CHARACTERIZATION OF ON-SITE CONTAMINATION

Chri-Mar Apartments
19618-19628 68th Avenue West
Lynnwood, Washington

FWAK, LLC

ENVIRONMENTAL
ASSOCIATES, INC.

1380 - 112th Avenue Northeast, Suite 300
Bellevue, Washington 98004
(425) 455-9025 Office
(888) 453-5394 Toll Free
(425) 455-2316 Fax

October 24, 2018 JN-36005-2

Ms. Anne Marie Kreidler
FWAK, LLC
c/o Mr. Jay Whitebread
Excel Properties
7850 East Greenlake Drive North, Suite C
Seattle, Washington 98103

Subject: **CHARACTERIZATION OF ON-SITE CONTAMINATION**
Chri-Mar Apartments
19618-19628 68th Avenue West
Lynnwood, Washington

Dear Ms. Kreidler:

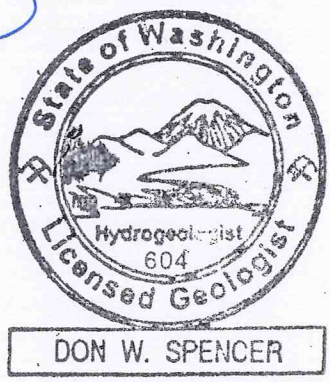
Environmental Associates, Inc. (EAI) has performed additional sampling and testing of subsurface soils and groundwater at selected localities on the subject property. The purpose of this work was to attempt to define the extent of chlorinated solvent impacted soils and groundwater previously detected by EAI at the site. This report, prepared in accordance with the terms of our proposal dated July 30, 2018 and Change Order dated September 11, 2018, summarizes our approach to the project along with results and conclusions.

The contents of this report are confidential and are intended solely for your use and the use of your representatives. No other distribution or discussion of this report will take place without your prior approval in writing.

We appreciate the opportunity to be of service on this assignment. If you have any questions or if we may be of additional service, please do not hesitate to contact us.

Respectfully submitted,
ENVIRONMENTAL ASSOCIATES, INC.

Don W. Spencer, M.Sc., P.G., R.E.A.
Principal



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CHARACTERIZATION OF ON-SITE CONTAMINATION

Chri-Mar Apartments
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Lynnwood, Washington

Prepared for:

Ms. Anne Marie Kreidler
FWAK, LLC
c/o Mr. Jay Whitebread
Excel Properties
7850 East Greenlake Drive North, Suite C
Seattle, Washington 98103

Questions regarding this investigation, the conclusions reached and the recommendations given should be addressed to one of the following undersigned.

Eric Zuern
Environmental Geologist / Project Manager

Don W. Spencer, M.Sc., P.G., R.E.A.
Principal

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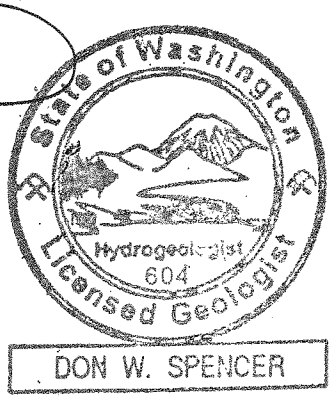

Reference Job Number: JN 36005-2

October 24, 2018

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INTRODUCTION/SCOPE OF WORK

SITE/PROJECT DESCRIPTION

The subject property is comprised of two (2) rectangular-shaped parcels (tax parcel numbers 27042000201000, 27042000200900) covering approximately 1.41 acres of land. The property is currently occupied by four (4) two-story apartment buildings constructed between 1962 and 1963. The approximate location of the site is shown on the Vicinity/Topographic Map, Plate 1, appended herewith.

Background

EAI previously presented Milestone Properties with a report titled Limited Subsurface Sampling and Testing on February 19, 2016. That report documented the results of soil, groundwater, and soil-vapor sampling and testing on the northern portion of the property in relation to a historical off-site dry cleaner and gas station/service shop formerly located on the adjacent northern parcels. That report documented the presence of perchloroethene (PCE) in soils and PCE and trichloroethene (TCE) in groundwater at concentrations exceeding their applicable MTCA Method-A cleanup limits. Additionally, soil-vapor samples collected from shallow depths adjacent to on-site buildings (address numbers 19618 and 19620) detected concentrations of benzene, 1,3-butadiene, and TCE at concentrations exceeding their MTCA Method-B screening limits.

On March 22, 2016, EAI presented a report titled Limited Air Sampling and Testing to Milestone Properties relating to the subject site. That report documented the results of indoor and outdoor air sampling and testing at three (3) locations (2 indoor and 1 outdoor) across the northern portion of the site. Air samples were analyzed for volatile organic compounds (VOCs). Laboratory analysis revealed benzene and 1,3-butadiene present in both indoor and outdoor air at the subject property at concentrations exceeding their applicable MTCA Method-B compliance limits.

The reader is referred to the above reports for further details.

Current Study

Your expressed interests to conduct additional evaluation of subsurface conditions to attempt to assess the vertical and horizontal extent of chlorinated solvent impacted soils and areal extent of impacted groundwater as memorialized in EAI's proposal dated July 30, 2018 and Change Order dated September 11, 2018, formed the basis for the following scope of work:

- Drill and sample seven (7) borings in accessible locations throughout the subject site and surrounding the previously discovered contamination. Soil and groundwater (where present) samples were obtained from each boring and a log of subsurface conditions encountered was prepared for each boring by the EAI project geologist. Four (4) of the boring locations were installed as permanent groundwater monitoring wells.

- Laboratory analysis of selected soil and groundwater samples for chlorinated volatile organic compounds (cVOCs).
- Preparation of this summary report documenting the methodology and results of the investigation.

FINDINGS

SUBSURFACE INVESTIGATION

Soil Boring Sampling

Between September 5, 2018 and September 27, 2018, seven (7) borings were made at the approximate locations noted as B-6, B-7, B-8, MW-1, MW-2, MW-3, and MW-4 on the attached Site Plan, Plate 2. Monitoring well MW-1 was placed within the known contaminated zone (between previous borings B-2 and B-3) at the closest approach to the former off-site dry cleaner to the north. The remaining monitoring wells were placed throughout the central portion of the site at inferred cross and down-gradient hydrologic areas based on groundwater flow measurements by others at the former gas station facility adjacent to the north. Temporary borings B-6, B-7, and B-8 were installed at areas in between MW-1 and the remaining monitoring wells in an attempt to provide further definition of the known contamination plume.

The borings/wells were completed to depths between 25 to 35 feet below ground surface (bgs) depending upon location and the occurrence of groundwater (if any). Boring MW-3 was initially extended to a depth of 50 feet during exploration in an effort to discover (if present) a subsurface zone of recoverable groundwater.

Soil and Groundwater Sampling Procedure

Under the observation of the EAI field geologist, a truck-mounted auger drill rig was brought into position over each boring location. Following set-up preparations, the boring/sampling technique consisted of advancing a steel split-spoon sampler into the ground at 5-foot intervals. The sampler was then withdrawn and the sampler opened for examination and transfer of the soil sample to laboratory prepared glassware by EPA Method 5035. Soil samples were transferred from the sampler directly to sterilized laboratory prepared glassware which were then stored in an iced chest maintained at approximately 4 degrees centigrade at the site and taken to the laboratory in this condition in an effort to preserve sample integrity. The split-spoon samplers were decontaminated prior to re-use.

Recoverable groundwater was not immediately present within the borings despite previous shallow groundwater recovery documented in January 2016 and despite groundwater noted by others in up-gradient monitoring wells at a former gas station. After soil sampling within the borings had been completed at locations not designated to be developed as monitoring wells and as time allowed, a temporary well screen was installed within borings B-6 and B-7 which were then left overnight in an attempt to collect groundwater from moist soil zones. Due to time constraints and dry conditions, no groundwater sampling was attempted at B-8 as no groundwater was present. After allowing time for groundwater to infiltrate the temporary casing, B-7 presented recoverable groundwater. Small diameter plastic tubing was extended from a peristaltic pump into that temporary screen to recover groundwater samples.

At locations developed as monitoring wells, such wells consisted of 2-inch PVC piping. The screen for MW-1 spanned a range of 3 to 25 feet below ground surface (bgs) while screen for MW-2 spanned a range of 5 to 25 feet bgs. Screen for MW-3 spanned a range of 10 to 35 feet bgs while screen for MW-4 was set between 5 to 30 feet bgs. The wells were capped with a steel monument at ground level. While initially dry, groundwater was later measured in MW-1 at approximately 13 to 14 feet bgs and in MW-4 at approximately 14.5 feet bgs. No groundwater was ever measured within wells MW-2 or MW-3 nor were wet conditions observed during initial drilling of those borings. After groundwater had infiltrated the wells, they were developed by surging (an EPA approved method) and left for over 48 hours to settle.

Soil and groundwater samples were transferred from sampling apparatus directly to sterilized laboratory prepared glassware which were then stored in an iced chest maintained at approximately 4 degrees centigrade at the site and taken to the laboratory in this condition in an effort to preserve sample integrity. At wells MW-1 and MW-4, approximately three well volumes of groundwater were purged using a peristaltic pump prior to sampling in an effort to ensure ambient conditions were being evaluated.

Each sample container was clearly labeled as to boring and sample number/depth, date, time, project, etc. EPA-recommended sample-management protocol was observed at each stage of the project.

During drilling, a field log was made by EAI for each boring. Information recorded versus corresponding depth included soil classification (Unified Soil Classification System), color, texture, relative moisture, odors (if present), etc. Final form logs appear as plates 4 through 10.

Subsurface Conditions

Soils encountered within the borings generally consisted of dense silts and gravels with occasional occurrences of sand intermixed typical of glacial till. As mentioned earlier, recoverable groundwater was not initially apparent within any of the borings and no wet subsurface zones were noted between the ground surface and approximately 50 feet bgs. As mentioned above, while initially dry, groundwater was later measured in MW-1 at approximately 13 to 14 feet bgs and in MW-4 at approximately 14.5 feet bgs. No groundwater was ever measured within borings MW-2, MW-3, B-6, or B-8, nor were wet conditions observed during initial drilling of those borings.

LABORATORY ANALYSIS

Laboratory analysis of soil and groundwater samples was conducted by ESN Northwest, Olympia, Washington, or Friedman & Bruya, Inc., Seattle, Washington, both being WDOE-accredited analytical laboratories. Selected soil and groundwater samples were submitted for analysis of chlorinated volatile organic compounds (cVOCs).

As summarized in Table 1 attached to this report, tetrachloroethene (PERC/PCE) was detected in soil samples collected from MW-1 at depths of 15, 19, and 25 feet bgs with the 15 and 19 foot intervals containing concentrations above (i.e. non compliant) with the current MTCA Method-A compliance limit for that analyte. No other solvents were detected in the soil samples analyzed.

As depicted in Table 2, attached to this report, PCE and its associated degradation product trichloroethene (TCE) were found in groundwater sampled from MW-1 at concentrations exceeding their applicable MTCA Method-A compliance levels. Additionally, the solvent (cis) 1,2 dichloroethene was found in groundwater at MW-1 at a level below (i.e. compliant with) its applicable cleanup level. No other cVOCs were detected in the groundwater samples analyzed.

CONCLUSIONS / RECOMMENDATIONS

Relying upon the results of limited sampling and laboratory testing documented in this report, chlorinated solvents (specifically PCE in soils, PCE and TCE in groundwater) were encountered in soils and groundwater at monitoring well MW-1. This finding is entirely consistent with EAI's findings in 2016.

In analyzing the test results documented above, acknowledging that compliant concentrations of PCE were reached by the 25 foot depth, the vertical extent of non-compliant soils within that affected area appears limited to the upper approximately 25 feet of the soil profile. Additionally, no detections of PCE or its degradation products were discovered at multiple interval depths in soils within the surrounding borings indicating that the areal extent of PCE in soils may be defined an area approximately 65 feet along the northern property line by 30 feet from the site boundary (as depicted in the hachured polygon on the attached Site Plan (Plate 2).

This hachured area also provides an approximation of the extent of impacted groundwater based on currently available data. Acknowledging that many of the temporary borings installed in this current phase of work as well as monitoring wells MW-2 and MW-3 did not produce groundwater or exhibit "wet" conditions during drilling, it appears that "shallow" groundwater beneath the site is not representative of the regional groundwater table and is instead a localized discontinuous perched zone of groundwater which would not be considered "potable". Based upon the presence of recoverable groundwater at B-1 in 2016, this shallow perched zone of groundwater may vary in size depending upon temporal fluctuations in precipitation, infiltration, and other factors.

Management Actions Moving Forward

Taking the results of this study in concert with results of EAI's prior on-site investigations (JN 36005) lends credence to a theory that on-site impacts originated from a former off-site dry cleaning establishment located directly north of the impacted area. Based on the data gathered thus far, the area of on-site impacted soils within the hachured area (Plate 2) may be approximately 2,200 to 2,500 cubic yards. The actual amount of impacted soils may only be known at the time of excavation.

While various remedial strategies exist for addressing VOC contaminated soils, acknowledging that the VOCs are migrating from an off-site source, on-site remedial actions at this time may not provide permanent resolution to the contaminant mass until the off-site source is addressed by the responsible party. For the benefit of the client, EAI has provided discussion of various remedial approaches for typical VOC contaminated media including approximate cost ranges. These remedial "alternatives" could range from a low or "minimalist"approach (i.e. stabilize and monitor) to a medium approach (potential installation of injection piping and injection of HRC/Oxidizer compounds) to a high "flow blown" approach which may include fully excavating and removing contaminated soil.

At the low end of the cost spectrum, the "minimalist" approach may consist of stopping the release of PERC, stop the use of PERC at the business, seal the floor of the tenant space with correct sealants, multiple years of quarterly monitoring, and reporting results to WDOE. As the former dry cleaning business has moved out of the neighboring property, it is reasonably presumed that the use/release of PCE has stopped as of this writing. We (EAI) estimate that an annual round of sampling and testing (consisting of four quarterly sampling events) would be approximately $8,000 per year.

Alternatively, based upon costs from similar sites in the area, approximate costs for the medium approach of installing piping and injecting/monitoring may be on the order of $50,000 to $100,000 or more just for soil excavation and installation of perforated PVC piping along excavated trenches or injection wells, injection of chemical compounds which may reduce the levels of contaminants in soils and groundwater under the site, associated lab fees, and soil transport/disposal for the soils removed during pipe installation. Follow-up monitoring events would also be needed after injection of HRC/Oxidizer compounds which, as described earlier, may be on the order of $8,000 per year for four sampling events.

Costs for a "full blown" approach would depend upon how much soil would be excavated from the site; and those costs would substantially exceed the figures given above for either the "low" or "medium" scope alternatives given above. It should be noted that the approximate costs provided above are extremely preliminary and should not be used as a sole informational resource for budgeting purposes.

Generation of detailed contract-ready cost sheets and bid documents was not included in the scope of proposed services for this phase of work. EAI will be pleased to provide additional details in the course of follow-on consultations upon request.

At this time, EAI would recommend that copies of this report along with any future reports regarding the environmental conditions thus far encountered be forwarded to the Department of Ecology by the owner. Additionally, periodic groundwater monitoring (i.e. sampling and testing) of the on-site monitoring wells should be conducted to determine whether seasonal fluctuations in the perched groundwater table occur beneath the site. Finally, periodic indoor air evaluations could be performed in an effort to monitor potential vapor intrusion within the on-site structures related to the subsurface contaminant plume.

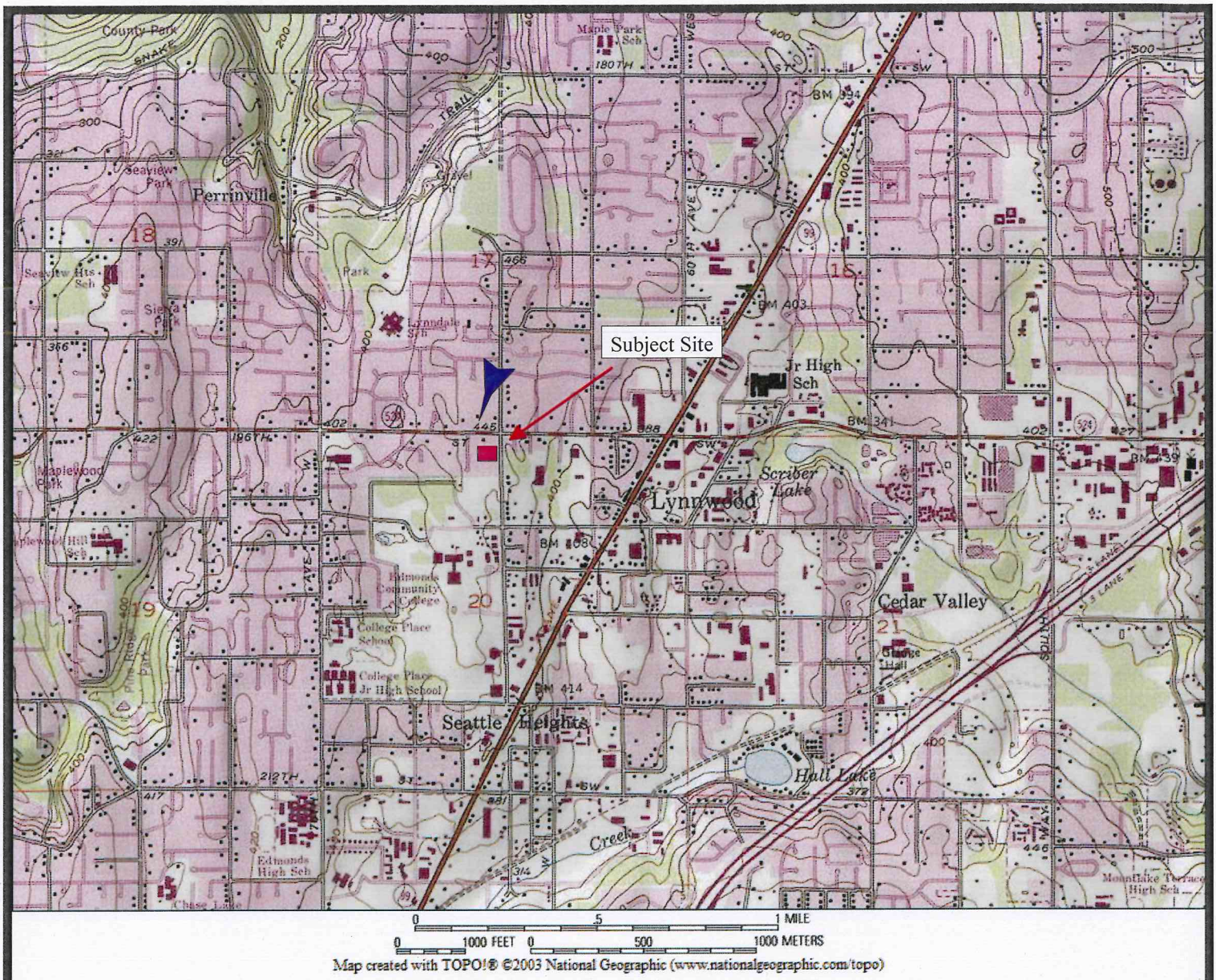
LIMITATIONS

This report has been prepared for the exclusive use of FWAK LLC along with Excel Properties and their several representatives for specific application to this site. Our work for this project was conducted in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area, and in accordance with the terms and conditions set forth in our proposal dated July 30, 2018. The findings and conclusions of this study are based upon the results of laboratory testing of selected samples obtained from separated boring localities and conditions may vary between those locations or at other locations, media, depths, or date. No other warranty, expressed or implied, is made. If new information is developed in future site work which may include excavations, borings, studies, etc., Environmental Associates, Inc., must be retained to reevaluate the conclusions of this report and to provide amendments as required.

REFERENCES

Environmental Associates, Inc., February 19, 2016, Limited Subsurface Sampling and Testing, Chri-Mar Apartments - 19618-19628 68th Avenue West, Lynnwood, Washington.

Environmental Associates, Inc., March 22, 2016, Limited Air Sampling and Testing, Chri-Mar Apartments - 19618-19628 68th Avenue West, Lynnwood, Washington.



Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)

Site Location

Inferred Approximate Direction of Groundwater Flow at Subject

N

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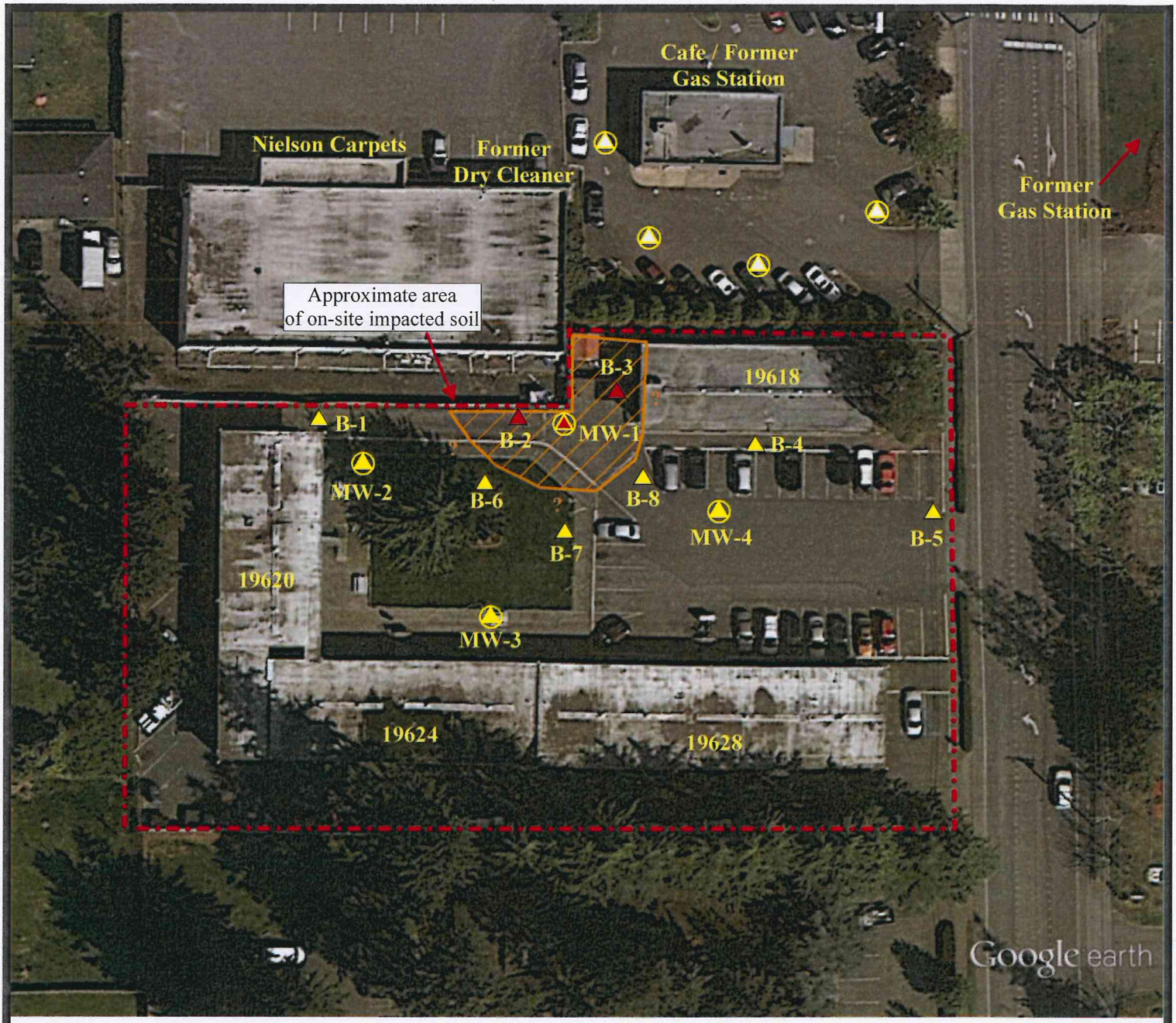
VICINITY/TOPOGRAPHIC MAP

Chri-Mar Apartments
19618-19628 68th Avenue West
Lynnwood, Washington

Job Number:	*Date:*		*Plate:*
JN 36005-2	October 2018		1



Approximate Monitoring Well Locations (yellow=compliant soil, red=non-compliant soil)

Approximate Boring Locations (yellow=compliant soil, red=non-compliant soil)

Approximate Site Boundary

Inferred Approximate Direction of Groundwater Flow at Subject
Based on Measurements from Northern Gas Station by Others

N

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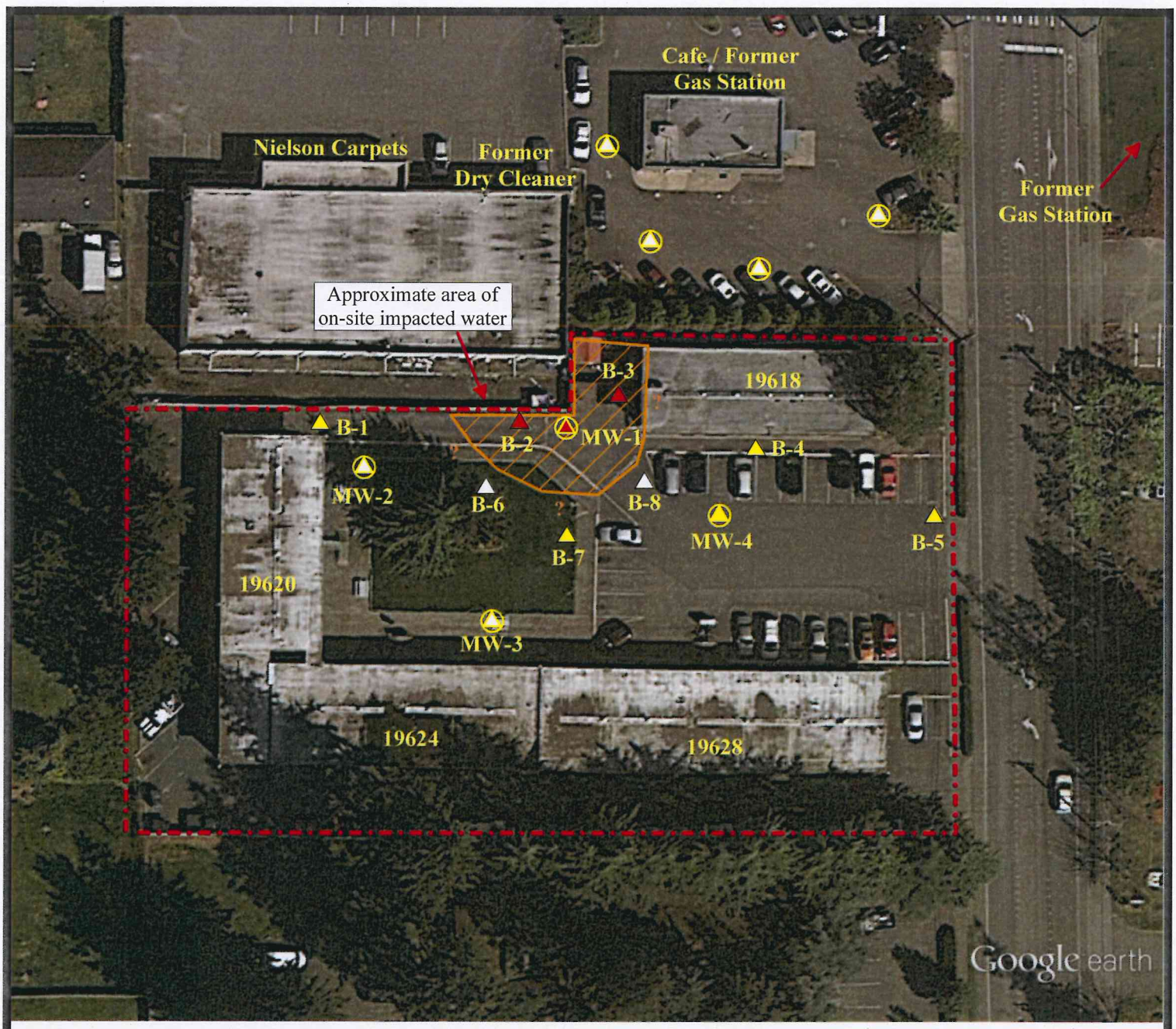
SITE PLAN

Chri-Mar Apartments
19618-19628 68th Avenue West
Lynnwood, Washington

Job Number:	*Date:*		*Plate:*
JN 36005-2	October 2018		2



Approximate Monitoring Well Locations
(yellow=compliant, red=non-compliant, white=no water present)

Approximate Boring Locations
(yellow=compliant, red=non-compliant, white=no water present)

Approximate Site Boundary

Inferred Approximate Direction of Groundwater Flow at Subject
Based on Measurements from Northern Gas Station by Others

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GROUNDWATER RESULTS MAP

Chri-Mar Apartments
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Lynnwood, Washington

Job Number:	Date:		Plate:
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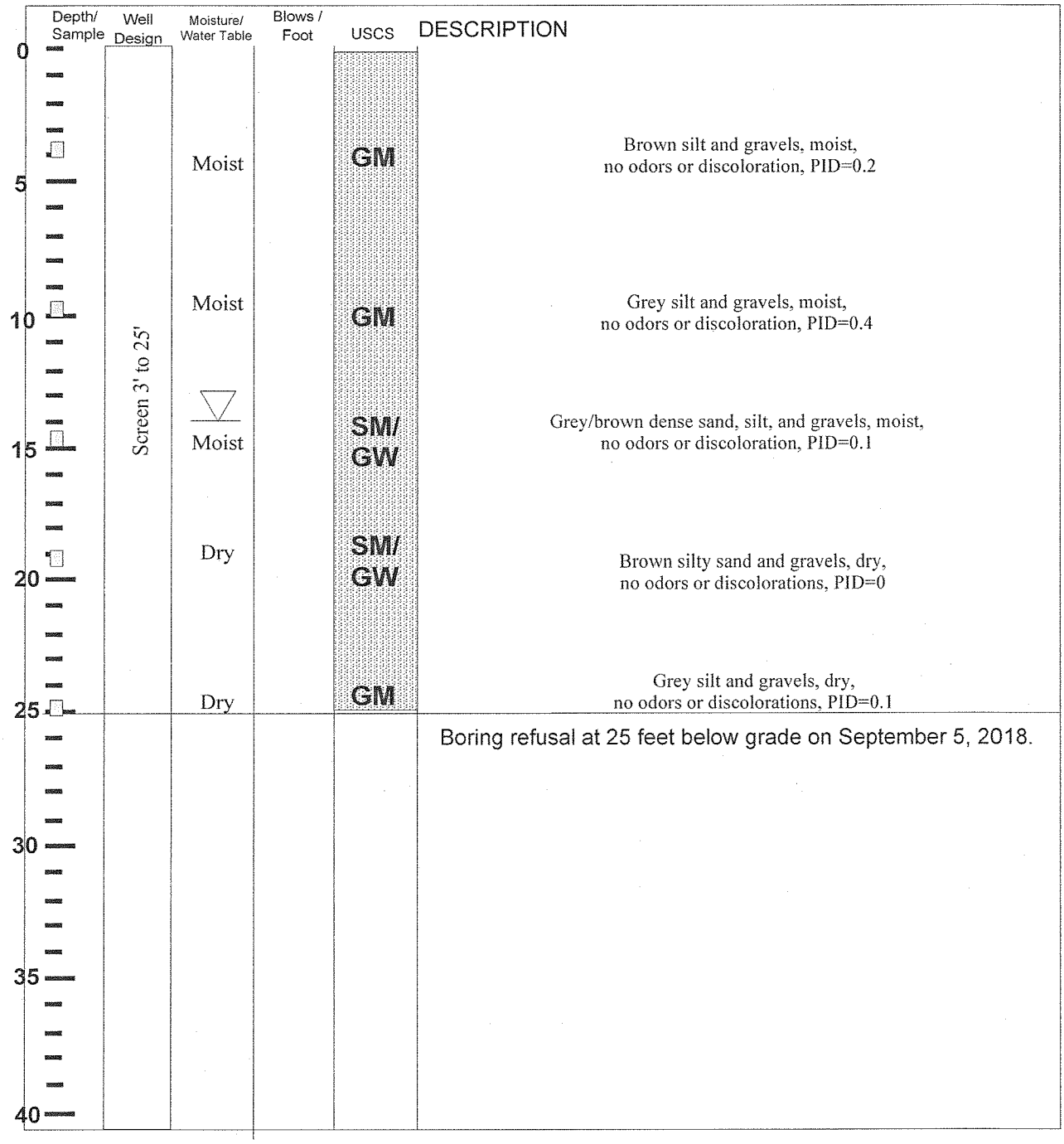
BORING MW-1



Hammer Weight: N/A
Driller: Environmental Services Network, Inc.

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Boring: MW-1

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Job Number:	Date:	Logged by:	Plate:
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BORING MW-2

Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	USCS	DESCRIPTION
0					
5	Screen 5' to 25'	Dry		GM	Brown silt and gravels, dry, no odors or discoloration, PID=0
10		Dry		GM	Brown silt and gravels, dry, no odors or discoloration, PID=0
15		Dry		GM	Brown silt and gravels, dry, no odors or discoloration, PID=0
20		Dry to Moist		GM	Brown silt and gravels, dry to moist, no odors or discolorations, PID=0
25		Dry			No Recovery due to large rocks
30					Boring terminated at 25 feet below grade on September 25, 2018.
35					
40					

Hammer Weight: N/A
Driller: Environmental Services Network, Inc.

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Boring: MW-2

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Job Number:	Date:	Logged by:	Plate:
JN 36005-2	October 2018	EAZ	5

BORING MW-3

Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	USCS	DESCRIPTION
0					
5		Dry		GM	Brown silt and gravels, dry, no odors or discoloration, PID=0
10		Moist		SM/ GW	Brown silty sand and gravels, moist, no odors or discoloration, PID=0
15		Dry		SM/ GW	Brown silty sand and gravels, dry, no odors or discoloration, PID=0
20	Screen 10' to 35'	Dry		GM	Brown silt and gravels, dry, no odors or discolorations, PID=0
25		Dry		SM/ GW	Brown silty sand and gravels, dry, no odors or discolorations, PID=0
30		Dry		SM/ GW	Brown silty sand and gravels, dry, no odors or discolorations, PID=0
35		Dry			Boring terminated at 35 feet below grade on September 26, 2018 upon reaching depth of 30' boring extended directly to 40' then 50' in an attempt to encounter wet zone. no water bearing zones observed. Well then set between 10 to 35 feet bgs.
40					

Hammer Weight: N/A
Driller: Environmental Services Network, Inc.

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Boring: MW-3

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Job Number:	Date:	Logged by:	Plate:
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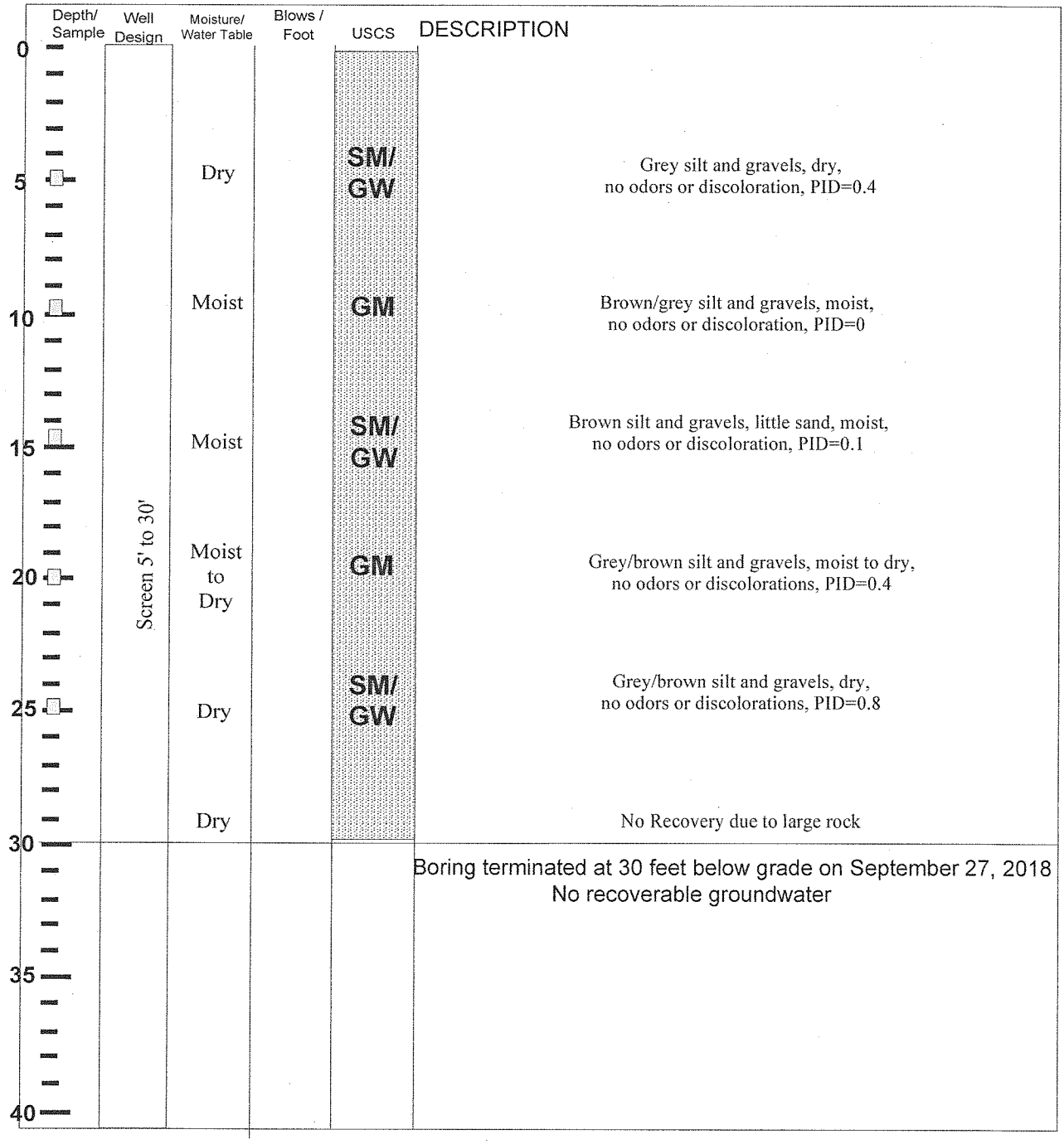
BORING MW-4



Hammer Weight: N/A
Driller: Environmental Services Network, Inc.

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Boring: MW-4

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Job Number:	Date:	Logged by:	Plate:
JN 36005-2	October 2018	EAZ	7

BORING B-6

Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	USCS	DESCRIPTION
0					
5	Screen 5' to 25'	Dry		GM	Brown silt and gravels, dry, no odors or discoloration, PID=10
10		Dry		GM	Brown silt and gravels, dry, no odors or discoloration, PID=0.1
15		Dry		GM	Brown silt and gravels, dry, no odors or discoloration, PID=0.2
20		Dry to Moist		GM	Brown silt and gravels, dry to moist, no odors or discolorations, PID=0.3
25		Dry to Moist		SM/ GW	Brown silty snd and gravels, dry to moist, no odors or discolorations, PID=0.1
30					Boring terminated at 25 feet below grade on September 25, 2018 casing left open overnight, no recoverable groundwater after 24 hours.
35					
40					

Hammer Weight: N/A
Driller: Environmental Services Network, Inc.

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Boring: B-6

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Job Number:	Date:	Logged by:	Plate:
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BORING B-7

Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	USCS	DESCRIPTION
0					
5		Dry		SM/ GW	Brown silty sand and gravels, dry, no odors or discoloration, PID=0.3
10		Moist		GM	Brown silt and gravels, dry, no odors or discoloration, PID=0.5
15		Dry		SM/ GW	Brown silty sand and gravels, dry, no odors or discoloration, PID=0
20	Screen 10' to 30'	Dry		GM	Brown silt and gravels, dry, no odors or discolorations, PID=0
25		Dry ▽		SM/ GW	Brown silty sand and gravels, dry, no odors or discolorations, PID=0
30		Dry		GM	Brown silt and gravels, dry, no odors or discolorations, PID=0
35					Boring terminated at 30 feet below grade on September 27, 2018 Boring left open overnight, groundwater present at 27' bgs by morning.
40					

Hammer Weight: N/A
Driller: Environmental Services Network, Inc.

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Boring: B-7

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Job Number:	Date:	Logged by:	Plate:
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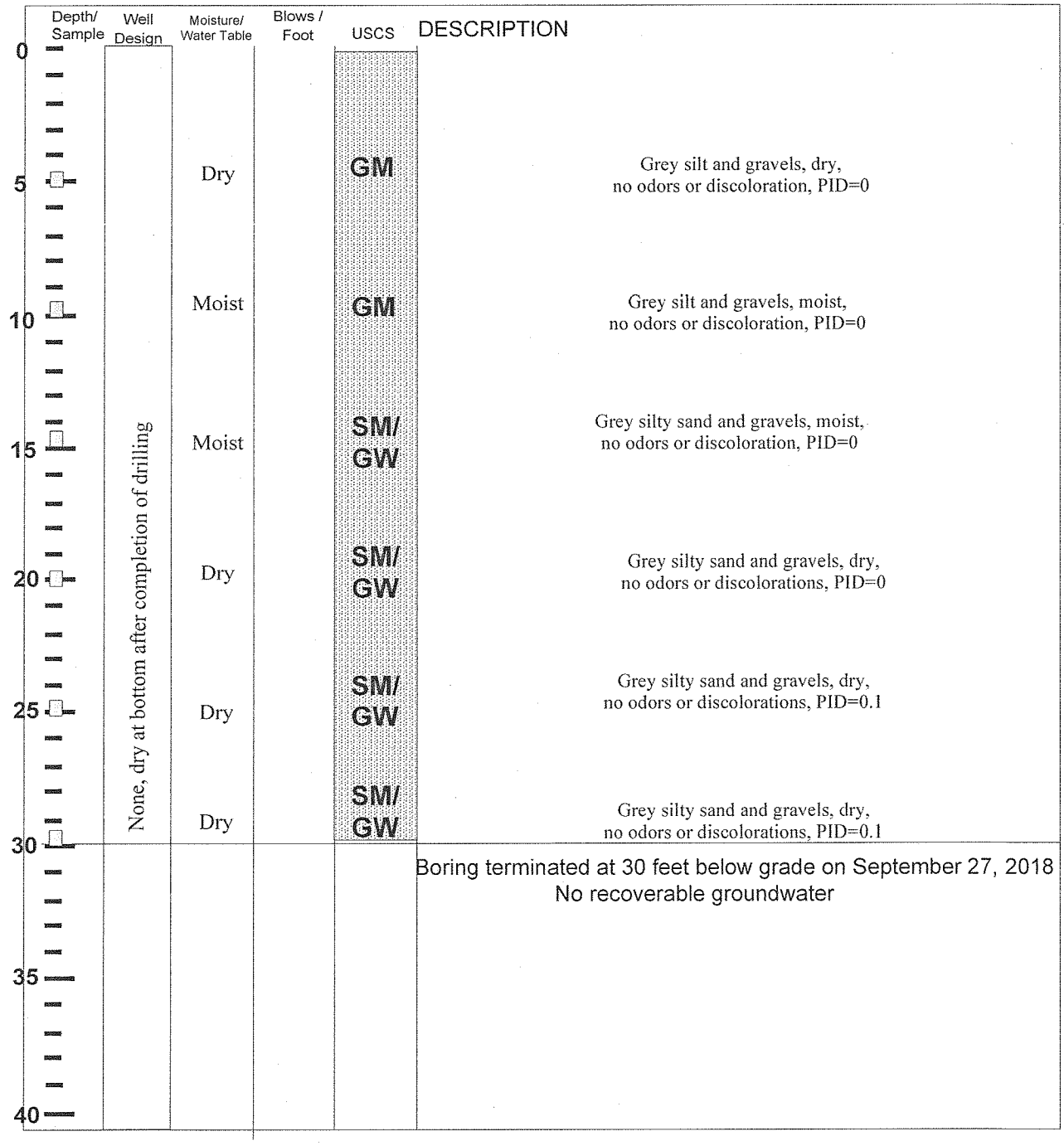
BORING B-8



Hammer Weight: N/A
Driller: Environmental Services Network, Inc.

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Boring: B-8

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Job Number:	Date:	Logged by:	Plate:
JN 36005-2	October 2018	EAZ	10

TABLE 1- Chlorinated VOCs - Soil Sampling Results
All results and limits in parts per million (ppm)

Sample Name and Depth	Tetrachloroethene (PCE)	Trichloroethene (TCE)	(cis) 1,2 Dichloroethene	(trans) 1,2 Dichloroethene	Vinyl Chloride
MW1-15 @ 15' BGS	***0.24***	ND	ND	ND	ND
MW1-19 @ 19' BGS	***0.14***	ND	ND	ND	ND
MW1-25 @ 25' BGS	0.04	ND	ND	ND	ND
MW2-5 @ 5' BGS	ND	ND	ND	ND	ND
MW2-15 @15' BGS	ND	ND	ND	ND	ND
MW2-20 @ 20' BGS	ND	ND	ND	ND	ND
B6-5 @ 5' BGS	ND	ND	ND	ND	ND
B6-15 @ 15' BGS	ND	ND	ND	ND	ND
B6-25 @ 25' BGS	ND	ND	ND	ND	ND
MW3-10 @ 10' BGS	ND	ND	ND	ND	ND
MW3-15 @ 15' BGS	ND	ND	ND	ND	ND
MW3-20 @ 20' BGS	ND	ND	ND	ND	ND
B7-10 @ 10' BGS	ND	ND	ND	ND	ND
B7-15 @ 15' BGS	ND	ND	ND	ND	ND
B7-20 @ 20' BGS	ND	ND	ND	ND	ND
MW4-10 @ 10' BGS	ND	ND	ND	ND	ND
MW4-20 @ 20' BGS	ND	ND	ND	ND	ND
MW4-25 @ 25' BGS	ND	ND	ND	ND	ND
B8-10 @ 10' BGS	ND	ND	ND	ND	ND
B8-20 @ 20' BGS	ND	ND	ND	ND	ND
B8-25 @ 25' BGS	ND	ND	ND	ND	ND
Reporting Limit [3]	0.02/0.025	0.02	0.05	0.05	0.02/0.05
Cleanup Level for Unrestricted Land Use (Method-A)[4]	0.05	0.03	---	---	---
Cleanup Level - (Method-B)[5]	476	12	160	1600.0	0.667

Notes:
1 - "ND" denotes analyte not detected at or above listed Reporting Limit.
2- "NA" denotes sample not analyzed for specific analyte.
3- "Reporting Limit" represents the laboratory lower quantitation limit.
4- Method A soil cleanup levels for unrestricted land use as published in the Model Toxics Control Act (MTCA) 173-340-WAC, Table 740-1.
5- Method-B soil cleanup levels for the "direct contact pathway", as published in Ecology's CLARC May 2014 database.

BGS-Below Ground Surface

Bold and Italics denotes concentrations above existing MTCA Method A or B soil cleanup levels.

TABLE 2- Chlorinated VOCs - Groundwater Sampling Results
All results and limits in parts per billion (ppb)

Boring	Tetrachloroethene (PCE)	Trichloroethene (TCE)	(cis) 1,2 Dichloroethene	(trans) 1,2 Dichloroethene	Vinyl Chloride
B7-WATER	ND	ND	ND	ND	ND
MW1-WATER	***220***	***11***	1.7	ND	ND
MW4-WATER	ND	ND	ND	ND	ND
Reporting Limit [3]	1	1	1	1	0.2
Existing Cleanup Level[4]	5 (A)	5 (A)	16 (B)	160 (B)	0.2 (A)

Notes:
1 - "ND" denotes analyte not detected at or above listed Reporting Limit.
2- "NA" denotes sample not analyzed for specific analyte.
3- "Reporting Limit" represents the laboratory lower quantitation limit.
4- Method A or B groundwater cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC, amended May 2014.

Bold and Italics denotes concentrations above existing MTCA Method A groundwater cleanup levels.

APPENDIX A

Laboratory Reports

ESN NORTHWEST
Environmental
Services Network

September 19, 2018

Eric Zuern
Environmental Associates
1380 112th Avenue NE, Suite 300
Bellevue, WA 98004

Dear Mr. Zuern:

Please find enclosed the analytical data report for the Chri-Mar Apts in Lynnwood, Washington. Probe services were conducted on September 5, 2018. Soil samples were analyzed for Chlorinated VOC's by Method 8260 on September 12 & 13, 2018.

The results of these analyses are summarized in the attached tables. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Environmental Associates for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Michael A Korosec

Michael A. Korosec
President

1210 Eastside Street SE, Suite 200 ■ Olympia, Washington 98501 ■ 360.459.4670 ■ FAX 360.459.3432
Web Site: *www.esnnw.com* E-Mail: *info@esnnw.com*

ESN NORTHWEST CHEMISTRY LABORATORY

Environmental Assiociates, Inc
PROJECT CHRIS-MAR APTS
PROJECT #36005-2
Lynnwood, Washington

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analysis of Chlorinated Volatile Organic Compounds in Soil by Method 8260C/5035

	RL	MB	LCS	LCSD	MW1-15	MW1-19	MW2-5
Date extracted		09/12/18	09/12/18	09/12/18	09/05/18	09/05/18	09/05/18
Date analyzed	(mg/Kg)	09/12/18	09/12/18	09/12/18	09/12/18	09/12/18	09/12/18
% Moisture					8%	7%	7%
Dichlorodifluoromethane	0.05	nd			nd	nd	nd
Chloromethane	0.05	nd			nd	nd	nd
Vinyl chloride	0.02	nd	120%	123%	nd	nd	nd
Chloroethane	0.05	nd			nd	nd	nd
Trichlorofluoromethane	0.05	nd			nd	nd	nd
1,1-Dichloroethene	0.05	nd	72%	78%	nd	nd	nd
Methylene chloride	0.05	nd			nd	nd	nd
trans-1,2-Dichloroethene	0.05	nd			nd	nd	nd
1,1-Dichloroethane	0.05	nd			nd	nd	nd
cis-1,2-Dichloroethene	0.05	nd			nd	nd	nd
2,2-Dichloropropane	0.05	nd			nd	nd	nd
Chloroform	0.05	nd	71%	76%	nd	nd	nd
Bromochloromethane	0.05	nd			nd	nd	nd
1,1,1-Trichloroethane	0.05	nd			nd	nd	nd
1,2-Dichloroethane (EDC)	0.05	nd			nd	nd	nd
1,1-Dichloropropene	0.05	nd			nd	nd	nd
Carbon tetrachloride	0.05	nd			nd	nd	nd
Trichloroethene (TCE)	0.02	nd	85%	91%	nd	nd	nd
1,2-Dichloropropane	0.05	nd	89%	92%	nd	nd	nd
Bromodichloromethane	0.05	nd			nd	nd	nd
cis-1,3-Dichloropropene	0.05	nd			nd	nd	nd
trans-1,3-Dichloropropene	0.05	nd			nd	nd	nd
1,1,2-Trichloroethane	0.05	nd			nd	nd	nd
1,3-Dichloropropane	0.05	nd			nd	nd	nd
Dibromochloromethane	0.05	nd			nd	nd	nd
Tetrachloroethene (PCE)	0.02	nd	92%	95%	**0.24**	**0.14**	nd
Chlorobenzene	0.05	nd	82%	86%	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd			nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd			nd	nd	nd
1,2,3-Trichloropropane	0.05	nd			nd	nd	nd
2-Chlorotoluene	0.05	nd			nd	nd	nd
4-Chlorotoluene	0.05	nd			nd	nd	nd
1,3-Dichlorobenzene	0.05	nd			nd	nd	nd
1,4-Dichlorobenzene	0.05	nd			nd	nd	nd
1,2-Dichlorobenzene	0.05	nd			nd	nd	nd
1,2-Dibromo-3-Chloropropane	0.05	nd			nd	nd	nd
1,2,4-Trichlorobenzene	0.05	nd			nd	nd	nd
Hexachloro-1,3-butadiene	0.05	nd			nd	nd	nd
1,2,3-Trichlorobenzene	0.05	nd			nd	nd	nd
Surrogate recoveries							
Dibromofluoromethane		91%	87%	89%	95%	98%	99%
Toluene-d8		100%	96%	96%	101%	106%	106%
4-Bromofluorobenzene		104%	104%	105%	104%	102%	102%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
Acceptable Recovery limits: 65% TO 135%
Acceptable RPD limit: 35%

ESN NORTHWEST CHEMISTRY LABORATORY

Environmental Assiociates, Inc
PROJECT CHRIS-MAR APTS
PROJECT #36005-2
Lynnwood, Washington

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analysis of Chlorinated Volatile Organic Compounds in Soil by Method 8260C/5035

	RL	MB	LCS	LCSD	MW1-25
Date extracted		09/13/18	09/13/18	09/13/18	09/05/18
Date analyzed	(mg/Kg)	09/13/18	09/13/18	09/13/18	09/13/18
% Moisture					
Dichlorodifluoromethane	0.05	nd			nd
Chloromethane	0.05	nd			nd
Vinyl chloride	0.02	nd	87%	74%	nd
Chloroethane	0.05	nd			nd
Trichlorofluoromethane	0.05	nd			nd
1,1-Dichloroethene	0.05	nd	82%	78%	nd
Methylene chloride	0.05	nd			nd
trans-1,2-Dichloroethene	0.05	nd			nd
1,1-Dichloroethane	0.05	nd			nd
cis-1,2-Dichloroethene	0.05	nd			nd
2,2-Dichloropropane	0.05	nd			nd
Chloroform	0.05	nd	80%	77%	nd
Bromochloromethane	0.05	nd			nd
1,1,1-Trichloroethane	0.05	nd			nd
1,2-Dichloroethane (EDC)	0.05	nd			nd
1,1-Dichloropropene	0.05	nd			nd
Carbon tetrachloride	0.05	nd			nd
Trichloroethene (TCE)	0.02	nd	98%	95%	nd
1,2-Dichloropropane	0.05	nd	102%	98%	nd
Bromodichloromethane	0.05	nd			nd
cis-1,3-Dichloropropene	0.05	nd			nd
trans-1,3-Dichloropropene	0.05	nd			nd
1,1,2-Trichloroethane	0.05	nd			nd
1,3-Dichloropropane	0.05	nd			nd
Dibromochloromethane	0.05	nd			nd
Tetrachloroethene (PCE)	0.02	nd	102%	100%	**0.04**
Chlorobenzene	0.05	nd	93%	92%	nd
1,1,1,2-Tetrachloroethane	0.05	nd			nd
1,1,2,2-Tetrachloroethane	0.05	nd			nd
1,2,3-Trichloropropane	0.05	nd			nd
2-Chlorotoluene	0.05	nd			nd
4-Chlorotoluene	0.05	nd			nd
1,3-Dichlorobenzene	0.05	nd			nd
1,4-Dichlorobenzene	0.05	nd			nd
1,2-Dichlorobenzene	0.05	nd			nd
1,2-Dibromo-3-Chloropropane	0.05	nd			nd
1,2,4-Trichlorobenzene	0.05	nd			nd
Hexachloro-1,3-butadiene	0.05	nd			nd
1,2,3-Trichlorobenzene	0.05	nd			nd
Surrogate recoveries					
Dibromofluoromethane		96%	89%	92%	94%
Toluene-d8		104%	93%	97%	100%
4-Bromofluorobenzene		103%	105%	105%	107%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
Acceptable Recovery limits: 65% TO 135%
Acceptable RPD limit: 35%

ESN NORTHWEST, INC. | Environmental Services Network

CHAIN-OF-CUSTODY RECORD

CLIENT: Eric Zuem - Environmental Associates Inc.
ADDRESS: 1380 - 112th ave NE, Suite 350 Bellevue, WA 98004
PHONE: 425-455-9025 FAX: 425-455-2316
CLIENT PROJECT #: 36005-2 PROJECT MANAGER: Eric Zuem

DATE: 9-5-18 PAGE 1 OF 1
PROJECT NAME: Chri-Mar Apts
LOCATION: Lynnwood
COLLECTOR: Eric Zuem DATE OF COLLECTION: 9-5-18

Sample Number	Depth	Time	Sample Type	Container Type	TPH - HCID	TPH - Diesel & Oil	TPH - Gasoline	BTEX	VOC 8260CL	VOC 8260	SemiVol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	RCRA 8 Metals	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WO Suite	NOTES	Total Number of Containers	Laboratory Note Number
1. MW1-4	4'	8:55	Soil																				3	
2. MW1-10	10'	9:00	↓																				3	
3. MW1-15	15'	9:05						X															3	
4. MW1-19	19'	10:15						X															3	
5. MW1-25	25'	11:15																					3	
6. MW2-5	5'	1:50						X															3	
7.																								
8.																								
9.																								
10.																								
11.																								
12.																								
13.																								
14.																								
15.																								
16.																								
17.																								
18.																								

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
Eric Zuem	9-5-18 3:40		9/5/18
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	18
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:
Call Eric for billing

Turn Around Time: 24 HR 48 HR (5 DAY)

1210 Eastside Street SE, Suite 200
Olympia, Washington 98501
Phone: 360-459-4670
Fax: 360-459-3432
Website: www.esnnw.com
E-Mail: info@esnnw.com

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

October 3, 2018

Eric Zuern, Project Manager
Environmental Associates, Inc.
1380 112th Ave. NE, 300
Bellevue, WA 98004

Dear Mr Zuern:

Included are the results from the testing of material submitted on September 25, 2018 from the Chri-mar Apts. 36005-2, F&BI 809428 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
EAI1003R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 25, 2018 by Friedman & Bruya, Inc. from the Environmental Associates Chri-mar Apts. 36005-2, F&BI 809428 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Associates
809428 -01	MW2-5
809428 -02	MW2-10
809428 -03	MW2-15
809428 -04	MW2-20
809428 -05	B6-5
809428 -06	B6-10
809428 -07	B6-15
809428 -08	B6-20
809428 -09	B6-25

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW2-15	Client:	Environmental Associates
Date Received:	09/25/18	Project:	Chri-mar Apts. 36005-2, F&BI 809428
Date Extracted:	09/26/18	Lab ID:	809428-03
Date Analyzed:	09/26/18	Data File:	092610.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	95	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW2-20	Client:	Environmental Associates
Date Received:	09/25/18	Project:	Chri-mar Apts. 36005-2, F&BI 809428
Date Extracted:	09/26/18	Lab ID:	809428-04
Date Analyzed:	09/26/18	Data File:	092611.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	95	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B6-5	Client:	Environmental Associates
Date Received:	09/25/18	Project:	Chri-mar Apts. 36005-2, F&BI 809428
Date Extracted:	09/26/18	Lab ID:	809428-05
Date Analyzed:	09/26/18	Data File:	092612.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	95	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B6-15	Client:	Environmental Associates
Date Received:	09/25/18	Project:	Chri-mar Apts. 36005-2, F&BI 809428
Date Extracted:	09/26/18	Lab ID:	809428-07
Date Analyzed:	09/26/18	Data File:	092613.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	95	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B6-25	Client:	Environmental Associates
Date Received:	09/25/18	Project:	Chri-mar Apts. 36005-2, F&BI 809428
Date Extracted:	09/26/18	Lab ID:	809428-09
Date Analyzed:	09/26/18	Data File:	092614.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	95	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Environmental Associates
Date Received:	Not Applicable	Project:	Chri-mar Apts. 36005-2, F&BI 809428
Date Extracted:	09/26/18	Lab ID:	08-2136 mb2
Date Analyzed:	09/26/18	Data File:	092609.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	99	55	145
4-Bromofluorobenzene	95	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Date of Report: 10/03/18
Date Received: 09/25/18
Project: Chri-mar Apts. 36005-2, F&BI 809428

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 809428-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	59	10-138
Chloroethane	mg/kg (ppm)	2.5	<0.5	69	10-176
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	83	10-160
Methylene chloride	mg/kg (ppm)	2.5	<0.5	92	10-156
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	88	14-137
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	89	19-140
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	93	25-135
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	84	12-160
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	95	10-156
Trichloroethene	mg/kg (ppm)	2.5	<0.02	87	21-139
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	95	20-133

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	mg/kg (ppm)	2.5	62	63	22-139	2
Chloroethane	mg/kg (ppm)	2.5	64	68	10-163	6
1,1-Dichloroethene	mg/kg (ppm)	2.5	86	86	47-128	0
Methylene chloride	mg/kg (ppm)	2.5	89	92	42-132	3
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	88	89	67-127	1
1,1-Dichloroethane	mg/kg (ppm)	2.5	87	89	68-115	2
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	89	90	72-113	1
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	83	85	56-135	2
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	92	95	62-131	3
Trichloroethene	mg/kg (ppm)	2.5	86	88	64-117	2
Tetrachloroethene	mg/kg (ppm)	2.5	95	94	72-114	1

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

809428

SAMPLE CHAIN OF CUSTODY

ME 09/25/18

CT2/VS2

Page # 1 of 1

Report To Eric Zuern

Company Environmental Associates, Inc.

Address 1380 112th ave NE #300

City, State, ZIP Bellevue, WA 98004

Phone 425-455-9025 Email info@environmentalassociates.com

SAMPLERS (*signature*) Eric Zuern

PROJECT NAME Chi-mar Apts

PO # 35005-C

REMARKS Anne Marie Strieker c/o Mr. Jay Whitebread Excel Properties 7850 E Greenlake Park #C Seattle, WA 98103

INVOICE TO annemarie@excelrci.com

TURNAROUND TIME
- ☑ Standard Turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☑ Dispose after 30 days
- ☐ Archive Samples
- ☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	Chlorinated VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
						ANALYSES REQUESTED											
MW2-5	01 A-D	9-25-18	9:50	Soil	4												
MW2-10	02		9:56		4												
MW2-15	03		10:05		4					X							chlorinated only
MW2-20	04		10:15		4					X							
B6-5	05		12:18		4					X							
B6-10	06		12:25		4												
B6-15	07		12:30		4					X							
B6-20	08		12:37		4												
B6-25	09		12:45		4					X							

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Eric Zuern	Eric Zuern	EAI	9-25-18	2:50
Received by: Eric Zuern	Eric Zuern	FedEx	9/26/18	1430
Relinquished by:				
Received by:		Samples received at 4 °C		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

October 5, 2018

Eric Zuern, Project Manager
Environmental Associates, Inc.
1380 112th Ave. NE, 300
Bellevue, WA 98004

Dear Mr Zuern:

Included are the results from the testing of material submitted on September 26, 2018 from the Chri-Mar Apts 360052, F&BI 809465 project. There are 11 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
EAI1005R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 26, 2018 by Friedman & Bruya, Inc. from the Environmental Associates Chri-Mar Apts 360052, F&BI 809465 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Associates
809465 -01	MW3-5
809465 -02	MW3-10
809465 -03	MW3-15
809465 -04	MW3-20
809465 -05	MW3-25
809465 -06	MW3-30
809465 -07	B7-5
809465 -08	B7-10
809465 -09	B7-15
809465 -10	B7-20
809465 -11	B7-25
809465 -12	B7-30

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW3-10	Client:	Environmental Associates
Date Received:	09/26/18	Project:	Chri-Mar Apts 360052, F&BI 809465
Date Extracted:	09/28/18	Lab ID:	809465-02
Date Analyzed:	09/29/18	Data File:	092859.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	62	142
Toluene-d8	98	55	145
4-Bromofluorobenzene	98	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW3-15	Client:	Environmental Associates
Date Received:	09/26/18	Project:	Chri-Mar Apts 360052, F&BI 809465
Date Extracted:	09/28/18	Lab ID:	809465-03
Date Analyzed:	09/29/18	Data File:	092860.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	98	55	145
4-Bromofluorobenzene	97	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW3-20	Client:	Environmental Associates
Date Received:	09/26/18	Project:	Chri-Mar Apts 360052, F&BI 809465
Date Extracted:	09/28/18	Lab ID:	809465-04
Date Analyzed:	09/29/18	Data File:	092861.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	142
Toluene-d8	99	55	145
4-Bromofluorobenzene	98	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B7-10	Client:	Environmental Associates
Date Received:	09/26/18	Project:	Chri-Mar Apts 360052, F&BI 809465
Date Extracted:	09/28/18	Lab ID:	809465-08
Date Analyzed:	09/29/18	Data File:	092862.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	142
Toluene-d8	99	55	145
4-Bromofluorobenzene	98	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B7-15	Client:	Environmental Associates
Date Received:	09/26/18	Project:	Chri-Mar Apts 360052, F&BI 809465
Date Extracted:	09/28/18	Lab ID:	809465-09
Date Analyzed:	09/29/18	Data File:	092863.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	99	55	145
4-Bromofluorobenzene	98	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B7-20	Client:	Environmental Associates
Date Received:	09/26/18	Project:	Chri-Mar Apts 360052, F&BI 809465
Date Extracted:	09/28/18	Lab ID:	809465-10
Date Analyzed:	09/29/18	Data File:	092838.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	97	55	145
4-Bromofluorobenzene	97	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Environmental Associates
Date Received:	Not Applicable	Project:	Chri-Mar Apts 360052, F&BI 809465
Date Extracted:	09/28/18	Lab ID:	08-2177 mb
Date Analyzed:	09/28/18	Data File:	092828.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Date of Report: 10/05/18
Date Received: 09/26/18
Project: Chri-Mar Apts 360052, F&BI 809465

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 809465-10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	54	48	10-138	12
Chloroethane	mg/kg (ppm)	2.5	<0.5	67	61	10-176	9
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	73	68	10-160	7
Methylene chloride	mg/kg (ppm)	2.5	<0.5	82	77	10-156	6
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	79	74	14-137	7
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	84	79	19-140	6
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	85	81	25-135	5
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	88	83	12-160	6
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	85	80	10-156	6
Trichloroethene	mg/kg (ppm)	2.5	<0.02	85	80	21-139	6
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	84	78	20-133	7

Date of Report: 10/05/18
Date Received: 09/26/18
Project: Chri-Mar Apts 360052, F&BI 809465

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Vinyl chloride	mg/kg (ppm)	2.5	74	22-139
Chloroethane	mg/kg (ppm)	2.5	83	10-163
1,1-Dichloroethene	mg/kg (ppm)	2.5	81	47-128
Methylene chloride	mg/kg (ppm)	2.5	89	42-132
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	86	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	89	68-115
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	90	72-113
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	92	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	92	62-131
Trichloroethene	mg/kg (ppm)	2.5	91	64-117
Tetrachloroethene	mg/kg (ppm)	2.5	87	72-114

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

809465

SAMPLE CHAIN OF CUSTODY

ME 09-26-18

VS4/C03

Send Report To Eric Zuern

Company Environmental Associates, Inc.

Address 1380 112th ave NE #300

City, State, ZIP Bellevue, WA 98004

Phone # 425-455-9025 Fax # 425-455-2316

SAMPLERS (signature) [signature]

PROJECT NAME/NO. Chi-Mai Apts

PO # 36005 C

REMARKS Bill to: Anne Marie ~~[illegible]~~ Kreidler c/o Jay Whitehead, Excel Properties 7850 E Greenlake Dr. N., Suite C Seattle 98103 annemariek@excelfri.com

Page # 1 of 2

TURNAROUND TIME
☑ ~~Standard (2 Weeks)~~ 1 week
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☒ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	chlorinated VOCs by 8260	SVOCs by 8270	HFS							Notes
MW3-5	01A-D	9-26-18	9:45	Soil	4													
MW3-10	02	↓	9:54	↓	4			~~X~~	X									chlorinated only (02–04)
MW3-15	03		9:58		4			~~X~~	X									
MW3-20	04		10:07		4			~~X~~	X									
MW3-25	05		10:15		4													
MW3-30	06		10:30		4													
B7-5	07		1:30		4													
B7-10	08		1:37		4				X									chlorinated only (08–10)
B7-15	09		1:45		4				X									
B7-20	10		1:50		4				X									

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Eric Zuern	EAI	9/26/18	3:25
Received by:	[signature]	DC VO	F&BI	9-26-18	3:25 PM
Relinquished by:					
Received by:			Samples received at 4 °C		

FORMS\COC\COC.DOC

809465

SAMPLE CHAIN OF CUSTODY

ME 09-26-18 2 VS4 & 03

Page # 2 of

Send Report To Eric Erven

Company EAT

Address

City, State, ZIP

Phone # Fax #

SAMPLERS (signature)

PROJECT NAME/NO. Chi - Mar Apts

PO # 36005-2

REMARKS

TURNAROUND TIME
- ☒ Standard (2 Weeks) 1 week
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☒ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS							Notes
B7-25	11A-D	9-26-18	2:00	Soil	4													
B7-30	12	↓	2:07	↓	4													

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Eric Erven	EAT	9/26/18	3:25
Received by:		DOUG	F+BI	9-26-18	3:25 PM
Relinquished by:					
Received by:			Samples received at 4 °C		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

October 8, 2018

Eric Zuern, Project Manager
Environmental Associates, Inc.
1380 112th Ave. NE, 300
Bellevue, WA 98004

Dear Mr Zuern:

Included are the results from the testing of material submitted on September 27, 2018 from the Chri-Mar Apts 36065-2, F&BI 809502 project. There are 13 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
EAI1008R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 27, 2018 by Friedman & Bruya, Inc. from the Environmental Associates Chri-Mar Apts 36065-2, F&BI 809502 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Associates
809502 -01	B7-water
809502 -02	MW4-5
809502 -03	MW4-10
809502 -04	MW4-15
809502 -05	MW4-20
809502 -06	MW4-25
809502 -07	B8-5
809502 -08	B8-10
809502 -09	B8-15
809502 -10	B8-20
809502 -11	B8-25
809502 -12	B8-30

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B7-water	Client:	Environmental Associates
Date Received:	09/27/18	Project:	Chri-Mar Apts 36065-2, F&BI 809502
Date Extracted:	10/02/18	Lab ID:	809502-01
Date Analyzed:	10/02/18	Data File:	100224.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	96	63	127
4-Bromofluorobenzene	95	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Environmental Associates
Date Received:	Not Applicable	Project:	Chri-Mar Apts 36065-2, F&BI 809502
Date Extracted:	10/02/18	Lab ID:	08-2213 mb
Date Analyzed:	10/02/18	Data File:	100213.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	96	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW4-10	Client:	Environmental Associates
Date Received:	09/27/18	Project:	Chri-Mar Apts 36065-2, F&BI 809502
Date Extracted:	10/01/18	Lab ID:	809502-03
Date Analyzed:	10/01/18	Data File:	100128.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	97	55	145
4-Bromofluorobenzene	98	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW4-20	Client:	Environmental Associates
Date Received:	09/27/18	Project:	Chri-Mar Apts 36065-2, F&BI 809502
Date Extracted:	10/01/18	Lab ID:	809502-05
Date Analyzed:	10/01/18	Data File:	100129.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	99	55	145
4-Bromofluorobenzene	97	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW4-25	Client:	Environmental Associates
Date Received:	09/27/18	Project:	Chri-Mar Apts 36065-2, F&BI 809502
Date Extracted:	10/01/18	Lab ID:	809502-06
Date Analyzed:	10/01/18	Data File:	100127.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	99	55	145
4-Bromofluorobenzene	97	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B8-10	Client:	Environmental Associates
Date Received:	09/27/18	Project:	Chri-Mar Apts 36065-2, F&BI 809502
Date Extracted:	10/01/18	Lab ID:	809502-08
Date Analyzed:	10/01/18	Data File:	100130.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	99	55	145
4-Bromofluorobenzene	97	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B8-20	Client:	Environmental Associates
Date Received:	09/27/18	Project:	Chri-Mar Apts 36065-2, F&BI 809502
Date Extracted:	10/01/18	Lab ID:	809502-10
Date Analyzed:	10/01/18	Data File:	100131.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	142
Toluene-d8	98	55	145
4-Bromofluorobenzene	98	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B8-25	Client:	Environmental Associates
Date Received:	09/27/18	Project:	Chri-Mar Apts 36065-2, F&BI 809502
Date Extracted:	10/01/18	Lab ID:	809502-11
Date Analyzed:	10/01/18	Data File:	100132.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	98	55	145
4-Bromofluorobenzene	98	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Environmental Associates
Date Received:	Not Applicable	Project:	Chri-Mar Apts 36065-2, F&BI 809502
Date Extracted:	10/01/18	Lab ID:	08-2179 mb
Date Analyzed:	10/01/18	Data File:	100125.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	62	142
Toluene-d8	99	55	145
4-Bromofluorobenzene	97	65	139

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Date of Report: 10/08/18
Date Received: 09/27/18
Project: Chri-Mar Apts 36065-2, F&BI 809502

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 809470-11 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	50	<0.2	101	36-166
Chloroethane	ug/L (ppb)	50	<1	104	46-160
1,1-Dichloroethene	ug/L (ppb)	50	<1	104	60-136
Methylene chloride	ug/L (ppb)	50	<5	101	67-132
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	96	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	97	70-128
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	97	71-127
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	97	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	99	60-146
Trichloroethene	ug/L (ppb)	50	<1	92	66-135
Tetrachloroethene	ug/L (ppb)	50	<1	92	10-226

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	50	99	99	50-154	0
Chloroethane	ug/L (ppb)	50	103	103	58-146	0
1,1-Dichloroethene	ug/L (ppb)	50	106	106	67-136	0
Methylene chloride	ug/L (ppb)	50	111	102	39-148	8
trans-1,2-Dichloroethene	ug/L (ppb)	50	99	98	68-128	1
1,1-Dichloroethane	ug/L (ppb)	50	98	98	79-121	0
cis-1,2-Dichloroethene	ug/L (ppb)	50	97	97	80-123	0
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	95	96	73-132	1
1,1,1-Trichloroethane	ug/L (ppb)	50	99	100	83-130	1
Trichloroethene	ug/L (ppb)	50	92	92	80-120	0
Tetrachloroethene	ug/L (ppb)	50	93	93	76-121	0

Date of Report: 10/08/18
Date Received: 09/27/18
Project: Chri-Mar Apts 36065-2, F&BI 809502

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 809502-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	47	49	10-138	4
Chloroethane	mg/kg (ppm)	2.5	<0.5	59	63	10-176	7
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	64	71	10-160	10
Methylene chloride	mg/kg (ppm)	2.5	<0.5	71	79	10-156	11
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	68	74	14-137	8
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	73	79	19-140	8
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	75	81	25-135	8
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	78	83	12-160	6
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	75	80	10-156	6
Trichloroethene	mg/kg (ppm)	2.5	<0.02	76	79	21-139	4
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	76	80	20-133	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Vinyl chloride	mg/kg (ppm)	2.5	68	22-139
Chloroethane	mg/kg (ppm)	2.5	80	10-163
1,1-Dichloroethene	mg/kg (ppm)	2.5	88	47-128
Methylene chloride	mg/kg (ppm)	2.5	91	42-132
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	87	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	90	68-115
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	90	72-113
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	90	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	90	62-131
Trichloroethene	mg/kg (ppm)	2.5	87	64-117
Tetrachloroethene	mg/kg (ppm)	2.5	87	72-114

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

809502

SAMPLE CHAIN OF CUSTODY

ME 09/27/18 VW1/VS4/CI3

Page # 1 of 2

Send Report To Eric Zuern

Company Environmental Associates, Inc.

Address 1380 112th ave NE, #300

City, State, ZIP Bellevue, WA 98004

Phone # 425-455-9025 Fax # 425-455-2316

SAMPLERS (signature)

PROJECT NAME/NO. Chri-Mar Apts

PO# 36065.2

REMARKS Bill to Anne Marie Kreidler same info from previous submittal on 9-26-18

TURNAROUND TIME
- ☒ Standard (2 Weeks) 1 week
- ☐ RUSH
- Rush charges authorized by

SAMPLE DISPOSAL
- ☒ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	Chlorinated VOCs by8260	SVOCs by 8270	HFS	Notes
B7-water	01A-D	9-27-18	9:08	Water	4				X			chlorinated only
MW4-5	02		9:30	Soil	4							
MW4-10	03		9:35		4				X			
MW4-15	04		9:38		4				X			
MW4-20	05		9:53		4				X			
MW4-25	06		10:00		4				X			
B8-5	07		12:36		4							
B8-10	08		12:45		4				X			
B8-15	09		12:48		4							
B8-20	10		12:53		4				X			

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Eric Zuern	EAI	9-27-18	3:15
Received by:	Nhan Phan	FeBI	9/27/18	3:15
Relinquished by:				
Received by:		Samples received at 4 °C		

FORMS\COC\COC.DOC

809502

SAMPLE CHAIN OF CUSTODY ME 09/27/18

VW1/VS4/CT3

Page # 2 of 2

Send Report To Eric Zoem

Company EAT

Address

City, State, ZIP

Phone # Fax #

SAMPLERS (signature)

PROJECT NAME/NO. Chin-Mar Apts

PO# 36005-2

REMARKS

TURNAROUND TIME
☒ Standard ~~(2 Weeks)~~ 1 week
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☒ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	Chlorinated VOCs by 8260	SVOCs by 8270	HFS							Notes
B8-25	11A-D	9-27-8	1:00	Soil	4				X									chlorinated only
B8-30	21	9-27-18	1:07	↓	4													

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Eric Zoem	EAT	9/27/18	3:15
Received by:		Nhan Pham	FBI	9/27/18	3:15
Relinquished by:					
Received by:			Samples received at 4 °C		

CASE NARRATIVE

This case narrative encompasses samples received on October 15, 2018 by Friedman & Bruya, Inc. from the Environmental Associates Chri-Mar Apts 36005-2, F&BI 810290 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Associates
810290 -01	MW1-water
810290 -02	MW4-water

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW1-water	Client:	Environmental Associates
Date Received:	10/15/18	Project:	Chri-Mar Apts 36005-2, F&BI 810290
Date Extracted:	10/16/18	Lab ID:	810290-01
Date Analyzed:	10/16/18	Data File:	101612.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	96	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	1.7
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	11
Tetrachloroethene	220 ve

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW1-water	Client:	Environmental Associates
Date Received:	10/15/18	Project:	Chri-Mar Apts 36005-2, F&BI 810290
Date Extracted:	10/16/18	Lab ID:	810290-01 1/10
Date Analyzed:	10/17/18	Data File:	101710.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	96	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<2
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	<10
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	11
Tetrachloroethene	220

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW4-water	Client:	Environmental Associates
Date Received:	10/15/18	Project:	Chri-Mar Apts 36005-2, F&BI 810290
Date Extracted:	10/16/18	Lab ID:	810290-02
Date Analyzed:	10/17/18	Data File:	101709.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	96	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Environmental Associates
Date Received:	Not Applicable	Project:	Chri-Mar Apts 36005-2, F&BI 810290
Date Extracted:	10/16/18	Lab ID:	08-2332 mb
Date Analyzed:	10/16/18	Data File:	101608.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	95	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Date of Report: 10/23/18
Date Received: 10/15/18
Project: Chri-Mar Apts 36005-2, F&BI 810290

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 810289-17 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	50	<0.2	98	36-166
Chloroethane	ug/L (ppb)	50	<1	97	46-160
1,1-Dichloroethene	ug/L (ppb)	50	<1	99	60-136
Methylene chloride	ug/L (ppb)	50	<5	96	67-132
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	93	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	94	70-128
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	95	71-127
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	92	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	97	60-146
Trichloroethene	ug/L (ppb)	50	<1	90	66-135
Tetrachloroethene	ug/L (ppb)	50	<1	91	10-226

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	50	116	103	50-154	12
Chloroethane	ug/L (ppb)	50	126	112	58-146	12
1,1-Dichloroethene	ug/L (ppb)	50	114	108	67-136	5
Methylene chloride	ug/L (ppb)	50	110	106	39-148	4
trans-1,2-Dichloroethene	ug/L (ppb)	50	105	97	68-128	8
1,1-Dichloroethane	ug/L (ppb)	50	104	98	79-121	6
cis-1,2-Dichloroethene	ug/L (ppb)	50	106	98	80-123	8
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	96	95	73-132	1
1,1,1-Trichloroethane	ug/L (ppb)	50	108	101	83-130	7
Trichloroethene	ug/L (ppb)	50	97	94	80-120	3
Tetrachloroethene	ug/L (ppb)	50	97	94	76-121	3

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

SAMPLE CHAIN OF CUSTODY

810290 ME 10/15/18 Page # 1 of 1 VWI

Report To Eric Zuern
Company Environmental Associates, Inc.
Address 1380 112th ave NE #300
City, State, ZIP Bellevue, WA 98004
Phone 425-453-8005 Email info@environmentalassociatesinc.com

SAMPLERS (signature) Eric Zuern

PROJECT NAME: Chri-Mar Apts
PO #: 36005-2

REMARKS:

INVOICE TO: Bill to Mary Kneidel same as prev number this order

TURNAROUND TIME
☑ Standard Turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
MW1-water	01AD	10-15-18	15:30	Water	4					+							3 chlorinated only
MW4-water	02 A-D	↓	11:30	↓	4					+							
											Samples received at						4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Eric Zuern	Eric Zuern	EAI	10-15-18	12:33
Received by:	Dhan Phan	FEBI	10/15/18	1233
Relinquished by:				
Received by:				

Samples received at _____ °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282