BRIDGE H-1443

HAZARDOUS MATERIALS SURVEY

BRIDGE INSPECTION AND SURVEY FOR PRESENCE OF ASBESTOS AND HEAVY METAL(S), JANUARY 2021

NDOT Hazardous Materials Section, Environmental Division
1263 South Stewart Drive
Carson City, NV 89712

EXECUTIVE SUMMARY

The inspection (survey) for hazardous materials was conducted on bridge H-1443 on January 20, 2021 by NDOT personnel from the Hazardous Materials section, of the Environmental Division. The bridge was evaluated for both asbestos containing materials (ACM) and heavy metals in coating materials. Three suspect metals samples and twenty-six suspect asbestos samples were collected with results and considerations summarized below:

- No ACMs were identified
- Lead was found in coating materials but at regulatory insignificant levels.

1.0 INTRODUCTION

NDOT conducted an asbestos survey and screening for metals-based coating materials on the following bridge structure located in Clark county:

- H-1443 (Stewart Grade Separator, I-515, Las Vegas, NV)

The survey was conducted on January 20, 2021 by NDOT personnel. Suspect Asbestos Containing Material (ACM) were identified and appropriately sampled. Coating materials, if present, were sampled and analyzed for the Resource Recovery and Conservation Act eight (RCRA 8) metals.

Bulk asbestos samples were analyzed by a National Voluntary Laboratory Accredited laboratory by polarized light microscopy (PLM). Metals analysis was conducted by a Nevada Certified Lab. The results of the laboratory analysis are attached as Appendix C and Appendix D, respectively.

2.0 BRIDGE DESCRIPTION

Bridge H-1443 was constructed in 1982 with improvements/maintenance-related activities in 1995 and 2001. Bridge H-1443 is constructed of concrete and steel components. The concrete components include terminal-end bridge stem wall/backwall, abutments, wing walls, sound walls, parapet, concrete barriers, piers, pier caps, and concrete bridge deck overlain with asphaltic concrete. The steel components include beams, cross bracing, field splice plates, and undercarriage corrugated steel decking. Four different types of coating materials were applied. Discrete coating materials were identified throughout the bridge, abutments, columns, and with the exception of undercarriage steel decking, paint applied to all steel components. Bridge bearing pads are elastomeric. Both fibrous and rubberized expansion joints were identified.

3.0 FIELD ACTIVITIES

The survey was conducted by NDOT personnel, appropriately licensed Asbestos and Hazardous Emergency Response Act (AHERA) accredited asbestos inspectors. The survey was conducted in general accordance with the sample collection protocols established in EPA regulation 40 CFR 763. A summary of the survey activities performed is discussed below. Copies of AHERA certifications and licenses for NDOT personnel conducting the survey are provided as Appendix E.

3.1 Visual and Physical Assessment

Survey activities began with a visual observation of the structures to identify homogeneous areas of suspect ACM and presence of coating materials. A physical assessment of each homogeneous area of suspect ACM was conducted to assess the friability and condition of the materials.

The homogeneous areas identified during the visual survey, the presence of coating materials, and sample identifiers are summarized in Table 1.

Table 1 - Bridge Component Descriptions

Homogeneous Area	Description	Sample IDs
A	wing walls	WW-1, WW-2, WW-3
B	parapet	PARA-1, PARA-2, PARA-3
C	bridge deck	DECK-1, DECK-2, DECK-3
D	brown fibrous expansion joint	EXP-1
E	stem/back wall	STEM-1, STEM-2, STEM-3
F	sound wall	S-WALL-1, S-WALL-2, S-WALL-3
G	column (pier and pier cap)	COL-1, COL-2, COL-3
H	brown fibrous expansion joint	EXP-2
I	abutment	ABT-1, ABT-2, ABT-3
J	white texture throughout bridge (composite)	TXT-1, Bridge-Paint-1443[(a)]
K	white paint, columns (composite)	COL-TXT-1, Column-Paint-1443[(a)]
L	red abutment cementous texture coating (composite)	ABT-TXT-1
M	red paint applied to steel components (composite)	I-Beam-Paint-1443[(a)]

notes: (a) Heavy metals sample identifier.

3.2 Sample Collection

Based on results of the visual observation, bulk samples of suspect ACM and coating materials were collected in general accordance with AHERA sampling protocols. Representative samples of suspect materials were collected in each homogeneous area. Samples were placed in new sealable containers and labeled with unique sample numbers.

3.3 Sample Analysis

Bulk samples of ACM were submitted under chain of custody to Asbestos TEM Laboratories for analysis by PLM. The percentage of asbestos, where applicable, was determined by microscopic visual estimation. Coating material samples were also submitted to Alpha Analytical and analyzed for heavy metals using EPA 6020 test method.

A discussion of suspect ACM and suspect metals-based coating samples collected during the survey and findings are included in Section 6.0.

4.0 PLAN REVIEW

Design plans did not require review.

5.0 REGULATORY OVERVIEW

5.1 Asbestos Regulations

NESHAP (40 CFR Part 61, Subpart M) regulates asbestos fiber emissions and asbestos waste disposal practices. It also requires the identification and classification of existing building materials prior to demolition or renovation activity. Under NESHAP, asbestos-containing building materials

are classified as either friable, Category I non-friable, or Category II non- friable ACM. Category I non-friable ACM includes packings, gaskets, resilient floor coverings and asphalt roofing products containing more than 1% asbestos. Category II non-friable ACM are any materials other than Category I materials that contain more than 1% asbestos.

Friable ACM, Category I and Category II non-friable ACM which are in poor condition and have become friable or which will be subjected to drilling, sanding, grinding, cutting or abrading and which could be crushed or pulverized during anticipated renovation or demolition activities are considered Regulated ACM (RACM).

5.2 Coating Material and Lead Based Paint Regulations

Lead-based paint (LBP) is defined as a surface coating or paint containing lead in excess of 0.5% (5000 mg/Kg) by weight (EPA Toxic Substance Control Act, Section 401).

Under EPA regulations heavy metal impacted wastes generated during abatement activities are handled as either a solid waste or a hazardous waste, depending on the concentration of each of the metal(s) and the method of coating material removal.

6.0 FINDINGS AND RECOMMENDATIONS

6.1 Suspect Asbestos Containing Materials

A total of twenty-six bulk samples were collected from twelve homogeneous areas of suspect ACM. No Asbestos Containing Materials were identified.

A bridge Location Map is included in Appendix A. A photographic log showing homogenous areas is presented in Appendix B. Asbestos analytical results are included in Appendix C. A summary of the suspect ACMs identified is provided in Table 2.

Table 2 – Summary of Suspected ACM

Homogeneous Sampling Area	Sample Number	Material Description/Sample Location	Asbestos Results[1], %	NESHAP Category[2]	Friability[3]
A	WW-1	wing walls	Not detected	N/A	non-friable
	WW-2				
	WW-3				
B	PARA-1	parapet	Not detected	N/A	non-friable
	PARA-2				
	PARA-3				
C	DECK-1	concrete bridge decking	Not detected	N/A	non-friable
	DECK-2				
	DECK-3				
D	EXP-1	brown fibrous expansion joint	Not detected	N/A	friable
E	STEM-1	stem/back wall	Not detected	N/A	non-friable
	STEM-2				
	STEM-3				
F	S-WALL-1	sound wall	Not detected	N/A	non-friable
	S-WALL-2				
	S-WALL-3				
G	COL-1	column (piers and pier caps)	Not detected	N/A	non-friable
	COL-2				
	COL-3				
H	EXP-2	brown fibrous expansion joint	Not detected	N/A	friable

I	ABT-1 ABT-2 ABT-3	abutment	Not detected	N/A	non-friable
J	TXT-1	white texture throughout bridge (composite)	Not detected	N/A	non-friable
K	COL-TXT-1	white paint, columns (composite)	Not detected	N/A	non-friable
L	ABT-TXT-1	red abutment cementous texture coating (composite)	Not detected	N/A	non-friable

notes: (1) PLM unless otherwise noted.
(2) NESHAAP category I, category II, RACM, or (N/A) not applicable.
(3) Friable materials are those that, when dry, may be crumbled, pulverized or reduced to powder by hand pressure.

Additional suspect materials, other than those identified during the survey, could exist within the structures in areas not accessible to the inspector at the time of the survey. Should suspect materials other than those identified during this survey be uncovered during the renovation/demolition process, those materials should be assumed to be ACM until sampling and analysis can confirm or refute this assumption.

6.2 Coating Materials

One paint chip sample from the coating materials applied to the steel components "I-Beam-Paint-1443", one composite sample from the coating material applied to the concrete components "Bridge-Paint-1443", and one composite paint sample from the columns (piers) "Column-Paint-1443" were collected for analysis. These composite samples were analyzed for total arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury. Based on the EPA's definition of LBP, none of the coating materials are a LBP. Analytical results are included in Appendix D and laboratory results are summarized in Table 3.

The sample from the abutment red coating material identified as "ABT-TXT-1" was not sampled for heavy metals. This was attributed to the cementous nature of the material and the historic absence of heavy metals, primarily lead.

Table 3 – Summary of Coating Material

Sample Identification	Material Description/Sample Location	Heavy Metal Results(1), mg/Kg							
		As	Ba	Cd	Cr	Pb	Se	Ag	Hg
I-Beam-Paint-1443	red paint applied to steel components (composite)	nd	nd	nd	nd	0.22	nd	nd	nd
Bridge-Paint-1443	white texture throughout bridge (composite)	nd	nd	nd	nd	nd	nd	nd	nd
Column-Paint-1443	white paint, columns (composite)	nd	nd	nd	nd	nd	nd	nd	nd

notes: (1) EPA test method 6020.
nd – not detected above method limits.

6.3 Recommendations

No ACMs were identified. Lead was found in steel component paint but at regulatory insignificant concentrations. Total concentration(s) of the above metal(s) indicates that the coating wastes would not be a toxic characteristic hazardous waste. However, the method used to remove the coating material will need to be taken into consideration prior to disposal.

Appendix A
Bridge Location Map

Bridge H-1443
Stewart Grade Separator, I-515
Las Vegas, Nevada

Appendix B
Bridge Photo Log

PHOTOGRAPHIC DOCUMENTATION

NDOT Hazardous Materials Survey
Bridge H-1443
I-515
Las Vegas, Nv

PHOTO 1 **DATE:** 1/20/2021 **DIRECTION:** East **TAKEN BY:** Brian Reed **DESCRIPTION:** Bridge H-1443.	
PHOTO 2 **DATE:** 1/20/2021 **DIRECTION:** East **TAKEN BY:** Brian Reed **DESCRIPTION:** Abutment and stemwall.	

PHOTOGRAPHIC DOCUMENTATION

NDOT Hazardous Materials Survey
Bridge H-1443
I-515
Las Vegas, Nv

PHOTO 3

DATE:
1/20/2021

DIRECTION:
North

TAKEN BY:
Brian Reed

DESCRIPTION:
Support columns and endcaps.

PHOTO 4

DATE:
1/20/2021

DIRECTION:
South

TAKEN BY:
Brian Reed

DESCRIPTION:
Wingwall, abutment, soundwall, parapet and stemwall.

Appendix C
Asbestos Sample(s) Analytical Results

ASBESTOS TEM LABORATORIES, INC.

EPA Method 600/R-93/116
Polarized Light Microscopy
Analytical Report

Report No. 143630

1350 Freeport Blvd., Unit 104
Sparks, NV 89431
(775) 359-3377
FAX (775) 359-2798

Main Office Located At:
3431 Ettie Street Oakland, CA 94608
Ph. (510) 704-8930 Fax (510) 704-8929

ASBESTOS TEM LABORATORIES, INC

NVLAP Lab Code 200104-0

Jan-29-21

Robert Piekarz
Nevada Department of Transportation
1263 South Stewart Street
Carson City, NV 89712

RE: LABORATORY JOB # 9092-00052
Polarized light microscopy analytical results for 26 bulk sample(s).
Job Site: D1 Las Vegas
Job No.:
Report No.: 143630

Enclosed please find the bulk material analytical results for one or more samples submitted for asbestos analysis. The analyses were performed in accordance with EPA Method 600/R-93/116 or 600/M4-82-020 for the determination of asbestos in bulk building materials by polarized light microscopy (PLM). Please note that while PLM analysis is commonly performed on non-friable and fine grained materials such as floor tiles and dust, the EPA method recognizes that PLM is subject to limitations. In these situations, accurate results may only be obtainable through the use of more sophisticated and accurate techniques such as transmission electron microscopy (TEM) or X-ray diffraction (XRD).

Prior to analysis, samples are logged-in and all data pertinent to the sample recorded. The samples are checked for damage or disruption of any chain-of-custody seals. A unique laboratory ID number is assigned to each sample. A hard copy log-in sheet containing all pertinent information concerning the sample is generated. This and all other relevant paper work are kept with the sample throughout the analytical procedures to assure proper analysis.

Each sample is opened in a class 100 HEPA negative air hood. A representative sampling of the material is selected and placed onto a glass microscope slide containing a drop of refractive index oil. The glass slide is placed under a polarizing light microscope where standard mineralogical techniques are used to analyze and quantify the various materials present, including asbestos. The data is then compiled into standard report format and subjected to a thorough quality assurance check before the information is released to the client.

Please note all samples will be held for 3 months from the date of receipt unless otherwise requested by client.

Sincerely Yours,

Laboratory Analyst
ASBESTOS TEM LABORATORIES, INC.

NVLAP Lab Code 200104-0

POLARIZED LIGHT MICROSCOPY ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Robert Piekarz

Address: Nevada Department of
1263 South Stewart Street
Carson City, NV 89712

Samples Indicated: 26
Reg. Samples Analyzed: 26
Split Layers Analyzed: 0

Job Site / No. D1 Las Vegas

Report No. **143630**
Date Submitted: Jan-22-21
Date Reported: Jan-29-21

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
WW-1	**None Detected**	1) None Detected 2) 99-100% Qtz, Calc, Opq	Grey concrete - wing wall
Lab ID # 9092-00052-001		3) 1-20-21 4) Jan-29-21	Concrete-Grey
WW-2	**None Detected**	1) None Detected 2) 99-100% Qtz, Calc, Opq *Fib.Op.Prop. Same as in*	Grey concrete - wing wall
Lab ID # 9092-00052-002		3) 1-20-21 4) Jan-29-21	Concrete-Grey
WW-3	**None Detected**	1) None Detected 2) 99-100% Qtz, Calc, Opq *Fib.Op.Prop. Same as in*	Grey concrete - wing wall
Lab ID # 9092-00052-003		3) 1-20-21 4) Jan-29-21	Concrete-Grey
PARA-1	**None Detected**	1) None Detected 2) 99-100% Qtz, Calc, Opq *Fib.Op.Prop. Same as in*	Grey concrete - parapet
Lab ID # 9092-00052-004		3) 1-20-21 4) Jan-29-21	Concrete-Grey
PARA-2	**None Detected**	1) None Detected 2) 99-100% Qtz, Calc, Opq *Fib.Op.Prop. Same as in*	Grey concrete - parapet
Lab ID # 9092-00052-005		3) 1-20-21 4) Jan-29-21	Concrete-Grey
PARA-3	**None Detected**	1) None Detected 2) 99-100% Qtz, Calc, Opq *Fib.Op.Prop. Same as in*	Grey concrete - parapet
Lab ID # 9092-00052-006		3) 1-20-21 4) Jan-29-21	Concrete-Grey
DECK-1	**None Detected**	1) None Detected 2) 99-100% Qtz, Calc, Opq *Fib.Op.Prop. Same as in*	Grey concrete - bridge deck/ marnlone(?)
Lab ID # 9092-00052-007		3) 1-20-21 4) Jan-29-21	Concrete-Grey
DECK-2	**None Detected**	1) None Detected 2) 99-100% Qtz, Calc, Opq *Fib.Op.Prop. Same as in*	Grey concrete - bridge deck/ marnlone(?)
Lab ID # 9092-00052-008		3) 1-20-21 4) Jan-29-21	Concrete-Grey
DECK-3	**None Detected**	1) None Detected 2) 99-100% Qtz, Calc, Opq *Fib.Op.Prop. Same as in*	Grey concrete - bridge deck/ marnlone(?)
Lab ID # 9092-00052-009		3) 1-20-21 4) Jan-29-21	Concrete-Grey
EXP-1	**None Detected**	1) 70-80% Cellulose 2) 20-30% Opq	Brown fiberboard - expansion joint
Lab ID # 9092-00052-010		3) 1-20-21 4) Jan-29-21	Fiberboard-Brown

Limit of quantitation of method is estimated to be 1% asbestos using a visual area estimation technique. Split samples are inhomogeneous.

Laboratory Analyst Greg Hanes

NVLAP Lab Code 200104-0

POLARIZED LIGHT MICROSCOPY ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Robert Piekarz

Address: Nevada Department of
1263 South Stewart Street
Carson City, NV 89712

Samples Indicated: 26
Reg. Samples Analyzed: 26
Split Layers Analyzed: 0

Job Site / No. D1 Las Vegas

Report No. **143630**
Date Submitted: Jan-22-21
Date Reported: Jan-29-21

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
STEM-1	**None Detected**	1) None Detected 2) 99-100% Qtz, Calc, Opq	Grey concrete - stem wall
Lab ID # 9092-00052-011		3) 1-20-21 4) Jan-29-21	Concrete-Grey
STEM-2	**None Detected**	1) None Detected 2) 99-100% Qtz, Calc, Opq *Fib.Op.Prop. Same as in*	Grey concrete - stem wall
Lab ID # 9092-00052-012		3) 1-20-21 4) Jan-29-21	Concrete-Grey
STEM-3	**None Detected**	1) None Detected 2) 99-100% Qtz, Calc, Opq *Fib.Op.Prop. Same as in*	Grey concrete - stem wall
Lab ID # 9092-00052-013		3) 1-20-21 4) Jan-29-21	Concrete-Grey
S-WALL-1	**None Detected**	1) None Detected 2) 99-100% Qtz, Calc, Opq *Fib.Op.Prop. Same as in*	Grey concrete - sound wall
Lab ID # 9092-00052-014		3) 1-20-21 4) Jan-29-21	Concrete-Grey
S-WALL-2	**None Detected**	1) None Detected 2) 99-100% Qtz, Calc, Opq *Fib.Op.Prop. Same as in*	Grey concrete - sound wall
Lab ID # 9092-00052-015		3) 1-20-21 4) Jan-29-21	Concrete-Grey
S-WALL-3	**None Detected**	1) None Detected 2) 99-100% Qtz, Calc, Opq *Fib.Op.Prop. Same as in*	Grey concrete - sound wall
Lab ID # 9092-00052-016		3) 1-20-21 4) Jan-29-21	Concrete-Grey
COL-1	**None Detected**	1) None Detected 2) 99-100% Qtz, Calc, Opq *Fib.Op.Prop. Same as in*	Grey concrete - column/ pier
Lab ID # 9092-00052-017		3) 1-20-21 4) Jan-29-21	Concrete-Grey
COL-2	**None Detected**	1) None Detected 2) 99-100% Qtz, Calc, Opq *Fib.Op.Prop. Same as in*	Grey concrete - column/ pier
Lab ID # 9092-00052-018		3) 1-20-21 4) Jan-29-21	Concrete-Grey
COL-3	**None Detected**	1) None Detected 2) 99-100% Qtz, Calc, Opq *Fib.Op.Prop. Same as in*	Grey concrete - column/ pier
Lab ID # 9092-00052-019		3) 1-20-21 4) Jan-29-21	Concrete-Grey
EXP-2	**None Detected**	1) 70-80% Cellulose 2) 20-30% Opq	Brown fiberboard - expansion joint
Lab ID # 9092-00052-020		3) 1-20-21 4) Jan-29-21	Fiberboard-Brown

Limit of quantitation of method is estimated to be 1% asbestos using a visual area estimation technique. Split samples are inhomogeneous.

Laboratory Analyst Greg Hanes

NVLAP Lab Code 200104-0

POLARIZED LIGHT MICROSCOPY ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Robert Piekarz

Address: Nevada Department of
1263 South Stewart Street
Carson City, NV 89712

Samples Indicated: 26
Reg. Samples Analyzed: 26
Split Layers Analyzed: 0

Job Site / No. D1 Las Vegas

Report No. **143630**
Date Submitted: Jan-22-21
Date Reported: Jan-29-21

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD LAB
ABT-1	**None Detected**	1) None Detected 2) 99-100% Opq, Qtz, Calc	Reddish concrete - abutment
Lab ID # 9092-00052-021		3) 1-20-21 4) Jan-29-21	Concrete-Grey/Red
ABT-2	**None Detected**	1) None Detected 2) 99-100% Opq, Qtz, Calc *Fib.Op.Prop. Same as in*	Reddish concrete - abutment
Lab ID # 9092-00052-022		3) 1-20-21 4) Jan-29-21	Concrete-Grey/Red
ABT-3	**None Detected**	1) None Detected 2) 99-100% Opq, Qtz, Calc *Fib.Op.Prop. Same as in*	Reddish concrete - abutment
Lab ID # 9092-00052-023		3) 1-20-21 4) Jan-29-21	Concrete-Grey/Red
TXT-1	**None Detected**	1) None Detected 2) 99-100% Calc, Opq	White texture - throughout bridge
Lab ID # 9092-00052-024		3) 1-20-21 4) Jan-29-21	Texture-Grey/White
COL-TXT-1	**None Detected**	1) None Detected 2) 99-100% Opq, Paint	White paint - columns
Lab ID # 9092-00052-025		3) 1-20-21 4) Jan-29-21	Paint-White
ABT-TXT-1	**None Detected**	1) None Detected 2) 99-100% Paint	Red paint/ texture - abutment
Lab ID # 9092-00052-026		3) 1-20-21 4) Jan-29-21	Paint-Red/Grey
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	

Limit of quantitation of method is estimated to be 1% asbestos using a visual area estimation technique. Split samples are inhomogeneous.

Laboratory Analyst Greg Hanes

Nevada Department of Transportation
1263 S. Stewart St
Carson City, NV 89701

Survey Data

Inspectors: Brian Reed/Robert Piekarz	Project Name: Bridge ~~#FF~~ 1443	Project Number:	Date Sampled: 1/20/21
Phone: 775-888-7892 Fax: 775-888-7104	Project Location: DT Las Vegas	Analysis Type: Abestos	Air (Bulk)
Turn-A-Round Time: Rush 24-Hour (2 Day)	Requests: Verbals Fax	Test to First Positive:	Yes (No)

Lab #	Sample ID	Material Description	Sample Location	Location of Materials	Quantity	Condition	Friable	Asbestos %
	1 WW-1	grey concrete	Wingwall	Bridge ~~#FF~~ 1443	1	G	N	
	2 WW-2	↓	↓	↓	1	G	N	
	3 WW-3	↓	↓	↓	1	G	N	
	4 Para-1	↓	Parapet	↓	1	G	N	
	5 Para-2	↓	↓	↓	1	G	N	
	6 Para-3	↓	↓	↓	1	G	N	
	7 Deck-1	↓	Bridge Deck/Median	↓	1	G	N	
	8 Deck-2	↓	↓	↓	1	G	N	
	9 Deck-3	↓	↓	↓	1	G	N	
	10 Exp-1	Brown Fiberboard	Expansion Joint	↓	1	G	N	

Comments/Additional Information

MATERIAL			CONDITION	UNITS	ASBESTOS %
PFI - Pipe Fitted Insulation	VT - Vinyl Tile	GA - Gasket	G - Good	LF - Linear Feet	A - Asmosite Asbestos
PRI - Pipe Run Insulation	M - Mastic	D - Debris	D - Damaged	SF - Square Feet	C - Chrysotile Asbestos
DI - Duct Insulation	CBM - Cove Base Mastic	TSI - Thermal System	SD - Significant Damage	CF - Cubic Feet	NDA - No Asbestos Detected
TI - Tank Insulation	AT - Acoustical Tile	Insulation			Assumed ACM - No Samples Taken
EJ - Expansion Joint	SA - Spray Acoustic	R - Roof			
BI - Boiler Insulation	W- Wall	DW - Drywall			
	P - Plaster	JC - Joint Compound			

Relinquished By: [signature]	Relinquished By:	Relinquished By:
Date/Time : 1/22/21 1055	Date/Time : 1/22/21 10:55 AM	Date/Time :
Received By:	Received By: Andrew Stroud ATEM	Received By:

Nevada Department of Transportation
1263 S Stewart St
Carson City, NV 89701

Survey Data

Inspectors: Brian Reed/Robert Piekarz	Project Name: Bridge ~~#FFF~~ 1443	Project Number:	Date Sampled: 1/20/21
Phone: 775-888-7892 Fax: 775-888-7104	Project Location: DI Las Vegas	Analysis Type: Abestos	Air (Bulk)
Turn-A-Round Time: Rush 24-Hour (2 Day)	Requests: Verbals Fax	Test to First Positive:	Yes (No)

Lab #	Sample ID	Material Description	Sample Location	Location of Materials	Quantity	Condition	Friable	Asbestos %
	1 Stem-1	grey Concrete	Stem wall	Bridge ~~#FFF~~ 1443	1	G	N	
	2 Stem-2	↓	↓	↓	1	G	N	
	3 Stem-3	↓	↓	↓	1	G	N	
	4 S-Wall-1	↓	Sound wall	↓	1	G	N	
	5 S-Wall-2	↓	↓	↓	1	G	N	
	6 S-Wall-3	↓	↓	↓	1	G	N	
	7 Col-1	↓	Column / Pier	↓	1	G	N	
	8 Col-2	↓	↓	↓	1	G	N	
	9 Col-3	↓	↓	↓	1	G	N	
	10 Exp-2	Brown Fiberboard	Expansion Joint	↓	1	G	N	

Comments/Additional Information

MATERIAL			CONDITION	UNITS	ASBESTOS %
PFI - Pipe Fitted Insulation	VT - Vinyl Tile	GA - Gasket	G - Good	LF - Linear Feet	A - Asmosite Asbestos
PRI - Pipe Run Insulation	M - Mastic	D - Debris	D - Damaged	SF - Square Feet	C - Chrysotile Asbestos
DI - Duct Insulation	CBM - Cove Base Mastic	TSI - Thermal System	SD - Significant Damage	CF - Cubic Feet	NDA - No Asbestos Detected
TI - Tank Insulation	AT - Acoustical Tile	Insulation			Assumed ACM - No Samples Taken
EJ - Expansion Joint	SA - Spray Acoustic	R - Roof			
BI - Boiler Insulation	W - Wall	DW - Drywall			
	P - Plaster	JC - Joint Compound			

Relinquished By: [signature]	Relinquished By:	Relinquished By:
Date/Time : 1/22/21 1055	Date/Time :	Date/Time :
Received By:	Received By:	Received By:

Nevada Department of Transportation
1263 S. Stewart St
Carson City, NV 89701

Survey Data

Inspectors: Brian Reed/Robert Piekarz	Project Name: Bridge ~~#1443~~ 1443	Project Number:	Date Sampled: 1/20/21
Phone: 775-888-7892 Fax: 775-888-7104	Project Location: DT Las Vegas	Analysis Type: Abestos	Air Bulk
Turn-A-Round Time: Rush 24-Hour 2-Day	Requests: Verbals Fax	Test to First Positive:	Yes NO

Lab #	Sample ID	Material Description	Sample Location	Location of Materials	Quantity	Condition	Friable	Asbestos %
	1 Abt-1	Reddish concrete	Abutment	Bridge ~~#1443~~ 1443	1	G	N	
	2 Abt-2	↓	↓	↓	1	G	N	
	3 Abt-3	↓	↓	↓	1	G	N	
	4 Txt-1	White Texture	Throughout Bridge	↓	1	G	N	
	5 Col Txt-1	White Paint	Columns	↓	1	G	N	
	6 Abt Txt-1	Red paint/texture	Abutment	↓	1	G	N	
	7							
	8							
	9							
	10							

Comments/Additional Information

MATERIAL			CONDITION	UNITS	ASBESTOS %
PFI - Pipe Fitted Insulation	VT - Vinyl Tile	GA - Gasket	G - Good	LF - Linear Feet	A - Asmosite Asbestos
PRI - Pipe Run Insulation	M - Mastic	D - Debris	D - Damaged	SF - Square Feet	C - Chrysotile Asbestos
DI - Duct Insulation	CBM - Cove Base Mastic	TSI - Thermal System	SD - Significant Damage	CF - Cubic Feet	NDA - No Asbestos Detected
TI - Tank Insulation	AT - Acoustical Tile	Insulation			Assumed ACM - No Samples Taken
E - Expansion Joint	SA - Spray Acoustic	R - Roof			
BI - Boiler Insulation	W- Wall	DW - Drywall			
	P - Plaster	JC - Joint Compound			

Relinquished By: BT/RJ	Relinquished By:	Relinquished By:
Date/Time : 1/22/21 1055	Date/Time :	Date/Time :
Received By:	Received By:	Received By:

Appendix D
Material Coating Sample(s) Analytical Results

Alpha Analytical, Inc.
255 Glendale Ave, #21
Sparks, Nevada 89431
TEL: (775) 355-1044 FAX: (775) 355-0406
Website: www.alpha-analytical.com

February 02, 2021

Robert Piekarz
Nevada DOT Environmental (NDOT)
1263 S. Stewart St.
Carson City, NV 89712
TEL: (775) 888-7692
FAX: (775) 888-7104

RE: Bridges D1

Order No.: NDO2101114

Dear Robert Piekarz:

The result of this report apply to the sample(s) as received.

There were no problems with the analytical events associated with this report unless noted.

Quality control data is within laboratory defined or method specified acceptance limits except if noted.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Roger Scholl

Roger Scholl
Laboratory Director
255 Glendale Ave, #21
Sparks, Nevada 89431

ALPHA ANALYTICAL INC.

Alpha Analytical, Inc.
255 Glendale Ave, #21
Sparks, Nevada 89431
TEL: (775) 355-1044 FAX: (775) 355-0406
Website: www.alpha-analytical.com

Analytical Report

WO#: **NDO2101114**
Report Date: **2/2/2021**

CLIENT: Nevada DOT Environmental (NDOT)
Collection Date: 1/20/2021 3:30:00 PM
Project: Bridges D1
Lab ID: 2101114-03
Matrix: OTHER
Client Sample ID: I-Beam Paint-1443

Analyses	Result	RL	Qual	Units	Date Analyzed	Method
Chromium (Cr)	ND	0.10		mg/L	1/26/2021	Metals by EPA 6020
Arsenic (As)	ND	0.10		mg/L	1/26/2021	Metals by EPA 6020
Selenium (Se)	ND	0.10		mg/L	1/26/2021	Metals by EPA 6020
Silver (Ag)	ND	0.10		mg/L	1/26/2021	Metals by EPA 6020
Cadmium (Cd)	ND	0.10		mg/L	1/26/2021	Metals by EPA 6020
Barium (Ba)	ND	1.0		mg/L	1/26/2021	Metals by EPA 6020
Mercury (Hg)	ND	0.10		mg/L	1/26/2021	Metals by EPA 6020
Lead (Pb)	0.22	0.10		mg/L	1/26/2021	Metals by EPA 6020

NOTES:
This analysis was performed on a TCLP extract.

ALPHA ANALYTICAL INC.

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Sparks, Nevada 89431
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Website: www.alpha-analytical.com

Analytical Report

WO#: **NDO2101114**
Report Date: **2/2/2021**

CLIENT: Nevada DOT Environmental (NDOT)
Collection Date: 1/20/2021 3:45:00 PM
Project: Bridges D1
Lab ID: 2101114-04
Matrix: OTHER
Client Sample ID: Bridge Paint-1443

Analyses	Result	RL	Qual	Units	Date Analyzed	Method
Chromium (Cr)	ND	0.10		mg/L	1/26/2021	Metals by EPA 6020
Arsenic (As)	ND	0.10		mg/L	1/26/2021	Metals by EPA 6020
Selenium (Se)	ND	0.10		mg/L	1/26/2021	Metals by EPA 6020
Silver (Ag)	ND	0.10		mg/L	1/26/2021	Metals by EPA 6020
Cadmium (Cd)	ND	0.10		mg/L	1/26/2021	Metals by EPA 6020
Barium (Ba)	ND	1.0		mg/L	1/26/2021	Metals by EPA 6020
Mercury (Hg)	ND	0.10		mg/L	1/26/2021	Metals by EPA 6020
Lead (Pb)	ND	0.10		mg/L	1/26/2021	Metals by EPA 6020

NOTES:
This analysis was performed on a TCLP extract.

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Analytical Report

WO#: **NDO2101114**
Report Date: **2/2/2021**

CLIENT: Nevada DOT Environmental (NDOT)
Collection Date: 1/20/2021 4:00:00 PM
Project: Bridges D1
Lab ID: 2101114-05
Matrix: OTHER
Client Sample ID: Column Paint-1443

Analyses	Result	RL	Qual	Units	Date Analyzed	Method
Chromium (Cr)	ND	0.10		mg/L	1/26/2021	Metals by EPA 6020
Arsenic (As)	ND	0.10		mg/L	1/26/2021	Metals by EPA 6020
Selenium (Se)	ND	0.10		mg/L	1/26/2021	Metals by EPA 6020
Silver (Ag)	ND	0.10		mg/L	1/26/2021	Metals by EPA 6020
Cadmium (Cd)	ND	0.10		mg/L	1/26/2021	Metals by EPA 6020
Barium (Ba)	ND	1.0		mg/L	1/26/2021	Metals by EPA 6020
Mercury (Hg)	ND	0.10		mg/L	1/26/2021	Metals by EPA 6020
Lead (Pb)	ND	0.10		mg/L	1/26/2021	Metals by EPA 6020

NOTES:
This analysis was performed on a TCLP extract.

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Sparks, Nevada 89431
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QC SUMMARY REPORT

WO#: **2101114**

02-Feb-21

Client: Nevada DOT Environmental (NDOT)

Project: Bridges D1 **TestCode:** **METALS_T_6020**

Sample ID: **MB-12294** SampType: **MBLK** TestCode: **METALS_T_6** Units: **mg/L**
Client ID: **PBW** Batch ID: **12294** TestNo: **E200.8**
Prep Date: **1/26/2021** RunNo: **10900** SeqNo: **309185**
Analysis Date: **1/26/2021**

Analyte	Result	PQL	SPK Value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (Cr)	ND	0.01									
Arsenic (As)	ND	0.005									
Selenium (Se)	ND	0.005									
Silver (Ag)	ND	0.005									
Cadmium (Cd)	ND	0.002									
Barium (Ba)	ND	0.005									
Mercury (Hg)	ND	0.001									
Lead (Pb)	ND	0.005									

Sample ID: **LCSD-12294** SampType: **LCSD** TestCode: **METALS_T_6** Units: **mg/L**
Client ID: **LCSS02** Batch ID: **12294** TestNo: **E200.8**
Prep Date: **1/26/2021** RunNo: **10900** SeqNo: **309187**
Analysis Date: **1/26/2021**

Analyte	Result	PQL	SPK Value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (Cr)	0.252	0.01	0.25	0	101	79.51	120.49	0.243	3.7	20	
Arsenic (As)	0.258	0.005	0.25	0	103	79.51	120.49	0.244	5.5	20	
Selenium (Se)	0.252	0.005	0.25	0	101	79.51	120.49	0.237	6	20	
Silver (Ag)	0.239	0.005	0.25	0	95.7	79.51	120.49	0.232	3	20	
Cadmium (Cd)	0.239	0.002	0.25	0	95.7	79.51	120.49	0.235	1.9	20	
Barium (Ba)	0.243	0.005	0.25	0	97.4	79.51	120.49	0.231	5.4	20	
Mercury (Hg)	0.00442	0.001	0.005	0	88.3	79.51	120.49	0.00412	7	20	
Lead (Pb)	0.237	0.005	0.25	0	94.9	79.51	120.49	0.224	5.8	20	

Sample ID: **LCS-12294** SampType: **LCS** TestCode: **METALS_T_6** Units: **mg/L**
Client ID: **LCSW** Batch ID: **12294** TestNo: **E200.8**
Prep Date: **1/26/2021** RunNo: **10900** SeqNo: **309186**
Analysis Date: **1/26/2021**

Analyte	Result	PQL	SPK Value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (Cr)	0.243	0.01	0.25	0	97.1	79.51	120.49				
Arsenic (As)	0.244	0.005	0.25	0	97.6	79.51	120.49				
Selenium (Se)	0.237	0.005	0.25	0	94.9	79.51	120.49				
Silver (Ag)	0.232	0.005	0.25	0	92.8	79.51	120.49				
Cadmium (Cd)	0.235	0.002	0.25	0	93.9	79.51	120.49				
Barium (Ba)	0.231	0.005	0.25	0	92.3	79.51	120.49				
Mercury (Hg)	0.00412	0.001	0.005	0	82.4	79.51	120.49				
Lead (Pb)	0.224	0.005	0.25	0	89.5	79.51	120.49				

Qualifiers:

B	Analyte detected in the associated Method Blan
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limit

ALPHA ANALYTICAL INC.

Alpha Analytical, Inc.
255 Glendale Ave, #21
Sparks, Nevada 89431
TEL: (775) 355-1044 FAX: (775) 355-0406
Website: www.alpha-analytical.com

QC SUMMARY REPORT

WO#: **2101114**

02-Feb-21

Client: Nevada DOT Environmental (NDOT)

Project: Bridges D1 **TestCode:** **METALS_T_6020**

Sample ID: **LCS-12294** SampType: **LCS** TestCode: **METALS_T_6** Units: **mg/L**

Client ID: **LCSW** Batch ID: **12294** TestNo: **E200.8**

Prep Date: **1/26/2021** RunNo: **10900** SeqNo: **309186**

Analysis Date: **1/26/2021**

Analyte	Result	PQL	SPK Value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B	Analyte detected in the associated Method Blan
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limit

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Sparks, Nevada 89431
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Definition Only

WO#: **2101114**
Date: **2/2/2021**

Definitions:

ND = Not Detected

C = Reported concentration includes additional compounds uncharacteristic of common fuels and lubricants.

D = Reporting Limits were increased due to high concentrations of non-target analytes.

H = Reporting Limits were increased due to the hydrocarbons present in the sample.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

K = DRO concentration may include contributions from lighter-end hydrocarbons (e.g. gasoline) that elute in the DRO range.

L = DRO concentration may include contributions from heavier-end hydrocarbons (e.g. motor oil) that elute in the DRO range.

O = Reporting Limits were increased due to sample foaming.

V = Reporting Limits were increased due to high concentrations of target analytes.

X = Reporting Limits were increased due to sample matrix interferences.

Z = DRO concentration may include contributions from lighter-end (e.g. gasoline) and heavier-end (e.g. motor oil) hydrocarbons that elute in the DRO range.

S50 = The analysis of the sample required a dilution such that the surrogate concentration was diluted below the laboratory acceptance criteria. The laboratory control sample was acceptable.

S51 = Surrogate recovery could not be determined due to the presence of co-eluting hydrocarbons.

S52 = Surrogate recovery was above laboratory acceptance limits. Probable matrix effect.

S53 = Surrogate recovery was below laboratory acceptance limits. Probable matrix effect.

S54 = Surrogate recovery was below laboratory acceptance limits.

S55 = Surrogate recovery was above laboratory acceptance limits.

Report CC's Dan Twichell
Robert Piekarz

WORKORDER SUMMARY

Alpha Analytical, Inc.

255 Glendale Ave, #21 Sparks, Nevada 89431
TEL: (775) 355-1044 FAX: (775) 355-0406

Report Attention: Robert Piekarz

NV

WorkOrder: NDO2101114
Report Due By: 05-Feb-21
EDD Required: NO

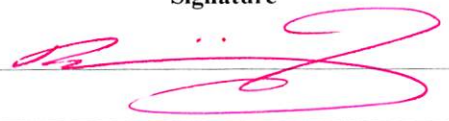
Client:
Nevada DOT Environmental (NDOT)
1263 S. Stewart St.
Carson City, NV 89712

TEL: 7758887692
FAX: 7758887104
ProjectNo: Bridges D1

Date Received: 22-Jan-21

Alpha Sample ID	Client Sample ID	Matrix	Collection Date	No. of Bottles Alpha	Sub	TAT	Requested Tests METALS_T_6020							Sample Remarks
NDO2101114-01	Abt Paint-1412	OTHER	1/20/2021 2:00:00 PM	1	0	10	A - TCLP_8							
NDO2101114-02	Texture-412	OTHER	1/20/2021 2:10:00 PM	1	0	10	A - TCLP_8							
NDO2101114-03	I-Beam Paint-1443	OTHER	1/20/2021 3:30:00 PM	1	0	10	A - TCLP_8							
NDO2101114-04	Bridge Paint-1443	OTHER	1/20/2021 3:45:00 PM	1	0	10	A - TCLP_8							
NDO2101114-05	Column Paint-1443	OTHER	1/20/2021 4:00:00 PM	1	0	10	A - TCLP_8							
NDO2101114-06	973 Paint	OTHER	1/21/2021 9:00:00 AM	1	0	10	A - TCLP_8							
NDO2101114-07	1109 Paint	OTHER	1/21/2021 10:30:00 AM	1	0	10	A - TCLP_8							

Comments: Paint chips

	Signature	Print Name	Company	Date/Time
Logged in by:		Daija Nordyke	Alpha Analytical, Inc.	1.22.21 11:35

NOTE: Samples are discarded 60 days after sample receipt unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information:

Company: Nevada Department of Transportation
Attn: Robert Pikarz
Address: 1263 S. Stewart Street
City, State, Zip: Carson City, NV 89712
Phone Number: 775-888-7692 Fax:

Alpha Analytical, Inc.

Main Laboratory 255 Glendale Ave, Suite 21 Sparks, NV 89431 Phone: 775-355-1044
Fax: 775-355-0406

Satellite Service Centers:

Northern CA: 9891 Horn Road, Suite C, Rancho Cordova, CA 95827 Phone: 916-366-9089
Southern NV: 6255 McLeod Ave, Suite 24, Las Vegas, NV 89120 Phone: 702-736-7522
Southern CA: 1007 E. Dominguez St., Suite O, Carson, CA 90746 Phone: 310-803-7761

Consultant/ Client Info:

Company: Same As Above
Address:
City, State, Zip:

Job and Purchase Order Info:

Job #: Not Applicable
Job Name: Bridges ~~#1447~~ D1
P.O. #:

Report Attention/Project Manager:

Name: Robert Piekarz
Email Address: rpiekarz@dot.state.nv.us
Phone #: 775-888-7692
Cell #:

QC Deliverable Info:

EDD Required? Yes / (No) EDF Required? Yes / (No)
Global ID:
Data Validation Level: III or IV

Samples Collected from which State? (circle one) AZ CA (NV) WA ID OR DOD Site Other

Time Sampled (HHMM)	Date Sampled (MM/DD)	Matrix* (See Key Below)	Lab ID Number (For Lab Use Only)	Sample Description	TAT	Field Filtered?	# Containers** (See Key Below)	Analysis Requested: TLP RCRA-8	Remarks
1400	1/20	(OT)	ND02101114-01	Abt Paint - 1412	Stnd	N	1-OT	X	
1410	1/20	OT	02	Texture - 1412	Stnd	N	1-OT	X	
1530	1/20	OT	03	I-Beam Paint - ~~1444~~ 1443	Stnd	N	1-OT	X	I-Beam Paint - 1443
1545	1/20	OT	04	Bridge Paint - ~~1444~~ 1443	Stnd	N	1-OT	X	
1600	1/20	OT	05	Column Paint - ~~444~~ 1443	Stnd	N	1-OT	X	
0900	1/21	OT	06	973 Paint	Stnd	N	1-OT	X	
1030	1/21	OT	07	1109 Paint	Stnd	N	1-OT	X	

ADDITIONAL INSTRUCTIONS:

I (field sampler) attest to the validity and authenticity of this sample(s). I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action. NAC 445.0636 (c) (2).

Sampled By:

Relinquished by: (Signature/Affiliation)	Date:	Time:	Received by: (Signature/Affiliation)	Date:	Time:
[signature] NDOT	1/22/21	1045	[signature]	1.22.21	10:45
Relinquished by: (Signature/Affiliation):	Date:	Time:	Received by: (Signature/Affiliation):	Date:	Time:
Relinquished by: (Signature/Affiliation):	Date:	Time:	Received by: (Signature/Affiliation):	Date:	Time:

* Key: AQ - Aqueous WA - Waste OT - Other **: L - Liter V - VOA S-Soil Jar O - Orbo T - Tedlar B - Brass P - Plastic OT - Other

NOTE: Samples are discarded 60 days after sample receipt unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report.

Appendix E

Inspector Certifications and Licenses

STATE OF NEVADA
DEPARTMENT OF BUSINESS AND INDUSTRY
DIVISION OF INDUSTRIAL RELATIONS
Occupational Safety and Health Administration
Asbestos Control Program

Certifies That Robert Piekarz
State of Nevada-DOT
is Licensed As Asbestos Abatement Consultant

License No. IJ-1049 Expiration Date 11/24/2021

Signature Of Licensee

STATE OF NEVADA
DEPARTMENT OF BUSINESS AND INDUSTRY
DIVISION OF INDUSTRIAL RELATIONS
Occupational Safety and Health Administration
Asbestos Control Program

Certifies That Robert Piekarz
State of Nevada-DOT
is Licensed As Asbestos Abatement Consultant

License No. IJ-1049 Expiration Date 11/24/2021

Signature Of Licensee

M & C Environmental Training

Asbestos Inspector

Refresher Training Course

Robert Piekarz

Has successfully completed the Asbestos Inspector Refresher course approved by the California Division of Occupational Safety and Health for purposes of certification required by Title 8, Article 2.7, Chapter 3.2, Section 341.16 and the accreditation required under the Toxic Substances Control Act, Title II. Conducted by M&C Environmental Training Inc., P.O. Box 6419, Concord, California Tel. # (510 499-5646

Course Approval Number: CA-003-06

Location:	**Concord, California**	**Expiration: November 24, 2021**
Dates:	**November 24, 2020**	
Director of Training: John McGinnis		

Certificate Number **48309 IR**

M & C Environmental Training

Asbestos Management Planner

Refresher Training Course

Robert Piekarz

Has successfully completed the Asbestos Management Planner Refresher course approved by the California Division of Occupational Safety and Health for purposes of certification required by Title 8, Article 2.7, Chapter 3.2, Section 341.16 and the accreditation required under the Toxic Substances Control Act, Title II. Conducted by M&C Environmental Training Inc., P.O. Box 6419, Concord, California. Tel. # (510) 499 - 5646

Course Approval Number: CA-003-08

Location:	**Concord, California**	**Expiration: November 24, 2021**
Dates:	**November 24, 2020**	
Director of Training: John McGinnis		

Certificate Number **48327 PR**