste fill activities within the project area. Municipal, county, and state agencies were consulted for information related to the project area.

3.3.2 Municipal, County, And State Records

The City of San Antonio Metropolitan Health Department, Public Works, Solid Waste, Real Estate, and Drainage Divisions, Planning Department, Environmental Management Department, and Aviation Department were consulted concerning waste fill activities in the project area. The Bexar County Land Records Office and the TDH Bureau of Solid Waste Management, Solid Waste Division were also consulted for information. Information was retrieved on three properties associated with the project area: the Wetmore Road Municipal Landfill, the Bitters Landfill Site, and the Mahone Property (Plate 2). The information retrieved on each of these properties is summarized in the following paragraphs.

Two TDH site inspection reports from 1975 and 1979 showed that the Wetmore Road Municipal Landfill was accepting municipal and construction waste, and was in operation before October 16, 1974. Various letters from the TDH to CSA concerning closure of the landfill

were also found. A CSA Interdepartment Memo concerning engineering details of closure of the landfill, soil gas survey information, monitor well water level measurements, and three chemical analyses of groundwater from monitor well MW-3 were found.

The present Bitters Landfill Site is referred to by CSA as "Bitters #2". TDH inspection reports from 1971, 1974, and 1978 reported that this site received brush and demolition wastes and that the site was permitted by the Texas Air Control Board as a Type VI burning site. A survey of the metes and bounds of the Brush Landfill property was also found.

The Mahone Property was apparently included in what CSA personnel referred to as the "Bitters #1" site. Anecdotal evidence suggests that brush and perhaps rubbish were collected and sometimes burned in an area north of Salado Creek and adjacent to Jones-Maltsberger and Old Bitters Road.

A portion of a map of landfill locations within Bexar County (CSA, 1989) is presented on Plate 5A and shows five sites within and immediately adjacent to the project area. The map numbers of these sites are 67, 100, 101, 102, and 201. The available information on these sites is shown on Plate 5B. There is a discrepancy between the locations shown on Plate 5A and the location descriptions shown on Plate 5B. It appears that the location descriptions shown on Plate 5B are more accurate.

According to Plate 5B, Site 100 is located on Wetmore Road north of Starcrest and thus does not directly affect the project area. The street addresses of Sites 67 and 102 indicate that they are located on the south side of Old Bitters Road near Salado Creek. There is no indication of landfilling in these areas, but some CDW is disposed in a pit just west of the Airport Fire Practice Area (Plate 2). This CDW appears to be of recent origin and no other landfilling is indicated by aerial photographs or surficial features.

Site 101 is the CSA Waste Transfer Station (Plate 2), which has a street address of 11601 Starcrest according to Plate 5B. Municipal waste is transferred at this location, but none is disposed or stored.

Site 201 is located near the corner of Wetmore and Starcrest Roads, but it is not clear which corner it was located at. Ms. Cathy Miller of the CSA Solid Waste Division indicated that this site may be one of the several known landfills along the east side of Wetmore Road in the vicinity of Starcrest. She also said that it is possible that this site was located in a former gravel quarry beneath what is now the Wetmore Road Municipal Landfill.

3.4 AERIAL PHOTOGRAPH INTERPRETATION

3.4.1 Objectives

Stereo, single vertical, and oblique aerial photographs of the project area from the 1940s to 1989 were evaluated to identify possible quarrying and landfilling activities. These photos were obtained from the San Antonio Department of Aviation, International Aerial Mapping and United Aerial Mapping. The project area was divided into eight areas and activities within each area were interpreted from the airphotos. These eight areas are shown on Plate 6. The activities interpreted from the airphotos are described in a narrative fashion in Appendix A and a summary of these activities is presented below. The descriptions of activities from these aerial photographs are necessarily subjective, but they allowed more efficient planning of field activities and show the complex history of the project area.

Area 1 experienced filling activities from 1958 to 1971, with promiscuous dumping through 1981. Area 2 shows no activity except for two borrow pits in 1973 and 1985. Area 3 contained a gravel quarry in 1958 with fill in 1966 and 1971 with brush dumping in 1985 and 1989. Area 4 contained a gravel quarry from 1958 to 1975 with brush filling in subsequent years at the Bitters Landfill Site. Area 5 had some quarrying activity with a trench next to Old Bitters Road in 1958, with little activity until 1979 when minor promiscuous dumping occurred over the area until 1989. Area 6 contained quarrying operations from 1958 to 1966 with three deep parallel pits dug in 1971 north of Old Bitters Road. The pits were filled by 1973 and some minor filling or leveling occurred near Northeast Entrance Road from 1977 through 1989. Area 7 appears to have been farmland from 1958 to 1985, with the runway extended over a portion of it in 1971. Area 8 showed landfilling at the Wetmore Road Landfill from 1971 through 1985 with borrowing of material from the streambed of Salado Creek.

From the aerial photo interpretation and the project area visit, a preliminary delineation of unmodified areas, areas affected by quarrying activity, areas affected by quarrying and fill activities, and areas affected by fill activity was prepared. These area are shown on Plate 7 and this was used to guide the field program to assess the extent and character of landfilling within the project area. The field program, including electromagnetic and resistivity surveys and boring and piezometer installation, are discussed in later sections of this report.

3.5 ELECTROMAGNETIC SURVEY

3.5.1 Objectives

The electromagnetic survey was designed to supplement the borings to delineate the edge of landfilling activities in the project area. Electromagnetic surveys were conducted on the Bitters Brush Landfill Site, the Old Bitters Strip Pits, and the Wetmore Road Municipal Landfill to delineate the edge of the landfilling activities.

3.5.2 EM-31D Electromagnetometer Survey Methods And Results

The survey was performed using a Geonics EM-31D electromagnetometer. The EM-31D measures the apparent electrical conductivity of the subsurface to a depth of approximately 20 feet. Strong anomalous readings are normally associated with highly conductive fill such as metal and moist waste. The EM-31D is also sensitive to abrupt changes in subsurface conductivity, as would be encountered at the edge of a waste cell. The edges of suspected waste fill areas were surveyed with the EM-31D to define the lateral extent of waste fill. The edge of landfilled areas were marked with surveyors flagging, which were later surveyed and used to construct the boundaries of waste filled areas. These boundaries, along with waste thicknesses, were used to calculate waste volumes, and are discussed in a later section of the report.

3.6 RESISTIVITY SURVEY

3.6.1 Objectives, Method, And Survey Location

The resistivity survey was conducted at the Bitters Brush Landfill Site and a portion of the Wetmore Road Landfill to aid in defining the edge of landfilling and to provide additional points to estimate waste fill thickness.

An ABEM Terrameter Soil Resistance Meter was used during this survey. The meter readout of the ABEM Terrameter is in voltage divided by the current, V/I. This survey used a 4-electrode Price array designed by William C. Price, C.P.G., of TDH. A diagram showing this array is presented on Plate 8. The terms and electrode nomenclature used in this report are after Price (1988). At each sounding location, the array was set up as shown on Plate 8.

The I_1 and I_2 electrodes were placed 72 ft from the meter in opposite directions. The V_2 electrode was placed in front of the meter at the center of the array. The V_1 electrode was initially placed 24 ft from the meter on the side of the I_1 electrode and moved in 3 ft increments toward the I_1 electrode. The apparent resistivity was recorded at each increment from the deepest reading to the shallowest reading. The distance between the V_1 and I_1 electrodes is known as the "A" spacing. The "A" spacings for the soundings ranged from 3 to 48 ft. During this survey, the V_1-I_1 side of the array was the reading side of the array. All soundings during this survey were conducted at locations shown on Plate 9.

The voltage lines being measured in the Price array are warped by the geometry of the array. The adjustment for this warping is provided by the Warp Factor, Q, which is determined by the following formula: Q = Log (3 + "A"/X). "A" is the distance between the V_1 and I_1 electrodes and X is a value which when divided into the maximum intended V_1 and I_1 electrode separation ("A" spacing) yields seven.

The data from the soundings were reduced on an electronic spreadsheet using Lotus 123. The equations and warp factor corrections are included in the spreadsheet. The Barnes' Layer Method is used to

calculate the apparent resistivities for each "A" spacing or depth reading. The Barnes' Layer Method values for each sounding were then graphed in bar chart form.

3.6.2 Results

The sounding bar graphs and data sheets are presented in Appendix B. The sounding bar graphs when laid side by side along each sounding line, allow comparison of subsurface resistivity characteristics along that sounding line. The resistivity characteristics of the shallow subsurface are observed to change across the line of section from areas containing waste to unaffected areas.

3.7 SOIL GAS SURVEY

3.7.1 Objectives

The soil gas survey was conducted at selected areas within the project area to indicate areas where combustible vapors or gases occur near the surface. Combustible soil gases may be generated from organic decomposition of waste, faults conducting natural gas from deeper formations, leaking gas utilities, and sanitary sewer lines. Combustible soil vapors may also be produced from subsurface petroleum hydrocarbon contamination, subsurface solvent contamination, or naturally occurring petroleum hydrocarbons.

Many factors control the emission of soil gases and can affect the accuracy of a soil gas survey. These factors include temperature, barometric pressure, wind speed, depth of investigation, soil gas flux, soil characteristics, and earth tides. The most accurate method of soil gas measurement is placing passive collectors in an area and analyzing these collectors for specific gaseous or vapor phase compounds present, but this type of survey was beyond the scope of this study. The shallow and deep soil gas survey conducted during this study can indicate areas of potential soil gas occurrence.

The information presented in this section is for planning purposes only. The design or location of specific structures or soil gas remedial systems within the project area will require site specific surveys to identify the presence or absence of soil gas. Also, subsurface utility construction may conduct soil gases from one area to another.

Shallow combustible gas readings were taken at selected locations across the project area at a depth of three feet and readings of deeper, open soil borings were also taken. The methods and results of the soil gas survey are discussed below.

3.7.2 Surficial And Boring Soil Gas Survey

The shallow soil gas survey was conducted at a depth of three feet at 121 measuring points across the project area. The survey was conducted by driving a steel rod three feet into the soil and inserting a probe attached to a Porta-FID II organic vapor analyzer. Use of the

Porta-FID II is described in Appendix D. A maximum reading and a stable reading after three minutes was recorded in the field. The maximum reading possible with the Porta-FID II is 5000 parts per million (ppm) total combustible hydrocarbons in air.

The maximum reading at each shallow measuring point was contoured and the resulting map of shallow surficial combustible soil gas concentrations is shown on Plates 10A, 10B and 10C. The location of Plates 10-A, 10-B, and 10-C relative to the property boundary is shown on Plate 2. Measuring points which had a reading of >5000 ppm were contoured as 5000 ppm.

A total of 41 borings were measured for combustible soil gas at the surface of the open boring immediately after the augers were removed. A maximum reading and a stable reading after three minutes were recorded in the field.

The maximum reading at each open boring was contoured and the resulting map of open boring combustible soil gas concentrations is presented on Plates 11A, 11B, and 11C. The location of Plates 11A, 11B and 11C relative to the property boundary is shown on Plate 12. Borings which had a reading of >5000 ppm were contoured as 5000 ppm.

3.8 TEST PIT EXCAVATION OBJECTIVES AND RESULTS

Test pits were to be dug in areas not accessible to a drilling rig or where larger samples were required for analysis. One test pit was dug in the project area perpendicular to the linear mounds at the Old Bitters Strip Pits (Plate 2). This cut was conducted to evaluate whether the linear mounds contained waste. Observation of these cuts, which ranged from 3 to 10 ft deep, showed no waste occurring in these linear mounds. However, later borings showed waste within the linear pits between the mounds. No other test pits were dug within the project area.

3.9 DRILLING AND SAMPLING

3.9.1 Health And Safety Plan Objectives And Information Sources

A health and safety plan was prepared to address health and safety issues which are involved in drilling through landfilled waste. The health and safety plan prepared prior to boring and piezometer installation is presented in Appendix C. This health and safety plan was prepared using all available information from municipal, county, and state records, as well as interviews with CSDA personnel. Subsequent modifications to the health and safety plan are also discussed in Appendix C.

3.9.2 Boring Program Objectives And Locations

The boring program was designed to sample areas of suspected waste, obtain geotechnical data, and allow installation of piezometers to measure groundwater levels. The installation of piezometers is discussed in a later section of this report. Borings were conducted at

71 locations across the project area. The locations of these borings are presented on Plate 12.

3.9.3 Sampling Method, Description, And Boring Logs

The borings were conducted using the hollow stem auger technique and sampled by driving a standard split spoon using the standard penetration test. The drilling, soil sampling, sample handling, and logging methods are described in Appendix D. The boring logs are presented on Plates 13 through 83. A key to terms and symbols used on the boring logs is presented on Plate 84. The detailed description of different types of waste encountered during the boring program could not be accommodated within the format of the boring logs presented on Plates 13 through 83. Copies of the field boring logs are presented in Appendix D.

3.10 PIEZOMETERS

Twelve of the borings were converted to temporary piezometers to obtain groundwater measurements and samples. The locations of the temporary piezometers are shown on Plate 12 and a description of their installation, development, sampling and removal is presented in Appendix D. The top of the piezometer casings were surveyed for elevation, groundwater measurements were converted to elevations, contoured and are presented on Plate 85. Groundwater measurements obtained over the course of the project are presented on Table 1.

3.11 CHEMICAL ANALYSIS

3.11.1 Soil And Rubbish

A total of 206 soil and waste samples were collected from the 71 borings. Five waste and eleven soil samples from beneath the waste were chemically analyzed. The results are tabulated on Table 2. The signed chemistry Report of Analysis forms are presented in Appendix E.

3.11.2 Groundwater

Seven of the temporary piezometers contained water after drilling and well development, these wells were sampled and chemically analyzed. Several weeks after well development, two more of the piezometers (B-9 and B-32) developed water and were sampled and analyzed. A summary of analytical chemistry results is presented on Table 3. The signed Report of Analysis forms are presented in Appendix E.

3.12 GEOTECHNICAL ENGINEERING CONSIDERATIONS

Geotechnical engineering considerations within the project area concern the general impacts to buildings build on or in the waste fill. Results of the blow counts from the standard penetration tests in borings B-1 through B-45, (Plates 13-57) descriptions of the waste fill contents, and previous experience with waste fill materials were used to estimate subsurface geotechnical conditions. The geotechnical conditions discussed in this report are preliminary; site specific

drilling and sampling must be conducted to address specific building design needs.

3.12.1 Settlement

Areas of waste fill can experience large and unequal settlements which can be attributed to one or more of the following mechanisms:

1) settlement of a mechanical nature, which includes distortion, bending, crushing or reorientation of the materials in a manner similar to consolidation of organic soils
2) settlement by ravelling, or the movement of fine materials (soils or wastes) into voids in and around large items buried in the landfill
3) settlement by physio-chemical change, such as corrosion, oxidation and combustion
4) settlement by bio-chemical decay, including both aerobic and anaerobic decomposition
5) interaction of one or more of the above mechanisms (e.g., organic acids from decay may produce corrosion)

Of the mechanisms listed above, bio-chemical decay is expected to be the major source of settlements in soil-supported structures overlying rubbish waste areas, while ravelling will more likely contribute to building settlements in the brush waste, modified brush waste, and CDW areas of the site.

Settlements of landfills generally occur rather rapidly at first. The period of these initial large settlements are usually measured in weeks or months. After the initial large settlements, the rate of settlement typically decreases to a nearly constant rate. Past experience has shown that municipal (rubbish) waste can decrease in volume by 30 to 40 percent of its total thickness within a broad time span ranging from 10 to 40 years. Settlements in the order of 6 to 12 in. have been documented by R-KCI in at-grade construction existing in the immediate vicinity of the subject property. For this site, movements in the order of 6 to 24 in. should be anticipated for soil-supported structures overlying landfill areas, with the greater movements generally occurring in buildings overlying rubbish waste. Actual settlements will be dependent upon imposed loads, groundwater conditions, current landfill age and overburden loads above the waste.

3.13.2. Corrosion

Another concern of developing over landfills is corrosion of structural foundation elements embedded in or penetrating through the waste materials. The concrete and/or metal components of the foundation systems may corrode excessively when subjected to the biological, chemical, physical and electrical processes typically prevalent within the landfill environment.

With regard to metals, electrical resistivity is generally accepted as the measurement by which to classify the aggressiveness of soil/waste materials toward metals. The resistivity of a material is stated in ohms per cu cm, and a low value indicates a high conductivity and a high corrosion potential. Although corrosion potential classifications vary throughout the technical literature, materials having a resistivity in the range of 0 to 1500 ohms per cu cm are generally considered to have high to very high corrosion potential. A review of Table 2 reveals that, of the waste samples analyzed, specimens gathered from Borings B-20 and B-27 are generally considered to possess high to very high corrosion potential with respect to metals such as steel or ductile iron. The measured pH of 8.3 for one of the samples is generally a good indication that the material contains a fair amount of dissolved salts, which in turn also indicates a low resistivity.

The low resistivities measured for waste samples from B-7, B-15 and B-31 indicates that metal construction materials (such as steel piles, exposed steel reinforcing, steel piping, ductile iron, etc.) will require protection against corrosion. Methods available include polyethylene encasement, cathodic protection, and possible overexcavation/select fill replacement.

Concrete components can be subject to corrosion when buried in materials which have a high acid content. When the ph is less than 5.5, it is recommended that the concrete be protected by a coating. Based on the results of the limited number of ph values measured for the waste (Table 2), it would appear that concrete members embedded in the wastes underlying this site are not expected to be affected by the hydrogen ion concentration.

Concrete products are also subject to corrosion when buried in materials with high sulfate contents or in areas of high water table where the ground water contains high levels of water-soluble sulfates. The maximum soluble sulfate content of the waste materials analyzed was 900 mg sulfate per kg of waste (Table 2), or approximately 0.09 percent. This level is generally considered negligible with respect to sulfate attack on concrete structures. However, additional confirmatory testing will be required before conclusions may be made concerning the need for special protection for concrete members embedded or penetrating the waste materials at this site.

4.0 SUMMARY OF FINDINGS

4.1 GEOLOGY AND HYDROGEOLOGY

The Pecan Gap Chalk Formation was found across the project area beneath the alluvium except at the location shown as Austin Chalk on Plate 2 within Mud Creek just south of Starcrest Road. The exposure of Austin Chalk may represent a faulted contact between the Pecan Gap Chalk and the Austin Chalk. The outcrop of Austin Chalk along the northern edge of the project area is significant because this outcrop falls under the geologic definition of the Edwards Aquifer Transition Zone (EATZ), as discussed in Section 3.1 of this report. Thus a portion of the EATZ falls within the extreme northern edge of the project area. The closed

depression in the alluvium appears to be the result of karstic collapse in the underlying Austin Chalk or settlement due to infilling of voids along a fault plane or unknown utility. This geologic feature is not sensitive with respect to recharge to the Edwards Aquifer. The only impact this closed depression could have on the Edwards Aquifer is indirect. If this closed depression is connected to the Austin Chalk or a fault plane, recharged water could flow within the Austin Chalk or the fault plane until it intersects an Edwards water well. If the casing or annulus cement has deteriorated, then this water could flow into the well and down to the Edwards Aquifer.

The shallow alluvial aquifer shows local gradients to the east at each group of piezometers. Across the entire study area the gradient of the groundwater is also to the east. This coincides with the top elevation of the Pecan Gap Chalk across the project area which decreases to the east. Baseline water quality in the shallow alluvial aquifer is unknown because none of the piezometers are up gradient of or outside waste fill areas. However, concentrations of heavy metals and organic chemicals above the detection limit do occur, and are attributed to leachate produced by the waste. These results are discussed later in the report for each waste area.

4.2 FIELD RECONNAISSANCE, AIRPHOTO INTERPRETATION, AND LITERATURE SEARCH

The field reconnaissance of the property area showed several major areas of waste landfilling as well as surficial promiscuous dumping. The airphoto interpretation showed gravel quarrying over a large portion of the property area and waste filling activities at the Mahone property, the Bitters Landfill Site, the Bitters Strip Pits, and the Wetmore Road Landfill. The literature search generally confirmed the airphoto interpretation of waste filling activities at these locations.

4.3 FIELD ACTIVITIES

The electromagnetic survey delineated the edges of waste filled areas on the Bitters Landfill Site, the Bitters Road Strip Pits, and the Wetmore Road Landfill. The resistivity survey provided some information on the depth, lateral extent, and internal stratification of the waste filled areas and aided the location of borings.

The borings showed a highly variable thickness of waste fill and samples showed the diverse character of the waste encountered. The borings also showed that the bottom of the waste fill was on top of both a alluvium and Pecan Gap Chalk. The piezometers showed that groundwater/leachate generally exists below and in the waste fill.

4.4 GEOTECHNICAL TESTING

The blow counts in the waste fill showed generally soft or loose fill in the subsurface. Limited chemical testing of the waste fill showed that it has low or very low corrosive effect on concrete and a highly corrosive effect on steel.

4.5 TYPE, LOCATION, VOLUME, AND CHEMISTRY OF WASTE

The result of all the activities described above is the type, location, extent, volume, chemical and geotechnical characteristics, combustible vapor potential, and possible effects on soil and groundwater of the waste fill in the LRMP project area. The type, location and volume of wastes are shown on Plate 86. Cross sections through the four main waste fill areas are presented on Plates 87 through 90. The location of the cross sections is shown on Plate 86.

In some areas, only a single boring penetrated the waste fill. The actual volume calculated from the single boring was assumed to be the minimum volume. The actual volume was increased by 30% and this amount assumed to be the maximum value. All volumes are in-place volumes and do not include an expansion factor for excavation. The type, location, volume, extent, corrosivity, and leachate associated with each waste fill area are discussed below.

4.5.1 Unaffected Areas

The property outside of the identified waste areas shown on Plate 86 are unaffected by waste fill or surficial dumping. The unaffected sites are not impacted by waste fill, but they may be affected by quarrying activities, including pits, excavations, and stockpiling of excavated natural material and possibly leachate from adjacent waste fill. The areas identified on Plate 7 as unmodified appear to be the only areas significantly undisturbed by mans activities within the project areas.

4.5.2 Brush Waste

The Brush Landfill site contains an approximate minimum volume of 410,000 cu yds, and a maximum of 570,000 cu yds of brush waste. Borings B-9, B-14, and B-15 are within this waste area. The brush waste has a low corrosivity potential for concrete and a high corrosivity potential for steel. The soil in B-14 and B-15 below the brush waste is below detection limits for the eight metals shown on Table 2. The groundwater from temporary piezometers B-9 and B-14 had very slightly alkaline water with TDS values of 900 and 1000 ppm, respectively. The leachate below the brush fill is below detection limits for seven of the metals shown on Table 3, but does contain 0.007 mg/L of arsenic.

4.5.3 Modified Brush Waste

A large area east and northeast of the brush waste in the Bitters Landfill Site contains a modified brush waste (Plate 86), which is a mixture of clay, gravel, brush, and very scattered pieces of rubbish. This modified brush waste has an approximate minimum volume of 74,000 cu yds, and an approximate maximum volume of 250,000 cu yds. The modified brush waste has a low potential for corrosion of concrete. The leachate in Boring B-10 contains arsenic, barium, cadmium, chromium, lead above detection limits (Table 2) and none of the organic compounds analyzed were above the detection limits.

4.5.4 Construction-Demolition Waste

CDW waste fill occurs on the southwest side of Old Bitters Road (BRCDW, Plate 86). This area contains a minimum of 4,500 cu yds and a maximum of 5,900 cu yds of CDW waste fill. The description of the fill from boring B-34 shows that this fill is normal CDW, containing clay, asphalt, and gravel. Normal CDW is generally not considered hazardous. No chemical tests were conducted on this waste.

4.5.5 Rubbish

4.5.5.1 Bitters Landfill Site

The rubbish at the Bitters Landfill Site occurs in two areas (BLS-RW1 and BLS - RW2, Plate 86). These two rubbish areas contain a minimum of 140,000 cu yd, and a maximum of 480,000 cu yds of rubbish waste. Borings B-3, B-4, B-7, and B-50 through 59 are within this area. The rubbish in this area has a low corrosivity potential for concrete and a high corrosivity potential for steel. The eight metals in soil below the waste (Table 2) in borings B-3 and B-7 are below detection limits. None of the borings in this area were moist enough to install a piezometer, but B-9 is very close to and down gradient from this waste. The leachate is below detection limits for seven of the metals, but there is 0.007 mg/L of arsenic. The TDS and pH values are among the lowest measured in the project area.

Another area of waste within the Bitters Landfill Site (BLS-MCDW, Plate 86) contains a mixture of CDW (on the surface), clay, and rubbish. This area contains a minimum of 123,000 cu yds and a maximum of 160,000 cu yds. The rubbish in this area should have the same general chemical characteristics as that in the larger rubbish area to the west. The CDW appears to be composed of clay, concrete, steel, and is not generally considered to be hazardous.

4.5.5.2 Wetmore Road Landfill Site

The three areas of rubbish in the Wetmore Road Landfill contain a minimum of 2,600,000 cu yds, and a maximum of 2,800,000 cu yds. The groundwater samples from piezometers B-40 and B-44 are moderately saline, contain trace amounts of arsenic, barium, chromium, lead, benzene, toluene, chlorobenzene, ethylbenzene, xylene, 1,4 dichlorobenzene, napthalene, and phenol. The presence of these organic compounds indicates that petroleum hydrocarbons and solvents may be present in the rubbish. The waste has a low corrosivity potential with respect to concrete and steel. The other rubbish samples were highly corrosive with respect to steel, so this sample may not be representative of all of the waste fill at the Wetmore Road Landfill. The eight metals in soils below the landfill in borings B-28, B-40, and B-44 are below detection limits (Table 2).

4.5.5.3 Mahone Property

This property contains a minimum of 110,000 cu yds, and a maximum of 180,000 cu yds of rubbish (MRW, Plate 86). The rubbish is highly corrosive with respect to steel and not corrosive with respect to concrete. The soil below the rubbish in B-33 does contain some barium, but the other metals are below detection limits. The groundwater beneath this property is slightly alkaline, slightly saline, contains trace amounts of arsenic, barium, cadmium, chromium, lead, benzene, tetrachloroethene, and chlorobenzene (Table 3).

4.5.5.4 Old Bitters Strip Pits

This area (BSP-1, 2 and 3, Plate 86) contains a minimum of 59,000 cu yds, a maximum of 80,000 cu yds of rubbish. The rubbish is corrosive to steel and is not corrosive to concrete. The soil below the rubbish is below detection limits for the eight metals (Table 2). The groundwater sample from boring B-36 is moderately saline, contains arsenic, barium, cadmium, chromium, lead, benzene, toluene, chlorobenzene, ethylbenzene, xylene, and 4-methylphenol (Table 3).

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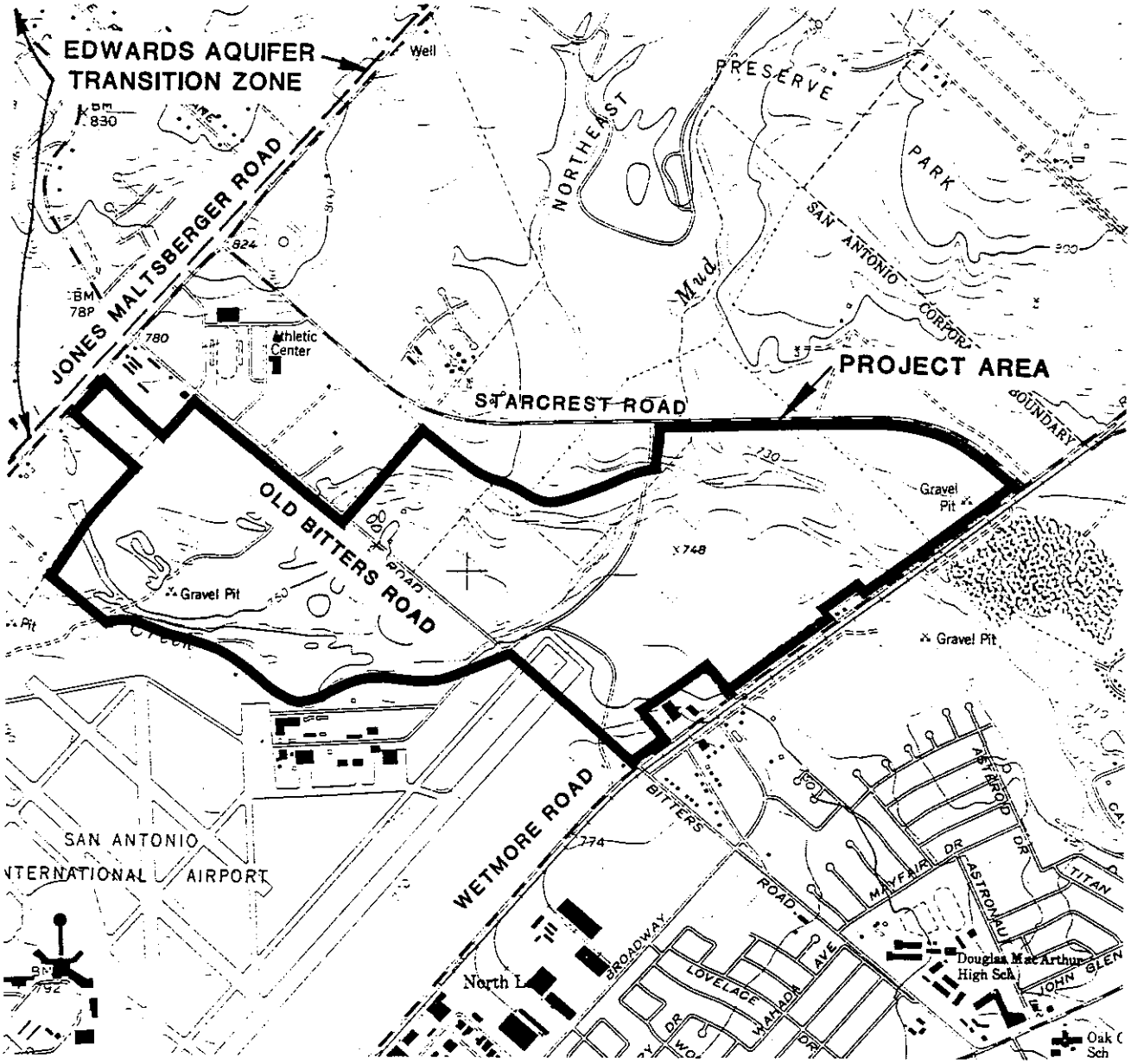
ILLUSTRATIONS



(Base map from USGS, 1973)

SITE LOCATION MAP
SAT LRMP
SAN ANTONIO, TEXAS

Project No. ASB90-069-00

Raba-Kistner Consultants, Inc.

PLATE 1

E = 2,166,550

E = 2,180,050

LEGEND

- APPROXIMATE EXTENT OF WASTE
- MRW: MAHONE RUBBISH WASTE
- BLS-RW: BITTERS LANDFILL SITE - RUBBISH WASTE
- BLS-BW: BITTERS LANDFILL SITE - BRUSH WASTE
- BLS-MBW: BITTERS LANDFILL SITE - MODIFIED BRUSH WASTE
- BLS-MCDW: BITTERS LANDFILL SITE - MODIFIED CONSTRUCTION DEMOLITION WASTE
- BRCDW: BITTERS ROAD CONSTRUCTION DEMOLITION WASTE
- BRSP-1: BITTERS ROAD STRIP PITS
- WRL-1: WETMORE ROAD LANDFILL
- PROJECT AREA
- BORING / PIEZOMETER LOCATION
- CROSS SECTION LOCATION

0 400 800
scale feet

JONES MALTSBERGER ROAD
OLD BITTERS ROAD
STARCREST ROAD
WETMORE ROAD
MRW
BLS-RW1
BLS-RW2
BLS-BW1
BLS-BW2
BLS-MCDW
BLS-MBW
BRCDW
BRSP-1
BRSP-2
BRSP-3
WRL-1
WRL-2
WRL-3

BASE MAP PROVIDED BY
DANNENBAUM ENGINEERING CORPORATION

REVISIONS			
NO.	BY	DATE	APPD

Raba-Kistner Consultants, Inc.

•Engineers •Geologists •Scientists •Chemists

LOCATION, EXTENT AND TYPE OF WASTE MAP
SAT LRMP
SAN ANTONIO, TEXAS

SCALE: AS SHOWN PROJ. NO.: ASS90-068-00 DWG. NO.: PLATE 86
DRAWN BY: RAH CHK BY: APPD: DATE: 5-15-91

N = 618,770

STRATIGRAPHIC COLUMN

	GEOLOGIC FORMATION			THICKNESS (FT.)	MEMBER	GEOLOGIC DESCRIPTION	WATER BEARING/PERMEABILITY PROPERTIES
QUATERNARY PERIOD	FLUVIATILE TERRACE DEPOSITS			30 MAX.		Gravel, sand, silt and clay with gravel more prominent in higher terraces.	Yields small quantities of water to a few wells
	LEONA FORMATION			45 MAX		Gravel, sand, and calcareous silt.	Yields small quantities of water to a few wells.
CRETACEOUS PERIOD	PECAN GAP CHALK			200		Chalk and chalky marl with calcite.	Not water bearing.
	AUSTIN CHALK			200		Limestone, argillaceous chalky limestone and calcareous shale, locally bentonitic.	Yields small to large supplies of good to poor quality water.
	EAGLE FORD SHALE			30		Calcareous and sandy shale and some argillaceous limestone.	Not water bearing.
	BUDA LIMESTONE			60		Dense, hard limestone.	Yields moderate amounts of water locally.
	DEL RIO CLAY			40-60		Calcareous shale; clays; impermeable.	Not water bearing.
	EDWARDS AND ASSOCIATED LIMESTONE	GEORGETOWN FORMATION		20-40		Dense, shaley limestone; mudstone and wackestone; isolated fossil molds.	May be water bearing, fractures are few and closed matrix permeability very low, total porosity less than 5%
		EDWARDS GROUP	PERSON FORMATION	80-100	CYCLIC MARINE	Hard, dense, recrystallized limestone; mudstone; rudistid biomicrite; some moldic porosity.	Many open fractures, low matrix permeability, total porosity 5-10%
				60-90	LEACHED COLLAPSED	Recrystallized, leached limestone; burrowed mudstone and wackestone, highly leached in places; solution breccias, vuggy, honeycombed.	Many open fractures, several cavernous zones, matrix permeability low to high, total porosity generally less than 20%, most porous and permeable part of Person Formation.
				20-24	REGIONAL DENSE MEMBER	Limestone, shaley to wispy, dense; mudstone; no open fractures.	Yields no water, total porosity less than 5%
			KAINER FORMATION	50-60	GRAINSTONE	Limestone; chalky to hard cemented miliolid grainstone with associated beds of mudstones and wackestones; locally honeycombed in burrowed beds.	Yields little water, few open fractures, matrix permeability low to moderate, total porosity 5-15%
				50-70	KIRSCHBERG EVAPORATE	Limestone and leached evaporitic rocks with boxwork porosity; most porous subdivision.	Many open fractures, cavernous layers, matrix permeability low to very high, total porosity 5-25%, most porous and permeable part of Edwards Group.
				110-150	DOLOMITIC	Limestone, recrystallized from dolomite, honeycombed in a few burrowed beds: more cavernous in upper part.	Many open fractures, matrix permeability, total porosity 5-20%
			WALNUT FORMATION	40-60	SOMETIMES INCLUDED AS BASAL NODULAR MEMBER OF KAINER	Limestone, hard, dense; clayey mudstone to wackestone, nodular, wispy, stylolitic, mottled; isolated molds.	Few open fractures, low matrix permeability, total porosity less than 10%
	GLEN ROSE FORMATION			650-700		Calcareous limestone; varying amounts of clay and sand; upper member karst structures and springs.	Upper member yields small to moderate quantities of generally poor quality water. The lower member yields fairly good water.

(Modified after Maclay and Small, 1976; Metcalf and Eddy, 1979)

Project No. ASB90-069-00

PLATE 3

LEGEND

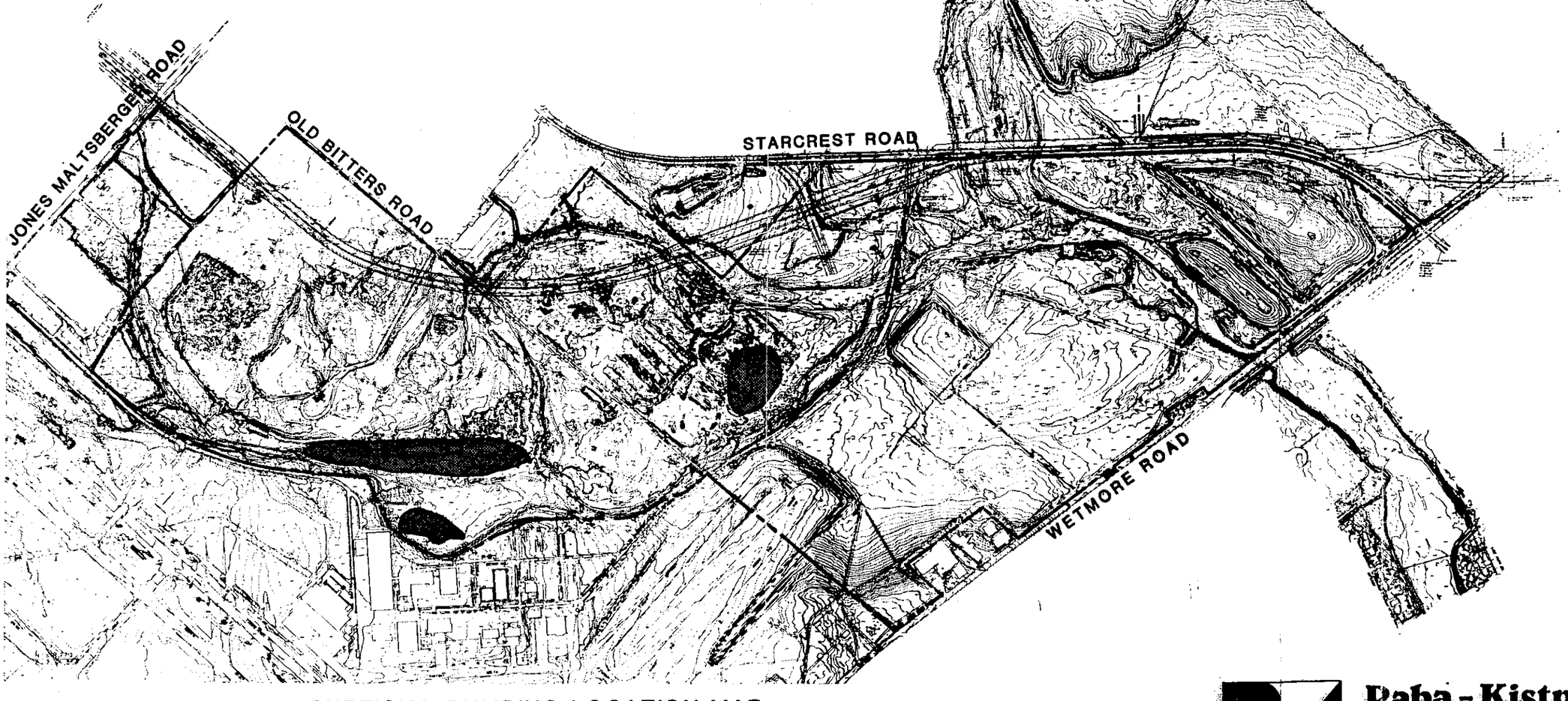
Project area

Surficial (above ground) dumping location

N

0 1000 2000

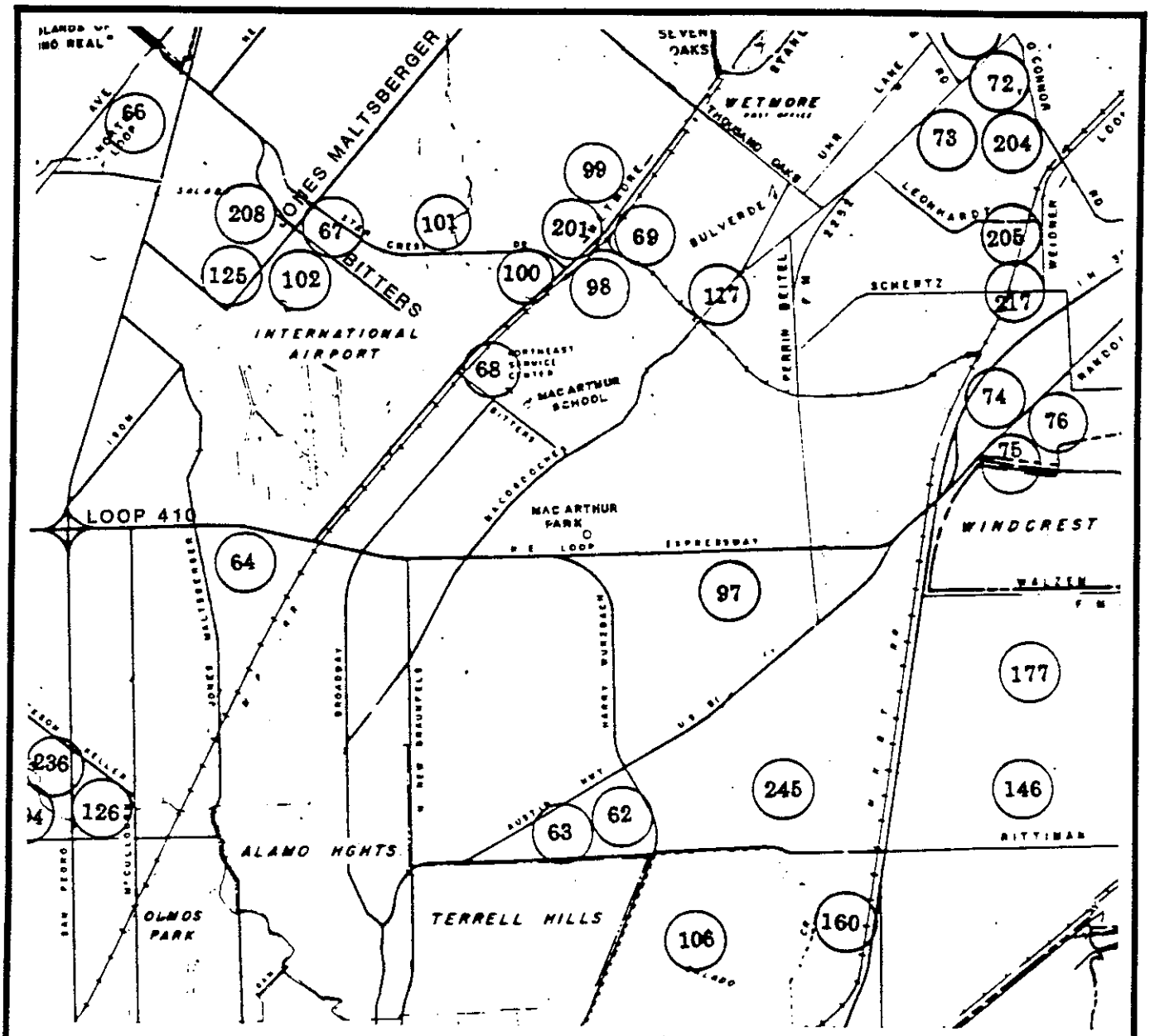
scale feet



SURFICIAL DUMPING LOCATION MAP

SAT LRMP - SAN ANTONIO, TEXAS

Raba - Kistner Consultants, Inc.



(After CSA, 1989)

LEGEND:

(67) Landfill Location (See Table 1)

LANDFILL LOCATION MAP
SAT LRMP
SAN ANTONIO, TEXAS

Project No. ASB90-069-00

Raba-Kistner Consultants, Inc.

PLATE 5a

LANDFILL SITES
SAT LRMP PROJECT
SAN ANTONIO, TEXAS

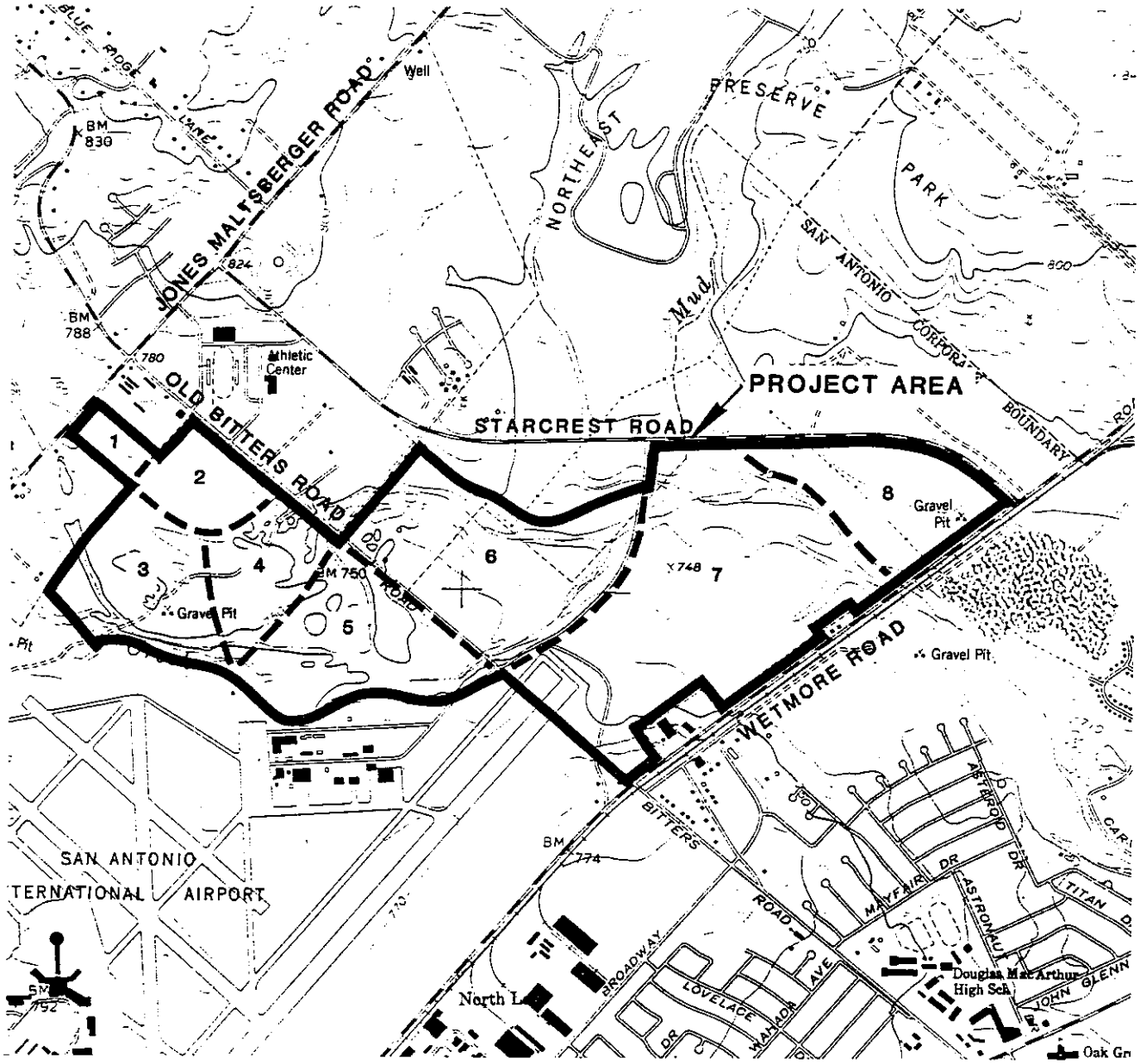
MAP NUMBER	SITE NAME	SITE LOCATION	PERMITTED	TYPE OF SITE	TYPE OF SOLID WASTE	METHOD OF DISPOSAL
67	Longhorn #1	1815 Bitters Road	------	------	------	------
100	Longhorn #6	Wetmore Road, .06 Miles NE of Starcrest	No (Type I)	------	Municipal Industrial	Incineration
101	Longhorn #86	11600 Block of Starcrest	Yes (Type IV)	------	-----	------
102	Longhorn #7	1826 Bitters Road	No (Type IV)	Trench	Brush	Incinerator and open burning
201		Westmore & Starcrest	No	Area	Municipal	Promiscuous

0 ------ No information available

Source: CSA, 1989

Project No. ASB90-069-00

PLATE 5b



(Base map from USGS, 1973)

N

LEGEND:

Airphoto Interpretation Area

0 2000 4000

scale feet

AIRPHOTO INTERPRETATION AREAS
SAT LRMP
SAN ANTONIO, TEXAS

Project No. ASB90-069-00

Raba-Kistner Consultants, Inc.

PLATE 6

N: 627,570
E: 2,166,550

N: 627,570
E: 2,163,150

LEGEND

- Unmodified area
- Area left out of study
- Project area
- Area affected by quarrying activity
- Area affected by quarrying and fill activity
- Area affected by fill activity

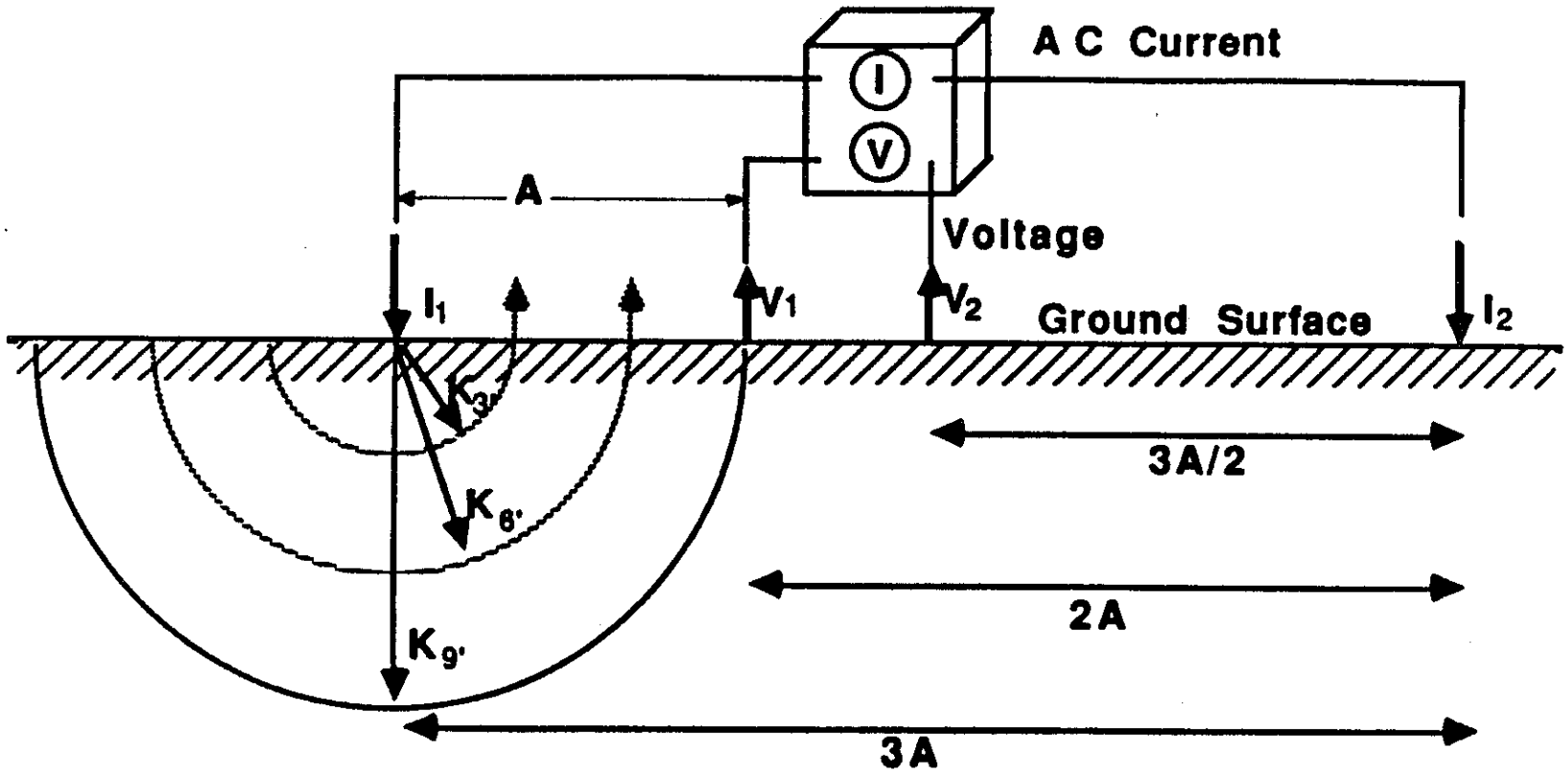
N

0 1000 2000
scale feet

PRELIMINARY DELINEATION OF AFFECTED AREAS

SAT LRMP – SAN ANTONIO, TEXAS

Raba - Kistner
Consultants, Inc.



LEGEND

I_1, I_2 = Current Electrode

V_1, V_2 = Voltage Electrode

A = A Spacing

K = Penetration Depth

FOUR ELECTRODE PRICE ARRAY

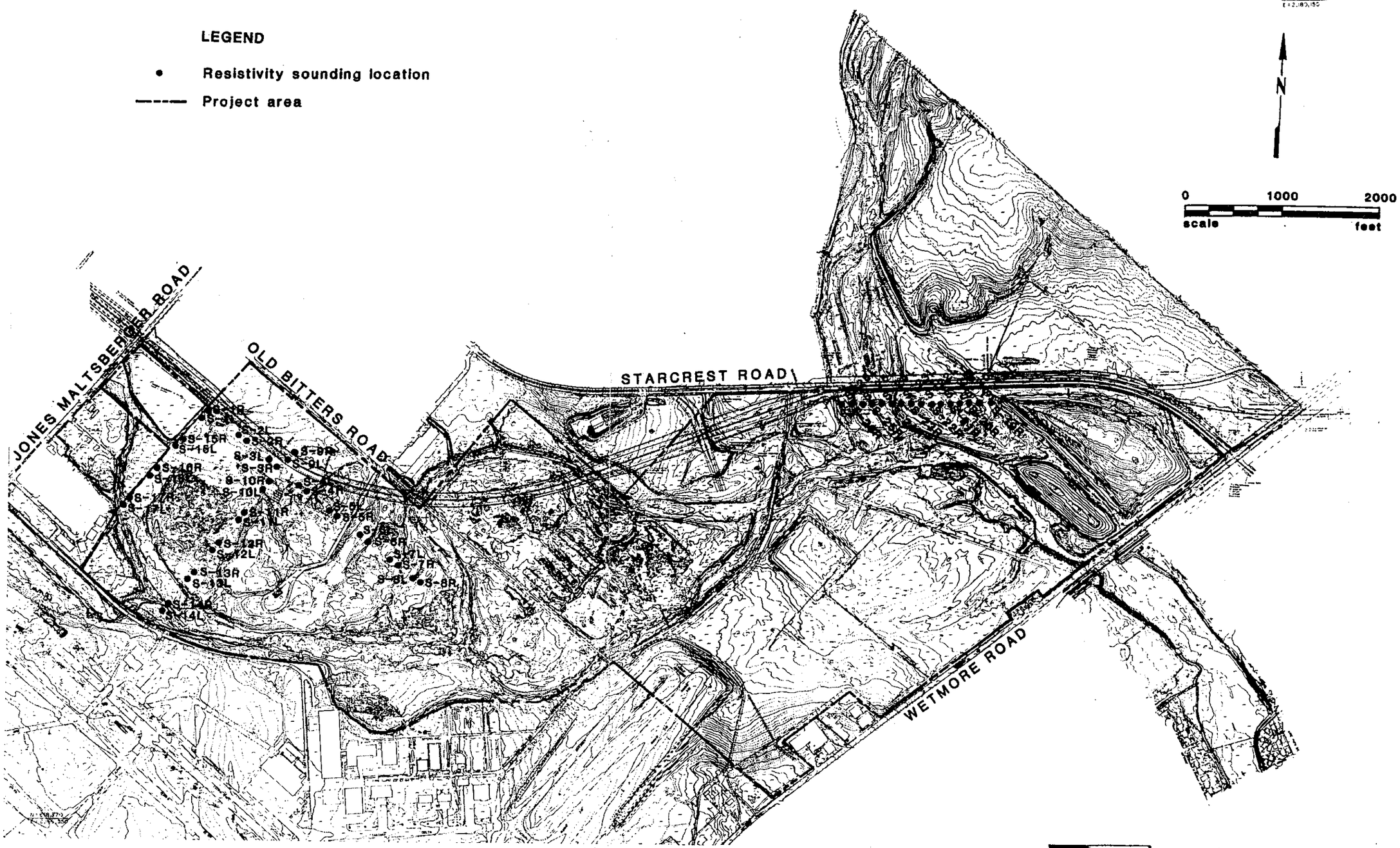
(from Price, 1988)

Project No. ASB90-069-00

PLATE 8

LEGEND

- • Resistivity sounding location
- ——— Project area

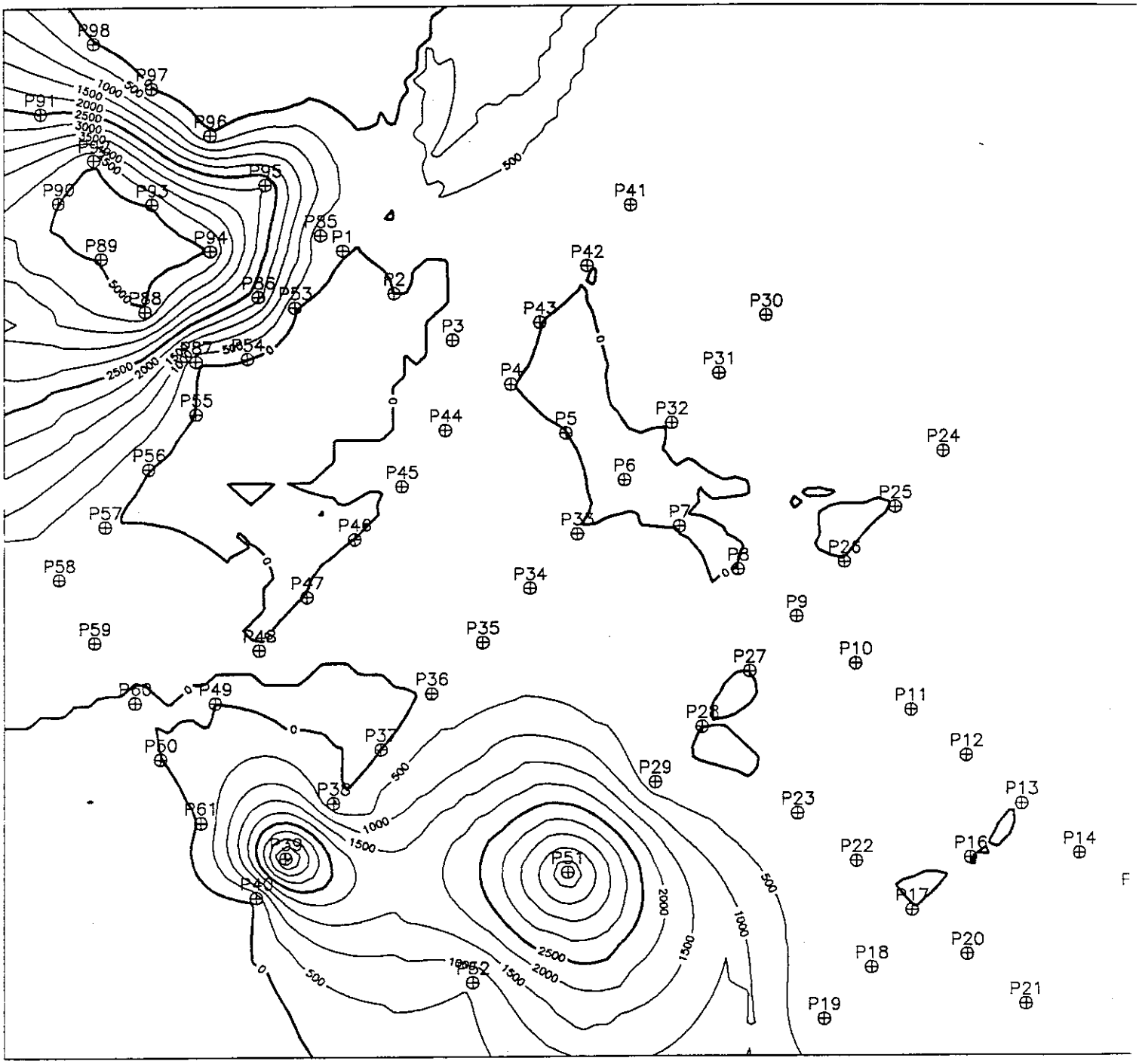


RESISTIVITY SURVEY LOCATION MAP

SAT LRMP – SAN ANTONIO, TEXAS

Raba-Kistner
Consultants, Inc.

SAT LRMP SURFICIAL SOIL GAS ISOCONCENTRATION MAP

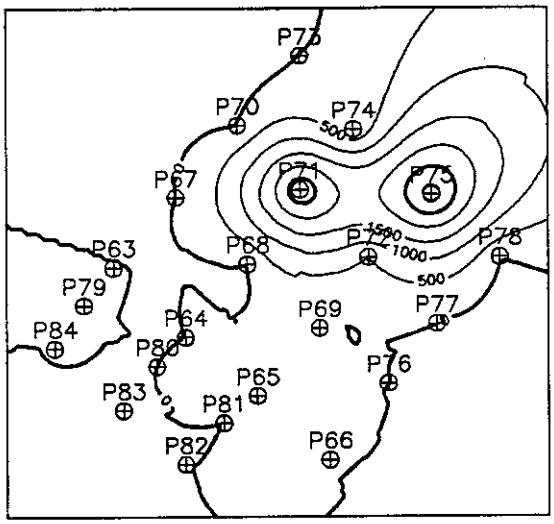


SCALE 1 inch = 400 feet

Project No. ASB90-069

PLATE 1

SAT LRMP SURFICIAL SOIL GAS ISOCONCENTRATION MAP

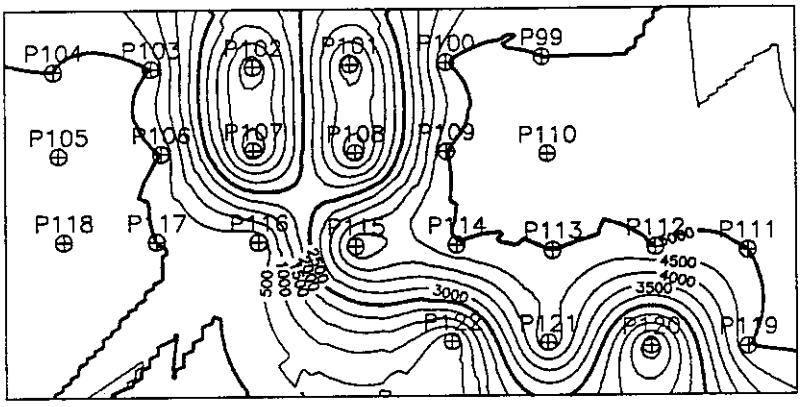


SCALE 1 inch = 400 feet

Project No. ASB90-069-00

PLATE 10-B

SAT LRMP SURFICIAL SOIL GAS ISOCONCENTRATION MAP

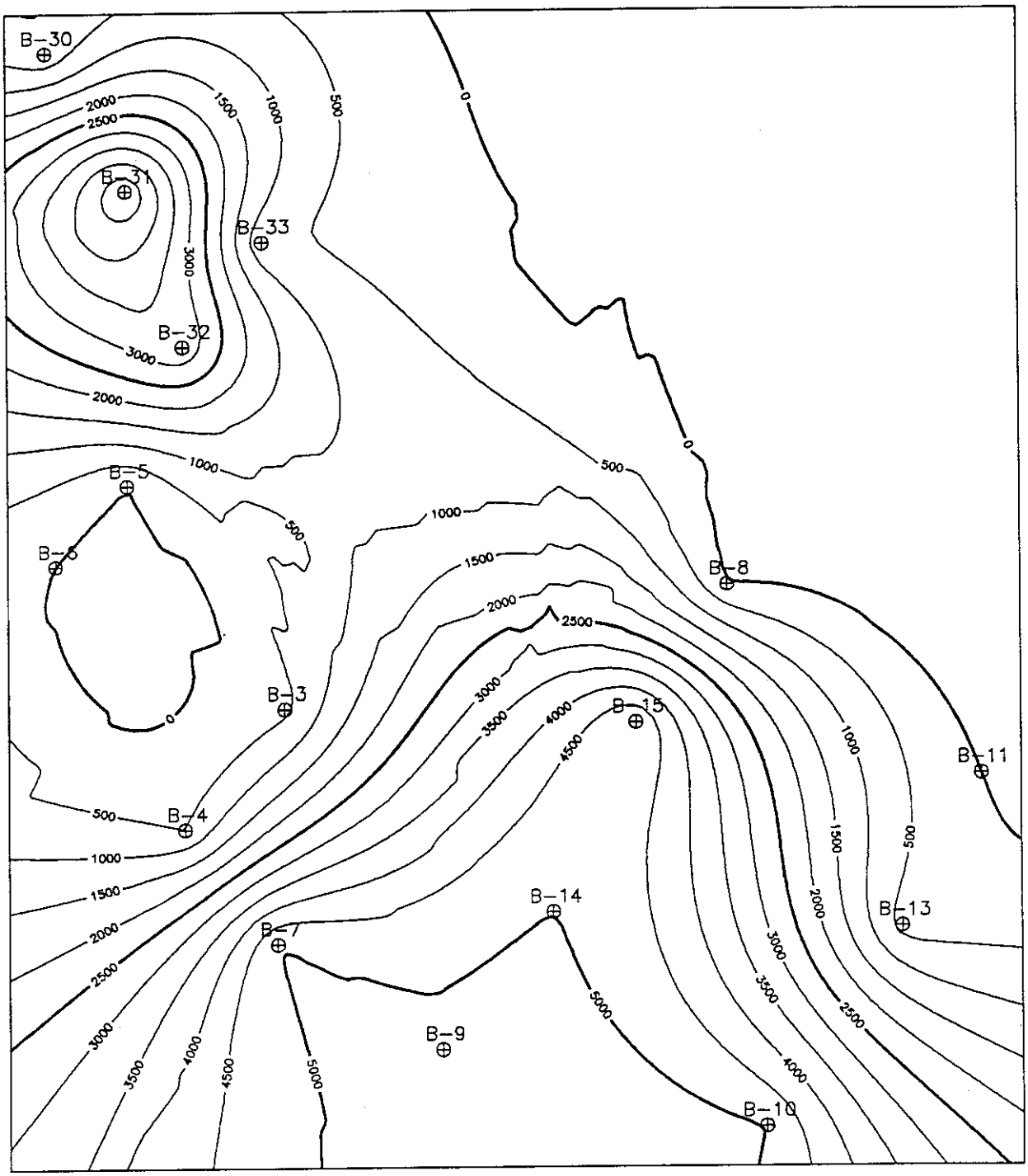


SCALE 1 inch = 400 feet

Project No. ASB90-069-00

PLATE 10-C

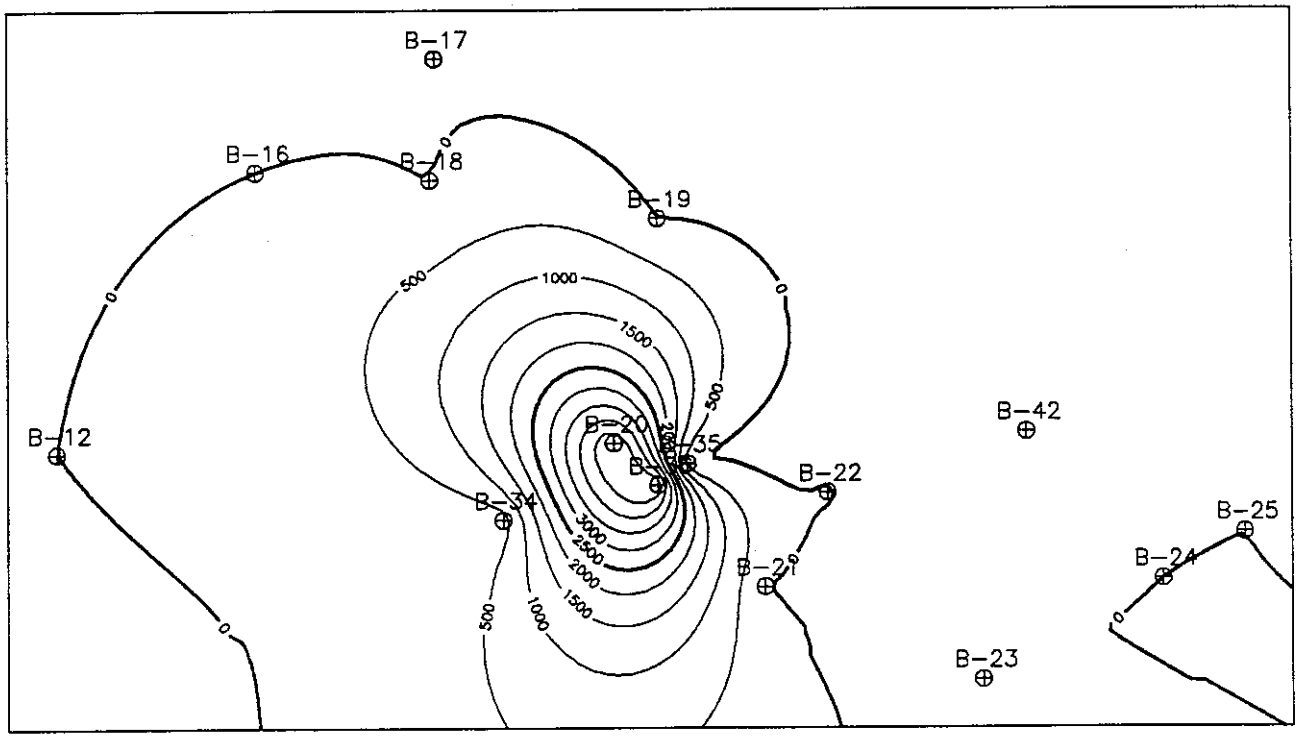
SAT LRMP OPEN BORING SOIL GAS ISOCONCENTRATION MAP



SCALE 1 inch = 400 feet

Project No. ASB90-069-(

SAT LRMP OPEN BORING SOIL GAS ISOCONCENTRATION MAP

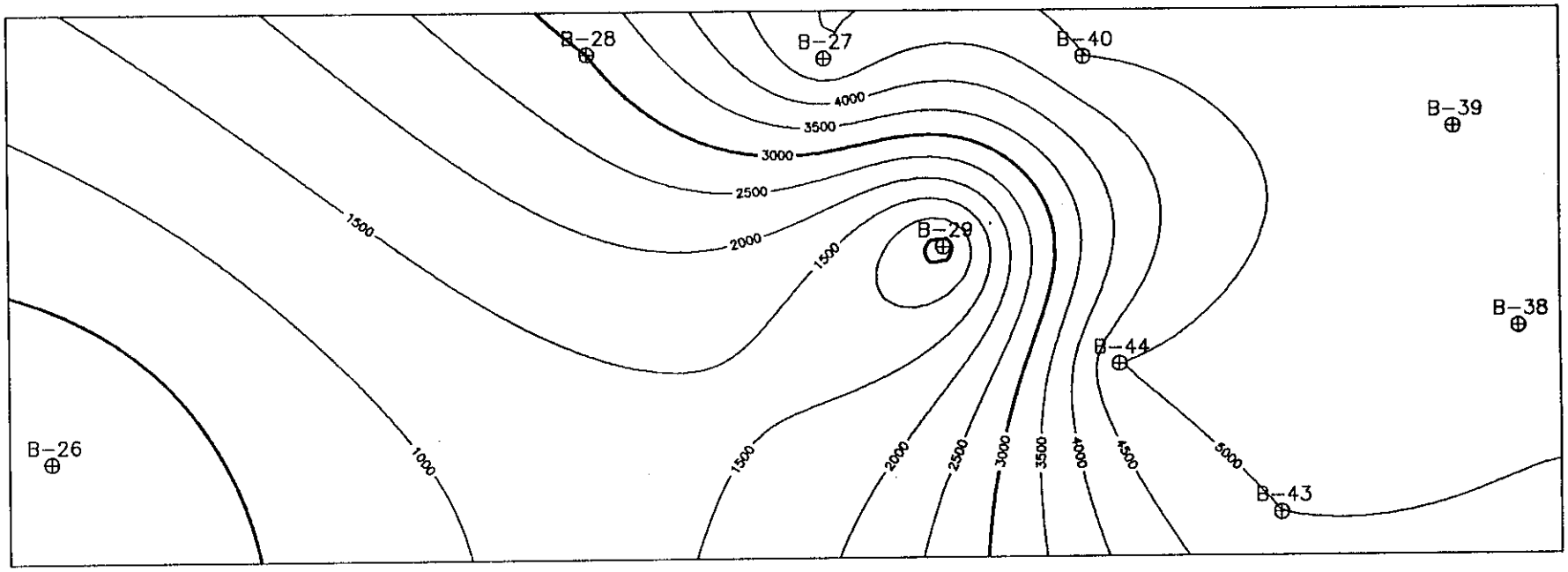


SCALE 1 inch = 400 feet

Project No. ASB90-069-00

PLATE 11-B

SAT LRMP OPEN BORING SOIL GAS ISOCONCENTRATION MAP



SCALE 1 inch = 400 feet

Project No. ASB90-069-00

PLATE 11-C


LEGEND
APPROXIMATE EXTENT OF WASTE
MRW: MAHONE RUBBISH WASTE
BLS-RW: BITTERS LANDFILL SITE - RUBBISH WASTE
BLS-BW: BITTERS LANDFILL SITE - BRUSH WASTE
BLS-MBW: BITTERS LANDFILL SITE - MODIFIED BRUSH WASTE
BLS-MCDW: BITTERS LANDFILL SITE - MODIFIED CONSTRUCTION DEMOLITION WASTE
BRCDW: BITTERS ROAD CONSTRUCTION DEMOLITION WASTE
BRSP-1: BITTERS ROAD STRIP PITS
WRL-1: WETMORE ROAD LANDFILL
PROJECT AREA
BORING / PIEZOMETER LOCATION
A A'
CROSS SECTION LOCATION
E = 2,166,550
N
0 400 800
scale feet
STARCREST ROAD
OLD BITTERS ROAD
JONES MALTSBERGER ROAD
WETMORE ROAD
MRW
BLS-RW2
BLS-RW1
BLS-BW2
BLS-BW1
BLS-MCDW
BLS-MBW
BRCDW
BRSP-1
BRSP-2
BRSP-3
WRL-1
WRL-2
WRL-3
BASE MAP PROVIDED BY
DANNENBAUM ENGINEERING CORPORATION
REVISIONS
NO. BY DATE APPD
Raba-Kistner
Consultants, Inc.
•Engineers •Geologists •Scientists •Chemists
LOCATION, EXTENT AND TYPE OF WASTE MAP
SAT LRMP
SAN ANTONIO, TEXAS
SCALE: AS SHOWN PROJ. NO.: ASB90-069-00 DWG. NO.: PLATE 86
DRAWN BY: RAH CHK BY: APPD: DATE: 5-15-91
N = 618,770
E = 2,180,150

INVENTORY MAP of SAN ANTONIO INTERNATIONAL AIRPORT

Mapping By
Todin Aerial Surveys
P.O. Box 201
San Antonio, Texas 78291

H-210

PHASE III SITE INVESTIGATION
FIRE TRAINING AREA

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PHASE III SITE INVESTIGATION WORK PLAN
SAN ANTONIO INTERNATIONAL AIRPORT
FIRE TRAINING AREA

Prepared for

City of San Antonio
San Antonio Department of Aviation
San Antonio, Texas

Submitted by

Roy F. Weston, Inc.
70 NE Loop 410, Suite 460
San Antonio, Texas 78216-5842

August 1998

PHASE III SITE INVESTIGATION WORK PLAN
SAN ANTONIO INTERNATIONAL AIRPORT
FIRE TRAINING AREA

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PHASE III SITE INVESTIGATION WORK PLAN
SAN ANTONIO INTERNATIONAL AIRPORT
FIRE TRAINING AREA

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PHASE III SITE INVESTIGATION WORK PLAN
SAN ANTONIO INTERNATIONAL AIRPORT
FIRE TRAINING AREA

LIST OF FIGURES

PHASE III SITE INVESTIGATION WORK PLAN
SAN ANTONIO INTERNATIONAL AIRPORT
FIRE TRAINING AREA

LIST OF TABLES

EXECUTIVE SUMMARY

The City of San Antonio's Department of Aviation (SADA) owns and previously operated a fire training area (FTA) at the San Antonio International Airport (SAIA) in San Antonio Texas. The FTA was active from the mid-1970s until its use was discontinued in 1991. Waste flammable solvents and diesel fuel were used as the ignition source for training exercises. Site structures were removed when the facility was decommissioned in 1991. An above ground storage tank, its associated piping and other containerized material were removed from the site. A site assessment report was completed in 1994 that documented the results of surface and subsurface soil and groundwater sampling events previously conducted at the FTA. The majority of the analytical results presented in the 1994 assessment report were based on samples collected in 1991.

Based on historical information, eight areas of environmental concern (AECs) at the site have been impacted by releases of a variety of combustible chemicals burned during the fire training activities conducted on site. The AECs are generally in well-defined areas of the facility. Metals contamination appears to be limited to the upper three feet at the impacted AECs except at one AEC where lead was detected at a depth of 6 feet. The depth of TPH contamination varies at each AEC but appears not to extend beyond a maximum depth of 10 feet at the site. Low levels of volatile or semi-volatile constituents were also detected at some of these AECs.

The purpose of this work plan is to describe the proposed multimedia investigation activities that will supplement historical site information and assess current site conditions. This investigation will be used to support planned site closure activities that are to be initiated after the results of the investigation are evident and have been reviewed. The results of this investigation will be used to establish closure criteria satisfying TNRCC Risk Reduction Closure requirements.

SECTION 1.0
INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

Roy F. Weston, Inc. (WESTON) has prepared this Phase III Site Investigation Work Plan for the Fire Training Area (FTA) located at the San Antonio International Airport (SAIA) at the request of the San Antonio Department of Aviation (SADA). The purpose of this work plan is to describe multimedia investigation activities that will be conducted to supplement and update historical site information. The results of the investigation will be used to establish site-specific closure criteria satisfying Texas Natural Resource Conservation Commission (TNRCC) Risk Reduction Standard (RRS) Closure requirements.

1.2 BACKGROUND

The FTA is a partially fenced site located on Old Bitters Road on the north side of SAIA. The location of the approximately 5.2-acre site is shown on Figure 1. The site was previously used for training of SAIA aircraft and fire rescue personnel. According to a previous study by Raba-Kistner (1991), the area surrounding the FTA consists of undeveloped land. The main areas and features discussed in this document are presented on Figure 2.

Fire training exercises began at the FTA during 1974 or 1975. Initially, training fires were fueled by concentrated burning of several flammable materials in burn pits. Fuels included flammable liquids, semi-solids, and solids of known and unknown chemicals. Some of the known chemicals that were used included methanol and methyl ethyl ketone (2-butanone). Various chlorinated hydrocarbons such as trichloroethane, tetrachloroethane, trichloromethane, carbon tetrachloride (tetrachloromethane), and methylene chloride were also suspected contaminants in liquid waste and waste fuels which may have been burned at the FTA. The apparent primary criteria for acceptance of material was that it was flammable and was characterized by a high British Thermal Unit (BTU) rating. Originally, these materials were stored in drums in the Drum Storage Area (DSA) and moved via the Drum Rolling Route (DRR) to the Former Burn Pit (FBP). Another site feature is a circular depression (CD) for which the historic use is unknown.

At a later date, diesel was used to fuel the training fires. A 4,000-gallon diesel aboveground storage tank (AST) and subsurface piping system were installed. The subsurface piping system consisted of approximately 160 feet of 3.5-inch diameter pipe connecting the AST and the Control Block Wall (CBW) via the North Pipe Chase. The CBW was a twelve-valve control station located between the AST and the burn pit. Several 1.5-inch diameter pipes extended from the CBW approximately 70 feet via the South Pipe Chase to a circular burn area (Current Burn Pit or CBP) where the diesel fuel was sprayed on the ground surface and ignited. The nine areas discussed above are collectively referred to in this document as the Areas of Environmental Concern (AECs).

The AST was removed on 22 May 1991 along with the piping system and other containerized material. These immediate abatement measures were undertaken by SADA to remove the concentrated sources of potential contamination and to remove containers of chemicals from the surface of the site. The various materials removed from the site were properly disposed of, or recycled. These activities are described in a Fugro report entitled Final Report, Abatement Measures, Fire Training Area, New Aviation and Old Aviation Maintenance Areas, San Antonio International Airport, San Antonio, Texas, dated December 1991. The Texas Water Commission (now the TNRCC) District 8 assigned tracking number D891041503 to the AST removal and initial abatement activities.

1.3 PREVIOUS INVESTIGATION RESULTS

Fugro performed an environmental assessment of the FTA site and documented the study in Report No. 1002-8035 dated 21 December 1994. As part of that investigation, soils at the nine AECs and groundwater beneath the site were investigated. The site contamination assessment results are summarized in the subsections below. The Contamination Summary presents a synopsis of the depth and location where soil contaminants occur in excess of the Risk Reduction Standard No. 2 (RRS 2) media specific concentrations (MSCs). The analytical data are presented in a summary table in Appendix A.

1.3.1 Soil Contaminant Distribution

A series of soil sampling events were conducted in 1991 in which surface and subsurface soil samples were collected from sample locations 1 through 110. Additional soil samples were collected in 1993 at locations 111 through 122. These historical soil sample locations are exhibited on Figures 3 through 11.

The distribution of contaminants in the soils is summarized below. Contaminants of concern are generally confined to well-defined areas of fire training activities. The inorganic contaminants of concern predominantly occur in the upper three feet of soil. TPH contamination is known to be at depths up to 8 feet below grade. Table 1 provides the contaminant concentration ranges, the Groundwater Protective MSC for an industrial site (GWP-Ind.), the Soil Air Interface MSC for an industrial site (SAI-Ind.), the calculated background concentration, and the remediation criteria for each contaminant of concern at the site.

1.3.1.1 Background Soil Concentrations

Seventeen soil samples were collected in areas of the FTA, which were not used for training activities to determine background metals and TPH concentrations. These samples were collected primarily along the site boundaries and the eastern half of the site, which was assumed to be least impacted by site activities.

The results for the background soil sample analyses for metals are provided in Table 2. For purposes of a potential RRS 2 closure evaluation, the analytical results for arsenic, barium, chromium, lead, and TPH were statistically analyzed to determine the background concentration for the Upper Tolerance Limit (UTL) at a 95% confidence level. Background concentrations were calculated for these analytes, because they were the only constituents with a sufficient number of background sample results available. In the case where less than 8 sample results were available, the maximum background concentration was selected as the site-specific background concentration.

1.3.1.2 Metals Distribution

The range of metals concentration in the soil samples is provided in Table 1. A comparison of the closure criteria to the concentration range of these metals in soil shows that arsenic, beryllium, barium, chromium, lead, and selenium exceed closure cleanup criteria. These contaminants of concern are located in the upper three feet of soil with one exception. The exception is a location at the CBP where lead was detected at a concentration of 68 mg/kg, (11 mg/kg above background), at a depth of 6 feet. Samples collected at more shallow depths at this location were found to contain less than the calculated background concentration for lead.

1.3.1.3 Volatile and Semi-Volatile Organic Compound Distribution

Although a number of volatile and semi-volatile organic chemicals were detected in shallow soils at the FTA, none of these exceed the RRS 2 standards except bis(2-ethylhexyl)phthalate. Bis(2-ethylhexyl)phthalate was found at a concentration of 2.4 mg/kg in one surface sample. This location is to be excavated with other contaminants of concern (COCs) also detected at that location.

1.3.1.4 TPH Distribution

TPH contamination in excess of the proposed remediation criteria level was found at the AST, the CBP, the CBW, the CD, the DRR, the DSA, the FBP, and the SPC. TPH concentrations in excess of RRS 2 standards were found at a depth of 4 feet at the AST and SPC, 6 feet at the CBP, 8 feet at the CBW, 4 feet at the CD, 1 foot at the DRR, 3 feet at the DSA, and 8 feet at the FBP.

1.3.2 GROUNDWATER CONTAMINATION

Previous site investigations indicate that there are two shallow water bearing units underlying the site. Ten groundwater monitor wells were installed in August 1991 (in pairs) at five on-site locations, with one well screening the upper and the other screening the lower water-bearing unit. The results of the September 1991 groundwater sampling event indicated site activities had not impacted the underlying groundwater quality. Monitor well locations are indicated on Figure 2. Interpreted groundwater contour maps for the water bearing units screened by the shallow

monitor wells and by the deep wells are shown on Figure 11 and Figure 12, respectively. As presented on these figures, the local gradient of both water bearing units is generally to the north and west.

The previous site assessment results indicated that no semi-volatile organics, volatile organics, polychlorinated biphenyl compounds (PCBs) or herbicides/pesticides were detected in groundwater. Trace amounts of metals were found in the upgradient well (MW-1D) indicating the natural occurrence of metals in the soils. The levels of metals found in both the upgradient and downgradient wells were below EPA Drinking Water Standards, except for beryllium in MW-5D. However, beryllium was detected in the upgradient monitor well (MW-1D) at a concentration above the drinking water standard. Because hydrocarbons were not detected in the groundwater, metals appear to be present in both upgradient and downgradient wells, and the metals found would not be expected to be the result of fire training activities, the groundwater does not appear to have been impacted by the fire training activities.

Due to the locations of previously installed groundwater monitoring wells with respect to the apparent groundwater gradient, additional monitoring wells will be installed as part of this investigation. Details concerning the additional well locations and installation methods are presented in Section 2.2.

1.4 CONTAMINATION SUMMARY

In summary, fire training activities at the FTA have impacted the soil at the site. Metals contamination is generally confined to the upper three feet of soils. TPH affected soil extends to a depth of at least 8 feet in two AECs and to lesser depths at six other AECs. If feasible, the City plans to excavate, characterize, and properly dispose of contamination in excess of the RRS 2 cleanup standards levels at the FTA in order to achieve TNRCC RRS 2 closure of the site. The cleanup standards referenced throughout this document are based on a proposed RRS 2 Closure. However, the results of the proposed investigation activities identified herein will be evaluated prior to reaching a final decision regarding actual remedial activities, and identification of a particular risk reduction standard. The COCs that currently exceed cleanup criteria and require removal include TPH, arsenic, beryllium, barium, chromium, lead, selenium, and bis(2-ethylhexyl)phthalate.

Although previous site investigations suggest there has been no impact to the groundwater underlying the site, additional monitor wells will be installed and sampled as part of this investigation to further evaluate the quality of the groundwater underlying the site. Additionally, surface soil samples will be collected along the identified drainage pathways to evaluate the potential for contaminant migration via surface water runoff.

SECTION 2.0
PROPOSED INVESTIGATION ACTIVITIES

This section presents WESTON's recommendations for Phase III investigation activities at the FTA site.

2.1 ADDITIONAL SOIL SAMPLING

The extent of contamination at the impacted AECs is not fully defined. Therefore, additional soil sampling will be performed to further delineate the extent of contamination at the AECs. Soil borings using Geoprobe techniques will be performed at the AECs to various depths based on a review of available data and visual observations and field screening measurements. The samples will be collected continuously and screened in the field using a photoionization detector (PID). An estimated two samples from each boring location will be submitted to a fixed laboratory. The analytical parameters proposed for each AEC include TPH, arsenic, barium, beryllium, chromium, lead, and selenium. These parameters were either detected, or were analyzed for on a limited number of samples at each AEC. Samples may also be collected for Synthetic Precipitation Leaching Procedure (SPLP) analysis during this sampling event in order to evaluate its applicability toward revising the soil cleanup standard necessary to be protective of groundwater. A discussion of each AEC is presented below. Proposed boring locations at each AEC are included as Figures 4 through 10.

2.1.1 Aboveground Storage Tank

Previous investigations identified TPH at the AST. Lead was the only metal constituent analyzed for (on a limited number of samples only), and was not detected above background concentrations. TPH appears to be localized near the southern end of the former location of the tank and limited to the upper five feet of soil; however, the clean perimeter is not well defined. Previous soil sampling locations in the vicinity of the AST and the proposed additional soil boring locations are presented on Figure 4.

2.1.2 Current Burn Pit

TPH, lead, arsenic, barium, and selenium were identified at the CBP. Other metals were analyzed for on a limited number of samples only. The extent of TPH contamination extends to various depths in the area and appears to be limited to the upper 8 feet of soil. Lead appears to be the indicator parameter for metals contamination. Lead was identified at a depth of 6 feet. No samples collected below 6 feet were analyzed for metals. The extent of contamination is not well defined vertically or along the east, south, and west ends of the AEC. Previous soil sampling locations and the proposed additional soil boring locations in the vicinity of the CBP are presented on Figure 5.

2.1.3 Control Block Wall

TPH was detected at the CBW. Samples were not analyzed for metals. The horizontal extent of contamination is not well defined. TPH was detected at a concentration of 5500 mg/kg and 3800 mg/kg at a depth of 8 feet. Samples collected from a depth of 10 feet deep adjacent to those locations had nondetectable concentrations of TPH contamination. The horizontal extent of contamination is not well defined on the north, east and south sides of the CBW. Previous soil sampling locations along with the proposed boring locations at the CBW are shown on Figure 6.

2.1.4 Circular Depression

Lead, arsenic, and chromium were detected at the CD. Other metals were analyzed for on a limited number of samples only. TPH was not detected at significant concentrations. Lead was detected at a concentration of 60 mg/kg at a depth of 4 feet. The horizontal and vertical extent of contamination is not well defined. Previous soil sample locations along with the proposed boring locations at the CD are presented on Figure 7.

2.1.5 Drum Rolling Route

Arsenic was detected at a depth of one foot along the DRR at two isolated areas; Locations 65 (7 mg/kg) and 67 (8.6 mg/kg), as presented on Figure 8. As these two areas of contamination appear to be isolated in nature, no additional soil sampling is proposed at the DRR.

2.1.6 Drum Storage Area

TPH, arsenic, lead, chromium, and selenium were detected at the DSA. Beryllium and barium were only analyzed for on a limited number of samples. TPH was identified at a depth of 3 feet. Four-foot samples from the same locations indicated insignificant levels of TPH. Metals contamination appears to be limited to the upper three feet. The horizontal extent of contamination is defined with the exception of the portion west of Sample Location 92 and east of Sample Location 18. The vertical extent of contamination appears to be limited to the upper four feet below grade. Previous soil sampling locations along with the proposed boring locations at the DSA are shown on Figure 9.

2.1.7 Former Burn Pit

TPH, lead, arsenic, barium, and beryllium were detected at the FBP. Chromium and selenium were not detected, but were only analyzed for on a limited number of samples. The extent of TPH contamination extends to various depths in the area and appears to be limited to the upper 10 feet of soil. Metals contamination appears to extend to a maximum depth of 6 feet. Metals contamination of shallow soils (less than 3 feet) appears to extend horizontally beyond that of TPH. Previous soil sampling locations along with the proposed boring locations at the FBP are shown on Figure 10.

2.1.8 South Pipe Chase

The impacted area of the SPC will be remediated as part of the CBP as discussed above.

2.2 GROUNDWATER PATHWAY INVESTIGATION

Three groundwater monitoring wells will be installed in the upper-most water bearing unit at the FTA to monitor conditions downgradient of the AECs and along the northern perimeter of the site. Proposed well locations are included on Figure 13. These well locations have been selected to be downgradient of three of the major AECs and still be within the site boundaries. WESTON will determine the screened interval of the monitoring wells based on field conditions encountered.

The new monitoring wells will be installed using hollow-stem auger drilling techniques and constructed of 2-inch diameter Schedule 40 flush-joint polyvinyl chloride (PVC) casing and up to 20 feet of 0.010-inch slotted screen. The annular space around the screen will be filled with clean, uniform sized (20-40 mesh or similar) silica sand to a maximum height of two feet above the top of the screen. A minimum 2-foot-thick layer of bentonite pellets or bentonite slurry will be placed immediately above the sand pack. If bentonite pellets are used, potable water will be poured over the pellets to initiate hydration. The pellets will be allowed to hydrate for at least 30 minutes before grout is added to the borehole. After the bentonite seal is placed, the remaining annular space will be pressure grouted (grout may be poured if the top of the bentonite seal is less than ten feet below ground surface). A flush-mount completion will be installed, centered in a 4-foot by 4-foot concrete pad.

The tops of the well casings will be surveyed so the newly installed wells can be referenced to other wells to determine groundwater gradient. The newly installed wells will be developed, and they along with the ten existing wells on site will be purged and sampled for TPH, arsenic, barium, beryllium, chromium, lead, and selenium.

2.3 SURFACE WATER PATHWAY INVESTIGATION

Soil samples will be collected from on-site surface water drainage pathways to evaluate potential contamination migration via surface water runoff. Although an intermittently flowing branch of the Salado Creek is located adjacent to the site to the south and east, based on a site reconnaissance, the majority of the drainage at the site appears to be north and northeast toward Old Bitters Road. A 1982 topographic map was reviewed (Appendix B) and also indicated drainage toward Old Bitters Road. It should be noted that this surface topographic gradient is very similar to the measured groundwater gradient presented on Figures 11 and 12. Based on this information, surface soil samples will be collected from four on-site locations believed to be in the surface water runoff pathway. These locations, along with the interpreted on-site surface water drainage, are shown on Figure 14. Samples will be submitted to a laboratory and analyzed for TPH, arsenic, barium, beryllium, chromium, lead, and selenium.

SECTION 3.0
SITE INVESTIGATION TASKS

This section summarizes the investigation tasks that will be performed.

3.1 MOBILIZATION

The tasks that the WESTON field team will complete prior to sampling are described in this subsection.

3.1.1 Task 1 - Mobilization

The WESTON field team will mobilize from the San Antonio, Texas office. One or two team members will check equipment prior to mobilizing to the site. An equipment checklist will be used to verify that the necessary sampling equipment is included in the mobilization. As part of the mobilization effort, the field team will assemble the required sample containers and sample identification labels prior to leaving for the site, as time permits

As part of initial mobilization activities, before going on site, the WESTON team will drive the route from the site to the nearest hospital.

3.1.2 Task 2 - Health and Safety Meeting and Protocol

After arriving at the site, the WESTON Field Team Leader (FTL) and the Site Health and Safety Coordinator (SHSC) will conduct a meeting to review the technical aspects of the project and discuss the site-specific Health and Safety Plan (HASP) and related WESTON Standard Operating Procedures (SOPs) with the sampling team. After this meeting, a copy of the HASP, with the map to the hospital on the first page, will be placed on the dashboard of the field vehicle designated for emergency use.

The field work will be conducted in accordance with the site-specific HASP. The sampling team generally will work in Level-D personal protective clothing and equipment as specified in the HASP, as long as air-monitoring results justify this level of protection. The monitoring instruments to be used are specified in the HASP. Depending on the air monitoring results, the sampling team may be required to upgrade to Level-C, if one or more of the air-monitoring action levels listed in the HASP are met or exceeded.

At the start of each day, and as necessary at other times during the sampling visit, the FTL will conduct safety meetings to reiterate site concerns and address any new technical or safety issues.

A designated team member will perform a calibration check and overall inspection of the monitoring instruments each day prior to sampling.

3.1.3 Task 3 – Site Control

WESTON will use existing site features as benchmarks to establish site control. Sample locations will be staked and located relative to the permanent site features. The elevations of the tops of the new well casings will be surveyed along with those of the ten existing wells. A local reference will be used to establish relative elevations to allow construction of a groundwater contour map.

3.2 SAMPLING TASKS

Field tasks 4 through 10, associated with the collection of samples, are described in the following subsections. Sample locations are shown on Figures 4 through 10, 13, and 14.

3.2.1 Task 4 - Documentation of Field Activities

The WESTON FTL will document in a logbook the activities performed during the sampling visit, as well as other significant observations made throughout the field investigation. The FTL will maintain a chronological log of field activities in the logbook. Additionally, the FTL will take periodic photographs of site operations to support the observations documented in the logbook.

The documentation recorded in the logbook for each sample location will include the following:

- Sample station number.
- Sample location (including the address and the distances from fixed reference points).
- Sample description (matrix, color, odor, PID responses, etc.).
- Sample ID numbers.
- Date and time of sample collection.
- Conditions around the sample location.

3.2.2 Task 5 - Equipment Decontamination

Prior to sampling, the WESTON field team will decontaminate non-dedicated sampling equipment that will come into contact with the samples during collection procedures. Equipment decontamination will be performed at the command post. To complete the decontamination process, the following steps will be taken:

- Wash equipment with a mixture of potable water and Liquinox (or other nonphosphate detergent).

- Clean drilling equipment with high-pressure washer as necessary.

- Rinse with potable water.

- Rinse with deionized water.

- Allow air-drying.

To minimize the need for decontamination, WESTON will used dedicated sampling equipment when available, for each sample station. WESTON will decontaminate non-dedicated sampling equipment before and after use. The amount of rinsate water generated will be kept to a minimum, and the rinsate water generated during the decontamination processes will be collected in a 55-gallon drum(s).

Upon the conclusion of the field activities, the water will be disposed of according to information provided in Task 12.

3.2.3 Task 6 – Well Installation

Three groundwater monitoring wells will be installed at the FTA to monitor conditions downgradient of the AECs and along the northern perimeter of the site. The wells will be installed using hollow stem auger drill methods and will screen the uppermost water bearing unit. This unit is described as Quaternary fluvatile deposits consisting of a dark brown stiff clay with increasing gravel content with depth, and may include a portion of the Leona Formation, which consists of a dense clayey brown gravel. The screens will be set so that the potentiometric surface remains within the screened interval. Proposed well locations are included on Figure 13.

3.2.4 Task 7 - Geoprobe Sampling

Based on the available information, contaminants have been identified in several distinct areas on site. Geoprobe sampling will be conducted in an effort to further characterize the horizontal and vertical extent of contamination in these areas.

As part of the investigation activities, WESTON will advance up to 40 shallow soil borings in an attempt to define the horizontal and vertical extent of contamination in the source areas. As part of the soil boring program, 10% duplicate soil samples will be collected for laboratory quality control (QC) purposes. In addition, one equipment rinsate blank will be collected for QC purposes.

Each soil boring will be advanced to a depth not to exceed 15 feet below ground surface (bgs). All samples will be screened in the field using a photoionization detector. Based on visual

observations and field screening results, from zero to two samples per boring will be submitted for analysis. It is anticipated that boring termination depths will be based on visual observation and field screening. Generally, one sample will be collected from the depth interval with the highest field screening results or greatest visual contamination, and one will be collected at the terminal depth. Proposed sample locations are provided in Figures 4 through 10.

3.2.5 Task 8 – Surface Water Drainage Pathway Sampling

WESTON will collect four samples on site along surface water drainage pathway as presented on Figure 14. The samples will be collected from a depth of 0 to 3 inches using a hand trowel.

3.2.6 Task 9 – Groundwater Sampling

Groundwater samples will be collected to further characterize the shallow groundwater underlying the site. The new wells will be developed, purged, and sampled along with the existing ten wells to evaluate the groundwater pathway. The wells will be developed after the concrete well pads have solidified. A bailer will be used to surge and purge the well of development water. The purged water will be periodically monitored for pH, specific conductance and temperature. The measurements will be recorded in a field log book. The well development will be considered to be complete when the measurements stabilize and the water turbidity is minimal. Samples will be collected using unused disposable bailers.

3.2.7 Task 10 - Sample Management

WESTON will manage the samples collected during the investigation. Samples will be placed in clean, unused sample containers. The sample containers will be labeled and placed in a cooler containing ice immediately after collection. A Chain of Custody will be maintained and remain with the samples until they arrive at the laboratory for final delivery.

3.2.7.1 Sample Container Decontamination

Prior to sample packaging, the outside of each container will be decontaminated. To decontaminate the sample containers, each sample container will be washed with deionized water and dried with a paper towel.

3.2.7.2 Sample Packaging

Once labeling is completed, the Sample Manager and FTL will review the sample documentation for accuracy before the samples are packaged for shipping. Once this QA check is completed, the samples will be packaged in coolers using the following guidelines:

- Each sample bottle or jar will be placed within a lock-top bag, which will be sealed. Analytical parameters and sample jars to be used for each parameter are presented in Tables 3 and 4.

- The bottles and jars will be placed into coolers.

- Packing material will be placed around the sample containers to fill empty space and help prevent breakage during transport.

- At least two lock-top bags filled with ice will be placed on the samples in each cooler to help maintain the ice chest temperature at approximately 4°C. Additional packing material may be added on top of the ice to fill the cooler.

- The appropriate chain-of-custody forms will be sealed inside a plastic lock-top bag and placed inside of the cooler.

- The coolers will then be closed, and sealed with strapping tape or packaging tape.

3.2.7.3 Sample Shipping

When sampling is completed for a given day, the sampling team will ship the samples by Federal Express Priority Overnight Service to the laboratory for analytical testing.

3.3 DEMOBILIZATION

The remaining tasks will be completed by the field team after all samples are collected and shipped and after the FTL acquires the consent of the WESTON Project Team Leader (PTL) or Site Manager.

3.3.1 Task 11 - Demobilization

Following the completion of sampling activities, the field team will decontaminate, package, and transfer all nondisposable sampling equipment. WESTON will, as possible, leave the site in the same condition it was prior to the investigation.

3.3.2 Task 12 –Investigation Derived Waste Staging and Disposal

Investigation derived waste (IDW), including drill cuttings, purge and development water, and decontamination fluids will be containerized in 55-gallon drums and staged on site at a location designated by San Antonio Airport personnel. Pending analytical results, IDW will be disposed of at a permitted facility approved by City personnel. WESTON will prepare manifest documents for signature. Completed manifests will be included in the final report.

3.4 REPORT PREPARATION

After receipt of the validated analytical data, WESTON will prepare the final report for the investigation. The report format will include the following:

- An introduction describing the background and purpose of the investigation.
- A site characteristics section describing the site location, operating history, source waste characteristics, and site concerns.
- A sampling activities section describing the field activities completed during the investigation.
- Individual sections discussing the findings of the investigation as they relate to the characterization of site soil and groundwater.
- A summary and conclusions section discussion the major site concerns.
- Photographs, field notes, and other reference material (included as appendices).

SECTION 4.0
LABORATORY QUALITY ASSURANCE/QUALITY CONTROL

4.1 LABORATORY ANALYTICAL METHODS

The laboratory analyses will be performed using the methods, quantitation limits, and quality assurance guidelines specified in this section. The laboratory will perform the analyses in accordance with its internal quality assurance plan that describes the internal quality control and quality assurance procedures that the laboratory will follow. The samples will be analyzed using the U.S. EPA methods specified in Table 3. Sample volume, preservation, and holding times are identified in Table 4. For a given analysis, the laboratory will provide, at a minimum, quantitative analysis for the analytes listed in Table 5 at the respective sample quantitation limits shown.

4.2 LABORATORY ANALYTICAL DATA REPORTING

Analytical reports prepared to present sample results will include the following:

- A case narrative describing the analytical work performed and any problems
- A copy of the Chain of Custody forms
- A copy of the laboratory sample analysis logs showing sample analysis times
- Analytical results, one page per sample per analysis
- Qualified analytical results where appropriate
- Non-detected analytes reported with a "U" flag
- Instrument calibration results
- Matrix spike/matrix spike duplicate analysis results
- Surrogate recovery results

For each batch of samples, the laboratory will provide an electronic data deliverable (EDD) based on specifications provided to the laboratory. The EDD will be transmitted to WESTON in the form of an electronic mail delivery and/or a 3.5-inch floppy diskette. A Standard Operating Procedure (SOP) will be provided to the laboratory describing the EDD format.

Standard analytical qualifiers should be used. The laboratory should provide a list of used qualifiers and their matching definitions with the analytical data. The general qualifiers that are used include:

- "U" should be used with the quantitation limits for analytes not found above the laboratory reporting limit.

- "J" should be used when reporting estimated concentrations.

- "E" should be used when a reported concentration exceeds the instrument calibration range and is estimated.

- "D" should be used for results that are derived from extra sample dilutions.

4.3 QUALITY CONTROL/QUALITY ASSURANCE

To confirm the reliability of analytical data, the laboratory will implement quality assurance (QA) and quality control (QC) procedures for sample management, analysis, and results reporting. The objectives of the procedures will be to obtain quality monitoring and measurement data and define the required accuracy, precision, and completeness of the data. Procedures to be used in sampling, chain-of-custody, calibrations, laboratory analyses, reporting, internal quality control, audits, preventative maintenance, and corrective actions will follow standard EPA protocols. General analytical quality control requirements are specified in Tables 6 through 8. A description of these protocols is as follows:

- The laboratory will analyze samples in accordance with EPA-approved methods.

- The laboratory will conduct a matrix spike/matrix spike duplicate (MS/MSD) analysis for each batch of 20 samples in each matrix for quality control of laboratory procedures and methods. MS/MSD samples will be analyzed for PCBs.

- The laboratory will analyze one blank sample for every batch of soil and water samples submitted to the laboratory.

The analytical laboratory will provide QA/QC documentation with each batch of samples analyzed. Laboratory QA/QC data will include, but is not limited to, MS/MSD results, surrogate recoveries, any clean up methods utilized, and laboratory blank sample analytical results.

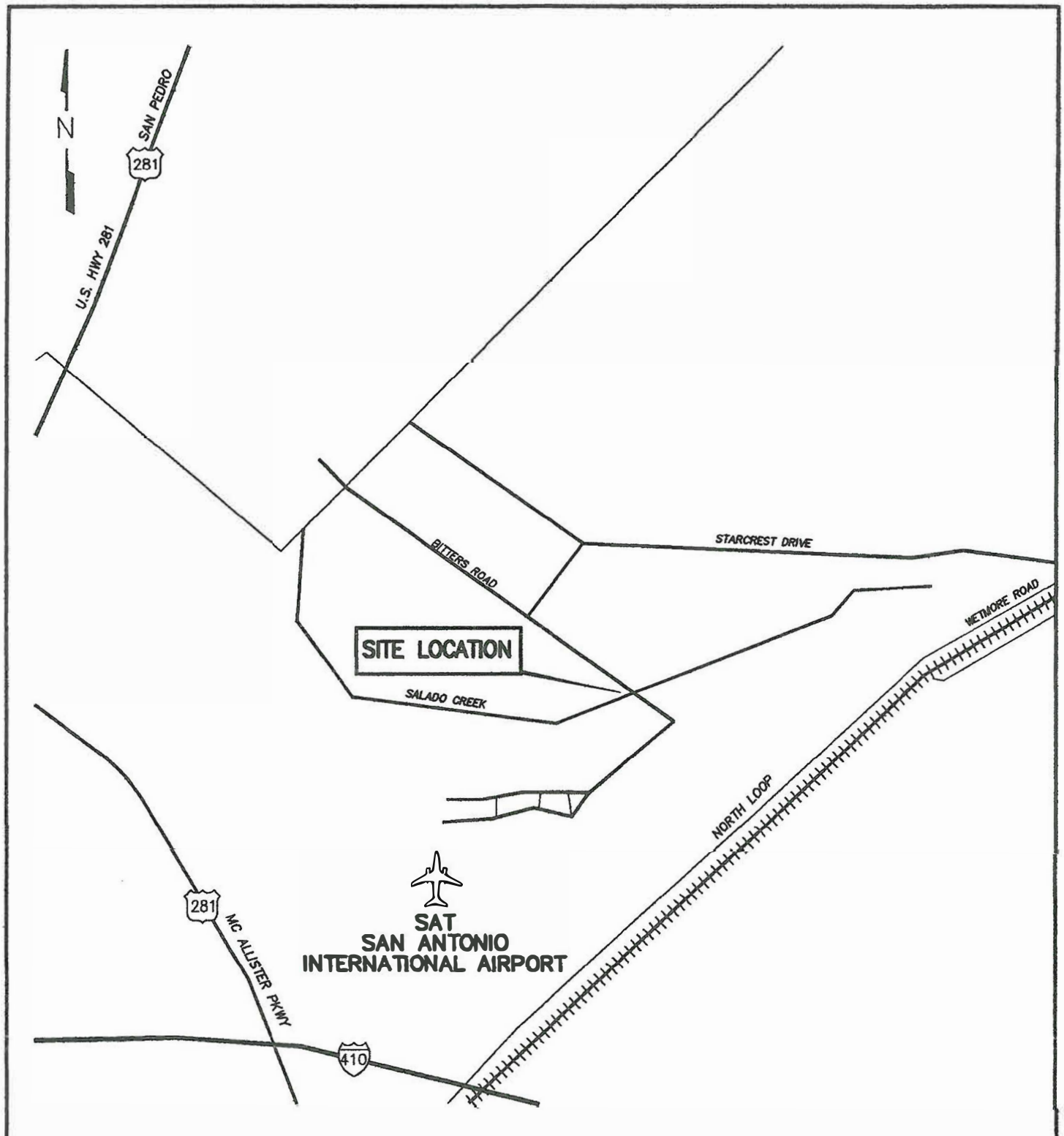
The analytical laboratory will report quality control issues in a case narrative that should be prepared and submitted with the analytical data for each batch of samples. Problems in calibration, surrogate recoveries, laboratory reagents appearing in the method blanks, and similar issues should be reported in the case narrative.

SECTION 5.0
PROPOSED SCHEDULE

Investigation activities will proceed on the following schedule following notice to proceed from TNRCC:

- Week 1: Notice to Proceed.
- Week 3: Mobilization
- Week 4: Conduct investigation activities.
- Week 7: Receive analytical reports.
- Week 11: Submit draft report of findings.
- Week 14: Submit final report.

FIGURES



0 1000 2000

SCALE IN FEET

WESTON
MANAGERS DESIGNERS/CONSULTANTS

FIGURE 1

SITE LOCATION MAP

FIRE TRAINING AREA

SAN ANTONIO INTERNATIONAL AIRPORT
SAN ANTONIO, TEXAS

W.O. NO. : 10920-003-001-0100

weston\stx\k:\cadd\corpusdo\sitemap.ls 08-27-98

N

OLD BITTERS ROAD

N.E. ENTRANCE ROAD

GRAVEL ROAD

GRAVEL ROAD

ABOVE GROUND STORAGE TANK

DRUM STORAGE AREA

MW-4

MW-2

STOCKPILED SOIL

NORTH PIPE CHASE

CONTROL BLOCK WALL

SOUTH PIPE CHASE

MW-5

MW-3

CIRCULAR DEPRESSION

FORMER BURN PIT

CURRENT BURN PIT

MW-1

FLOW

SALADO CREEK

0 50 100

SCALE IN FEET

NOTE: MAIN CHANNEL OF SALADO CREEK IS LOCATED APPROXIMATELY 1700 FEET NORTH AND EAST OF THE SITE.

LEGEND

APPROXIMATE SITE BOUNDARY

MONITOR WELL LOCATION

WESTON
MANAGERS DESIGNERS/CONSULTANTS

FIGURE 2

SITE AREA PLAN
FIRE TRAINING AREA

SAN ANTONIO INTERNATIONAL AIRPORT
SAN ANTONIO, TEXAS

W.O. NO. : 10920-003-001-0100

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N

OLD BITTERS ROAD

GRAVEL ROAD

ABOVEGROUND STORAGE TANK

DRUM STORAGE AREA

APPROXIMATE DRUM ROLLING ROUTE

NORTH PIPE CHASE

CONTROL BLOCK WALL

SOUTH PIPE CHASE

CRUSHED LIMESTONE BASE MATERIAL

CRUSHED LIMESTONE BASE MATERIAL

FORMER BURN PIT

CURRENT BURN PIT

CIRCULAR DEPRESSION

LEGEND

● 60 SOIL SAMPLING POINT (SAMPLES COLLECTED IN 1991 AND 1993)

0 25 50

SCALE IN FEET

WESTON® MANAGERS DESIGNERS/CONSULTANTS

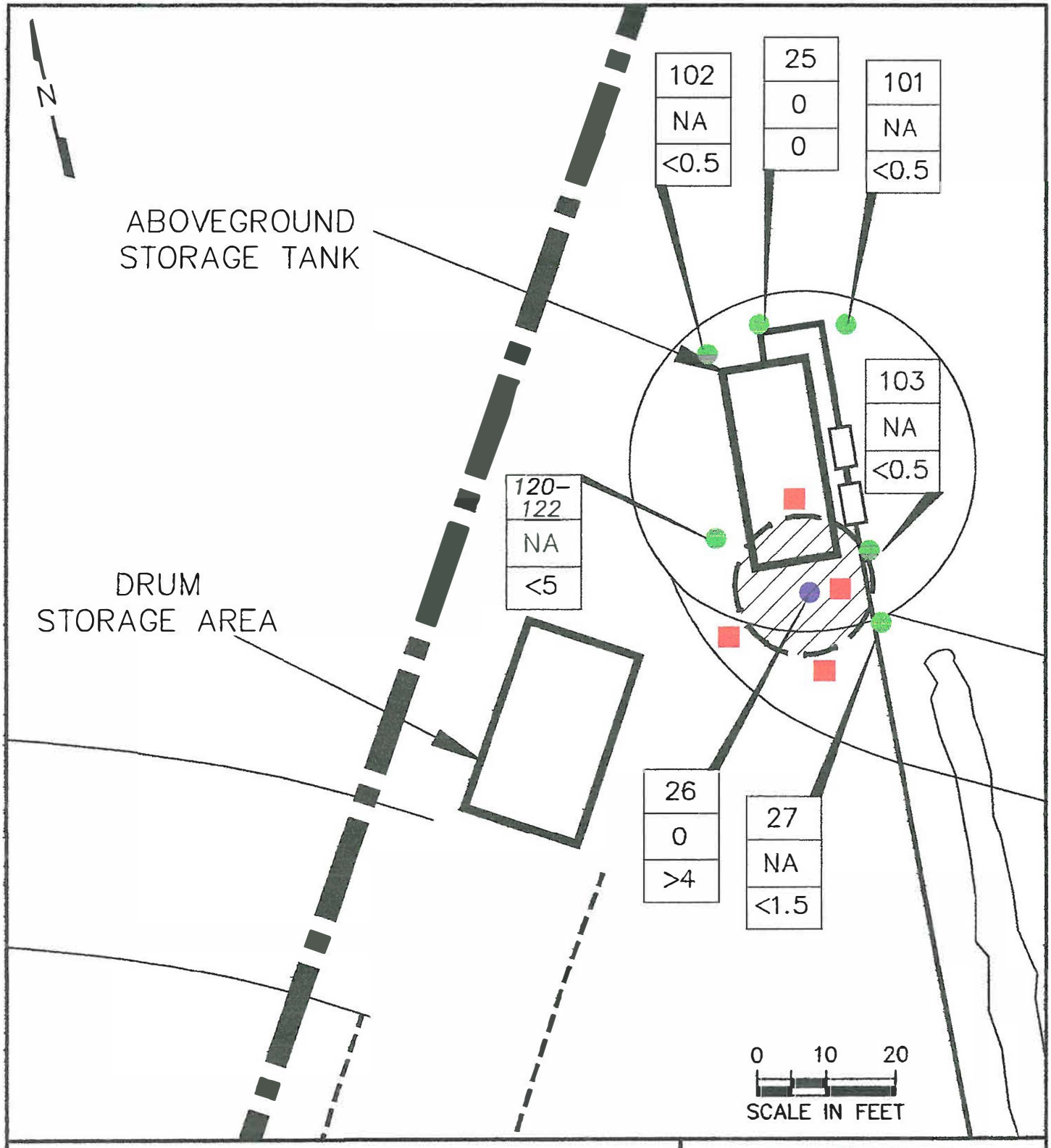
FIGURE 3

PREVIOUS SAMPLING LOCATIONS FIRE TRAINING AREA

SAN ANTONIO INTERNATIONAL AIRPORT
SAN ANTONIO, TEXAS

W.O. NO. : 10920-003-001-0100

weston\gtx\c:\cadd\casasda\fig-1a.ls 08-28-98



LEGEND

103	SAMPLE LOCATION
NA	DEPTH TO METALS BELOW ACTION LEVELS
<0.5	DEPTH TO TPH BELOW ACTION LEVELS
NA	NOT ANALYZED

- BELOW ACTION LEVELS
- TPH ABOVE ACTION LEVELS
- PROPOSED BORING LOCATION
- ESTIMATED EXTENT OF CONTAMINATION

WESTON® MANAGERS DESIGNERS/CONSULTANTS

FIGURE 4

PROPOSED ADDITIONAL BORINGS
ABOVEGROUND STORAGE TANK
FIRE TRAINING AREA

SAN ANTONIO INTERNATIONAL AIRPORT
SAN ANTONIO, TEXAS

W.O. NO. : 10920-003-001-0100

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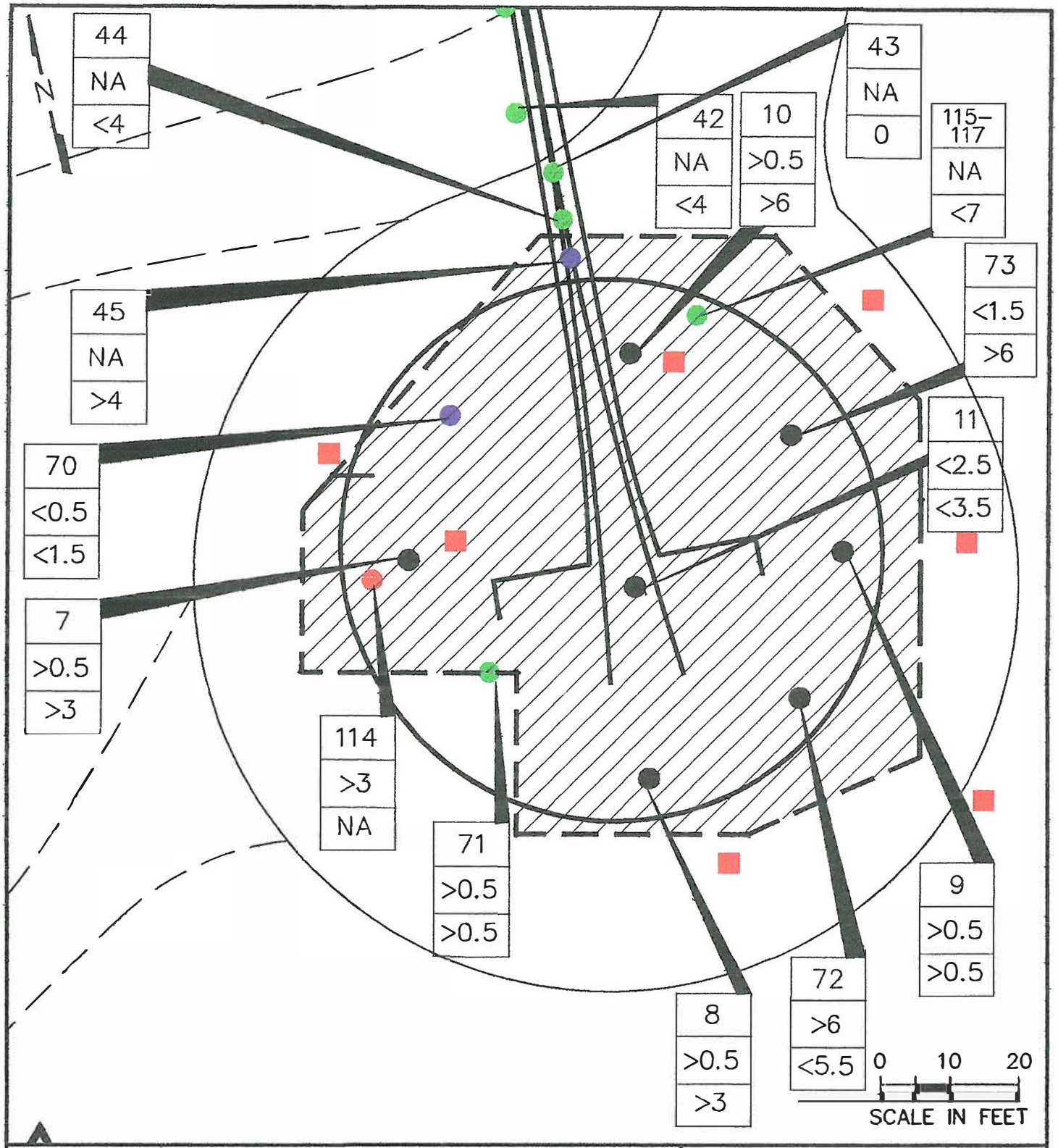

LEGEND

114	SAMPLE LOCATION
>3	DEPTH TO METALS BELOW ACTION LEVELS
NA	DEPTH TO TPH BELOW ACTION LEVELS
▨	ESTIMATED EXTENT OF CONTAMINATION
NA	NOT ANALYZED
●	BELOW ACTION LEVELS
●	TPH ABOVE ACTION LEVELS
●	TPH & METALS ABOVE ACTION LEVELS
■	PROPOSED BORING LOCATION

WESTON ENGINEERS DESIGNERS/CONSULTANTS

FIGURE 5

PROPOSED ADDITIONAL BORINGS
CURRENT BURN PIT
FIRE TRAINING AREA

SAN ANTONIO INTERNATIONAL AIRPORT
SAN ANTONIO, TEXAS

W.O. NO. : 10920–003–001–0100

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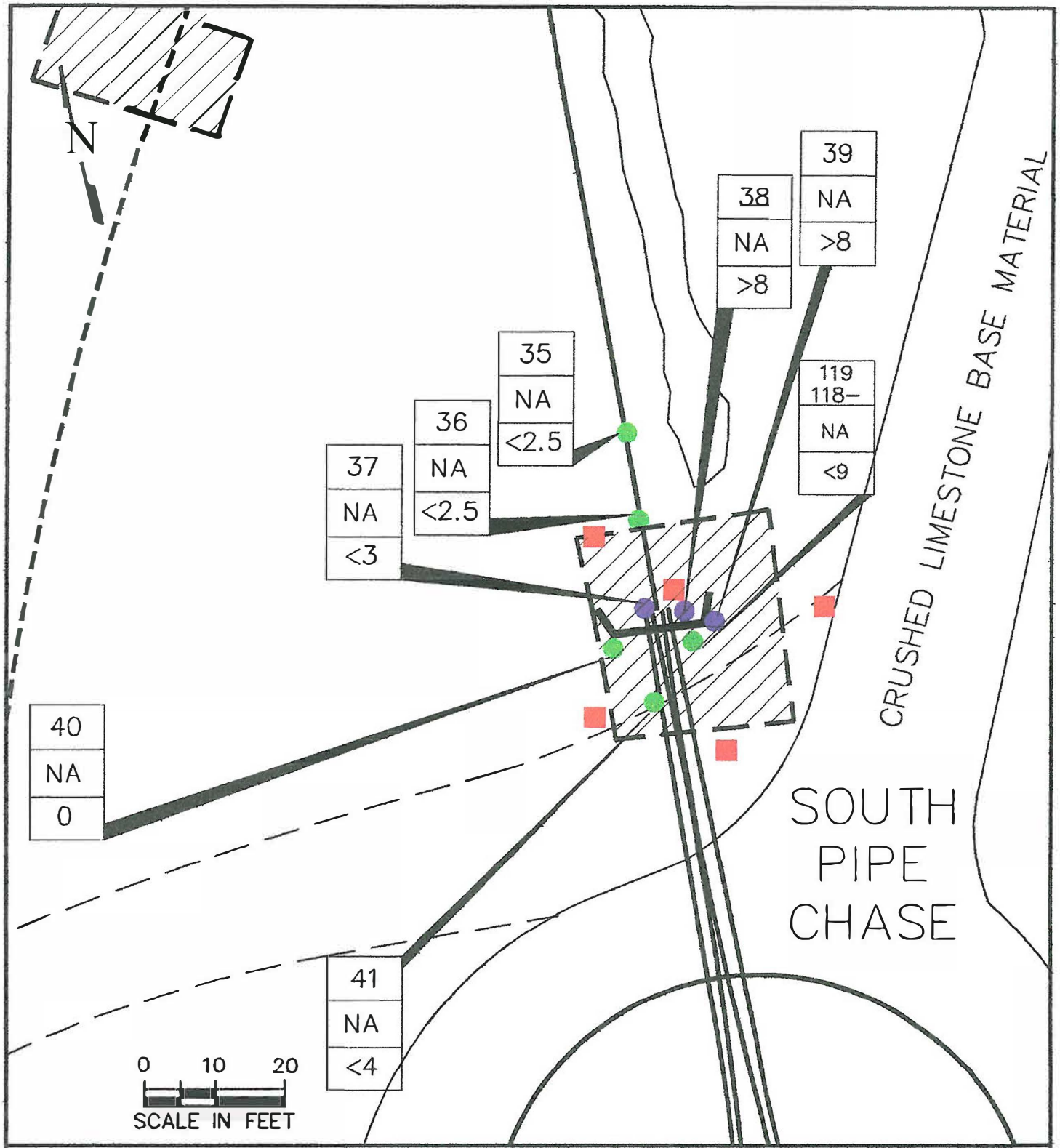


LEGEND

37	SAMPLE LOCATION
NA	DEPTH TO METALS BELOW ACTION LEVELS
<3	DEPTH TO TPH BELOW ACTION LEVELS
NA	NOT ANALYZED

- BELOW ACTION LEVELS
- TPH ABOVE ACTION LEVELS
- PROPOSED BORING LOCATION
- ESTIMATED EXTENT OF CONTAMINATION

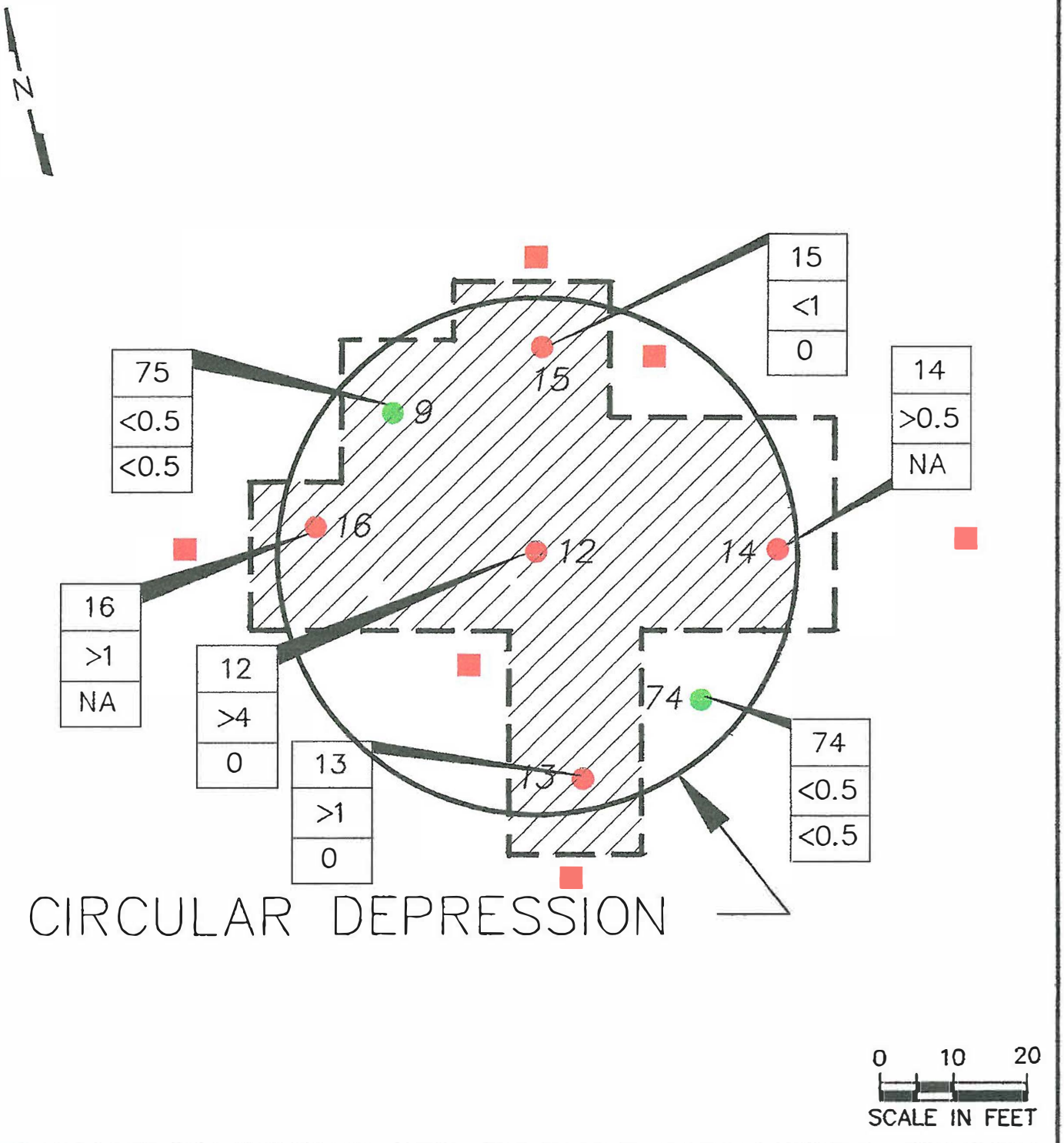
WESTON® MANAGERS DESIGNERS/CONSULTANTS

FIGURE 6

PROPOSED ADDITIONAL BORINGS
CONTROL BLOCK WALL
FIRE TRAINING AREA

SAN ANTONIO INTERNATIONAL AIRPORT
SAN ANTONIO, TEXAS

W.O. NO. : 10920–003–001–0100



LEGEND

74	SAMPLE LOCATION
<0.5	DEPTH TO METALS BELOW ACTION LEVELS
<0.5	DEPTH TO TPH BELOW ACTION LEVELS
NA	NOT ANALYZED

- BELOW ACTION LEVELS
- METALS ABOVE ACTION LEVELS
- PROPOSED BORING LOCATION
- ESTIMATED EXTENT OF CONTAMINATION

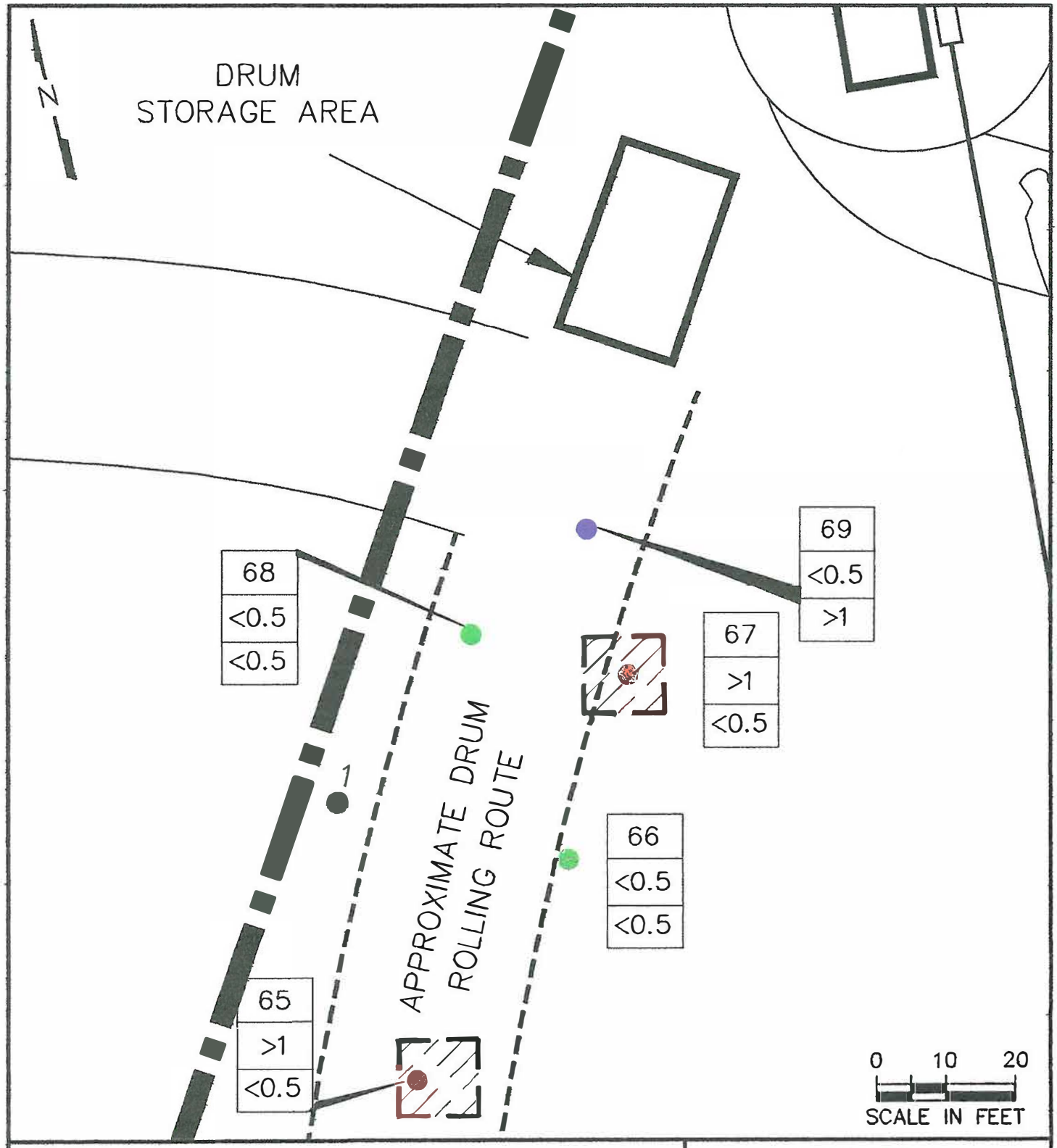
WESTON® MANAGERS DESIGNERS/CONSULTANTS

FIGURE 7

PROPOSED ADDITIONAL BORINGS
CIRCULAR DEPRESSION
FIRE TRAINING AREA

SAN ANTONIO INTERNATIONAL AIRPORT
SAN ANTONIO, TEXAS

W.O. NO. : 10920-003-001-0100



LEGEND

63	SAMPLE LOCATION
<0.5	DEPTH TO METALS BELOW ACTION LEVELS
<0.5	DEPTH TO TPH BELOW ACTION LEVELS
	ESTIMATED EXTENT OF CONTAMINATION
	BELOW ACTION LEVELS
	METALS ABOVE ACTION LEVELS
	TPH & METAL ABOVE ACTION LEVELS
	TPH ABOVE ACTION LEVELS

WESTON
MANAGERS DESIGNERS/CONSULTANTS

FIGURE 8

PROPOSED ADDITIONAL BORINGS
DRUM ROLLING ROUTE
FIRE TRAINING AREA

SAN ANTONIO INTERNATIONAL AIRPORT
SAN ANTONIO, TEXAS

W.O. NO. : 10920-003-001-0100

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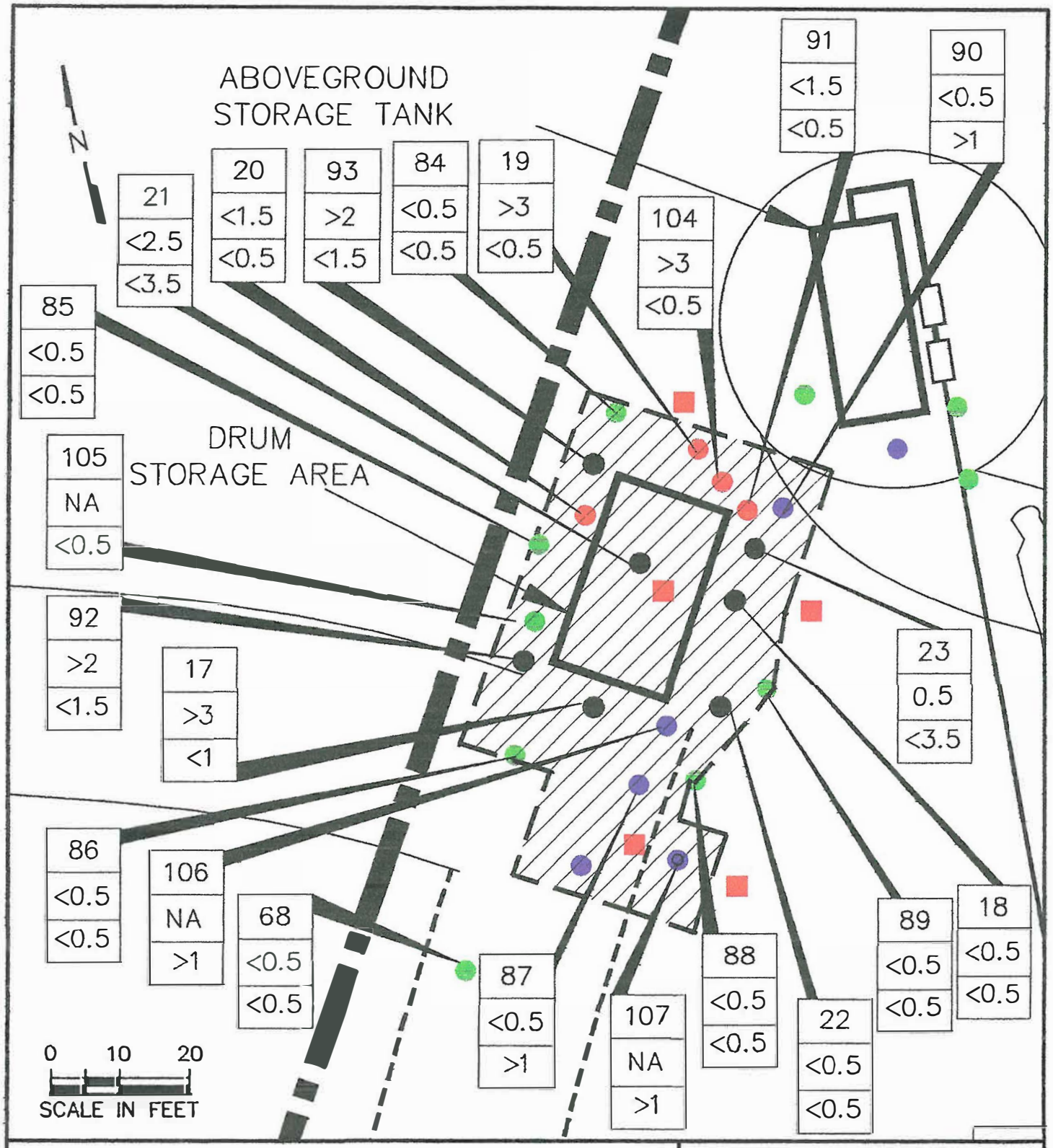

LEGEND

17	SAMPLE LOCATION
>3	DEPTH TO METALS BELOW ACTION LEVELS
<1	DEPTH TO TPH BELOW ACTION LEVELS
//////	ESTIMATED EXTENT OF CONTAMINATION
NA	NOT ANALYZED
●	BELOW ACTION LEVELS
●	METALS ABOVE ACTION LEVELS
●	TPH ABOVE ACTION LEVELS
●	TPH & METALS ABOVE ACTION LEVELS
■	PROPOSED BORING LOCATION

WESTON

FIGURE 9

PROPOSED ADDITIONAL BORINGS
DRUM STORAGE AREA
FIRE TRAINING AREA

SAN ANTONIO INTERNATIONAL AIRPORT
SAN ANTONIO, TEXAS

W.O. NO. : 10920-003-001-0100

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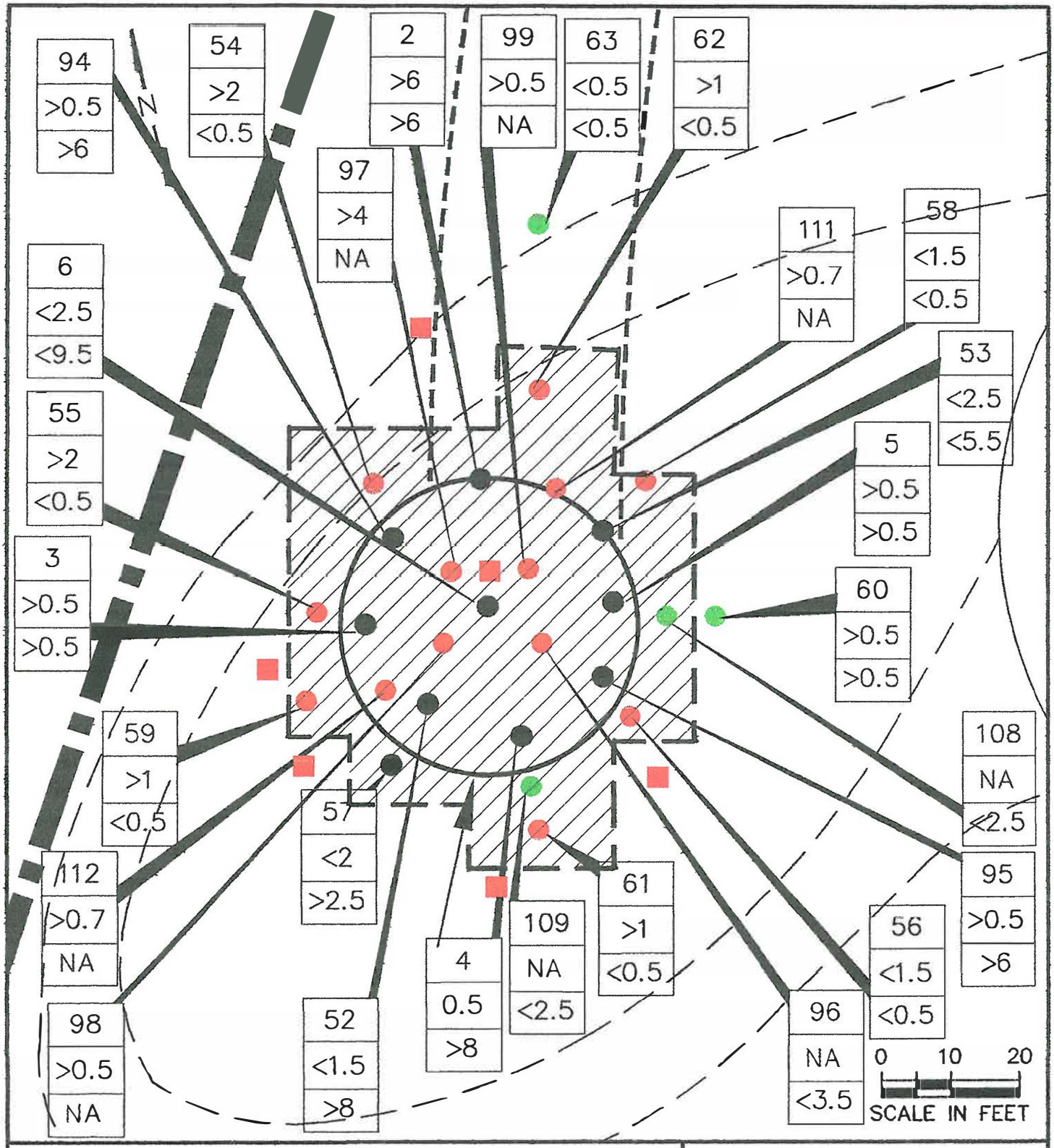

LEGEND

60	SAMPLE LOCATION
<0.5	DEPTH TO METALS BELOW ACTION LEVELS
<0.5	DEPTH TO TPH BELOW ACTION LEVELS
▨	ESTIMATED EXTENT OF CONTAMINATION
NA	NOT ANALYZED
●	BELOW ACTION LEVELS
●	METALS ABOVE ACTION LEVELS
●	TPH & METALS ABOVE ACTION LEVELS
■	PROPOSED BORING LOCATION

WESTON® MANAGERS DESIGNERS/CONSULTANTS

FIGURE 10

PROPOSED ADDITIONAL BORINGS
FORMER BURN PIT
FIRE TRAINING AREA

SAN ANTONIO INTERNATIONAL AIRPORT
SAN ANTONIO, TEXAS

W.O. NO. : 10920-003-001-0100

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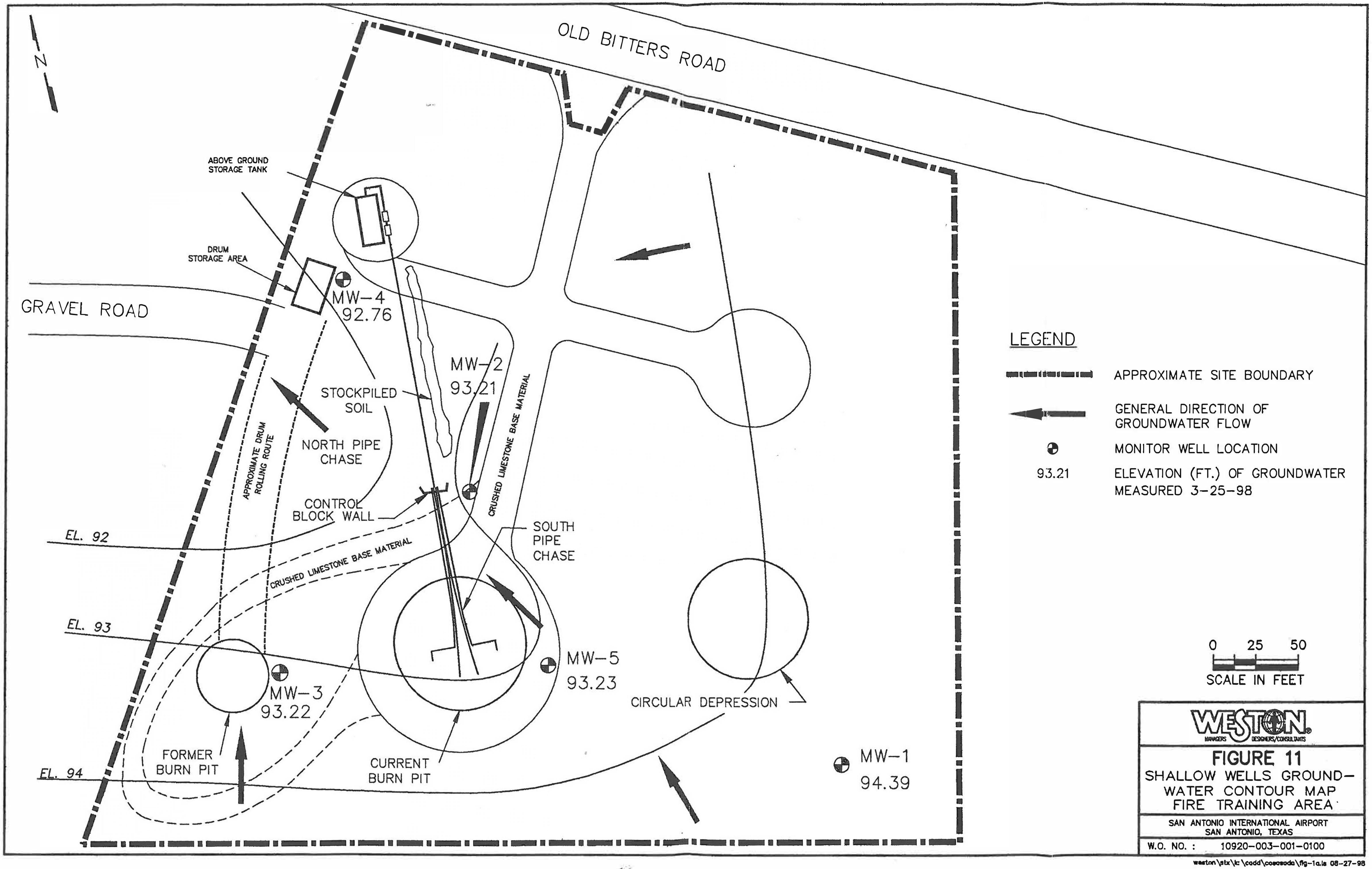
OLD BITTERS ROAD
N
ABOVE GROUND STORAGE TANK
DRUM STORAGE AREA
GRAVEL ROAD
MW-4
92.76
MW-2
93.21
STOCKPILED SOIL
NORTH PIPE CHASE
APPROXIMATE DRUM ROLLING ROUTE
CRUSHED LIMESTONE BASE MATERIAL
CONTROL BLOCK WALL
EL. 92
CRUSHED LIMESTONE BASE MATERIAL
SOUTH PIPE CHASE
EL. 93
MW-5
93.23
MW-3
93.22
CIRCULAR DEPRESSION
FORMER BURN PIT
CURRENT BURN PIT
EL. 94
MW-1
94.39
LEGEND
APPROXIMATE SITE BOUNDARY
GENERAL DIRECTION OF GROUNDWATER FLOW
MONITOR WELL LOCATION
93.21
ELEVATION (FT.) OF GROUNDWATER MEASURED 3-25-98
0 25 50
SCALE IN FEET
WESTON
MANAGERS DESIGNERS/CONSULTANTS
FIGURE 11
SHALLOW WELLS GROUND-WATER CONTOUR MAP FIRE TRAINING AREA
SAN ANTONIO INTERNATIONAL AIRPORT
SAN ANTONIO, TEXAS
W.O. NO. : 10920-003-001-0100
weston\stx\c:\cadd\cosacoda\fig-1a.ls 08-27-98

N

OLD BITTERS ROAD

ABOVE GROUND STORAGE TANK

DRUM STORAGE AREA

GRAVEL ROAD

MW-4
92.05

MW-2
89.68

STOCKPILED SOIL

NORTH PIPE CHASE

APPROXIMATE DRUM ROLLING ROUTE

CRUSHED LIMESTONE BASE MATERIAL

CONTROL BLOCK WALL

SOUTH PIPE CHASE

CRUSHED LIMESTONE BASE MATERIAL

EL.92

EL.93

MW-5
92.26

MW-3
92.48

CIRCULAR DEPRESSION

FORMER BURN PIT

CURRENT BURN PIT

MW-1
93.72

LEGEND

APPROXIMATE LANDFILL BOUNDARY

GENERAL DIRECTION OF GROUNDWATER FLOW

MONITOR WELL LOCATION

93.21 ELEVATION (FT.) OF GROUNDWATER MEASURED 3-25-98

NOTE: DATA FROM MW-2 NOT USED

0 25 50
SCALE IN FEET

WESTON MANAGERS DESIGNERS/CONSULTANTS

FIGURE 12

DEEP WELLS GROUND-WATER CONTOUR MAP
FIRE TRAINING AREA

SAN ANTONIO INTERNATIONAL AIRPORT
SAN ANTONIO, TEXAS

W.O. NO. : 03886-150-002-0030

weston\stx\jc\cadd\coamsada\fig-1a.ls 08-27-98

N

OLD BITTERS ROAD

N.E. ENTRANCE ROAD

GRAVEL ROAD

GRAVEL ROAD

MW-6

ABOVE GROUND STORAGE TANK

MW-4

MW-8

MW-2

STOCKPILED SOIL

NORTH PIPE CHASE

CONTROL BLOCK WALL

APPROXIMATE DRUM ROLLING ROUTE

CRUSHED LIMESTONE BASE MATERIAL

CRUSHED LIMESTONE BASE MATERIAL

MW-7

MW-5

MW-3

CIRCULAR DEPRESSION

FORMER BURN PIT

CURRENT BURN PIT

MW-1

FLOW

SALADO CREEK

0 50 100

SCALE IN FEET

NOTE: MAIN CHANNEL OF SALADO CREEK IS LOCATED APPROXIMATELY 1700 FEET NORTH AND EAST OF THE SITE.

LEGEND

APPROXIMATE SITE BOUNDARY

MONITOR WELL LOCATION

PROPOSED MONITORING WELL

WESTON® MANAGERS DESIGNERS/CONSULTANTS

FIGURE 13

PROPOSED MONITORING WELL LOCATION MAP
FIRE TRAINING AREA

SAN ANTONIO INTERNATIONAL AIRPORT
SAN ANTONIO, TEXAS

W.O. NO. : 10920-003-001-0100

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N

OLD BITTERS ROAD

N.E. ENTRANCE ROAD

ABOVE GROUND STORAGE TANK

MW-4

GRAVEL ROAD

STOCKPILED SOIL

MW-2

NORTH PIPE CHASE

CONTROL BLOCK WALL

APPROXIMATE DRUM ROLLING ROUTE

CRUSHED LIMESTONE BASE MATERIAL

CRUSHED LIMESTONE BASE MATERIAL

MW-3

MW-5

CIRCULAR DEPRESSION

FORMER BURN PIT

CURRENT BURN PIT

MW-1

GRAVEL ROAD

FLOW

SALADO CREEK

0 50 100

SCALE IN FEET

NOTE: MAIN CHANNEL OF SALADO CREEK IS LOCATED APPROXIMATELY 1700 FEET NORTH AND EAST OF THE SITE.

LEGEND

APPROXIMATE SITE BOUNDARY

MONITOR WELL LOCATION

PROPOSED SOIL SAMPLE

DIRECTION OF SURFACE WATER FLOW

WESTON® MANAGERS DESIGNERS/CONSULTANTS

FIGURE 14
SURFACE WATER DRAINAGE PATHWAY SAMPLE LOCATION MAP FIRE TRAINING AREA

SAN ANTONIO INTERNATIONAL AIRPORT
SAN ANTONIO, TEXAS

W.O. NO. 10920-003-001-0100

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TABLES

San Antonio International Airport
Soil Contamination Ranges and Closure Remediation Criteria
Fire Training Area
TABLE 1

CONSTITUENTS OF CONCERN: RANGE OF CONCENTRATIONS (mg/kg)		SAI-IND MSC (mg/kg)	GWP-IND MSC (mg/kg)	CALCULATED BACKGROUND UTL (mg/kg)	REMEDIATION CRITERIA (mg/kg)	REMEDIATION NECESSARY? (Y-N)
Arsenic	0.57-170	3.27	5.00	6.30	6.30	Y
Barium	0.81-350	137000.00	200.00	162.00	200.00	Y
Beryllium	34-48	1.33	0.40	43.00*	43.00	Y
Cadmium	0.54-7.7	1020.00	0.50	7.70*	7.70	N
Chromium	2.7-780	5110.00	10.00	38.00	38.00	Y
Lead	6.5-4,200	1000.00	1.50	57.00	57.00	Y
Mercury	17-24	613.00	0.20	24.00*	24.00	N
Selenium	2.8-29	10200.00	5.00	23.00*	23.00	Y
Silver	0.95-5.3	10200.00	51.10	43.00*	51.10	N
Benzene	0.0006-0.033	1.62	0.50		0.50	N
Ethylbenzene	0.0029-1.9	17000.00	7.00		7.00	N
Toluene	0.0041-8.2	3630.00	100.00		100.00	N
Xylenes	0.0014-17.4	5800.00	1000.00		1000.00	N
Acenaphathene	1.4	44300.00	613.00		613.00	N
Anthracene	1.3-5.0	151000.00	3070.00		3070.00	N
Bis(2-ethylhexyl)phthalate	1.5-2.4	409.00	2.04		2.04	Y
1-3 Dichlorobenzene	2.3	9990.00	6.00		6.00	N
Fluorene	1.6-2.0	38700.00	409.00		409.00	N
Naphthalene	1.5-4.9	7720.00	409.00		409.00	N
Nitrobenzene	1.7	106.00	5.11		5.11	N
Pyrene	3.9	61300.00	310.00		310.00	N
TPH	ND-11,200	3500**	310.00**	26.02	310.00	Y

NOTE: SAI-IND and GWP-IND both based on Risk Reduction Standard 2 MSCs.

UTL - Upper Tolerance Limit(95% confidence)

* Due to limited number of background samples analyzed, the highest background concentration was used.

San Antonio International Airport
Background Soil TPH and Metals Concentrations (mg/kg)
Fire Training Area
TABLE 2

SAMPLE #	TPH	Ag	As	Ba	Be	Cd	Cu	Cr	Hg	Ni	Pb	Sb	Se	Sn	Ti	Zn
1a	u	2.9	180	<56	-	4.5	-	24	<23	-	34	-	23	-	-	-
1b	4.6	-	2.6	-	33	-	13	-	-	<2	27	-	-	43	<5.1	43
1c	u	-	2	-	-	-	-	-	-	-	16	<11	-	-	-	-
24a		1.6	76	60	-	4.2	-	31	24	-	37	-	15	-	-	-
24b		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
76	17	-	2.4	66	-	-	-	15	-	-	52	-	-	-	-	-
77	23	-	1.3	100	-	-	-	14	-	-	58	-	-	-	-	-
78a	13	-	2.6	78	-	-	-	8.6	-	-	47	-	-	-	-	-
78b	17	-	-	-	43	7.7	8.3	-	-	<2.2	-	<9.5	-	<42	<5.5	35
79a	11	-	3.1	110	-	-	-	20	-	-	45	-	-	-	-	-
79b	23	-	4	120	-	-	-	22	-	-	42	-	-	-	-	-
80	11	-	3.4	180	-	-	-	24	-	-	43	-	-	-	-	-
81a	20	-	3.9	100	-	-	-	9.2	-	-	45	-	-	-	-	-
81b	21	-	4.8	100	-	-	-	16	-	-	48	-	-	-	-	-
82	41	-	2.5	96	-	-	-	11	-	-	45	-	-	-	-	-
83	50	-	5.1	99	-	-	-	3.6	-	-	59	-	-	-	-	-
100		-	-	-	-	-	-	-	-	-	-	<9.8	-	-	-	-
110	34															

TABLE 3
ANALYTICAL METHODS TO BE PERFORMED

ANALYSIS REQUIRED	SOLID/SOIL MATRIX METHOD	LIQUID/WATER MATRIX METHOD
TPH	EPA Method 1005	EPA Method 1005
Arsenic	EPA SW846 Method 7740	EPA SW846 Method 7060
Barium	EPA SW846 Method 6010	EPA SW846 Method 6010
Beryllium	EPA SW846 Method 6010	EPA SW846 Method 6010
Chromium	EPA SW846 Method 6010	EPA SW846 Method 6010
Lead	EPA SW846 Method 6010	EPA SW846 Method 7421
Selenium	EPA SW846 Method 7740	EPA SW846 Method 7740
TCL Semi-volatile Organics (Potentially)	N/A	EPA SW846 Method 8270
SPLP	EPA SW846 Method 1312	N/A

TABLE 4
SAMPLE VOLUME, PRESERVATION, AND HOLDING TIME REQUIREMENTS

ANALYSIS	WATER/LIQUID MATRIX SAMPLES			SOIL/SOLID MATRIX SAMPLES		
	Sample Container	Preservation	Maximum Holding Time	Sample Container[2]	Preservation	Maximum Holding Time
Total Petroleum Hydrocarbons	2-40 mL Glass Vials	5 mL 35% $Na_2(So_4)_2$; Cool to 4°C	14 days for analysis	One 2 oz. glass jar	Cool to 4°C	14 days for analysis
Total Metals (Any Combination)	1-L HDPE Bottle	5 mL 35% HNO_3; Cool 4°C	180 days for analysis	One 4 oz. glass jar	Cool to 4°C	180 days for analysis
Semi-Volatile Organics	3-L Glass Amber Bottle	Cool to 4°C	7 days extraction 40 days analysis	Not Applicable	Not Applicable	Not Applicable
SPLP	Not Applicable	Not Applicable	Not Applicable	One 8 oz. glass jar	Cool to 4°C	14 days extraction 40 days analysis

TABLE 5
LABORATORY QUANTITATION LIMITS
TPH AND METALS ANALYSIS

Inorganic Analytes	Inductively Coupled Plasma/Mass Spectrometer			Graphite Furnace/Atomic Absorption			Flame Atomic Absorption		
	Method	Quantitation Limit		Method	Quantitation Limit		Method	Quantitation Limit	
		Water (ug/L)	Soil[b] (mg/kg)		Water (ug/L)	Soil[b] (mg/kg)		Water (ug/L)	Soil[b] (mg/kg)
Total Petroleum Hydrocarbons	1005	5000*	50*						
Arsenic				7060	2	0.2			
Barium	6010	50	5						
Beryllium	6010	50	5						
Cadmium	6010	10	1						
Chromium	6010	20	2						
Lead	6010		5	7421	2				
Selenium				7740	2	0.2			

Notes: Total Petroleum Hydrocarbon analyses not conducted by Inductively Coupled Plasma/Mass Spectrometer.

Quantitation limits are highly matrix dependent. The limits listed above are provided for guidance and may not always be achievable based on sample volume/size, dilution factors, and dry weight reporting (soils).

Assumes 0.2 gram/100 mL digestate for Inductively Coupled Argon Plasma (ICP).

Assumes 1 gram/100 mL digestate for Graphite Furnace Atomic Absorption (GFAA).

Method References:"Test Methods for Evaluating Solid Waste, Physical and Chemical Methods," USEPA, SW-846 Revision 3, November 1992.

TABLE 5
LABORATORY QUANTITATION LIMITS
SEMI-VOLATILE ORGANICS ANALYSIS

PARAMETER	SOIL (mg/kg)	WATER (mg/L)	PARAMETER	SOIL (mg/kg)	WATER (mg/L)	PARAMETER	SOIL (mg/kg)	WATER (mg/L)
2,4,5-Trichlorophenol	1.7	0.0001	Acenaphthylene	0.33	0.005	Azobenzene	0.33	0.005
2,4,6-Trichlorophenol	0.33	0.005	Anthracene	0.33	0.005	Benzyl Alcohol	0.33	0.005
2,4-Dichlorophenol	0.33	0.005	Benzidine	0.33	0.005	Carbazole	0.33	0.005
2,4-Dimethylphenol	0.33	0.005	Benzo(b)fluoranthene	0.33	0.005	Dibenzofuran	0.33	0.005
2,4-Dinitrophenol	0.01	0.01	Benzo(a)anthracene	0.33	0.005	Dimethyl Phthalate	0.33	0.005
2-Chlorophenol	0.33	0.005	Benzo(a)pyrene	0.33	0.005	Fluorene	0.33	0.005
2-Nitrophenol	0.33	0.005	Benzo(ghi)perylene	0.33	0.005	Hexachlorobenzene	0.33	0.005
2-Methylphenol (o-Cresol)	1.7	0.0001	Benzo(k)fluoranthene	0.33	0.005	Hexachlorobutadiene	0.33	0.005
4,6-Dinitro-o-Cresol	0.33	0.005	Bis(2-Chloroethoxy)me	0.33	0.005	Hexachloroethane	0.33	0.005
4-Nitrophenol	0.33	0.005	Bis(2-Chloroipr)ether	0.33	0.005	Hexachlorocyclpentadiene	0.33	0.005
Benzoic Acid	1.7	0.01	Bis(2-Chloroeth)ether	0.33	0.005	Ideno(1,2,3)-cdpyrene	0.33	0.005
Pentachlorophenol	1.7	0.01	Bis-2-ethhexphthalate	0.33	0.005	Isophorone	0.33	0.005
Phenol	0.33	0.005	Bu-Benzyl Phthalate	0.33	0.005	N-Nitrodi-nPrpylamine	0.33	0.005
m+p-Cresol	1.7	0.01	Carbaryl	0.33	0.005	N-Nitrodiphenylamine	0.33	0.005
p-Chloro-m-Cresol	0.33	0.005	Chrysene	0.33	0.005	N-Nitrosodimethamine	0.33	0.005
1,2,4,5-Tetrachlorobenzene	0.33	0.005	Di-n-Butyl Phthalate	0.33	0.005	N-Nitrosodimethamine	0.33	0.005
Pentachlorobenzene	0.33	0.005	Di-n-Octyl Phthalate	0.33	0.005	Naphthalene	0.33	0.005
1+2-Chloronaphthalene	1.7	0.01	Dibenz(ah)anthracene	0.33	0.005	Nitrobenzene	0.33	0.005
1,2-Dichlorobenzene	0.33	0.005	Diethyl Phthalate	0.33	0.005	Phenanthrene	0.33	0.005
1,3-Dichlorobenzene	0.33	0.005	Fluoroanthene	0.33	0.005	Pyrene	0.33	0.005
1,4-Dichlorobenzene	0.33	0.005	1,2,4-Trichlorobenzene	1.7	0.01	Pyridine	0.33	0.005
2,4-Dinitrotoluene	0.33	0.005	2-Methylnaphthalene	0.33	0.005			
2,6-Dinitrotoluene	0.33	0.005	2-Nitroaniline	0.33	0.005			
3,3-Dichlorobenzidine	0.33	0.005	3-Nitroaniline	0.33	0.005			
4-Bromophenylphenether	0.33	0.005	4-Chloroaniline	0.33	0.005			
4-chlorophenylphenether	0.33	0.005	4-Nitroaniline	0.33	0.005			
Acenaphthene	0.33	0.005	Aniline	0.33	0.005			

TABLE 6
LABORATORY DATA QUALITY OBJECTIVES
FOR ORGANICS ANALYSES

FRACTION	MATRIX SPIKE COMPOUND	% REC. LIMITS		% RPD LIMITS	
		WATER	SOIL/SED.	WATER	SOIL/SED.
Base-Neutral Extractable Semivolatile Organics (Method 8270)	1, 2, 4- Trichlorobenzene	39-98	38-107	28	23
	Acenaphthene	46-118	31-137	31	19
	2, 4-Dinitrotoluene	24-96	28-89	38	47
	Pyrene	26-127	35-142	31	36
	N-nitroso-di-N-Propylamine	41-116	41-126	38	38
	1, 4-Dichlorobenzene	36-97	28-104	28	27

TABLE 7
QUALITY ASSURANCE OBJECTIVES FOR ACCURACY OF ORGANIC SURROGATES ANALYSES

FRACTION	SURROGATE COMPOUND	PERCENT RECOVERY	
		WATER	SOIL/SEDIMENT
Semivolatile BNAs (Method 8270)	Nitrobenzene-d_5	35-114	23-120
	2-Fluorobiphenyl	43-116	30-115
	p-Terphenyl-d_{14}	33-141	18-137
	Phenol-d_5	10-94	24-113
	2-Fluorophenol	21-100	25-121
	2, 4, 6-Tribromophenol	10-123	19-122

This list includes selected compounds used for QC/QA accuracy and precision control in the groups (fractions) of analytes shown. Selected compounds are consistent with guidance presented in EPA SW-846, 3rd Edition.

TABLE 8
LABORATORY DATA QUALITY OBJECTIVES
FOR TPH AND METALS ANALYSES

ANALYTES	PRECISION[1] (RPD)[2] WATER/SOIL LIMITS	ACCURACY[1] (MSR)[3] WATER/SOIL LIMITS	PERCENT COMPLETE-NESS
Total Petroleum Hydrocarbons	20	70-130	90
Arsenic	25	75-125	90
Barium	25	75-125	90
Beryllium	25	75-125	90
Chromium	25	75-125	90
Lead	25	75-125	90
Selenium	25	75-125	90

1 The precision and accuracy data are given only for those compounds used in matrix spike analyses. The overall precision and accuracy of each analytical method will be based on these compounds.

2 RPD - Relative Percent Difference.

3 MSR - Matrix Spike Recovery (percent).

APPENDIX A

ANALYTICAL DATA SUMMARY TABLES

SAN ANTONIO INTERNATIONAL AIRPORT
FIRE TRAINING AREA

SUMMARY OF HISTORICAL SOIL RESULTS (mg/kg)

CLEANUP CRITERIA				310	57	6.3	43	200	38	23		
AEC	SAMPLE ID	DESCRIPTION	DEPTH	TPH	Pb	As	Be	Ba	Cr	Se	VOC	BTEX
AST	25A		0 to 0.5	31	6.5							
AST	25B		0.5 to 1	5.6	14							
AST	25C		1.5 to 2	7.2							X	
AST	25D		2.5 to 3	u								
AST	25E		3.5 to 4	u							X	
AST	25F	DUP of 25E	3.5 to 4	u								
AST	26A		0 to 0.5	590	17						X	
AST	26B		0.5 to 1	740	0							
AST	26C		1.5 to 2	2200							X	
AST	26D		2.5 to 3	1800								
AST	26E		3.5 to 4	1300							X	
AST	27		1.5 to 2	44								X
AST	101A		0.5 to 1	23								
AST	101B		1.5 to 2	11								
AST	102A		0.5 to 1	16								
AST	102B		1.5 to 2	14								
AST	103A		0.5 to 1	15								
AST	103B		1.5 to 2	6.6								
AST	120		5 to 7	u								
AST	121		8 to 9	u								
AST	122		12 to 14	u								
BKG	1A	BACKGROUND	0 to 0.5	u	34	180		u	24	23	X	
BKG	1B	BACKGROUND	0.5 to 1	4.6	27	2.6	33					
BKG	1C	BACKGROUND	1.5 to 2	u	16							
BKG	24A	BACKGROUND	0 to 0.5	u	37	76		16	31	15		
BKG	24B	BACKGROUND	0.5 to 1								X	
BKG	76	BACKGROUND	0.5 to 1	17	52	2.4		66	15			
BKG	77	BACKGROUND	0.5 to 1	23	58	1.3		100	14			
BKG	78A	BACKGROUND	0.5 to 1	13	47	2.6		76	8.6			
BKG	78B	BACKGROUND	1.5 to 2	17	48	0.57	43	100	11			
BKG	79A	BACKGROUND	0.5 to 1	11	45	3.1		110	20			
BKG	79B	BACKGROUND	1.5 to 2	23	42	4		120	22			
BKG	80	BACKGROUND	0.5 to 1	11	43	3.4		180	24			
BKG	81A	BACKGROUND	0.5 to 1	20	45	3.7		100	9.2			
BKG	81B	BACKGROUND	1.5 to 2	21	48	4.8		100	16			
BKG	82	BACKGROUND	0.5 to 1	41	45	2.5		96	11			
BKG	83	BACKGROUND	0.5 to 1	50	59	5.1		99	3.6			
BKG	100	BACKGROUND	0 to 0.5									
BKG	110	BACKGROUND	33 to 34	34							X	
CBP	7A		0 to 0.5	1700	58	28		u	8.5	20	X	
CBP	7B	DUP of 7A	0 to 0.5		62	7.3		u	2.5	11	X	
CBP	7C		2.5 to 3	2100								
CBP	7D	DUP of 7C	2.5 to 3	1500								
CBP	7E	DUP of 7A	0 to 0.5		590							
CBP	8A		0 to 0.5	930	63	24		55	7.9	29	X	
CBP	8B		2.5 to 3	8300								
CBP	8C	DUP of 8A	0 to 0.5		80							
CBP	9		0 to 0.5	700	56	10		u	4	2.8	X	
CBP	10A		0 to 0.5	8900	170	8.9		52	8.8	5	X	X
CBP	10B		3.5 to 4	4200								
CBP	10C		5.5 to 6	2800								
CBP	10D	DUP of 10A	0 to 0.5		190							
CBP	11A		0 to 0.5	660	57	9.2		49	u	3.3	X	
CBP	11B		0.5 to 1	2900	88		34					

SAN ANTONIO INTERNATIONAL AIRPORT
FIRE TRAINING AREA

SUMMARY OF HISTORICAL SOIL RESULTS (mg/kg)

CLEANUP CRITERIA				310	57	6.3	43	200	38	23		
AEC	SAMPLE ID	DESCRIPTION	DEPTH	TPH	Pb	As	Be	Ba	Cr	Se	VOC	BTEX
CBP	11C		1.5 to 2	1600	65							
CBP	11D		2.5 to 3	1200	54							
CBP	11E		3.5 to 4	u	57						X	
CBP	70A		0 to 0.5						u			
CBP	70B		0.5 to 1	600	21							
CBP	70C		1.5 to 2	210	20							
CBP	70D		2.5 to 3	u	14							
CBP	71A		0 to 0.5						u			
CBP	71B		0.5 to 1	34	11							
CBP	71C		1.5 to 2	u	11							
CBP	71D		2.5 to 3	u	11							
CBP	72A		0.5 to 1	4100	95							
CBP	72B		1.5 to 2	5100	54							
CBP	72C		2.5 to 3	7300	63							
CBP	72D		3.5 to 4	9100								
CBP	72E		5.5 to 6	19	68							
CBP	73A		0 to 0.5		270							
CBP	73B		0.5 to 1	4300	380							
CBP	73C		1.5 to 2	2.2	44							
CBP	73D		2.5 to 3	u	48							
CBP	73E		3.5 to 4	2700								
CBP	73F		5.5 to 6	650								
CBP	114		2 to 3		90							
CBP	115		7 to 8	u								
CBP	116		8 to 9	u								
CBP	117		9 to 10	u								
CBW	37		2.5 to 3	7900								X
CBW	38A		0 to 0.5	160								X
CBW	38B		3.5 to 4	2300								X
CBW	38C		5.5 to 6	3600								X
CBW	38D		7.5 to 8	5500								X
CBW	39A		2.5 to 3	5500								X
CBW	39B		3.5 to 4	4500								X
CBW	39C		5.5 to 6	5700								X
CBW	39D		7.5 to 8	3800								X
CBW	40		0 to 0.5	36								X
CBW	118		9 to 10	u								
CBw	119		10 to 11	u								
CD	12A		0 to 0.5	130	97	130		58	21	41	X	
CD	12B		0.5 to 1	15	43			150	12			
CD	12C		1.5 to 2	3.9	50			75	21			
CD	12D		2.5 to 3	14	54			140	14			
CD	12E		3.5 to 4	5.9	60			59	9.8			
CD	12F	DUP of 12A	0 to 0.5		290							
CD	12G	DUP of 12B	0.5 to 1					150				
CD	13A		0 to 0.5	160	110	82		110	100	18		
CD	13B	DUP of 13A	0 to 0.5		53				240			
CD	13C		0.5 to 1						88			
CD	14A		0 to 0.5									
CD	14B		0.5 to 1						3.5		X	
CD	14C	DUP of 14A	0 to 0.5		600				u			
CD	15A		0 to 0.5	78	150	74		u	60	12		
CD	15B	DUP of 15A	0 to 0.5		100				49			
CD	15C		0.5 to 1						7			

SAN ANTONIO INTERNATIONAL AIRPORT
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SUMMARY OF HISTORICAL SOIL RESULTS (mg/kg)

CLEANUP CRITERIA				310	57	6.3	43	200	38	23		
AEC	SAMPLE ID	DESCRIPTION	DEPTH	TPH	Pb	As	Be	Ba	Cr	Se	VOC	BTEX
CD	16A		0 to 0.5									
CD	16B		0.5 to 1						59		X	
CD	16C	DUP of 16A	0 to 0.5		160				210			
CD	74A		0.5 to 1	u	45	1.4		100	11			
CD	74B		1.5 to 2	u	47	3.4		130	17			
CD	74C		2.5 to 3	u	52	2.4		85	15			
CD	75A		0.5 to 1	78	52	1.6		130	23			
CD	75B		1.5 to 2	6.4	49	3.5		170	17			
CD	75C		2.5 to 3	0	51	1.5		110	16			
CD	113		0 to 0.5		140							
DRR	63		0.5 to 1	26	14	5.2						
DRR	64		0.5 to 1	7.6	25	5.1						
DRR	65		0.5 to 1	27	25	7						
DRR	66		0.5 to 1	18	26	3.1						
DRR	67		0.5 to 1	6	23	8.6						
DRR	68		0.5 to 1	12	29	2.8						
DRR	69A		0.5 to 1	u	27	3						
DRR	69B	DUP of 69A	0.5 to 1	380								
DSA	17A		0 to 0.5	4600	440	50		50	8.1	8.5		
DSA	17B		0.5 to 1	17	39	8.2					X	
DSA	17C		1.5 to 2	6.3	59	4						
DSA	17D		2.5 to 3	10	36	6.4						
DSA	17E	DUP of 17B	0.5 to 1	11200								
DSA	18		0 to 0.5	460	43	140		57	23	20		
DSA	19A		0 to 0.5									
DSA	19B		0.5 to 1	15	28	8.2					X	
DSA	19C		1.5 to 2	21	31	5.3						
DSA	19D		2.5 to 3	10	40	7.4						
DSA	19E	DUP of 19B	0.5 to 1	56								
DSA	20A		0 to 0.5									
DSA	20B		0.5 to 1	19	30	7.4						
DSA	20C		1.5 to 2	12	27	6.3						
DSA	20D		2.5 to 3	35	34	5.8						
DSA	20E	DUP of 20B	0.5 to 1	70								
DSA	21A		0 to 0.5	260	42	170		u	36	24	X	
DSA	21B		0.5 to 1	10600	59	6.4						
DSA	21C		1.5 to 2	5200	40	7						
DSA	21D		2.5 to 3	1000	42	2.2						
DSA	21E		3.5 to 4	u							X	
DSA	21F		4.5 to 5	230								
DSA	21G		5.5 to 6								X	
DSA	22A		0 to 0.5	4900	200	150		54	2.7	3.8	X	
DSA	22B	DUP of 22A	0 to 0.5	98							X	
DSA	22C		0.5 to 1	23	37	5.8						
DSA	22D		1.5 to 2	14	48	5.4						
DSA	23A		0 to 0.5	5000	130	120		61	31	14	X	
DSA	23B		0.5 to 1	4600	51	4.8	44					
DSA	23C		1.5 to 2	3900	36	4.1						
DSA	23D		2.5 to 3	5200	47	1.1						
DSA	23E		3.5 to 4	76	37	5.8					X	
DSA	23F	DUP of 23C	1.5 to 2									
DSA	23G	DUP of 23D	2.5 to 3	29								
DSA	23H	DUP of 23E	3.5 to 4	170							X	
DSA	23I		4.5 to 5	160								

SAN ANTONIO INTERNATIONAL AIRPORT
FIRE TRAINING AREA

SUMMARY OF HISTORICAL SOIL RESULTS (mg/kg)

CLEANUP CRITERIA				310	57	6.3	43	200	38	23		
AEC	SAMPLE ID	DESCRIPTION	DEPTH	TPH	Pb	As	Be	Ba	Cr	Se	VOC	BTEX
DSA	23J		5.5 to 6	u							X	
DSA	23K		7.5 to 8		23							
DSA	23L		9.5 to 10	160								
DSA	84		0.5 to 1	40	49	4.6						
DSA	85		0.5 to 1	17	34	1.8						
DSA	86		0.5 to 1	17	44	4.1						
DSA	87		0.5 to 1	610	52	3.4						
DSA	88		0.5 to 1	23	56	2.8						
DSA	89		0.5 to 1	20	45	2.6						
DSA	90A		0.5 to 1	1100	43	5						
DSA	90B	DUP of 90A	0.5 to 1	42								
DSA	91A		0.5 to 1	46	45	6.7						
DSA	91B		1.5 to 2	13	48	5.1						
DSA	92A		0.5 to 1	15	33	5.2						
DSA	92B		1.5 to 2	22	35	8						
DSA	92C	DUP of 92A	0.5 to 1	3900								
DSA	93A		0.5 to 1	24	29	8.3						
DSA	93B		1.5 to 2	15	53	8						
DSA	93C	DUP of 93A	0.5 to 1	330								
DSA	104A		0 to 0.5						670			
DSA	104B		0.5 to 1	29	71				u			
DSA	104C		1.5 to 2		48							
DSA	104D		2.5 to 3		79							
DSA	105		0.5 to 1	74								
DSA	106		0.5 to 1	2100								
DSA	107		0.5 to 1	920								
FBP	2A		0 to 0.5	7900	770	84		210	31	10	X	
FBP	2B	DUP of 2A	0 to 0.5	5800	810	58		190	43	14	X	
FBP	2C	DUP of 2A	0 to 0.5						u			
FBP	2D		0.5 to 1	1500	260							
FBP	2E		3.5 to 4	2600								
FBP	2F		5.5 to 6	1000								
FBP	2G	DUP of 2F	5.5 to 6	6000	350							
FBP	3		0 to 0.5	1900	300	44		350	59	4.8	X	
FBP	4A		0 to 0.5	2600	390	130		200	49	11	X	
FBP	4B	DUP of 4A	0 to 0.5						8.5			
FBP	4C		0.5 to 1		49				u			
FBP	4D		1.5 to 2		48							
FBP	4E		2.5 to 3		31							
FBP	4F		5.5 to 6	360								
FBP	4G		7.5 to 8	2000								
FBP	5		0 to 0.5	2200	180	96		200	39	17	X	
FBP	6A		0 to 0.5	5100	77	100		180	35	4.4	X	
FBP	6B		0.5 to 1	4000	64	4.7	48	110	u			
FBP	6C		1.5 to 2	2600	77	4.2						
FBP	6D		2.5 to 3	1800	29	2.5		54				
FBP	6E		3.5 to 4	2500	23	ND		8.1			X	
FBP	6F		5.5 to 6								X	
FBP	6G		7.5 to 8	4100							X	
FBP	6H		9.5 to 10	190							X	
FBP	6I		11.5 to 12	37								
FBP	52A		0.5 to 1	5200	91	3.9		51				
FBP	52B		1.5 to 2	5400	37	3.3		25				
FBP	52C		2.5 to 3	4300	36	4.1		27				

SAN ANTONIO INTERNATIONAL AIRPORT
FIRE TRAINING AREA

SUMMARY OF HISTORICAL SOIL RESULTS (mg/kg)

CLEANUP CRITERIA				310	57	6.3	43	200	38	23		
AEC	SAMPLE ID	DESCRIPTION	DEPTH	TPH	Pb	As	Be	Ba	Cr	Se	VOC	BTEX
FBP	52D		0 to 0.5		4200							
FBP	52E		3.5 to 4	8000							X	
FBP	52F		5.5 to 6	480							X	
FBP	52G		7.5 to 8	1200								
FBP	53A		0 to 0.5	u	2600							
FBP	53B		0.5 to 1	5100	38	19		100				
FBP	53C		1.5 to 2	3900	58	3.4		42				
FBP	53D		2.5 to 3	850	39	5.2		37				
FBP	53E	DUP of 53A	0 to 0.5	1700							X	
FBP	53F		3.5 to 4	980							X	
FBP	53G		5.5 to 6	230								
FBP	54A		0.5 to 1	110	26	48		95				
FBP	54B		1.5 to 2	240	38	17		150				
FBP	55A		0.5 to 1	u	12	7.7		120				
FBP	55B		1.5 to 2	u	13	6.8		50				
FBP	56A		0.5 to 1	7.9	13	8.1		140				
FBP	56B		1.5 to 2	22	10	4.4		98				
FBP	57A		0.5 to 1	300	12	6.6		140				
FBP	57B		1.5 to 2	17	22	7.5		160				
FBP	57C		2 to 2.5	4300	10	4.4		98				
FBP	58A		0.5 to 1	u	11	7.7		160				
FBP	58B		1.5 to 2	8.8	13	5.7		86				
FBP	59		0.5 to 1	9.4	14	6.9		120				
FBP	60		0.5 to 1	26	0	6		140				
FBP	61		0.5 to 1	22	23	6.6		93				
FBP	62		0.5 to 1	7.4	27	6.6		110				
FBP	94A		0 to 0.5		620							
FBP	94B		3.5 to 4	340							X	
FBP	94C		5.5 to 6	620							X	
FBP	95		0 to 0.5		1700							
FBP	95B		3.5 to 4	2700							X	
FBP	95C		5.5 to 6	8100							X	
FBP	96A		0 to 0.5		96							
FBP	96B		3.5 to 4		20							
FBP	97A		0 to 0.5		52							
FBP	97B		3.5 to 4		23							
FBP	97C	DUP of 97B	3.5 to 4		63							
FBP	98		0 to 0.5		1500							
FBP	99		0 to 0.5		2200							
FBP	108		2.5 to 3	43								
FBP	109		2.5 to 3	230								
FBP	111		0 to 0.7		250							
FBP	112		0 to 0.7		750							
NPC	28		2.5 to 3	66								
NPC	29A		0 to 0.5								X	
NPC	29B		1.5 to 2									
NPC	30A		1.5 to 2	42								X
NPC	30B		2.5 to 3	22								
NPC	31A		1.5 to 2									
NPC	31B		2.5 to 3						u			
NPC	32		1.5 to 2									
NPC	33		2.5 to 3	37								
NPC	34		1.5 to 2	16								X
NPC	35		2.5 to 3	100								

SAN ANTONIO INTERNATIONAL AIRPORT
FIRE TRAINING AREA

SUMMARY OF HISTORICAL SOIL RESULTS (mg/kg)

CLEANUP CRITERIA				310	57	6.3	43	200	38	23		
AEC	SAMPLE ID	DESCRIPTION	DEPTH	TPH	Pb	As	Be	Ba	Cr	Se	VOC	BTEX
NPC	36A		1.5 to 2								X	
NPC	36B		2.5 to 3	90								
SPC	41A		1.5 to 2								X	
SPC	41B		3.5 to 4	25								X
SPC	42A		1.5 to 2									
SPC	42B		3.5 to 4	55								X
SPC	43A		0 to 0.5	23								X
SPC	43B		3.5 to 4	35								X
SPC	44A		1.5 to 2									
SPC	44B		3.5 to 4	93								X
SPC	45		3.5 to 4	840								X
	46	STOCKPILE	0.5 to 1	34								X
	47	STOCKPILE	0.5 to 1									X
	48	STOCKPILE	0.5 to 1	17								X
	49	STOCKPILE	0.5 to 1									X
	50	STOCKPILE	0 to 0.5	190								X
	51	STOCKPILE	0.5 to 1	910								X

NOTE: "X" denotes analyses performed.
Benzene detected at concertrations ranging from 0.006 to 0.025 mg/kg.
Ethylbenzene detected at concentrations ranging from 0.0029 to 1.6 mg/kg.
Toluene detected at concentrations ranging from 0.004 to 8.2 mg/kg.
Total Xylenes detected at concentrations ranging 0.37 to 16.5 mg/kg.

SITE CLOSURE PLAN
SAN ANTONIO INTERNATIONAL AIRPORT
FIRE TRAINING AREA

SUMMARY OF HISTORICAL SOIL RESULTS (mg/kg)

CLEANUP CRITERIA				310	57	6.3	43	200	38	23
AEC	SAMPLE ID	DESCRIPTION	DEPTH	TPH	Pb	As	Be	Ba	Cr	Se
AST	25A		0 to 0.5	31	6.5					
AST	25B		0.5 to 1	5.6	14					
AST	25C		1.5 to 2	7.2						
AST	25D		2.5 to 3	u						
AST	25E		3.5 to 4	u						
AST	25F	DUP of 25E	3.5 to 4	u						
AST	26A		0 to 0.5	590	17					
AST	26B		0.5 to 1	740	0					
AST	26C		1.5 to 2	2200						
AST	26D		2.5 to 3	1800						
AST	26E		3.5 to 4	1300						
AST	27		1.5 to 2	44						
AST	101A		0.5 to 1	23						
AST	101B		1.5 to 2	11						
AST	102A		0.5 to 1	16						
AST	102B		1.5 to 2	14						
AST	103A		0.5 to 1	15						
AST	103B		1.5 to 2	6.6						
AST	120		5 to 7	u						
AST	121		8 to 9	u						
AST	122		12 to 14	u						
BKG	1A	BACKGROUND	0 to 0.5	u	34	180		u	24	23
BKG	1B	BACKGROUND	0.5 to 1	4.6	27	2.6	33			
BKG	1C	BACKGROUND	1.5 to 2	u	16					
BKG	24A	BACKGROUND	0 to 0.5	u	37	76		16	31	15
BKG	24B	BACKGROUND	0.5 to 1							
BKG	76	BACKGROUND	0.5 to 1	17	52	2.4		66	15	
BKG	77	BACKGROUND	0.5 to 1	23	58	1.3		100	14	
BKG	78A	BACKGROUND	0.5 to 1	13	47	2.6		76	8.6	
BKG	78B	BACKGROUND	1.5 to 2	17	48	0.57	43	100	11	
BKG	79A	BACKGROUND	0.5 to 1	11	45	3.1		110	20	
BKG	79B	BACKGROUND	1.5 to 2	23	42	4		120	22	
BKG	80	BACKGROUND	0.5 to 1	11	43	3.4		180	24	
BKG	81A	BACKGROUND	0.5 to 1	20	45	3.7		100	9.2	
BKG	81B	BACKGROUND	1.5 to 2	21	48	4.8		100	16	
BKG	82	BACKGROUND	0.5 to 1	41	45	2.5		96	11	
BKG	83	BACKGROUND	0.5 to 1	50	59	5.1		99	3.6	
BKG	100	BACKGROUND	0 to 0.5							
BKG	110	BACKGROUND	33 to 34	34						
CBP	7A		0 to 0.5	1700	58	28		u	8.5	20
CBP	7B	DUP of 7A	0 to 0.5		62	7.3		u	2.5	11
CBP	7C		2.5 to 3	2100						
CBP	7D	DUP of 7C	2.5 to 3	1500						
CBP	7E	DUP of 7A	0 to 0.5		590					

SITE CLOSURE PLAN
SAN ANTONIO INTERNATIONAL AIRPORT
FIRE TRAINING AREA

SUMMARY OF HISTORICAL SOIL RESULTS (mg/kg)

CLEANUP CRITERIA				310	57	6.3	43	200	38	23
AEC	SAMPLE ID	DESCRIPTION	DEPTH	TPH	Pb	As	Be	Ba	Cr	Se
CBP	8A		0 to 0.5	930	63	24		55	7.9	29
CBP	8B		2.5 to 3	8300						
CBP	8C	DUP of 8A	0 to 0.5		80					
CBP	9		0 to 0.5	700	56	10		u	4	2.8
CBP	10A		0 to 0.5	8900	170	8.9		52	8.8	5
CBP	10B		3.5 to 4	4200						
CBP	10C		5.5 to 6	2800						
CBP	10D	DUP of 10A	0 to 0.5		190					
CBP	11A		0 to 0.5	660	57	9.2		49	u	3.3
CBP	11B		0.5 to 1	2900	88		34			
CBP	11C		1.5 to 2	1600	65					
CBP	11D		2.5 to 3	1200	54					
CBP	11E		3.5 to 4	u	57					
CBP	70A		0 to 0.5						u	
CBP	70B		0.5 to 1	600	21					
CBP	70C		1.5 to 2	210	20					
CBP	70D		2.5 to 3	u	14					
CBP	71A		0 to 0.5						u	
CBP	71B		0.5 to 1	34	11					
CBP	71C		1.5 to 2	u	11					
CBP	71D		2.5 to 3	u	11					
CBP	72A		0.5 to 1	4100	95					
CBP	72B		1.5 to 2	5100	54					
CBP	72C		2.5 to 3	7300	63					
CBP	72D		3.5 to 4	9100						
CBP	72E		5.5 to 6	19	68					
CBP	73A		0 to 0.5		270					
CBP	73B		0.5 to 1	4300	380					
CBP	73C		1.5 to 2	2.2	44					
CBP	73D		2.5 to 3	u	48					
CBP	73E		3.5 to 4	2700						
CBP	73F		5.5 to 6	650						
CBP	114		2 to 3		90					
CBP	115		7 to 8	u						
CBP	116		8 to 9	u						
CBP	117		9 to 10	u						
CBW	37		2.5 to 3	7900						
CBW	38A		0 to 0.5	160						
CBW	38B		3.5 to 4	2300						
CBW	38C		5.5 to 6	3600						
CBW	38D		7.5 to 8	5500						
CBW	39A		2.5 to 3	5500						
CBW	39B		3.5 to 4	4500						
CBW	39C		5.5 to 6	5700						

SITE CLOSURE PLAN
SAN ANTONIO INTERNATIONAL AIRPORT
FIRE TRAINING AREA

SUMMARY OF HISTORICAL SOIL RESULTS (mg/kg)

CLEANUP CRITERIA				310	57	6.3	43	200	38	23
AEC	SAMPLE ID	DESCRIPTION	DEPTH	TPH	Pb	As	Be	Ba	Cr	Se
CBW	39D		7.5 to 8	3800						
CBW	40		0 to 0.5	36						
CBW	118		9 to 10	u						
CBw	119		10 to 11	u						
CD	12A		0 to 0.5	130	97	130		58	21	41
CD	12B		0.5 to 1	15	43			150	12	
CD	12C		1.5 to 2	3.9	50			75	21	
CD	12D		2.5 to 3	14	54			140	14	
CD	12E		3.5 to 4	5.9	60			59	9.8	
CD	12F	DUP of 12A	0 to 0.5		290					
CD	12G	DUP of 12B	0.5 to 1					150		
CD	13A		0 to 0.5	160	110	82		110	100	18
CD	13B	DUP of 13A	0 to 0.5		53				240	
CD	13C		0.5 to 1						88	
CD	14A		0 to 0.5							
CD	14B		0.5 to 1						3.5	
CD	14C	DUP of 14A	0 to 0.5		600				u	
CD	15A		0 to 0.5	78	150	74		u	60	12
CD	15B	DUP of 15A	0 to 0.5		100				49	
CD	15C		0.5 to 1						7	
CD	16A		0 to 0.5							
CD	16B		0.5 to 1						59	
CD	16C	DUP of 16A	0 to 0.5		160				210	
CD	74A		0.5 to 1	u	45	1.4		100	11	
CD	74B		1.5 to 2	u	47	3.4		130	17	
CD	74C		2.5 to 3	u	52	2.4		85	15	
CD	75A		0.5 to 1	78	52	1.6		130	23	
CD	75B		1.5 to 2	6.4	49	3.5		170	17	
CD	75C		2.5 to 3	0	51	1.5		110	16	
CD	113		0 to 0.5		140					
DRR	63		0.5 to 1	26	14	5.2				
DRR	64		0.5 to 1	7.6	25	5.1				
DRR	65		0.5 to 1	27	25	7				
DRR	66		0.5 to 1	18	26	3.1				
DRR	67		0.5 to 1	6	23	8.6				
DRR	68		0.5 to 1	12	29	2.8				
DRR	69A		0.5 to 1	u	27	3				
DRR	69B	DUP of 69A	0.5 to 1	380						
DSA	17A		0 to 0.5	4600	440	50		50	8.1	8.5
DSA	17B		0.5 to 1	17	39	8.2				
DSA	17C		1.5 to 2	6.3	59	4				
DSA	17D		2.5 to 3	10	36	6.4				
DSA	17E	DUP of 17B	0.5 to 1	11200						
DSA	18		0 to 0.5	460	43	140		57	23	20

SITE CLOSURE PLAN
SAN ANTONIO INTERNATIONAL AIRPORT
FIRE TRAINING AREA

SUMMARY OF HISTORICAL SOIL RESULTS (mg/kg)

CLEANUP CRITERIA				310	57	6.3	43	200	38	23
AEC	SAMPLE ID	DESCRIPTION	DEPTH	TPH	Pb	As	Be	Ba	Cr	Se
DSA	19A		0 to 0.5							
DSA	19B		0.5 to 1	15	28	8.2				
DSA	19C		1.5 to 2	21	31	5.3				
DSA	19D		2.5 to 3	10	40	7.4				
DSA	19E	DUP of 19B	0.5 to 1	56						
DSA	20A		0 to 0.5							
DSA	20B		0.5 to 1	19	30	7.4				
DSA	20C		1.5 to 2	12	27	6.3				
DSA	20D		2.5 to 3	35	34	5.8				
DSA	20E	DUP of 20B	0.5 to 1	70						
DSA	21A		0 to 0.5	260	42	170		u	36	24
DSA	21B		0.5 to 1	10600	59	6.4				
DSA	21C		1.5 to 2	5200	40	7				
DSA	21D		2.5 to 3	1000	42	2.2				
DSA	21E		3.5 to 4	u						
DSA	21F		4.5 to 5	230						
DSA	21G		5.5 to 6							
DSA	22A		0 to 0.5	4900	200	150		54	2.7	3.8
DSA	22B	DUP of 22A	0 to 0.5	98						
DSA	22C		0.5 to 1	23	37	5.8				
DSA	22D		1.5 to 2	14	48	5.4				
DSA	23A		0 to 0.5	5000	130	120		61	31	14
DSA	23B		0.5 to 1	4600	51	4.8	44			
DSA	23C		1.5 to 2	3900	36	4.1				
DSA	23D		2.5 to 3	5200	47	1.1				
DSA	23E		3.5 to 4	76	37	5.8				
DSA	23F	DUP of 23C	1.5 to 2							
DSA	23G	DUP of 23D	2.5 to 3	29						
DSA	23H	DUP of 23E	3.5 to 4	170						
DSA	23I		4.5 to 5	160						
DSA	23J		5.5 to 6	u						
DSA	23K		7.5 to 8		23					
DSA	23L		9.5 to 10	160						
DSA	84		0.5 to 1	40	49	4.6				
DSA	85		0.5 to 1	17	34	1.8				
DSA	86		0.5 to 1	17	44	4.1				
DSA	87		0.5 to 1	610	52	3.4				
DSA	88		0.5 to 1	23	56	2.8				
DSA	89		0.5 to 1	20	45	2.6				
DSA	90A		0.5 to 1	1100	43	5				
DSA	90B	DUP of 90A	0.5 to 1	42						
DSA	91A		0.5 to 1	46	45	6.7				
DSA	91B		1.5 to 2	13	48	5.1				
DSA	92A		0.5 to 1	15	33	5.2				

SITE CLOSURE PLAN
SAN ANTONIO INTERNATIONAL AIRPORT
FIRE TRAINING AREA

SUMMARY OF HISTORICAL SOIL RESULTS (mg/kg)

CLEANUP CRITERIA				310	57	6.3	43	200	38	23
AEC	SAMPLE ID	DESCRIPTION	DEPTH	TPH	Pb	As	Be	Ba	Cr	Se
DSA	92B		1.5 to 2	22	35	8				
DSA	92C	DUP of 92A	0.5 to 1	3900						
DSA	93A		0.5 to 1	24	29	8.3				
DSA	93B		1.5 to 2	15	53	8				
DSA	93C	DUP of 93A	0.5 to 1	330						
DSA	104A		0 to 0.5						670	
DSA	104B		0.5 to 1	29	71				u	
DSA	104C		1.5 to 2		48					
DSA	104D		2.5 to 3		79					
DSA	105		0.5 to 1	74						
DSA	106		0.5 to 1	2100						
DSA	107		0.5 to 1	920						
FBP	2A		0 to 0.5	7900	770	84		210	31	10
FBP	2B	DUP of 2A	0 to 0.5	5800	810	58		190	43	14
FBP	2C	DUP of 2A	0 to 0.5						u	
FBP	2D		0.5 to 1	1500	260					
FBP	2E		3.5 to 4	2600						
FBP	2F		5.5 to 6	1000						
FBP	2G	DUP of 2F	5.5 to 6	6000	350					
FBP	3		0 to 0.5	1900	300	44		350	59	4.8
FBP	4A		0 to 0.5	2600	390	130		200	49	11
FBP	4B	DUP of 4A	0 to 0.5						8.5	
FBP	4C		0.5 to 1		49				u	
FBP	4D		1.5 to 2		48					
FBP	4E		2.5 to 3		31					
FBP	4F		5.5 to 6	360						
FBP	4G		7.5 to 8	2000						
FBP	5		0 to 0.5	2200	180	96		200	39	17
FBP	6A		0 to 0.5	5100	77	100		180	35	4.4
FBP	6B		0.5 to 1	4000	64	4.7	48	110	u	
FBP	6C		1.5 to 2	2600	77	4.2				
FBP	6D		2.5 to 3	1800	29	2.5		54		
FBP	6E		3.5 to 4	2500	23	ND		8.1		
FBP	6F		5.5 to 6							
FBP	6G		7.5 to 8	4100						
FBP	6H		9.5 to 10	190						
FBP	6I		11.5 to 12	37						
FBP	52A		0.5 to 1	5200	91	3.9		51		
FBP	52B		1.5 to 2	5400	37	3.3		25		
FBP	52C		2.5 to 3	4300	36	4.1		27		
FBP	52D		0 to 0.5		4200					
FBP	52E		3.5 to 4	8000						
FBP	52F		5.5 to 6	480						
FBP	52G		7.5 to 8	1200						

SITE CLOSURE PLAN
SAN ANTONIO INTERNATIONAL AIRPORT
FIRE TRAINING AREA

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CLEANUP CRITERIA				310	57	6.3	43	200	38	23
AEC	SAMPLE ID	DESCRIPTION	DEPTH	TPH	Pb	As	Be	Ba	Cr	Se
FBP	53A		0 to 0.5	u	2600					
FBP	53B		0.5 to 1	5100	38	19		100		
FBP	53C		1.5 to 2	3900	58	3.4		42		
FBP	53D		2.5 to 3	850	39	5.2		37		
FBP	53E	DUP of 53A	0 to 0.5	1700						
FBP	53F		3.5 to 4	980						
FBP	53G		5.5 to 6	230						
FBP	54A		0.5 to 1	110	26	48		95		
FBP	54B		1.5 to 2	240	38	17		150		
FBP	55A		0.5 to 1	u	12	7.7		120		
FBP	55B		1.5 to 2	u	13	6.8		50		
FBP	56A		0.5 to 1	7.9	13	8.1		140		
FBP	56B		1.5 to 2	22	10	4.4		98		
FBP	57A		0.5 to 1	300	12	6.6		140		
FBP	57B		1.5 to 2	17	22	7.5		160		
FBP	57C		2 to 2.5	4300	10	4.4		98		
FBP	58A		0.5 to 1	u	11	7.7		160		
FBP	58B		1.5 to 2	8.8	13	5.7		86		
FBP	59		0.5 to 1	9.4	14	6.9		120		
FBP	60		0.5 to 1	26	0	6		140		
FBP	61		0.5 to 1	22	23	6.6		93		
FBP	62		0.5 to 1	7.4	27	6.6		110		
FBP	94A		0 to 0.5		620					
FBP	94B		3.5 to 4	340						
FBP	94C		5.5 to 6	620						
FBP	95		0 to 0.5		1700					
FBP	95B		3.5 to 4	2700						
FBP	95C		5.5 to 6	8100						
FBP	96A		0 to 0.5		96					
FBP	96B		3.5 to 4		20					
FBP	97A		0 to 0.5		52					
FBP	97B		3.5 to 4		23					
FBP	97C	DUP of 97B	3.5 to 4		63					
FBP	98		0 to 0.5		1500					
FBP	99		0 to 0.5		2200					
FBP	108		2.5 to 3	43						
FBP	109		2.5 to 3	230						
FBP	111		0 to 0.7		250					
FBP	112		0 to 0.7		750					
NPC	28		2.5 to 3	66						
NPC	29A		0 to 0.5							
NPC	29B		1.5 to 2							
NPC	30A		1.5 to 2	42						
NPC	30B		2.5 to 3	22						

SITE CLOSURE PLAN
SAN ANTONIO INTERNATIONAL AIRPORT
FIRE TRAINING AREA

SUMMARY OF HISTORICAL SOIL RESULTS (mg/kg)

CLEANUP CRITERIA				310	57	6.3	43	200	38	23
AEC	SAMPLE ID	DESCRIPTION	DEPTH	TPH	Pb	As	Be	Ba	Cr	Se
NPC	31A		1.5 to 2							
NPC	31B		2.5 to 3						u	
NPC	32		1.5 to 2							
NPC	33		2.5 to 3	37						
NPC	34		1.5 to 2	16						
NPC	35		2.5 to 3	100						
NPC	36A		1.5 to 2							
NPC	36B		2.5 to 3	90						
SPC	41A		1.5 to 2							
SPC	41B		3.5 to 4	25						
SPC	42A		1.5 to 2							
SPC	42B		3.5 to 4	55						
SPC	43A		0 to 0.5	23						
SPC	43B		3.5 to 4	35						
SPC	44A		1.5 to 2							
SPC	44B		3.5 to 4	93						
SPC	45		3.5 to 4	840						
	46	STOCKPILE	0.5 to 1	34						
	47	STOCKPILE	0.5 to 1							
	48	STOCKPILE	0.5 to 1	17						
	49	STOCKPILE	0.5 to 1							
	50	STOCKPILE	0 to 0.5	190						
	51	STOCKPILE	0.5 to 1	910						

APPENDIX B

TOPOGRAPHIC MAP

Topographic Map of SAN ANTONIO INTERNATIONAL AIRPORT

100 50 0 100 200 300 400
Scale 1" = 100'
Contour Interval: 1'
Compiled from Aerial Photography
Flown December 1982
ELECTRIC TRANSFORMER
FUEL TANK
VALVE BARRIER
FIREMAN'S TRAINING AREA
W/S 734.8
48" RCP
12" CP w/CONC. HDWL OUTLET ONLY (NO INLET FOUND)
MH
752.4
753.2
754.5
754.3
756.6
750.2
748.8
748.8
743.8
744.4
744.5
743.4
744.2
745.5
746.1
745.8
744.2
741.7
746.2
740.2
739.6
738.8
742.9
741.7
742.3
742.7
744.2
743.3
745.2
750.6
748.2
745.7
738.9
738.4
737.1
736.2
734.9
734.5
735.5
735.7
736.3
735.5
735.6
739.8
741.2

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