Intermountain GeoEnvironmental Services, Inc.
12429 South 300 East, Suite 100, Draper, Utah, 84020
Phone (801) 748-4044 | Fax (801) 748-4045
www.igesinc.com

Pre-Demolition
McDonald's Restaurant
3890 South 1100 East
Salt Lake City, Utah

IGES Job No. 00115-185

March 12, 2018

Prepared for:

McDonald's USA, LLC

Intermountain GeoEnvironmental Services, Inc.
12429 South 300 East, Suite 100, Draper, Utah 84020
~ T: (801) 748-4044 ~ F: (801) 748-4045

Prepared for:

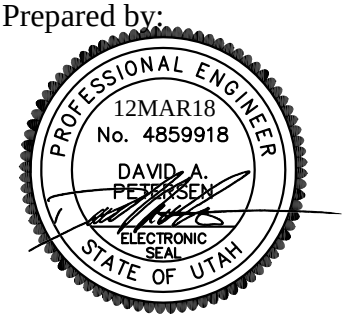
McDonald's USA, LLC
4643 South Ulster Street, Suite 1300
Denver, Colorado 80237
Attn: Kurtis Demarse, Area Construction Manager – Rocky Mountain Region

Pre-Demolition Survey
McDonald's Restaurant
3890 South 1100 East
Salt Lake City, Utah

IGES Job No. 00115-185

March 12, 2018

Prepared by:



David A. Petersen, P.E.
Project Engineer

Reviewed by:

Davey L. Breinholt, P.E.
Project Engineer

TABLE OF CONTENTS

APPENDIX

1.0 INTRODUCTION

1.1 PURPOSE

This report presents the results of a pre-demolition hazardous materials survey including asbestos testing that has been completed for the existing McDonald's restaurant located at 3890 South 1100 East in Salt Lake City, Utah; the restaurant was in operation at the time of the survey. In accordance with the United States Environmental Protection Agency's (EPA) Title 40 Code of Federal Regulations (CFR) Part 61 – National Emission Standards for Hazardous Air Pollutants (NESHAP), owners and operators are required to complete an asbestos survey to inspect for asbestos containing materials (ACM) in areas of the building where either renovation or demolition will take place. Testing should be completed by a laboratory having a National Voluntary Laboratory Accreditation Program (NVLAP) accreditation for asbestos.

If regulated ACM (RACM) is observed in the structure, it should be removed prior to renovation or demolition. RACM includes friable ACM, Category I nonfriable ACM that has become friable or may be subject to sanding, grinding, cutting, abrading or otherwise pulverized into a powder or Category II nonfriable ACM having a high probability of becoming crumbled or pulverized into a powder in the course of demolition or renovation. Certain nonfriable ACM may be left in place during demolition or renovation if it is unlikely to be pulverized, sanded grinded etc. into a powder such as Category I asphalt roof shingles. The EPA generally defines ACM as containing more than 1 percent asbestos using a method described in Appendix E of 40 CFR Part 763 Appendix E, subpart E. Any material having asbestos is considered by the Occupational Safety and Health Administration (OSHA) to be *asbestos containing* and provides permissible exposure limits (PEL), training guidelines and other recommendations for workers in various working conditions where they are potentially exposed to asbestos (29 CFR Chapter 17).

Additionally, Salt Lake County requires a pre-demolition hazard materials survey to be completed for structures prior to demolition to assess the presence of Polychlorinated Biphenyls (PCB), Chlorofluorocarbons (CFC), mercury containing materials such as thermostats and fluorescent lights and liquid or solid hazardous waste.

The recommendations presented in this report are subject to the limitations presented in the **Limitations** section of this report (Section 8.1).

1.2 PROJECT DESCRIPTION

The McDonald's restaurant studied is a single-story building with a dining area, play area, kitchen, restrooms, storage, walk-in refrigerator and freezer. IGES estimates the footprint of the structure is approximately 4,100 ft^2. IGES understands that renovation of a portion of the restaurant is planned.

1.3 SCOPE OF WORK

On February 27, 2018 IGES visited the site of the McDonald's restaurant at 3890 South 1100 East in Salt Lake City to collect samples for the Asbestos Survey and assess for the presence of PCBs, CFCs, mercury containing items and hazardous waste; areas that were inaccessible such as doors and below floors and roofs were not sampled. Samples were collected by David A. Petersen (IGES), who is a certified asbestos inspector in accordance with EPA Toxic Substances Control Act (TSCA) Title II (Asbestos Hazard Emergency Response) and Utah Department of Environmental Quality (DEQ) Division of Air Quality (DAQ). IGES is also a certified asbestos company in the state of Utah (Certification Number – ASBC-642). Mr. Petersen is also a Salt Lake County Pre-Demolition Inspector (PBI – 152); copies of these certifications are attached to this report. Samples were tested for ACM by visual estimation based on EPA-600/M4-82-020 December 1982 optical microscopy test method with guidance from the EPA/600/R-93/116 July 1993 and OSHA ID 191 Methods. Testing was completed by Dixon Information Inc., Microscopy, Asbestos Analysis & Consulting, A.I.H.A. Accredited Laboratory # 101579, NVLAP Lab Code 101012-0 (see Appendix A for certification).

IGES collected 22 samples for asbestos testing; the approximate locations of the samples are shown on Figure 1 (*Sample Location Map*) attached to this report. Sampling for asbestos testing is considered destructive testing. Where possible, IGES obtained samples from inconspicuous locations or areas not readily seen by the public. IGES made repairs to locations where samples were taken in areas that were more visible using caulk, paint and/or filler. IGES is not qualified to repair roofs, drywall, ceiling tiles, stucco, roof shingles and other areas of the structure. IGES recommends using a qualified and experienced contractor to complete repairs if those made by IGES or the areas left unrepaired are not satisfactory.

2.0 ASBESTOS TESTING RESULTS

The table below summarizes the samples taken and lab results. A brief description of the material sampled and an estimate of the square footage of the material in the building are also provided. The complete test results are also attached to this report in Appendix B.

Sample No.	Area of Building	Building Material Description	Estimated Area (ft^2)	ACM	ACM Content (%)	Condition	Friability
1, 2, 3, 4, 5	Roof	Gray asphalt shingles with black back	3,900	Yes (sample 1)	15	Good	non-friable
6, 7, 8	Exterior Walls	Red brown textured Stucco	1,500	No	-	-	-
9, 10, 11	Exterior Walls	Orange tan textured Stucco	1,600	No	-	-	-
12, 13, 14	Dining & Service	Fissured ceiling tile	1,700	No*			
15, 16, 17	Kitchen	Gypsum board ceiling tile with white covering	2,200	No	-	-	-
18, 19, 20, 21, 22	Dining, Kitchen, Service, Restroom, Play Place and Crew Break Room	Gypsum board for walls and ceilings	3,200	No	-	-	-

*Less than 1% tremolite cleavage fragments were reported in 2% of Sample No 12,

A photograph of the ACM building materials sampled are included in Figure 2. One of five samples of the gray flat roof asphalt shingles contained 15% chrysotile asbestos (#1); the remaining four samples (#2 through #5) were listed as none-detect. The gray flat roof generally consisted of black tar with white rocks and fiberglass backing. The roof tar was generally homogenous and black but, in some areas, it was covered with a silver colored sealant.

Based on the test results (Appendix B), less than 1% tremolite cleavage was reported in 2% of Sample #12 for the fissured tile observed in the south entrance. Tremolite is considered fibrous asbestos or asbestiform fibers characterized by relatively high length to width ratios (aspect ratio) typically greater than 20:1 and in some cases greater than 100:1. Tremolite cleavage fragments were reported for each of samples 7 – 9. Notes in the lab report state that some of the tremolite cleavage fragments have an aspect ratio exceeding 3:1, which, according to an interim method for determination of asbestos (EPA-600/M4-82-020) in 1982 could be characterized as

asbestos containing. The 1993 version of this test method (EPA-600/R-93-116) which includes significant revisions to the procedures outlined in the 1982 interim method would not classify these tremolite cleavages as asbestos as the mean aspect ratio does not exceed 20:1. While the EPA and the state of Utah do not regulate asbestos when tested at less than 1%, OSHA does. However, it is understood that OSHA has exempted cleavage fragments from inclusion in the OSHA asbestos standard (OSHA ID 191).

3.0 POLYCHLORINATED BIPHENYL'S

According to the EPA (https://www.epa.gov/pcbs/learn-about-polychlorinated-biphenyls-pcbs) PCBs are man-made organic chemicals that consist primarily of carbon, hydrogen and chlorine that were manufactured as early as 1929 and until 1979 when manufacturing was banned. PCBs are chemically stable with low- to non- flammable characteristics and have been used in electrical and hydraulic equipment such as transformers, capacitors, voltage regulators, electromagnets, motors, fluorescent light ballasts, calking, plastics and several other applications. PCBs were primarily manufactured as a mixture of individual PCB-related substances. PCBs have been manufactured and sold under many names, but the most common was the Aroclor series. An example of an Aroclor product is Aroclor 1254 meaning that there are 12 carbon atoms in the phenyl rings and that this mixture contains approximately 54% chlorine by weight based on https://www.epa.gov/pcbs/learn-about-polychlorinated-biphenyls-pcbs. At the time of our site reconnaissance IGES did not observe any PCB-containing items. However, the ballasts for the tube lights were not labelled as "non-PCB" and should be assumed to contain PCBs unless documentation or evidence is provided stating otherwise.

4.0 CHLOROFLUOROCARBON

According to the National Oceanic & Atmospheric Administration (NOAA) CFCs are nontoxic, nonflammable chemicals containing carbon, chlorine and fluorine that were synthesized as early as 1928 for use as safer chemicals for refrigerators used in commercial applications (https://www.esrl.noaa.gov/gmd/hats/publictn/elkins/cfcs.html) following fatal accidents in which toxic gasses were used for refrigeration. CFCs are generally safe in most applications in the lower atmosphere, however, it was later shown that they could be a major source of chlorine in the stratosphere following ultra violet (UV) radiation that destroys the earth's protective ozone layer. In 1987, 27 nations signed a global environmental treaty known as the *Montreal Protocol to Reduce Substances that Deplete the Ozone Layer*; the goal was to reduce production levels of CFCs by 50% before the year 2000. The protocol was amended in 1990 to target elimination of production by 2000. The manufacture of CFCs ended almost completely by 1996; certain exceptions were made to allow production of CFCs for inhalers and other applications. In accordance with 40 CFR Part 82, Subpart F (Section 608 of the Clean Air Act – National Recycling and Emission Reduction Program) technicians who maintain, service, repair or dispose of equipment that could release ozone depleting refrigerants into the atmosphere must be certified; more information on this certification can be obtained from EPA's website on this topic (https://www.epa.gov/section608/section-608-technician-certification-0). At the time of our site reconnaissance IGES observed 5 roof top units, a walk-in cooler, a walk-in refrigerator, ice machine and a drink refrigeration unit with refrigeration that should be checked for CFCs by a qualified certified technician prior to removal from the site. Any CFCs included in these units should be removed by an EPA-certified technician prior to disposal (see Figures 3-6).

5.0 MERCURY

According to the EPA mercury (Hg) is a naturally-occurring element that is a shiny silver-white colored metal that is liquid at room temperature (https://www.epa.gov/mercury/basic-information-about-mercury#health). Mercury was used frequently in older thermometers, fluorescent light bulbs and some electric switches. Mercury can also be found in some batteries, thermostats, dental fillings and automotive switches. When dropped, mercury can break into small droplets and can penetrate small cracks or become strongly attached to certain objects and can also evaporate into an invisible, odorless toxic gas. Exposure to high levels of mercury can cause damage to the brain, heart, kidneys, lungs and immune system. Certain measures have been taken to reduce the presence of mercury including the Mercury Export Ban Act of 2008, Mercury-Containing and Rechargeable Battery Management Act of 1996, the Clean Air Act, the Clean Water Act and the Resource Conservation and Recovery Act (RCRA) (https://www.epa.gov/mercury/environmental-laws-apply-mercury). Additional information on mercury can be obtained from EPA's website: https://www.epa.gov/mercury. At the time of our site reconnaissance, the majority of the lighting in the structure was provided by LED tube lights however, 30 tubes containing mercury and approximately 23 compact fluorescent lights (CFL) were observed on the interior of the structure and three exterior signs with fluorescent lights (see Figure 7). Mercury and items containing mercury should be carefully removed from a structure and recycled if applicable or properly disposed of prior to demolition or renovation if it will be impacted. IGES observed four thermostats that did not appear to contain mercury.

6.0 HAZARDOUS WASTE

According to the EPA hazardous waste includes waste that make it dangerous or capable of having a harmful effect on human health or the environment. Hazardous waste can result from industrial manufacturing processes or be found in batteries, among other processes and sources and may be encountered as a liquid, gas, solid or sludge. In addition to the chemicals and substances mentioned previously (PCBs, CFCs, Mercury), hazardous waste can also include radiological waste, used oil, solvents, cathode ray tubes, waste from laboratories or medical offices, paint, pesticides etc. At the time of our site reconnaissance IGES did not observe any hazardous materials stored in containers on site.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 CONCLUSIONS

As discussed previously, IGES visited the site on February 27, 2018 and collected 22 samples for asbestos testing and to complete the pre-demolition survey. One sample of the gray flat roof asphalt shingles contained 15% chrysotile asbestos and is considered non-friable. IGES estimates 3,900 square feet of these shingles were used on the roof.

As stated previously (Section 1.1), an asbestos survey should be completed prior to renovation or demolition as required by EPA. If RACM is observed in the structure based on testing, it should be removed prior to renovation or demolition by a contractor licensed to remove asbestos and done in accordance with all EPA and OSHA regulations and requirements. Areas of the building that were not readily accessible were not sampled and tested.

7.2 RECOMMENDATIONS

Any building materials observed during renovation or demolition that are suspect ACM and were not sampled and tested as part of this asbestos survey should be sampled and tested to assess the presence asbestos and removed as recommended herein if determined to be RACM.

Provided the gray flat roof and roof tar is not subject to sanding, grinding, cutting, abrading, burning, etc. in a manner that will result in the material becoming friable or pulverized into powder, it can remain during renovation and demolition. If these building materials are left in place during renovation and demolition, all OSHA regulations should be followed to protect workers and other occupants of the site while renovation and demolition are taking place.

Any CFCs identified in the roof-top units, walk-in coolers and freezers and drink refrigeration units should be completely removed by an EPA-certified technician prior to demolition of the building.

Any mercury containing bulbs and PCB containing items should be carefully removed from the building and properly disposed of or recycled prior to demolition of the building.

The Salt Lake County Pre-Demolition Building Inspection Form is included in Appendix C of this report.

8.0 CLOSURE

8.1 LIMITATIONS

The concept of risk is a significant consideration regarding the renovation and/or demolition of a building. The analytical means and methods used in completing this pre-demolition survey and accompanying recommendations do not constitute an exact science. Analytical tools used by pre-demolition and asbestos inspectors are based on limited data, judgment and experience. As such the solutions and resulting recommendations presented in this report cannot be considered risk-free and constitute IGES's best professional opinions and recommendations based on the available data and other information available at the time they were developed. IGES has developed the preceding recommendations in accordance with generally accepted professional practices and care being exercised in the project area at the time our services were performed. No warrantees, guarantees or other representations are made.

The information contained in this report is based on limited field testing and understanding of the project. It is possible that variations in the building materials could exist and may not be evident until renovation and/or demolition takes place. If any conditions are encountered at this site that are different from those described in this report, IGES must be immediately notified so that we may make any necessary revisions to recommendations contained in this report which may necessitate additional sampling and testing. In addition, if the scope of the proposed renovation or demolition changes from those described in this report, we must be notified.

This report was prepared for our client's exclusive use on the project identified in the foregoing. Use of the data or recommendations contained herein for any other project or development on the site or other similar buildings is at the user's sole risk and without the approval of IGES, Inc. It is the client's responsibility to see that all parties to the project including the project designer, contractor, subcontractors, etc. are made aware of this report in its entirety. The use of information contained in this report for bidding purposes should be done at the contractor's option and risk.

We recommend that IGES be retained to sample and test any suspect ACM encountered at the time of the renovation/demolition process that were not previously sampled and tested.

APPENDIX A

State of Utah
GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

Utah Department of Environmental Quality
Division of Air Quality

The Utah Division of Air Quality certifies that:
Intermountain GeoEnvironmental Services, Inc.

is hereby certified as an asbestos company in accordance with the provisions of Utah Administrative Code R307-801.

Certification number: **ASBC-642**
Expiration date: **06/30/18**
Director, Utah Division of Air Quality

DAQA-003-17

June 29, 2017

John F. Wallace
Intermountain GeoEnvironmental Services
12429 South 300 East, Suite 100
Draper, UT 84020

Dear Mr. Wallace:

Re: Utah Asbestos Company Certification Card

The Utah Division of Air Quality (DAQ) has received your Certification Application for Asbestos Company and we are pleased to inform you that your application has been approved. Your new Asbestos company certification card is enclosed with this letter and this card is the sole method of Asbestos company certification documentation that you will receive from the DAQ. Please check the information on your asbestos company certification card carefully and please confirm that the company name and certification expiration date are correct.

Please be aware that your company is certified to perform asbestos projects in accordance with applicable state and federal rules and the use of Utah certified individuals is mandatory. Also, your certification may be revoked or suspended if the Utah certified individual or company are found to be in violation of the asbestos certification and work practices standards found in Utah Administrative Code R307-801 or the National Emission Standard for Asbestos found in Title 40 Code of Federal Regulations Part 61 Subpart M.

If you have any questions about this letter or the enclosed asbestos company certification card, please contact Lisa Haroutunian at (801) 536-4007 or at lharoutunian@utah.gov.

Sincerely,

Robert W. Ford, Manager
Air Toxics, Lead-Based Paint, and Asbestos Section

RWF:LH:lr LCA

UNIVERSITY OF UTAH
SCHOOL OF MEDICINE | Rocky Mountain Center for Occupational & Environmental Health

Department of Family & Preventive Medicine
391 Chipeta Way, Suite C
Salt Lake City UT 84108
Phone: (801) 581-4055
Fax: (801) 585-5275

THIS CERTIFIES THAT

David A. Petersen

HAS COMPLETED THE REQUISITE TRAINING FOR ASBESTOS ACCREDITATION UNDER TSCA TITLE II

PRACTICES AND PROCEDURES IN ASBESTOS ABATEMENT

Asbestos Inspector Training

DATE: June 19-21, 2017
EXAM: June 21, 2017
NUMBER: 170571
EXPIRES: June 21, 2018
CREDITS: 2.4 CEUs / 4.01 ABIH CM Points

Connie Crandall, MBA, MA
Continuing Education Director

State of Utah
GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

Utah Asbestos Certification

David A. Petersen
ASB-6356
Inspector (Exp. 06/21/18)

AIR QUALITY
Director, Utah Division of Air Quality

DAQA-001-17

June 29, 2017

David A. Peterson
Intermountain GeoEnvironmental Services
12429 South 300 East, Suite 100
Draper, UT 84020

Dear Mr. Peterson:

Re: Utah Asbestos Program Individual Certification Card

The Utah Division of Air Quality (DAQ) has reviewed your Utah Asbestos Program Certification Application for Individuals and we are pleased to inform you that your application has been approved. Your new asbestos program individual certification card is enclosed with this letter and this card is the sole method of individual certification documentation that you will receive from the DAQ.

Please check the information on your asbestos program certification card carefully. Please confirm that the photograph, name, and certification discipline(s) are correct. Also, please remember to keep your current asbestos program certification card with you at all times when you are performing regulated asbestos work activities.

If you have any questions regarding this letter or the enclosed asbestos program certification card, please contact Lisa Haroutunian at (801) 536-4007 or at lharoutunian@utah.gov.

Sincerely,

Robert W. Ford, Manager
Air Toxics, Lead-Based Paint, and Asbestos Section

RWF:LH:lr LCA

NVLAP® National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Dixon Information Inc.
78 West 2400 South
South Salt Lake, UT 84115-3013
Mr. Steven H. Dixon
Phone: 801-486-0800 Fax: 801-486-0849
Email: dixoninformation@yahoo.com
http://www.dixoninformation.com

ASBESTOS FIBER ANALYSIS — NVLAP LAB CODE 101012-0

Bulk Asbestos Analysis

Code	*Description*
18/A01	EPA 600/M4-82-020: Interim Method for the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

For the National Voluntary Laboratory Accreditation Program

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 101012-0

Dixon Information Inc.

South Salt Lake, UT

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2017-04-01 through 2018-03-31

Effective Dates

DEPARTMENT OF COMMERCE * UNITED STATES OF AMERICA *

For the National Voluntary Laboratory Accreditation Program

Salt Lake County Health Department

Registered Predemolition Building Inspector

Name David A. Petersen

Reg#: PBI 152

Height	Weight	Sex	DOB	Eyes
5'8"	150	M	10/20/73	Blu

Signature

Director

Exp

(Please see back)

The Director may revoke or suspend
this registration based upon violations
of any requirements, in
Health Regulation #1

SALT LAKE
COUNTY
HEALTH
DEPARTMENT

Expiration: 7/31/19

APPENDIX B

Bulk Analytican Request Form
(Chain of Custody)

Dixon Information Inc.

CD0005 R4 Issued 07/2017

78 West 2400 South
South Salt Lake, Utah 84115
Phone: (801) 486-0800 Fax: (801) 486-0849
e-mail: info@dixoninformation.com

Batch Number: 15919

Turnaround Time - Check one

- ☐ **Priority Rush** (Before 8am next business day $35.00 per sample)
- ☐ **Next Day Rush** ($25.00 per sample)
- ☒ **Non-rush** (1 week $17.00 per sample)
- ☐ Point Count (1 week $45.00 per sample)
- ☐ Rush Point Count (1 business day $70.00 per sample)
- ☐ Emergency A.S.A.P. ($100.00 per sample)
- ☐ Vermiculite by Weight ($50.00 per sample)
- ☐ After Hours ($50.00 base charge up to 5 samples. $10.00 per additional sample. Priority Rush price per sample also applies. Holidays and after midnight double fee.)

Name of location sample was taken at: McDonald's
Street address sample was taken at: 3890 south 1100 East, S.L.C.
Sampled by: David Peterson Date: 2-27-18
☒ Project # ☐ Work Order ☐ Purchase Order # 00115-185 Job#:
Were these samples exposed to category 3 flooding or any hazardous chemicals? ☐ Yes ☒ No If yes, pease explain:
Additional Comments:

Report to be Sent to:	**Billing** to be sent to: PAID Dave Peterson
Company: IGES	Company: IGES
Address: 12429 South 300 East #.100	Address: CH #
City/State/Zip: Draper, UTAH 84020	City/State/Zip: AMEX 213077
Telephone #: 801-580-9596	Telephone #: VISA #
Fax #:	RECEIPT #
E-mail: david p@igesinc.com	

Field #	Date	Description	Lab #
1,2,3,4,5	2-27-18	gray Asphalt Shingles	199, 200, 201, 202, 203
6,7,8		Red or brown exterior stucco	204, 205, 206
9,10,11		orange tan exterior Stucco	207, 208, 209
12,13,14		white Fissured ceiling tile	210, 211, 212
15,16,17		gypsum board ceiling tile	213, 214, 215
18,19,20,21,22	↓	gypsum board walls + ceilings	216, 217, 218, 219, 220

Chain of Custody: serves as Dixon Information Inc.'s official work contract. Receiving samples signifies the Lab's capabilities to analyze the samples. Submission of asbestos for analysis and/or signing a Chain of Custody is the equivalent of submission of a purchase order and constitutes an agreement to pay for services provided at Dixon Information Inc. standard schedule of fees for services. Any change must be approved by laboratory and customer. Turnaround Time is subject to sample load.

Submitted by:		Date: 2-27-18	Time: 12:24
Received by Lab:		Date: 2.27.18	Time: 1224
Received by Analyst:		Date: 3-5-18	Time:
Returned by Lab:		Date:	Time:

DIXON INFORMATION INC.
MICROSCOPY, ASBESTOS ANALYSIS & CONSULTING
AIHA-LAP LLC. ACCREDITED LABORATORY # 101579
NVLAP LAB CODE 101012-0

March 6, 2018

Mr. David Petersen
IGES Inc
4153 So Commerce Dr
SLC, UT 84107

Ref: Batch # 151919, Lab # IGES199 - IGES220
Received February 27, 2018
Test report, Page 1 of 7
3890 South 1100 East SLC
McDonald's
Project #: 00115-185
Sampled by David Peterson February 27, 2018

Dear Mr. Petersen:

Samples IGES199 through IGES220 have been analyzed by visual estimation based on EPA-600/M4-82-020 December 1982 optical microscopy test method, with guidance from the EPA/600/R-93/116 July 1993 and OSHA ID 191 methods. Appendix "A" contains statements which an accredited laboratory must make to meet the requirements of accrediting agencies. It also contains additional information about the method of analysis. Appendix "A" must be included as an essential part of this test report. This analysis is accredited under NVLAP Lab Code: 101012-0. It does not contain data or calibrations for tests performed under the AIHA program under lab code 101579.

This report may be reproduced but all reproduction must be in full unless written approval is received from the laboratory for partial reproduction. The results of analysis are as follows:

Lab IGES199, Field 1 Gray Asphalt Shingles
This sample contains two types of material: The first type is **15% chrysotile asbestos** in black tar sealant; the second type is 15% fiberglass in black asphalt shingle with white rocks on one side. This sample is non-homogeneous.

The first type is 2% of the sample. The second type is 98% of the sample.

78 WEST 2400 SOUTH | SOUTH SALE LAKE, UTAH 84115-3013
PHONE 801-486-0800 | FAX 801-486-0849 | RES 801-571-7695

Lab IGES200, Field 2 Gray Asphalt Shingles
This sample contains two types of material: The first type is 15% fiberglass in black asphalt with gray rocks on one side; the second type is black tar with a trace of rocks. This sample is non-homogeneous.

The first type is 85% of the sample. The second type is 15% of the sample.

Less than 1% chrysotile asbestos was detected, the asbestos containing source could not be identified.

Lab IGES201, Field 3 Gray Asphalt Shingles
This sample contains three types of material: The first type is 3% organic fiber in silver colored sealant with perlite; the second type is 15% fiberglass in black asphalt shingle with gray rocks on one side; the third type is black tar. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 15% of the sample. The second type is 75% of the sample. The third type is 10% of the sample.

Lab IGES202, Field 4 Gray Asphalt Shingles
This sample contains three types of material: The first type is silver colored sealant; the second type is 15% fiberglass in black asphalt shingle with gray rocks on one side; the third type is black tar. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 2% of the sample. The second type is 85% of the sample. The third type is 13% of the sample.

Lab IGES203, Field 5 Gray Asphalt Shingles
This sample contains two types of material: The first type is 15% fiberglass in black asphalt shingle with off-white rocks on one side; the second type is black tar. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 85% of the sample. The second type is 15% of the sample.

Lab IGES204, Field 6 Red Brown Enterior Stucco
This sample contains four types of material: The first type is red coating; the second type is off-white sandy plaster; the third type is 15% cross-woven fiberglass in gray sandy cement; the fourth type is white foam insulation. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 2% of the sample. The second type is 27% of the sample. The third type is 70% of the sample. The fourth type is 1% of the sample.

Lab IGES205, Field 7 Red Brown Enterior Stucco
This sample contains four types of material: The first type is red coating; the second type is off-white sandy plaster; the third type is 15% cross-woven fiberglass in gray sandy cement; the fourth type is white foam insulation. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 2% of the sample. The second type is 37% of the sample. The third type is 60% of the sample. The fourth type is 1% of the sample.

Lab IGES206, Field 8 Red Brown Enterior Stucco
This sample contains four types of material: The first type is red coating; the second type is off-white sandy plaster; the third type is 15% cross-woven fiberglass in gray sandy cement; the fourth type is white foam insulation. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 2% of the sample. The second type is 37% of the sample. The third type is 60% of the sample. The fourth type is 1% of the sample.

Lab IGES207, Field 9 Orange Tan Exterior Stucco
This sample contains four types of material: The first type is orange coating; the second type is off-white sandy plaster; the third type is 15% fiberglass in gray sandy cement; the fourth type is white foam insulation. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 2% of the sample. The second type is 36% of the sample. The third type is 60% of the sample. The fourth type is 2% of the sample.

Lab IGES208, Field 10 Orange Tan Exterior Stucco
This sample contains four types of material: The first type is orange coating; the second type is off-white sandy plaster; the third type is 15% cross-woven fiberglass in gray sandy cement; the fourth type is white foam insulation. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 2% of the sample. The second type is 37% of the sample. The third type is 60% of the sample. The fourth type is 1% of the sample.

Lab IGES209, Field 11 Orange Tan Exterior Stucco
This sample contains four types of material: The first type is orange coating; the second type is off-white sandy plaster; the third type is 15% cross-woven fiberglass in gray sandy cement; the fourth type is white foam insulation. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 2% of the sample. The second type is 37% of the sample. The third type is 60% of the sample. The fourth type is 1% of the sample.

Lab IGES210, Field 12 White Fissured Ceiling Tile
This sample contains two types of material: The first type is less than 1% talc fiber and **less than 1% tremolite cleavage fragments** in white coating; the second type is 30% plant fiber and 20% mineral wool in binder with perlite. This sample is non-homogeneous.

The first type is 2% of the sample. The second type is 98% of the sample.

Note: Under certain geologic conditions, talc and amphibole minerals occur in the same deposit. In some of those deposits, asbestiform fibers grow. The chemical composition and crystal structure of these fibers range between that of talc and that of anthophyllite, the fibers are asbestiform mineraloids which can be very difficult to characterize by PLM and/or TEM.

Note: Some of the tremolite cleavage fragments have an aspect ratio exceeding 3:1. EPA 600/M4-82-020 defines asbestos as being positively identified as one of the minerals listed in Table 1-1 with an aspect ratio exceeding 3:1. Guidance from EPA/600/R-93-116 would not classify this tremolite as asbestos, as the mean aspect ratio does not exceed 20:1. OSHA ID 191 has exempted tremolite cleavage fragments from inclusion in the OSHA asbestos standard.

Lab IGES211, Field 13 White Fissured Ceiling Tile
This is a light gray sample with perlite, 30% plant fiber, and 5% mineral wool in resin binder with a white coating on one side. **Asbestos is none detected.**

The white coating is 1% of the sample.

Lab IGES212, Field 14 White Fissured Ceiling Tile
This is a light gray sample with perlite, 25% plant fiber, and 25% mineral wool in resin binder with a white coating on one side. **Asbestos is none detected.**

The white coating is 1% of the sample.

Lab IGES213, Field 15 Gypsum Board Ceiling Tile
This sample contains two types of material: The first type is brown plant fiber paper; the second type is 1% fiberglass in white gypsum plaster with vermiculite. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 5% of the sample. The second type is 95% of the sample.

Lab IGES214, Field 16 Gypsum Board Ceiling Tile
This sample contains three types of material: The first type is white vinyl coating; the second type is brown plant fiber paper; and the third type is white gypsum plaster with vermiculite and 1% fiberglass. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 1% of the sample. The second type is 4% of the sample. The third type is 95% of the sample.

Lab IGES215, Field 17 Gypsum Board Ceiling Tile
This sample contains three types of material: The first type is white vinyl coating; the second type is brown plant fiber paper; and the third type is white gypsum plaster with vermiculite and 1% fiberglass. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 1% of the sample. The second type is 4% of the sample. The third type is 95% of the sample.

Lab IGES216, Field 18 Gypsum Board Walls & Ceilings
This sample contains three types of material: The first type is white limestone plaster with perlite and mica; the second type is brown plant fiber paper; and the third type is white gypsum plaster with 1% fiberglass. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 1% of the sample. The second type is 4% of the sample. The third type is 95% of the sample.

Lab IGES217, Field 19 Gypsum Board Walls & Ceilings
This sample contains three types of material: The first type is white limestone plaster with mica and perlite; the second type is brown plant fiber paper; and the third type is white gypsum plaster with 1% fiberglass. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 2% of the sample. The second type is 4% of the sample. The third type is 94% of the sample.

Lab IGES218, Field 20 Gypsum Board Walls & Ceilings
This sample contains two types of material: The first type is brown plant fiber paper; the second type is 1% fiberglass in white gypsum plaster. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 5% of the sample. The second type is 95% of the sample.

Lab IGES219, Field 21 Gypsum Board Walls & Ceilings
This sample contains four types of material: The first type is white paint; the second type is white limestone plaster with perlite and mica; the third type is brown plant fiber paper; and the fourth type is white gypsum plaster with 1% fiberglass. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 1% of the sample. The second type is 5% of the sample. The third type is 5% of the sample. The fourth type is 89% of the sample.

Lab IGES220, Field 22 Gypsum Board Walls & Ceilings
This sample contains three types of material: The first type is white limestone plaster with mica and perlite; the second type is brown plant fiber paper; and the third type is white gypsum plaster with 1% fiberglass. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 5% of the sample. The second type is 5% of the sample. The third type is 90% of the sample.

In order to be sure reagents and tools used for analysis are not contaminated with asbestos, blanks are tested. Asbestos was none detected in the blanks tested with this bulk sample set.

Very truly yours,

Steve H. Dixon, President

Analyst: Ofir A. Sosa_____ Date Analyzed: March 5, 2018

Appendix "A"

"This report relates only to the items tested. This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST, AIHA-LAP LLC or any agency of the US government."

NVLAP and AIHA-LAP LLC. requires laboratories to state the condition of the samples received for testing. These samples are in acceptable condition for analysis unless there is a statement in the report of analysis that a test item has some characteristics or condition that precludes analysis or requires a modification of standard analytical methodology. If a test item is not acceptable, the reasons for non-acceptability will be given under the laboratory number for that particular test item. The reported percentages of each material type are based on the sample received by the laboratory and may not be representative of the parent material. Orientation of top and bottom may not be specified due to uncertainty of orientation.

Methods of Analysis and Limit of Detection.

In air count analysis, the results may be biased when interferences are noted.

The accuracy of asbestos analysis in bulk samples increases with increasing concentration of asbestos. Pigments, binders, small sample size, and multiple layers may affect the analysis sensitivity.

There are two methods for analysis of asbestos in a bulk test sample. Visual estimation with gravimetry is the most sensitive method. If an analyst makes a patient search, 0.1% or less asbestos can be detected in a bulk sample.

The second method of analysis is a statistical approach called point counting. EPA will not accept visual estimation if a laboratory detects a trace of asbestos in a sample i.e. anything less than 1% asbestos. Government agencies regulate asbestos containing materials (ACM) whenever the ACM is more than 1%. OSHA requirements apply on samples containing any amount of asbestos.

Due to higher charge for a point count analysis, Dixon Information Inc. does not perform a point count unless authorized to do so by the customer. If a sample is point counted, when possible, various chemical and/or physical means may be used to concentrate the asbestos in the sample. This is permitted by the EPA method and it increases the accuracy of the analysis.

APPENDIX C

SALT LAKE COUNTY HEALTH DEPARTMENT

Pre-demolition Building Inspection Form

Water Quality and Hazardous Waste Bureau, Environmental Health Division
788 East Woodoak Lane; Murray, UT 84107
Phone: 385-468-3862; Fax: 385-468-3863

Section 1: General Information

Select one: ☐ Residential ☑ Business

3890 South 1100 East	Salt Lake City	02/27/2018
Address of Demolition	City	Inspection Date
McDonald's Corporation - Attn: Kurtis DeMarse	480-417-6764	kurtis.demarse@us.mcd.com
Property Owner Name	Phone	Email
Not yet konwn	N/A	N/A
Demolition Permit Holder or Contractor	Phone	Email

Section 2: Inspection Results

Items	Amount	Condition
Mercury (Hg) Thermostats	None	☐ Damaged ☐ Undamaged
Hg Fluorescent Lights	~23	☐ Damaged ☑ Undamaged
PCB Ballasts or Transformers	None observed	☐ Damaged ☐ Undamaged
Refrigeration Units containing CFCs	9	☐ Damaged ☑ Undamaged
Containers of Hazardous or Special Waste, including Vehicle Batteries	None	☐ Damaged ☐ Undamaged

Suspect ACM (substrates sampled):

☐ Ceiling tile ☐ Ceiling texture ☐ Drywall ☐ Flooring ☐ Heat tape ☐ Insulation ☑ Roofing
☐ Window caulk ☐ Other: _____ ☐ Other: _____ ☐ None present

David A. Petersen		152
Inspector name	Inspector signature	PBI Reg. #

Section 3: Follow-Up Inspection Results

Have all items identified above been removed? ☐ Yes ☐ No

Inspector signature	Date

Section 4: Disposition of Identified Items or Copies of Receipts

Item	Name of Disposal or Recycling Facility	Date
Hg Thermostats		
Hg Fluorescent Lights		
PCB Ballasts or Transformers		
Refrigeration Units containing CFCs		
Hazardous or Special Waste; Batteries		
RACM or other ACM		

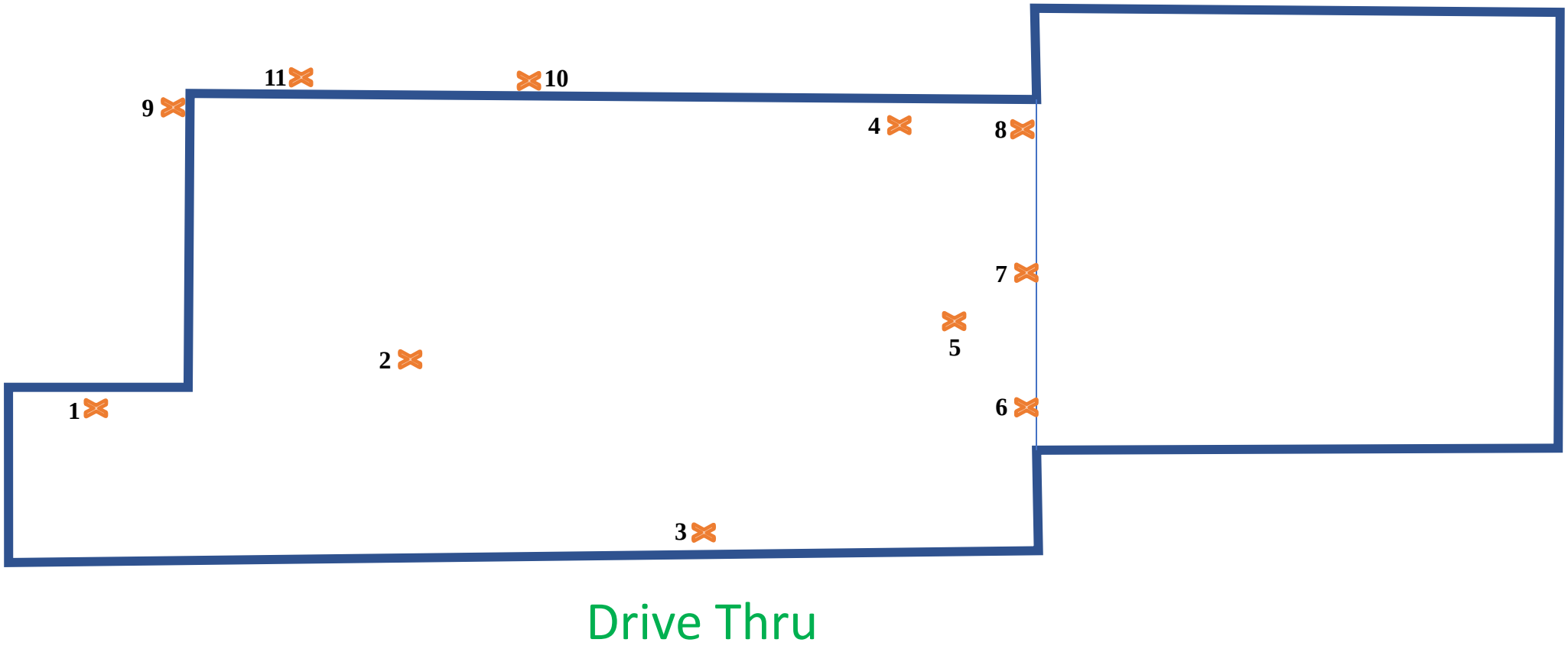
HEALTH DEPARTMENT USE ONLY

☐ Approved by: _____ _____
Licensed Environmental Health Scientist Date approved

Print

Submit

FIGURES



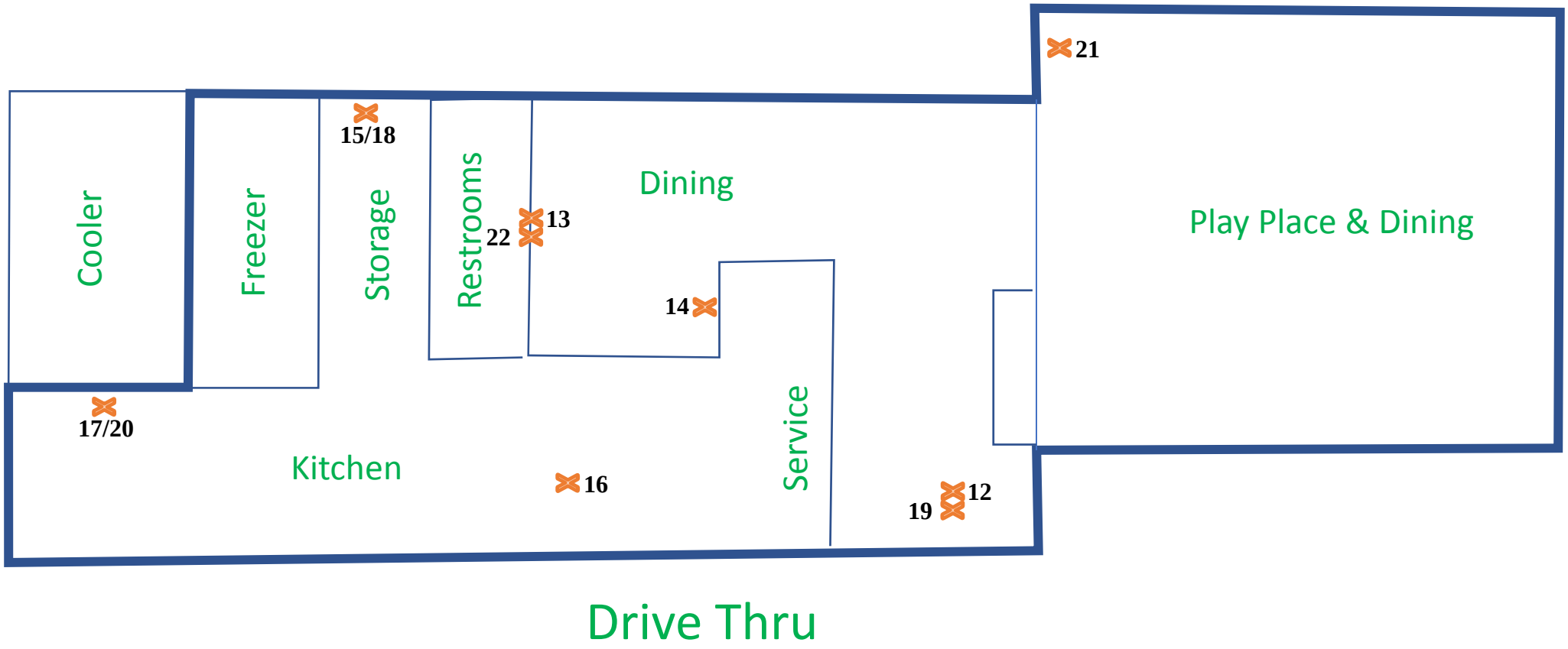
IGES®

Project Number – 00115-185

Pre-Demolition Survey
McDonald's Restaurant
3890 South 1100 East
Salt Lake City, Utah

SAMPLE LOCATION MAP
Roof Level & Exterior

FIGURE 1a



IGES®

Project Number – 00115-185

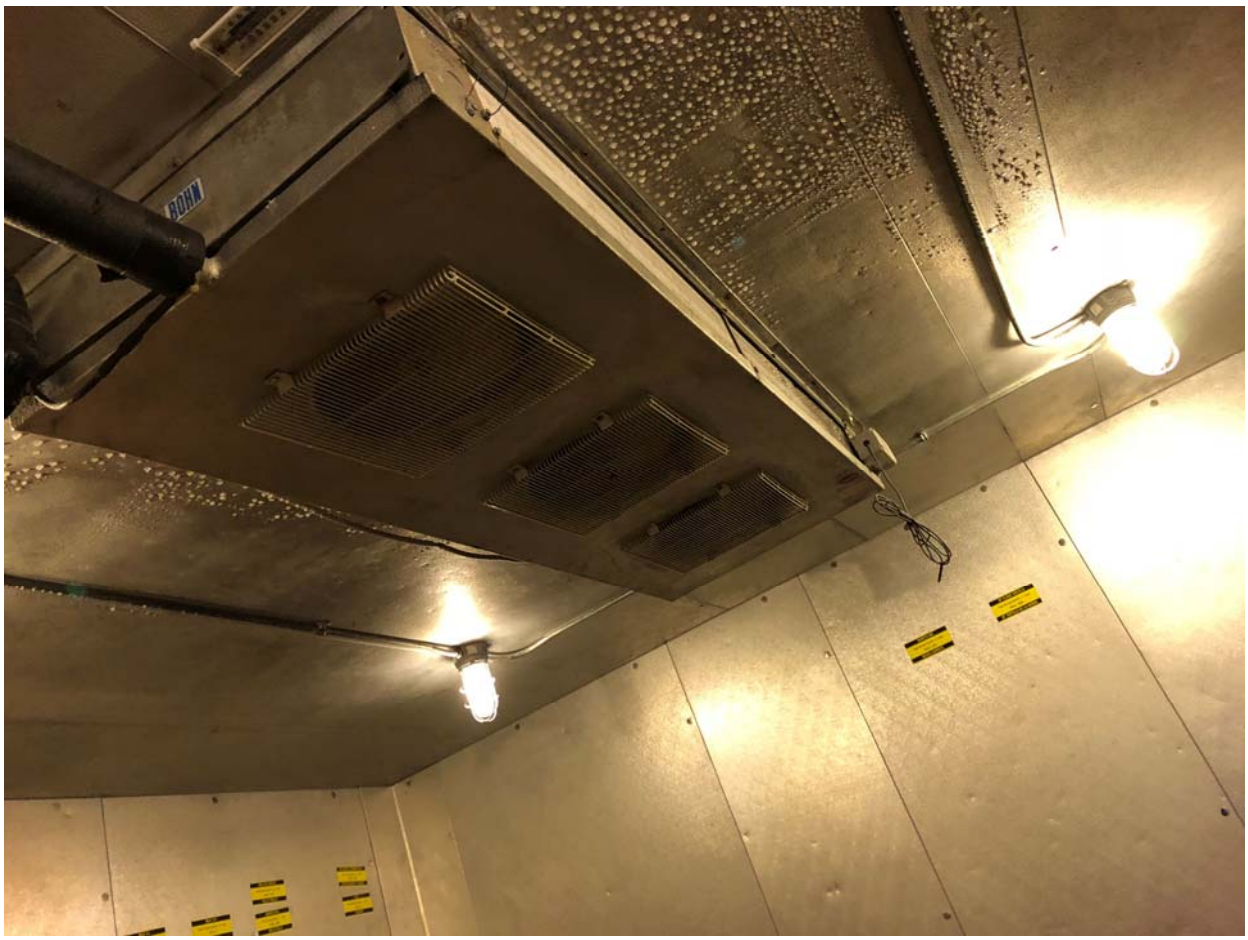
Pre-Demolition Survey
McDonald's Restaurant
3890 South 1100 East
Salt Lake City, Utah

SAMPLE LOCATION MAP
Main Level

FIGURE 1b

Black Asphalt Sealant (typical)

Walk-in Cooler

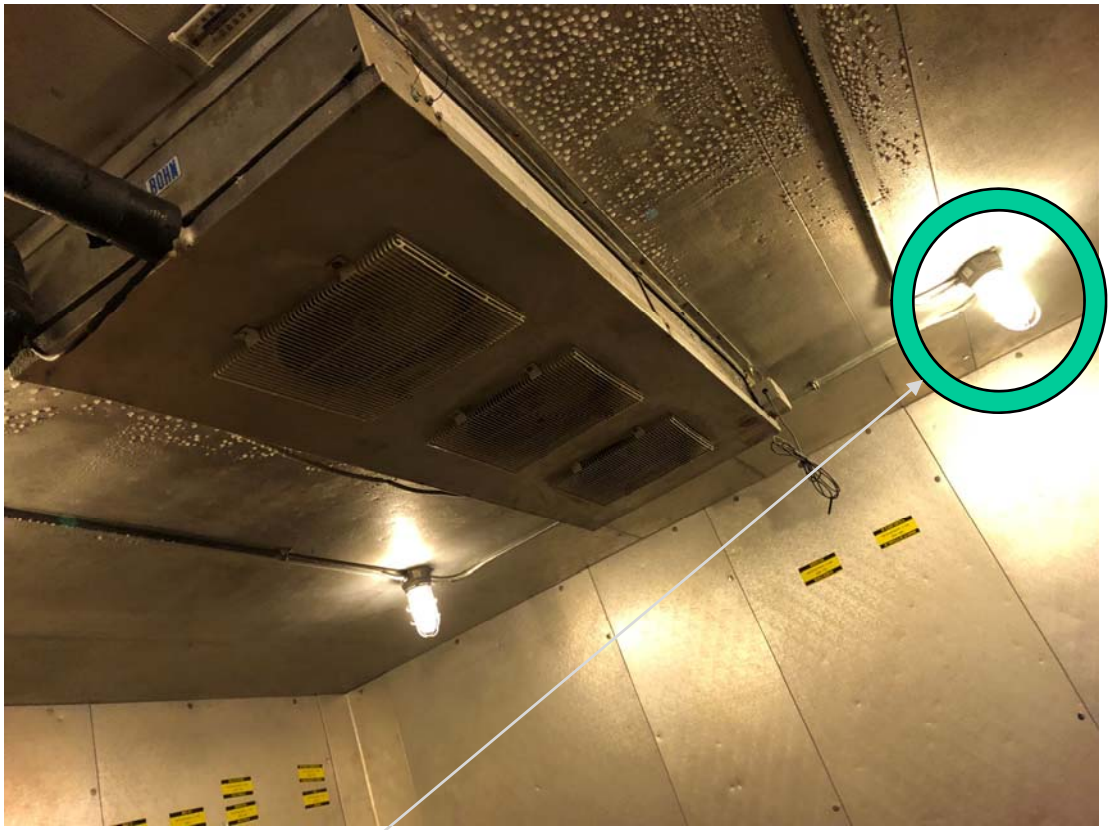


Walk-in Freezer

Roof-top units

Drink Chiller

Ice Machine



CFL Bulbs