PARTNER

INDOOR AIR QUALITY SURVEY REPORT

West Chestnut Plant - IAQ

5200 and 5201 West Chestnut Avenue
Yakima, Washington 98908

December 20, 2022
Partner Project Number: ES21-321187.3

Prepared for:

Yakima Hop Storage

5201 West Chestnut Avenue
Yakima, Washington 98908



Engineers who understand your business

PARTNER

December 20, 2022

Tim Sattler
Yakima Hop Storage
5201 West Chestnut Avenue
Yakima, Washington 98908

Subject: Indoor Air Quality Survey Report
West Chestnut Plant - IAQ
5200 and 5201 West Chestnut Avenue
Yakima, Washington 98908
Partner Project Number: ES21-321187.3

Dear Mr. Sattler:

Partner Engineering and Science, Inc. (Partner is pleased to provide the results of the assessment performed at the above-referenced property. The following report describes the field activities, methods, and findings of the Indoor Air Quality Survey conducted at the above-referenced property.

This assessment was performed consistent with acceptable industry standards. The independent conclusions represent Partner's best professional judgment based upon existing conditions and the information and data available to us during the course of this assignment.

We appreciate the opportunity to provide these services. If you have any questions concerning this report, or if we can assist you in any other matter, please contact Rob Vaughn at (949) 481-9818.

Sincerely,

Partner Engineering and Science, Inc.

Mitchell Williams
Project Manager



Brian T. Godbois
Project Manager

Rob Vaughn
National Client Manager

TABLE OF CONTENTS

1.0 Introduction 1
1.1 Purpose 1
1.2 Limitations 1
1.3 User Reliance 1
2.0 Site Background 2
2.1 Site Description 2
2.2 Site History 2
3.0 Field Activities 4
3.1 Preparatory Activities 4
3.1.1 Health and Safety Plan 4
3.1.2 Building Survey 4
3.2 Sample Locations 4
3.3 Air Sampling Equipment 4
3.4 Air Sampling Methodology 5
3.5 Post-Sampling Activities 5
4.0 Data Analysis 6
4.1 Laboratory Analysis 6
4.2 Regulatory Agency Comparison Criteria 6
4.3 Air Sample Data Analysis 6
4.4 Discussion 6
5.0 Summary and Conclusions 8

ATTACHMENTS

Tables
1. Summary of Investigation Scope
2. Air Sample Benzene Laboratory Results

Figures
1. Site Vicinity Map
2. Previous Sample Location Map
3. Sample Location Map

Appendices
A. Field Sampling Data Sheet
B. Laboratory Analytical Report

1.0 INTRODUCTION

1.1 Purpose

The purpose of the investigation was to further evaluate the potential impact of benzene to indoor air as a consequence of the known soil gas impacts. Yakima Hop Storage provided project authorization of Partner Proposal Number P21-321187.3.

1.2 Limitations

This report presents a summary of work conducted by Partner. The work includes observations of site conditions encountered and the analytical results provided by an independent third-party laboratory of samples collected during the course of the project. The number and location of samples were selected to provide the required information. It cannot be assumed that the limited available data are representative of subsurface conditions in areas not sampled.

Conclusions and/or recommendations are based on the observations, laboratory analyses, and the governing regulations. Conclusions and/or recommendations beyond those stated and reported herein should not be inferred from this document.

Partner warrants that the environmental consulting services contained herein were accomplished in accordance with generally accepted practices in the environmental engineering, geology, and hydrogeology fields that existed at the time and location of work. No other warranties are implied or expressed.

1.3 User Reliance

Partner was engaged by Yakima Hop Storage (the Addressee), or their authorized representative, to perform this investigation. The engagement agreement specifically states the scope and purpose of the investigation, as well as the contractual obligations and limitations of both parties. This report and the information therein, are for the exclusive use of the Addressee. This report has no other purpose and may not be relied upon, or used, by any other person or entity without the written consent of Partner. Third parties that obtain this report, or the information therein, shall have no rights of recourse or recovery against Partner, its officers, employees, vendors, successors or assigns. Any such unauthorized user shall be responsible to protect, indemnify and hold Partner, the Addressee and their respective officers, employees, vendors, successors and assigns harmless from any and all claims, damages, losses, liabilities, expenses (including reasonable attorneys' fees) and costs attributable to such use. Unauthorized use of this report shall constitute acceptance of, and commitment to, these responsibilities, which shall be irrevocable and shall apply regardless of the cause of action or legal theory pled or asserted.

This report has been completed under specific Terms and Conditions relating to scope, relying parties, limitations of liability, indemnification, dispute resolution, and other factors relevant to any reliance on this report. Any parties relying on this report do so having accepted Partner's standard Terms and Conditions, a copy of which can be found at http://www.partneresi.com/terms-and-conditions.php.

2.0 SITE BACKGROUND

2.1 Site Description

The Site consists of two non-contiguous parcels of land comprising 8.64 acres located on the north and south sides of West Chestnut Avenue within a mixed residential and commercial area of Yakima, Yakima County, Washington. The Site is currently developed with an office building and a shop building located north of West Chestnut Avenue and packing and storage facilities located south of Chestnut Avenue. On-site operations include the cleaning, sorting, packing, and shipping of apples, pears, and cherries. The facility includes five cold storage rooms and 10 controlled atmosphere storage rooms.

The Site is bound by residential property to the north, commercial and residential properties to the east, commercial property to the south, and commercial and residential properties to the west. Refer to **Figure 1** for a site vicinity map showing site features and surrounding properties.

2.2 Site History

Partner was provided with a Fulcrum Environmental Consulting (Fulcrum) Phase I Environmental Site Assessment Report (Phase I) for the Site, dated May 20, 2020, on behalf of Borton & Sons, Inc. According to the historical sources reviewed by Fulcrum, the Site was developed with the current fruit storage and shipping facility which was operated by George F. Joseph Fruit Company from at least 1953 until 2005 when it was acquired by Borton & Sons, Inc. The site has been operated by Borton since 2005.

The following recognized environmental conditions (RECs) were identified in the Fulcrum Phase I:

- "Historic [sic] underground storage tanks [500-gallon UST installed in 1991, and seven former USTs without closure documentation]
- Drain located in shop building
- Drywells around shop building"

Partner conducted a Phase II Subsurface Investigation (Phase II) at the Site on July 21 and 22, 2021, to identify the location of on-site underground storage tanks (USTs), former tankholds, and/or other associated features and to evaluate the potential impact of petroleum hydrocarbons and volatile organic compounds (VOCs) to soil gas and/or soil as a consequence of a release or releases from the current and/or former on-site operations. The scope of the Phase II included a geophysical survey and the advancement of 11 borings (B1 through B11) to collect representative or soil and/or soil gas samples; however, due to early refusal in one of the borings (B9) an additional boring was added to the scope (B12). Eleven soil samples were analyzed for gasoline, diesel, and residual range organics (GRO, DRO, RRO), and VOCs, and 11 soil gas samples were analyzed for VOCs.

No evidence of USTs, backfilled excavations, or subsurface anomalies consistent with former USTs was identified during the geophysical survey to the exterior of the Site. None of the analyzed soil samples contained GRO, DRO, RRO, or VOCs at concentrations exceeding applicable cleanup levels.

Benzene was detected in 10 of the 11 soil gas samples at concentrations exceeding the Model Toxics Control Acts (MTCA) Method B Cancer screening level. Tetrachlorethylene (PCE) was detected in one of the soil gas samples (SV-2) at a concentration exceeding the MTCA Method B Cancer screening level, and in one of the

soil gas samples (SV-1) at a concentration exceeding both the MTCA Method B Cancer and Noncancer screening levels. Trichloroethylene (TCE) was detected in four of the soil gas samples (SV-1, and SV-4 through SV-6) at concentrations exceeding both the MTCA Method B Cancer and Noncancer screening levels. M&P-Xylene was detected in one of the soil gas samples (SV-1) at a concentration exceeding both the MTCA Method B Cancer and Noncancer screening levels. None of the remaining VOCs were detected in the soil gas samples at concentrations exceeding applicable screening levels.

Based on the Phase II there was evidence of a release and/or releases of benzene, PCE, TCE, and m&p-xylene to the subsurface at concentrations exceeding applicable screening levels. Partner recommended further investigation with respect to the detected concentrations of benzene, PCE, and TCE.

On September 15, 2021, Partner conducted an Indoor Air Quality (IAQ) Survey at the Site to evaluate the potential impact of benzene, PCE, and TCE to indoor air as a consequence of a release or releases from the current or former on-site operations. The scope of the Indoor Air Quality Survey included the collection and analysis of ten indoor air samples (IAQ-1 through IAQ-5 and IAQ 7 through IAQ 11) and two ambient air samples (IAQ-6 and IAQ-12). Twelve air samples were analyzed for benzene, PCE, and TCE using United States Environmental Protection Agency (EPA) Method TO-15 Selective Ion Monitoring (SIM).

Benzene was detected in sample IAQ-1 at a concentration exceeding the Method B Cancer screening level (SL). PCE and TCE were not detected in sample IAQ-1 at a concentration above the laboratory reporting detection limits (RDLs), and the RDLs were below applicable SLs.

Benzene was detected in sample IAQ-5 at a concentration of 3.42 micrograms per cubic meter ($\mu g/m^3$) exceeding the Method C Cancer SL; however, when the ambient benzene air concentration observed in the vicinity of IAQ-5 (0.575 ug/m^3 for IAQ-6) is subtracted from the benzene concentration in sample IAQ-5, it does not exceed the Method C SLs. PCE and TCE were not detected at concentrations exceeding applicable Method C SLs.

Based on the results of the initial IAQ survey, benzene impacts were identified within the office building at concentrations exceeding the applicable Method B SLs, representing a potential concern to human health. These exceedances required additional investigation of benzene and benzene appeared to be the main risk driver at the Site.

Because the September 2021 samples were collected during the harvest season, which is a period of heightened activity at the Site (increased vehicle traffic and increased foot traffic in and out of the office building), and because the VOC exceedances from the September 2021 sampling event may have been adversely affected by the ambient air quality, on December 3, 2022, Partner returned to the Site to perform a follow-up IAQ survey of the office building.

3.0 FIELD ACTIVITIES

The IAQ Survey scope included the collection and analysis of two indoor air samples (IAQ-13 and IAQ-14) and two ambient air samples (AMB-S and AMB-N). Refer to **Table 1** for a summary of the samples, sampling schedule, and laboratory analyses for this investigation.

3.1 Preparatory Activities

Prior to the initiation of fieldwork, Partner completed the following activities.

3.1.1 Health and Safety Plan

Partner prepared a site-specific Health and Safety Plan, which was reviewed with on-site personnel involved in the project prior to the commencement of drilling activities.

3.1.2 Building Survey

During the week prior to the IAQ surveys, Site staff diligently removed potential sources of benzene from the office building interior. Prior to conducting sampling activities, Partner completed an Indoor Air Building Survey and Sampling Form. The Indoor Air Building Survey and Sampling Form identifies general property information (i.e., address, size, type of structure, number of floors, floor layout, type of ventilation system, and other physical conditions of the property) along with documenting any remaining indoor products that could potentially contribute to or affect the air quality.

No chemicals of concern were noted during the Building Survey.

3.2 Sample Locations

Indoor air sample IAQ-13 was collected from the central interior area/conference room of the office building. Indoor air sample IAQ-14 was collected from the office located within the northeast part of the interior of the office building. AMB-S was collected from the southeast part of the exterior parking area in front of the office building and AMB-N was collected from the exterior area between the office building and the shop building.

Refer to **Figure 2** for a map indicating the previous sampling locations and **Figure 3** for a map indicating the current office area sample locations.

3.3 Air Sampling Equipment

Air samples were collected using 6-liter, stainless-steel, spherical SUMMA canisters. The sampling containers were provided by Pace Analytical (Pace) a state-certified laboratory [Environmental Laboratory Accreditation Program (ELAP) certificate number C1915] in Mount Juliet, Tennessee, which subjected each canister to a rigorous cleaning process using a combination of dilution, heat, and high vacuum. After cleaning, each canister was individually certified to be free of target contaminants to a specified reporting limit via gas chromatography/mass spectroscopy (GC/MS) prior to delivery.

Partner received the SUMMA canisters evacuated to approximately 30 inches of mercury. The SUMMA canisters were fitted with stainless-steel flow controllers, which Enthalpy calibrated to maintain constant flow [approximately 12.5 milliliters per minute (mL/min)] into the containers over an 8-hour sampling event.

3.4 Air Sampling Methodology

The air samples were collected on December 3, 2022. The SUMMA canister inlets were elevated approximately 5 feet off the ground by placing the containers atop existing counters or (in the case of the outdoor air samples AMB-S and AMB-N, on ledges or elevated on boxes. In general, indoor air samples were collected away from entrances and in areas where the air was relatively still to minimize potential dilution effects from outside air.

Each SUMMA canister valve was opened, which caused air to enter the canister due to the pressure differential. Partner remained on-site for the duration of sampling and checked the canister vacuum pressures each hour. The canister valves were closed after approximately 8 hours, with pertinent data (e.g., time and canister vacuum) recorded at the start, each hour, and at the end of the sampling event. The SUMMA canisters were labeled for identification and stored away from direct sunlight prior to analysis.

Refer to **Appendix A** for the Field Sampling Data Sheet.

3.5 Post-Sampling Activities

No significant amounts of derived wastes were generated during this investigation.

4.0 DATA ANALYSIS

4.1 Laboratory Analysis

Partner collected four air samples on December 3, 2022, which were transported at ambient temperature under chain-of-custody protocol to Pace for analysis. Each air sample was analyzed for benzene via EPA Method TO-15.

Laboratory analytical results are included in **Appendix B** and discussed below.

4.2 Regulatory Agency Comparison Criteria

Washington Department of Ecology Model Toxics Control Act (MTCA)

Ecology promulgated the MTCA Cleanup Regulation (Chapter 173-340 of the WAC) to establish administrative processes and standards for identifying, investigating, and cleaning up facilities where there has been a release or threatened release of a hazardous substance or substances that may pose a threat to human health and/or the environment. The MTCA Cleanup Regulation provides Method A for establishing cleanup levels for unrestricted land use, Method B for establishing cleanup levels for sites that do not have a Method A cleanup level and Method C for industrial sites that meet certain criteria. Method B consists of a Cancer Cleanup Level or (SL) and Noncancer Cleanup Level or SL. MTCA B Cancer establishes the concentration threshold for analytes at which the human health risk is cancer. MTCA B Noncancer establishes concentration thresholds for analytes at which the human health risk is a noncancer effect. In cases where MTCA Method B is used, data is compared to the most conservative Cleanup Level or SL. Based on the current use and presumed future use of the office part of the Site, results were compared to MTCA Method B SLs.

4.3 Air Sample Data Analysis

Benzene was detected in each of the air samples (IAQ-13, IAQ-14, AMB-N and AMB-S) at concentrations above the RDL, and exceeding the Method B Cancer SL.

Refer to **Table 2** for a summary of the air sample laboratory analysis results for samples IAQ-13, IAQ-14, AMB-N and AMB-S. Previous IAQ results for office and nearby ambient sample locations (IAQ-1 and IAQ-12) are also included.

4.4 Discussion

Benzene was detected in samples IAQ-13 and IAQ-14 at concentrations of 0.850 and 0.872 µg/m^3, respectively, exceeding the Method B Cancer SL. Benzene was detected in outdoor ambient air samples AMB-N and AMB-S at concentrations of 0.652 and 0.674 µg/m^3, respectively exceeding the Method B Cancer SL. When the outdoor ambient air sample benzene concentrations are averaged (0.663 µg/m^3) and subtracted from the indoor air sample benzene concentrations, the adjusted benzene concentrations for samples IAQ-13 and IAQ-14 are 0.187 and 0.209 µg/m^3, respectively, which are below the Method B Cancer SL.

Based on the exceedances of benzene in ambient air, the concentrations in indoor air are likely a result of the ambient air intrusion rather than from vapor intrusion. As such, there does not appear to be a health concern to subject property occupants from the identified benzene concentrations at this time.

5.0 SUMMARY AND CONCLUSIONS

Partner conducted an Indoor Air Quality Survey at the Site to evaluate the potential impact of VOCs to indoor air as a consequence of a release or releases as a consequence of a release or releases from the current and/or former on-site operations. The scope of the Indoor Air Quality Survey included the collection and analysis of two indoor air samples (IAQ-13 and IAQ-14) and two ambient air samples (IAQ-N and IAQ-S). Four air samples were analyzed for VOCs using EPA Method TO-15.

Benzene was detected in samples IAQ-13 and IAQ-14 at concentrations of 0.850 and 0.872 µg/m^3, respectively, exceeding the Method B Cancer SL. Benzene was detected in outdoor ambient air samples AMB-N and AMB-S at concentrations of 0.652 and 0.674 µg/m^3, respectively exceeding the Method B Cancer SL. When the outdoor ambient air sample benzene concentrations are averaged (0.663 µg/m^3) and subtracted from the indoor air sample benzene concentrations, the adjusted benzene concentrations for samples IAQ-13 and IAQ-14 are 0.187 and 0.209 µg/m^3, respectively, which are below the Method B Cancer SL.

Based on the exceedances of benzene in ambient air, the concentrations in indoor air are likely a result of the ambient air intrusion rather than from vapor intrusion. As such, there does not appear to be a health concern to subject property occupants from the identified benzene concentrations and Partner recommends no further investigation at this time.

TABLES

PARTNER

Table 1: Summary of Investigation Scope
5200 and 5201 West Chestnut Avenue
Yakima, Washington 98908
Partner Project Number ES21-321187.3
December 3, 2022

Sample Identification	Sample Collection Date	REC/Issue	Location	Matrix Sampled	Target Analytes
IAQ-1	9/15/2022	Assessment of elevated soil gas VOCs	SW office inside main office building	Indoor Air	Benzene, PCE, TCE
IAQ-2	9/15/2022		Restroom inside automotive shop building	Indoor Air	
IAQ-3	9/15/2022		Office inside auto storage building	Indoor Air	
IAQ-4	9/15/2022		Cold storage building	Indoor Air	
IAQ-5	9/15/2022		Cold storage building	Indoor Air	
IAQ-6	9/15/2022		Ambient (vehicle area between cold storage buildings)	Ambient Outdoor Air	
IAQ-7	9/15/2022		Maintenance building upstairs office	Indoor Air	
IAQ-8	9/15/2022		Storage room adjacent to/inside cold storage building	Indoor Air	
IAQ-9	9/15/2022		Shelf inside mechanical room	Indoor Air	
IAQ-10	9/15/2022		Receiving office	Indoor Air	
IAQ-11	9/15/2022		Receiving building lunchroom	Indoor Air	
IAQ-12	9/15/2022		Ambient (north of Shop building)	Ambient Outdoor Air	
IAQ-13	12/3/2022	Further assessment of elevated indoor air benzene concentrations	Central interior area/conference room of the office building	Indoor Air	Benzene
IAQ-14	12/3/2022		Interior of northeast office within office building	Indoor Air	
AMB-N	12/3/2022		Ambient (between the office building and shop building)	Ambient Outdoor Air	
AMB-S	12/3/2022		Ambient (southeast part of the exterior parking area)	Ambient Outdoor Air	

Notes:
Air samples collected on September 15, 2022, analyzed for benzene, tetrachlorethylene (PCE), and trichloroethylene (TCE) via United States Environmental Protection Agency (EPA) Method TO-15 Selective Ion Monitoring (SIM). Air samples collected on December 3, 2022, analyzed for benzene via EPA Method TO-15.
REC = recognized environmental condition

PARTNER

Table 2: Air Sample Benzene Laboratory Results
5200 and 5201 West Chestnut Avenue
Yakima, Washington 98908
Partner Project Number ES21-321187.3
December 3, 2022

EPA Method	Benzene via TO-15							
Units	($\mu g/m^3$)							
Analyte	CLARC Air Method B Noncancer	CLARC Air Method B Cancer	IAQ-1	IAQ-12 (AMB)	IAQ-13	IAQ-14	AMB-N	AMB-S
Sample Date			9/15/2022	9/15/2022	12/3/2022	12/3/2022	12/3/2022	12/3/2022
Benzene	14	0.32	**1.33**	**0.47**	**0.850**	**0.872**	**0.652**	**0.674**
Adjusted Benzene	14	0.32	**0.86**	--	**0.187**	**0.209**	--	--

Notes:

EPA = United States Environmental

$\mu g/m^3$ = micrograms per cubic meter

CLARC = Cleanup Levels and Risk Calculation

Values in **bold** exceed laboratory reporting detection limits (RDLs)

Adjusted benzene = indoor air benzene concentration with average outdoor ambient air sample concentrations subtracted

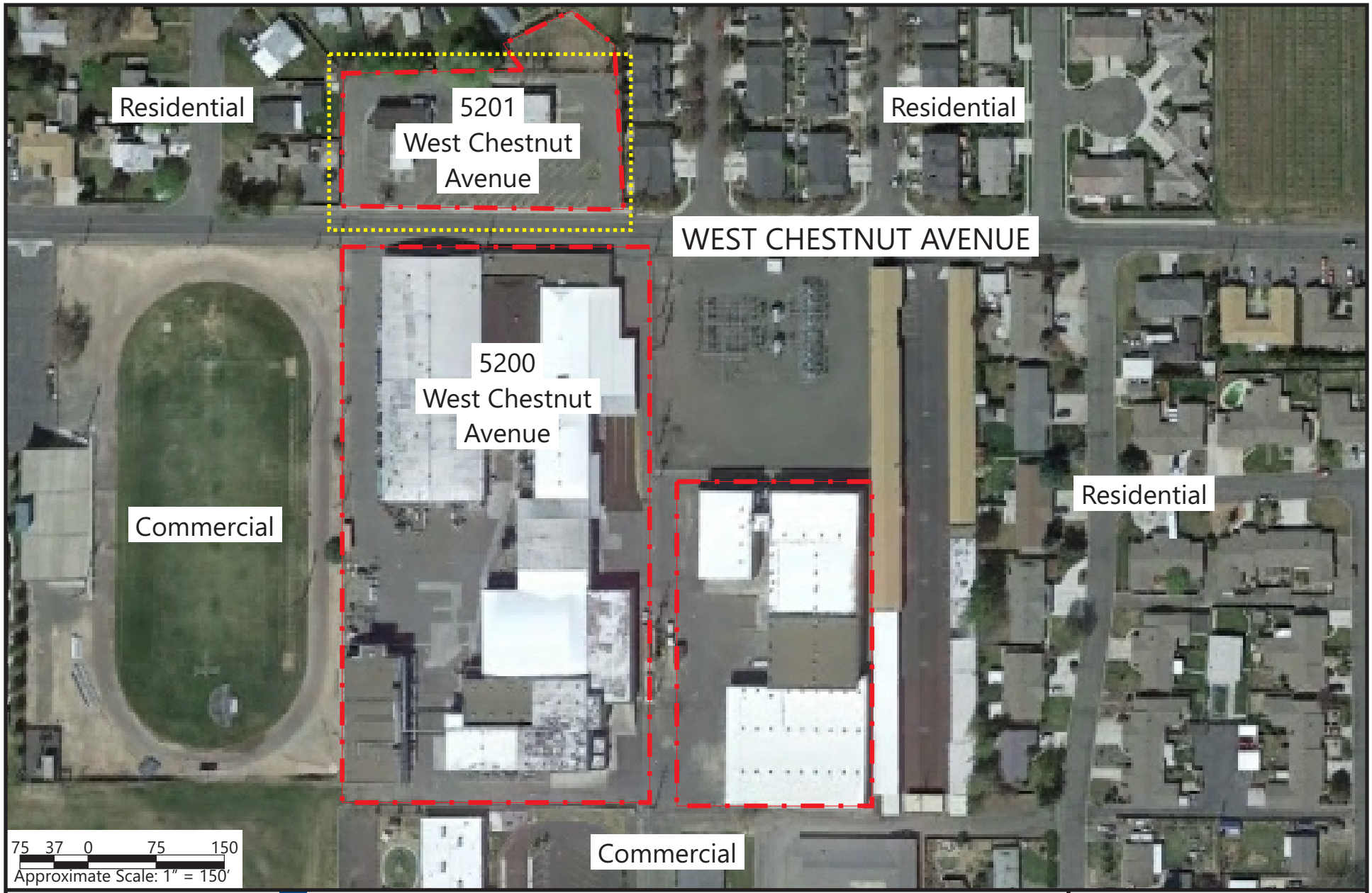
Average ambient benzene concentration for 9/15/2022 sampling = 0.47 µg/m3

Average ambient benzene concentration for 12/3/2022 sampling = 0.663 µg/m3

Orange highlighted values exceed one or more regulatory guideline

FIGURES

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2150 North 170th Street, Suite 475
Seattle, Washington 98133

Project Number: ES21-321187.3

N

Legend

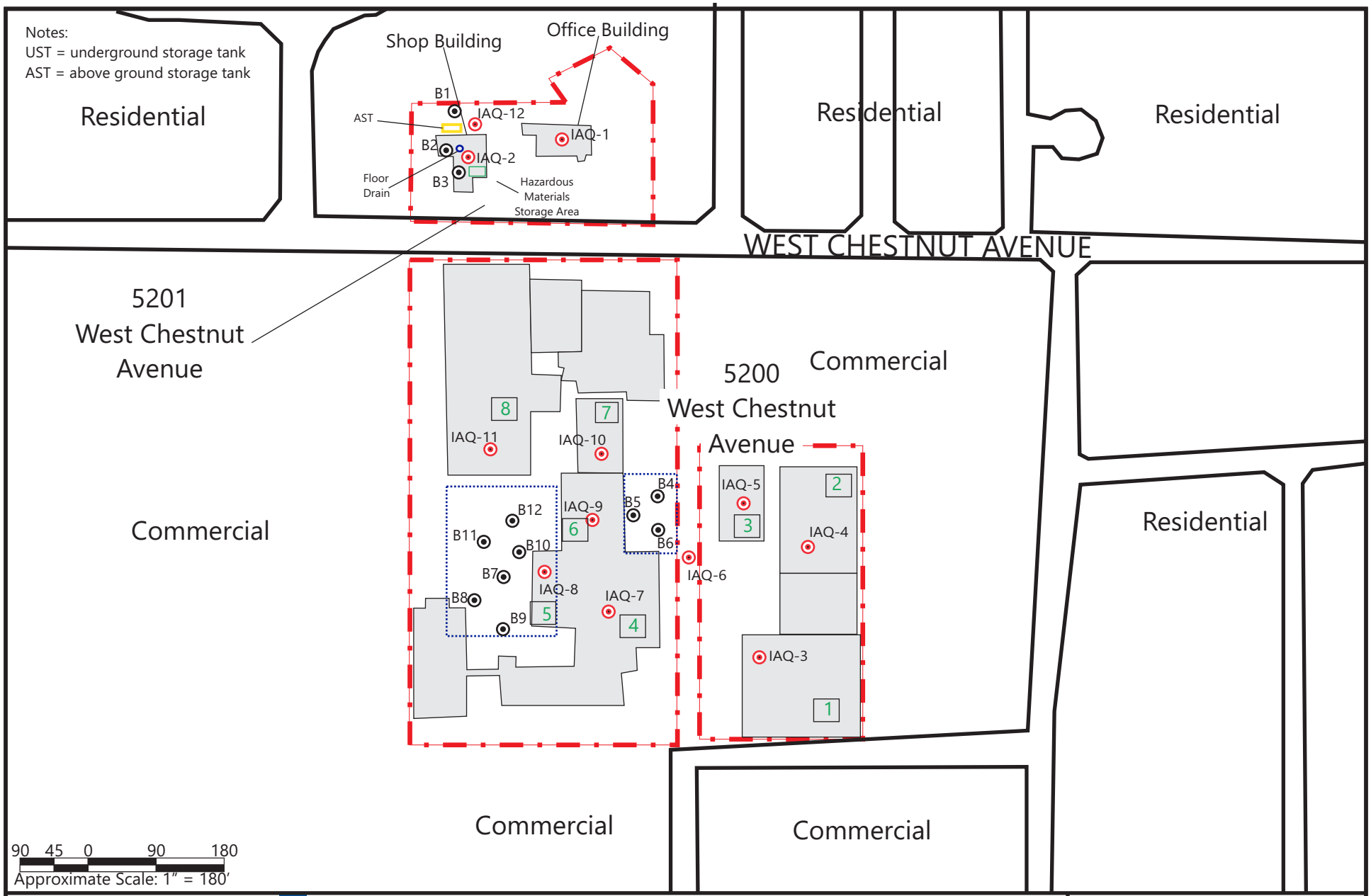
Subject Property

Area Shown in Figure 3

Site Vicinity Map

Figure	Prepared By	Date
1	D. Rutherford	December 2022

5200 and 5201 West Chestnut Avenue
Yakima, Washington 98908



PARTNER
2150 North 170th Street, Suite 475
Seattle, Washington 98133

Project Number: ES21-321187.3

N

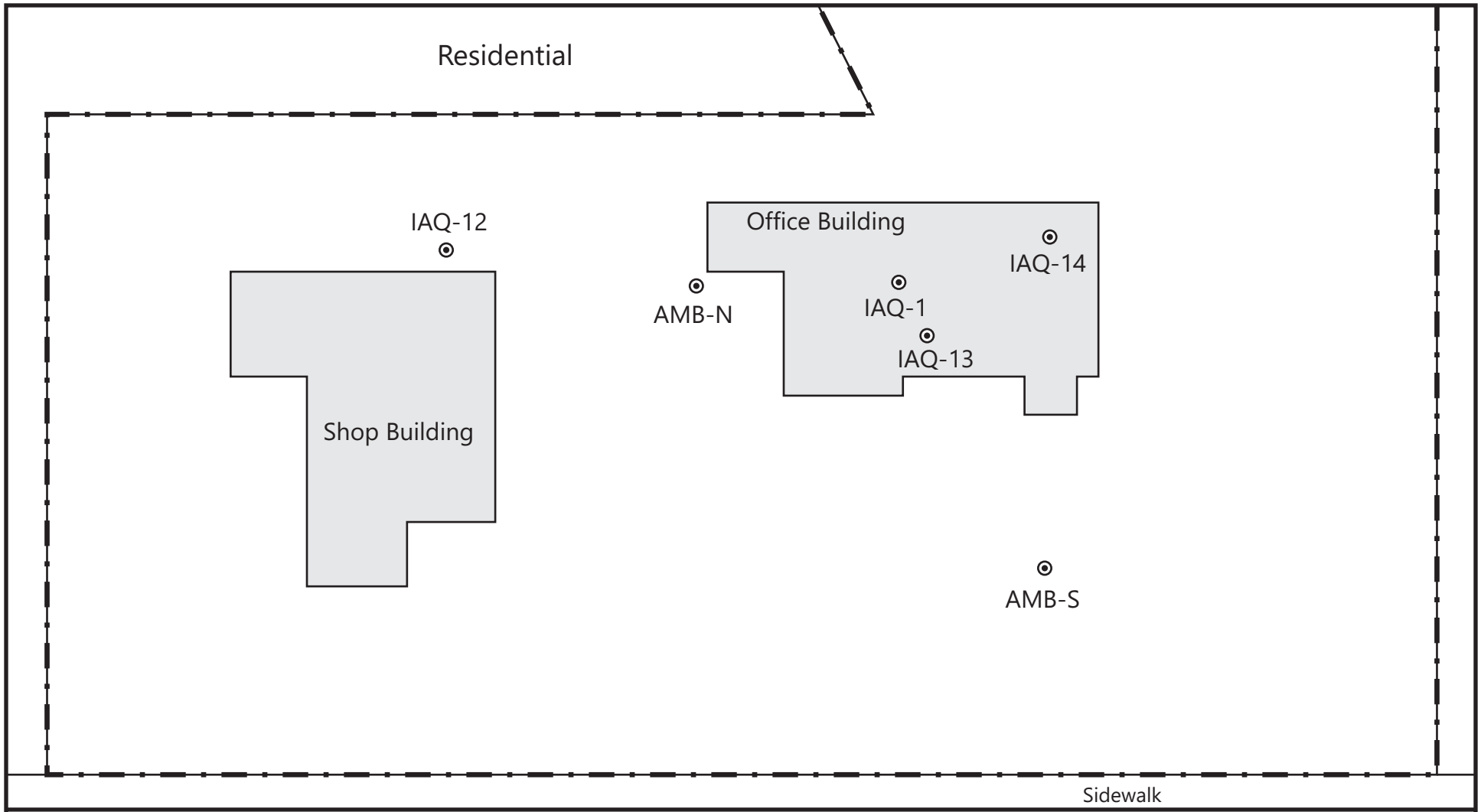
Legend

- Subject Property
- Previous Boring Location
- UST Target Areas
- Building Number Reference: 1
- Air Sample Location

Previous Sample Location Map

Figure	Prepared By	Date
2	M. Williams	December 2022

5200 and 5201 West Chestnut Avenue
Yakima, Washington 98908



Legend

Subject Property

Air Sample Location

N

PARTNER
2150 North 170th Street, Suite 475
Seattle, Washington 98133

Project Number: ES21-321187.3

Sample Location Map

Figure	Prepared By	Date
3	B. Godbois	December 2022

5200 and 5201 West Chestnut Avenue
Yakima, Washington 98908

APPENDIX A: FIELD SAMPLING DATA SHEET

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INDOOR AIR BUILDING SURVEY and SAMPLING FORM

Preparer's name: M. WILLIAMS Date: 12/2 - 12/3/22

Site Name/Address: WEST CHESTNUT PLANT OFFICE

Project Number: SM 22-321187.3

Part I – Building Characteristics

Building type: residential / multi-family residential / (office) / strip mall / commercial / industrial

Describe building: WOOD/METAL FRAMING Year constructed: _____

Number of floors below grade: 1 (full basement / crawl space / slab on grade)

Number of floors at or above grade: 0

Basement floor construction: (concrete) / dirt / floating / stone / other (specify): _____

Foundation walls: (poured concrete) / cinder blocks / stone / other (specify) _____

Type of ~~heating system~~ (circle all that apply):

(hot air circulation)	hot air radiation	wood	steam radiation
heat pump	hot water radiation	kerosene heater	electric baseboard

other (specify): _____

Type of ~~ventilation system (circle~~ all that apply):

~~central air~~ conditioning (ducts)	mechanical fans	bathroom ventilation fans individual air
conditioning units	kitchen range hood fan	outside air intake

other (specify): _____

Type of fuel utilized (circle all that apply):

Natural gas / ~~electric~~ / fuel oil / wood / coal / solar / kerosene

Are the basement walls or floor sealed with waterproof paint or epoxy coatings? *Yes / No / (Unknown)*

Existing subsurface depressurization (radon, or other) system in place? *Yes / (No)* *active / passive*

4381

Potential soil gas entry points (sumps, cracks, utilities, drains, etc.): DOORS, WINDOWS

Part II - Outdoor Contaminant Sources

Contaminated site(s) (1000-ft. radius): NA

Other stationary sources nearby (gasoline stations, emission stacks, etc.): FUELING AREA ≥ 600'W

Heavy vehicular traffic nearby (or other mobile sources): ON W. CHESTNUT ROAD

Part III – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

Potential Sources	Location(s)	Removed (Yes / No / NA)
Gasoline storage cans		
Gas-powered equipment		
Kerosene storage cans		
Paints / thinners / strippers	BASEMENT	Y
Cleaning solvents	RESTROOMS, MAINTENANCE CLOSETS	Y
Oven cleaners	KITCHEN	Y
Carpet / upholstery cleaners	MAINT CLOSETS	Y
Other house cleaning products	"	Y
Moth balls		
Polishes / waxes		
Insecticides		
Furniture / floor polish	MAINT CLOSETS	Y
Nail polish / polish remover	DESKS	Y
Hairspray		
Cologne / perfume	RANDOM	Y
Air fresheners		
Fuel tank (inside building)		NA
Wood stove or fireplace		NA
New furniture / upholstery		
New carpeting / flooring		NA
Hobbies - glues, paints, etc.		

Do any occupants of the building smoke? *Yes / No / Unknown*

Does the building have an attached garage directly connected to living space? *Yes / No*

Do the occupants of the building have their clothes dry cleaned? *Yes / No / Unknown*

Do any of the occupants use solvents in work? *Yes / No / Unknown*

If yes, what types of solvents are used? _____

Have any pesticides/herbicides been applied around the building or in the yard? *Yes* / No / Unknown

If so, when and which chemicals? _____

Has there ever been a fire in the building? *Yes / No / Unknown* If yes, when? _____

Has painting or staining been done in the building in the last 6 months? *Yes / No / Unknown*

If yes, when _____ and where? _____

Part IV - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? *Yes / No*

Describe the general weather conditions: COLD / CLEAR / LOW WIND

Part V – Other Observations

Provide other information that may be pertinent to the sampling event and may assist with data interpretation:

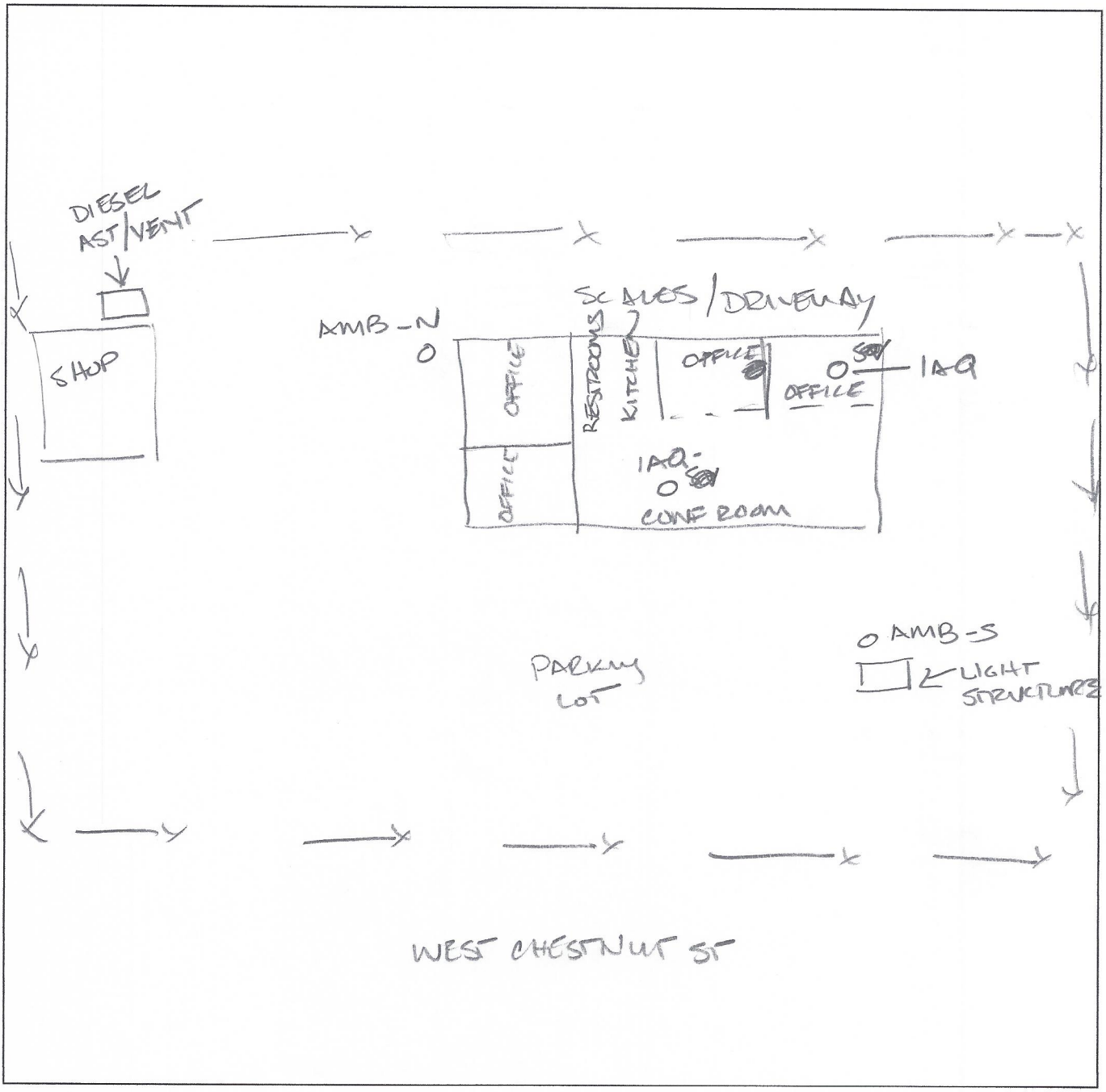
Part VI – Sampling Information (photo-document each location)

Sample info (ID, location):

Field ID # IAQ-1 CONF ROOM Field ID # IAQ-2 OFFICE

Field ID # AMB-S PARKING LOT Field ID # AMB-N DRIVEWAY

Provide a drawing of sample location(s), including pertinent items from above



APPENDIX B: LABORATORY ANALYTICAL REPORT

PARTNER

ANALYTICAL REPORT

December 19, 2022

Revised Report

Partner Engineering & Science - WA

Sample Delivery Group:	L1564842
Samples Received:	12/07/2022
Project Number:	21-321187.3
Description:	West Chestnut Plant IAQ

Report To: Mitchell Williams
3015 S 12th Street
Tacoma, WA 98405

Entire Report Reviewed By:

Marty Edwards III
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

IAQ-13 L1564842-01 5

IAQ-14 L1564842-02 6

AMB-S L1564842-03 7

AMB-N L1564842-04 8

Qc: Quality Control Summary 9

Volatile Organic Compounds (MS) by Method TO-15 9

Gl: Glossary of Terms 10

Al: Accreditations & Locations 11

Sc: Sample Chain of Custody 12

SAMPLE SUMMARY

IAQ-13 L1564842-01 Air

Collected by: M. Williams
Collected date/time: 12/03/22 08:25
Received date/time: 12/07/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1971286	1	12/08/22 21:40	12/08/22 21:40	CEP	Mt. Juliet, TN

IAQ-14 L1564842-02 Air

Collected by: M. Williams
Collected date/time: 12/03/22 08:28
Received date/time: 12/07/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1971286	1	12/08/22 22:11	12/08/22 22:11	CEP	Mt. Juliet, TN

AMB-S L1564842-03 Air

Collected by: M. Williams
Collected date/time: 12/03/22 08:32
Received date/time: 12/07/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1971286	1	12/08/22 22:41	12/08/22 22:41	CEP	Mt. Juliet, TN

AMB-N L1564842-04 Air

Collected by: M. Williams
Collected date/time: 12/03/22 08:36
Received date/time: 12/07/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1971286	1	12/08/22 23:12	12/08/22 23:12	CEP	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Marty Edwards III
Project Manager

Report Revision History

Level II Report - Version 1: 12/09/22 10:31

Project Narrative

Report only Benzene.

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.200	0.639	0.266	0.850		1	WG1971286
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*96.7*				WG1971286

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.200	0.639	0.273	0.872		1	WG1971286
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*98.0*				WG1971286

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.200	0.639	0.211	0.674		1	WG1971286
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*94.5*				WG1971286

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.200	0.639	0.204	0.652		1	WG1971286
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*94.6*				WG1971286

Method Blank (MB)

(MB) R3870020-2 12/08/22 09:47

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Benzene	U		0.0715	0.200
(S) 1,4-Bromofluorobenzene	*95.0*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3870020-1 12/08/22 09:16 • (LCSD) R3870020-3 12/08/22 10:19

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	3.75	4.29	4.24	114	113	70.0-130			1.17	25
(S) 1,4-Bromofluorobenzene				*101*	*101*	*60.0-140*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
Partner Engineering & Science - WA

3015 S 12th Street
Tacoma, WA 98405

Billing Information:
Accounts Payable
2154 Torrance Blvd.
Torrance, CA 90501

Report To:
Mitchell Williams

Email To:
dwilliams@partneresl.com

Project Description: **West Chestnut Plant IAQ**

City/State Collected:

Please Circle: PT MT CT ET

Phone: **206-947-6594**

Client Project # **21-321187.3**

Lab Project # **PARENGSWA-213211873**

Collected by (print): M. Williams

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day ___ Three Day
___ Next Day X Five Day
___ Two Day

Date Results Needed

Sample ID	Can #	Flow Cont. #	Collection Date	Collection Time	Canister Pressure/Vacuum Initial	Canister Pressure/Vacuum Final	TO-15 Summa	Rem./Contaminant	Sample # (lab only)
~~IAQ-1~~ (MW) IAQ-13	19920	010063	12/3/22	0825	-28	-3	X		-01
~~IAQ-2~~ (MW) IAQ-14	36171	011332	↓	0828	-28	-4	X		-02
AMB-S	012343	011727		0832	-28	-5	X		-03
AMB-N	005057	011330		0836	-28	-5	X		-04

Analysis

Chain of Custody Page 1 of 1

Pace
PEOPLE ADVANCING SCIENCE
MT JULIET, TN
12065 Lebanon Road Mt Juliet, TN 37122
Phone: 615-758-5858 Alt: 800-767-5859
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1564842
Ta L-059
Acctnum: PARENGSWA
Template: T220167
Prelogin: P963619
PM: 3813 - Marty Edwards III
PB: 12/30/22
Shipped Via: FedEX Ground

Remarks:

Samples returned via: __ UPS __ FedEx __ Courier _____
Tracking #
Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	12/4/22	12:10			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 12/7/22	Time: 0930

Condition: (lab use only)
COC Seal Intact: ___Y ___N ___NA
NCF: