California Animal Health & Food Safety Laboratory System
PO Box 1770
Davis, CA 95617
(530) 752-8700

FINAL REPORT

This report supersedes all previous reports for this case

CAHFS Case #: D1310737
Referral #: Barn 61/Hollywood Park
Date Collected:
Date Received: 09/11/2013
Case Coordinator: Adrienne C. Bautista, DVM, PhD
Electronically Signed and Authorized By: Bautista, Adrienne C. on 9/16/2013 4:57:09PM

Email To:
ARTHUR, RICK M
RMARTHUR@UCDAVIS.EDU

Collection Site:

CA
County: Los Angeles

Specimens Received: 1 feed romm composite; 1 shedrow soil #61 composite;

Case Contacts

Report To	ARTHUR, RICK M	626-665-8130	311 E GRAND VIEW AVE SIERRA MADRE, CA 91024
Submitter	CALIFORNIA HORSE RACING BOARD	916-263-6000	1010 HURLEY WAY SUITE 300ATTENTION: ACCOUNTS PAYABLE SACRAMENTO, CA 95825

Specimen Details

ID	ID Type	Taxonomy	Gender	Age
1	CAHFS Internal ID	Equine		

Laboratory Findings/Diagnosis

Anticoagulant rodenticides not detected.

No diagnosis.

Case Summary

None of the listed anticoagulant rodenticides were detected in the submitted samples (feed room composite and shedrow soil #61) at or above the stated reporting limits.

Toxicology

Reporting Limit (Rep. Limit): The lowest routinely quantified concentration of an analyte in a sample. The analyte may be detected, but not quantified, at concentrations below the reporting limit. Sample volumes less than requested might result in reporting limits that are higher than those listed.

ANTICOAGULANT SCREEN

Animal/Source	Specimen	Specimen Type
1	(1) B3H2845-01A	feed romm composite

Analyte	Result	Units	Rep. Limit	Units
Brodifacoum	Not Detected	ppm	0.2	ppm
Bromadiolone	Not Detected	ppm	1	ppm
Chlorophacinone	Not Detected	ppm	5	ppm
Coumachlor	Not Detected	ppm	1	ppm

Difethialone	Not Detected	ppm	5	ppm
Diphacinone	Not Detected	ppm	5	ppm
Warfarin	Not Detected	ppm	1	ppm

1 (2) B3H2845-2A shedrow soil #61 composite

Analyte	Result	Units	Rep. Limit	Units
Brodifacoum	Not Detected	ppm	0.2	ppm
Bromadiolone	Not Detected	ppm	1	ppm
Chlorophacinone	Not Detected	ppm	5	ppm
Coumachlor	Not Detected	ppm	1	ppm
Difethialone	Not Detected	ppm	5	ppm
Diphacinone	Not Detected	ppm	5	ppm
Warfarin	Not Detected	ppm	1	ppm

Aurora
INDUSTRIAL HYGIENE

Industrial Hygiene Sampling Report

Exposure Assessment
Morning Exercise Session and Track Grooming

Hollywood Park Race Track
Inglewood, California

Prepared For:

California Horse Racing Board

Prepared By:
Aurora Industrial Hygiene

Karen G Shockley

Prepared By: Karen G. Shockley, CIH #6766

Date: October 1, 2013

9666 Businesspark Avenue, Suite 102 ◦ San Diego, CA 92131 ◦ (619) 276-5901 ◦ Fax (619) 276-5904

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USE OF THIS REPORT

This report is intended to provide an understanding of the potential hazards associated with the activities evaluated in this report. This report is based primarily upon data and information obtained during a single site visit by Aurora Industrial Hygiene, Inc. to the Hollywood Park Race Track facility, located in Inglewood, California on September 18, 2013 and is based solely upon the work practices observed and conditions of the facility on the date of the assessment.

Aurora has performed this work, made the findings, and proposed the recommendations described in this report in accordance with generally accepted industrial hygiene and environmental science practices in effect in California at the time the work was performed. This warranty stands in lieu of all other warranties, expressed or implied. While this report can be used as a guide, it must be understood that it is neither a rejection nor an endorsement of the facility. It must also be understood that changing circumstances in the environment and in the work processes can alter radically the conclusions and information contained in this report.

1.0 INTRODUCTION

This report documents the findings, recommendations, and conclusions from the industrial hygiene sampling conducted by Matthew Froehlich, Field Industrial Hygienist, under the supervision of Karen Shockley, Certified Industrial Hygienist #6766, at the Hollywood Park Race Track, located in Inglewood, California.

Area air sampling was conducted at three locations around the track, and two locations in Barn 61.

Air sampling results indicated that total particulate, respirable particulate, total petroleum hydrocarbon, and bromadiolone levels were well below the OSHA Permissible Exposure Levels.

2.0 PROJECT HISTORY AND PROCESS DESCRIPTION

Aurora Industrial Hygiene (Aurora) was retained by the California Horse Racing Board to do air monitoring at the Hollywood Park Race Track facility. The analytes and sample locations were specified by the California Horse Racing Board.

Aurora visited the Hollywood Park Race Track on September 18, 2013 and met with Jeff Salmon, Safety Steward. Air sampling was conducted during a morning training session with the horses and afternoon maintenance of the track. There were approximately 40 horses on the track during the morning session. The training session lasted approximately two hours and consisted of trainers galloping and breezing horses around the track. Sampling continued after the training session, during grooming of the synthetic race track, which involved tractors "harrowing" to redistribute track material. Additional air sampling was also conducted inside Barn 61 in feed room 1 and in-between stalls 40 and 41.

Appendix A contains a satellite photograph of the race track with the area sample locations indicated. **Appendix B** contains photographs.

3.0 SAMPLE COLLECTION AND ANALYSIS

3.1 – Air Sample Collection

The air samples were collected in accordance with the most recent (4th Ed.) National Institute of Occupational Safety and Health (NIOSH) methods, where such methods have been established. Specifically, sampling was performed using Sensidyne personal sampling pumps, which were calibrated prior to sample collection (pre-calibrated) and at the end of the sampling event with a DryCal DC-Lite Precision Flow Meter (S/N 109309, calibrated November 15, 2012) or a calibrated rotameter (#LB-003). The flow rate for each sample was established as an average of the two values.

Air samples were collected using pre-weighed polyvinyl chloride filters for total and respirable particulates (dust). Additionally for the respirable particulate samples, a size-selective sampling device (cyclone) was attached to the sampling train preceding the filter so that non-respirable-sized particles were excluded from the sample. Coconut shell charcoal sorbent tubes were used to collect total petroleum hydrocarbons samples. Bromadiolone samples were collected on mixed cellulose ester filters. Hydrocarbon samples were refrigerated after sample collection and kept cold during shipment. No additional preservation of samples was necessary.

Air samples were collected and analyzed by the following methods:

Particulates not otherwise regulated (PNOR, total dust)	NIOSH Method 0500, Gravimetric
Respirable particulates (PNOR, respirable dust)	NIOSH Method 0600, Gravimetric
Total petroleum hydrocarbons	NIOSH Method 1550, Gas Chromatography with Flame Ionization Detector
Bromadiolone	Laboratory In-House Method, High Performance Liquid Chromatography[1]

3.2 – Sample Identification and Transportation

A unique sample identification (ID) number was assigned to each sample. This ID number was placed on the sample media immediately upon completion of each sample's

[1] A NIOSH method has not been established for Bromadiolone, so it was analyzed by an in-house method developed and researched by the laboratory.

collection. The ID number, flow rate, calibration data, worker name or sample location, and time were also recorded on the sampling data sheet.

Proper transfer of samples from project site to laboratory requires documentation and custody procedures. Components of sample transfer documentation include sample labels, a chain-of-custody record, and a sample analysis request form. All documentation entries were made with waterproof ink.

All air samples were delivered by Federal Express under proper chain of custody to Bureau Veritas North America, Inc. (BV), located at 22345 Roethel Drive, Novi, Michigan or ALS Environmental (ALS), located at 960 West LeVoy Drive, Salt Lake City, Utah. BV and ALS are licensed and accredited to perform air sample analyses by the American Industrial Hygiene Association (AIHA).

3.3 – Atmospheric Monitoring

Weather data was recorded from weather station data collected at the nearby Hawthorne Airport. Weather station data from the Hollywood Park station was not available for the day the survey was conducted.

The following table summarizes the atmospheric measurements.

Table 1 –Temperature and Humidity Measurements

Time	Temperature (°F)	Humidity (%RH)
0800	66.2	68
1000	69.8	60
1200	73.4	53
1400	73.4	56

4.0 SAMPLE RESULTS

The following tables summarize the data obtained from air samples collected on September 18, 2013. The Permissible Exposure Limits (PEL) in effect in the State of California for the sampled analytes are compared to the air sample results.

Sample locations are indicated on the satellite photograph in **Appendix A.** Photographs of area sample locations are in **Appendix B.** Original laboratory reports of analysis and chains of custody are attached as **Appendix C**.

Table 2 – Air Sample Results – Total Particulate

Sample Number	Employee / Area Location	Time	Results[2] (mg/m^3)	8-hour PEL
12084	VIP Gap (Track Entrance)	0820-1408	0.11 mg/m^3	10.0 mg/m^3
12075	Stable Café Outside Rail	0835-1400	<0.10 mg/m^3	
12073	Cassidy Lane Entrance	0848-1410	0.10 mg/m^3	
12072	Barn 61 Feed Room 1	1025-1423	0.17 mg/m^3	
12083	Barn 61 Between Stable 40 and 41	1035-1431	<0.14 mg/m^3	
12086	Sample Blank	n/a	< 0.050 mg	

Table 3 – Air Sample Results –Total Petroleum Hydrocarbons

Sample Number	Employee / Area Location	Time	Results[3] (ppm)	8-hour PEL[4]
2026	VIP Gap (Track Entrance)	0820-1408	< 0.052 ppm	300 ppm
2027	Stable Café Outside Rail	0835-1400	< 0.044 ppm	
2028	Cassidy Lane Entrance	0848-1410	< 0.053 ppm	
2029	Barn 61 Feed Room 1	1025-1423	0.072 ppm	
2030	Barn 61 Between Stable 40 and 41	1035-1431	<0.077 ppm	
2031	Sample Blank	n/a	< 10 µg	

[2] "<" indicates none detected and the laboratory's limit of detection.
[3] "<" indicates none detected and the laboratory's limit of detection.
[4] A permissible exposure limit has not been established for total petroleum hydrocarbons. 300 ppm is the PEL for gasoline and VM&P naphtha.

Table 4 – Air Sample Results – Respirable Particulates

Sample Number	Employee / Area Location	Time	Results[5] (mg/m^3)	8-hour PEL
12174	VIP Gap (Track Entrance)	0820-1408	< 0.057 mg/m^3	5.0 mg/m^3
12172	Stable Café Outside Rail	0835-1400	< 0.062 mg/m^3	
12175	Cassidy Lane Entrance	0848-1410	< 0.062 mg/m^3	
12173	Barn 61 Feed Room 1	1025-1423	< 0.084 mg/m^3	
12171	Barn 61 Between Stable 40 and 41	1035-1431	< 0.085 mg/m^3	
12194	Sample Blank	n/a	<50 µg	

Table 5 – Air Sample Results –Bromadiolone

Sample Number	Area Location	Time	Results[6] (ppm)	8-hour PEL
0918-B1	Barn 61, Feed Room 1	1025-1423	< 0.000019 ppm	Not Established
0918-B2	Barn 61, Between Stable 40 and 41	1035-1431	< 0.000021 ppm	
0918-B3	Sample Blank	n/a	< 0.10 µg	

[5] "<" indicates none detected and the laboratory's limit of detection.
[6] "<" indicates none detected and the laboratory's limit of detection.

5.0 DISCUSSION AND RECOMMENDATIONS

The federal government and the State of California have defined Permissible Exposure Limits (PEL) for chemical exposures in the workplace. These limits refer to "airborne contaminants to which nearly all workers may be exposed daily during a 40-hour workweek for a working lifetime without adverse effect. Because of some variation in individual susceptibility, an occasional worker may suffer discomfort, aggravation of a pre-existing condition, or occupational diseases upon exposures even below the values specified. The exposure limits established by this section reflect current medical opinion and industrial hygiene practice, doubts being resolved on the side of safety, and are intended to be used in accordance with good industrial hygiene practice by qualified persons[7]"

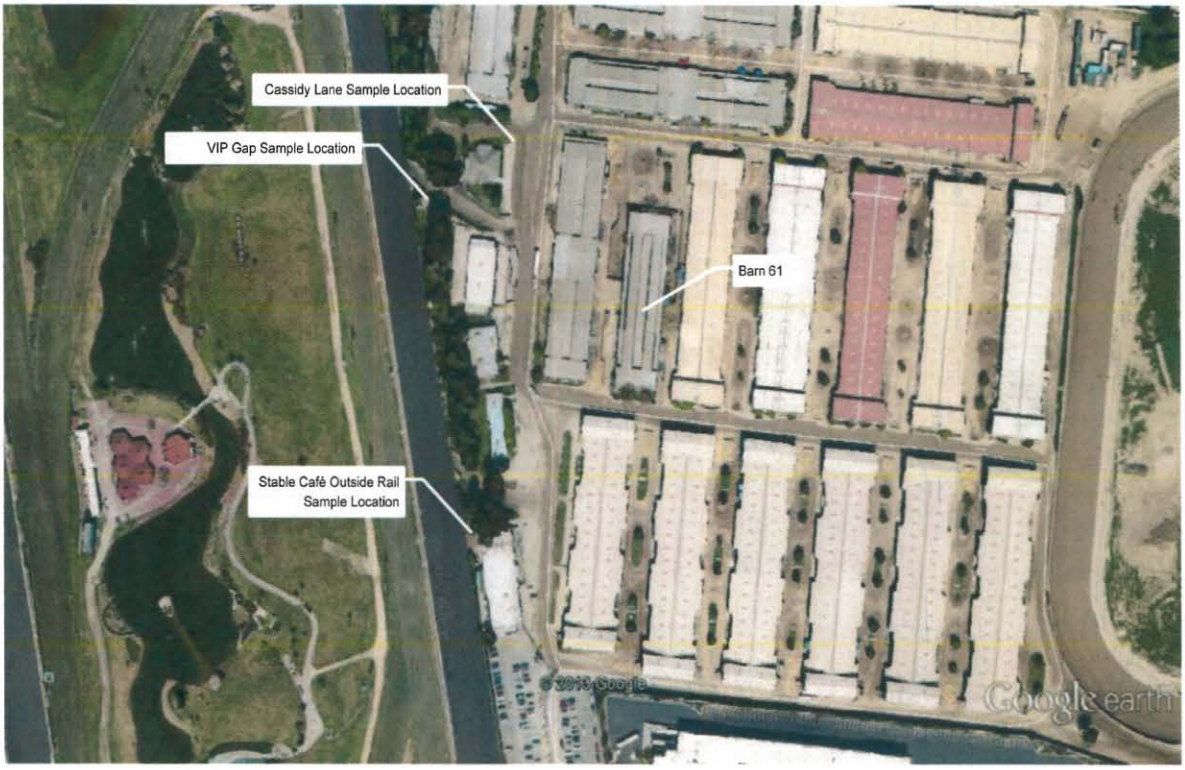
The Cal-OSHA PEL's are as follows:

Particulates Not Otherwise Regulated (PNOR), or Total Particulates – 10 mg/m^3;
Respirable-Sized Particulates – 5 mg/m^3;
Total Petroleum Hydrocarbons – 300 ppm[8];

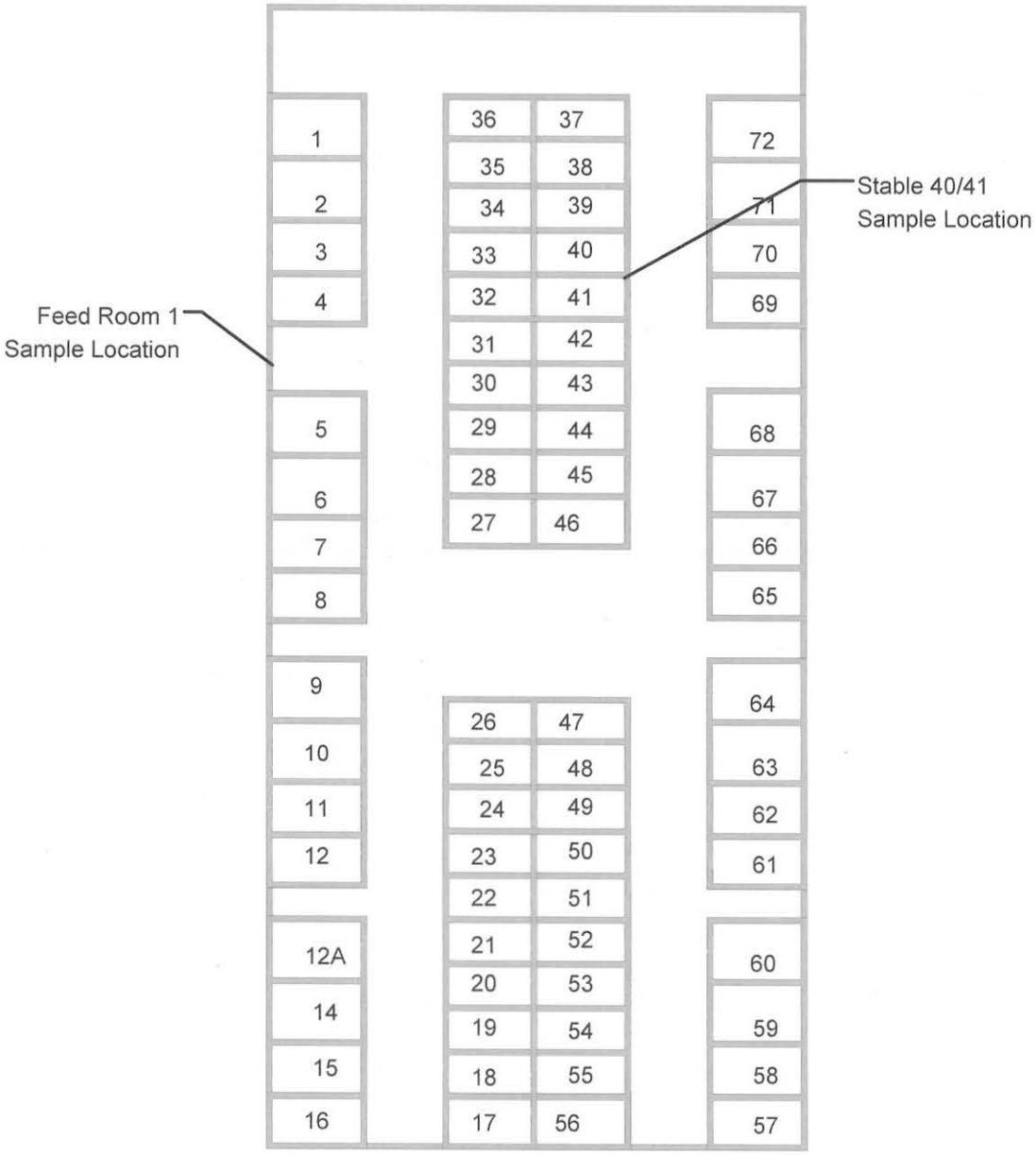
Total petroleum hydrocarbons and total particulates were detected in some of the area air samples, at levels well below the Permissible Exposure Limits. Respirable-sized particulates and bromadiolone were not detected in any of the air samples.

[7] Quote from California Code of Regulations 8 CCR 5155.
[8] A permissible exposure limit has not been established for total petroleum hydrocarbons. 300 ppm is the PEL for gasoline and VM&P naphtha.

Appendix A – Sample Locations



Satellite photo of sample locations



Barn 61 Sample Locations

Appendix B – Photographs

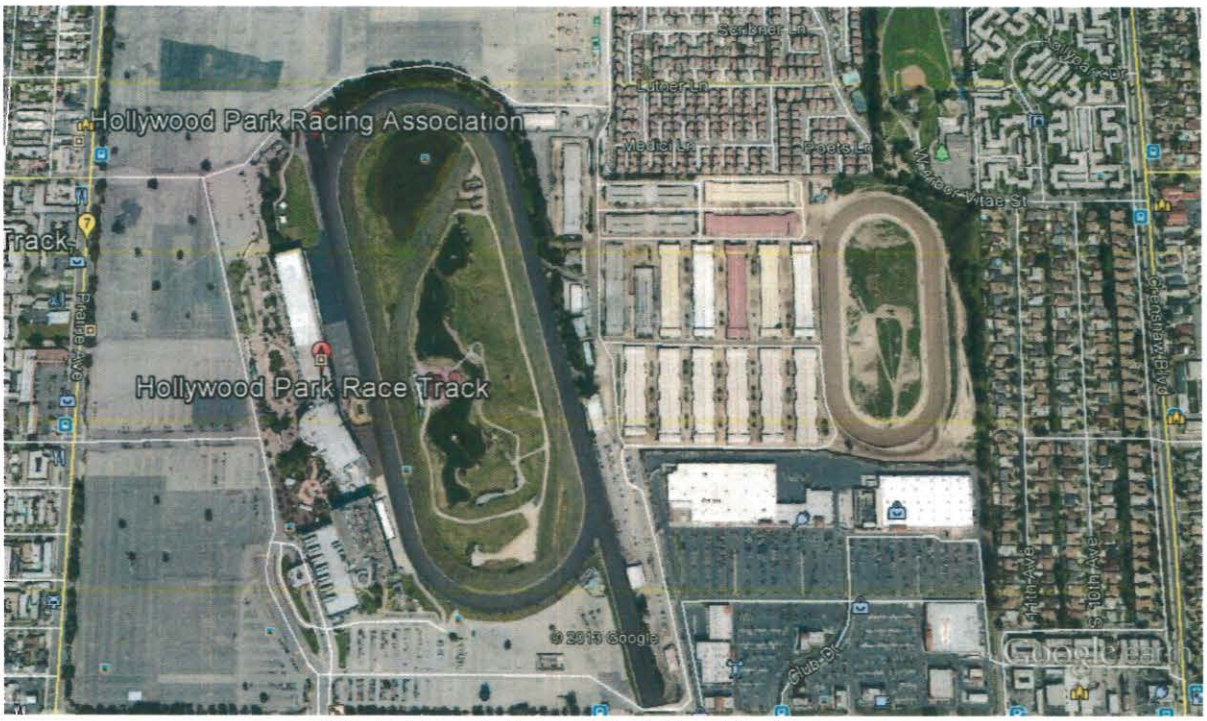


Photo One: Hollywood Park Race Track

Photo Two: Sample location at VIP Gap (Sample # 12174, 12084, 2026)

Photo Three: Stable Café outside rail sample location (Sample #12172, 12075, 2027)

Photo Four: Cassidy Lane entrance sample location (Sample # 12175, 12075, 2028)

Photo Five: Barn 61 Feed Room 1 sample location (Sample # 12173,12072, 2029, 0918-B1)

Photo Six: Barn 61 between Stable 40 and 41 sample location(Sample # 12171, 12083, 2030, 0918-B2).