FOCUSED FEASIBILITY STUDY

FORMER PLANTER'S HOTEL SITE

Prepared for
PORT OF SUNNYSIDE
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The material and data in this report were prepared under the supervision and direction of the undersigned.

MAUL FOSTER & ALONGI, INC.

This digital seal certifies the signatory and document content.

03-11-2022

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ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
COC	contaminant of concern
CUL	cleanup level
Ecology	Department of Ecology (Washington)
ESA	environmental site assessment
FFS	focused feasibility study
ft	foot
MFA	Maul Foster & Alongi, Inc.
MTCA	Model Toxics Control Act
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MRL	method reporting limit
PAH	polycyclic aromatic hydrocarbon
POC	point of compliance
the Port	Port of Sunnyside
the Property	the former Planter's Hotel site located at 400 S Sixth street in Sunnyside, Washington
TPH	total petroleum hydrocarbon
UST	underground storage tank
VOC	volatile organic compounds
WAC	Washington Administrative Code

1 INTRODUCTION

Maul Foster & Alongi, Inc. (MFA) prepared this focused feasibility study report (FFS) for the Port of Sunnyside (the Port) for the former Planters Hotel site located at 400 S Sixth street in Sunnyside, Washington (the Property) (Figure 1-1). This FFS identifies and evaluates potential cleanup alternatives based on findings from pervious site investigations, technical feasibility and cost, and regulatory requirements.

1.1 Regulatory Framework

This FFS has been prepared in accordance with grant agreement No. TCPIPG-1921-PoSun-00003, dated October 01, 2021, between the Washington State Department of Ecology (Ecology) and the Port. The agreement provides funding under Ecology's Integrated Planning Grant program.

The analysis provided in this FFS is based on the information provided in the Phase 1 environmental site assessment (ESA) (MFA, 2020), Final Site Investigation Report, and previous historical environmental investigation (MFA, 2021).

1.2 Purpose and Objectives

The purpose of this FFS is to identify and evaluate potential cleanup alternatives. The specific objectives are as follows:

- Summarize information from previous environmental investigations and existing environmental data
- Identify feasible cleanup technologies to address contamination at the Property
- Assemble cleanup technologies into a range of potential cleanup alternatives
- Provide a streamlined evaluation of the cleanup alternatives against regulatory criteria
- Identify the cleanup alternative most likely to be selected for implementation

2 BACKGROUND

This section describes the physical location and characteristics of the Property, including the geology and hydrogeology, and summarizes the site history.

2.1 Property Location, History, and Description

The Property is located in section 25, township 10 north, range 22 east of the Willamette Meridian in Sunnyside, Washington (Figure 1-1). The Property is comprised of approximately 0.31 acres and is located at the southeast corner of S Sixth Street and Decatur Avenue (Yakima County tax lots 22102524512 and 22102524511).

The Property currently contains a 3,152-square-foot unoccupied commercial building constructed in 1971 (Figure 2-1). The most recent building occupant was a KFC restaurant franchise. The Property was occupied by the Planters Hotel from the early 1900s to the late 1960s; the hotel used two underground storage tanks (USTs) at the location shown on Figure 2-1 that were removed in 2015.

2.2 Previous Environmental Investigations

In 2015, two USTs associated with the former hotel were removed from the Property. Analysis of soil samples collected from the bottom of the UST excavation detected diesel- and heavy-oil-range total petroleum hydrocarbon (TPH), total naphthalenes, and polycyclic aromatic hydrocarbons (PAHs) at concentrations greater than the Model Toxics Control Act (MTCA) cleanup levels (CULs). Analysis of reconnaissance groundwater samples collected from borings in the UST excavation exhibited diesel exceedances of the MTCA CUL, total naphthalenes and PAHs detections below MTCA CULs, and no detections of heavy oil or carcinogenic PAHs.

In December 2020, a Phase I ESA was conducted for the Property and identified recognized environmental conditions on the Property associated with the former UST removal and nearby contaminated sites (MFA, 2020).

In June 2021, MFA conducted a site investigation to characterize the nature and extent of soil and shallow groundwater contamination associated with the RECs identified during the Phase I ESA to determine if further action is required at the Property. During the investigation, soil and shallow groundwater samples were collected from eight borings advanced on the Property. Chemical data from the investigation activities described in this report were screened against Ecology MTCA Method A or Method B CULs. Concentrations exceeding MTCA CULs were identified within the former UST excavation (boring location GP03) and north of the excavation (boring location GP02), with the highest concentrations detected in GP03. A supplemental subsurface investigation to further evaluate the magnitude and extent of impacts north and east of the former UST excavation was recommended. Off-site sources of contamination were assessed at the Property perimeter, and based on the findings, off-site sources are not a currently recognized environmental conditions on the Property.

2.3 Geology and Hydrogeology

The topography at the Property and the vicinity is generally level; the Property elevation is approximately 747 feet above mean sea level. The nearest surface water is Snipes Mountain Lateral, an irrigation canal flowing approximately 0.30 miles southwest of the Property. The Yakima River flows approximately 6 miles south of the Property. Based on topography and surface water features, the direction of groundwater flow regionally and locally is inferred to be south-southwest.[1]

Subsurface soils on the Property consist of silt with sand and occasional gravel, sand with silt, and silt to approximately 16 feet below ground surface (bgs). According to GeoEngineers' report, groundwater was encountered at the Property at 6.5 to 12 feet bgs (GeoEngineers, 2019).

3 ENVIRONMENTAL CONDITIONS AND CLEANUP LEVELS

A complete discussion of the site investigation scope of work, methods, analytical results, and conclusion on the Property are provided in the final site investigation report (MFA, 2021). This section summarizes the results and finding of the investigation used to develop cleanup alternatives.

3.1 Sources

Based on documented historical uses, historical soil and groundwater data, and soil and groundwater data obtained from the site investigation, it appears that the former leaking USTs on the Property have contributed to contamination at the Property. Off-site recognized environmental conditions were assessed as part of the Final Site Investigation Report (MFA, 2021) and were not recognized as contributing to the contamination on the Property.

3.2 Contaminants of Concern

The following contaminants of concern were detected during the 2021 site investigation in soil and groundwater above their respective MTCA cleanup levels:

- Soil
  - Gasoline-range hydrocarbons
  - Diesel-range hydrocarbons
  - Lube oil -range hydrocarbons

[1] Depth-to-groundwater measurements were recorded at each reconnaissance boring during the site investigation. However, since the depths were measured in an open boring relative to the ground surface (rather than a completed monitoring well with a surveyed measure point elevation) and the project schedule would not allow for standby time to ensure water levels had achieved a static level, the measurements were not used to determine a site-specific groundwater flow direction.

  - VOCs
  - PAHs
- Groundwater
  - Diesel-range hydrocarbons
  - lube oil- range hydrocarbons
  - PAHs

3.3 Data Gaps

Based on previous investigations conducted at the Property, several data gaps remain:

- The lateral extent of impacts in soil to the north and east is not known.
- The lateral and vertical extent of groundwater impacts to the east is not known.

3.4 Screening Results

Sample results were screened against MTCA Method A CULs for unrestricted land use. Where MTCA Method A CULs were not available, the results were screened against MTCA Method B CULs for cancer or noncancer, whichever value is lower. Soil and groundwater analytical results from the site investigation are provided in Tables 3-1 and 3-2, respectively. Exceedances of MTCA CULs in soil and groundwater are also shown in Figure 3-1.

3.4.1 Groundwater

Diesel- and lube-oil-range TPH, the diesel + lube-oil sum, and 1-methylnaphthalene and 2-methylnaphthalene were detected at concentrations that exceeded the MTCA CULs in sample GP03-GW-15. Diesel- and lube-oil-range TPH were detected at borings GP01 and GP02 at concentrations less than the MTCA CULs and were not detected in any other boring. 1-methylnaphthalene and 2-methylnaphthalene were not detected in any other boring. No other chemicals were detected at concentrations above the MTCA CULs.

3.4.2 Soil

Concentrations of gasoline, diesel- and lube-oil-range TPH in soil exceeded MTCA CULs at GP03, which was collected at a depth of 6 feet bgs. Lube-oil-range TPH was detected at borings GP01, GP02, and GP06 at concentrations less than the MTCA CULs and were not detected in any other boring. Concentrations of benzene, naphthalene, tetrachloroethene, and total xylenes were detected above MTCA CULs at GP03. VOCs were not detected in any other borings. Benzo(a)pyrene and carcinogenic PAH TEQ were detected at concentrations that exceeded the MTCA CULs at borings GP02 and GP03. 1-methylnaphthalene and total naphthalenes also exceeded MTCA CULs at GP03. PAHs were detected at concentrations below the MTCA CULs at borings GP01 and GP06.

3.5 Cleanup Standards and Points of Compliance

According to MTCA, the cleanup standards for a site have two primary components: chemical-specific CULs and points of compliance (POCs). The CUL is the concentration of a chemical in a specific environmental medium that will not pose unacceptable risks to human health or the environment. MTCA provides three different options for establishing CULs for human health: Methods A, B, and C. MTCA Method A is designed for cleanups at relatively simple sites, such as small sites that have only a few hazardous substances. Method B can be used at any site. Method C is used primarily for industrial sites.

The POC for each environmental medial impacted on the Property were determined based on site conditions and regulations in the Washington Administrative Code. The POC is the location where the CUL must be met. CULs and POCs for each media are described below:

3.5.1 Soil

For human health screening, soil was screened against MTCA Method A CULs for unrestricted land use. The Method A values are for protection of human health via the direct-contact or ingestion pathways and protection of groundwater via the soil-leaching-to-groundwater pathway. For certain constituents, MTCA Method A CULs are not available, and Method B CULs were applied. Method B CULs may be used at any site.

The soil POC is the depth at which soil CULs shall be attained. The standard POC in soil for human direct contact and for ecological receptors is from the surface to 15 feet bgs throughout the entire site. This standard POC is applied to soil on the Property.

3.5.2 Groundwater

Groundwater was screened to MTCA Method A CULs. For groundwater, the POC is the point or points where the groundwater CULs must be attained for a site to comply with the cleanup standards. Groundwater CULs shall be attained in all groundwater from the POC to the outer boundary of the hazardous-substance plume. Under WAC 173-340-720(8)(c), Ecology may approve a conditional POC if it is not practicable to meet the CULs throughout the site within a reasonable restoration time frame. A conditional POC for groundwater is not proposed.

4 CONCEPTUAL SITE MODEL

A conceptual site model (CSM) was developed to describe release mechanisms, environmental transport processes, exposure routes, and receptors for sources of contamination identified on the Property (Figure 4-1). The primary purpose of a CSM is to identify potential pathways by which human and ecological receptors could be exposed to site-related chemicals. A complete exposure pathway consists of four necessary elements: (1) a source and mechanism of chemical release to the

environment; (2) an environmental transport medium for a released chemical; (3) a point of potential contact with the impacted medium (referred to as the exposure point); and (4) an exposure route (e.g., soil ingestion) at the exposure point. However, an incomplete exposure pathway does not guarantee that the exposure pathway will always remain incomplete. If the Property is redeveloped for purposes not currently planned (e.g., for residential purposes), potential exposure pathways may need to be reevaluated. The CSM describes potential exposure scenarios based on information collected during initial investigations and the supplemental investigation.

The primary mechanisms likely to influence the fate and transport of chemicals at the Property include natural biodegradation of organic chemicals, sorption of chemicals to soil, physical dispersion of adsorbed chemicals, and leaching of chemicals from soil to groundwater. The relative importance of these processes varies, depending on the chemical and physical properties of the released contaminant. The properties of the soil and the dynamics and elevation of groundwater also affect contaminant fate and transport.

The Property is currently covered in gravel. The soil-to-groundwater migration pathway is complete because of the potential for precipitation and infiltration through unpaved areas at the Property into the vadose-zone soil and shallow groundwater. Leaching of near-surface soil impacts during precipitation events could affect shallow groundwater at the Property.

The Property is relatively level. The closest surface water body to the Property is the Snipes Mountain Lateral located approximately 0.3 miles southwest at slightly higher elevation. Groundwater flow directions on the Property were observed to the south or southwest, towards the Snipes Mountain Lateral. A groundwater to surface water pathway has not been confirmed, however, even if they were hydraulically connected, it is unlikely that dissolved-phase contamination migrating downgradient of the source area would impact surface water associated with the river.

Potable water is supplied to the Property by the City. Therefore, groundwater beneath the Property is not currently used as a drinking water source. However, there are no covenants restricting groundwater use on the Property; therefore, groundwater is considered potable and available for use.

Volatile contaminants in soil and groundwater may also partition to the vapor phase, which could result in impacts to air quality. However, the detected constituents in soil and groundwater on the Property are not highly volatile; therefore, it is unlikely that volatile concentrations would result in impacts to air.

Habitat that is likely to support ecological receptors is absent at the Property. Therefore, ecological exposure pathways at the Property are considered insignificant or incomplete.

4.1.1 Potential Exposure Scenarios

Current or future exposure pathways that are considered potentially complete are illustrated on Figure 4-1 and include the following:

- Incidental ingestion of surface or subsurface soil or groundwater
- Incidental contact with surface or subsurface soil or groundwater

- Inhalation of fugitive dusts generated from surface and/or subsurface soil
- Use of groundwater as drinking water

4.1.2 Potential Receptors

Redevelopment plans for the Property include remodeling the existing building for use as a restaurant; therefore, the following groups are considered current and future potential receptors:

- Construction workers
- Park workers and visitors
- Residents (potential future use of groundwater for drinking)
- Ecological receptors

5 CLEANUP ALTERNATIVES

The purpose of this FFS is to identify and evaluate the most relevant cleanup alternative that reduces contaminant exposure to levels that are protective of human health and the environment and are appropriate for meeting the CULs at the Property. This section identifies feasible cleanup technologies and assembles those technologies into potential options for addressing contamination in defined cleanup action areas.

5.1 Cleanup Action Areas

A single cleanup action area consisting of 450 square feet around the footprint of the two former USTs, as shown in Figure 5-1, is proposed for the Property.

5.2 Soil Cleanup Technologies

The following cleanup technologies were considered for addressing soil with concentrations above CULs.

- Institutional controls
- Capping
- Excavation and offsite disposal

All cleanup technologies were considered feasible and were retained during alternative development.

5.3 Groundwater Cleanup Technologies

The following technologies were considered for groundwater with concentrations above CULs.

- Institutional controls
- In-situ chemical oxidation
- In-situ bioremediation
- Pump and treat
- Permeable reactive barrier
- Bioremediation via backfilling

The density of silts within the cleanup action area prevents effective dispersion of chemical treatments in the subsurface and restricts the rate of groundwater flow. For this reason, in-situ chemical oxidation, in-situ bioremediation, and pump and treat were not considered further. A utility network located on the eastern edge of the cleanup action area may impact the ability to completely remove soil with concentrations above their respective CULs if impacts extend further to the east.

5.4 Potential Cleanup Alternatives

Cleanup technologies were assembled into several cleanup alternatives and compared against each other.

5.4.1 Alternative 1—No Action

Under the no action alternative, the property would remain in its current state and no further remediation is carried out. The Alternative does not meet the minimum requirements and is used as a baseline for comparison of alternatives.

5.4.2 Alternative 2—Capping, Institutional Controls, and Monitored Natural Attenuation

Alternative 2 uses capping, institutional controls, and monitored natural attenuation to reduce direct-contact exposure risks for current and future occupants of the Property. It includes the following elements:

Capping: Place demarcation fabric over former UST footprint and cap with asphalt.

Institutional Controls: Prepare a site management plan and record an environmental covenant to prevent future use of groundwater until such a time that monitoring indicates no impacts remain. Elements of the site management plan will include description of the cleanup action area and outline work procedures for any future site disturbing activities.

Groundwater Monitoring: Install up to two groundwater monitoring wells to a depth of 20 feet below ground surface. Groundwater will be monitored biannually for five years after completion of excavation activities then annually for 25 years or until cleanup levels are achieved.

Cost: The probable cost of Alternative 2 is $271,000. It is assumed that design documents and permits would be incorporated into site redevelopment and that a separate bid package is not required to complete the excavation. If the alternative is to be completed independently of site redevelopment, costs should be revised to account for this. This estimate includes a 30 percent contingency and is considered to have a confidence of -30%/+50%.

5.4.3 Alternative 3—Soil Excavation

Alternative 3 includes source removal by excavation of remaining soil impacts and backfilling with clean fill. The alternative includes the following actions:

Excavation and Offsite Disposal: Excavate soil within the former UST footprint to a maximum depth of 10 feet below ground surface. Stockpile clean overburden from the previous UST removal removed during excavation activities onsite and reuse as clean backfill. Stockpile contaminated soils removed during excavation activities separately and dispose of offsite at a licensed Subtitle D landfill. The excavation is estimated to remove approximately 100 cubic yards of clean overburden and 100 cubic yards of contaminated soil. Removal volumes includes a 20 percent contingency to account for uncertainty in the extent of impacted soils. Groundwater encountered during excavation activities will be treated with activated carbon and discharged to the municipal sanitary sewer.

Groundwater Monitoring: Install up to two groundwater monitoring wells to a depth of 20 feet below ground surface. Groundwater will be monitored biannually for five years after completion of excavation activities and annually from years five to nine, with a quarterly monitoring year ten or until cleanup levels are achieved.

Cost: The probable cost of Alternative 3 is $198,000. It is assumed that design documents and permits would be incorporated into site redevelopment and that a separate bid package is not required to complete the excavation. If the alternative is to be completed independently of site redevelopment, costs should be revised to account for this. This estimate includes a 30 percent contingency and is considered to have a confidence of -30%/+50%.

5.4.4 Alternative 4—Soil Excavation

Alternative 4 includes the same elements as Alternative 3 with the addition of an oxygen release compound (ORC) to encourage biodegradation of impacts in groundwater. The alternative includes the following actions:

Excavation and Offsite Disposal: Excavate soil within the former UST footprint to a maximum depth of 10 feet below ground surface. Stockpile clean overburden from the previous UST removal removed during excavation activities onsite and reuse as clean backfill. Stockpile contaminated soils removed during excavation activities separately and dispose of offsite at a licensed Subtitle D landfill. The excavation will remove approximately 100 cubic yards of clean overburden and 100 cubic yards

of contaminated soil. Removal volumes includes a 20 percent contingency to account for uncertainty in the extent of impacted soils. Groundwater encountered during excavation activities will be treated and discharged to the municipal sanitary sewer.

ORC: Apply solid phase ORC to mixed with imported clean material to base of excavation within smear zone. Bucket mixing of product into

Groundwater Monitoring: Install up to two groundwater monitoring wells to a depth of 20 feet below ground surface. Groundwater will be monitored biannually for four years and then quarterly for one year or until cleanup levels are achieved.

Cost: The probable cost of Alternative 4 is $200,000. It is assumed that design documents and permits would be incorporated into site redevelopment and that a separate bid package is not required to complete the excavation. If the alternative is to be completed independently of site redevelopment, costs should be revised to account for this. This estimate includes a 30% contingency and is considered to have a confidence of -30%/+50%.

6 EVALUATION OF CLEANUP ALTERNATIVES

The following discussion describes the evaluation completed for the alternatives presented in Section 4.

6.1 Model Toxics Control Act Requirements

Criteria used to evaluate cleanup alternatives are defined in the MTCA regulation (Washington Administrative Code [WAC] 173-340-360). These criteria are as follows:

- Threshold requirements:
  i. Protect human health and the environment
  ii. Comply with cleanup standards (WAC 173-340-700 through 173-340-760)
  iii. Comply with applicable state and federal laws (WAC 173-340-710)
  iv. Provide for compliance monitoring (WAC 173-340-410 and 173-340-720 through 173-340-760)
- Other requirements:
  i. Use permanent solutions to the maximum extent practicable
  ii. Provide for a reasonable restoration timeframe
  iii. Consider public concerns (WAC 173-340-600)

Regarding the threshold requirements, all cleanup alternatives except for Alternative 1:

- Protect human health and the environment
- Are expected to comply with the preliminary CULs presented in Tables 3-1 and 3-2
- Include compliance monitoring
- Would be designed to comply with applicable state and federal laws

6.2 Laws and Regulations Applicable to Cleanup

Laws and regulations that are applicable to this cleanup include state environmental law, and city municipal codes. Federal, state, and local laws regarding procurement of contractors to conduct the cleanup will be followed.

All appropriate permits will be obtained prior to the work commencing. It is anticipated that a construction general stormwater permit, clearing and grading permit and soil disposal manifests may be required to complete the cleanup activities described in the cleanup alternatives.

6.3 Comparison of Alternatives

Alternatives 2, 3, and 4 all meet the minimum threshold requirements as defined in MTCA and were retained for further evaluation. Retained alternatives were evaluated for effectiveness, implementability, and cost as described below.

6.3.1 Effectiveness

Alternative 2 effectively eliminates the direct exposure risk by preventing direct contact with impacted soils and allowing for natural degradation processes to reduce concentrations of COCs in groundwater over time. However, since Alternative 2 does not involve any source removal, the assumed timeline for achieving CULs is significantly longer than Alternatives 3 and 4. Additionally, the success of the capping and institutional controls is dependent on compliance with the site management plan which includes repairing the cap as it wears over time and ensuring that any future development work is performed with the existing contamination in mind.

Alternatives 3 and 4 both include source removal, which will remove all soils with concentrations of COCs above CULs. Under Alternative 3, the removal of impacted soils is expected to increase the natural rate of contamination degradation in groundwater by removing the source of impact. In addition to the soil removal, Alternative 4 includes the application of ORC in the base of excavation with bucket mixing into the smear zone. The use of ORC is expected to decrease the time needed to achieve groundwater CULs when compared to the other alternatives by providing a more favorable environment for contaminant degradation.

6.3.2 Implementability

Alternatives 2, 3, and 4 are all technically implementable. Alternative 2 requires the least amount of initial labor but has more significant long-term monitoring requirements than Alternatives 3 and 4.

Based on current site knowledge, location of existing utilities will not inhibit soil removal within property boundaries. If soil impacts are found to extend into the utility corridor east of the Property complete removal may not be feasible.

6.3.3 Cost

Due to the uncertainty of long-term concentrations, the monitoring costs associated with Alternative 2 are significantly more than the other alternatives. Additionally, a no further action determination may be harder to obtain without further action under Alternative 2. The cost of implementing Alternative 4 is marginally less than the cost of Alternative 3, due primarily to a reduced period of groundwater monitoring. Alternative 4 is the preferred alternative because it is constructable, removes the source of contamination, enhances the rate of degradation of COCs in groundwater, and the cost is in line with other alternatives considered.

7 CONCLUSIONS AND RECCOMENDATIONS

The preferred alternative consists of excavation of soils with concentrations of COCs above CULs, mixing ORC into the base of the excavation, and backfilling with clean material. After remedy implementation, groundwater will be monitored using two wells installed on the property. Monitoring activities will continue until four consecutive events show groundwater concentrations with no exceedances of the CULs. As feasible it is recommended that cleanup activities be timed around or in conjunction with site redevelopment.

For this FFS, it is assumed that any cleanup action would be conducted independently by the Port and an no further action letter would be requested through the voluntary cleanup program after completion of groundwater monitoring. Cost estimates provided in this FFS assume limited reporting would be required during the cleanup action design and implementation process. If the Port were to enter into a formal agreement with Ecology, it is recommended that these costs be re-evaluated.

LIMITATIONS

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

REFERENCES

MFA. 2020. Phase I environmental site assessment, 400 S 6th Street, Sunnyside, Washington 98944. Prepared for Port of Sunnyside. Maul Foster & Alongi, Inc., Vancouver, Washington. December 18.

MFA. 2021. Final Site Investigation Report, 400 S 6th Street, Sunnyside, Washington 98944. Prepared for Port of Sunnyside. Maul Foster & Alongi, Inc., Vancouver, Washington. June 30.

TABLES

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Table 3-1
Soil Analytical Results
Former Planters Hotel Site
Sunnyside, Washington

Location	MTCA A/B[1]	GP01	GP02	GP03	GP04	GP05	GP06		GP07	GP08
Sample Name		GP01-S-5.5	GP02-S-8	GP03-S-6	GP04-S-8	GP05-S-6	GP06-S-7.5	GP06-S-7.5-DUP	GP07-S-6	GP08-S-6
Collection Date		4/6/2021	4/7/2021	4/7/2021	4/7/2021	4/6/2021	4/6/2021	4/6/2021	4/6/2021	4/7/2021
Collection Depth (ft bgs)		5.5	8	6	8	6	7.5	7.5	6	6
TPH (mg/kg)										
Gasoline Range Hydrocarbons	100[a]	3.5 U	3.33 U	3,130 J	4.06 U	3.14 U	2.83 U	3.94 U	4.26 U	3.41 U
Diesel Range Hydrocarbons	2,000	11.8 U	12.3 U	17,900 J	12.2 U	12.4 U	11.3 U	11.4 U	12.5 U	12.3 U
Lube Oil Range Hydrocarbons	2,000	29.9 J	119	16,000 J	24.5 U	24.8 U	22.6 U	34.2 J	25.1 U	24.6 U
Diesel + Lube Oil Range Hydrocarbons[b]	2,000	35.8 J	125	33,900 J	24.5 U	24.8 U	22.6 U	39.9 J	25.1 U	24.6 U
VOCs (mg/kg)										
1,1,1,2-Tetrachloroethane	38	0.0175 U	0.0166 U	0.2 U	0.0203 U	0.0157 U	0.0142 U	0.0197 U	0.0213 U	0.0171 U
1,1,1-Trichloroethane	2,000	0.0175 U	0.0166 U	0.2 U	0.0203 U	0.0157 U	0.0142 U	0.0197 U	0.0213 U	0.0171 U
1,1,2,2-Tetrachloroethane	5	0.035 U	0.0333 U	0.401 U	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
1,1,2-Trichloroethane	18	0.0175 U	0.0166 U	0.2 U	0.0203 U	0.0157 U	0.0142 U	0.0197 U	0.0213 U	0.0171 U
1,1-Dichloroethane	180	0.0175 U	0.0166 U	0.2 U	0.0203 U	0.0157 U	0.0142 U	0.0197 U	0.0213 U	0.0171 U
1,1-Dichloroethene	4,000	0.0175 U	0.0166 U	0.2 U	0.0203 U	0.0157 U	0.0142 U	0.0197 U	0.0213 U	0.0171 U
1,1-Dichloropropene	NV	0.035 U	0.0333 U	0.401 U	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
1,2-Dibromoethane	0.005	1.4 U	1.33 U	401 U	1.62 U	1.26 U	1.13 U	1.57 U	1.7 U	1.37 U
1,2,3-Trichlorobenzene	64	0.175 U	0.166 U	2 U	0.203 U	0.157 U	0.142 U	0.197 U	0.213 U	0.171 U
1,2,3-Trichloropropane	0.0063	0.035 U	0.0333 U	0.802 U	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
1,2,4-Trichlorobenzene	34	0.175 U	0.166 U	2 U	0.203 U	0.157 U	0.142 U	0.197 U	0.213 U	0.171 U
1,2,4-Trimethylbenzene	800	0.035 U	0.0333 U	46	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
1,2-Dibromo-3-chloropropane	1	0.175 U	0.166 U	2 U	0.203 U	0.157 U	0.142 U	0.197 U	0.213 U	0.171 U
1,2-Dichlorobenzene	7,200	0.0175 U	0.0166 U	0.2 U	0.0203 U	0.0157 U	0.0142 U	0.0197 U	0.0213 U	0.0171 U
1,2-Dichloroethane	11	0.0175 U	0.0166 U	0.2 U	0.0203 U	0.0157 U	0.0142 U	0.0197 U	0.0213 U	0.0171 U
1,2-Dichloropropane	27	0.0175 U	0.0166 U	0.2 U	0.0203 U	0.0157 U	0.0142 U	0.0197 U	0.0213 U	0.0171 U
1,3,5-Trimethylbenzene	800	0.035 U	0.0333 U	13	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
1,3-Dichlorobenzene	NV	0.0175 U	0.0166 U	0.2 U	0.0203 U	0.0157 U	0.0142 U	0.0197 U	0.0213 U	0.0171 U
1,3-Dichloropropane	1600	0.035 U	0.0333 U	0.401 U	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
1,4-Dichlorobenzene	190	0.0175 U	0.0166 U	0.2 U	0.0203 U	0.0157 U	0.0142 U	0.0197 U	0.0213 U	0.0171 U
2,2-Dichloropropane	NV	0.035 U	0.0333 U	0.401 U	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
2-Butanone	48,000	0.35 U	0.333 U	4 U	0.406 U	0.314 U	0.283 U	0.394 U	0.426 U	0.341 U
2-Chlorotoluene	1,600	0.035 U	0.0333 U	0.401 U	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
2-Hexanone	400	0.35 U	0.333 U	4.01 U	0.406 U	0.314 U	0.283 U	0.394 U	0.426 U	0.341 U
4-Chlorotoluene	NV	0.035 U	0.0333 U	0.401 U	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
4-Isopropyltoluene	NV	0.035 U	0.0333 U	2.92 J	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
4-Methyl-2-pentanone	6,400	0.35 U	0.333 U	4.01 U	0.406 U	0.314 U	0.283 U	0.394 U	0.426 U	0.341 U
Acetone	72,000	0.7 U	0.665 U	8.02 U	0.811 U	0.629 U	0.566 U	0.787 U	0.852 U	0.683 U
Acrylonitrile	2	0.07 U	0.0665 U	0.802 U	0.0811 U	0.0629 U	0.0566 U	0.0787 U	0.0852 U	0.0683 U
Benzene	0.03	0.007 U	0.00665 U	0.152 J	0.00811 U	0.00629 U	0.00566 U	0.00787 U	0.00852 U	0.00683 U

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Table 3-1
Soil Analytical Results
Former Planters Hotel Site
Sunnyside, Washington

Location	MTCA A/B[1]	GP01	GP02	GP03	GP04	GP05	GP06		GP07	GP08
Sample Name		GP01-S-5.5	GP02-S-8	GP03-S-6	GP04-S-8	GP05-S-6	GP06-S-7.5	GP06-S-7.5-DUP	GP07-S-6	GP08-S-6
Collection Date		4/6/2021	4/7/2021	4/7/2021	4/7/2021	4/6/2021	4/6/2021	4/6/2021	4/6/2021	4/7/2021
Collection Depth (ft bgs)		5.5	8	6	8	6	7.5	7.5	6	6
Bromobenzene	640	0.0175 U	0.0166 U	0.2 U	0.0203 U	0.0157 U	0.0142 U	0.0197 U	0.0213 U	0.0171 U
Bromodichloromethane	16	0.035 U	0.0333 U	0.401 U	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
Bromoform	130	0.07 U	0.0665 U	0.802 U	0.0811 U	0.0629 U	0.0566 U	0.0787 U	0.0852 U	0.0683 U
Bromomethane	110	0.7 U	0.665 U	8 U	0.811 U	0.629 U	0.566 U	0.787 U	0.852 U	0.683 U
Carbon disulfide	8,000	0.35 U	0.333 U	4 U	0.406 U	0.314 U	0.283 U	0.394 U	0.426 U	0.341 U
Carbon tetrachloride	14	0.035 U	0.0333 U	0.401 U	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
Chlorobenzene	1,600	0.0175 U	0.0166 U	0.2 U	0.0203 U	0.0157 U	0.0142 U	0.0197 U	0.0213 U	0.0171 U
Chlorobromomethane	NV	0.035 U	0.0333 U	0.401 U	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
Chloroethane	NV	0.35 U	0.333 U	4 U	0.406 U	0.314 U	0.283 U	0.394 U	0.426 U	0.341 U
Chloroform	32	0.035 U	0.0333 U	0.401 U	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
Chloromethane	NV	0.175 U	0.166 U	2 U	0.203 U	0.157 U	0.142 U	0.197 U	0.213 U	0.171 U
cis-1,2-Dichloroethene	160	0.0175 U	0.0166 U	0.2 U	0.0203 U	0.0157 U	0.0142 U	0.0197 U	0.0213 U	0.0171 U
cis-1,3-Dichloropropene	NV	0.035 U	0.0333 U	0.401 U	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
Dibromochloromethane	12	0.07 U	0.0665 U	0.802 U	0.0811 U	0.0629 U	0.0566 U	0.0787 U	0.0852 U	0.0683 U
Dibromomethane	800	0.035 U	0.0333 U	0.401 U	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
Dichlorodifluoromethane (Freon 12)	16,000	0.07 U	0.0665 U	2 UJ	0.0811 U	0.0629 U	0.0566 U	0.0787 U	0.0852 U	0.137 UJ
Ethylbenzene	6	0.0175 U	0.0166 U	2	0.0203 U	0.0157 U	0.0142 U	0.0197 U	0.0213 U	0.0171 U
Hexachlorobutadiene	13	0.07 U	0.0665 U	0.802 U	0.0811 U	0.0629 U	0.0566 U	0.0787 U	0.0852 U	0.0683 U
Isopropylbenzene	8,000	0.035 U	0.0333 U	0.734 J	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
m,p-Xylene	NV	0.035 U	0.0333 U	12	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
Methyl tert-butyl ether	0.1	0.035 U	0.0333 U	0.401 U	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
Methylene chloride	0.2	0.35 U	0.333 U	4 U	0.406 U	0.314 U	0.283 U	0.394 U	0.426 U	0.341 U
Naphthalene	5	0.07 U	0.0665 U	132	0.0811 U	0.0629 U	0.0566 U	0.0787 U	0.0852 U	0.0683 U
n-Butylbenzene	4,000	0.035 U	0.0333 U	5 J	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
n-Propylbenzene	8,000	0.0175 U	0.0166 U	3	0.0203 U	0.0157 U	0.0142 U	0.0197 U	0.0213 U	0.0171 U
o-Xylene	16,000	0.0175 U	0.0166 U	5	0.0203 U	0.0157 U	0.0142 U	0.0197 U	0.0213 U	0.0171 U
sec-Butylbenzene	8,000	0.035 U	0.0333 U	1	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
Styrene	16,000	0.035 U	0.0333 U	0.401 U	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
tert-Butylbenzene	8,000	0.035 U	0.0333 U	0.401 U	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
Tetrachloroethene	0.05	0.0175 U	0.0166 U	0.284 J	0.0203 U	0.0157 U	0.0142 U	0.0197 U	0.0213 U	0.0171 U
Toluene	7	0.035 U	0.0333 U	0.969	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
trans-1,2-Dichloroethene	1,600	0.0175 U	0.0166 U	0.2 U	0.0203 U	0.0157 U	0.0142 U	0.0197 U	0.0213 U	0.0171 U
trans-1,3-Dichloropropene	NV	0.035 U	0.0333 U	0.401 U	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
Trichloroethene	0.03	0.0175 U	0.0166 U	0.2 U	0.0203 U	0.0157 U	0.0142 U	0.0197 U	0.0213 U	0.0171 U
Trichlorofluoromethane (Freon 11)	24,000	0.07 U	0.0665 U	0.802 U	0.0811 U	0.0629 U	0.0566 U	0.0787 U	0.0852 U	0.0683 U

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Table 3-1
Soil Analytical Results
Former Planters Hotel Site
Sunnyside, Washington

Location	MTCA A/B[1]	GP01	GP02	GP03	GP04	GP05	GP06		GP07	GP08
Sample Name		GP01-S-5.5	GP02-S-8	GP03-S-6	GP04-S-8	GP05-S-6	GP06-S-7.5	GP06-S-7.5-DUP	GP07-S-6	GP08-S-6
Collection Date		4/6/2021	4/7/2021	4/7/2021	4/7/2021	4/6/2021	4/6/2021	4/6/2021	4/6/2021	4/7/2021
Collection Depth (ft bgs)		5.5	8	6	8	6	7.5	7.5	6	6
Vinyl chloride	0.67	7 U	6.65 U	200 U	8.11 U	6.29 U	5.66 U	7.87 U	8.52 U	6.83 UJ
Xylenes (total)[c]	9	70 U	66.5 U	17	0.0406 U	0.0314 U	0.0283 U	0.0394 U	0.0426 U	0.0341 U
PAHs (mg/kg)										
1-Methylnaphthalene	34	0.0135	0.119 U	105	0.00646 U	0.00599 U	0.00573 U	0.00583 U	0.00628 U	0.00618 U
2-Methylnaphthalene	320	0.0192	0.119 U	186	0.00646 U	0.00599 U	0.00573 U	0.00583 U	0.00628 U	0.00618 U
Acenaphthene	4,800	0.00616 U	0.119 U	13.2 U	0.00646 U	0.00599 U	0.00573 U	0.00583 U	0.00628 U	0.00618 U
Acenaphthylene	NV	0.00616 U	0.119 U	2.46 U	0.00646 U	0.00599 U	0.00573 U	0.00583 U	0.00628 U	0.00618 U
Anthracene	24,000	0.00616 U	0.313	5.86 U	0.00646 U	0.00599 U	0.00573 U	0.00583 U	0.00628 U	0.00618 U
Benzo(a)anthracene	NV	0.00677 J	1.24	4.43	0.00646 U	0.00599 U	0.00573 U	0.00583 U	0.00628 U	0.00618 U
Benzo(a)pyrene	0.1	0.00659 J	0.963	3.04	0.00646 U	0.00599 U	0.00573 U	0.00583 U	0.00628 U	0.00618 U
Benzo(b)fluoranthene	NV	0.00803 J	1.18 J	0.868 J	0.00646 U	0.00599 U	0.00573 U	0.00583 U	0.00628 U	0.00618 U
Benzo(ghi)perylene	NV	0.0188	0.551	1.72	0.00646 U	0.00599 U	0.00573 U	0.00583 U	0.00628 U	0.00618 U
Benzo(k)fluoranthene	NV	0.00616 U	0.535 J	0.232 U	0.00646 U	0.00599 U	0.00573 U	0.00583 U	0.00628 U	0.00618 U
Chrysene	NV	0.00877 J	1.27	5.86	0.00646 U	0.00599 U	0.00573 U	0.00583 U	0.00628 U	0.00618 U
Dibenzo(a,h)anthracene	NV	0.00616 U	0.119 U	0.317 J	0.00646 U	0.00599 U	0.00573 U	0.00583 U	0.00628 U	0.00618 U
Dibenzofuran	80	0.00616 U	0.119 U	4.56 U	0.00646 U	0.00599 U	0.00573 U	0.00583 U	0.00628 U	0.00618 U
Fluoranthene	3,200	0.00616 U	2.20	1.56	0.00646 U	0.00599 U	0.00573 U	0.00583 U	0.00628 U	0.00618 U
Fluorene	3,200	0.00616 U	0.119 U	9.43	0.00646 U	0.00599 U	0.00573 U	0.00583 U	0.00628 U	0.00618 U
Indeno(1,2,3-cd)pyrene	NV	0.0105 J	0.692	0.584	0.00646 U	0.00599 U	0.00573 U	0.00583 U	0.00628 U	0.00618 U
Naphthalene	5	0.0109 J	0.119 U	25.0	0.00646 U	0.00599 U	0.00573 U	0.00583 U	0.00628 U	0.00618 U
Phenanthrene	NV	0.0102 J	1.51	36.9	0.00646 U	0.00599 U	0.00805 J	0.00583 U	0.00628 U	0.00618 U
Pyrene	2,400	0.00616 U	1.60	11.2	0.00646 U	0.00599 U	0.00573 U	0.00583 U	0.00628 U	0.00618 U
cPAH TEQ[d][2]	0.1	0.0098	1.35	3.73	ND	ND	ND	ND	ND	ND
Naphthalene (total)[e]	5	0.0436 J	0.119 U	316	0.00646 U	0.00599 U	0.00573 U	0.00583 U	0.00628 U	0.00618 U

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Table 3-1
Soil Analytical Results
Former Planters Hotel Site
Sunnyside, Washington

NOTES:

Shading (color key below) indicates values that exceed screening criteria; non-detects ("U" or "UJ") were not compared with screening criteria.

Method A or B. The lower of the Method B cancerous or noncancerous values applied when Method A was not available.

cPAH TEQ = carcinogenic PAH toxicity equivalence.

ft bgs = feet below ground surface.

J = estimated value.

mg/kg = milligrams per kilogram.

MTCA = Motel Toxics Control Act.

ND = non-detect.

NV = no value.

PAH = polycyclic aromatic hydrocarbon.

TPH = total petroleum hydrocarbons.

U = Result is non-detect to-detection limit.

UJ = Result is non-detect with an estimated detection limit.

VOC = volatile organic compound.

[a]TPH gasoline range hydrocarbon with no detectable benzene value.

[b]Diesel + Lube Oil Range Hydrocarbons are the sum of diesel range hydrocarbon and oil range hydrocarbon where non-detect results are included at one-half the detection limit; when all results are non-detect, the highest detection limit is used.

[c]Total xylene is the sum of o-xylene and m,p-xylene where non-detect results are included at one-half the detection limit; when all results are non-detect, the highest detection limit is used.

[d]cPAH TEQ values are based on toxic equivalence factors.

[e]Total naphthalene is the sum of 1-methylnaphthalene, 2-methylnaphtalene, and naphthalene where non-detect results are included at one-half the detection limit; when all results are non-detect, the highest detection limit is used.

REFERENCES:

[1]Washington State Department of Ecology—Cleanup Levels and Risk Calculation Master Table. February 2021.
[2]Washington Ecology Evaluating the Human Heath Toxicity of Carcinogenic PAHs Using Toxicity Equivalence Factors. 2015.

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Table 3-2
Groundwater Analytical Results
Former Planters Hotel Site
Sunnyside, Washington

Location	MTCA A/B[1]	GP01		GP02	GP03	GP04	GP05	GP06	GP07	GP08
Sample Name		GP01-GW-15	GP01-GW-15-DUP	GP02-GW-15	GP03-GW-15	GP04-GW-15	GP05-GW-12	GP06-GW-15	GP07-GW-15	GP08-GW-15
Collection Date		4/6/2021	4/6/2021	4/7/2021	4/7/2021	4/7/2021	4/6/2021	4/6/2021	4/6/2021	4/7/2021
Collection Depth (ft bgs)		15	15	15	15	15	12	15	15	15
TPH (mg/L)										
Gasoline Range Hydrocarbon	1.0[a]	0.05 U	0.05 U	0.05 U	0.388	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Diesel Range Hydrocarbons	0.5	0.0408 U	0.0412 U	0.0392 U	1.66	0.0417 U	0.0449 U	0.0396 U	0.0435 U	0.0412 U
Lube Oil Range Hydrocarbons	0.5	0.232	0.235	0.0786 J	0.935 J	0.0833 U	0.0899 U	0.0792 U	0.0870 U	0.0825 U
Diesel + Lube Oil Range Hydrocarbons[b]	0.5	0.252	0.256	0.0982 J	2.60 J	0.0833 U	0.0899 U	0.0792 U	0.0870 U	0.0825 U
VOCs (ug/L)										
1,1,1,2-Tetrachloroethane	1.7	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,1-Trichloroethane	16,000	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2,2-Tetrachloroethane	0.22	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1,2-Trichloroethane	0.77	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1-Dichloroethane	7.7	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	400	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloropropene	NV	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	6.4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichloropropane	0.00038	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	1.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	80	0.5 U	0.5 U	0.5 U	6.51	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-chloropropane	0.055	5 UJ	5 UJ	5 UJ	2.5 U	5 UJ	2.5 U	2.5 U	5 UJ	2.5 U
1,2-Dichlorobenzene	720	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichloroethane	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	1.2	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3,5-Trimethylbenzene	80	0.5 U	0.5 U	0.5 U	1.93	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	NV	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3-Dichloropropane	160	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	8.1	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,2-Dichloropropane	NV	1 UJ	1 UJ	1 UJ	0.5 U	1 UJ	0.5 U	0.5 U	1 UJ	0.5 U
2-Butanone	4,800	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	160	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Hexanone	40	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	NV	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
4-Isopropyltoluene	NV	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
4-Methyl-2-pentanone	640	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	7,200	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acrylonitrile	0.081	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

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Table 3-2
Groundwater Analytical Results
Former Planters Hotel Site
Sunnyside, Washington

Location	MTCA A/B[1]	GP01		GP02	GP03	GP04	GP05	GP06	GP07	GP08
Sample Name		GP01-GW-15	GP01-GW-15-DUP	GP02-GW-15	GP03-GW-15	GP04-GW-15	GP05-GW-12	GP06-GW-15	GP07-GW-15	GP08-GW-15
Collection Date		4/6/2021	4/6/2021	4/7/2021	4/7/2021	4/7/2021	4/6/2021	4/6/2021	4/6/2021	4/7/2021
Collection Depth (ft bgs)		15	15	15	15	15	12	15	15	15
Benzene	5	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Bromobenzene	64	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromodichloromethane	0.71	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	5.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	11	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon disulfide	800	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	0.63	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	160	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Chlorobromomethane	NV	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	NV	5 U	5 U	5 U	5 UJ	5 U	5 UJ	5 UJ	5 U	5 UJ
Chloroform	1.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	NV	2.5 U	2.5 U	2.5 U	5 UJ	2.5 U	5 UJ	5 UJ	2.5 U	5 UJ
cis-1,2-Dichloroethene	16	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
cis-1,3-Dichloropropene	NV	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane	0.52	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	80	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane (Freon 12)	1,600	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	700	0.25 U	0.25 U	0.25 U	0.46 J	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Hexachlorobutadiene	0.56	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Isopropylbenzene	800	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	NV	0.5 U	0.5 U	0.5 U	2.37	0.5 U	0.781 J	0.5 U	0.5 U	0.5 U
Methyl tert-butyl ether	20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Naphthalene	160	2 U	2 U	2 U	32.2 J	2 U	2 U	2 U	2 U	2 U
n-Butylbenzene	400	0.5 U	0.5 U	0.5 U	0.595 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Propylbenzene	800	0.25 U	0.25 U	0.25 U	0.365 J	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
o-Xylene	1,600	0.25 U	0.25 U	0.25 U	1.02	0.25 U	0.265 J	0.25 U	0.25 U	0.25 U
sec-Butylbenzene	800	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	1,600	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
tert-Butylbenzene	800	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5	0.5 U	0.5 U	0.4 U	0.2 U	0.4 U	0.2 U	0.2 U	0.4 U	0.2 U
Toluene	1,000	0.5 U	0.5 U	0.5 U	0.583 J	0.5 U	1.02	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	160	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	NV	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

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Table 3-2
Groundwater Analytical Results
Former Planters Hotel Site
Sunnyside, Washington

Location	MTCA A/B[1]	GP01		GP02	GP03	GP04	GP05	GP06	GP07	GP08
Sample Name		GP01-GW-15	GP01-GW-15-DUP	GP02-GW-15	GP03-GW-15	GP04-GW-15	GP05-GW-12	GP06-GW-15	GP07-GW-15	GP08-GW-15
Collection Date		4/6/2021	4/6/2021	4/7/2021	4/7/2021	4/7/2021	4/6/2021	4/6/2021	4/6/2021	4/7/2021
Collection Depth (ft bgs)		15	15	15	15	15	12	15	15	15
Trichloroethene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichlorofluoromethane (Freon 11)	2,400	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes (total)[c]	1,000	1 U	1 U	1 U	3.39	1 U	1.05 J	1 U	1 U	1 U
VOCs by EPA 8260D SIM (ug/kg)										
1,2-Dibromoethane	0.01	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Vinyl chloride	0.2	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
PAHs (ug/L)										
1-Methylnaphthalene	1.5	0.0444 U	0.046 U	0.0421 U	42.2	0.0417 U	0.0455 U	0.0426 U	0.0444 U	0.0435 U
2-Methylnaphthalene	32	0.0444 U	0.046 U	0.0421 U	56.9	0.0417 U	0.0455 U	0.0426 U	0.0444 U	0.0435 U
Acenaphthene	960	0.0222 U	0.023 U	0.0211 U	3.68 U	0.0208 U	0.0227 U	0.0213 U	0.0222 U	0.0217 U
Acenaphthylene	NV	0.0222 U	0.023 U	0.0211 U	0.526 U	0.0208 U	0.0227 U	0.0213 U	0.0222 U	0.0217 U
Anthracene	4,800	0.0222 U	0.023 U	0.0211 U	0.526 U	0.0208 U	0.0227 U	0.0213 U	0.0222 U	0.0217 U
Benzo(a)anthracene	NV	0.0222 U	0.023 U	0.0211 U	0.0532	0.0208 U	0.0227 U	0.0213 U	0.0222 U	0.0217 U
Benzo(a)pyrene	0.1	0.0222 U	0.023 U	0.0211 U	0.0211 U	0.0208 U	0.0227 U	0.0213 U	0.0222 U	0.0217 U
Benzo(b)fluoranthene	NV	0.0222 U	0.023 U	0.0211 U	0.0211 U	0.0208 U	0.0227 U	0.0213 U	0.0222 U	0.0217 U
Benzo(ghi)perylene	NV	0.0222 U	0.023 U	0.0211 U	0.0211 U	0.0208 U	0.0227 U	0.0213 U	0.0222 U	0.0217 U
Benzo(k)fluoranthene	NV	0.0222 U	0.023 U	0.0211 U	0.0211 U	0.0208 U	0.0227 U	0.0213 U	0.0222 U	0.0217 U
Chrysene	NV	0.0222 U	0.023 U	0.0211 U	0.0616	0.0208 U	0.0227 U	0.0213 U	0.0222 U	0.0217 U
Dibenzo(a,h)anthracene	NV	0.0222 U	0.023 U	0.0211 U	0.0211 U	0.0208 U	0.0227 U	0.0213 U	0.0222 U	0.0217 U
Dibenzofuran	16	0.0222 U	0.023 U	0.0211 U	0.948	0.0208 U	0.0227 U	0.0213 U	0.0222 U	0.0217 U
Fluoranthene	640	0.0222 U	0.023 U	0.0211 U	0.0473	0.0208 U	0.0227 U	0.0213 U	0.0222 U	0.0217 U
Fluorene	640	0.0222 U	0.023 U	0.0211 U	2.06	0.0208 U	0.0227 U	0.0213 U	0.0222 U	0.0217 U
Indeno(1,2,3-cd)pyrene	NV	0.0222 U	0.023 U	0.0211 U	0.0211 U	0.0208 U	0.0227 U	0.0213 U	0.0222 U	0.0217 U
Naphthalene	160	0.0444 U	0.0486 J	0.0421 U	13.9	0.0417 U	0.09 J	0.0426 U	0.0546 J	0.0435 U
Phenanthrene	NV	0.0222 U	0.023 U	0.0211 U	4.07	0.0208 U	0.0227 U	0.0213 U	0.0253 J	0.0217 U
Pyrene	480	0.0222 U	0.023 U	0.0211 U	0.287	0.0208 U	0.0227 U	0.0213 U	0.0222 U	0.0217 U
cPAH TEQ[d][2]	0.1	ND	ND	ND	0.0207	ND	ND	ND	ND	ND
Naphthalene (total)[e]	160	0.0444 U	0.0946 J	0.0421 U	113	0.0417 U	0.136 J	0.0426 U	0.099 J	0.0435 U

Table 3-2
Groundwater Analytical Results
Former Planters Hotel Site
Sunnyside, Washington

NOTES:

Shading (color key below) indicates values that exceed screening criteria; non-detects ("U" or "UJ") were not compared with screening criteria.

Method A or B. The lower of the Method B cancerous or noncancerous values applied when Method A was not available.

cPAH TEQ = carcinogenic PAH toxicity equivalence.

ft bgs = feet below ground surface.

J = estimated value.

mg/L = milligrams per liter.

MTCA = Motel Toxics Control Act.

ND = non-detect.

NV = no value.

PAH = polycyclic aromatic hydrocarbon.

TPH = total petroleum hydrocarbons.

U = Result is non-detect to detection limit.

UJ = Result is non-detect with an estimated detection limit.

ug/kg = micrograms per kilogram.

ug/L = micrograms per liter.

VOC = volatile organic compound.

[a]TPH gasoline range hydrocarbon with no detectable benzene value.

[b]Diesel + Lube Oil Range Hydrocarbons are the sum of diesel range hydrocarbon and oil range hydrocarbon where non-detect results are included at one-half the detection limit; when all results are non-detect, the highest detection limit is used.

[c]Total xylene is the sum of o-xylene and m,p-xylene where non-detect results are included at one-half the detection limit; when all results are non-detect, the highest detection limit is used.

[d]cPAH TEQ values are based on toxic equivalence factors.

[e]Total naphthalene is the sum of 1-methylnaphthalene, 2-methylnaphtalene, and naphthalene where non-detect results are included at one-half the detection limit; when all results are non-detect, the highest detection limit is used.

REFERENCES:

[1]Washington State Department of Ecology—Cleanup Levels and Risk Calculation Master Table. February 2021.
[2]Washington Ecology Evaluating the Human Heath Toxicity of Carcinogenic PAHs Using Toxicity Equivalence Factors. 2015.

Table 5-1
Alternative 2 - Capping and Institutional Controls Probable Cost
Port of Sunnyside
Sunnyside, Washington

Title:	Alternative 2 - Capping and Institutional Controls Probable Cost	
Project:	Former Planter's Hotel Site Feability Study	
Client:	Port of Sunnyside	
Project #/Task:	0346.11.04	Initial
Prepared By:	E. Lundeen	EL
Checked By:	E. Bakkom	EB
Date:	12/27/2021	
Revision #.:	0	

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Cost Estimate Summary - Feasibility Level

Schedule 'A' - Monitoring Well Installation		$	4,800
Schedule 'B' - Capping		$	5,750
Schedule 'C' - Institutional Controls		$	25,000
Schedule 'D' - Design and Project Management		$	20,000
Schedule 'E' - Monitoring and Periodic Costs		$	151,600
Schedule 'F' - Contingency		$	63,000
	Total:	**$**	**271,000**

Assumptions:

1. The Point of Compliance will be the parcel boundaries of the Property and the extent of the contamination is confined to the area of the former UST excavation shown in Figure 4-1.
2. Any new landscaping or site improvements made during development will include an impervious cap over the former UST excavation area. For estimating purposes this is assumed to be asphalt.
3. Institutional controls will include a site management plan and environmental covenant.
4. Cap maintenance will be required on a 10-year basis and consist of a slurry seal over paved area.
5. Groundwater will be monitored semi-annually for five years, and then annually for the remaining lifetime of the project.
6. Cells that are highlighted in grey may be considered costs associated with redevelopment.
7. Lifetime of the project is 30 years.
8. A 30% contingency is included to account for site and design uncertainty.
9. Probable cost is a decision tool and should be considered to represent a range reflecting -30%/+50%.

Table 5-1
Alternative 2 - Capping and Institutional Controls Probable Cost
Port of Sunnyside
Sunnyside, Washington

Schedule 'A' - Monitoring Well Installation						
Description		*Quantity*	*Unit*	*Unit Cost*		*Total Cost*
A.1	Mobilization/Drilling Rig	1	LS	$ 1,800.00	$	1,800.00
A.2	Install Monitoring Well	2	EA	$ 1,500.00	$	3,000.00
				Subtotal Schedule 'A':	**$**	**4,800**

Schedule 'B' - Capping						
Description		*Quantity*	*Unit*	*Unit Cost*		*Total Cost*
B.1	Mobilization	1	LS	$ 2,500.00	$	2,500.00
B.2	Install Demarcation	1	LS	$ 1,000.00	$	1,000.00
B.3	Asphalt Cap	75	SY	$ 30.00	$	2,250.00
				Subtotal Schedule 'B':	**$**	**5,750**

Schedule 'C' - Institutional Controls						
Description		*Quantity*	*Unit*	*Unit Cost*		*Total Cost*
C.1	Preparation of Site Management Plan	1	LS	$ 15,000.00	$	15,000.00
C.2	Preparation of Environmental Covenant	1	LS	$ 10,000.00	$	10,000
				Subtotal Schedule 'C':	**$**	**25,000**

Schedule 'D' - Design and Project Management						
Description		*Quantity*	*Unit*	*Unit Cost*		*Total Cost*
D.1	Project management and communications	8%	LS	-	$	6,000.00
D.2	Remedial design	30%	LS	-	$	8,000.00
D.3	Construction management	10%	LS	-	$	6,000.00
				Subtotal Schedule 'D':	**$**	**20,000**

Schedule 'E' - Monitoring and Periodic Cost						
	Discount Rate	**1.78%**				
	Total Years	**30**				
Description		*Quantity*	*Unit*	*Unit Cost*		*Total Cost*
E.1	Semiannual monitoring (Years 1-5)	1	LS	$37,900.00	$	37,900.00
E.2	Cap Maintenance (Year 10)	1	LS	$ 900.00	$	900.00
E.3	Cap Maintenance (Year 20)	1	LS	$ 800.00	$	800.00
E.4	Cap Maintenance (Year 30)	1	LS	$ 600.00	$	600.00
E.5	Annual Monitoring Event Years (6-30)	1	LS	$111,400.00	$	111,400
				Subtotal Schedule 'E':	**$**	**151,600**

Schedule 'F' - Contingency						
Description		*Quantity*	*Unit*	*Unit Cost*		*Total Cost*
F.1	Contingency (30%)	30%	LS	-	$	63,000
				Subtotal Schedule 'F':	**$**	**63,000**

Table 5-2
Alternative 3 - Complete Excavation Probable Cost
Port of Sunnyside
Sunnyside, Washington

Title:	**Alternative 3 - Complete Excavation Probable Cost**	
Project:	Former Planter's Hotel Site Feability Study	
Client:	Port of Sunnyside	
Project #/Task:	0346.11.04	Initial
Prepared By:	E. Lundeen	EL
Checked By:	E. Bakkom	EB
Date:	12/27/2021	
Revision #.:	0	

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Cost Estimate Summary - Feasibility Level

Schedule 'A' - Site Preparation		$	4,900
Schedule 'B' - Excavation and Disposal		$	30,678
Schedule 'C' - Monitoring Well Installation		$	4,800
Schedule 'D' - Permitting and Technical Services		$	20,000
Schedule 'E' - Design and Project Management		$	24,000
Schedule 'F' - Groundwater Monitoring		$	67,700
Schedule 'G' - Contingency		$	46,000
	Total:	**$**	**198,000**

Assumptions:

1. The Point of Compliance will be the parcel boundaries of the Property and the extent of the contamination is confined to the area of the former UST excavation shown in Figure 4-1.
2. Soil will be excavated in the former UST to a depth of 10 feet below ground surface. Material removed from the ground surface to a depth of 6 feet consist of clean fill to be stockpiled on site and used in the backfill.
3. Groundwater encountered during excavation can be treated and discharged to the local sanitary sewer.
4. Groundwater will be monitored on a semi-annual basis for 9 years post remedy, then quarterly for another year or until groundwater cleanup levels will be achieved.
5. Excavation work will be bid with site redevelopment documents, a separate bid package is not required. A technical site management memorandum will be created for the site.
6. Cells that are highlighted in grey may be considered costs associated with redevelopment.
7. Lifetime of the project is 10 years.
8. A 30% contingency is included to account for site and design uncertainty.
9. Probable cost is a decision-making tool and should be considered to represent a range reflecting -30%/+50%.

Table 5-2
Alternative 3 - Complete Excavation Probable Cost
Port of Sunnyside
Sunnyside, Washington

Schedule 'A' - Site Preparation					
Description		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
A.1	Mobilization/Demobilization	10%	LS	$ -	$ 2,900.00
A.2	Erosion and Sediment Control	1	LS	$ 2,000.00	$ 2,000.00
				Subtotal Schedule 'A':	**$ 4,900**

Schedule 'B' - Excavation and Disposal					
Description		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
B.1	Excavation and contaminated material management	217	BCY	$ 30.00	$ 6,500.00
B.2	Waste characterization	1	LS	$ 2,000.00	$ 2,000.00
B.3	Dewatering and Treatment System	1	LS	$ 1,000.00	$ 1,000.00
B.4	Offsite waste transportation and disposal	163	TON	$ 65.00	$ 10,562.50
B.5	Backfill Material	125	LCY	$ 25.00	$ 3,114.58
B.6	Backfill and Compaction Labor	249	LCY	$ 30.00	$ 7,500.00
				Subtotal Schedule 'B':	**$ 30,678**

Schedule 'C' - Monitoring Well Installation					
Description		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
C.1	Mobilization/Drilling Rig	1	LS	$ 1,800.00	$ 1,800.00
C.2	Install Monitoring Well	2	LS	$ 1,500.00	$ 3,000.00
				Subtotal Schedule 'D':	**$ 4,800**

Schedule 'D' - Permitting and Technical Services					
Description		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
D.1	Dewatering Permit	1	LS	$ 5,000.00	$ 5,000.00
D.2	Completion Reporting	1	LS	$ 5,000.00	$ 5,000.00
D.3	Planning documents	1	LS	$ 10,000.00	$ 10,000.00
				Subtotal Schedule 'E':	**$ 20,000**

Schedule 'E' - Design and Project Management					
Description		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
E.1	Project management and communications	8%	LS	-	$ 6,000.00
E.2	Remedial design	30%	LS	-	$ 8,000.00
E.3	Construction management	10%	LS	-	$ 10,000.00
				Subtotal Schedule 'F':	**$ 24,000**

Schedule 'F' - Monitoring and Periodic Costs					
	Discount Rate	**1.14%**			
	Total Years	**10**			
Description		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
F.1	Semi-Annual Groundwater Monitoring and Report (Years 1-5)	1	LS	$38,700.00	$ 38,700.00
F.2	Annual Groundwater Monitoring and Report (Years 6-9)	1	LS	$14,700.00	$ 14,700.00
F.3	Quarterly Monitoring (Year 10)	1	LS	$14,300.00	$ 14,300.00
				Subtotal Schedule 'G':	**$ 67,700**

Schedule 'G' - Contingency					
Description		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
G.1	Contingency (30%)	30%	LS	-	$ 46,000.00
				Subtotal Schedule 'H':	**$ 46,000**

Table 5-3
Alternative 4 - Excavation adn Backfill w/ Bioremedation Compound Probable Cost
Port of Sunnyside
Sunnyside, Washington

Title:	**Alternative 4 - Excavation and Backfill w/ Bioremediation Compound Probable Cost**	
Project:	Former Planter's Hotel Site Feability Study	
Client:	Port of Sunnyside	
Project #/Task:	0346.11.04	Initial
Prepared By:	E. Lundeen	EL
Checked By:	E. Bakkom	EB
Date:	12/27/2021	
Revision #.:	0	

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Cost Estimate Summary - Feasibility Level

Schedule 'A' - Site Preparation		$	5,200
Schedule 'B' - Excavation and Disposal		$	33,300
Schedule 'C' - ORC Backfill		$	9,600
Schedule 'D' - Monitoring Well Installation		$	4,800
Schedule 'E' - Permitting and Technical Services		$	23,000
Schedule 'F' - Design and Project Management		$	31,000
Schedule 'G' - Groundwater Monitoring		$	46,400
Schedule 'H' - Contingency		$	46,000
	Total:	**$**	**200,000**

Assumptions:

1. The Point of Compliance will be the parcel boundaries of the Property and the extent of the contamination is confined to the area of the former UST excavation shown in Figure 4-1.
2. Soil will be excavated in the former UST to a depth of 10 feet below ground surface. Material removed from the ground surface to a depth of 6 feet consist of clean fill to be stockpiled on site and used in the backfill.
3. Groundwater encountered during excavation can be discharged to the local sanitary sewer.
4. Limited bucket mixing of ORC below the water table is assumed.
5. Excavation work will be bid with site redevelopment documents, a separate bid package is not required. A site management plan will not be created for the site.
6. Groundwater will be monitored semi-annually for 5 years, after which cleanup levels in groundwater will be achieved.
7. Lifetime of the project is 5 years.
8. A 30% contingency is included to account for site and design uncertainty.
9. Probable cost is a decision making tool and should be considered to represent a range reflecting -30%/+50%.

Table 5-3
Alternative 4 - Excavation and Backfill w/ Bioremedation Compound Probable Cost
Port of Sunnyside
Sunnyside, Washington

Schedule 'A' - Site Preparation					
Description		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
A.1	Mobilization/Demobilization	10%	LS	$ -	$ 3,200.00
A.2	Erosion and Sediment Control	1	LS	$ 2,000.00	$ 2,000.00
				Subtotal Schedule 'A':	**$ 5,200**

Schedule 'B' - Excavation and Disposal					
Description		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
B.1	Excavation and contaminated material management	217	BCY	$ 30.00	$ 6,500.00
B.2	Waste characterization	1	LS	$ 2,000.00	$ 2,000.00
B.3	Dewatering and Treatment System	1	LS	$ 3,000.00	$ 3,000.00
B.4	Offsite waste transportation and disposal	163	TON	$ 65.00	$ 10,600.00
B.5	Backfill Material	125	LCY	$ 25.00	$ 3,200.00
B.6	Backfill and Compaction Labor	249	LCY	$ 32.00	$ 8,000.00
				Subtotal Schedule 'B':	**$ 33,300**

Schedule 'C' - ORC Backfill					
Description		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
C.1	Bioremediation Product (e.g., ORC Advanced)	800	LB	$ 12.00	$ 9,600.00
				Subtotal Schedule 'C':	**$ 9,600**

Schedule 'D' - Monitoring Well Installation					
Description		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
D.1	Mobilization/Drilling Rig	1	LS	$ 1,800.00	$ 1,800.00
D.2	Install Monitoring Well	2	LS	$ 1,500.00	$ 3,000.00
				Subtotal Schedule 'D':	**$ 4,800**

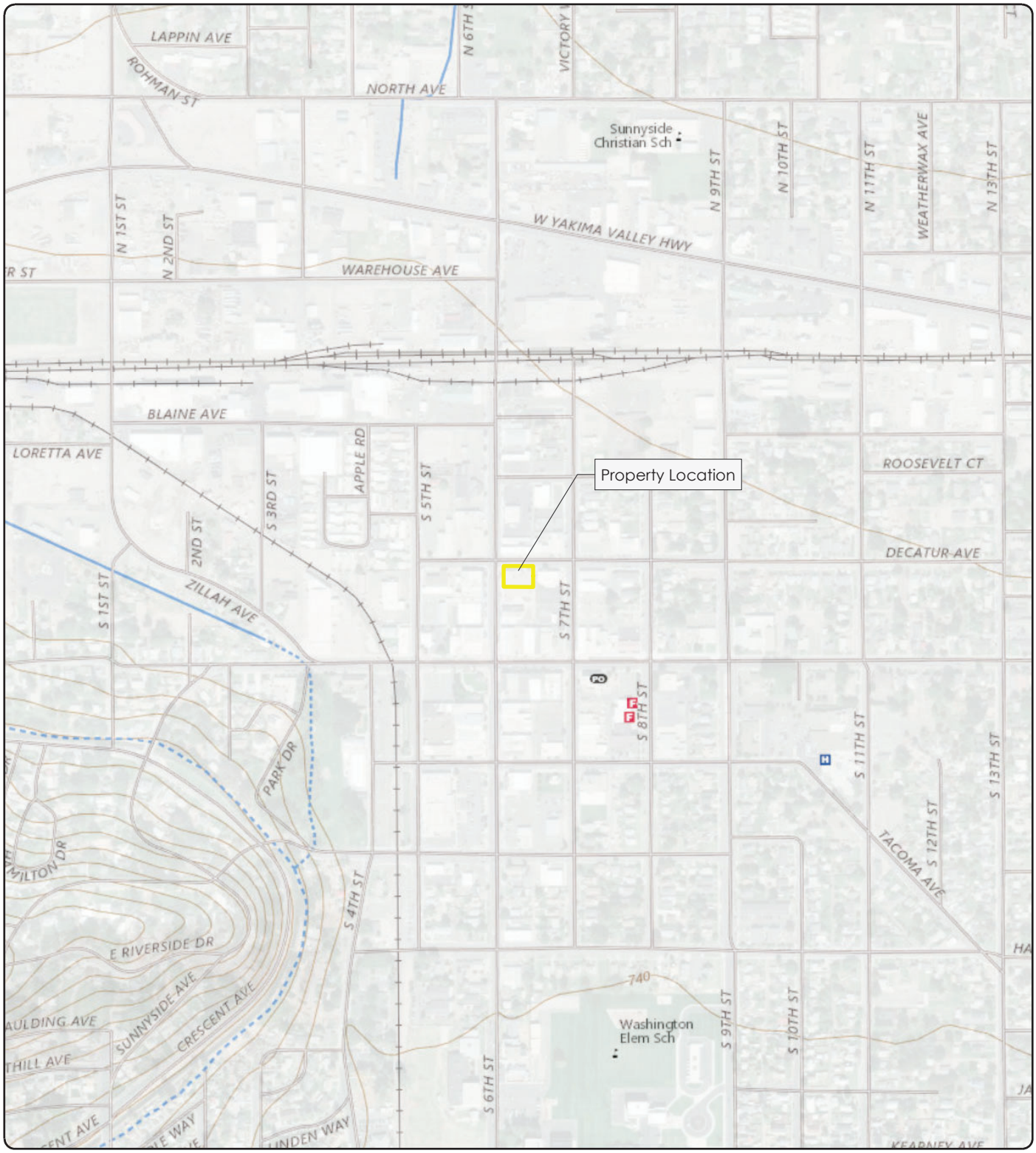
Schedule 'E' - Permitting and Technical Services					
Description		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
E.1	Dewatering Permit	1	LS	$ 5,000.00	$ 5,000.00
E.2	Completion Reporting	1	LS	$ 8,000.00	$ 8,000.00
E.3	Planning documents	1	LS	$ 10,000.00	$ 10,000.00
				Subtotal Schedule 'E':	**$ 23,000**

Schedule 'F' - Design and Project Management					
Description		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
G.1	Project management and communications	8%	LS	-	$ 7,000.00
G.2	Remedial design	15%	LS	-	$ 10,000.00
G.3	Construction management	10%	LS	-	$ 14,000.00
				Subtotal Schedule 'F':	**$ 31,000**

Schedule 'G' - Monitoring and Periodic Costs					
	Discount Rate	**1.14%**			
	Total Years	**5**			
Description		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
H.1	Semiannual monitoring (Years 1-4)	1	LS	$31,200.00	$ 31,200.00
H.1	Quartely monitoring (Year 5)	1	LS	$15,200.00	$ 15,200.00
				Subtotal Schedule 'G':	**$ 46,400**

Schedule 'H' - Contingency					
Description		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
G.4	Contingency (30%)	30%	LS	-	$ 46,000.00
				Subtotal Schedule 'H':	**$ 46,000**

FIGURES



Source:
U.S. Geological Survey (2020) 7.5-minute topographic quadrangle: Sunnyside.
Township10 North, Range 22 East, Section 25.
Property boundary obtained from Yakima County GIS.

Legend

Property Boundary

Figure 1-1
Property Location

Former Planters Hotel Site
400 S Sixth Street
Sunnyside, Washington

0 400 800
Feet

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Produced By: sturner
Project: 0346.11

Figure 2-1
Property Overview

Former Planters Hotel Site
400 S Sixth Street
Sunnyside, Washington

Legend

- Former UST ~~Excavation~~
- Property Boundary
- Tax Lots

All locations are approximate.
ASTM E1527-13 defines RECs as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.
REC = recognized environmental condition.
UST = underground storage tank.

0 10 20
Feet

Source:
Aerial photograph obtained from Esri.
Tax lot data obtained from Yakima County GIS.

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Project:0346.11

Figure 3-1
Soil and Groundwater Exceedances

Former Planters Hotel Site
400 S Sixth Street
Sunnyside, Washington

Legend

- Boring
- Soil MTCA CUL Exceedance
- Groundwater MTCA CUL Exceedance
- Former UST Excavation
- Property Boundary
- Tax Lots

NOTES:
CUL = cleanup level.
MTCA = Model Toxics Control Act
UST = underground storage tank.

0 10 20
Feet

Source:
Aerial photograph obtained from Esri.
Tax lot data obtained from Yakima County GIS.

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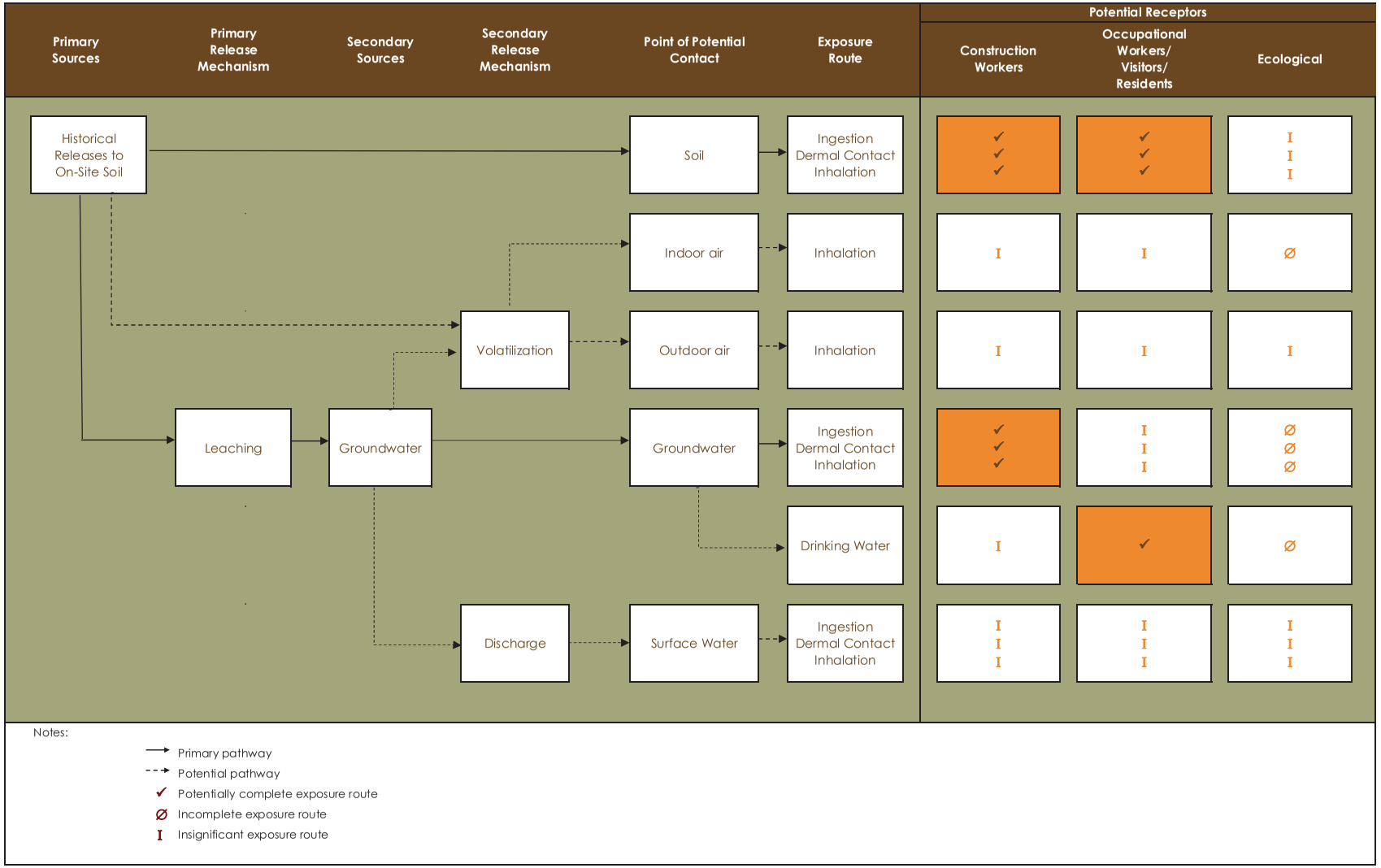
Table 4-1
Conceptual Site Model
Former Planters Hotel Site
Sunnyside, Washington



Notes:

- Primary pathway
- Potential pathway
- ✓ Potentially complete exposure route
- Ø Incomplete exposure route
- I Insignificant exposure route

Figure 5-1
Cleanup Action Area

Former Planters Hotel Site
400 S Sixth Street
Sunnyside, Washington

Legend

- Boring (April 2021)
- Supplemental Boring (May 2021)
- Soil MTCA CUL Exceedance
- Groundwater MTCA CUL Exceedance
- Cleanup Action Area
- Former UST Excavation
- Property Boundary
- Tax Lots

NOTES:
CUL = cleanup level.
MTCA = Model Toxics Control Act.
UST = underground storage tank.

0 10 20
Feet

Source:
Aerial photograph obtained from Esri.
Tax lot data obtained from Yakima County GIS.

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Print Date: 12/17/2021
Requested By: MPollock
Produced By: jstilhart
Project: 0346.11