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March 19, 2021

James P. Kiernan
Chevron Environmental Management and Real Estate Company
6001 Bollinger Canyon Road
San Ramon, CA 94583
(jkiernan@chevron.com)

Re: Ecology Comments on Draft Remedial Investigation Work Plan
Texaco 211577 Monterey
631 Queen Anne Avenue N, Seattle, WA 98109
Facility Site No.: 77774779
Cleanup site ID No.: 6663

Dear James Kiernan:

On December 10, 2020, the Washington State Department of Ecology (Ecology) received the *Draft Remedial Investigation Work Plan (December 2020 Draft RIWP)*, for the Texaco 211577 Monterey facility (Site). The Site is generally located at 631 Queen Anne Avenue North in Seattle (the Property), and consists of the Property and multiple nearby properties and rights-of-way. Ecology appreciates your timely submission of this work plan.

Currently, the Site cleanup is conducted under an *Agreed Order No. 16537 (AO 16537)*, effective August 21, 2019. The *AO 16537* requires Chevron Environmental Management Company (CEMC) to submit an Agency Review Draft Remedial Investigation Work Plan (Draft RIWP) no later than 120 days after the AO effective date (December 19, 2019). Ecology issued a *Response to Remedial Investigation Work Plan Extension Request letter, dated December 27, 2019 (December 2019 Ecology Letter)*, to approve an extension requested by CEMC for submitting the Draft RIWP. The *December 2019 Ecology Letter* required CEMC to conduct an off-Property monitoring well/soil vapor probe survey and groundwater sampling, and submit the Draft RIWP no later than 60 days after receiving validated data of the off-Property groundwater sampling.

Arcadis U.S., Inc., (Arcadis) completed the off-Property survey and sampling in August 2020, and submitted the *December 2020 Draft RIWP* on behalf of CEMC for Ecology's review. The submission of the *December 2020 Draft RIWP* meets the requirement of *AO 16537* and *December 2019 Ecology Letter*.

Based on a review of the *December 2020 Draft RIWP*, Ecology provides the following comments:

1. Ecology requires updating text, tables, and figures, to provide accurate Site information that complies with *AO 16537* and Ecology guidance.

Ecology requires updating the following parts of the *December 2020 Draft RIWP*:

- Tables within the document text shall be labeled with table numbers and titles, and included in the Table of Contents.

- Section 2.1 and 2.2 shall provide accurate and complete information of monitoring well and vapor probe locations, property use, presence of historic underground and aboveground storage tanks, and other potential sources of contamination. For example, the table in this section does not list the monitoring wells on the Queen Anne Arms Apartments, Alvena Vista Apartments, 18 Mercer Street, and Shah Safari properties; the properties east of Queen Anne Avenue North shall be discussed, including Counterbalance Park (formerly Unocal 306568 service station, Ecology facility #599728334), the Barclay Square on Queen Anne Condominium property (formerly Ron Isaacs Property, Ecology facility #37384634), and MarQueen property.

- Section 2.4 describes the Site environmental setting. All Site monitoring wells are screened in the shallow aquifer except for monitoring well MP-2, which was installed at a total depth of 165 feet below ground surface (bgs) and screened in a lower aquifer[1]. This monitoring well was observed to have a static water level at 116 feet bgs in August 2020[2]. Section 2.4 shall include a brief discussion of the depth to groundwater in monitoring well MP-2 and the presence of a deeper aquifer.

- Section 3.1 discusses the historic soil vapor and indoor air investigations. Table 1 provides the shallow soil vapor sampling results. Section 3.1 and Table 1 shall include the soil vapor sampling results in 2002 and 2004 from two soil vapor probes DVP-1 and DVP-2 that were installed beneath the Monterey Apartments building.

- Section 5.2 provides the results of the August 2020 monitoring well/soil vapor probe assessment. This section shall include a complete list of the monitoring wells that were not sampled in August 2020, and provide an explanation of the issues that prevented sampling of these wells.

- Section 7.4 describes the data gaps associated with soil and groundwater characterization. The following additional data gaps shall be included in this section: 1) north of the Property and Del Roy Apartments to delineate the northern boundary of the soil and groundwater contamination; 2) south of the Monterrey Apartments to delineate the southern boundary of the soil and groundwater contamination; 3) east of the Property to

[1] CEMC, *Final Remedial Investigation and Site Summary Report, Former Texaco Service Station/Chevron Site No. 211577, 631 Queen Anne Avenue North, Seattle, Washington*, August 20, 2007.
[2] Arcadis email correspondence, *RE: Texaco 211577 Monterey - Status of a few monitoring wells*, January 13, 2021.

delineate the eastern boundary of the groundwater contamination and potential impact from up-gradient sources of contamination.

- Table 4 shall provide accurate information about current well status and shall specify wells that were destroyed versus wells that were properly decommissioned per WAC 173-160-460. For example, monitoring wells RW-2, SSI-W2, MW-10, and MW-12 were not decommissioned during Property redevelopment; monitoring well MW-24 was damaged in 2020 instead of being properly decommissioned; DB-7 and DB-11 are soil borings instead of monitoring wells.

- Tables 5 and 6 shall provide comprehensive historical groundwater analytical results, including all analytes that have been analyzed, such as metals and inorganic compounds, other volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs).

- Table 7 shall provide the date when the Property monitoring well was properly decommissioned per WAC 173-160-460, or destroyed.

- Table 8 shall provide accurate and complete historic soil analytical data. For example, there are two sets of soil borings (with similar boring ID) installed on Property: borings P1 through P7 installed on 5/22/2017, and borings P01 through P09 on 5/2/2012. Please include the analytical results for both sets of soil samples, with correct sample collection dates and depths.

- Figures 2 and Figures 4 through 8 shall depict accurate and current names of all buildings/properties. For example, the Monterey Apartments is not labeled on any of these figures; the Bungalows Apartments is labeled as Lindberg Apartments on Figures 4, 7, and 8; the Masonry shall be labeled as Barclay Square on Queen Anne Condominium on Figure 2.

- Figure 3 shall depict all historical soil borings and monitoring well locations on Property. For example, soil borings P01 through P09, DP-1 through DP-7, SP-1, and DB-3 are not depicted on this figure.

- Figures 4 through 8 shall depict accurate locations of all monitoring well/soil boring/soil vapor probes. For example, monitoring well RW-2 is located off-Property to the southwest; soil boring DB-4 is located off-Property to the south; DB-4, DB-5, DB-7, and DB-11 are soil borings, instead of monitoring wells; soil vapor probes installed beneath Del Roy and Monterey Apartments buildings shall be included.

- Figure 7 shall include all soil boring locations. For example, soil borings SP-2 and SP-4 are not depicted on the figure; soil borings P4, P5, P6 and P7 have been over-excavated.

- Appendix D shall include all historic boring logs in chronological order. For example, the boring logs for monitoring wells MW-27 through MW-29 are not included; duplicate

boring logs shall be removed; monitoring wells that were installed on or for other cleanup sites (e.g. formerly Unocal 306568 service station) shall be placed in a separate Appendix.

Ecology also requires updating the following parts of the *December 2020 Draft RIWP* to comply with Ecology guidance:

- Section 6, Table 5, and Figure 6 shall be updated in accordance with Ecology guidance regarding diesel-range and heavy oil-range petroleum hydrocarbons (DRO and ORO) cleanup levels. Ecology guidance[3,4] requires comparing the sum of the DRO and ORO concentrations in each sample to the MTCA Method A cleanup level of 2,000 milligrams per kilogram (mg/kg) for soil, and 500 micrograms per liter (µg/L) for groundwater. For example, the groundwater sample collected from monitoring well MW-25 in August 2020 contained a sum of DRO and ORO concentrations of 751 µg/L, which exceeded the MTCA Method A groundwater cleanup level.

- Section 9.2.1 describes the procedure for soil vapor sampling probe installation. This section proposes to install soil vapor probes to a total depth of 5 feet bgs and screened from 4.5 to 5 feet bgs. Ecology's guidance[5] indicates that soil gas samples "*should not be collected from depths shallower than 5 feet bgs (unless located sub-slab)*", due to the possibility of diluting the collected soil gas with atmospheric air.

  Therefore, the proposed soil vapor probes shall be screened at depths of at least from 5 to 5.5 feet bgs, or immediately located beneath the basement floor slab (for vapor probes installed at Del Roy and Monterey Apartments only).

2. Ecology requires inclusion of soil and groundwater data collected at the U-Park lot, Queen Anne Arms, and Tup Tim Thai properties.

Section 5.2.1 of the *December 2020 Draft RIWP* indicates that five additional monitoring wells were installed on the U-Park lot, Queen Anne Arms, and Tup Tim Thai Properties. Figure 8 of the *December 2020 Draft RIWP* depicts these monitoring wells (OTBMW-1, OTBMW-2, QAAMW-1, PESMW-1, and PESMW-2).

PES Environmental (PES) installed the monitoring wells on behalf of the owner of the properties (SLM Mercer LLC), in preparation for redevelopment of these properties. PES also installed five soil borings SB-1 through SB-5 on the U-Park lot and Queen Anne Arms

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[3] *Determining Compliance with Method A Cleanup Levels for Diesel and Heavy Oil, Implementation Memorandum #4, Ecology Publication 04-09-086,* June 2004; https://apps.ecology.wa.gov/publications/SummaryPages/0409086.html

[4] *Guidance for Remediation of Petroleum Contaminated Sites, Ecology Publication No. 10-09-057,* Revised June 2016; https://apps.ecology.wa.gov/publications/SummaryPages/1009057.html

[5] *Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action, Ecology Publication No. 09-09-047*, revised April 2018; https://apps.ecology.wa.gov/publications/SummaryPages/0909047.html

properties[6]. PES collected soil and groundwater samples from the monitoring wells and soil borings in 2018 and 2019, which provided important Site characterization data on the western portion of the Site.

Ecology requires inclusion of the soil and groundwater data collected from these monitoring wells and soil borings into the *December 2020 Draft RIWP*.

3. Ecology requires a vapor intrusion risk evaluation for the Del Roy and Monterey Apartments buildings.

The monitoring well/soil vapor probe assessment and groundwater sampling event in August 2020 obtained the following results associated with vapor intrusion evaluation:

- The two soil vapor probes NV-1 and NV-2, located north of the Queen Anne Arms Apartments, are in fair condition. However, the current status of the soil vapor probes beneath the Monterey and Del Roy Apartments buildings was not assessed.

- The benzene concentrations exceeded the MTCA Method B groundwater screening level for vapor intrusion, in the groundwater samples collected from monitoring wells MW-4, MW-18, and MW-21. Monitoring wells MW-4 and MW-18 are located immediately south of Del Roy and Monterey Apartments buildings, respectively; monitoring well MW-21 is located on the Bank of America property.

- Based on the groundwater sampling results, the *December 2020 Draft RIWP* proposes to install an additional soil vapor probe SVP-1 near monitoring well MW-21 on the Bank of America property. However, no soil vapor sampling and vapor intrusion evaluation is proposed for the Del Roy and Monterey Apartment buildings.

Historically, vapor intrusion risk evaluation was conducted for the Monterey and Del Roy Apartments buildings from 2002 to 2009.

- In 2002, two soil vapor probes (DVP-1 and DVP-2) were installed at the basement of the Monterey Apartments building, with screen interval between 12 to 18 inches below the top basement slab. The vapor probe locations are depicted on Figures 4 through 8 of the *December 2020 Draft RIWP*.

  Sub-slab soil gas samples were collected from the soil vapor probes in 2002 and 2004. Multiple VOC concentrations were detected above the MTCA Method B screening levels.

- In 2008, two soil vapor probes (DRVP-1 and DRVP-2) were installed immediately below the basement (sub-slab) of the Del Roy Apartments building (**Figure 1**); one vapor probe

[6] PES, *Limited Phase II Investigation Report, Queen Anne Arms and U-Park Parcels, 621 First Avenue West and 101 West Roy Street, Seattle, Washington*, November 12, 2020.

(MVP-1) and one temporary vapor probe (MVPT-1) were installed sub-slab in the basement of Monterey Apartments building (**Figure 2**)[7].

Sub-slab soil gas samples were collected from the soil vapor probes in January and August 2009, along with two indoor air samples collected from the basement level of the Del Roy and Monterey Apartments building, respectively, and one ambient air sample collected outside in the alley between the two buildings. Multiple VOC concentrations were detected above the MTCA Method B screening levels (for soil gas) or cleanup levels (for air), including in the ambient air samples.

- Ecology has determined that the historic soil gas and air sampling results are incomplete because these samples were not analyzed for air-phase petroleum (APH). In addition, these samples were collected more than 10 years ago; therefore, the sampling results are not likely representative of current conditions.

Therefore, Ecology requires a vapor intrusion risk evaluation for the Del Roy and Monterey Apartments buildings:

- Ecology requires assessment of the locations and current status of the previously installed soil vapor probes DVP-1, DVP-2, DRVP-1, and DRVP-2, and MVP-1. If these soil vapor probes cannot be used for sampling, Ecology requires installation of at least two soil vapor probes under each of the Del Roy and Monterey Apartments building. Soil gas samples shall be collected from the soil vapor probes beneath the Del Roy and Monterey Apartments buildings.

- At least one indoor air sample shall be collected at the basement level of the Del Roy and Monterey Apartments building, respectively, along with at least one ambient air sample outside of the buildings. Section 9 of the *December 2020 Draft RIWP* shall be updated to include the Scope of Work and Sampling and Analysis Plan (SAP) for air sampling.

- The soil gas and air samples collected from the Del Roy and Monterey Apartments buildings, along with the soil gas samples proposed in Section 9.2 of the *December 2020 Draft RIWP*, shall be submitted for the analysis listed in Section 9.2.2.2.

- The vapor intrusion evaluation shall be conducted at least twice, approximately 6 months apart, to evaluate the seasonal variability.

4. Ecology requires further assessing the monitoring well status, and repairing, replacing, or decommissioning monitoring wells depending on their locations and current status.

During the August 2020 groundwater sampling event, multiple monitoring wells were not sampled due to various issues, such as inaccessibility (e.g. parked cars), obstructions in wells,

[7] SAIC, *January 2009 Vapor Sampling Event Summary Report, Former Texaco Service station/Chevron Site No. 211577, 631 Queen Anne Avenue North, Seattle, WA*, April 7, 2009.

and insufficient water. The *December 2020 Draft RIWP* proposes the following actions to solve issues associated with the monitoring wells that were not sampled in August 2020:

- Section 9.4.1 proposes to install two new monitoring wells MW-3A and MW-11A to replace existing monitoring wells at the MW-3/VP-7/MW-19 and MW-11 locations, due to the obstructions in these wells at approximately 10 to 11 feet bgs. Ecology agrees with these two replacement monitoring wells.

- Section 9.4.2 proposes to redevelop and cap/secure monitoring well MW-22/DPE-8 since it was observed to not have a cap during the August 2020 assessment. Ecology agrees with the well redevelopment and capping.

In addition to the actions proposed in the *December 2020 Draft RIWP*, Ecology requires the following additional work:

- Ecology requires properly decommissioning monitoring wells MW-3/VP-7, MW-11, and MW-19 in accordance with WAC 173-160-460.

    - After these monitoring wells are decommissioned, replacement wells are needed. The *December 2020 RIWP* proposes replacement wells for MW-3/VP-7 and MW-11, but not for MW-19.

    - Monitoring well MW-19 is located south of monitoring well MW-18. Monitoring well MW-18 contained concentrations of gasoline-range petroleum hydrocarbons (GRO), DRO, and benzene above the MTCA Method A groundwater cleanup levels in August 2020. In addition, no soil samples have been collected from monitoring wells MW-18 and MW-19 to delineate the southern boundary of soil contamination. One monitoring well shall be installed in this area. This issue is addressed below in item #5.

- Ecology requires properly decommissioning monitoring well MW-24 in accordance with WAC 173-160-460.

    - Monitoring well MW-24 was reportedly damaged during construction activities associated with Property redevelopment[8]. The *December 2020 RIWP* proposes a monitoring well MW-36 in the close vicinity of monitoring well MW-24.

- Ecology requires properly decommissioning and replacing monitoring well MW-23, located south of the Property.

[8] The Riley Group, Inc., *Project Summary (June 8 through June 12, 2020), Texaco 211577 Monterey Site – Roystone Redevelopment, Seattle, Washington 98109*, June 16, 2020.

- Monitoring well MW-23 was installed in October 2004. This monitoring well has not been sampled since December 2007[9], likely due to a shallower screen interval (5.5 to 13.5 feet bgs) and insufficient yield, or destruction of the well. When last sampled in December 2007, monitoring well MW-23 contained a DRO concentration above the MTCA Method A groundwater cleanup level. The current well status is unknown.

- A soil sample collected at 10 feet bgs from the MW-23 well boring contained concentrations of GRO, benzene, toluene, ethylbenzene, and xylenes (BTEX) above the MTCA Method A soil cleanup levels.

- Ecology requires confirming the current status of monitoring well MW-23. If the well is located, Ecology requires properly decommissioning monitoring well MW-23 in accordance with WAC 173-160-460.

- Ecology requires installing a replacement well for monitoring well MW-23, with a deeper screen interval consistent with other Site monitoring wells and Site groundwater depths. Soil samples shall be collected during the replacement well installation per Section 9.3.1, especially at 10 feet bgs.

- This replacement monitoring well is to assess the current soil and groundwater condition at the historic contaminated area immediately south of the Property.

- Ecology requires decommissioning and replacing monitoring wells VP-2 and DPE-9, located south of the Del Roy Apartments building.

  - Monitoring well VP-2 had insufficient water for sampling in August 2020. This well has a shallower interval (5 to 15 feet bgs), and has not been sampled since July 2005 due to insufficient water[9].

  - Monitoring well DPE-9 is located west of VP-2. This well also has a shallower screen interval (10.5 to 15.5 feet bgs), and contained insufficient water in most of the historical sampling events[9].

  - A soil sample collected at 13.5 feet bgs from monitoring well DPE-9 contained concentrations of GRO, BTEX, and total naphthalenes above the MTCA Method A soil cleanup levels. In addition, the soil samples collected at 1 and 6 feet below the top of basement slab (the top of basement slab is approximately 9 feet bgs[1]) from two soil vapor probes (DVP-1 and DVP-2) to the south, contained concentrations of GRO, DRO, and total naphthalenes above the MTCA Method A soil cleanup levels.

  - Ecology requires properly decommissioning monitoring wells DPE-9 and VP-2 in accordance with WAC 173-160-460. A replacement monitoring well shall be installed in the vicinity of these two monitoring wells, with a deeper screen interval

[9] SAIC, *First Semiannual 2013 Groundwater Monitoring Report, Former Texaco Service Station No. 211577, 631 Queen Anne Avenue North, Seattle, Washington*, July 26, 2013.

consistent with other Site monitoring wells and Site groundwater depth. Soil samples shall be collected during the replacement well installation per Section 9.3.1, especially at 10, 13.5 and 15 feet bgs.

- This replacement monitoring well is to assess the current soil and groundwater condition south of the Del Roy Apartments building.

- Ecology requires decommissioning and replacing monitoring MP-1, located northeast of the Alvena Vista Apartments building.

  - Monitoring well MP-1 was not sampled in August 2020 due to a vehicle parked over the monument[2]. Historically, this well contained insufficient water so no groundwater sample has been collected[9].

  - Ecology requires properly decommissioning monitoring well MP-1 in accordance with WAC 173-160-460, and installing a replacement monitoring well with a screen interval consistent with other Site monitoring wells and Site groundwater depths. Soil samples shall be collected during the replacement well installation per Section 9.3.1.

  - Soil boring DB-4, and monitoring wells DPE-3 and VP-8/MW-7 have exceeded the MTCA Method A cleanup levels in soil and/or groundwater. The replacement monitoring well for MP-1 is to assess the current soil and groundwater condition south of these soil borings and monitoring wells, and delineate the southern boundary of the soil and groundwater contamination.

- Ecology requires repairing, or decommissioning/replacing monitoring well DB-1/MW-12 located southeast of the Property.

  - Monitoring well DB-1/MW-12 was reportedly damaged during a utility work associated with Property redevelopment[10]. Ecology requires repairing monitoring well DB-1/MW-12 so the well can be sampled.

  - If the well is beyond repair, Ecology requires properly decommissioning monitoring well DB-1/MW-12 in accordance with WAC 173-160-460, and installing a replacement monitoring well with a screen interval consistent with other Site monitoring wells and Site groundwater depths. Soil samples shall be collected during the replacement well installation following the procedure described in Section 9.3.1, if installed.

  - Monitoring well DB-1/MW-12 (if restored), or the replacement well is to assess the soil and groundwater conditions east (up-gradient) of the Property

[10] Arcadis email correspondence, *Chevron 211577 Queen Anne - MW-12 damage*, January 4, 2021.

- Ecology requires repairing, or decommissioning/replacing monitoring wells RW-2 and RW-5, located immediately southwest of the Property.

    - Monitoring well RW-5 reportedly has the well cap unable to be removed[2]. Ecology requires repairing monitoring well RW-5 so the well can be sampled.

    - Monitoring well RW-2 is located east of monitoring well RW-5; the current status of monitoring well RW-2 is unknown. Ecology requires assessing the current status of monitoring well RW-2.

    - If either of these monitoring wells are beyond repair, the monitoring well shall be properly decommissioned in accordance with WAC 173-160-460.

    - If both of the monitoring wells cannot be used for sampling, a replacement monitoring well shall be installed for monitoring wells RW-2 and RW-5 with a screen interval consistent with other Site monitoring wells and Site groundwater depths. Soil samples shall be collected during the replacement well installation per Section 9.3.1, if installed.

    - Monitoring wells RW-2 and RW-5 (if restored), or the replacement well are to assess the current soil and groundwater condition immediately southwest (down-gradient) of the Property.

- Ecology requires confirming the current status of monitoring wells SSI-W2 and DB-8/MW-15, and repairing/replacing the monitoring wells, where applicable.

    - Monitoring wells SSI-W2 and DB-8/MW-15 were not sampled in August 2020 due to the presence of construction equipment or vehicles. Ecology requires confirming the current status of these two monitoring wells.

    - If either of the monitoring wells needs repair, Ecology requires repairing the well so the well can be sampled.

    - If either of the monitoring wells is beyond repair, the monitoring well shall be properly decommissioned in accordance with WAC 173-160-460. A replacement monitoring well shall be installed with a screen interval consistent with other Site monitoring wells and Site groundwater depths. Soil samples shall be collected during the replacement well installation per Section 9.3.1, if installed.

    - Monitoring well SSI-W2 (or the replacement well) is to assess the current soil and groundwater condition north and up-gradient of the Property.

    - Monitoring well DB-8/MW-15 (or the replacement well) is to assess the current soil and groundwater condition along 1st Avenue West, southwest of the Monterey Apartments.

- Ecology requires confirming the current status of the other monitoring wells that were not sampled in August 2020, and conducting necessary repairs or decommissioning.

    - Monitoring wells MW-10, DB-6/MW-14, DPE-1, DPE-3, and DPE-4 were not sampled due to the presence of construction equipment, vehicles, or a dumpster at the well location. Monitoring well RW-3 was not sampled because the presence of a large vault at the well location that could not be safely removed[2].

    - Ecology requires confirming the current status of these monitoring wells (MW-10, DB-6/MW-14, DPE-1, DPE-3, DPE-4, and RW-3), and conducting necessary work to restore well integrity if any of these monitoring wells is damaged.

    - If any of these monitoring wells is beyond repair, the well shall be properly decommissioned in accordance with WAC 173-160-460.

- Please note after the *December 2020 Draft RIWP* is updated, additional work may be needed after Ecology reviews additional data. Ecology will work with CEMC to determine additional work, if needed.

5. Ecology requires installing additional groundwater monitoring wells to delineate the extents of the contaminated soil and groundwater.

Sections 9.3 and 9.4 of the *December 2020 Draft RIWP* propose to install eight groundwater monitoring wells MW-36 through MW-43. These proposed monitoring well locations are depicted on Figure 8 of the *December 2020 RIWP*. Ecology agrees with these monitoring well locations.

Based on a review of Site soil and groundwater data, Ecology has determined that the following additional monitoring wells shall be installed. Soil samples shall be collected during the monitoring well installation per Section 9.3.1.

- One monitoring well east of the Property, on the right-of-way (ROW) of Queen Anne Avenue North, between monitoring wells SSI-W1 and DB-1/MW-12. This monitoring well is to assess the current soil and groundwater condition east (up-gradient) of the Property.

- One or two monitoring wells north of the Del Roy Apartments building, along the West Roy Street ROW. The monitoring wells are to delineate the northern boundary of the soil and groundwater contamination.

- One monitoring well north of Alvena Vista Apartments building, south of monitoring well MW-19 (MW-19 will be decommissioned). This monitoring well is to assess the current soil and groundwater condition south of monitoring wells VP-6/DPE-1, MW-18, and MW-19, and delineate the southern boundary of the soil and groundwater contamination.

- One monitoring well south of Alvena Vista Apartments building, south of monitoring well VP-5/MW-5. This monitoring well is to delineate the southern boundary of the soil and groundwater contamination.

6. Ecology requires addition of naphthalenes analysis on selective soil samples.

Historically, concentrations of total naphthalenes exceeded the MTCA Method A soil cleanup level in the soil samples collected from the southern and western portions of the Property (DP-3, DP-5, DP-6, DP-7, DPE-5, and DPE-7), as well as from the Del Roy and Monterey Apartments properties (DVP-1, DVP-2, DB-4, DB-5, and DPE-9). It appears that naphthalene contamination in soil was present on the southern and western portions of the Property, and extended to the south and west beyond the Property boundaries.

The western boundary of the naphthalene contamination in soil appears to be delineated by soil boing DB-7, DB-6/MW-14, and DB-8/MW-15. However, the southern boundary of the naphthalene contamination in soil has not been delineated.

Ecology requires addition of naphthalenes analysis for the soil samples that are collected from the Del Roy, Monterey, Bungalows, and Alvena Vista Apartments properties. Section 9.3.2 of the *December 2020 Draft RIWP* shall be updated to add the naphthalene analysis.

7. Ecology requires concurrent sampling of all monitoring wells for complete analysis.

Section 9.4.2 of the *December 2020 Draft RIWP* provides a list of groundwater analysis. Ecology has determined the following analysis shall also be included:

- Arsenic.

  A few Site monitoring wells were historically analyzed for arsenic in groundwater. Arsenic concentrations exceeded the MTCA Method A groundwater cleanup level in Property monitoring wells MW-10 and RW-4, and off-Property monitoring wells VP-7/MW-3, MW-4, and DB-6/MW-14; the maximum detected arsenic concentration was 97.3 µg/L (Well VP-7/MW-3, 2002)[1].

  The *December 2020 Draft RIWP* states that the arsenic concentrations "*may be attributed to background arsenic groundwater concentrations in the region*". Ecology does not agree with the statement. Arsenic analysis is required.

- Vinyl Chloride (VC).

  Halogenated VOCs including tetrachloroethene (PCE), trichloroethene (TCE), and cis-1,2-dichloroethene (cis-1,2-DCE) were detected at concentrations above the MTCA Method A or Method B groundwater cleanup levels in multiple monitoring wells. VC is

a daughter degradation product of PCE, TCE, and 1,2-cis-DCE, and shall be analyzed for groundwater samples.

In addition, Section 9.4.2 proposes to analyze polychlorinated biphenyls (PCBs) for monitoring wells located downgradient of the former waste oil underground storage tank (UST). Ecology agrees with the additional PCB analysis.

- One waste oil UST and two underground hoists were discovered on Property in 2020. In accordance with WAC 173-360-900, Table 830-1, groundwater samples shall be additionally analyzed for full list of VOCs, carcinogenic polycyclic aromatic hydrocarbons (cPAHs), and PCBs for waste oil and heavy oil releases.

- Historically, groundwater samples from multiple monitoring wells on- and off-Property were analyzed for full list of VOCs and cPAHs. cPAHs were detected below the laboratory detection limits. VOCs were detected below the MTCA Method A or B groundwater cleanup levels, except for BTEX, naphthalene, PCE, TCE, cis-1,2-DCE, 1,3,5-trimethylbenzene and 1,2,4-trimethylbenzene. Therefore, cPAHs and full VOC analysis is not necessary.

- PCBs have not been analyzed for off-Property monitoring wells. The monitoring wells located down-gradient of the waste oil UST and hoists shall be analyzed for PCBs. These monitoring wells include new well MW-38, existing well RW-2 (or the replacement well), and replacement well for MW-23.

Therefore, Ecology requires sampling all existing and new monitoring wells (including the five PES monitoring wells) during a single sampling event. Section 9.4.2 of the *December 2020 Draft RIWP* shall be updated to include the following analysis:

- Groundwater samples from all Site monitoring wells shall be analyzed for:

    - GRO, DRO, and ORO.
    - BTEX.
    - PCE, TCE, cis-1,2-DCE, and VC.
    - 1,3,5-trimethylbenzene and 1,2,4-trimethylbenzene.
    - Naphthalene, 1-methyl naphthalene, and 2-methyl naphthalene.
    - Total and dissolved lead.
    - Total and dissolved arsenic.

- Groundwater samples from monitoring wells MW-38 and RW-2 (or the replacement well), and replacement well for MW-23, shall be additionally analyzed for PCBs.

- After the first round of groundwater sampling, the groundwater analysis list shall be adjusted based on the sampling results.

8. Ecology requires inclusion of a Site-Specific Health and Safety Plan (HASP).

A Site-Specific HASP shall be included in the *December 2020 RIWP*, in accordance with Exhibit B of the *AO 16537*.

Again, Ecology appreciates your timely submission of the *December 2020 Draft RIWP*. We look forward to working together to accomplish this work and the ultimate cleanup of the Site. Per Exhibit C of the *AO 16537*, please incorporate Ecology's comments and submit a revised RIWP no later than 45 days after receipt of this letter.

If you have any questions about this letter, please contact me by phone at (425) 229-2565 or by email at jing.song@ecy.wa.gov.

Sincerely,

Jing Song
Site Manager
Toxics Cleanup Program, NWRO

Enclosures: Figures

cc: Christopher Dotson, Arcadis (christopher.dotson@arcadis.com)
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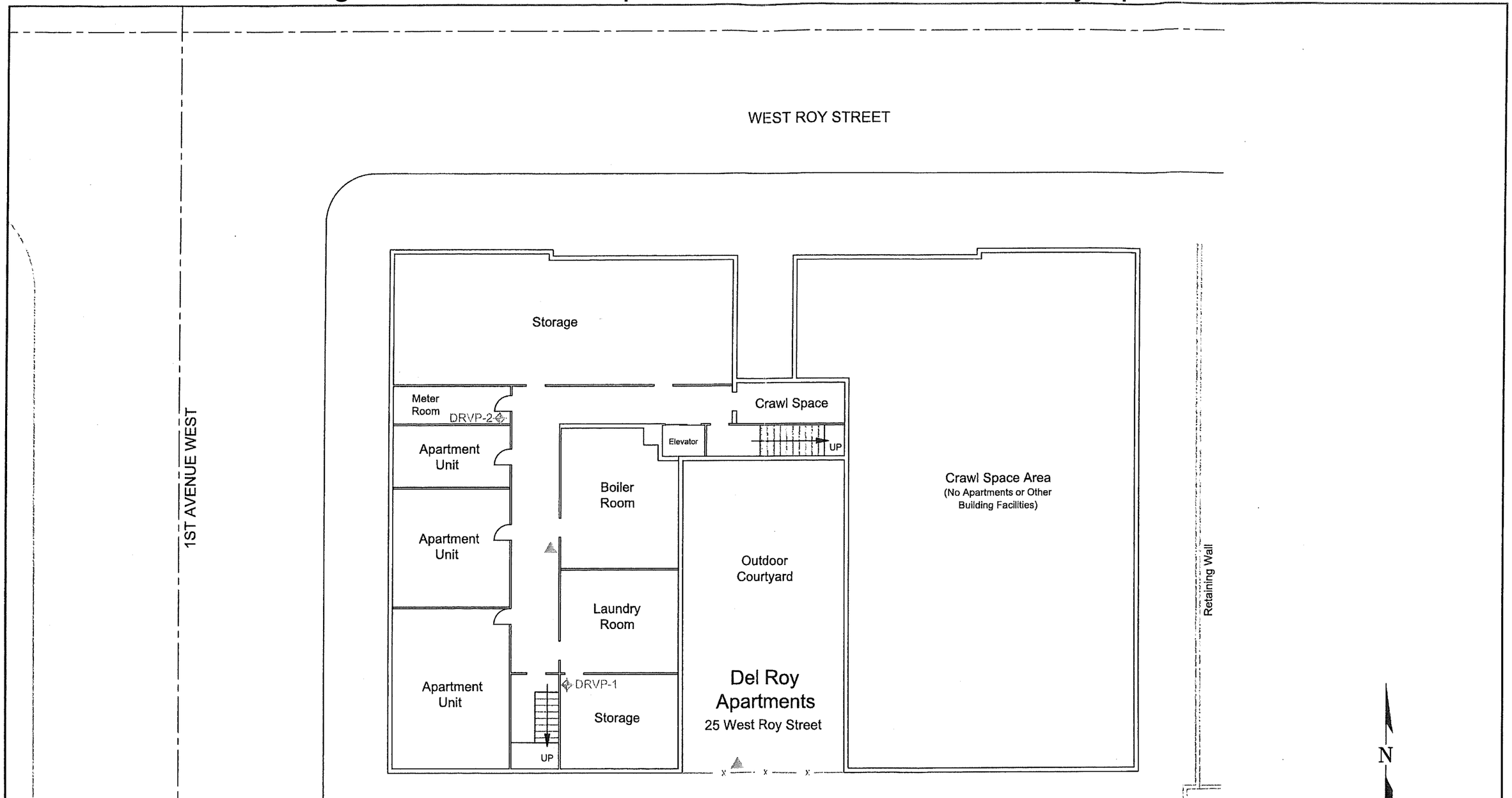
Figure 1 2008 Soil Vapor Probe Locations on Del Roy Apartment



LEGEND:

- DRVP-1 — EXISTING $\frac{1}{4}$" DIAMETER SUB-SLAB VAPOR POINTS
- ▲ — APPROXIMATE STATION LOCATION FOR COLLECTION OF AMBIENT AIR SAMPLE
- —— x —— — FENCE

NOTE: BUILDING LAYOUT SHOWN IS BASED ON ELECTRICAL PLANS (CIRCA 1981) PROVIDED TO SAIC BY DARCO, INC. AND BY APPROXIMATE MEASUREMENTS MADE BY SAIC PERSONNEL ON 1/15/2008. LAYOUT IS ASSUMED TO BE APPROXIMATE AND IS SHOWN FOR ILLUSTRATION PURPOSES ONLY.

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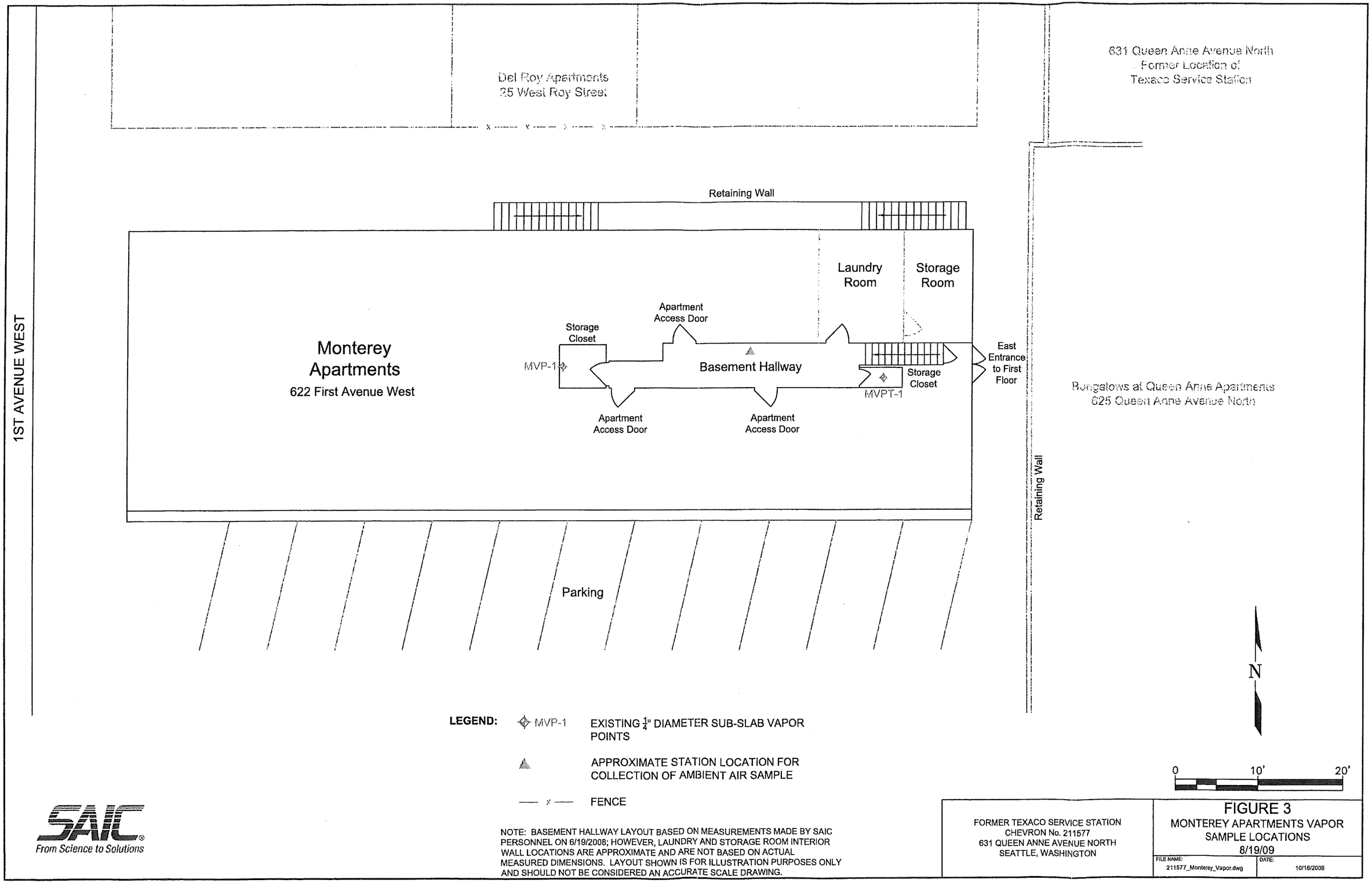
FIGURE 2
DEL ROY APARTMENTS BASEMENT FLOOR VAPOR SAMPLE LOCATIONS
08/19/09

FILE NAME: Del Roy Basement Map.dwg
DATE: 09/24/2009

Figure 2 2008 Soil Vapor Probe Locations on Monterey Apartment



LEGEND:

- MVP-1 — EXISTING ¼" DIAMETER SUB-SLAB VAPOR POINTS
- APPROXIMATE STATION LOCATION FOR COLLECTION OF AMBIENT AIR SAMPLE
- —— x —— FENCE

NOTE: BASEMENT HALLWAY LAYOUT BASED ON MEASUREMENTS MADE BY SAIC PERSONNEL ON 6/19/2008; HOWEVER, LAUNDRY AND STORAGE ROOM INTERIOR WALL LOCATIONS ARE APPROXIMATE AND ARE NOT BASED ON ACTUAL MEASURED DIMENSIONS. LAYOUT SHOWN IS FOR ILLUSTRATION PURPOSES ONLY AND SHOULD NOT BE CONSIDERED AN ACCURATE SCALE DRAWING.

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FIGURE 3
MONTEREY APARTMENTS VAPOR SAMPLE LOCATIONS
8/19/09

FILE NAME:	DATE:
211577_Monterey_Vapor.dwg	10/16/2009