

Remedial Investigation Report

**Former Seattle Times Property
1120 John Street
Seattle, Washington**

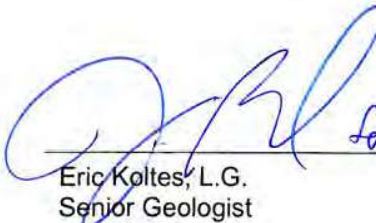
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ABBREVIATIONS AND ACRONYMS

Abbreviation/ Acronym	Definition
AOPC	Area of potential concern
bgs	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, and total xylenes
CAP	Cleanup Action Plan
CAR	Cleanup Action Report
COC	Constituent of concern
cPAHs	Carcinogenic polycyclic aromatic hydrocarbons
CSM	Conceptual site model
CUL	Cleanup level
cVOCs	Chlorinated volatile organic compounds
DPT	Direct-push technology
DRO	Diesel-range organics
Onni	The Onni Group
Ecology	Washington State Department of Ecology
LSI	Limited Subsurface Investigation
EPI	Environmental Partners, Inc.
ESA	Environmental Site Assessment
Farallon	Farallon Consulting, LLC
GRO	Gasoline-range organics
HSA	Hollow-stem auger
µg/L	Micrograms per liter
mg/kg	Milligrams per kilogram
MTCA	Model Toxics Control Act
Onni	Onni Group
ORO	Oil-range organics
PCBs	Polychlorinated biphenyls
PCE	Tetrachloroethene
PLP	Potentially Liable Party
POC	Point of compliance
RCRA	Resource Conservation and Recovery Act
REC	Recognized environmental condition
RI	Remedial investigation
SES	SoundEarth Strategies
SI	Supplemental Investigations
TCE	Trichloroethene
TEE	Terrestrial Ecological Evaluation
UST	Underground storage tank
VCP	Voluntary Cleanup Program
VOCs	Volatile organic compounds
WAC	Washington Administrative Code

1.0 INTRODUCTION

Environmental Partners, Inc. (EPI), a TRC Company¹, is pleased to submit this Remedial Investigation Report (RI Report) for the former Seattle Times Property (subject property), located at 1120 John Street in Seattle, Washington (Figure 1). The subject property is currently owned by Onni Group (Onni).

The purpose of this RI Report is to summarize available data regarding the "Site", which is fully encompassed within the subject property, consistent with the requirements of the Model Toxics Control Act (MTCA; Chapter 70.105D Revised Code of Washington [RCW]) and its implementing regulations (Chapter 173-340 of the Washington Administrative Code [WAC]), collectively "MTCA". This RI Report has been prepared to comply with MTCA regulations, specifically WAC 173-340-350(7).

The lateral and vertical extent of contaminant impacts at concentrations greater than applicable cleanup levels constitutes the "Site" under the Washington State Department of Ecology (Ecology) MTCA regulations. Under WAC 173-340-200, a Site is defined by the nature and extent of contamination associated with one or more releases of hazardous substances at the subject property prior to any cleanup of the contamination. A Site, as interpreted under MTCA, is not defined by the property or parcel boundaries and can be smaller and larger than the property with which it is associated. The Site that is the subject of this RI Report is fully contained within the subject property.

A Voluntary Cleanup Program (VCP) Application form, signed VCP Agreement, and Agency Determination Checklist are included with this RI Report submittal. With the submittal of this RI Report, Onni is requesting an advisory opinion on the sufficiency of this RI Report.

The data generated by multiple phases of environmental investigations performed at the subject property have been reviewed and evaluated and are summarized in this RI Report. These existing data are sufficient to fully characterize the nature and extent of contamination at the Former Seattle Times Site and to develop and evaluate cleanup action alternatives for the MTCA-defined Site within the subject property.

It must be noted that a portion of the north-adjacent Troy Laundry Site may encroach onto the northernmost portion of the subject property. Any such impacts, to the extent that they exist, are not considered a part of the Site discussed within this RI Report because those two Sites do not commingle. The Troy Laundry Site is currently managed under an Agreed Order, which included assessment of soil and groundwater conditions on the northernmost portion of the subject property. Those characterization efforts are ongoing and are being undertaken by the potentially liable persons (PLPs) for the Troy Laundry Site with the full cooperation of Onni.

¹ NOTE: The work described herein was performed by EPI before being acquired by TRC on December 27, 2019. For the purposes of this report, TRC and EPY may be used synonymously.

1.1 General Site Information

The Site is situated within the approximately 2.54-acre subject property, which is identified as King County parcel number 1986200525 on Figure 2. The subject property is in the southeast corner of Section 30, Township 25 North, Range 4 East, latitude 47.62028, longitude -122.33511. Adjacent properties consist of commercial office space, parking areas, a restaurant, a Seattle Times facility, and light commercial facilities.

The subject property was historically developed with four buildings constructed between 1930 and 1969. The four on-property buildings had approximately 316,000 square feet of floor space and were most recently used by the Seattle Times Company for offices, paper storage, a vehicle maintenance garage, and the main printing press and production area. Paved areas for vehicle parking were located on the north and west portions of the subject property adjacent to the former buildings.

The Onni acquired the subject property in November 2013 and the property is currently under development as a commercial office structure with subgrade parking extending to approximately 50 feet below the pre-development land surface.

1.1.1 Contact Information

Contact information for project coordinators and other pertinent entities associated with the Seattle Times Site is presented below.

Ecology Site Manager: To be determined.

Property Owner:

Onni Contracting (Washington) Inc.
200-1010 Seymour Street
Vancouver, British Columbia
Canada V6B 3M6
Property Owner Contact: Mr. Rehman Nazerali

Environmental Consultant:

Environmental Partners, Inc.
1180 NW Maple Street, Suite 310
Issaquah, Washington 98027
Project Manager: Mr. Eric Koltes, L.G., erick@epi-wa.com (425) 395-0014

1.2 Site History

As noted in the Phase I Environmental Site Assessment Report (Phase I ESA Report) prepared in 2010, the subject property was historically developed with single-family residences dating back to the late 1800s through the 1930s (Farallon 2010). In 1930, the subject property was developed with the former Seattle Times office and main plant building. The maintenance garage in the northwest corner of the subject

property was constructed in 1948. Residential structures occupied the remainder of the subject property from the 1930s through approximately 1950. The southwestern portion of the subject property was developed into a parking lot in 1965. The former offices and press buildings were reportedly constructed in 1968.

The subject property reportedly had 11 underground storage tanks (USTs) containing a variety of liquids including waste oil, heating oil, diesel fuel, gasoline, and petroleum- and solvent-based inks. The USTs were installed as early as the 1930s and, according to available records, at least three of the USTs have been closed in-place.

The Phase I ESA Report notes that several historical auto service stations, retail gasoline stations, and dry-cleaning facilities were located less than 0.125 mile from the subject property (Farallon 2010). Chlorinated solvents (degreasers and dry-cleaning fluid) and petroleum products were potentially released to the subsurface during historical operations of these facilities. In addition, during an Ecology file review, EPI identified and reviewed a Remedial Investigation Report related to the former Troy Laundry property, which was a commercial laundry and dry-cleaning business that formerly operated on the north-adjacent property until 1985. That document, titled *DRAFT Remedial Investigation Report* and authored by SoundEarth Strategies (SES RI Report) indicated documented releases of gasoline-range organics (GRO), diesel-range organics (DRO), oil-range organics (ORO), tetrachloroethene (PCE), trichloroethene (TCE), and common environmental degradation products of the PCE release, at concentrations greater than MTCA cleanup levels. The SES RI Report documents impacts to soil, soil vapor, and groundwater resulting from releases at the former Troy Laundry property. Though it is not documented when dry cleaning operations were initiated at Troy Laundry, the use of Stoddard solvent, a petroleum-hydrocarbon-based dry-cleaning solvent, was documented as the preferred dry-cleaning solvent. Stoddard solvent was subsequently replaced with PCE as the dry-cleaning solvent of choice at the former Troy Laundry facility until dry cleaning operations ceased (SES 2012).

Cross-sections presented in the SES RI Report indicate that the regional groundwater aquifer is at approximately 85 to 90 feet below ground surface (bgs) at the Troy Laundry property and flows toward the southeast (SES 2012). Well logs for the subject property indicate that the regional aquifer is at approximately 88 to 95 feet bgs. The documented flow direction for the regional aquifer indicates that the subject property is hydraulically downgradient of the former Troy Laundry property.

In addition to the regional aquifer, groundwater has been sporadically encountered at shallower intervals on the subject property, generally between 15 to 20 feet bgs. The shallower groundwater occurrences are laterally-discontinuous zones of perched groundwater entrained within sandier lenses of the glacial till at the subject property. These zones of sandier soil are typically less than 5 feet thick and are more commonly approximately 1 foot thick. These water-bearing lenses were not present in all boring locations and when observed, were not at a uniform or consistent depth. These discontinuous perched groundwater lenses are consistently of very low yield and do not represent a continuous water table aquifer beneath the subject property. This observation is consistent with other locations throughout the area of the subject property, which is documented as not having a continuous shallow or water table aquifer.

1.3 Current Site Use

The subject property is zoned SM-SLU 175/85-280 (King County Parcel Viewer 2019). The former Seattle Times offices, printing press building, vehicle maintenance building, and other supporting structures have been demolished to the original grade. The property is currently being developed as a commercial office structure with below ground parking to approximately 50 feet bgs and extending laterally to the property boundaries. USTs known to be present on the property have been decommissioned per Ecology UST decommissioning requirements prior to property re-development. Additional soil and groundwater remediation related to the Site will be performed concurrent with the planned 50-foot-bgs excavation for the below ground parking structure.

2.0 FIELD INVESTIGATIONS

2.1 Previous Environmental Investigations

Multiple environmental field investigations have been performed at the subject property as summarized chronologically in the following sections. Copies of the historical environmental investigation reports performed at the subject property are included in Attachment A, which is included on the CD ROM in the pocket of this report.

2.1.1 Phase I Environmental Site Assessment

Farallon Consulting, LLC (Farallon) conducted a Phase I ESA for the subject property and documented the work in a report titled *Phase I Environmental Site Assessment Report*, dated January 8, 2010 (Farallon 2010). The Phase I ESA identified several recognized environmental conditions (RECs) at the subject property. These RECs included:

- The presence of at least 11 USTs. The USTs contained multiple compounds including waste oils, heating oil, diesel fuel, gasoline, and petroleum- and solvent-based inks. The USTs were installed as early as 1930 and at least three were closed in-place. The Phase I ESA Report also indicated that there is the potential for additional unknown or undocumented USTs to be present at the subject property. Five of the USTs and a fuel dispenser are located east of a maintenance garage in the northwestern corner of the subject property.
- Potential releases of inks and/or cleaning compounds from two large newspaper printing presses located on below-grade foundations.
- The presence of a maintenance garage on the property with the known use of solvents and petroleum products for vehicle maintenance since about 1948.
- The presence of a hazardous materials storage room with drains that are connected to an oil/water separator and a UST located west of the building. The age, location, and condition of that UST are not known.

- The potential migration of releases from adjacent or nearby properties onto the subject property.

2.1.2 Limited Subsurface Investigation Report (2012–2013)

EPI performed a Limited Subsurface Investigation (LSI) of the subject property to investigate the RECs identified in Farallon's Phase I ESA Report. The LSI was performed in three phases beginning in July 2012, with subsequent phases in September 2012 and May 2013. Prior to mobilization for the LSI, EPI reviewed the Phase I ESA Report and performed a reconnaissance visit to the subject property to identify potential sample locations, access limitations, and other Site-specific considerations necessary to plan and implement the LSI.

Based on information presented in Farallon's Phase I ESA Report and field observations made during site reconnaissance, EPI identified 10 areas of potential concern (AOPCs) at the subject property. Locations and outlines of the 10 AOPCs identified by EPI are presented on Figure 2. The 10 AOPCs are:

- AOPC 1: Printing Press Areas
- AOPC 2: Interior Ink Tanks
- AOPC 3: Ink Room
- AOPC 4: Compressor Room
- AOPC 5: Northern UST Complex and Dispenser
- AOPC 6: Waste Oil UST
- AOPC 7: Heating Oil UST (Office Area)
- AOPC 8: Heating Oil USTs (South-Centrally Located in Alleyway)
- AOPC 9: Hoists (Located in Maintenance Garage)
- AOPC 10: Sumps (Located Throughout the Facility)

In addition to the investigation of the 10 AOPCs, the LSI included groundwater sampling in the deeper regional aquifer underlying the subject property. Three monitoring wells were installed along the northern property boundary to evaluate if groundwater impacts, primarily chlorinated volatile organic compounds (cVOCs) from the north-adjacent former Troy Laundry Site are potentially migrating onto the subject property. Monitoring well locations are shown on Figure 3.

The LSI was implemented using multiple sample collection methods and techniques. Five general methods of investigation were used to obtain representative samples from media of concern at the subject property. The five general sampling methods used during the LSI are:

1. Hollow-stem auger (HSA) drilling was used at eight sample locations that were accessible to a full-size HSA drilling rig. Shallower direct-push technology (DPT) probing was performed at 54 locations, generally in areas with limited access for drilling equipment, generally inside buildings.
2. Monitoring wells were installed, and groundwater samples were collected at three locations designated MW-1 through MW-3. These monitoring wells were installed and sampled to

evaluate groundwater quality along the northern property boundary adjacent to the former Troy Laundry property. In addition, a reconnaissance groundwater sample was collected from boring location U-6 in AOPC 5.

3. Sump water was sampled from three shallow sumps throughout the facility where shallow perched groundwater was pumped and removed by a series of de-watering pumps beneath facility buildings.
4. Wipe samples were collected from 30 locations on equipment surfaces, concrete floors, and utility piping within the facility to test for the presence and concentrations of polychlorinated biphenyls (PCBs). These are not environmental media samples and their locations and results are not discussed in this report.
5. Product samples of oil found within some of the equipment (e.g., printing presses, compressors) at the subject property were collected and analyzed for PCBs for disposal characterization purposes.

Soil boring and well locations performed as part of the LSI are presented on Figure 3. A summary of the samples of all media (e.g., soil, sump water, wipe, and groundwater) that were collected during the LSI and the analyses performed on those samples is presented in Table 1. A copy of the LSI Report is included in Attachment A.

2.1.3 Supplemental Investigations (2018–2019)

Based on results from the LSI described above, EPI determined that additional sampling and analysis was warranted at four of the AOPCs and in the deeper regional groundwater. EPI conducted a series of Supplemental Investigations (SI) that were performed in April and May 2018 and October 2019 to fill data gaps identified in those areas. The areas that were further investigated as part of the SI were:

- AOPC 2: Interior Ink Tanks
- AOPC 4: Compressor Room
- AOPC 5: Northern UST Complex and Dispenser
- AOPC 8: Heating Oil USTs (south-centrally located in alleyway)
- Regional Groundwater

LSI data included detected concentrations of laboratory analytes in soil, sump water, or shallow perched water in these areas that exceeded MTCA Method A Cleanup Levels (CULs), which were used for screening purposes. These detected concentrations warranted additional sampling to assess the horizontal and vertical extent of the identified impacts. Soil and groundwater samples were collected using HSA drilling techniques to advance borings for soil sample collection, installation of monitoring wells, and reconnaissance groundwater sample collection from temporary wells.

A total of 26 soil borings were completed during the SI. Two of the borings, MW-4 and MW-5, were completed as monitoring wells to evaluate groundwater in the deep regional aquifer. Both monitoring wells were installed to a total depth of 105 feet bgs. The remaining 24 borings were advanced to depths

ranging from refusal at 9 feet bgs to 35 feet bgs. At locations where water was encountered, reconnaissance groundwater samples were collected from temporary wells installed in shallow, discontinuous, lenses of perched groundwater.

Soil boring and well locations performed at part of the SI are presented on Figure 3. A summary of the samples that were collected during the SI and the analyses performed on those samples is presented in Table 2. An electronic copy of the SI technical memorandum is provided in Attachment A.

2.2 Site Characterization

Site characterization data and data evaluations from historical and more recent environmental investigations have been reviewed and compiled into summaries by media in the following sections. Full descriptions of historical investigations and data are presented in the reports included in Attachment A. Analytical data sheets for more recent soil and groundwater sampling performed after the LSI and SI reports were completed are also included in Attachment A.

2.2.1 Topography

The subject property is at an approximate elevation of 121 feet above mean sea level (MSL) according to data from Environmental Database Report (EDR) presented in the Phase I ESA Report (Farallon 2010). Observations made during on-Site environmental investigations indicate that the subject property is relatively flat. The United States Geological Survey (USGS) topographic map for Seattle South, dated 1983 indicates that topography surrounding the subject property is relatively flat with a slope to the west (toward Elliott Bay) and north (toward Lake Union).

2.2.2 Geology

The Puget Sound region is primarily underlain by sequences of advancing and retreating glacial sediment deposition episodes of Pleistocene Age. The regional sediments consist primarily of interlayered or sequential deposits of alluvial sands, silts, and clays and typically contain organic matter. Sand units have varying amounts of finer materials depending on the energy level of the depositional environment. Except for the shallower, more recent deposits, the glacial outwash sediments have been over-consolidated by later overriding ice sheets, which greatly increased their density, forming glacial till. The underlying dense glacial till has a low permeability, which limited the downward vertical migration of contaminants and resulted in high blow counts and refusal during drilling at many borehole locations.

Geologic logs from many of the borings completed through concrete floor slabs indicate varying thicknesses of imported structural fill sub-base material immediately beneath the floor slabs. Approximately 10 feet of pea gravel were encountered beneath the concrete slab at boring location MW 1; however, imported structural sub-base was not encountered beneath the concrete floor slab at some other borehole locations within the subject property.

At the monitoring well locations MW-1 and MW-2, native soils generally consist of silt alternating with layers of silty sand and gravelly silt. The boring log for MW-3 indicates that native soil is well-graded

sand with varying amounts of finer materials transitioning to poorly-graded sand near the bottom of the boring. Monitoring well locations are shown on Figure 3.

Shallower borings U-1 through U-9 generally have poorly-graded sand with varying amounts of gravel and silt in the upper 10 to 15 feet bgs transitioning to well-graded sand with clay below 15 feet bgs. Boring logs for MW-1 through MW-3 and for U-1, U-2, and U-6 through U-9 are included in the LSI Report in Attachment A.

Shallow DPT borings performed during the LSI, generally shallower than 10 feet bgs, exhibit sandy soils, either well- or poorly-graded, with varying amounts of silt and clay. DPT locations P-1 through P-4 exhibit clay from the surface to 4 feet bgs, the terminal depth of those borings.

Boring logs for DPT and HSA borings and as-built well diagrams for monitoring wells completed by EPI at the former Seattle Times property are presented in Attachment B.

2.2.3 Hydrogeology

Groundwater movement in the Puget Sound region is generally limited to the uppermost (most recent) alluvial deposits of sand and gravel, which are commonly underlain or overlain by relatively impermeable glacial till deposits. The presence of relatively dense and impermeable glacial till throughout the region commonly impedes the lateral and vertical movement of groundwater and contaminants. In addition, some of the permeable water-bearing units are laterally discontinuous and contain thin, perched, discontinuous zones of shallow groundwater that might be present seasonally and locally in shallow intervals above the more extensive deeper aquifer commonly present on underlying low permeability glacial till.

Groundwater at the subject property was noted at two depths, representing two distinct and separate occurrences of groundwater consistent with Site-specific groundwater conditions described in the preceding paragraph and further described below.

- **Shallow Perched Groundwater:** Occurs in thin discontinuous zones that are not present at all boring locations at the subject property. Based on field data from the LSI and SI, shallow perched groundwater was present in fewer than half of the borings performed on the subject property and, where encountered, was generally less than 1 foot thick. Because shallow perched groundwater is sporadically encountered in discontinuous zones, groundwater flow direction evaluations for these occurrences of perched water are not possible or warranted.
- **Regional Groundwater:** Based on well logs from the subject property, the deeper regional aquifer beneath the subject property is present at depths of approximately 85 to 95 feet bgs and flows toward the southeast. The subject property is crossgradient to downgradient of the former Troy Laundry property based on documented deeper regional aquifer groundwater flow direction data presented in the SES RI Report for Troy Laundry (SES 2012).

2.2.4 Soil Characterization

Subsurface conditions at the subject property vary depending on the specific AOPC investigated and the total depth reached during the investigation. Generally, shallow soil immediately beneath the concrete floor slab in areas of AOPC 1, consisted of approximately 2 to 6 inches of structurally-supportive, imported, sub-base material. Native soils located beneath the sub-base material generally consisted of well-graded sands, clay-sand mixtures, and clay to approximately 7 feet bgs, where the soils commonly transition to poorly-graded sands with gravel and thick units of lean clay, down to the maximum depth explored. The native soils are typical of dense glacial till, which is common in the region where the subject property is located.

Soil samples collected during the LSI and SI were analyzed for multiple constituents and constituent groups as summarized in Tables 1 and 2. Laboratory analyses that were performed on soil samples collected during the LSI and SI are:

- GRO
- DRO and ORO
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX)
- Volatile organic compounds (VOCs)
- Carcinogenic polycyclic aromatic hydrocarbons (cPAHs)
- PCBs
- Resource Conservation and Recovery Act (RCRA) Metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver)

As summarized in Tables 1 and 2, not all analyses were performed on every sample. Analyses were selected based on historical operations within the AOPCs, MTCA requirements specific to petroleum hydrocarbon analyses, and analyses required for waste characterization and disposal. During the SI, laboratory analyses were adjusted based on evaluations of analytical results from the same area that was investigated during the LSI.

Soil analytical results for samples collected at the subject property are discussed below for each of the identified AOPCs.

2.2.4.1 AOPC 1 – Printing Press Areas

During the LSI, soil samples were obtained from 16 sample locations within AOPC 1 at depths ranging from immediately beneath the concrete slab to 4 feet bgs using DPT methods. The LSI soil sample locations are shown on Figure 3.

Samples from AOPC 1 were analyzed for GRO, DRO, ORO, VOCs, PCBs, and RCRA Metals as noted in Table 1. Analytical results for soil samples from AOPC 1 are summarized in Table 3 and are described below:

- Petroleum hydrocarbons (GRO, DRO, and ORO) were not detected in any of the soil samples from AOPC 1.

- VOCs were not detected in any of the soil samples from AOPC 1.
- PCBs, specifically Aroclor 1254, were detected in two near-surface soil samples from locations P-2 and P-19, at concentrations of 0.2 milligrams per kilogram (mg/kg) and 0.23 mg/kg, respectively. Both detected PCB concentrations are less than the MTCA Method A Soil Cleanup Level (CUL) of 1.0 mg/kg.
- The RCRA metals chromium, arsenic, silver, barium, and lead were detected in at least 1 of the 17 soil samples from AOPC 1. None of the RCRA metals were detected at concentrations greater than their applicable MTCA Method A Soil CULs.
- Chromium data are for total chromium and were not speciated to distinguish chromium III (CUL is 2,000 mg/kg) from chromium VI (CUL is 19 mg/kg). If the total chromium results represent only chromium VI, then 7 of the 17 chromium concentrations exceed the lower MTCA Method A Soil CUL of 19 mg/kg for chromium VI. However, this is very unlikely due to chromium's rarity and instability in the chromium VI oxidation state. This statement regarding chromium speciation relative to regulatory CULs is applicable to all subsequent evaluations of chromium data presented in this report.

Based on the sample results from the LSI, which indicate no exceedances of MTCA Method A Soil CULs for any of the constituents analyzed, no remediation or special handling or disposal of soils appears to be warranted in AOPC 1. Based on the favorable soil data from the LSI, AOPC 1 soil was not investigated further during the SI performed in 2018–2019.

2.2.4.2 AOPC 2 – Interior Ink Tanks

During the LSI, a total of four shallow soil borings were advanced near the interior ink tanks in AOPC 2 using DPT methods. An additional 18 multi-depth soil samples were collected from 10 locations using an HSA drilling rig during the SI. The AOPC 2 soil boring sample locations from both the LSI and SI investigations are presented on Figure 3.

Soil samples collected at AOPC 2 were analyzed for GRO, DRO, ORO, VOCs, PCBs, and RCRA metals as summarized in Tables 1 and 2. Analytical results for soil samples from AOPC 2 for the LSI and SI are summarized in Tables 3 and 4, respectively, and are described below:

- GRO was detected in samples from T-8 and MW-8 at concentrations of 5.8 mg/kg and 21 mg/kg, respectively. Both detected concentrations for GRO are less than the MTCA Method A Soil CUL of 30 mg/kg.
- DRO was detected in the 10-foot bgs sample from MW-8 at a concentration of 600 mg/kg, which is less than the MTCA Method A Soil CUL of 2,000 mg/kg. This detected concentration has an “X” data qualifier indicating that the chromatograph does not resemble the standard used for quantitation.

- ORO was detected in samples from T-8 (5 feet bgs) and MW-8 (10 feet bgs) at concentrations of 360 mg/kg and 5,000 mg/kg, respectively. The ORO concentration for the sample from MW-8 exceeds the MTCA Method A Soil CUL of 2,000 mg/kg.
- The VOCs naphthalene and 1,2,4-trimethylbenzene were detected in the 10-foot bgs soil sample from MW-8 at concentrations of 0.17 mg/kg and 0.12 mg/kg, respectively. The concentration of naphthalene is lower than the MTCA Method A Soil CUL of 5 mg/kg. The concentration of 1,2,4-trimethylbenzene is less than the MTCA Method B Soil CUL of 800 mg/kg.
- PCBs were not detected.
- The RCRA metals arsenic, barium, chromium, and lead were detected in at least one of the 13 soil samples collected from AOPC 2. None of the RCRA metals were detected at concentrations greater than their applicable MTCA Method A or B Soil CULs.

Based on data collected during the LSI and SI, soil at sample location MW-8 in AOPC 2 requires remediation for ORO. The sample location MW-8, where ORO was detected at a concentration greater than the MTCA Method A CULs, is presented on Figure 4.

2.2.4.3 AOPC 3 – Ink Room

A total of 4 shallow soil borings were advanced to 5 feet bgs in AOPC 3 using DPT methods. AOPC 3 soil boring sample locations are presented on Figure 3.

Soil samples collected at AOPC 3 were analyzed for GRO, DRO, ORO, VOCs, and RCRA metals as summarized in Table 1. Analytical results for soil samples from AOPC 3 are summarized in Table 3 and are described below:

- GRO, DRO, and ORO were not detected in any of the soil samples from AOPC 3.
- VOCs were not detected in any of the soil samples from AOPC 3.
- RCRA metals chromium, arsenic, barium, and lead were detected in at least one of the four soil samples from AOPC 3. None of the RCRA metals were detected at concentrations greater than their applicable MTCA Method A Soil CULs.

Based on the sample results there are no exceedances of MTCA Method A CULs in AOPC 3 and no remediation or special handling or disposal of soils appears to be required.

2.2.4.4 AOPC 4 – Compressor Room

A total of six shallow soil borings were performed using DTP probe methods near the air compressors in AOPC 4 at the locations shown on Figure 3. Sample depths were shallow due to dense glacial till

encountered in this area and range from surface samples to 0.75-foot bgs. The samples were analyzed for GRO, DRO, ORO, VOCs, PCBs, and RCRA metals as summarized in Table 1. Wipe and product samples were also collected from locations within AOPC 4 and were analyzed for PCBs only, as shown in Table 1. The wipe and product samples were collected for evaluating decontamination and disposal options for on-Site equipment, not for subsurface characterization purposes. Wipe and product samples do not represent environmental media and are not discussed further in this RI Report.

Nine soil samples were collected at five locations in AOPC 4 and were analyzed for PCBs only, as summarized in Table 2.

Analytical results for soil samples from AOPC 4 are summarized in Tables 3, 4, and 5, and are described below:

- GRO, DRO, and ORO were not detected in any of the soil samples from AOPC 4.
- VOCs were not detected in any of the soil samples from AOPC 4.
- PCBs were detected in samples C-2 and C-12 at concentrations of 1.3 mg/kg and 1.2 mg/kg, respectively. Both detected concentrations are slightly greater than the MTCA Method A Soil CUL of 1.0 mg/kg. During the SI, PCBs were detected in samples C-17 and C-18 at concentrations of 0.055 mg/kg and 0.11 mg/kg, respectively. Both detected PCB concentrations from the SI are less than the MTCA Method A Soil CUL.
- RCRA metals, arsenic, barium, chromium, lead, and silver were detected in at least one of the soil samples from AOPC 4. None of the RCRA metals were detected at concentrations greater than their applicable MTCA Method A or B Soil CULs.

Based on the sample results from AOPC 4, a release of PCBs occurred to shallow soil at concentrations greater than the MTCA Method A Soil CUL. Sample locations where PCBs were detected at concentrations greater than MTCA Method A Soil CULs are presented on Figure 4.

2.2.4.5 AOPC 5 – Northern UST Complex and Fuel Dispenser

A total of seven borings were advanced near the USTs in AOPC 5 at the locations shown on Figure 3. Boreholes were performed using a combination of DPT and HSA drilling methods, depending on the accessibility of the locations. Except for boring U-3, which was terminated at 8 feet bgs due to dense glacial till, all borings were advanced to approximately 20 feet bgs. Soil sample depths ranged from 8 to 15 feet bgs as noted in Table 1. Eight soil samples and one groundwater sample were collected and analyzed for GRO, DRO, ORO, BTEX, and VOCs as summarized in Table 1.

An additional 7 soil boring locations were advanced using an HSA drilling rig to depths of up to 20 feet bgs during the 2018 SI performed at AOPC 5. Soil samples were collected every 5 feet and were analyzed for GRO, DRO, ORO, and VOCs are summarized in Table 2.

Analytical results for soil samples from AOPC 5 for the 2012 LSI and 2018 SI are summarized in Tables 3 and 4, respectively, and are described below:

- Petroleum hydrocarbons (GRO, DRO, and ORO) were not detected in the seven LSI soil samples from AOPC 5.
- GRO was detected in two SI samples (U-11:20 and U-12:20 at concentrations of 12 mg/kg and 940 mg/kg, respectively. The 940 mg/kg concentration in the U-12:20 sample exceeds the MTCA Method A Soil CUL of 30 mg/kg, which is appropriate for sites where benzene has been detected.
- DRO was detected in SI sample U-12-20 at a concentration of 2,100 mg/kg, which slightly exceeds the MTCA Method A Soil CUL of 2,000 mg/kg. This detected concentration has an "X" data qualifier indicating that the chromatograph does not resemble the standard used for quantitation.
- A total of 14 VOCs were detected in at least one of the AOPC 5 soil samples collected during the SI; however, benzene and naphthalene were the only detected VOCs with concentrations exceeding MTCA Method A Soil CULs as summarized below:
 - Benzene was detected in samples from U-11 and U-12 at concentrations of 0.15 mg/kg and 0.33 mg/kg, respectively, which exceed the MTCA Method A Soil CUL of 0.03 mg/kg.
 - Naphthalene was detected in sample U-12:20 at a concentration of 6.5 mg/kg, which slightly exceeds the MTCA Method A Soil CUL of 5.0 mg/kg.

Based on the sample results from AOPC 5, a release of petroleum hydrocarbons occurred to soil at concentrations greater than the MTCA Method A Soil CUL and will require remediation during redevelopment. Soil sample locations with analytical results exceeding MTCA Method A Soil CULs in AOPC 5 are presented on Figure 4.

2.2.4.6 AOPC 6 – Waste Oil UST

Two borings were advanced to 10 feet bgs near the waste oil UST in AOPC 6 using HSA drilling methods. Boring locations are shown on Figure 3. Soil samples were collected from 10-foot bgs sample depths and were analyzed for GRO, DRO, ORO, VOCs, cPAHs, PCBs, and RCRA metals as summarized in Table 1. The constituent list for AOPC 6 is based on Ecology's analytical requirements for waste or unknown oils found in Table 830-1 of the MTCA regulations. Results of the soil analyses are presented in Table 3 and are described below:

- GRO, DRO, and ORO were not detected in the soil samples from AOPC 6.
- VOCs were not detected in the soil samples from AOPC 6.
- cPAHs were not detected in the soil samples from AOPC 6.

- PCBs were not detected in the soil samples from AOPC 6.
- RCRA metals chromium, arsenic, and lead were detected in both soil samples from AOPC 6. Concentrations for all detected RCRA metals were less than the MTCA Method A Soil CULs.

Based on the sample results for AOPC-6, which indicate no exceedances of MTCA Method A Soil CULs, no remediation or special handling or disposal of soils appears to be warranted in AOPC 6.

2.2.4.7 AOPC 7 – Heating Oil UST

Six borings were advanced near the heating oil UST to depths between 5 and 20 feet bgs using DPT and hand auger drilling methods. Boring locations are shown on Figure 3. Soil samples were collected from the terminal depths of the borings and were analyzed for DRO, ORO, and BTEX as summarized in Table 1.

Analytical results for soil samples from AOPC 7 are summarized in Table 3 and are described below:

- DRO and ORO were not detected in any of the soil samples from AOPC 7.
- BTEX compounds were not detected in any of the soil samples from AOPC 7.

Based on the sample results, which indicate no exceedances of MTCA Method A Soil CULs, no remediation or special handling or disposal of soils appears to be warranted in AOPC 7

2.2.4.8 AOPC 8 – Heating Oil USTs

Three borings were advanced to depths of 8.5 to 9.0 feet bgs near the former heating oil USTs using DPT drilling methods. Boring locations are shown on Figure 3. Soil samples were collected from the terminal depths of the borings and were analyzed for DRO, ORO, and BTEX as summarized in Table 1. Additional soil borings were performed at five locations during the SI, with two samples collected from each boring at different depths. These 10 samples were analyzed for DRO and ORO as summarized in Table 2.

Analytical results for LSI and SI soil samples from AOPC 8 are summarized in Tables 3 and 4, respectively, and are described below:

- DRO was detected in soil samples from all three LSI borings at concentrations ranging from 290 mg/kg in sample A-2 to 940 mg/kg in sample A-3. All detected DRO concentrations are less than the MTCA Method A Soil CUL of 2,000 mg/kg. The three detected DRO concentrations have an “X” data qualifier indicating that the chromatograph does not resemble the standard used for quantitation. DRO was not detected in the 10 soil samples collected during the SI.

- ORO was detected in soil samples from all three LSI borings at concentrations ranging from 1,700 mg/kg in sample A-2 to 4,600 mg/kg in samples from A-1 and A-3. The two 4,600 mg/kg ORO detections exceed the MTCA Method A Soil CUL of 2,000 mg/kg. ORO was not detected in the 10 soil samples that were collected during the SI.
- BTEX compounds were not detected in soil samples from the three LSI borings. BTEX was not analyzed in the 10 soil samples collected during the SI based on the consistent non-detections in the LSI samples.

Based on data, a release of DRO to soil occurred at concentrations greater than MTCA Method A Soil CULs and will require remediation during property redevelopment. Soil sample locations with analytical results exceeding MTCA Method A Soil CULs in AOPC 8 are presented on Figure 4.

2.2.4.9 AOPC 9 – Hoists

Six borings were advanced to depths ranging from 4 to 8 feet bgs near the hydraulic hoists in AOPC 9 using DPT drilling methods. Boring locations are shown on Figure 3. Soil samples were collected from the terminal depth at each boring and were analyzed for DRO, ORO, PCBs, and RCRA metals as summarized in Table 1.

The analytical results for LSI soil samples from AOPC 9 are summarized in Table 3 and are described below:

- DRO was detected in soil samples from H-3 and H-4 at concentrations of 120 mg/kg and 810 mg/kg, respectively. Both detected DRO concentrations are less than the MTCA Method A Soil CUL of 2,000 mg/kg.
- ORO was detected in the soil sample from H-3 at a concentration of 640 mg/kg, which is less than the MTCA Method A Soil CUL of 2,000 mg/kg.
- RCRA metals arsenic, chromium, and lead were detected in all six of the soil samples from AOPC 9. None of the RCRA metals were detected at concentrations greater than the applicable MTCA Method A Soil CULs.

Based on the sample results, which indicate no exceedances of MTCA Method A Soil CULs, no remediation or special handling or disposal of soils appears to be warranted in AOPC 9. AOPC 9 soil was not investigated further during the SI.

2.2.4.10 AOPC 10 – Sumps

Unlike AOPCs 1 through 9, AOPC 10 does not represent a specific area but rather represents seven shallow groundwater dewatering sumps, identified as 10a through 10g. The sumps were concrete structures approximately 8 feet deep and were designed to capture and contain shallow perched groundwater that occurs seasonally at discontinuous locations throughout the subject property.

Three soil borings were advanced to depths ranging from 5 to 7 feet bgs near sumps labeled 10c, 10d, and 10g using DPT drilling methods. The three sump boring locations are presented on Figure 3. Soil samples were collected from the terminal depth at each boring and were analyzed for DRO, ORO, VOCs, PCBs, and RCRA metals as summarized in Table 1.

The analytical results for soil samples from AOPC 10 are summarized in Table 3 and are described below:

- DRO and ORO were not detected in any of the soil samples from AOPC 10.
- VOCs were not detected in any of the soil samples from AOPC 10.
- PCBs were not detected in any of the soil samples from AOPC 10.
- RCRA metals chromium, arsenic, and lead were detected in all six of the soil samples from AOPC 10. None of the RCRA metals were detected at concentrations greater than the applicable MTCA Method A Soil CULs.

Based on the sample results, which indicate no exceedances of MTCA Method A CULs, no remediation or special handling or disposal of soils appears to be warranted in AOPC 10. AOPC 10 soil was not investigated further during the SI.

2.2.4.11 Potential Off-Site Sources

During the LSI, boreholes were advanced using an HSA drilling rig with the intent to sample groundwater from the deeper regional aquifer at three locations, designated MW-1 through MW-3. Soil samples were collected from the boreholes and were analyzed for GRO, DRO, ORO, VOCs, cPAHs, PCBs, and RCRA metals as summarized in Table 1. During the SI, five additional boreholes were drilled with the intention of completing them as monitoring wells MW-4 through MW-8, all using HSA drilling methods. No soil samples were retained for analysis from MW-4 and MW-5. These borings were completed as shallow groundwater wells and groundwater samples were analyzed as summarized in Table 2. The boreholes for MW-6 through MW-8 were advanced with the intention of completing them as deeper aquifer wells. However, these boreholes encountered refusal due to dense glacial till, were dry, and therefore, were not completed as wells, only as soil borings. Discussions and data evaluations for soil samples from boreholes MW-6 through MW-8 are included in Section 2.2.4.2 above. Well and borehole locations are presented on Figure 3.

The analytical results for soil samples from boreholes MW-1 through MW-3 are summarized in Table 3 and are described below:

- GRO, DRO, and ORO were not detected in any of the soil samples from boreholes for wells MW-1 and MW-2.
- VOCs were not detected in any of the soil samples from boreholes for wells MW-1 through MW-3.

- cPAHs were not detected in the soil sample from the borehole for well MW-2.
- PCBs were not detected in the soil sample from the borehole for well MW-2.
- RCRA metals chromium, arsenic, and lead were detected in samples from MW-1 and MW-2 and were not analyzed in samples from MW-3. None of the RCRA metals were detected at concentrations greater than the applicable MTCA Method A Soil CULs.

Based on the soil sample results from MW-1 through MW-3, which indicate no exceedances of MTCA Method A CULs, no remediation or special handling or disposal of soils appears to be warranted in the areas outside of the identified AOPCs.

2.2.5 Groundwater Characterization

Groundwater at the subject property generally occurs at two separate depths, representing two distinct and separate occurrences of groundwater consistent with regional groundwater conditions described in Section 2.2.3.

- **Shallow Perched Groundwater:** Occurs in thin discontinuous zones that are not present at all boring locations. Based on field data from the LSI and SI, shallow perched groundwater was present in fewer than half of the borings on the subject property and, where encountered, was generally less than 1 foot thick. Because shallow perched groundwater is sporadically encountered in thin discontinuous zones, groundwater flow direction evaluations are not possible or warranted.
- **Regional Groundwater:** The regional aquifer beneath the subject property is present at depths of approximately 85 to 95 feet bgs and flows toward the southeast. The subject property is cross gradient to downgradient of the Troy Laundry Site based on the southeast regional aquifer groundwater flow direction.

Due to the discontinuous nature of the shallow perched groundwater zones, groundwater was not encountered and could not be sampled in all AOPCs. The AOPCs in which groundwater was encountered and sampled, and the nature of the groundwater occurrence at those locations are summarized below:

- AOPC 2: Interior Ink Tanks – shallow perched groundwater
- AOPC 5: Northern UST Complex and Fuel Dispenser – shallow perched groundwater
- AOPC 10: Sumps – shallow perched groundwater
- Potential Off-Site Sources – regional deeper groundwater

Analytical results for groundwater samples collected from these areas of the subject property are summarized by their respective AOPCs in the following sections.

2.2.5.1 AOPC 2 – Interior Ink Tanks

Reconnaissance samples of shallow perched groundwater were collected from temporary monitoring wells installed at borings T-4 through T-7 and T-9 during the SI; groundwater was not encountered at location T-8. All five groundwater samples were analyzed for DRO and ORO; the sample from T-9 was also analyzed for GRO and VOCs, as summarized in Table 2. Locations of boreholes T-4 through T-7 and T-9 are presented on Figure 5.

Analytical results for reconnaissance groundwater samples from boreholes T-4 through T-7 and T-9 are summarized in Table 6 and described below:

- GRO was not detected in the groundwater sample from T-9.
- DRO was detected in all five groundwater samples collected from T-4 through T-7 and T-9 at concentrations ranging from 170 micrograms per liter ($\mu\text{g/L}$) in the sample from T-6 to 8,600 $\mu\text{g/L}$ in the sample from T-9. The samples from T-4, T-5, and T-9 have DRO concentrations that are greater than the MTCA Method A Groundwater CUL of 500 $\mu\text{g/L}$. All five detected DRO concentrations have an “X” data qualifier indicating that the chromatograph does not resemble the standard used for quantitation.
- ORO was detected in the samples from T-4, T-5, and T-9 at concentrations of 420 $\mu\text{g/L}$, 1,200 $\mu\text{g/L}$, and 3,000 $\mu\text{g/L}$ respectively. The ORO concentrations in samples from T-5 and T-9 exceed the MTCA Method A Groundwater CUL of 500 $\mu\text{g/L}$. All three detected ORO concentrations have an “X” data qualifier indicating that the chromatograph does not resemble the standard used for quantitation.
- A total of seven VOCs were detected in the sample from T-9 with only one compound exceeding a MTCA CUL. Vinyl chloride was detected at a concentration of 0.22 $\mu\text{g/L}$, which exceeds the MTCA Method A Groundwater CUL of 0.2 $\mu\text{g/L}$.

Locations of groundwater samples with constituent concentrations exceeding MTCA CULs are presented on Figure 5.

2.2.5.2 AOPC 5 – Northern UST Complex and Fuel Dispenser

Shallow perched groundwater was encountered in boring U-6, located near the loading dock as shown on Figure 5. The groundwater sample from U-6 was analyzed for GRO, DRO, ORO, BTEX, and VOCs as summarized in Table 1. During the SI, groundwater was encountered and sampled from six locations, U-10 through U-15, as shown on Figure 5. Groundwater samples from U-10 through U-15 were analyzed for GRO, DRO, ORO, and VOCs, as summarized in Table 2.

Analytical results for reconnaissance groundwater samples from U-6 are summarized in Table 7, results for groundwater samples from U-10 through U-15 are summarized in Table 6 and both sets of data are described below.

- GRO was detected in groundwater samples from U-11 and U-12 at concentrations of 6,400 µg/L and 37,000 µg/L, respectively. Both concentrations exceed the MTCA Method A Groundwater CUL of 500 µg/L.
- DRO was detected in groundwater samples U-10 through U-15 at concentrations ranging from 230 µg/L to 6,700 µg/L. DRO concentrations in samples from U-10, U-11, U-12, and U-15 exceed the MTCA Method A Groundwater CUL of 500 µg/L. All six detected DRO concentrations have an “X” data qualifier indicating that the chromatograph does not resemble the standard used for quantitation.
- ORO was detected in groundwater samples from U-10 through U-13 and in the sample from U-15 at concentrations ranging from 390 µg/L to 4,700 µg/L. ORO concentrations in the samples from U-10, U-11, and U-15 exceed the MTCA Method A Groundwater CUL of 500 µg/L. All five detected ORO concentrations have an “X” data qualifier indicating that the chromatograph does not resemble the standard used for quantitation.
- A total of 17 VOCs were detected in one or more of the groundwater samples collected from AOPC 5. Exceedances of MTCA CULs for VOCs are summarized below.
 - Chloroform was detected in samples from U-6, U-11 and U-12 at concentrations of 2.4 µg/L, 2.5 µg/L, and 2.3 µg/L, respectively. All three detected concentrations exceed the MTCA Method B Groundwater CUL of 1.41 µg/L.
 - Naphthalene was detected in the sample from U-12 at a concentration of 570 µg/L, which exceeds the MTCA Method A Groundwater CUL of 160 µg/L.
 - Trichloroethene (TCE) was detected in samples from U-6 and U-13 at concentrations of 9.0 µg/L and 7.9 µg/L, respectively. These concentrations exceed the MTCA Method A Groundwater CUL of 5.0 µg/L.
 - 1,2,4-Trimethylbenzene was detected in samples from U-11 and U-12 at concentrations of 540 µg/L and 2,900 µg/L, respectively. These concentrations exceed the MTCA Method B Groundwater CUL of 80 µg/L.
 - 1,3,5-Trimethylbenzene was detected in samples from U-11 and U-12 at concentrations of 170 µg/L and 720 µg/L, respectively. These concentrations exceed the MTCA Method B Groundwater CUL of 80 µg/L.
 - Total xylene was detected in the sample from U-12 at a concentration of 5,800 µg/L, which exceeds the MTCA Method A Groundwater CUL of 1,000 µg/L.

Locations of the groundwater samples with constituent concentrations exceeding MTCA CULs are depicted on Figure 5. The presence of TCE in shallow groundwater samples from U-6 and U-13 is consistent with the known impacts on the hydraulically upgradient and north-adjacent Troy Laundry Site. TCE detections in groundwater are limited to sample locations near the north property boundary and are

not detected elsewhere on the subject property or Site. In addition, the deeper groundwater sample from monitoring well MW-2, which is located at the north property boundary, has MTCA exceedances for PCE, TCE, and vinyl chloride, which are all attributable to known impacts at the Troy Laundry Site.

As noted earlier, the Troy Laundry Site is currently being investigated and remediated by the PLPs for that Site under an Agreed Order. The PLPs have requested access to the subject property for the purpose of assessing the extent of the Troy Laundry Site onto the subject property. The Troy Laundry Site impacts at the subject property are not commingled with the Site and should not preclude the ability of Onni to remain in the VCP or to obtain an No Further Action determination for the Site.

2.2.5.3 AOPC 10 – Sumps

Shallow perched groundwater was encountered in three sumps, S-2, S-4, and S-5 and was sampled and analyzed for GRO, DRO, ORO, and VOCs as summarized in Table 1. Sump locations are shown on Figure 5 along with detections of constituents at concentrations greater than the MTCA Groundwater CULs.

Analytical results for shallow perched groundwater samples from sumps S-2, S-4, and S-5 are summarized in Table 8 and are described below:

- GRO was not detected in any of the AOPC 10 sump samples.
- DRO was detected in the sump samples from S-4 and S-5 at concentrations of 310 µg/L and 110,000 µg/L, respectively. The DRO concentration of 110,000 µg/L in S-5 exceeds the MTCA Method A Groundwater CUL of 500 µg/L. All three detected DRO concentrations have an “X” data qualifier indicating that the chromatograph does not resemble the standard used for quantitation.
- ORO was detected in the sump samples from S-4 and S-5 at concentrations of 1,900 µg/L and 10,000 µg/L, respectively. Both detected ORO concentrations exceed the MTCA Method A Groundwater CUL of 500 µg/L. The ORO concentration from sample S-5 has an “X” data qualifier indicating that the chromatograph does not resemble the standard used for quantitation.
- Chloroform was the only VOC detected in the AOPC 10 sump groundwater samples at a concentration of 1.0 µg/L in the sample from S-5, which is less than the MTCA Method B Groundwater CUL of 1.41 µg/L.

Locations of groundwater samples with constituent concentrations exceeding MTCA CULs are presented on Figure 5.

2.2.5.4 Potential Off-Site Source

A total of three monitoring wells, designated MW-1 through MW-3, were drilled and installed using HSA drilling methods along the northern subject property boundary as part of the LSI. The wells were installed in the deeper regional aquifer at the locations shown on Figure 5. The purpose of the wells was to provide groundwater data to evaluate the potential for on-property migration of impacts originating on the north-adjacent Troy Laundry Site. Groundwater samples collected from MW-1 and MW-2 were analyzed for GRO, DRO, ORO, VOCs, and RCRA metals as summarized in Table 1.

A laterally discontinuous lens of perched groundwater was encountered at approximately 20 feet bgs in the MW-3 borehole. A reconnaissance groundwater sample was collected from this perched water and was analyzed for VOCs only. After the shallow perched groundwater sample was collected, drilling continued and MW-3 was extended to a total depth of 100 feet bgs and was completed as a permanent monitoring well screened in the deeper regional aquifer. A groundwater sample was collected from the deeper aquifer and was sampled for VOCs only as summarized in Table 1.

During the SI, five additional monitoring wells, designated MW-4 through MW-8, were drilled using HSA drilling methods. These wells were intended to provide samples from the deeper regional aquifer; however, groundwater was only encountered in MW-4 and MW-5. Groundwater samples from MW-4 and MW-5 were analyzed for VOCs as summarized in Table 2. The locations of MW-4 through MW-8 are shown on Figure 5.

Analytical results for groundwater samples from MW-1 through MW-3 are summarized in Table 7, results for groundwater samples from MW-4 and MW-5 are summarized in Table 6 and both sets of data are described below:

- GRO was detected in the groundwater sample from MW-2 at a concentration of 340 µg/L, which is less than the MTCA Method a Groundwater CUL of 800 µg/L.
- DRO was detected in the groundwater sample from MW-2 at a concentration of 400 µg/L, which is less than the MTCA Method a Groundwater CUL of 500 µg/L. The DRO concentration from sample from MW-2 has an "X" data qualifier indicating that the chromatograph does not resemble the standard used for quantitation.
- ORO was not detected in samples from MW-1 or MW-2.
- A total of 14 VOCs were detected in one or more of the groundwater samples collected from monitoring wells installed in the deeper regional aquifer. Exceedances of MTCA CULs are summarized below.
 - Chloroform was detected in the groundwater sample from MW-2 at a concentration of 2.3 µg/L, which exceeds the MTCA Method B Groundwater CUL of 1.41 µg/L.
 - PCE was detected in the groundwater sample from MW-2 at a concentration of 10 µg/L, which exceeds the MTCA Method A Groundwater CUL of 5 µg/L.

- TCE was detected in the groundwater sample from MW-2 at a concentration of 5.6 µg/L, which exceeds the MTCA Method A Groundwater CUL of 5 µg/L.
- Vinyl chloride was detected in the groundwater sample from MW-2 at a concentration of 1.3 µg/L, which exceeds the MTCA Method A Groundwater CUL of 0.2 µg/L.
- Arsenic, chromium and lead were the only RCRA metals detected in samples from MW-1 and MW-2.
 - Arsenic and dissolved arsenic were detected in the sample from MW-1 at concentrations of 1.38 and 1.10 µg/L, respectively. Arsenic was detected in the sample from MW-2 at a concentration of 2.19 µg/L. All three detected arsenic concentrations are less than the MTCA Method A Groundwater CUL of 5.0 µg/L.
 - Total chromium was detected at a concentration of 57.1 µg/L in the sample from MW-2, which exceeds the MTCA Method A Groundwater CUL of 50 µg/L. The MTCA Method A Groundwater CUL conservatively assumes that 100 percent of the detected total chromium concentration is chromium VI, which is unlikely. Turbidity was high in the sample from MW-2 and the sample was also analyzed for dissolved metals (filtered to 0.45 microns). The concentration for dissolved chromium in the sample from MW-2 is 2.8 µg/L with a data qualifier indicating potential lab contamination. The dissolved chromium result is significantly less than the MTCA Method A Groundwater CUL of 50, µg/L, which indicates that chromium is not a concern for the deeper aquifer. Chromium was not detected in the sample from MW-1.
 - Lead was detected in the sample from MW-2 at a concentration of 4.84 µg/L, which is less than the MTCA Method A Groundwater CUL of 15 µg/L. Lead was not detected in the sample from MW-1.

The PCE, TCE, and vinyl chloride that were detected at concentrations greater than MTCA Method A Groundwater CULs in the sample from MW-2 are likely attributable to the north-adjacent, and hydraulically upgradient Troy Laundry Site. Based on deeper regional aquifer groundwater samples collected and analyzed during the LSI and SI, cVOC impacts to groundwater appear to be limited to MW-2 and further delineation is not warranted under this investigation because cVOC impacts to the deeper aquifer are from an off-Site source, which is under investigation by others under an Agreed Order. The identified impacts at MW-2 are present solely as a result of passive migration from an off-property source and Onni is not a PLP for those impacts.

Locations of groundwater sample locations with constituent concentrations exceeding MTCA Method A or B Groundwater CULs are presented on Figure 5.

2.3 Constituents of Concern

The COCs for the Site have been identified during the multi-phased Site investigation and characterization process. Constituents analyzed in samples collected from environmental media were

selected based on potential sources (e.g., USTs, air compressors, etc.), and historical operations (e.g., vehicle fueling, printing presses, vehicle maintenance) at the subject property. Analytical results for samples collected from the various AOPCs at the subject property were evaluated and constituent lists for follow-on sampling events were adjusted based on those AOPC-specific analytical results.

COCs were identified in the impacted media of soil, shallow perched groundwater, and deeper regional groundwater based on their detections at concentrations greater than MTCA Method A CULs. In the absence of a MTCA Method A CUL, the default MTCA Method B CUL was used as a screening tool for COC identification. The COCs for affected environmental media at the subject property are described below.

2.3.1 Soil Constituents of Concern

Soil samples were analyzed for GRO, DRO, ORO, BTEX, VOCs, cPAHs, PCBs, and RCRA metals as summarized in Tables 1 and 2. Evaluations of analytical results from the LSI and SI Site characterization investigations resulted in the following soil COCs, which were detected at concentrations exceeding MTCA Method A or B Soil CULs at the sample locations listed:

- GRO – SI sample U-12:20 from AOPC 5.
- DRO – SI sample U-12:20 from AOPC 5.
- ORO – LSI samples A-1 and A-3 from AOPC 8 and SI sample MW-8:10 from AOPC 2.
- Benzene – SI samples U-11:15 and U-12:15 from AOPC 5.
- Naphthalene – SI sample U-12:20 from AOPC 5.
- PCBs – LSI samples C-2 and C-12 from AOPC 4.

2.3.2 Shallow Perched Groundwater Constituents of Concern

Shallow perched groundwater was sporadically encountered in thin discontinuous lenses during the SI. Shallow perched groundwater was also encountered in the dewatering sumps in AOPC 10. Where encountered, shallow perched groundwater was sampled and analyzed for GRO, DRO, ORO, BTEX, VOCs, and RCRA metals as summarized in Tables 1 and 2. Evaluations of analytical results from the LSI and SI Site characterization resulted in the following shallow perched groundwater COCs, which were detected at concentrations exceeding MTCA CULs at the sample locations listed:

- GRO – SI samples U-11:GW and U-12:GW from AOPC 5.
- DRO – SI samples T-4:GW, T-5:GW, and T-9:GW from AOPC 2. SI samples U-10:GW, U-11:GW, U-12:GW, and U-15 from AOPC 5. LSI sample S-5 from AOPC 10.

- ORO – SI samples T-5:GW and T-9:GW from AOPC 2. SI samples U-10:GW, U-11:GW, U-12:GW, and U-15 from AOPC 5. LSI samples S-4 and S-5 from AOPC 10.
- Chloroform – SI samples U-6, U-11:GW, and U-12:GW from AOPC 5.
- Naphthalene – SI sample U-12:GW from AOPC 5.
- 1,2,4-Trimethylbenzene and 1,3,5-trimethylbenzene – SI samples U-11:GW and U-12:GW from AOPC 5.
- Total xylenes – SI sample U-12:GW from AOPC 5.
- TCE – SI samples U-6 and U-13:GW from AOPC 5.
- Vinyl chloride – SI sample T-9:GW from AOPC 2.

2.3.3 Deeper Regional Groundwater Constituents of Concern

Deeper regional groundwater was encountered and sampled at four locations, MW-2 through MW-5. Well MW-1 was intended to be drilled to the deeper regional aquifer but encountered shallow perched groundwater at approximately 15 feet bgs and was completed with a screened interval in this shallow lens of perched groundwater. Deeper regional groundwater samples were analyzed for GRO, DRO, ORO, VOCs, and RCRA metals as summarized in Tables 1 and 2. Evaluations of analytical data from the LSI and SI Site characterization resulted in the following deeper regional groundwater COCs, which were detected at concentrations exceeding MTCA Groundwater CULs at the sample locations listed:

- Chloroform – LSI sample MW-2 from Potential Off-Site Sources (Troy Laundry) along the northern property boundary.
- PCE – LSI sample MW-2 from Potential Of-Site Sources (Troy Laundry).
- TCE – LSI sample MW-2 from Potential Off-Site Sources (Troy Laundry).
- Vinyl chloride – LSI sample MW-2 from Potential Off-Site Sources (Troy Laundry).

Chromium was evaluated for inclusion in the COC list for groundwater due to a 57.1 µg/L detection of total chromium in the sample from MW-2, which is greater than the MTCA Method A Groundwater CUL of 50 µg/L. However, the concentration of dissolved chromium in that sample was 2.8 µg/L. Therefore, it is likely that the total chromium sample result is a false positive, potentially caused by sample turbidity.

All deeper regional groundwater COCs are cVOCs directly related to documented releases from the hydraulically upgradient Troy Laundry Site located immediately north of the subject property. These releases have resulted in impacts to soil, groundwater, and soil vapor. The deeper regional groundwater cVOC impacts are therefore not part of the former Seattle Times property Site.

3.0 CONCEPTUAL SITE MODEL

The conceptual site model (CSM) for the subject property is based on soil and groundwater data collected during the two main phases of subsurface investigation (i.e., the LSI and SI). Geologic materials encountered as well as soil and groundwater data for the subject property are represented on two geologic cross-sections designated A-A', which extends north to south, and B-B', which extends west to east through the subject property. The alignments of the two geologic cross-sections are depicted on Figure 3. Cross-section A-A' extends from the former Troy Laundry property south through the subject property and is depicted on Figure 6. Cross-section B-B' extends from Boren Avenue N to the west to Fairview Avenue N to the east and is depicted on Figure 7.

Because there are cVOC impacts to the deeper regional aquifer and associated soil vapor that originate from the north-adjacent former Troy Laundry property, the CSM is separated into two models to accurately describe the on-Site and off-Site (Troy Laundry) source areas, mechanisms of release and transport, and potential receptors. The two CSMs are described below.

3.1 On-Site Source Conceptual Site Model

Impacts to soil and shallow, perched, discontinuous lenses of groundwater at the subject property are the result of several confirmed and potential on-Site release mechanisms, including the following:

- Leaking USTs (vehicle fuel, heating oil, ink);
- Vehicle maintenance operations and hydraulic hoists;
- Fuel dispensing operations;
- Sumps;
- Air compressor use and maintenance; and
- Printing press operation and maintenance.

Contaminant releases from these Site-specific mechanisms were at the surface or near the surface, in the case of sumps, and in the case of USTs generally within the upper 10 to 15 feet of soil. Petroleum hydrocarbons, especially DRO and ORO have low solubility in water and commonly bind to soil and do not spread laterally over great distances. In addition, because these compounds are less dense than water, they do not migrate downward through the groundwater column.

Figure 8 presents the CSM for impacts to environmental media caused by on-Site sources. The on-Site source CSM lists COCs and their primary source(s), media affected, transport mechanisms, exposure media and pathways, and potential receptors for impacted soil, groundwater, soil vapor, and air caused by on-Site sources.

Releases from surface sources such as printing presses, air compressors, and fuel dispensers create impacts that are generally limited to surface and shallow soil, including the shallow soil beneath former building slabs as depicted graphically on the geologic cross-sections (Figures 6 and 7).

Releases from USTs and hydraulic hoists are subsurface releases that impact soil to a greater depth than soil impacted by surface releases. Impacts to soil from subsurface releases extend downward to discontinuous lenses of shallow perched groundwater at several locations, particularly in AOPC 2 (interior ink tanks) and AOPC 5 (northern UST complex and fuel dispenser area). In these areas, thin discontinuous lenses of shallow perched groundwater were encountered in the upper 15 to 20 feet bgs at some locations. Impacted soil can extend into those occurrences of shallow perched groundwater or contaminants might be leached from impacted soil to the shallow perched groundwater as shown on Figures 6 and 7.

3.2 Off-Site Source Conceptual Site Model

The off-Site source for subsurface impacts at the Site is releases of cVOCs such as PCE and other dry-cleaning fluids from historical operations at the Troy Laundry Site, which operated from 1926 to 1985 and was one of the Pacific Northwest's largest commercial dry-cleaning facilities.

Figure 9 presents the CSM for impacts to environmental media caused by off-Site sources, specifically, releases of cVOCs from the former Troy Laundry property. The off-Site source CSM lists COCs and their primary source(s), media affected, transport mechanisms, exposure media and pathways, and potential receptors for impacted soil, groundwater, soil vapor, and air caused by the former Troy Laundry off-Site source.

Releases of PCE on the former Troy Laundry property have migrated vertically downward through the soil column and impacted the deeper regional aquifer. Groundwater flow in the deeper regional aquifer is toward the southeast as documented in the SES RI Report for the former Troy Laundry property (SES 2012). That documented deeper regional aquifer flow direction indicates that impacted groundwater under the former Troy Laundry property flows toward the subject property. Chlorinated VOC impacts to the deeper regional aquifer appear to be limited to the far northern portion of the subject property, the area closest to the former Troy Laundry property source area, as shown on Figure 6.

The Troy Laundry Site is separate and distinct from the Site that is the subject of this RI Report. To the extent that the subject property may be affected by the Troy Laundry Site, those impacts are solely the result of passive migration and Onni is not PLP for that Site. The PLPs for the Troy Laundry Site are parties to an Agreed Order with the State of Washington and Ecology and are actively addressing those impacts. Onni has, and is, providing access to the subject property as necessary to facilitate that ongoing investigation under the Agreed Order.

VOCs in soil vapor originating from the Troy Laundry Site have a limited potential to affect the subject property development. However, the below grade portions of the subject property development will be limited to about 5 floors of parking with ground floor commercial uses. The potential for exposure to VOC vapors is limited to parking garage users that have a very low exposure frequency and duration. This potential exposure is further limited by the additional depth between the bottom of the development (i.e.,

50 feet) and the depth to groundwater (i.e., 85 to 95 feet) and the 35 to 45 feet of vertical separation between groundwater and the bottom of the building. Vapor intrusion risks are still further mitigated by the new building construction and the high degree of ventilation (e.g., four atmospheric turnovers per hour) typically required of parking garages for carbon monoxide ventilation. Therefore, the potential exposures associated with vapor intrusion from low level VOCs at the limits of the dissolved-phase plume are not considered a concern for the subject property.

Additionally, at the time of this RI no VOCs from the Troy Laundry Site have been detected in groundwater beneath the subject property at concentrations that exceed a Groundwater Screening Level that could trigger a vapor intrusion concern or the need for further vapor intrusion assessment.

4.0 PROPOSED CLEANUP STANDARDS

Cleanup standards consist of two components: CULs and points of compliance (POCs) where those CULs must be achieved for the COCs identified during Site characterization. As required by MTCA, the selected CULs are protective of human health and the environment based upon the potential exposure pathways that will remain after completion of the cleanup action.

4.1 Soil Cleanup Levels

Soil COCs for the Site are GRO, DRO, ORO, benzene, naphthalene, and PCBs, which were detected at concentrations exceeding the MTCA Method A Soil CULs in at least one soil sample. MTCA Method B Soil CULs for direct contact and for the protection of groundwater, as well as MTCA Method C were considered, as summarized in the table below.

Proposed Cleanup Levels for Soil COCs (in mg/kg)

Soil COC	MTCA Method A (unrestricted land use)	MTCA Method B (direct contact)	MTCA Method B (protect GW at 13° C)	MTCA Method C	Proposed CUL
GRO	30 ^a	NVE	NVE	NVE	30 ^a
DRO	2,000	NVE	NVE	NVE	2,000
ORO	2,000	NVE	NVE	NVE	2,000
Benzene	0.03	18.2	0.027	2,390	0.03
Naphthalene	5.0	1,600	4.45	70,000	5.0
PCBs	1.0	0.5	NVE	65.6	1.0

Notes:

- a GRO cleanup level with detected benzene.
- NVE No value established.

Based on an evaluation of the potential exposure pathways and receptors for COCs in soil, standard MTCA Method A Soil CULs for Unrestricted Land Uses (WAC 173-340-900 Table 740-1) were selected as the applicable CULs. MTCA Method A CULs are conservative and are appropriate for Sites

undergoing routine cleanup actions for relatively few hazardous substances, which is consistent with Site-specific conditions at the former Seattle Times property.

The standard POC for these soil CULs is all soil within 15 feet of the ground surface. This POC is protective of all potential human, terrestrial, and ecological exposures at the Site (WAC 173-340-740 (6)(d)).

4.2 Groundwater Cleanup Levels

Groundwater COCs at the Site are GRO, DRO, ORO, chloroform, naphthalene, total xylenes, TCE, and vinyl chloride, which were detected at concentrations exceeding MTCA Method A CULs for groundwater in at least one groundwater sample from the shallow perched groundwater or the deeper regional aquifer. MTCA Method B CULs, MTCA Method C CULs, and Maximum Contaminant Levels (MCLs) were considered, as summarized in the table below.

Proposed Cleanup Levels for Groundwater COCs (in µg/L)

Groundwater COC	MTCA Method A	MTCA Method B	MTCA Method C	EPA or Washington State Maximum Contaminant Level	Proposed CUL
GRO	800 ^a	NVE	NVE	NVE	800 ^a
DRO	500	NVE	NVE	NVE	500
ORO	500	NVE	NVE	NVE	500
Chloroform	NVE	1.41	14.1	80	1.41
Naphthalene	160	160	350	NVE	160
Total Xylenes	1,000	1,600	3,500	10,000	1,000
TCE	5.0	0.54	9.51	5.0	5.0
1,2,4-TMB	NVE	80	180	NVE	80
1,3,5-TMB	NVE	80	180	NVE	80
Vinyl Chloride	0.2	0.029	0.29	2.0	0.2

Notes:

- a GRO cleanup level with detectable benzene in groundwater.
- EPA U.S. Environmental Protection Agency.
- TMB Trimethylbenzene
- NVE No value established.

Based on an evaluation of the potential exposure pathways and receptors for COCs in groundwater, standard MTCA Method A Groundwater CULs (WAC 173-340-900 Table 720-1) were selected as the applicable CULs, except for chloroform, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene, which do not have MTCA Method A CULs. For those compounds, the MTCA Method B CUL (carcinogenic) was selected. MTCA Method A and B CULs are conservative and are appropriate for Sites undergoing routine cleanup actions for relatively few hazardous substances.

The POC for these groundwater CULs is within the thin discontinuous occurrences of shallow perched groundwater at the Site.

Impacted groundwater in the deeper regional aquifer is attributable to off-Site impacts from the north-adjacent Troy Laundry Site. These impacts are related to historical dry-cleaning operations and are characterized by cVOCs, notably the dry-cleaning solvent PCE and its lesser chlorinated breakdown products. As noted above, those impacts are separate and distinct from the Site that is the subject of this RI Report. The impacts associated with the Troy Laundry Site are being addressed by the PLPs for that Site under an Agreed Order. Onni is voluntarily cooperating, to the extent required, with the PLPs in their assessment of VOC impacts to groundwater beneath the far northern portion of the subject property.

4.3 Terrestrial Ecological Evaluation

The potential terrestrial exposures at the Site were evaluated using the Terrestrial Ecological Evaluation (TEE) procedures in WAC 173-340-7493. The Site qualified for an exclusion from performance of a TEE based on the fact at the completion of redevelopment all areas of the Site will be covered with buildings or associated impervious surfaces such as concrete and asphalt (WAC 173-340-7491 (1)(b)). The completed Terrestrial Ecological Evaluation Form for the former Seattle Times property is presented in Attachment C.

5.0 CONCLUSIONS

The following conclusions are supported by the data and evaluations presented in this RI Report:

- This RI Report meets the substantive requirements of WAC 173-340-350(7) and Ecology's Remedial Investigation Checklist, Publication No 16-09-006. All elements of Ecology's Remedial Investigation Checklist are presented herein.
- The Site has been sufficiently characterized and impacted media have been adequately delineated to facilitate the development and implementation of Site-specific cleanup action.
- Onni currently plans to redevelop the subject property, which will include a remedial action consisting of excavation and off-Site disposal of all contaminated media at the Site. At the completion of that remedial action a Cleanup Action Report will be prepared documenting compliance with CULs throughout the subject property and Site. This planned remedial action will establish a standard POC consisting of all media throughout the Site.
- PCBs detected in soil at concentrations greater than the MTCA Method A Soil CUL are limited to two sample locations of surficial soil (less than 1-foot bgs) in AOPC 4. Additional multi-depth (5, 10, 15, and 20 feet bgs) soil sampling for PCBs in AOPC 4 was performed in April and May 2018. None of the 2018 soil samples from AOPC 4 had PCB detections at concentrations greater than the MTCA Method A Soil CUL (seven of nine sample results were non-detect for PCBs). These data demonstrate that PCB impacts to soil are limited to surface soil in a small area of AOPC 4.

- Soil samples with GRO, DRO, or ORO at concentrations greater than the CULs are limited to a few locations further described below:
 - ORO in samples A-1 (9 feet bgs) and A-3 (8.5 feet bgs) in AOPC 8. Additional testing performed during the SI in AOPC 8 included deeper sampling intervals generally extending from 15 to 20 feet bgs, with no detections of DRO or ORO demonstrating vertical delineation of ORO impacts to soil in this area.
 - ORO in the 10-foot bgs sample from MW-8 in AOPC 2. No deeper soil samples were collected at this location to bound the impacted area vertically. However, HSA drilling hit refusal at approximately 14 feet bgs indicating very dense glacial till, which has a low permeability and is resistant to downward migration of ORO. It is likely that ORO-impacted soil does not extend more than a few feet deeper and the planned 50 feet bgs excavation for below ground parking will remove deeper soil impacts, if present.
 - GRO and DRO in the 20 feet bgs soil sample from location U-12 in AOPC 5. No deeper soil samples were collected at this location to bound the impacted area vertically. However, the planned 50-foot bgs excavation for below ground parking will remove deeper soil impacts, if present.
 - Benzene was detected in soil at concentrations greater than the CUL in samples from borings U-11 and U-12 in AOPC 5, both samples from 15 feet bgs. The 20-foot bgs samples from both locations were non-detect for benzene demonstrating vertical delineation.
 - Naphthalene was detected in soil at a concentration greater than the CUL in the 20-foot bgs sample from boring U-12 in AOPC 5.
- Samples of shallow perched groundwater with one or more COCs at concentrations greater than CULs are limited to a few locations as further described below:
 - GRO, DRO, or ORO were detected in shallow perched groundwater at concentrations greater than the CULs in samples from locations T-4, T-5, and T-9 in AOPC 2 and locations U-1, U-11, U-12, and U-15 in AOPC 5.
 - VOCs, specifically chloroform, TCE, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, vinyl chloride, naphthalene, and total xylenes, were detected in shallow perched groundwater at concentrations greater than the CULs in samples from U-6, U-11, U-12, and U-13 in AOPC 5 and T-9 in AOPC 2.
- Chlorinated VOC impacts to the deeper regional aquifer are from historical releases of dry-cleaning fluid at the north-adjacent former Troy Laundry property. Deeper regional groundwater that is impacted by cVOCs is a separate and distinct site from the former Seattle Times property Site. Any further characterization or remediation of impacts to the deeper

regional aquifer are the responsibility of the PLP for the north-adjacent former Troy Laundry property.

- Due to the urban nature of the surroundings, the Site qualifies for exclusion from TEE as there is neither a completed exposure pathway for TEE receptors nor sufficient nearby habitat.

6.0 RECOMMENDATIONS

Based on the conclusions and supporting data evaluations presented in this RI Report, COC impacts to soil and shallow perched groundwater have been documented and delineated sufficiently to efficiently incorporate Site-specific cleanup actions into the property development plans. TRC recommends the following additional actions:

- Preparation of a Cleanup Action Plan (CAP) to address the identified impacts at the Site during the pending redevelopment. TRC understands that the planned redevelopment will excavate all soil within the property lines to a depth of 50 feet below grade or greater. As documented herein, excavation to that depth will remove all contaminated soil and groundwater from the Site.
- TRC oversight of CAP implementation during redevelopment, including collection of necessary performance samples to document compliance with CULs and appropriate contaminated soil disposal and management.
- Preparation of a Cleanup Action Report (CAR) documenting the successful implementation of the CAP and submittal to the Ecology VCP for a No Further Action determination.
- There is the limited potential for post-development vapor intrusion of vapors from the north-adjacent Troy Laundry Site. Property development plans should consider designs that incorporate engineered soil vapor mitigation measures such as vapor barriers or soil vapor venting equipment (active or passive). While the potential for vapor intrusion to present unacceptable risk to the subject property is highly limited, the inclusion of active or passive vapor mitigation systems may assist in alleviating the perceived concerns of future buyers, lenders, or development partners for the subject property.

7.0 REFERENCES

Farallon Consulting LLC (Farallon). 2010. *Phase I Environmental Site Assessment Report, Seattle Times, 1120 John Street, Seattle, Washington*. 8 January.

SoundEarth Strategies (SES). 2012. *Draft Remedial Investigation Report, Troy Laundry Property, 307 Fairview Avenue North, Seattle, Washington*. 2 May.

8.0 DISCLAIMER

As applicable and available within the project schedule and budget, TRC has completed the agreed scope of services employing professional standards applicable in the industry today. TRC assumes no risk for existing conditions on the subject property.

To the extent that these services have required judgment, there can be no assurance that fully definitive or desired results were obtained, or if any results were obtained, that they were supportive of any given course of action. The services have included the application of judgment to scientific principles; to that extent, certain results of this work have been based on subjective interpretation. TRC makes no warranties, express or implied including, without limitation, warranties as to merchantability or fitness for a particular purpose. The information provided in this letter report is not to be construed as legal advice.

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