



DRAFT
Analysis of Brownfield Cleanup Alternatives
Former Don's Market
Lakeview, Oregon

Prepared for:
Oregon Department of Environmental Quality
Task Order No. 66-23-27

May 15, 2026
25013603/Task 5



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1.0 Introduction

This Site Investigation and Analysis of Brownfield Cleanup Alternatives (ABCA) Report (Report) presents the results of the Phase 1 Environmental Site Assessment (ESA) and the subsequent analysis of brownfield cleanup alternatives for the Don's Market Site (Site) located at 859 North G Street in Lakeview, Oregon (Figures 1 and 2). This Report was prepared for the Oregon Department of Environmental Quality (DEQ) under Task 5 of Task Order 66-23-27.

1.1 Purpose

This Report presents the results of the December 2025 Phase 1 ESA and the developed conclusions of the ABCA. The purpose of the ESA is to perform All Appropriate Inquiry (AAI) into the past ownership and uses of the Site as outlined by ASTM International (ASTM) in Standard Practice for Environmental Site Assessments: Phase 1 ESA Process Designation E1527-21 is utilized in order to identify, to the extent feasible, adverse environmental conditions including recognized environmental conditions (RECs) at the Site. The information gathered in the ESA and a preliminary assessment of the Site building are used to provide information to determine the likely presence or absence of impacts associated with the historical use of the Site and allow development of the ABCA.

1.2 Scope of Work

To accomplish the above objectives, the scope of work included the following tasks:

- Completion of a Phase I ESA;
- Preparation of this Report to document the ESA findings, assess likely Site conditions, and provide an analysis of the most reasonable cleanup alternatives applicable to the conditions that would likely be encountered at the Site.

2.0 Background

This section includes a description of the Site, land use, history, and geology and hydrogeology.

2.1 Site Location and History

The subject property is a 0.08-acre parcel located in a residential area of northern Lakeview, Oregon. The Site contains the 1,692-square-foot former Don's Market convenience store structure, which was dilapidated and abandoned at the time of Apex's Site visit. The surrounding area is flat with a moderate slope to the south. The northern portion of the Site was covered with logs and vegetation debris from recently downed trees.

The subject property was first developed as a convenience store and gasoline service station in the 1940s and was reportedly in this use until the 1990s. The property has been abandoned, with the structure falling into disrepair since at least the early 2000s. A previous Phase I ESA performed on the Site and prepared by Cardno on March 23, 2020 confirmed the presence of underground storage tanks (USTs), and an aboveground heating oil tank. Asbestos-containing materials (ACMs) and lead-based paint were identified in building materials at the Site by Cardno in May 2020.

2.1.1 Location

The former convenience store and gasoline service station site is located at 859 North G Street, in Lakeview, Oregon, and is situated on the northeastern corner of the intersection of North H Street and North G Street (also known as Highway 395). The Site is located in the northeast quarter of the southwest quarter of Section 10 in Township 39 South, Range 20 East, Willamette Meridian, and is identified as Tax Lot ID 39S20E10-CA-07600 on the Lake County Assessor Map.

2.1.2 Land Use

Land use in the vicinity of the Site is a mix of residential and commercial. The Site has one single-story building (approximately 1,692 square feet) and is currently paved with asphalt and concrete. The Site is north of the downtown commercial district of Lakeview in an area of mixed retail, local government, and residential use. Properties to the north and east include scrubland and Highway 395; to the south are residential properties; and to the west are North H Street and residential properties.

The Site was acquired by the Town of Lakeview in 2026 with the intent to redevelop the Site as a Gateway Park/Welcome Center Kiosk.

2.1.3 Geology and Hydrogeology

According to the Geologic Map of Oregon (DOGAMI, 2001) and the United States Geological Survey (USGS, 2001), the Site is underlain by Holocene fluvial material consisting of unconsolidated to semi-consolidated silt, sand, and gravel, underlain by Pliocene/Pleistocene volcanic basalt flows that are prominent in the adjacent Warner Mountains to the east of the Site. The topography of the Site has a modest downward slope to the southwest, away from the mountains and toward the regional drainage. The Site is located approximately 4,800 to 4,810 feet above mean sea level (MSL).

Based on the review of local water well logs provided by Oregon Water Resources Department (OWRD), subsurface soils at the Site are expected to consist of shallow sand, silt, and gravel, from the surface to approximately 10 to 15 feet below ground surface (bgs) underlain by interbedded clay, gravel, and claystone/sandstone to depths in excess of 300 bgs where basalt bedrock has been encountered.

The nearest surface water bodies to the Site include Bullard Creek, located approximately 3,100 feet to the south, and an unnamed drainage, located approximately 1,400 feet to the north. These drainages flow to Thomas Creek and then to Goose Lake, which is located about 7.5 miles south of the Site.

The water well logs obtained from OWRD indicate that groundwater was first encountered at depths of between 30 and 60 bgs and the static water level was recorded between 10 and 20 feet bgs. Based on topography and regional drainage, the direction of shallow confined or semi-confined groundwater flow is expected to be toward the southwest.

2.1.4 Current and Forecasted Risks of Extreme Weather or Natural Hazards

The Site is situated in a predominantly arid region, over ½-mile from the nearest surface water drainage. Forecasted risks of extreme weather or natural hazards to the region include increased risk of extreme temperatures, drought and wildfire.

2.2 Site History and Prior Assessments

The subject property was first developed as a convenience store and gasoline service station in the 1940s and was reportedly in this use until the 1990s. The property has been abandoned, with the structure having fallen into disrepair since at least the early 2000s. Based on the construction date and type of building, hazardous building materials (HBMs) including ACMs and lead-based paint may reasonably be present. The following previous environmental assessments of the subject property were provided for Apex to review.

2.2.1 Subsurface Mapping Survey to Detect Possible Underground Storage Tanks, GeoPotential, February 2007

A geophysical survey was conducted at two different locations along the North G Street right-of-way in Lakeview, Oregon, to detect possible USTs that could be encountered during forthcoming road construction. The probable presence of two on-site USTs was confirmed: one to the north of the structure and one to the southeast of the structure. One vent pipe was determined to be associated with the northern tank, and three vent pipes were seen coming through the roof of the subject property by the southern wall. At least one of the three vent pipes is potentially associated with the southern UST. No additional USTs were identified in the vicinity of the southern property corner, suggesting either that the remaining two vents are also venting the southern tank, or that other tanks have been removed or abandoned or are otherwise unknown. This survey did not examine the west side of the structure. The environmental database report noted that three USTs were registered to the subject property. According to the database report, one 550-gallon gasoline UST has an installation date of 1968, and one 1,000-gallon gasoline UST has an installation date of 1985. The third tank does not have installation date, size, or content details on the database. The ground penetrating radar (GPR) report conducted by GeoPotential in February 2007 calculated that the tanks may have volumes of approximately 2,000 gallons and 750 gallons based on length and width measurements.

2.2.2 Phase 1 Environmental Site Assessment, Cardno, March 2020

This Phase I ESA identified two RECs on the subject property. Cardno's REC statement reads:

“The Subject Property historically operated as a gasoline filling station from the 1940s into the 1990s... A GPR report conducted by GeoPotential in February of 2007 confirmed the presence of two on-site USTs. The north UST reportedly measures approximately 6 feet in diameter by 9 feet long and is approximately 24 inches below ground surface (bgs). Based on these dimensions, the volume of this tank (REC #1) is anticipated to be roughly 2,000 gallons. The UST at the front of the store appeared to be approximately 4 feet in diameter by 8 feet long and approximately 3 to 4 feet bgs. Based on these dimensions, the volume of this tank (REC #2) is anticipated to be roughly 750 gallons... Finally, the environmental database reviewed noted that three USTs were registered to the site. No evidence of a third tank was noted during the site inspection.”

Cardno recommended that the two USTs be removed or closed in place per DEQ guidance, soil and groundwater be evaluated for contamination, and the building be demolished to facilitate tank removal. Cardno also noted that the possibility of the presence of a third UST should be evaluated. (Cardno ESA)

2.2.3 Limited Asbestos and Lead-Based Paint Assessment, Cardno, May 2020

A limited survey of potentially hazardous building materials was completed by Cardno in May 2020. The building was abandoned and dilapidated at the time of the assessment, but the structure including the roof were intact.

Asbestos-containing materials (ACM) were identified in the adhesive for the vinyl floor, wall and ceiling materials, roofing materials, insulation and duct work.

Lead-based paint (LBP) was identified in exterior paint, including brown trim and red door paint, as well as orange and yellow interior paint used on the walk-in cooler and display shelves.

Cardno recommended that identification, characterization, and abatement be completed prior to demolition or disturbance. (Cardno HBMS)

2.3 Phase I Environmental Site Assessment, January 2026

Apex obtained and reviewed environmental databases and readily available historical records to characterize the obvious and apparent uses of the Site. Apex retained Environmental Risk Information Services (ERIS) to conduct a search of regulatory databases and provide historical resources for review.

2.3.1 Environmental Records Review

A search of Environmental Protection Agency (EPA), state, and tribal environmental database listings was performed by a commercial database search provider. The purpose of this search was to identify potential,

suspected, or known sources of contamination on or in the area of the subject property. Various agency listings were searched for different approximate minimum search distances from the subject property as established in the ASTM method. Listings included publicly available databases of environmental liens, activity and use limitations (AULs), and easements and equitable servitudes, if recorded or filed.

Apex has determined that properties listed in the database report but not discussed below are not likely to have caused RECs on the Site due to factors such as the apparent groundwater flow direction, distance from the subject property, regulatory status (e.g., the agency file is closed), or other physical factors.

The subject property is listed as Site No. 81591 in the Your DEQ Online (YDO) database for being a former gasoline service station with the potential for petroleum contamination due to its former use and the potential for asbestos-containing building materials and lead paint on the on-site structure.

There are three registered USTs associated with the Site. These USTs are listed as “closed,” but there is no record of their proper decommissioning. One 550-gallon gasoline UST has an installation date of 1968, and one 1,000-gallon gasoline UST has an installation date of 1985. The third tank does not have installation date, size, or contents details in the database.

Local Sites of Interest:

- **Former Lakeview Lumber—N 10th and N J Street, Lakeview, Oregon.** Located approximately 0.20 miles northwest of the subject property. This site was added to the Environmental Cleanup Site Information (ECSI) database for tracking as a former lumber mill. A Brownfield site assessment was performed in 2020, and a No Further Action (NFA) letter was granted for this site in November 2020. Due to its regulatory status and cross-gradient location, this site is not expected to pose an environmental concern for the subject property.
- **Former Lakeview Service Station—N 4th and N G Street, Lakeview, Oregon.** Located approximately 0.42 miles south of subject property. This site was added to the ECSI database as a former gasoline service station. It was noted that this site is not listed in DEQ’s tank program databases. Due to its cross-gradient location, this site is not expected to pose an environmental concern for the subject property.

2.3.2 Site Reconnaissance

The subject property operated as a gasoline filling station from the 1940s to the 1990s. A GPR report conducted by GeoPotential in February 2007 confirmed the probable presence of two USTs on site; one to the north of the former Don’s Market structure, and one to the east of the former Don’s Market structure. Vent pipes were observed in the vicinity of the identified USTs. These tanks reportedly may still contain gasoline. No GPR was conducted on the west side of the structure. No environmental characterization or remediation has been conducted with regard to these tanks.

Site reconnaissance was conducted on November 6, 2025. At the time of the site visit, debris from a fallen tree partially obstructed access to the north side of the Site. The southern and western exterior portions of the Site were generally impacted by overgrown vegetation and debris. On the east side of the Site, bordering North G Street, the right-of-way has been improved with a sidewalk.

The former Don's Market building has begun to collapse and is not safe to enter. Temporary fencing was installed around the exterior of the building on December 15, 2025, to prevent unauthorized access to the building. Hazardous building materials have been identified at the Site, including lead-based paint, ACMs, and potentially chemicals left over from historical business operations. Planning and execution of building demolition will require appropriate characterization and handling of this material.

2.3.3 Recognized Environmental Conditions (RECs)

The subject property operated as a gasoline filling station from the 1940s to the 1990s. A GPR report conducted by GeoPotential in February 2007 confirmed the probable presence of two USTs on site; one to the north of the former Don's Market structure, and one to the east of the former Don's Market structure. Vent pipes were observed in the vicinity of the identified USTs. These tanks reportedly may still contain gasoline. No GPR was conducted on the west side of the structure. No environmental characterization or remediation has been conducted with regard to these tanks, but based on the age, steel construction and potentially shallow groundwater, unidentified petroleum releases may have occurred at the Site, impacting surrounding soil and groundwater. This is a high environmental concern.

3.0 Conceptual Site Model

A Conceptual Site Model (CSM) considers physical properties, the nature and extent of contamination, and potential exposure pathways under current and potential future uses. This section presents a CSM for the Site based on the information gathered during the site investigation activities.

3.1 Physical Model

Site geology and hydrogeology are summarized in Section 2.1.3. In general, subsurface soils at the Site are expected to be predominantly sands, silts, and gravels from the surface to approximately 10 to 15 feet bgs underlain by clay, silty clay, and interbedded gravels and sandstone/claystone. Groundwater is expected to be encountered at depths of 30 feet or more, but static water levels may be as shallow as 10 feet, and the local gradient direction is expected to be toward the southwest.

3.2 Contaminants of Potential Concern

Based on the historical use of the Site as a gasoline service station, contaminants of potential concern (COPCs) would at a minimum include petroleum hydrocarbons (gasoline-range and diesel-range) and lead. Although vehicle repair has not been conclusively identified as a former Site use, vehicle repair and retail fuel

sales were commonly offered together, particularly in rural areas. Additional contaminants of potential concern may include contaminants related to waste oil USTs, such as metals, VOCs and PCBs. Hazardous building materials, including ACM, lead-based paint and chemicals associated with business operations have been identified.

3.3 Nature and Extent of Contamination

The nature and extent of the anticipated contamination at the Site have not been determined. The presence of the Site building in its current state of deterioration and presence of ACMs precludes the safe collection of soil and groundwater samples in the immediate vicinity of the several USTs. However, given the historical use of the property and UST infrastructure it is anticipated that there have been historical releases of petroleum hydrocarbons to the site subsurface, likely impacting soil around the USTs, pumps, and piping (consistent with observations at other similar sites). There may be relatively shallow groundwater present in the vicinity of the site at elevations expected to fluctuate seasonally. If a release from the UST systems has impacted soils at the Site, it is reasonably likely that petroleum impacts to groundwater in the vicinity of the UST systems may be identified.

3.4 Locality of the Facility

The locality of the facility (LOF) is defined as locations where a human or ecological receptor contacts or is reasonably likely to come into contact with facility-related hazardous substances. The term “facility” is defined (in both Oregon Revised Statue [ORS] 465.200 and Oregon Administrative Rule [OAR] 340-122-0115) to include the equipment or property where the release occurred and where the release has come to be located. The LOF has not been defined for the Site as no samples have been collected and the presence or extent of potential contamination has not been determined.

For the purposes of this assessment, based on the historic use of the Site and similarities with other like properties, it is assumed that petroleum hydrocarbons are present in site soil and groundwater at concentrations that may exceed applicable risk-based screening levels, particularly in the immediate vicinity of the USTs and fueling infrastructure. Hazardous building materials including ACMs and lead-containing paint have been identified (the expected extent of which would likely be confined to the immediate vicinity of the building).

3.5 Beneficial Land and Water Use

Current and future land uses were assessed to develop a model describing potentially complete exposure pathways for human and ecological receptors at the Site. The potentially complete pathways established in this section will be used in conjunction with contaminant concentrations to evaluate risk at the Site.

3.5.1 Summary of Land Use

The following section describes current and reasonably likely potential future land uses.

Current Use. Based on assessment records for the Lakeview (Lakeview), the Site is zoned as Commercial Improved, surrounded by residential zoning. Historical use has been commercial, associated with the use as a gasoline station and market. The Site is largely covered by the Site building and pavement, but significant unimproved areas exist along the west and south sides of the property; therefore, there are potentially feasible direct-contact exposures to soil with the current Site condition. Exposure to ACMs and lead-containing paint is also reasonable to expect with the dilapidated condition of the Site building. These direct exposures have been addressed in the short term by the installation of a temporary perimeter fence.

Future Use. The Site is expected to be redeveloped as a public space with an informational kiosk (not intended for long-term occupancy). Site development could reasonably result in short-term to soil and hazardous building materials if not addressed.

3.5.2 Summary of Water Use

The water supply for the Site has not been identified. The building has been out of use for approximately 30 years, and the Town of Lakeview has no record of a municipal water connection. When the demolition is completed, additional investigation can be completed to determine if the Site had an unpermitted municipal supply or unrecorded domestic supply well. Surrounding properties are supplied with water from the Town municipal supply (which is sourced primarily from groundwater wells west of Lakeview and supplemented with spring water), and since the Site is relatively small and fully developed (with no discovered well) it is likely that the Site had also been served by a water connection. Based on the presence of shallow groundwater and relatively remote setting of Lakeview, it is likely that both registered and unregistered domestic water supply wells are in use in the vicinity of the Site.

The nearest surface water bodies to the Site include Bullard Creek, located approximately 3,100 feet to the South and an unnamed drainage located approximately 1,400 feet to the north. These drainages flow to Thomas Creek and then to Goose Lake, which is located about 7.5 miles south of the Site. All surface water bodies are located a sufficient distance from the former USTs that impacts from the Site to surface water sources is extremely unlikely.

The OWRD well-query online database was reviewed by Apex on November 5, 2025. The following representative nearby well logs were identified: LAKE 2456 and LAKE 52361. Records for the nearby wells indicate that groundwater was first encountered between 60 and 80 feet bgs, and static water was recorded between 2 and 15 feet bgs. Based on topography and nearby surface water features, the direction of shallow unconfined or semi-confined groundwater flow is expected to be toward the southwest; therefore, both wells are considered cross-gradient to the subject property and located a sufficient distance that they are unlikely to be impacted.

All known utilities servicing the Site have been disconnected by the utility service providers. A municipal sewer connection, if present, will be capped during demolition of the Site structure. Downgradient utilities include municipal water supply and sanitary sewer lines. Stormwater collection catch basins have not been observed at or near the Site. The topography of the Site slopes sharply to the west and currently most of the Site is capped with a structure or paved surfaces. There is no apparent collection for surface water at the Site.

The presence of the utilities adjacent to (and downgradient of) the Site is not considered a significant pathway for the plume migration because the shallower utilities (e.g., municipal water supply and UST lines) are located entirely above the depth to groundwater, and the deeper sanitary sewer utilities would only intersect the groundwater table during seasonally high groundwater conditions.

3.5.3 Exposure Pathway Analysis

Potential Receptors. Potential human receptors at the Site include those that may be exposed to the COPCs under the current or reasonably likely future land and water use scenarios. The following potential receptors were identified:

- Occasional site workers and visitors;
- Construction workers; and
- Excavation workers (during construction at or near the Site).

As there are no standard exposure factors for site visitors, Apex is substituting Occupational site factors to conservatively screen these potential exposures (understanding that the frequency of such exposures will be significantly less than included in the occupational exposure assumptions).

Because the Site is located in a fully developed urban area and is significantly developed with the building and pavement, and has no surface water exposure, there is currently no viable ecological habitat of significance on the site. East of the Site across route 395 is undeveloped hillslopes and foothills. The remainder of the LOF is developed along the valley corridor. Surface water bodies are at least 0.24 miles from the Site and there is no information to suggest that contaminated groundwater would reasonably migrate that far. Additionally, the likely contamination present in surface soil would be significantly covered by the Site building or pavement, so it is expected that areas of potentially higher impacts would not likely be exposed to terrestrial receptors. However, as the extent and magnitude of the potential impacts have not been determined, the potential exists for these exposures to occur. The proposed future use of the Site is also expected to be more conducive to ecological (terrestrial) exposures.

Exposure Pathways for Soil. Exposure pathways describe the physical connection or potential connection between a receptor and a potential contaminant source. Identifying a pathway as complete or potentially complete does not, by itself, indicate that there is an unacceptable risk, only that a receptor could be exposed to a contaminant source if such a source exists. Potentially complete exposure pathways for soil are listed below.

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- Direct Contact (Soil Ingestion, Dermal Contact, and Inhalation). This pathway is potentially complete for occupational and construction workers in future likely scenarios. Construction worker and excavation worker exposures are potentially complete for both surface soil and subsurface soil (such as for utility maintenance or future redevelopment of the property), and occupational exposure is potentially complete for the proposed redevelopment of the property (representing visitors and occasional maintenance workers). Direct contact for terrestrial ecological receptors may also be a complete exposure pathway.
 - Vapor Intrusion into Buildings. This pathway is potentially complete under future land uses if the future development includes any enclosed structures.
 - Volatilization to Outdoor Air. This pathway is potentially complete under current and future land uses.
 - Leaching to Groundwater. This pathway is a potential exposure pathway; however, exposures are not considered reasonably likely given that groundwater in the vicinity of the Site is not being used and the Town provides municipal water supply to the Site.

Exposure Pathways for Groundwater. Potentially complete exposure pathways for groundwater are listed below.

- Groundwater Ingestion and Inhalation. This pathway is a potential exposure pathway; however, current exposures are not considered reasonably likely given that groundwater in the vicinity of the Site is not being used and the Town of Lakeview provides municipal water supply to the Site. As groundwater is not expected to be encountered at shallow depths, it is unlikely that ecological receptors would be exposed to Site contamination in groundwater.
- Vapor Intrusion into Buildings. This pathway is potentially complete under future land uses if future development were to include any enclosed building.
- Volatilization to Outdoor Air. This pathway is potentially complete under current and future land uses.
- Groundwater in Excavations. This pathway is not likely to be complete for construction and excavation worker exposures as groundwater at the Site is typically encountered at depths that are greater than would be reasonable for redevelopment of the Site.
- Groundwater Discharge to Surface Water. This pathway is incomplete since the nearest surface water body is more than 0.24 miles from the Site and outside the reasonable extent of the contaminated groundwater plume.

4.0 Applicable Regulations and Cleanup Standards

As outlined in previous sections of this document, it is considered likely that constituents of concern (COCs) are present in both soil and structural building materials at concentrations exceeding State and/or EPA screening criteria. Exceedances of these levels would indicate potential risk to human health and the

environment; therefore, remediation of these environmental impacts would be required to support the redevelopment of this property. The following describes applicable regulations and cleanup standards that will apply to future remediation efforts.

4.1 Cleanup Oversight Authority

DEQ will have oversight of the cleanup activities at the subject site. Additionally, work plans and cleanup activities conducted throughout the implementation of this project will be overseen by qualified professional registered geologists and/or professional engineers licensed in the state of Oregon.

4.2 Cleanup Standards for Major Contaminants

As future Site use will likely include redevelopment, the screening levels applicable to the site are: direct contact for construction worker, excavation worker, and occupational worker exposure; vapor intrusion, volatilization to outdoor air and terrestrial ecological receptors. Those applicable DEQ RBCs and ecological screening levels will be used to evaluate the effectiveness of remedial actions. Metals concentrations will be compared to the Regional Background concentrations (DEQ 2013).

4.3 Laws and Regulations Applicable to the Cleanup

The applicable cleanup standards are:

- OAR 333, Division 068 to 070 – Lead Requirements: The rules established under these chapters establish the requirements for the abatement of lead paint-containing materials.

Lead-based paint (paint containing lead concentrations over 5,000 parts per million [ppm]) as defined by EPA (40 CFR 745) was identified at the Site. The Occupational Safety and Health Administration (OSHA) requires specific practices when a worker may be exposed to lead (OSHA 1926). Contractors should be notified of the possible lead concentrations, and best management practices (BMPs) and appropriate engineering controls (OSHA 1926.62[e][1]) should be used to reduce possible lead exposure during redevelopment activities.

- OAR 340-248 and OR-OSHA- Asbestos-Containing Materials (ACMs) Requirements: Suspected ACMs will be identified and characterized prior to removal and disposal by a qualified, licensed asbestos-abatement contractor, in accordance with OAR 340-248 and OR-OSHA regulations, prior to disturbance. A minimum of ten days prior to initiating asbestos abatement, written notification will be provided to DEQ (OAR 340-248-0260).
- OAR 340 Division 122 – Environmental Cleanup Rules: The rules established under this chapter establish 1×10^{-6} as the maximum excess lifetime cancer risk for hazardous substances (including asbestos), and a hazard index of 1 for non-cancer-causing substances.

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- 36 CFR Part 800 – Protection of Historic Properties: Section 106 of the National Historic Preservation Act requires agencies to account for the effects of their undertakings on historic properties and afford State Historical Preservation Office (SHPO) a reasonable opportunity to comment on such undertakings. The alternatives presented herein are considered federal undertakings as federal funding sources would be involved. As noted in Section 4.4, this review has not yet been completed but will be done prior to any work at the Site.

Additionally, demolition of the wood and concrete structures at the Site will be conducted in accordance with applicable federal, state, and local laws, rules, and regulations by a licensed demolition contractor. Information regarding which screening levels were chosen is provided in the sections below.

Required Permits and Notifications. Permits and notifications required for the recommended alternative include:

- Demolition Permit Application Form – Lake County (Appendix D);
- Consultation with the Oregon SHPO; and,
- The following UST decommissioning forms and notifications:
 - A UST Decommissioning/Change-in-Service 30-Day Notice Form must be submitted a minimum of 30 days before starting any decommissioning work;
 - Notification to the Local DEQ Regional Office in Bend must be made by telephone a minimum of three days before starting any decommissioning work; and
 - A UST Decommissioning Checklist and Site Assessment Report must be submitted to the DEQ Regional Office within 30 days after completing the decommissioning.

4.4 Ecologic and Cultural Resource Considerations

Ecologic Considerations. A review for threatened and endangered (T&E) species at or near the vicinity of the Site was completed by Apex in preparation for proposed redevelopment activities in accordance with the ESA. Based on the list of threatened and endangered species within the county and the fully-developed condition of the Site with no suitable ecological habitat, Apex believes it is unlikely that they will be present on the Site; however, work conducted at the Site will be assessed for potential to impact to species during the planning and implementation stages.

Effects on Cultural Resources. As the site is currently developed and not proximal to waterways, no cultural resources are anticipated to be encountered. A specific cultural resources review has not been completed for the Site. Given the nature of the Site, implementation of the cleanup alternatives is not expected to have an impact on any potential cultural resources; however, building demolition and potential excavation associated with cleanup activities or proposed redevelopment may require project review with the Oregon SHPO. As

such, inquiries have been submitted with request for consultation to SHPO and will be completed prior to any work done at the Site.

Consistent with Section 106 of the National Historic Preservation Act, the project review will be performed in coordination with the Oregon SHPO to determine if the proposed demolition and redevelopment would have impacts on properties of historic significance. To initiate the project review, Oregon SHPO requires notification of the agencies involved in the project and a brief description of the proposed activity. As applicable, proposed redevelopment details should be provided to SHPO as part of coordination. Within 30 days of submittal of that information, the Oregon SHPO will provide direction to advise on avoidance or minimization of potential project impacts to properties of historic significance, if applicable. If required by SHPO, Apex will prepare an Inadvertent Discovery Plan and provide a cultural monitor during implementation of the site assessment. Additionally, Apex will complete consultation with the Klamath and Burns Paiute Tribes prior to the start of work.

4.5 Risk-Based Screening

COPCs commonly associated with releases from petroleum USTs include: total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs) and metals. These COPCs are assumed to be present at the Site in soil (and potentially groundwater) at concentrations that may exceed the following applicable screening levels:

- Direct contact with soil for residential scenario
- Soil leaching to groundwater for residential scenario
- Soil vapor intrusion into buildings and volatilization to outdoor air for residential scenario
- Groundwater vapor intrusion into buildings and volatilization to outdoor air for residential scenario

HCMs are presumed to be present based on the age of the building including: lead-based paint, ACMs, and potentially chemicals left over from business operations. Planning and execution of building demolition will require appropriate characterization and handling of these materials by qualified professionals.

As these exceedances are based on assumptions related to the historical use of the property and the building condition, additional work will be necessary to quantify the presence of the COPCs and define the extent and magnitude of contamination (the definition of the LoF). As the current condition of the Site precludes the safe collection of soil and groundwater samples in the immediate vicinity of the Site building and USTs, the consideration of cleanup alternatives discussed below includes potentially applicable measures for completing the environmental site assessment.

5.0 Cleanup Alternatives

The purpose of this section is to define and evaluate applicable site assessment and potential cleanup alternatives at the Site to levels protective of human health and the environment. This ABCA was completed in general accordance with EPA guidelines for conducting an ABCA [NCP 300.415(4)(i)] and OARs for conducting feasibility studies (OAR 340-122-085). This ABCA contains the following elements:

- Remedial action areas;
- Evaluation of proposed cleanup alternatives;
- Presentation of the recommended alternative; and
- Discussion of the residual risks associated with the recommended alternative.

5.1 Remedial Action Area

For the purposes of this assessment, the cleanup action area will include the footprint of the Site building and the vicinity around each of the USTs. It is assumed that impacted soil will be associated with the UST systems, including potential leakage from the tanks and surface releases (overfilling) in the vicinity of former dispensers and product lines. Due to the age and presumed condition of the USTs, there may be petroleum impacts to soil or groundwater with concentrations above applicable RBCs in the vicinity of or below the USTs.

5.2 Cleanup Alternative Considerations

Below are elements that are considered in the evaluation of each cleanup alternative that is applicable to the Site.

- **Building Demolition:** The current dilapidated state of the Site building contributes to potential short-term exposures to ACMs and lead-containing paint and precludes the safe completion of the environmental site assessment and UST decommissioning via removal or in-place (due to proximity to the building and right-of-way). Therefore, it is necessary to complete the demolition of the building (including abatement of the ACMs).
- **UST Decommissioning:** Decommissioning of the USTs is necessary to complete the site assessment, which can be achieved either by removal or by decommissioning in-place. Removal of the USTs would also facilitate the assessment of site conditions directly beneath the tanks.
- **Petroleum-Impacted Soil:** Petroleum-impacted soil is likely present in the vicinity of the USTs and former dispenser areas. Exposure risks associated with petroleum-impacted soil at the Site can be mitigated by in-situ soil treatment or soil excavation, removal and disposal at a DEQ-licensed waste disposal facility. Soil excavation may include widespread removal of petroleum-impacted soil in excess of applicable cleanup levels, or may be completed using an approach of targeted hot-spot removal, followed by site assessment and implementation of institutional controls.

5.3 Evaluation of Cleanup Alternatives

The evaluation of potential cleanup alternatives included screening of potentially viable technologies to identify those strategies that would be most applicable to the Site given the Site conditions, the need to complete the environmental site assessment, and broadly address the types and extent of the contamination that is expected to be present at the Site. An initial screening of potentially applicable technologies is described in Table 1, including the rationale for the inclusion or exclusion of each technology. Considerations for each technology and its applicability to the specific site conditions are discussed in the table and technologies that are not feasible for use at the Site are removed from further consideration. Potentially applicable technologies have been assessed for suitability for the Site, and include:

- Institutional Controls (deed restrictions, soil management plan, and monitoring);
- Engineering Controls (physical access restrictions and vapor barriers);
- Removal (excavation) and Off-Site Disposal;
- In-Situ Physical Treatment (Soil Vapor Extraction); and
- In-Situ Biological Treatment (Monitored Natural Attenuation).

As discussed in Section 5.5, each alternative (except the No Action alternative) assumes that the Site building will need to be demolished and the USTs will be decommissioned. Each alternative also includes the completion of an environmental site assessment to determine the magnitude and extent of the COPCs. Due to the confirmed presence of hazardous building materials such as asbestos and lead-based paint, demolition service personnel would require a licensed and certified abatement contractor to safely remove the structure and ensure proper characterization, handling, and disposal of hazardous building materials in accordance with applicable regulations. The demolition of the building would address exposures to ACM and lead-containing paint.

The scope of any soil or groundwater remediation associated with the assumed presence of COPCs at the Site will be significantly dependent on the extent and magnitude of those impacts and their proximity to features like the adjacent roadways and other properties. Therefore, this assessment assumes sub-surface piping associated with the UST systems is confined to the immediate UST and former dispenser locations, and that petroleum-impacted soil does not extend beyond the property line or into the right-of-way at concentrations that would warrant immediate mitigation. If the environmental site assessment identifies a more significantly impacted area then additional consideration may need to be given to the specific technologies that may be applicable to the removal action, however it is not anticipated that a new ABCA would not be necessary to adequately assess cleanup alternatives.

Common Alternative Components. Several technologies identified on the screening table would not be suitable for use as a standalone cleanup alternative but may be useful in conjunction with other technologies to form a complete alternative. These common components include the following:

Institutional controls are non-engineered instruments, such as administrative and legal controls, which reduce the potential for human exposure to contamination. Examples include deed restrictions limiting future property use and/or groundwater use, easements and equitable servitudes, contaminated media management plans, etc. Institutional controls do not treat or remove the hazard but are usually combined with other responses and are almost always required when at least some hazard remains at the site.

Engineering controls are designed systems that are used to restrict exposure to site contaminants. Examples include access restrictions (fencing or other physical barriers) and vapor controls or barriers. Installation of a soil cap may also be beneficial to restrict contact with potentially contaminated shallow soil. To remain effective, however, these structures would need to remain intact.

MNA would not be effective as a primary cleanup technology, but may be beneficial to address residual contamination at the site, particularly for dispersed low-level contamination in groundwater. Natural degradation processes would be expected to continue reduction of contamination in non-source areas, particularly with a primary cleanup action addressing the higher source-area concentrations.

Cleanup Alternatives. The common technologies noted above are combined with the remaining cleanup technologies to create complete cleanup alternatives. These cleanup alternatives include:

Cleanup Alternative	Technology
1. No Action	None
2. UST Decommissioning by Removal and Extensive Excavation of Petroleum-Impacted Soil	<ul style="list-style-type: none"> • Excavation • Off-site disposal • Deed restrictions to prohibit groundwater use and requirement for vapor controls on new construction • Soil management plan • Capping as appropriate to prevent access to residual shallow soil contamination • MNA to address residual contamination
3. UST Decommissioning by Removal and Targeted Excavation of Petroleum-Impacted Soil	<ul style="list-style-type: none"> • Targeted excavation • Off-site disposal • Deed restrictions to prohibit groundwater use and requirement for vapor controls on new construction • Soil management plan • Capping (i.e., paving) as appropriate to prevent access to shallow soil contamination • MNA to address residual contamination

Cleanup Alternative	Technology
4. UST Decommissioning In-Place and No Active Soil Treatment (MNA)	<ul style="list-style-type: none"> • Deed restrictions to prohibit groundwater use and requirement for vapor controls on new construction • Soil management plan • Capping (i.e., paving) as appropriate to prevent access to shallow soil contamination • MNA to address residual contamination
5. UST Decommissioning In-Place and In Situ Soil Treatment (Soil Vapor Extraction)	<ul style="list-style-type: none"> • Deed restrictions to prohibit groundwater use and requirement for vapor controls on new construction • Soil management plan • Capping (i.e., paving) as appropriate to prevent access to shallow soil contamination • Soil Vapor Extraction and Vapor Phase Adsorption to remove contaminant mass. • MNA to address residual contamination

The assessment of cleanup alternatives includes a Baseline or No Action alternative, which is required to be carried through for comparison of conducting no further remediation versus implementing additional cleanup actions to reduce contaminant concentrations and associated risk at the Site. However, the No Action alternative is not considered protective of human or ecological receptors. The following sections detail the review of the applicable technologies. Table 2 provides a summary of the comparative evaluation of the retained treatment technologies.

5.3.1 Description of Alternatives

Alternative 1—No Action. No Action is used as a comparison to assure that at least some cleanup is warranted; the No-Action response assumes that no cleanup or protections of any kind are implemented.

Alternative 2—UST Decommissioning by Removal and Extensive Excavation of Petroleum-Impacted Soil. In this alternative, the USTs will be decommissioned by removal (following the demolition of the Site building), and all coincident petroleum-impacted soil that is accessible to excavation will be removed by excavation and off-site disposal. There is insufficient site assessment data available to determine the extent of petroleum impacts from the abandoned USTs; however, based on the age of the USTs, site topography and the presence of shallow groundwater in the area, it is possible that petroleum impacts may be widespread at the Site. For the purpose of the alternative, it is assumed that a total of 250 cubic yards of soil will be removed by excavation and disposed of off-site. Confirmation sampling will be performed after soil removal to demonstrate that concentrations of remaining residual petroleum contamination, if present, do not exceed applicable Soil Matrix cleanup levels. This alternative includes import of 300 tons of three-quarter-inch minus structural backfill to fill the void of the excavation volume and 100 tons of topsoil to match the existing surface. It is anticipated that extensive removal of petroleum-contaminated soil in the vicinity of the UST system (tanks

and piping) will be sufficient to achieve the Site cleanup goals and no other active treatment would be needed (any residual contamination would be addressed by MNA).

Alternative 3—UST Decommissioning by Removal and Targeted Excavation of Petroleum-Impacted Soil. In this alternative, the USTs will be decommissioned by removal (following the demolition of the Site building). Following removal of the USTs and associated piping, limited and targeted excavation and off-site disposal of coincident petroleum-impacted soil will be completed. For the purpose of the alternative, it is assumed that a total of 40 cubic yards of impacted soil will be removed by excavation and disposed of off site. Confirmation sampling will be performed after soil removal to demonstrate that concentrations of remaining residual petroleum contamination, if present, do not exceed applicable risk-based cleanup levels. This alternative includes import of 40 tons of three-quarter-inch minus structural backfill to fill the void of the excavation volume and 40 tons of topsoil to match the existing surface. It is anticipated that targeted excavation of soil in the immediate vicinity of the UST system (tanks and piping) may not be sufficient to achieve the Site cleanup goals without the subsequent implementation of institutional or engineering controls as indicated by site assessment data. Institutional controls could include site use restrictions or preparation of a Contaminated Media Management Plan (CMMP); engineering controls could include controls to prevent intrusion of petroleum-contaminated vapors into adjacent residential properties.

Alternative 4 —UST Decommissioning in Place and No Active Soil Treatment. In this alternative, the USTs will be decommissioned in place, and the petroleum-impacted soil will be managed only with institutional and engineering controls. Natural processes would be expected to reduce petroleum hydrocarbon concentrations through microbial degradation or other similar processes (documented through MNA). Permanent land use restrictions would be required for future use of the property and long-term monitoring would be needed to assess potential exposures. As residual contamination will remain at the Site in the vicinity of the USTs, a Contaminated Media Management Plan (CMMP) should be prepared to address the proper handling and disposal of any contaminated soil that may be encountered during future construction or development at the Site.

Alternative 5—UST Decommissioning in Place and In Situ Treatment of Petroleum-Impacted Soil. In this alternative, the USTs will be decommissioned in place, and the petroleum-impacted soil in the vicinity of the fuel island will be treated in situ. For the purpose of the alternative, the in situ technology is soil vapor extraction (SVE; an in situ alternative that is likely to be relatively cost-effective given the Site conditions), and it is assumed a total of 250 cubic yards of soil at the Site will be treated in situ. This alternative would require the construction and operation of a treatment system (essentially comprised of a vacuum blower, moisture separator, and potentially vapor treatment such as activated carbon vessels). Land use restrictions and monitoring would be required until soil cleanup goals are met. As residual contamination will remain at the Site in the vicinity of the USTs, a CMMP should be prepared to address the proper handling and disposal of any contaminated soil that may be encountered during future construction or development at the Site. It would be expected that operation of an SVE system would achieve cleanup goals in three to five years (depending on the extent of contamination immediately surrounding the USTs). Confirmation sampling would be

performed to confirm adequate treatment to below residential RBCs. Alternative in situ treatment technologies such as chemical oxidation may achieve the cleanup goals sooner but would also be less cost-effective under the assumed Site conditions.

5.4 Effectiveness

Alternative 1—No Action. The No-Action alternative would not be effective in controlling the risk to human health or the environment posed by the petroleum-contaminated soil or groundwater at the Site.

Alternative 2—UST Decommissioning by Removal and Extensive Excavation of Petroleum-Impacted Soil. Decommissioning the USTs by removal and completing extensive soil excavation, to remove all accessible petroleum-impacted soil with concentrations exceeding applicable Soil Matrix cleanup levels, is an effective alternative to address potential risk of the impacted soil to human health or the environment. Off-site disposal has the benefit that known and suspected petroleum-contaminated soil associated with the USTs will be removed from the Site and disposed of off site at a Subtitle D landfill, eliminating risk associated with contaminated soil. In addition, the removal of the USTs will facilitate the environmental site assessment and future development of the site into a park by the Town.

Alternative 3—UST Decommissioning by Removal and Targeted Excavation of Petroleum-Impacted Soil. Decommissioning the USTs by removal and completing targeted soil excavation, to remove petroleum-impacted soil with concentrations exceeding applicable risk-based cleanup levels in the immediate vicinity of the USTs, is an effective alternative to address the most significant potential risk of the impacted soil to human health or the environment. Off-site disposal has the benefit that known and suspected petroleum-contaminated soil associated with the USTs will be removed from the Site and disposed of off site at a Subtitle D landfill, eliminating risk associated with contaminated soil. In addition, the removal of the USTs will facilitate the environmental site assessment and future Site redevelopment. Although institutional or engineering controls may be required to address potential risk of remaining petroleum-contaminated soil following targeted excavation, it is not anticipated that these controls would significantly impact the proposed future site use as a public space and welcome kiosk.

Alternative 4 —UST Decommissioning in Place and No Active Soil Treatment. Decommissioning the USTs in place and implementing institutional/engineering controls (use restrictions and CMMP) would not address the potential residual petroleum-contaminated soil in a reasonable timeframe. In addition, the presence of the decommissioned USTs would complicate the completion of the environmental site assessment and may constitute a barrier to Site redevelopment by potentially interfering with development construction. Institutional controls (e.g., CMMP) and engineering controls (e.g., vapor barriers beneath new construction) would need to be maintained permanently to remain effective. Institutional and engineering controls would also not be effective at mitigating exposures to ecological receptors, if present at the site.

Alternative 5—UST Decommissioning in Place and In Situ Treatment of Petroleum-Impacted Soil.

Decommissioning the USTs in place, treating the soil on site with a soil vapor extraction system or equivalent, and implementing institutional/engineering controls (vapor barrier and use restrictions) could effectively treat the assumed volume of petroleum-contaminated soil in the vicinity of the USTs. However, the presence of the decommissioned USTs would complicate the completion of the environmental site assessment and may constitute a barrier to Site redevelopment by potentially interfering with development construction, and the installation and operation of the SVE system would likely interfere with the proposed future use of the Site until the treatment has been sufficiently completed for the system to be decommissioned. Institutional controls (e.g., CMMP) and engineering controls (e.g., vapor barriers beneath new construction) would need to be maintained to remain effective until contaminant concentrations are reduced sufficiently to be protective. Confirmation sampling would be performed after soil treatment to demonstrate adequate cleanup.

Comparative Effectiveness. Based on a review of the effectiveness for the five alternatives for mitigating the impacted soil areas, Alternative 2 is the most effective. This alternative addresses all assumed petroleum-contaminated soil at the Site and facilitates the environmental site assessment. Alternative 1 (No Action) is not effective. Alternative 3 would address the most impacted of the suspected petroleum-contaminated soil in the vicinity of the USTs, and presumably will result in the removal of any hotspots that may be present; however, this alternative may rely on institutional or engineering controls to remain protective, if elevated concentrations of petroleum-contaminated soil are present following excavation. Alternative 4 would not address the suspected petroleum-contaminated soil in the vicinity of the USTs in a timely manner, relies on institutional and engineering controls to remain protective, and does not address potential ecological exposures. Alternative 5 would address the suspected petroleum-contaminated soil in the vicinity of the USTs; however, this alternative would rely on institutional and engineering controls to remain protective during the implementation process (which will take more time than the excavation alternatives). Alternatives 4 and 5 may also interfere with the completion of the environmental site assessment and future development of the property.

5.6 Long-Term Reliability

Alternative 1—No Action. The No Action alternative would not be reliable in controlling the risk to human health or the environment posed by the petroleum-contaminated soil at the Site and, therefore, would offer no long-term benefits.

Alternative 2—UST Decommissioning by Removal and Extensive Excavation of Petroleum-Impacted Soil. Removal of all petroleum-impacted soil by excavation and off-site disposal permanently removes the likely primary source for direct exposure, potential vapor intrusion, or continuing impacts to groundwater.

Alternative 3—UST Decommissioning by Removal and Targeted Excavation of Petroleum-Impacted Soil. Removal of hot spots by excavation and off-site disposal permanently removes the portions of the impacted soil associated with the highest exposure risks, such as potential vapor intrusion or continuing

impacts to groundwater. Remaining lower concentrations of petroleum-impacted soil at the site could be managed with institutional controls (such as use restrictions and a Contaminated Media Management Plan (CMMP)) and monitored natural attenuation.

Alternative 4 —UST Decommissioning in Place and No Active Soil Treatment. Decommissioning the USTs in place would ensure that continued or future releases from abandoned USTs would not be possible at the Site. This alternative does not address historical releases or current soil conditions and would be less reliable in controlling the risk to human health or the environment posed by the petroleum-contaminated soil at the Site as it would rely on long-term natural processes that are relatively slow. Exposure to remaining concentrations of petroleum-impacted soil at the site may be managed with institutional controls (such as use restrictions and a Contaminated Media Management Plan (CMMP)) and inclusion of vapor controls on future development.

Alternative 5—UST Decommissioning in Place and In Situ Treatment of Petroleum-Impacted Soil. Decommissioning the USTs in place would ensure that continued or future releases from abandoned USTs would not be possible at the Site. Active soil cleanup through SVE would require regular operation and maintenance to ensure long-term reliability, including maintenance of a power source, regular inspections and monitoring, periodic repair and replacement of associated equipment as needed due to wear and tear, extreme weather events, or accidental damage. The forecasted risks associated with climate change and natural hazards at the site are relatively low, with most likely impacts from wildfire, which could potentially impact the SVE system and lead to additional costs associated with restoration or replacement.

Comparative Long-Term Reliability. Alternative 1 would not be reliable. The long-term reliability of Alternatives 4 and 5 are lower than the other alternatives as they are dependent on either long-term operations and maintenance requirements of the system or relatively uncontrolled natural processes, though while the Alternative 5 system is properly maintained it would be more reliable than the MNA of Alternative 4. Petroleum-impacted soil removal included in alternatives 2 and 3 provide greater long-term reliability than the other alternatives. Alternative 2 best insures that the action will be reliable in the long term and not impacted by future changes to the Site, increased risks from extreme weather events, human error or budgetary shortfalls.

5.6 Implementability

Alternative 1—No Action. The No-Action alternative would require no effort to implement.

Alternative 2—UST Decommissioning by Removal and Extensive Excavation of Petroleum-Impacted Soil. The tasks associated with decommissioning the USTs by removal and completing extensive soil excavation alternative are commonly performed by a large number of contractors but due to site constraints and potential risk to adjacent infrastructure would not be easy to implement. The tasks include decommissioning the USTs and piping by removal and removing coincident petroleum-contaminated soil by excavation and off-site disposal. Implementation involves conventional construction equipment and methods,

but it is reasonably likely that contamination would extend beneath the adjacent highway right-of-way, precluding the practical removal of this soil. Implementation involves transportation of contaminated soils on public roads for relatively long distances. This alternative is also most conducive to the completion of the environmental site assessment.

Alternative 3—UST Decommissioning by Removal and Targeted Excavation of Petroleum-Impacted Soil. The tasks associated with decommissioning the USTs by removal and completing targeted soil excavation are commonly performed by a large number of contractors and would be easy to implement. They include decommissioning the USTs and piping by removal and removing a limited quantity of petroleum-contaminated soil by excavation and off-site disposal. Implementation involves conventional construction equipment and methods. Implementation involves transportation of contaminated soils on public roads for relatively long distances. This alternative is also conducive to the completion of the environmental site assessment.

Alternative 4 —UST Decommissioning in Place and No Active Soil Treatment. The tasks associated with decommissioning the USTs in place with no active soil treatment, are commonly performed by a large number of contractors and would be easy to implement. Implementation involves conventional construction equipment and methods. This alternative includes the development of long-term controls (e.g., site use restrictions, CMMP, and potentially the implementation of vapor controls on new construction). Those long-term controls make implementation more difficult and require significant coordination and long-term maintenance and upkeep to be protective.

Alternative 5—UST Decommissioning in Place and In Situ Treatment of Petroleum-Impacted Soil. The tasks associated decommissioning the USTs in place, treating the soil on site with a soil vapor extraction system or equivalent, and implementing institutional/engineering controls (vapor barrier and use restrictions) will require specialized equipment, potential treatment of vapors from an engineered system, permitting, and enforcement of land use restrictions during the cleanup phase. Operation and maintenance of the system for an expected period of three to five years will require long-term coordination, power usage, and multiple site mobilizations.

Comparative Implementability. Based on a review of the ease of implementation for the five alternatives for mitigating the impacted soil areas, Alternative 1 is the easiest to implement (with no action). Alternative 4 is reasonably easy to implement, only requiring the development of the institutional and engineering controls in addition to the building removal and UST decommissioning, but those controls will need to be permanently maintained. Alternatives 2 and 3 would require construction activities, but Alternative 2 carries a significantly greater potential risk of damage to infrastructure, and associated costs of protective measures, when compared to Alternative 3. The implementation of Alternative 5 will require significant planning, permitting, oversight, and maintenance.

5.7 Cost

The costs associated with implementing Alternatives 1 through 5 are summarized below; detailed costs for the implementation of the selected alternatives are presented in Tables 3 through 6, respectively. The costs represented in these estimates are based on professional judgement or experience with similar work that Apex has completed at other Sites. Specific costs will be refined following the completion of a complete design of the selected alternative and the procurement of the associated subcontracted services.

Alternative 1—No Action. The cost for implementing the No Action alternative is \$0.

Alternative 2—UST Decommissioning by Removal and Extensive Excavation of Petroleum-Impacted Soil. The cost for implementing the alternative for UST decommissioning by removal, extensive excavation of all accessible petroleum-impacted soil (up to 250 cubic yards), and off-site disposal is estimated to be about \$778,000 (including the demolition of the site structure and sampling to confirm that Soil Matrix cleanup standards are met).

Alternative 3—UST Decommissioning by Removal and Targeted Excavation of Petroleum-Impacted Soil. The cost for implementing the alternative for UST decommissioning by removal, targeted excavation of petroleum-impacted soil in the vicinity of the USTs (up to 40 cubic yards), and off-site disposal is estimated to be about \$657,000 (including the demolition of the site structure, risk-based site assessment sampling to confirm that cleanup standards are met, and, if necessary implementation of institutional or engineering controls).

Alternative 4 —UST Decommissioning in Place and No Active Soil Treatment. The cost for implementing the alternative for decommissioning the USTs in place and implementing institutional/engineering controls (use restrictions and CMMP) is estimated to be about \$686,000 (including the demolition of the site structure and risk-based site assessment sampling). This cost includes about \$125,000 in long-term costs for inspection and reporting. The decommissioned-in-place USTs would constitute a barrier to redevelopment and potentially place additional costs or limitations on the Town during redevelopment into a public space with an informational kiosk.

Alternative 5—UST Decommissioning in Place and In Situ Treatment of Petroleum-Impacted Soil. The cost for implementing the alternative for decommissioning the USTs in place, treating the soil on site with a soil vapor extraction system or equivalent, and implementing institutional/engineering controls (vapor barrier and use restrictions) is estimated to be about \$1,028,000 (including the demolition of the site structure, long term care costs for a 5-year period, and additional site work costs required to lift the restrictions are included in this alternative), with approximately \$320,000 of this cost associated with long-term system operation, maintenance, and monitoring. In addition, the decommissioned-in-place USTs and engineering system would constitute barriers to redevelopment, and the property value would reflect those barriers.

Comparative Cost. Based on a review of the estimated cost for the five alternatives for mitigating the impacted soil areas, Alternative 1 is the least costly to implement. Alternatives 3 and 4 are similar in cost, (though Alternative 4 has a lower initial capital cost). Alternatives 2 and 5 are the most costly, with higher initial capital costs associated with Alternative 2, but lower overall project costs due to the extended monitoring that would be required with Alternative 5. The presence of the decommissioned-in-place USTs and land use restrictions in Alternatives 4 and 5 constitute barriers to redevelopment and carry the greatest risk of human and environmental exposure to COPCs in the future. Alternative 3 offers the best cost to benefit value of direct cleanup and mitigation of remaining risk through engineering or institutional control.

5.7 Comparative Evaluation of Alternatives

Protectiveness is considered to be a pass/fail criterion, and alternatives that are not protective (such as No Action) are not considered for selection but are retained for comparison to the remaining alternatives. The balancing criteria discussed above are compared relatively for each alternative as summarized on Table 2. Each alternative is compared to each of the other alternatives for each evaluation criterion. An alternative is ranked as favorable (+), equal (0), or unfavorable (-) in relation to every other alternative, corresponding to respective scores of 1, 0, or -1. The scores are summed at the right of the table for each alternative, and the alternatives are ranked according to the overall score. As shown on Table 2, Alternative 3 (UST Decommissioning by Removal and Targeted Soil Excavation) has a significantly higher-ranking score than the other alternatives. Therefore, Alternative 3 is selected as the recommended alternative for implementation at the Site.

5.8 Public Participation

The ABCA process mandates the public comments and concerns be addressed during the selection of a cleanup alternative. DEQ will host a 15-day public comment period for nearby residents in the Town of Lakeview, tribes and other interested parties. Additional public comment period(s) will be included during the permitting of the cleanup action.

6.0 Conclusions and Recommendations

Based on the current and proposed future Site uses, the primary risk exposures of potential concern related to the contamination encountered at the Site are limited to vapor intrusion into buildings from petroleum-impacted soil and groundwater, volatilization to outdoor air, and direct contact with soil. Petroleum impacts to groundwater as a result of soil leaching is a potential, but unlikely, exposure risk. Although the Site is not intended for residential use, residential RBCs will be used to assess risk based on the predominantly residential use of adjacent and surrounding properties.

To address these potential future risks, an assessment of feasible cleanup alternatives was completed. Based on that assessment (summarized in Table 2), Apex recommends that the areas of impacted soil be addressed with the implementation of Alternative 3 (UST Decommissioning by Removal and Targeted Excavation of Petroleum-Impacted Soil). With this alternative (including the removal of the Site building coincident with the UST removals), impacted petroleum-contaminated soil in the immediate vicinity of the USTs and associated piping will be removed by excavation and disposed at an off-site regulated Subtitle D landfill. Although this alternative includes the potential to leave residual concentrations of petroleum-impacted soil in place, it is anticipated that a risk-based site assessment will demonstrate that minimal institutional or engineering controls will be required to be protective of human health and the environment and be compatible with the planned future use of the Site as a park space. Alternative 3 is lower cost and would be more easily implemented compared to Alternative 2, particularly when considering risk to the adjacent roadways and city infrastructure. In addition, the presence of decommissioned-in-place USTs in Alternatives 4 and 5 would constitute barriers to redevelopment that would decrease the resulting property value and limit site redevelopment options, whereas Alternatives 2 and 3 allows for unrestricted redevelopment of the site. The total estimated cost associated with implementation of this scope of work is \$657,000.

Recognizing that the Town of Lakeview has acquired the property to redevelop the Site as a Gateway Park/Welcome Center Kiosk, the potential for more significant contamination in the immediate vicinity of the USTs and beneath the site structure may also affect redevelopment of the Site. However, further characterization of that area would still require removal of the USTs, which would not be feasible without the removal of the Site building due to the proximity of the building to the USTs and the dilapidated condition of the building. As the activities necessary to pursue further characterization of contamination in the immediate vicinity of the USTs are consistent with the implementation of cleanup Alternative 3 (differing only in the potential volume of soil that may need to be removed), and Alternative 3 was determined to be the safest and most cost-effective alternative for addressing the potential Site risks during redevelopment, it is recommended that Alternative 3 (UST Decommissioning by Removal and Targeted Excavation of Petroleum-Impacted Soil) be considered for the Site. This would ensure that: the site is in compliance with all applicable UST regulations, there would be no subsurface obstacles or limitations to redevelopment, elevated concentrations of petroleum-impacted soil would be removed and disposed off site, and the risk of residual concentrations of petroleum is assessed to determine if engineering or institutional controls should be implemented to be protective of future development of the property.

7.0 References

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Table 1
ABCA Screening and Evaluation of Technologies for Soil
Former Don's Market
Lakeview, Oregon

General Response Actions	Technology	Description	Screening Criteria			Screening Comments
			Effectiveness	Implementability	Cost	
NO ACTION	None	No Action	Not effective in achieving cleanup goals.	Easy to implement.	No capital or O&M costs incurred.	Not effective.
INSTITUTIONAL CONTROLS	Deed Restrictions/ Soil Management Plan	Can prevent disturbance of engineering controls, address notification of site hazards, and ensure proper controls are implemented during future site activities.	Effective at regulating human health direct contact on-site. Requires adherence to restrictions. Not effective at mitigating ecological risk.	Easy to implement on-site, but difficult to enforce and maintain due to remote nature of site and lack of supervision.	Low costs associated with implementing soil management plan.	May be effective to preclude other site uses or disturbance of contaminated soil. Soil management plan may be appropriate for potential future on-site construction activities.
MONITORING	Monitoring	Laboratory analysis of soil or groundwater samples.	Effective for documenting site conditions to evaluate current and potential future site risks. Does not affect potential contaminant exposures.	Easy to implement for shallow soil, groundwater monitoring would require drilling and may include installation of permanent monitoring wells.	Low to moderate costs for monitoring.	Applicable to document site conditions and effectiveness of any treatment.
ENGINEERING CONTROLS	Access Restrictions	Use of physical controls to limit access to soil contamination (such as fencing)	Effective at preventing human health direct contact, but does not affect contaminant mass or concentration. Not effective at mitigating ecological risk.	Relatively simple to implement at Site, but not compatible with anticipated future site use. Difficult to enforce and maintain due to remote nature of site and lack of supervision.	Low to moderate costs associated with implementing controls. Will likely require regular maintenance of control structures.	Could be applicable for temporary use during implementation of other technologies, but not suitable for standalone use.
	Vapor Barrier	Use of barriers or vapor collection to prevent vapor migration into site buildings.	Effective at preventing human health direct contact, but does not affect contaminant mass or concentration. Not effective at mitigating ecological risk.	Reasonable to implement at Site for new construction.	Low to moderate costs associated with implementing controls. May require periodic monitoring to verify effectiveness	May be applicable for alternatives that leave residual contamination if future site use includes construction of enclosed structures.
	Capping	Installation of cap (e.g., soil, asphalt, impermeable liner) over impacted soils.	Effective at preventing direct contact with contaminated soils. Low-permeability caps can reduce rainwater infiltration thereby reducing the potential for contaminants leaching from soil. May not control exposure to burrowing animals, but armored caps would minimize potential for disturbance.	Moderately easy to implement at Site. Periodic inspection and maintenance of cap would be required.	Moderate costs to install new cap(s). Low to moderate costs for upkeep and maintenance of cap(s).	May be applicable for alternatives that leave residual shallow soil contamination. Would be incorporated into future site development plan.
REMOVAL/OFF-SITE DISPOSAL	Excavation	Excavation of contaminated soils for subsequent disposal or treatment.	Effective for removing contaminated soil from site. Addresses direct exposure pathways for human health and ecological exposures by removing contaminant concentrations and mass from the Site.	Moderately easy to implement at Site. Implementation involves conventional construction equipment and methods. Easy to coordinate.	Moderate costs for excavation of shallow soil.	Applicable to expected shallow soil contamination.
	Off-site Disposal	Off-site disposal at licensed landfill. Soils would require characterization to determine type of disposal facility (hazardous or non-hazardous).	Effective for containing contaminated soils and reducing risks associated with direct exposure.	Implementation involves transportation of contaminated soils on public roads for potentially long distances.	Moderate to high costs depending upon soil volumes.	Applicable to excavated soil.
IN SITU PHYSICAL/ CHEMICAL/ THERMAL TREATMENT	Soil Vapor Extraction (SVE)	SVE involves extraction of vapors from vadose zone using system of vertical wells or horizontal vents and vacuum pumps/blowers.	Highly effective at removing volatile organic compounds (VOCs) from unsaturated soils and controlling vapor migration. Not effective in areas of shallow groundwater (would require inclusion of groundwater removal/dewatering)	Conventional technologies available for implementation. Would require long-term access to power for equipment.	Generally moderate to high capital and O&M costs. Treatment of vapors increases costs significantly.	May be applicable if groundwater depths are deeper than target treatment area.
	Chemical Oxidation	Chemically converts hazardous contaminants to less toxic compounds. Effective in destroying organic contaminants and oxidizing inorganic contaminants to less toxic/less mobile forms. Can include oxidant chemicals such as peroxides, permanganates, or ozone.	Can be highly effective at destruction of organic contaminants. Can be difficult to achieve full coverage (contact between oxidant and COIs), particularly in shallow soils.	Equipment and vendors are readily available. Oxidation most efficient for areas of high concentration. Would likely require multiple applications. Difficult to safely control in near-surface applications.	High to Very High implementation cost.	While potentially applicable to site contaminants, would be difficult to implement due to likely shallow (near-surface) contamination and costs would be very high. Likely would require very closely-spaced injections and multiple oxidation events.

Please refer to note at end of table.

Table 1
ABCA Screening and Evaluation of Technologies for Soil
Former Don's Market
Lakeview, Oregon

General Response Actions	Technology	Description	Screening Criteria			Screening Comments
			Effectiveness	Implementability	Cost	
IN SITU PHYSICAL/ CHEMICAL/ THERMAL TREATMENT (CONTINUED)	Soil Flushing	Water (or water containing an additive to enhance contaminant solubility) is circulated through the soil to desorb contaminants, recovered, and treated. Single-well implementation can involve injection followed by removal (such as via vacuum truck).	Less effective for organic contaminants and would require water extraction/treatment operation.	Extracted water would require treatment and disposal.	High implementation cost.	Not suitable for expected site contaminants (petroleum hydrocarbons), not suitable for size of site, and significantly more expensive than more suitable alternatives.
	Solidification/ Stabilization/ Vitrification	Contaminants are physically bound or enclosed within a stabilized mass (solidification and vitrification), or chemical reactions are induced between the stabilizing agent and contaminants to reduce their mobility (stabilization).	Most suitable to inorganic contaminants to prevent leaching.	Coverage of impacted saturated soil would be difficult and expensive.	High implementation cost.	Not suitable to expected site contaminants and difficult to implement with site conditions. Significantly more expensive than more suitable alternatives.
	Thermally Enhanced Removal	High energy injection (steam/hot air, electrical resistance, electromagnetic, fiber optic, radio frequency) is used to increase the recovery rate of semi-volatile or non-volatile compounds to facilitate extraction (enhanced volatilization or decreased viscosity).	Most suitable to semi-volatile organic contaminants or viscous compounds that are not otherwise extractable with vapor extraction or fluid extraction technologies. Vapor recovery not effective in saturated soil.	Generally used in conjunction with soil vapor extraction system or other recovery system (i.e., groundwater extraction). Has high energy requirements, particularly in saturated soil. Would require power supply provided during extent of treatment.	High to Very High implementation cost.	Difficult to implement for expected shallow soil contamination, and not feasible to provide vapor recovery. No benefit to the high additional cost.
IN SITU BIOLOGICAL TREATMENT	Bioventing	Bioventing involves inducing air or oxygen flow in the unsaturated zone to promote biodegradation of hydrocarbons and VOCs. Applications include injection of air or oxygen into subsurface, or extraction of air at rates lower than SVE.	Effective in reducing contaminant concentrations in deeper unsaturated soils. Less benefit for shallow course soil where oxygen transfer is less inhibited.	Venting can be done passively, but is less suitable to addressing shallow saturated soil.	Generally has moderate capital and O&M costs.	Less benefit with expected site conditions (shallow soil contamination).
	Enhanced Bioremediation (Bioaugmentation, Biostimulation)	Adding nutrients, electron acceptor, or other amendments to enhance bioremediation.	Suitable for saturated soils with addition of suitable amendments, but is most effective at relatively low concentrations. Process requires saturation of shallow soil to be effective (consistent with site conditions).	Implementation would require mixing of amendments into soil, which can be completed using readily available equipment. Amendments for petroleum contamination are available, generally consisting of oxygen-releasing compounds and bacterial cultures.	Generally moderate costs depending on number of injection/mixing events required.	Less suitable to expected site conditions (would not address contamination in unsaturated soil).
	Land Treatment	Combination of aeration (tilling) and amendments to enhance bioremediation in surface soils.	Effective for organic contaminants in shallow soil that can be degraded aerobically. Less effective for heavy organics encountered at the Site.	Reasonable implementation in shallow soil using readily available equipment. Would require frequent trips to the remote site. Heavy-chain organics would degrade slowly.	Low to moderate implementation cost for each tilling event, but would require numerous events.	Impractical to implement at remote site for types of contamination found in shallow soil - would require numerous trips. Not enough room on site for layout.
	Monitored Natural Attenuation	Using natural processes to reduce contaminant concentrations to acceptable levels. Process is closely monitored to verify exposures are acceptable prior to concentrations reaching acceptable levels.	May be effective, especially in areas of low concentrations, but is dependant upon site conditions. Not efficient for source areas; other technologies will likely be required.	Easy to implement. Monitoring of unsaturated soil may require repeated intrusive sampling events. Likely will require significant timeframe to reach cleanup goals.	Low costs for monitoring.	May be applicable to address residual low-concentration organic contamination not efficiently addressed by active remediation.
	Phytoremediation	Phytoremediation is a process that uses plants to remove, transfer, stabilize, and destroy contaminants in soil or sediment.	Can be effective at removing a variety of organic and inorganic compounds from soil through plant uptake in vicinity of roots (rhizosphere).	Can be implemented for shallow soil contamination but difficult to control at remote site. Would require frequent maintenance of plants until established. Not reasonably implementable with expected future site use.	Moderate implementation cost.	Not likely compatible with future site use. Would require significant maintenance.

Please refer to note at end of table.

Table 1
ABCA Screening and Evaluation of Technologies for Soil
Former Don's Market
Lakeview, Oregon

General Response Actions	Technology	Description	Screening Criteria			Screening Comments
			Effectiveness	Implementability	Cost	
EX SITU PHYSICAL/ CHEMICAL/ THERMAL TREATMENT	Chemical Extraction	Excavated soil is mixed with an extractant which dissolves the contaminants. The resultant solution is placed in a separator to remove the contaminant/extractant mixture for treatment.	Most suitable to removal of semi-volatile and inorganic contamination from excavated soil.	Somewhat effective in removing most organic contaminants from soil. Difficult to remove all contaminant/extractant mixture from soil - would likely require finish treatment. Requires area for soil treatment or transport to off-site facility. Extractant fluid would need subsequent treatment process or disposal.	High to very high implementation cost.	Additional treatment would be required for both soil and recovered extractant. Not cost effective for types of contamination and volume of excavated soil.
	Incineration	High temperatures are used to combust (in the presence of oxygen) organic constituents in hazardous wastes.	Effective at removing organic contaminants from excavated soil, but particularly suitable for recalcitrant contaminants.	Requires transport to off-site facility (long-distance transport).	High implementation cost.	Significant cost for transportation and treatment and not cost effective for types of contamination (no benefit of significantly higher cost over disposal alternative)
	Soil Washing	Contaminants are separated from the excavated soil with wash-water augmented with additives to help remove organics.	Most suitable for semi-volatile organics or inorganic contamination.	Requires area for soil treatment or transport to off-site facility. Resultant fluid would need subsequent treatment process or disposal. Would need additives to assist with removal of organics.	Moderate to high implementation cost.	Additional treatment would be required for recovered extractant. Not cost effective for types of contamination and volume of excavated soil. Would require more space than is available.
	Solar Detoxification	Contaminants are destroyed by photochemical and thermal reactions using ultraviolet energy in sunlight or artificial UV light. Usually involves application of catalyst agent.	Can be effective at treating a variety of organic compounds. Most effective when used with catalyst agent (e.g., titanium dioxide).	Implementation with sunlight limited by availability (not effective during nighttime and limited effectiveness in cloudy/wet seasons). Requires significant area for treatment or transport to off-site facility. Existing shallow soil has had long-term exposure to sunlight without sufficient improvement.	Moderate to high implementation cost.	Would require significant processing and management of soil during treatment. No commercial treatment facility available. No room on site.
	Thermal Desorption/ Pyrolysis/ Hot Gas Decontamination	Waste soils are heated to either volatilize (desorption and hot gas) or to anaerobically decompose (pyrolysis) organic contaminants. Off-gas is collected and treated.	Effective at removing organic materials from excavated soil (particularly volatile organics). Pyrolysis generally used for semi-volatiles or pesticide wastes.	Requires transport to off-site treatment facility. Off-gas treatment required.	Moderate to high implementation cost.	Significant cost for transportation and treatment and not cost effective for types of contamination (no benefit of significantly higher cost over disposal alternative)
EX SITU PHYSICAL/ CHEMICAL/ THERMAL TREATMENT - CONTINUED	Separation	Separation techniques concentrate contaminated solids through physical, magnetic, and/or chemical means. These processes remove solid-phase contaminants from the soil matrix.	Effective only for removal of solids with distinct physical characteristics (size, density, composition, etc).	Commercial equipment available for separation by size (sieving) or for removing iron (magnetic removal).	Low to moderate cost.	Not compatible with site contaminants.
	Vapor Phase Oxidation	Chemicals in the vapor stream are oxidized in the presence of elevated temperatures (thermal oxidation), or with the addition of a catalyst (catalytic oxidation).	Effective at removal of organics from a vapor stream.	Commercial equipment available for vapor phase oxidation. Requires energy source (electric or flammable gas).	Moderate capital cost; low to moderate O&M costs.	Potentially applicable as component of vapor extraction system for treatment of vapors, but would require prohibitive levels of electricity or gas.
	Vapor Phase Adsorption	Concentrating solutes on the surface of a sorbent material, such as activated carbon, to remove the solute from a vapor stream.	Highly effective at removing many organic compounds from vapor stream.	Treatment equipment is readily available. Media requires periodic replacement as adsorption sites are used up.	Moderate capital and O&M costs.	Applicable to treat vapors from extraction system.
EX SITU BIOLOGICAL TREATMENT	Biopiles	Excavated soils are mixed with soil amendments and placed in aboveground enclosures and aerated with blowers or vacuum pumps.	Effective for removal of organic contaminants from excavated soil. Most effective with control of moisture, heat, nutrients, oxygen, and pH to enhance biodegradation	Requires area for soil treatment or transport to off-site facility. May generate leachate that would need to be collected and managed.	Moderate to high cost.	Inefficient for treatment of heavy organics. Would require significant management of soil and leachate at remote site, and not enough room for layout.

Please refer to note at end of table.

Table 1
ABCA Screening and Evaluation of Technologies for Soil
Former Don's Market
Lakeview, Oregon

General Response Actions	Technology	Description	Screening Criteria			Screening Comments
			Effectiveness	Implementability	Cost	
EX SITU BIOLOGICAL TREATMENT (CONTINUED)	Composting	Excavated soil is mixed with bulking agents and organic amendments to promote microbial activity.	Effective for removal of organic contaminants from excavated soil. Most effective with control of moisture, heat, nutrients, oxygen, and pH to enhance biodegradation	Requires area for soil treatment or transport to off-site facility. May generate leachate that would need to be collected and managed.	Low to moderate cost.	Inefficient for treatment of heavy organics. Would require significant management of soil and leachate at remote site, and not enough room for layout.
	Landfarming	Excavated soil is placed in lined beds and periodically tilled to aerate the soil.	Effective at removing organic contaminants from excavated soil.	Would require frequent trips to the remote site. Heavy-chain organics would degrade slowly.	Low to moderate implementation cost for shallow soils.	Impractical to implement at remote site for types of contamination found in shallow soil. Not enough room on site for layout.
	Slurry Phase Biological Treatment	An aqueous slurry of soil, sediment, or sludge with water and other additives is mixed to keep solids suspended and microorganisms in contact with the soil contaminants. When complete, the slurry is dewatered and the soil is disposed of.	Can be effective at treating a variety of organic compounds.	Requires area for soil treatment or transport to off-site facility. Slurry dewatering generates water that requires treatment or disposal.	Moderate to high implementation cost.	Handling of slurry and wastewater is complicated and expensive; would require significant on-site management of soil during long-term treatment process. Not enough room on site for layout.

Note:

1) Shading indicates technologies that have been eliminated from consideration.

Table 2
Comparative Evaluation of Alternatives
Former Don's Market
Lakeview, Oregon

Remedial Alternatives	Protective	Balancing Factors																				Score	Rank
		Effectiveness					Long-Term Reliability					Implementability					Reasonableness of Cost						
		Alternative					Alternative					Alternative					Alternative						
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
1 No Action	No		-	-	-	-		-	-	-	-		+	+	+	+		+	+	+	+	0.0	na
2 UST Decommissioning by Removal and Extensive Soil Excavation	Yes	+		+	+	+	+		+	+	+	-		-	-	-	-		-	-	+	2.0	2
3 UST Decommissioning by Removal and Targeted Soil Excavation	Yes	+	-		+	+	+	-		+	+	-	+		+	+	-	+		+	+	8.0	1
4 UST Decommissioning In-Place and No Active Soil Treatment	Yes	+	+	-		-	+	+	-		+	-	-	+		+	-	+	-		+	2.0	2
5 UST Decommissioning In-Place and In-Situ Soil Treatment	Yes	+	+	-	+		+	+	-	-		-	-	+	-		-	-	-	-		-4.0	4

Notes:

- + = The alternative is favored over the compared alternative (score=1)
- 0 = The alternative is equal with the compared alternative (score=0)
- = The alternative is less favorable than the compared alternative (score=-1)
- na = Not protective, therefore not ranked

Alternative	Compared Against Alternative:				
1					
2	1				
3	1	2			
4	1	2	3		
5	1	2	3	4	

Table 3
Cost Estimate - Alternative 2
Former Don's Market
Lakeview, Oregon

Alternative 2: UST Decommissioning by Removal and Extensive Excavation of Petroleum-Impacted Soil

Item Description - Management Costs	Quantity	Unit	Unit Cost	Extension
Project Management (implementation)	5	%		\$29,000
DEQ Oversight Costs	10	%		\$58,500
Management Costs Subtotal:				\$87,500
Item Description - Capital Costs	Quantity	Unit	Unit Cost	Extension
Equipment mobilization and site setup	1	est	\$15,000	\$15,000
Specialty Subcontractor - Building Demolition and Hazardous Materials Abatement	1	est	\$200,000	\$200,000
Specialty Subcontractor - UST Decommission Contractor	1	est	\$75,000	\$75,000
Excavation Shoring during excavation	1	est	\$50,000	\$50,000
Excavation Removal, Transport, and Disposal	250	cubic yards	\$700	\$175,000
Confirmation Sampling After Removal	1	est	\$10,000	\$10,000
Excavation Backfill Transport and Placement	400	tons	\$60	\$24,000
Travel Expenses (round trip, includes mileage and labor)	2	trip	\$3,200	\$6,400
Per-Diem	12	days	\$168	\$2,020
Labor/Oversight	12	days	\$1,500	\$18,000
Completion Report	1	each	\$8,000	\$8,000
Capital Costs Subtotal:				\$583,500
Item Description - O&M Costs (Present Value @ 5%)	Quantity	Unit	Unit Cost	Extension
Long-Term Inspection and Reporting (annual)	5	years	\$10,000	\$43,300
O&M Costs Subtotal:				\$43,500
Contingency	10	%		\$62,700
TOTAL ESTIMATED COST:				\$778,000

Table 4
Cost Estimate - Alternative 3
Former Don's Market
Lakeview, Oregon

Alternative 3: UST Decommissioning by Removal and Targeted Excavation of Petroleum-Impacted Soil

Item Description - Management Costs	Quantity	Unit	Unit Cost	Extension
Project Management (implementation)	5	%		\$22,000
Project Management (long-term PV @ 5%)	10	years	\$3,000	\$23,170
DEQ Oversight	10	%		\$44,000
Management Costs Subtotal:				\$89,000
Item Description - Capital Costs	Quantity	Unit	Unit Cost	Extension
Equipment mobilization and site setup	1	est	\$25,000	\$25,000
Specialty Subcontractor - Building Demolition and Hazardous Materials Abatement	1	est	\$200,000	\$200,000
Specialty Subcontractor - UST Decommission Contractor	1	est	\$75,000	\$75,000
Specialty Subcontractor - Driller	1	est	\$30,000	\$30,000
Excavation Removal, Transport, and Disposal	40	cubic yards	\$700	\$28,000
Confirmation Sampling After Removal	1	est	\$8,000	\$8,000
Excavation Backfill Transport and Placement	80	tons	\$60	\$4,800
Travel Expenses (round trip, includes mileage and labor)	5	trip	\$3,200	\$16,000
Per-Diem	15	days	\$168	\$2,520
Labor/Oversight	15	days	\$1,500	\$22,500
Engineering/Institutional Controls Coordination and Implementation	1	est	\$15,000	\$15,000
Completion Report	1	each	\$12,000	\$12,000
Capital Costs Subtotal:				\$438,900
Item Description - O&M Costs (Present Value @ 5%)	Quantity	Unit	Unit Cost	Extension
Long-Term Inspection and Reporting (annual)	10	years	\$10,000	\$77,300
O&M Costs Subtotal:				\$77,300
Contingency	10	%		\$51,700
TOTAL ESTIMATED COST:				\$657,000

Table 5
Cost Estimate - Alternative 4
Former Don's Market
Lakeview, Oregon

Alternative 4: UST Decommissioning In-Place and No Active Soil Treatment

Item Description - Management Costs	Quantity	Unit	Unit Cost	Extension
Project Management (implementation)	5	%		\$46,500
Project Management (long-term PV @ 5%)	20	years	\$3,000	\$37,390
DEQ Oversight	10	%		\$92,500
Management Costs Subtotal:				\$176,400
Item Description - Capital Costs	Quantity	Unit	Unit Cost	Extension
Equipment mobilization and site setup	1	est	\$5,000	\$5,000
Specialty Subcontractor - Building Demolition and Hazardous Materials Abatement	1	est	\$200,000	\$200,000
Specialty Subcontractor - UST Decommission Contractor	1	est	\$40,000	\$40,000
Specialty Subcontractor - Driller	1	est	\$30,000	\$30,000
Travel Expenses (round trip, includes mileage and labor)	5	trip	\$3,200	\$16,000
Per-Diem	12	days	\$168	\$2,020
Labor/Oversight	12	days	\$1,500	\$18,000
Engineering/Institutional Controls Coordination and Implementation	1	est	\$15,000	\$15,000
Completion Report and CMMP	1	each	\$12,000	\$12,000
Capital Costs Subtotal:				\$338,100
Item Description - O&M Costs (Present Value @ 5%)	Quantity	Unit	Unit Cost	Extension
Long-Term Inspection and Reporting (annual)	20	years	\$10,000	\$124,500
O&M Costs Subtotal:				\$124,500
Contingency	10	%		\$46,300
TOTAL ESTIMATED COST:				\$686,000

Table 6
Cost Estimate - Alternative 5
Former Don's Market
Lakeview, Oregon

Alternative 5: UST Decommissioning In-Place and In-Situ Soil Treatment

Item Description - Management Costs	Quantity	Unit	Unit Cost	Extension
Project Management (implementation)	5	%		\$23,500
Project Management (long-term PV @ 5%)	5	years	\$3,000	\$13,000
DEQ Oversight	10	%		\$47,000
Management Costs Subtotal:				\$83,500
Item Description - Capital Costs	Quantity	Unit	Unit Cost	Extension
Project review with the Oregon State Office of Historic Preservation, ODFW	1	est	\$3,000	\$3,000
Equipment mobilization and site setup	1	est	\$10,000	\$10,000
Specialty Subcontractor - Building Demolition and Hazardous Materials Abatement	1	est	\$200,000	\$200,000
Specialty Subcontractor - UST Decommission Contractor	1	est	\$40,000	\$40,000
Specialty Subcontractor - Driller	1	est	\$50,000	\$50,000
Specialty Subcontractor - Vapor Extraction System Installation	1	est	\$75,000	\$75,000
Travel Expenses(round trip, includes mileage and labor)	8	trip	\$3,200	\$25,600
Per-Diem	20	days	\$168	\$3,360
Labor/Oversight	20	days	\$1,500	\$30,000
Engineering/Institutional Controls Coordination and Implementation	1	est	\$15,000	\$15,000
Completion Report	1	each	\$18,000	\$18,000
Capital Costs Subtotal:				\$470,000
Item Description - O&M Costs (Present Value @ 5%)	Quantity	Unit	Unit Cost	Extension
Monthly system operation and inspections	60	event	\$2,500	\$132,500
Quarterly vapor carbon replacement	20	event	\$8,000	\$140,800
Progress sampling (annual)	5	events	\$10,000	\$43,300
O&M Costs Subtotal:				\$316,600
Contingency	20	%		\$157,300
TOTAL ESTIMATED COST:				\$1,028,000







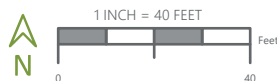
Site Plan

859 N G Street, Lakeview, Oregon

Date: March 2026 | Project: 25013603

Figure: 2

-  Aboveground Heating Oil Tank
-  Pole-Mounted Transformer
-  Possible UST Fill Port
-  Site Boundary



This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.









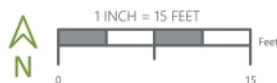
Alternative 2 Conceptual Layout

859 N G Street, Lakeview, Oregon

Date: March 2026 | Project: 25013603

Figure: 3

-  Aboveground Heating Oil Tank
-  Pole-Mounted Transformer
-  Possible UST Fill Port
-  UST
-  Sidewalk
-  Site Boundary



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Alternative 3 Conceptual Layout

859 N G Street, Lakeview, Oregon

Date: March 2026 | Project: 25013603

Figure: 4

-  Aboveground Heating Oil Tank
-  Pole-Mounted Transformer
-  Possible UST Fill Port
-  Excavation Boundary
-  UST
-  Sidewalk
-  Site Boundary



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


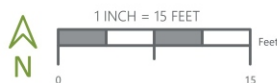
Alternative 4 Conceptual Layout

859 N G Street, Lakeview, Oregon

Date: March 2026 | Project: 25013603

Figure: 5

-  Aboveground Heating Oil Tank
-  Pole-Mounted Transformer
-  Possible UST Fill Port
-  UST
-  Sidewalk
-  Site Boundary



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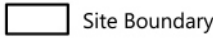


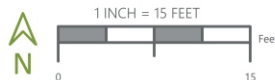
Alternative 5 Conceptual Layout

859 N G Street, Lakeview, Oregon

Date: March 2026 | Project: 25013603

Figure: 6

-  Aboveground Heating Oil Tank
-  Pole-Mounted Transformer
-  Possible UST Fill Port
-  UST
-  Sidewalk
-  Site Boundary



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Appendix A

Phase I Environmental Site Assessment Report (Apex 2025)

Phase I Environmental Site Assessment

Don's Market
859 N G Street
Lakeview, Oregon 97630

Prepared for:
Town of Lakeview, Oregon; and,
South Central Oregon Economic Development District

On Behalf Of:
Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, Oregon 97232

December 2025
Apex Project 25013603



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Abbreviations

The following are commonly used abbreviations in Apex Phase I Environmental Site Assessment reports. Abbreviations are defined upon first use within the text.

AAI	all appropriate inquiry
ACBM	asbestos-containing building material
ACM	asbestos-containing material
Apex	Apex Companies, LLC
AST	aboveground storage tank
ASTM	ASTM International (formerly American Society for Testing and Materials)
AUL	activity and use limitation
bgs	below ground surface (depth below the ground surface)
CEG	conditionally exempt generator (of hazardous waste)
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (EPA)
CR2K	Oregon Community Right-to-Know
CREC	controlled recognized environmental condition
DEQ	Oregon Department of Environmental Quality
ECSI	Environmental Cleanup Site Information database (DEQ)
EDR	Environmental Data Resources (a regulatory database report provider)
EPA	Environmental Protection Agency
ESA	environmental site assessment
HOT	heating oil tank
HREC	historical recognized environmental condition
LCP	lead-containing paint
LQG	large-quantity generator (of hazardous waste)
LUST	leaking underground storage tank
mg/kg	milligrams per kilogram (equivalent to ppm)
NFA	No Further Action determination (DEQ)
NLR	no longer reporting
NonGen	non-generator of hazardous waste
PCB	polychlorinated biphenyls
ppm	parts per million (equivalent to mg/kg)
RCRA	Resource Conservation and Recovery Act (EPA)
REC	recognized environmental condition
SQG	small-quantity generator (of hazardous waste)
USGS	United States Geological Survey
UST	underground storage tank

Executive Summary

A Phase I Environmental Site Assessment was conducted by Apex Companies, LLC (Apex) for the property (Site or subject property) located at 859 N G Street in Lakeview, Oregon. The assessment was conducted for the Town of Lakeview and the South Central Oregon Economic Development District, on behalf of the Oregon Department of Environmental Quality (Client or User). This assessment was performed in general compliance with the ASTM International (ASTM) E1527-21 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process for conducting all appropriate inquiries (AAI).

This report should be read in its entirety (text and attachments) before decisions are made based on the findings provided in the Executive Summary. Apex is not responsible for utilization of less than the complete report.

Site Description and History

The subject property is a 0.08-acre parcel located in a residential area of northern Lakeview, Oregon. The Site contains the 1,692-square-foot former Don's Market convenience store structure, which was dilapidated and abandoned at the time of Apex's Site visit. The surrounding area is flat with a gentle slope to the south. The northern portion of the Site was covered with logs and vegetation debris from recently downed trees.

The subject property was first developed as a convenience store and gasoline service station in the 1940s and was reportedly in this use until the 1990s. The property has been abandoned with the structure falling into disrepair since at least the early 2000s.

Regulatory Review

EPA and state environmental databases were reviewed to identify sites that pose a potential environmental concern to the subject property. The subject property appears on the database report for being on the Brownfields site list and for having underground storage tanks (USTs) on site. Based on a review of the listed nearby sites, none appear to pose a significant environmental concern to the subject property.

Findings and Opinions

This Phase I ESA identified the following:

1. The subject property operated as a gasoline filling station from the 1940s to the 1990s. A ground penetrating radar (GPR) report conducted by GeoPotential in February 2007 confirmed the probable presence of two USTs on site; one to the north of the former Don's Market structure, and one to the east of the former Don's Market structure. Vent pipes were observed in the vicinity of the identified USTs. These tanks reportedly may still contain gasoline. No GPR was conducted on the west side of the structure. No environmental characterization or remediation has been conducted with regard to these tanks. This is a high environmental concern.
2. The environmental database report noted that three USTs were registered to the subject property. According to the database report, one 550-gallon gasoline UST has an installation date of 1968, and one 1,000-gallon gasoline UST has an installation date of 1985. The third tank does not have installation date, size, or content details on the database. The GPR report conducted by GeoPotential in February 2007 calculated that the tanks may have volumes of approximately 2,000 gallons and 750 gallons based on length and width measurements. This is a high environmental concern.
3. One approximately 275-gallon heating oil tank (HOT) was observed by the western exterior of the subject property structure. This aboveground storage tank (AST) appeared to be empty and no staining in its vicinity was observed. This HOT was reportedly not in use for years and appeared to be

empty. This HOT should be removed from the subject property following applicable state and federal regulations. This is a low environmental concern.

4. The subject property structure was not entered due to safety concerns. A portion of the structure's interior was observed through a window, and much solid waste was observed to be present within this structure. This waste should be removed and properly disposed of. This is a low environmental concern.
5. Interviews with people knowledgeable about the subject property indicate that there may be freon-containing equipment within the structure. These materials should be managed and disposed of in accordance with applicable state and federal regulations. This is a low environmental concern.

Recognized Environmental Conditions

Apex has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-21 of 859 N G Street in Lakeview, Oregon, the subject property. Any exemptions to, or deletions from, this practice are described in section 1 of this report. This assessment has revealed the following recognized environmental conditions (RECs) in connection with the property:

- The long-term past use of the subject property as a gasoline fueling station and the evidence of at least two gasoline USTs left on site constitute a REC. Releases associated with petroleum USTs have the potential to contaminate subsurface soils, shallow groundwater, soil-vapor and ambient air at the Site and surrounding residential properties. There is currently no available site assessment data to determine if the Site has been impacted by a petroleum release associated with historic site use as a fueling station.

Data Gaps

No significant data gaps were identified during this study.

Additional Investigation

Additional investigation is warranted as follows:

- Apex recommends that the two USTs identified by GPR on site be removed or closed as per DEQ guidance. The potential for the presence of a third UST referenced by the environmental database report should also be evaluated. Soils and groundwater should be sampled to determine if contamination is present on site. If contaminated soils or groundwater are identified onsite, site assessment and/or cleanup, including the potential for excavation and disposal of soil, should be completed in accordance with DEQ Cleanup requirements. Due to the location and condition of the Site structure, thorough site assessment necessitates removal of the former Don's Market building. Due to the likely presence of hazardous building materials, removal of the structure should include assessment and proper handling of potentially hazardous building materials.

1 PROJECT AND REPORT INFORMATION

1.1 Apex Client Information

Apex Companies, LLC (Apex) conducted this assessment for Oregon Department of Environmental Quality (Client). The Client is considered the User, as defined by ASTM International (ASTM) Standard E1527-21.

This Phase I Environmental Site Assessment (ESA) has been requested by Oregon Department of Environmental Quality to qualify for a Landowner Liability Protection (LLP) from Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) liability.

This assessment was performed in general compliance with ASTM's E1527-21 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, approved by the Environmental Protection Agency (EPA) in 2023, for conducting all appropriate inquiries (AAI). This assessment also meets 40 CFR Part 312, Standards and Practices for All Appropriate Inquiries. Any exceptions from or additions to these standards are listed in section 1.3.

1.2 Report Purpose

A Phase I ESA was conducted by Apex for the property located at 859 N G Street in Lakeview, Oregon (Site or subject property). The purpose of the Phase I ESA was to identify recognized environmental conditions (RECs) associated with the subject property, and to assess the likelihood that contamination from hazardous substances or petroleum products may exist on the Site either from past or present use of the subject property or nearby properties. This study is intended to reduce, not eliminate, uncertainty regarding the potential for RECs in connection with the subject property, within reasonable limits of time and cost.

The purpose of this study is to conduct an AAI into the current and previous ownership and uses of the subject property consistent with good commercial or customary practice. In so doing, the Client may qualify for one of three LLPs that limit CERCLA liability. The Client must fulfill associated continuing obligations to maintain LLP status.

1.3 Scope of Work

The assessment was performed in compliance with the ASTM E1527-21 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, approved by EPA in February 2023. Unless noted in section 1.6 Special Terms and Conditions, the scope of work for the project included the following:

1. Identifying and visually surveying the subject property for the presence of hazardous substances and petroleum products.
2. Obtaining information from the Client through a completed disclosure questionnaire and a review of a title report, if provided by the Client.
3. Reviewing federal, state, tribal, and local agency listings using a commercial database search provider, including activity and use limitations (AULs).
4. Reviewing historical maps, historical occupant records, and the nature of past property usage.
5. Reviewing readily available soils, geology, or environmental reports for the subject property or subject property vicinity.
6. Interviewing persons knowledgeable about the subject property, including current and previous owners.
7. Preparing the report summarizing any observations, sources used, findings, conclusions, and opinions relating to the presence or likely presence of hazardous substances or petroleum products on the

subject property, including the potential for contaminants migrating to the subject property from an off-site location.

This assessment considers business environmental risks (see section 11.2 Glossary) that are not RECs unless the Client specifically requests otherwise. Please refer to the Apex Proposal to Provide a Phase I Environmental Site Assessment/Contract, Appendix A, for a detailed description of our scope of work.

Apex has prepared this report using information that is reasonably ascertainable; that is, information that is practically reviewable, publicly available, and obtainable from its source within reasonable time and cost constraints.

1.4 Conformance with ASTM E1527-21

This report has been formatted to maximize reader usability and comprehension. This report conforms to the requirements of ASTM E1527-21, and items indicated in Appendix X5 of the standard are included. Section 11 provides a cross-reference table that allows the reader to confirm conformance.

1.5 Non-ASTM Method Scope of Work

Non-ASTM method issues such as asbestos, lead-containing paint, wetlands, and indoor air quality were not addressed during this study.

1.6 Special Terms and Conditions

The standard Apex Terms and Conditions are included in the Apex Proposal to Provide a Phase I Environmental Site Assessment/Contract in Appendix A; there are no special terms and conditions.

1.7 Client-Imposed Limitations

The Client did not impose limitations on Apex while completing this report.

2 PROPERTY INFORMATION AND PHYSICAL SETTING

2.1 Site Description

Site Address:	859 N G Street, Lakeview, Oregon 97630
Tax Lot:	Lake County Assessor ID 39S20E10-CA-07600
Township, Range, Section:	Township 39 South, Range 20 East, NE ¼ of SW ¼ of Section 10, Willamette Base and Meridian
Size:	Approximately 0.08 acres
Current Use:	Dilapidated abandoned former store (currently unused)

Tax lot information was obtained from the Lake County Property Information website¹ on October 22, 2025.

A Site Vicinity Map and Site Plan are included with this report under Figures. A copy of the county assessor's tax map is included in Appendix B.

2.2 Owner and Occupant(s)

Current Owner:	Daphne Bach: March 2025 to present
Previous Owner:	Daniel Bach: 2009 to March 2025 John W. Bach and J. R. Schmit, et al.: 1987 to 2009 Donald D. and Florence Mauts: 1975 to 1987 Vera M. Zevely: Prior to 1975
Property Manager:	Current owner
Current Occupant(s):	None

2.3 Topography and Surface Features

The US Geological Survey 7.5-minute topographic map (Lakeview, Oregon Quadrangle, 2024; see Figure 1) for the Site indicates that the Site is situated on relatively level ground in northern Lakeview, Oregon, adjacent to the west of Highway 395. The subject property elevation is approximately 4,800 feet above mean sea level.

The topographic map indicated that the nearest surface water is an unnamed manmade pond, located approximately 0.30 miles northwest from the subject property.

2.4 Groundwater Well/Borehole Records

The Oregon Water Resources Department (OWRD) well-query online database² provides logs for water wells, monitoring wells, and geotechnical borings along with decommissioned well reports and other records. This database was reviewed by Apex on November 5, 2025. The following representative nearby well logs were identified: LAKE 2456 and LAKE 52361. Records for the nearby wells indicate that groundwater was first encountered between 60 and 80 feet below ground surface (bgs), and static water was recorded between 2 and 15 feet bgs.

Based on topography, the direction of shallow unconfined groundwater flow is expected to be toward the west; therefore, properties to the east are considered upgradient to the subject property.

¹ <https://records.lakecountyor.org/pso>

² http://apps.wrd.state.or.us/apps/gw/well_log

3 GOVERNMENTAL AND REGULATORY RECORDS REVIEW

3.1 Government Record Sources

Oregon Department of Environmental Quality Public Project Records

The Oregon Department of Environmental Quality (DEQ) maintains an online database³ of facilities and sites that have had regulatory interactions with DEQ involving matters such as permitted air and water discharges, underground injection controls sites, generated hazardous and/or solid waste; cleanup sites; and underground storage tanks (USTs) and releases from USTs. This website was reviewed by Apex on November 14, 2025. The subject property and adjoining and nearby properties were not listed on any database other than those identified by the environmental database search (see section 3.2).

Department of Environmental Quality Heating Oil Tanks

DEQ maintains online databases⁴ for heating oil tanks (HOTs) that have either been decommissioned with clean certification or identified as a leaking underground storage tank (LUST). This website was reviewed by Apex on November 5, 2025. The subject property was not listed.

Oregon State Police and State Fire Marshal

Oregon State Police and Oregon Office of State Fire Marshal maintain the Community Right-to-Know Hazardous Substance Incident Searchable Database⁵ on their Community Right-to-Know website, which was reviewed by Apex on November 5, 2025. The subject property and adjacent properties were not listed.

Local Fire Department

Apex requested information on November 5, 2025, from the Town of Lakeview Fire Marshal's office (dlepori@townoflakeviewor.gov), regarding the subject property. No records for the property were available from this source.

Other Government Records

No other local government records were reviewed for this assessment.

3.2 Standard Environmental Record Sources

A search of EPA, state, and tribal environmental database listings was performed by a commercial database search provider (a copy of the database search report is included in Appendix C). The purpose of this search was to identify potential, suspected, or known sources of contamination on or in the area of the subject property. Various agency listings were searched for different approximate minimum search distances from the subject property as established in the ASTM method. Listings included publicly available databases of environmental liens, AULs, and easements and equitable servitudes, if recorded or filed.

If the Site and/or adjacent properties are identified in the regulatory database report, the information is summarized below. Regulatory data for surrounding properties that may pose a potential risk to the subject property are also included. Apex has determined that properties listed in the database report but not discussed below are not likely to have caused RECs on the Site due to factors such as the apparent groundwater flow direction, distance from the subject property, regulatory status (e.g., the agency file is closed), or other physical factors.

³ <https://ordeq-edms-public.govonlinesaas.com/pub/pub-rcd/projects>

⁴ <http://www.oregon.gov/deq/tanks/Pages/hot.aspx>

⁵ <https://www.oregon.gov/osfm/industry/Pages/hazmat-incident-search.aspx>

The commercial database report may also include proprietary data derived from historical city directories. These can include historical dry cleaners/laundries and automobile stations (gas stations, automobile repair shops, auto body shops). These are non-regulatory listings and are included as historical information.

Subject Property

Address:	Don's Market 859 N G Street	Program #:	Brownfields UST # 1600
<p>The subject property is in the Brownfields database for being a former gasoline service station with the potential for petroleum contamination due to its former use and the potential for asbestos-containing building materials and lead paint on the on-site structure.</p> <p>The subject property is also in the UST database for having three USTs on site. These USTs are listed as "closed," but there is no record of their proper decommissioning. One 550-gallon gasoline UST has an installation date of 1968, and one 1,000-gallon gasoline UST has an installation date of 1985. The third tank does not have installation date, size, or contents details in the database.</p>			

Adjoining Properties

No adjoining properties appear on the regulatory database report.

Surrounding Properties

Address:	Former Lakeview Lumber N 10th and N J Street	Program #:	ECSI # 5406 Brownfields
<p>Located 0.20 miles northwest (cross-gradient) of subject property</p> <p>This site was added to the Environmental Cleanup Site Information (ECSI) database for tracking as a former lumber mill. A Brownfield site assessment was performed in 2020, and a No Further Action (NFA) letter was granted for this site in November 2020. Due to its regulatory status and cross-gradient location, this site is not expected to pose an environmental concern for the subject property.</p>			

Address:	Former Lakeview Service Station N 10th and N J Street	Program #:	ECSI # 4302
<p>Located 0.42 miles south (cross-gradient) of subject property</p> <p>This site was added to the ECSI database as a former gasoline service station. It was noted that this site is not listed in DEQ's tank program databases. Due to its cross-gradient location, this site is not expected to pose an environmental concern for the subject property.</p>			

Unmappable Sites

Unmappable sites are identified as "Non-Geocoded" or "Orphan" in the regulatory database report. They are categorized this way because inaccurate or incomplete site addresses prevented mapping by the database provider.

No unmappable sites were listed in the database report.

4 HISTORICAL RECORDS REVIEW

4.1 Standard Historical Sources

ASTM E1527-21 requires identification of developed uses back to the first developed use or back to 1940, whichever is earlier. Review of standard historical sources at less than approximately five-year intervals is not required by this practice. If the specific use of the property appears unchanged over a period longer than five years, then it is not required by this practice to research the use during that period.

The following standard historical sources were reviewed:

- Aerial photographs were obtained from GeoSearch and Google Earth.
- Building department records were viewed at the State of Oregon building permits website⁶ on October 22, 2025.
- Sanborn fire insurance maps were obtained from EDR (no coverage).
- Title Records were obtained from EDR in their Environmental Lien and AUL Search report on December 4, 2025.
- Topographic maps were obtained from Topoview⁷.

No other historical records were reviewed for this assessment.

The table below summarizes the information gathered from the sources listed above, except information from city directories, if available, which is summarized subsequently. Data obtained from sources reviewed for other sections of this Phase I ESA may also be included in the following table to avoid data failure a significant data gap.

Copies of the reviewed records are included in Appendix D.

Year	Source	Description
1943	Lake County Assessor	The 1,692-square-foot subject property structure was first developed as a retail store/convenience market.
1946	Aerial photograph	<u>Subject Property:</u> The subject property consists of one structure and its surrounding vegetation on a small parcel. <u>Adjoining Properties:</u> Roads are present to the east and west. There is a small patch of vegetation to the north, with a road immediately adjacent to the north of this patch. Scrubland and residential development are present to the south.
1953	Aerial photograph	<u>Subject Property:</u> No significant changes are apparent for the subject property. <u>Adjoining Properties:</u> No significant changes are apparent for adjoining properties.
1960	Aerial photograph	<u>Subject Property:</u> No significant changes are apparent for the subject property. <u>Adjoining Properties:</u> No significant changes are apparent for adjoining properties.
1969	Aerial photograph	Features are difficult to discern in this aerial photograph due to its grainy resolution.

⁶ <https://aca-oregon.accela.com/oregon/Default.aspx>

⁷ <https://ngmdb.usgs.gov/topoview/viewer/#4/39.98/-100.06>

Year	Source	Description
1982	Aerial photograph	<u>Subject Property</u> : No significant changes are apparent for the subject property. <u>Adjoining Properties</u> : Additional structures are observed to the northwest.
1994	Aerial photograph	<u>Subject Property</u> : No significant changes are apparent for the subject property. <u>Adjoining Properties</u> : No significant changes are apparent for adjoining properties.
2005	Aerial photograph	<u>Subject Property</u> : No significant changes are apparent for the subject property. <u>Adjoining Properties</u> : No significant changes are apparent for adjoining properties.
2016	Aerial photograph	<u>Subject Property</u> : No significant changes are apparent for the subject property. <u>Adjoining Properties</u> : Structures are first observed to the south.
2024	Aerial photograph	<u>Subject Property</u> : No significant changes are apparent for the subject property. <u>Adjoining Properties</u> : No significant changes are apparent for adjoining properties.

City Directories

City directories were searched using GeoSearch. A listing of the directory listings is included in Appendix D. A summary of the findings is presented below.

No historic city directory coverage is available for Lakeview, Oregon, prior to 2000. GeoSearch was contacted and they confirmed that coverage was only available from 2000 onward. The address for the subject property is listed as 859 North G Street under the name Don’s Market in 2019. The subject property did not appear in city directories in years prior. City directories indicate that adjacent properties were in residential use from 2000 to 2019.

Summary of Property Use from Historical Sources

The subject property was first developed as a convenience store and gasoline service station in the 1940s and was reportedly in this use until the 1990s. The property has been abandoned, with the structure having fallen into disrepair since at least the early 2000s.

4.2 Previous Environmental Assessments

The following previous environmental assessments of the subject property were provided by the Client for Apex to review. Copies of the reports are included in Appendix D of this report.

- **Phase I ESA, Cardno, March 2020**
 - This Phase I ESA identified two RECs on the subject property. Cardno’s REC statement reads: “The Subject Property historically operated as a gasoline filling station from the 1940s into the 1990s... A GPR report conducted by GeoPotential in February of 2007 confirmed the presence of two on-site USTs. The north UST reportedly measures approximately 6 feet in diameter by 9 feet long and is approximately 24 inches below ground surface (bgs). Based on these dimensions, the volume of this tank (REC #1) is anticipated to be roughly 2,000 gallons. The UST at the front of the store appeared to be approximately 4 feet in diameter by 8 feet long and approximately 3 to 4 feet bgs. Based on these dimensions, the volume of this tank (REC #2) is anticipated to be roughly 750 gallons... Finally, the environmental database reviewed noted that three USTs were registered to the site. No evidence of a third tank was noted during the site inspection.” Cardno recommended that the two USTs be removed or closed in

place per DEQ guidance, soil and groundwater be evaluated for contamination, and the building be demolished to facilitate tank removal. Cardon also noted that the possibility of the presence of a third UST should be evaluated.

- **Subsurface Mapping Survey to Detect Possible Underground Storage Tanks, GeoPotential, February 2007**
 - A geophysical survey was conducted at two different locations along the North G Street right-of-way in Lakeview, Oregon, to detect possible USTs that could be encountered during forthcoming road construction. The probable presence of two on-site USTs was confirmed: one to the north of the structure and one to the southeast of the structure. One vent pipe was determined to be associated with the northern tank, and three vent pipes were seen coming through the roof of the subject property by the southern wall. At least one of the three is possibly associated with the southern UST. No additional USTs were identified in the vicinity of the southern corner, suggesting either that the remaining two vents are also venting the southern tank, or that other tanks have been removed or abandoned. This survey did not examine the west side of the structure.

4.3 Activity and Use Limitations

Apex obtained a title report documenting chain-of-title back to at least 1980. Apex did not identify environmental liens, AULs, or easements and equitable servitudes on the subject property during this study.

4.4 Data Failure

Data failure was encountered while conducting the historical research for this Phase I ESA report. Data failure occurs when the standard historical sources reasonably ascertainable and likely to be useful have been reviewed, but the objectives in ASTM E1527-21 Sections 8.3.1 through 8.3.6 have not been met. If the data failure represents a significant data gap, the impact of this data gap shall be discussed in section 8.1 of this Phase I ESA report.

The following data failure occurred:

- Several time periods exist for which data could not be gathered every five years (see source tables above). Section 8.3.5 of ASTM E1527-21 indicates that if the specific use of the property appears unchanged over a period longer than five years, then research of its use during that period is not required. Aerial photographs and historical records indicate no change in use of the subject property since it was first developed. Apex does not view this data failure as a significant data gap and the data failure does not change the conclusions or opinion of Apex as stated in this Phase I ESA.

5 SITE RECONNAISSANCE

5.1 Methodology and Limiting Conditions

The Site reconnaissance was conducted by Holly Burnett, project manager/scientist and an Apex environmental professional (EP), on November 6, 2025, to observe and document Site conditions and visible indications of existing environmental conditions. The reconnaissance was performed unaccompanied.

The entirety of the subject property was accessed with the exception of the interior of the former Don's Market structure due to safety concerns. This structure's interior was viewed through accessible windows. Additionally, much of the ground cover was obscured by fallen leaves due to the fall timing of the Site visit.

Photographs of the Site are included in Appendix E.

5.2 Site and Vicinity General Characteristics

The subject property is a 0.08-acre parcel located in a residential area of northern Lakeview, Oregon. The Site contains the 1,692-square-foot former Don's Market convenience store structure, which was dilapidated and abandoned at the time of the Site visit. The surrounding area is flat with a gentle slope to the south. The northern portion of the Site was covered with logs and vegetation debris from recently downed trees.

Site Operations/Processes

The subject property is currently vacant.

Exterior Improvements

The subject property can be accessed via North H Street to the west and Highway 395 to the east. Sidewalks are present along the northern, eastern, and western borders, and a concrete berm is present by the western portion. The former storefront faces the east toward Highway 395, and asphalt paving is present between the sidewalk and the storefront.

Utilities

Water Supply:	Municipal (City of Lakeview)
Sewage System:	Municipal (City of Lakeview)
Stormwater:	Overland flow
Heating Source:	None (historical HOT)

5.3 Site Conditions and Observations

Note: The Apex Field Checklist, Appendix E, may detail additional field observations not described below.

Aboveground and Underground Storage Tanks

One approximately 275-gallon HOT was observed by the western exterior of the subject property structure. This AST appeared to be empty and no staining in its vicinity was observed.

One UST fill port was observed by the eastern exterior of the subject property structure. This fill port indicates the presence of a UST on site. Please note that a previous Phase I ESA noted a second fill port to the north of the structure; however, due to this portion of the Site being covered with downed logs and vegetation debris, Apex did not observe this second fill port.

Drywells, Injection Wells, Septic Systems

None of these features were observed and/or known to be present on the subject property.

Floor Drains, Catch Basins, Sumps, Oil/Water Separators

None of these structures were observed on the subject property. However, as the interior of the structure was not entered due to safety concerns, it is possible these features may be present inside the structure.

Hazardous Substances, Petroleum Products, Unidentified Containers

None of these features were observed and/or known to be on the exterior of the subject property. However, as the interior of the structure was not entered due to safety concerns, it is possible these features may be present inside the structure.

Improper Dumping/Solid Waste Disposal

Only minor indications of improper solid waste disposal, such as household waste, were observed by the exterior of the structure during the Site reconnaissance. Based on what was observed through windows, there is much solid waste present within the subject property structure.

Pits, Ponds, Lagoons, Surface Impoundments

None of these features were observed on the subject property.

Polychlorinated Biphenyls

Polychlorinated biphenyls (PCBs) were once used in the manufacture of electrical equipment (transformers) and hydraulic fluids. Now considered hazardous substances under CERCLA rules, the manufacture of PCBs was banned in 1979. Examination or sampling of individual building components or fixtures for PCBs is not within the scope of the Phase I ESA; however, the following was observed:

- A pole-mounted transformer was observed along the western border of the subject property. This transformer was in good condition, and no leaks or damage were observed.

Stains, Sheens, Odors

None of these conditions were observed on the subject property.

Wells

Water supply wells and monitoring wells were not observed on the subject property.

Other Conditions of Concern

No other conditions of concern were observed on the subject property during the site reconnaissance.

5.4 Observed Current Use of Adjoining Properties

North: Highway 395/scrubland
South: Residential
East: Highway 395/scrubland
West: North H Street/residential

These properties were viewed from the subject property or the nearest public right-of-way. An approximately 275-gallon residential HOT was observed on a west-adjacent property. This HOT was in good condition, and this property was downslope from the subject property. No other conditions of environmental concern were observed.

6 INTERVIEWS

The section below summarizes information obtained from interviews and questionnaires completed by the Client/User, property owner, and/or other key personnel.

6.1 Interview with Client/User

The Apex standard Client/User Questionnaire was completed by Ginger Casto, Brownfields Program Coordinator with Casto Consulting for the South Central Oregon Economic Development District, and is included in Appendix F. The questionnaire is summarized as follows:

- Ms. Casto is not aware of environmental liens against the subject property or AULs related to environmental conditions.
- Ms. Casto does not have specialized knowledge or experience that may be material to the identification of RECs on the subject property.
- Ms. Casto is not aware of commonly known or reasonably ascertainable information about the property that would aid in identification of environmental conditions.
- Ms. Casto stated there is a possibility of contamination from known USTs still on site.
- Ms. Casto stated the stove oil AST (HOT) has not been in use for over 10 years.
- Ms. Casto stated the past use of the property was a gasoline station for decades. It was also a convenience store with refrigeration units, which are still in place. Freon from the refrigeration units may still be on site.
- Ms. Casto is not aware of any spills, chemical releases, or environmental cleanups for the property.
- Ms. Casto stated there is possible chemical storage in the basement of the structure, but this is not confirmed.

6.2 Interview with Owner

The Apex standard Property Owner/Representative Questionnaire was completed by Daphne Bach, subject property owner, and is included in Appendix F. The questionnaire is summarized as follows:

- Ms. Bach indicated no knowledge of environmental liens against the subject property, or limitations of use related to environmental conditions.
- Ms. Bach described the historical use of the property as a convenience store and gasoline fueling station.
- Ms. Bach stated there are no utilities currently hooked up to the Site.
- Ms. Bach is aware of the HOT on site. She does not know if there are USTs still on site.
- Ms. Bach is aware of the previous Phase I ESA conducted in 2020. She is not aware of any other environmental reports associated with the subject property.

6.3 Interview with Previous Owner(s)

Daniel Bach, who owned the subject property from approximately 2009 to March 2025, was interviewed for a previous iteration of the Phase I ESA for this property and provided the following information:

- Mr. Bach indicated he had been associated with the subject property since 2000.
- Mr. Bach stated petroleum products were formerly stored on site in USTs. Two USTs remain on the property, and these still might have gasoline in them.

- The property was not in use during Mr. Bach's ownership. The property was in use as a convenience store and gasoline fueling station in the past. There has never been a septic tank or well on the property.
- Mr. Bach stated automobile repair and maintenance was not conducted on site.
- Mr. Bach was not aware of any spills or chemical releases that had taken place on the subject property or adjoining properties.
- Mr. Bach indicated no knowledge of environmental liens against the subject property, or limitations of use related to environmental conditions.

6.4 Interviews with Site Manager, Occupants, or Employees

The subject property is managed by the owner.

6.5 Interviews with Local Government Officials

Interviews with local government officials were previously summarized in section 3.1, and are not repeated here.

6.6 Interviews with Others

No other interviews were conducted for this report.

7 NON-SCOPE CONSIDERATIONS

Non-scope considerations are issues or conditions at the subject property that could pose a business risk to an owner or prospective purchaser but are not included in a standard Phase I ESA. Apex assesses non-scope considerations only when requested to do so by the Client.

There were no non-scope considerations requested by the Client.

8 EVALUATION

The sections below present the findings, opinion, and conclusions of this Phase I ESA.

8.1 Findings and Opinion

This Phase I ESA identified the following:

1. The subject property operated as a gasoline filling station from the 1940s to the 1990s. A ground penetrating radar (GPR) report conducted by GeoPotential in February 2007 confirmed the probable presence of two USTs on site; one to the north of the former Don's Market structure, and one to the east of the former Don's Market structure. Vent pipes were observed in the vicinity of the identified USTs. These tanks reportedly may still contain gasoline. No GPR was conducted on the west side of the structure. No environmental characterization or remediation has been conducted with regard to these tanks. This is a high environmental concern.
2. The environmental database report noted that three USTs were registered to the subject property. According to the database report, one 550-gallon gasoline UST has an installation date of 1968, and one 1,000-gallon gasoline UST has an installation date of 1985. The third tank does not have installation date, size, or contents details in the database. The GPR report conducted by GeoPotential in February 2007 calculated that the tanks may have volumes of approximately 2,000 gallons and 750 gallons based on length and width measurements. This is a high environmental concern.
3. One approximately 275-gallon HOT was observed by the western exterior of the subject property structure. This AST appeared to be empty and no staining in its vicinity was observed. This HOT was reportedly not in use for years and appeared to be empty. This HOT should be removed from the subject property following applicable state and federal regulations. This is a low environmental concern.
4. The subject property structure was not entered due to safety concerns. A portion of the structure's interior was observed through the window, and much solid waste was observed to be present within this structure. This waste should be removed and properly disposed of. This is a low environmental concern.
5. Interviews with people knowledgeable about the subject property indicate that there may be freon-containing equipment within the structure. These materials should be managed and disposed of in accordance with applicable state and federal regulations. This is a low environmental concern.

8.2 Conclusions

Apex has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-21 of 859 N G Street in Lakeview, Oregon, the subject property. Any exemptions to, or deletions from, this practice are described in section 1 of this report. This assessment has revealed the following RECs in connection with the property:

- The long-term past use of the subject property as a gasoline fueling station and the evidence of at least two gasoline USTs left on site constitute a REC. Releases associated with petroleum USTs have the potential to contaminate subsurface soils, shallow groundwater, soil-vapor and ambient air at the Site and surrounding residential properties. There is currently no available site assessment data to determine if the Site has been impacted by a petroleum release associated with historic site use as a fueling station.

Data Gaps

No significant data gaps were identified during this study.

Additional Investigation

Additional investigation is warranted as follows:

- Apex recommends that the two USTs identified by GPR on site be removed or closed as per DEQ guidance. The potential for the presence of a third UST referenced by the environmental database report should also be evaluated. Soils and groundwater should be sampled to determine if contamination is present on site. If contaminated soils or groundwater are identified onsite, site assessment and/or cleanup, including the potential for excavation and disposal of soil, should be completed in accordance with DEQ Cleanup requirements. Due to the location and condition of the Site structure, thorough site assessment necessitates removal of the former Don's Market building. Due to the likely presence of hazardous building materials, removal of the structure should include assessment and proper handling of potentially hazardous building materials.

10 ASSUMPTIONS AND LIMITATIONS

10.1 Significant Assumptions

Client's Responsibilities

It is assumed that the User has provided Apex with title and lien records, actual knowledge of environmental liens or activity and use limitations encumbering the property, any specialized knowledge or experience material to recognized environmental conditions in connection with the property, any commonly known or reasonably ascertainable information material to recognized environmental conditions on the property, and the reason why the property may have a significantly lower purchase price than comparable properties, if applicable (User Responsibilities, ASTM E1527-21, Section 6.0).

It is further assumed that the Client will read this report in its entirety (text and attachments) before making decisions based on the findings of the report.

Groundwater Flow

Groundwater flow direction has been determined based on topography in the area of the subject property; the assumption is that shallow groundwater flow will follow topography. No site-specific field measurements of groundwater flow direction (such as installation of groundwater monitoring wells) have been performed.

Based on this interpretation, Apex has reviewed regulatory agency information for sites located in a presumed upgradient direction that, based on proximity and knowledge of potential contaminant fate and transport, may potentially impact the subject property.

Accuracy and Completeness

The public records search is performed by Apex with the understanding that such records may be inaccurate or incomplete, and that the ability of public agencies to retrieve records may be variable or inconsistent over time. Similarly, Apex interviews of knowledgeable persons are performed in good faith that information provided is reasonably accurate and truthful. It may not always be feasible or appropriate for Apex to determine the accuracy of conflicting information, and this determination is pursued at the environmental professional's discretion.

10.2 Limitations and Exceptions

Unless noted elsewhere in this proposal, the scope of work for the project does not address a number of potentially significant environmental issues including, but not limited to, hazardous materials audit, environmental compliance, vapor encroachment assessment per ASTM standard E2600-10, formaldehyde, radon, asbestos-containing building materials, PCBs, lead-containing paint, mold, wetlands and other land use issues, drinking water quality, geotechnical or geologic hazards, nor does it include subsurface exploration or chemical screening of soil and groundwater beneath the subject property.

Recognized environmental conditions are defined in paragraph 3.2.73 of ASTM E1527-21 and the complete text is included in the glossary of this document. The vague and ambiguous nature of recognized environmental conditions as defined by the ASTM standard may result in reasonable minds differing as to whether any observed condition at a site is a recognized environmental condition. There may be other conditions noted in this report that could be considered recognized environmental conditions by other persons. Accordingly, the Client is advised that no warranty is given that other experts may agree that site conditions noted herein are recognized environmental conditions. Users of this report are encouraged to review the report in its entirety and specifically to consider all site conditions described and not merely those classified herein as recognized environmental conditions.

When an assessment is completed without surface exploration or chemical screening of soil and groundwater beneath the subject property, as in this study, no statement of scientific certainty can be made regarding latent subsurface conditions that may be the result of on-site or off-site sources. Apex is not able to represent that the Site or adjoining land contains no hazardous substances including petroleum, or other latent conditions beyond that identified by Apex during the study. The possibility always exists for contaminants to migrate undetected through surface water, air, soil, soil gas, or groundwater. The ability to accurately address the environmental risk associated with transport in these media is beyond the scope of this study.

The findings and conclusions of this report are not scientific certainties, but are based on professional judgment concerning the significance of the data gathered during the course of the Phase I ESA. The conclusions in this report are not to be considered a legal opinion or advice as to the Client's duty concerning due diligence and AAI relating to potential liabilities in leasing, owning, or purchasing real estate.

The ASTM method does not require a search interval of fewer than five years; this search interval is not guaranteed to identify all prior tenants or occupants of the subject property (please refer to the table in section 4.1 Standard Historical Resources for search intervals achieved for this report.) The Apex investigator reviewed sources that are publicly available, available within a reasonable time and cost, and reasonably ascertainable and considered practically reviewable, as defined under the ASTM standard. In addition, these criteria are applied keeping in mind sources that are likely to provide information concerning possible recognized environmental conditions at the subject property. Apex has reviewed sources of information that we consider meeting these criteria. In cases where the history of the subject property is not traced prior to its first-developed use, this condition is considered a data failure and not an exception to the required scope of work. If the data failure represents a significant data gap, this will be discussed in the report.

10.3 Data Gaps

A data gap results from a lack of, or inability to, obtain information required by the ASTM method, despite good faith efforts to gather such information. Our report identifies and comments on significant data gaps that have affected our ability to identify recognized environmental conditions.

10.4 Client Reliance

Apex acknowledges that only the Client (User of the report) may rely upon the information, findings, opinions, and conclusions set forth in this report, subject to the conditions and limitations contained in this report, and as set forth in our contract. This report is for the exclusive use of the User and is not to be relied upon by other parties unless specifically indicated. Reliance on this report by other parties will require a fee from those parties, and a written agreement from Apex, and will be subject to the same conditions and limitations contained in the contract between Apex and the User. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

This report was prepared with the standard of care and skill ordinarily recognized under similar circumstances by members of its profession in the state and region at the time the services are performed. No warranties, expressed or implied, are made.

This report provides information on the subject property only as specified in the scope of work based on conditions at the time of the study. Additional information may become available that differs significantly from our understanding of conditions presented in this report. If this occurs, we request that this information be brought to our attention so that we may reassess the conclusions provided herein.

11 RESOURCES

11.1 References

Many references, primarily internet-based and governmental resources, are cited within the text of this report and are not repeated on this page.

11.2 Glossary

Note: Definitions without a specific citation are derived from Apex project and industry experience.

Abandoned Property. A property that can be presumed to be deserted, or an intent to relinquish possession or control can be inferred from the general disrepair or lack of activity thereon such that a reasonable person could believe that there was an intent on the part of the current owner to surrender rights to the property. (ASTM E1527-21, Section 3.2.1)

Activity and Use Limitations (AULs). Legal (institutional) or physical (engineering) restrictions or limitations on the use of, or access to, a site or facility, to reduce or eliminate potential exposure to hazardous substances or petroleum products in soil or groundwater, or to prevent activities that could interfere with the effectiveness of a response action in order to ensure maintenance of a condition of no significant risk to public health or the environment. These legal or physical restrictions, which may include institutional and/or engineering controls are intended to prevent adverse impacts to individuals or populations that may be exposed to hazardous substances and petroleum products in the soil or ground water on the property. (ASTM E1527-21, Section 3.2.2)

Adjoining Properties. Any real property or properties the border of which is contiguous or partially contiguous with that of the property, or that would be contiguous or partially contiguous with the property but for a street, road, or other public thoroughfare separating them. (ASTM E1527-21, Section 3.2.4)

All Appropriate Inquiry (AAI). That inquiry constituting "All Appropriate Inquiry" into the previous ownership and uses of the property consistent with good commercial or customary practice, as defined in CERCLA, 42 U.S.C. §9601(35)(B), that will qualify a party to a commercial real estate transaction for one of the threshold criteria for satisfying the LLPs to the CERCLA liability (42 U.S.C. §9601(35)(A)&(B), §9607 (b)(3), §9607(q); and §9607(r)), assuming compliance with other elements of the defense. (ASTM E1527-21, Section 3.2.6)

Approximate Minimum Search Distance. The area for which records must be obtained and reviewed pursuant to Section 8 of ASTM Standard Practice E1527-21 subject to the limitations provided in that section. This may include areas outside the property and shall be measured from the nearest property boundary. This term is used in lieu of radius to include irregularly shaped properties. (ASTM E1527-21, Section 3.2.7)

Business Environmental Risk. A risk which can have a material environmental or environmentally driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice. Consideration of business environmental risk issues may involve addressing one or more non-scope considerations some of which are identified in the report (ASTM E1527-21, Section 3.2.11)

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), 42 USC 9601 et seq. (ASTM E1527-21, Section 3.3.2)

Contaminated Aquifer Policy. Oregon and Washington environmental agencies will not hold a property owner liable for groundwater contamination that has migrated from an upgradient property. This indemnity is granted under the assumption that the property owner is not responsible for the release of the contamination, is not financially associated with the property from which the contamination originated and did nothing to exacerbate the problem. Certain restrictions might be placed on the use of groundwater on the site (such as an irrigation or drinking water well could not be installed on the property). The property owner should ensure that the contamination does not present a health risk to on-site occupants. (5/20/04 DEQ Contaminated Aquifer policy, Washington RCW 70.105D.020(17)(iii)F(iv))

Continuing Obligations. After completion of an AAI-compliant Phase I ESA, there are continuing obligations of the User required under 2002 Brownfields Amendment to maintain landowner liability protections. These include:

1. Complying with land use restrictions and not impeding the effectiveness or integrity of institutional controls.
2. Taking “reasonable steps” with respect to hazardous substances affecting a landowner’s property to stop continuing releases, prevent threatened future releases, and prevent exposure to earlier releases.
3. Providing cooperation, assistance, and access to the EPA, a state, or other party conducting response actions or natural resource restoration at the property.
4. Complying with CERCLA information requests and administrative subpoenas.
5. Providing legally required notices relating to the discovery or release of hazardous substances on the property (40 CFR Par 312, Section II – Background, Item D).

Controlled Recognized Environmental Condition (CREC). A recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). (See ASTM Note 2.) A condition considered by the environmental professional to be a controlled recognized environmental condition shall be listed in the findings section of the Phase I Environmental Site Assessment report, and as a recognized environmental condition in the conclusions section of the Phase I Environmental Site Assessment report. (See ASTM Note 3.) (ASTM E1527-21, Section 3.2.17)

ASTM Note 2: For example, if a leaking underground storage tank has been cleaned up to a commercial use standard, but does not meet unrestricted residential cleanup criteria, this would be considered a controlled recognized environmental condition. The “control” is represented by the restriction that the property use remains commercial.

ASTM Note 3: A condition identified as a controlled recognized environmental condition does not imply that the environmental professional has evaluated or confirmed the adequacy, implementation, or continued effectiveness of the required control that has been, or is intended to be, implemented.

Data Failure. A failure to achieve the historical research objectives in Section 8.3.1 through 8.3.2.2 of ASTM E1527-21 even after reviewing standard historical sources in 8.3.4.1 through 8.3.4.8 of ASTM E1527-21 that are reasonably ascertainable and likely to be useful. Data failure is a type of data gap. (ASTM E1527-21, Section 3.2.18)

Data Gap. A lack of, or inability to obtain required information by ASTM E1527-21 despite good faith efforts to gather such information. Data gaps may result from incompleteness in any of the activities required by this practice, including, but not limited to site reconnaissance (for example, an inability to conduct the site visit), and interviews (for example, an inability to interview the key site manager, regulatory officials, etc.). The report will identify and comment on significant data gaps that affect the ability of the EP to identify recognized environmental conditions. (ASTM E1527-21, Section 3.2.19)

De minimis Condition. Condition that generally does not present a material risk of harm to public health or the environment or that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* are not recognized environmental conditions.

Environmental Professional. A person meeting the education, training, and experience requirements set forth in 40 CFR §312.10(b). That person may be an independent contractor or an employee of the User. (ASTM E1527-21, Section 3.2.30)

Hazardous Substance. A substance defined as a hazardous substance pursuant to CERCLA 42 USC §9601 (14), as interpreted by EPA regulations and the courts: "(A) any substance designated pursuant to Section 1321 (b)(2)(A) of Title 33, (B) any element, compound, mixture, solution, or substance designated pursuant to Section 9602 of this title, (C) any hazardous waste having the characteristics identified under or pursuant to Section 3001 of the Solid Waste Disposal Act (42 USC 6921) (but not including any waste the regulation of which under the Solid Waste Disposal Act (42 USC §9601 et seq.) has been suspended by act of Congress), (D) any toxic pollutant listed under Section 1317(a) of Title 33, (E) any hazardous air pollutant listed under Section 112 of the Clean Air Act (42 USC 7412), and (F) any imminently hazardous chemical substance or mixture with respect to which the administrator (of EPA) has taken action pursuant to Section 2606 of Title 15. The term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas)." (ASTM E1527-21, Section 3.2.36)

Apex Note: The term hazardous substances, as it is used in this report, describes both hazardous substances and petroleum products. It does not include hazardous building materials.

Historical Recognized Environmental Condition (HREC). A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). Before calling the past release a historical recognized environmental condition, the environmental professional must determine whether the past release is a recognized environmental condition at the time the Phase I Environmental Site Assessment is conducted (for example, if there has been a change in the regulatory criteria). If the EP considers the past release to be a recognized environmental condition at the time the Phase I ESA is conducted, the condition shall be included in the conclusions section of the report as a recognized environmental condition. (ASTM E1527-21, Section 3.2.39)

Landowner Liability Protections (LLPs). Landowner liability protections provided under CERCLA; these protections include the bona fide prospective purchaser liability protection, contiguous property owner liability protection, and innocent landowner defense from CERCLA liability. See 42 U.S.C. §§ 9601(35)(A), 9601(40), 9607(b), 9607(q), 9607(r). (ASTM E1527-21, Section 3.2.47)

Off-Site Migration Policy. It is Oregon Department of Environmental Quality (DEQ) policy, subject to the specific conditions, that where hazardous substances have come to be located at a property solely as the result of migration from a source or sources outside the property, DEQ will not require the owner or operator of the impacted property to perform remedial actions or pay remedial action costs associated with the migrated contaminants as long as: (a) the owner or operator of the impacted property did not cause, contribute to, or exacerbate through an act or omission, the release of hazardous substances that has migrated to the impacted property; (b) the person whose acts or omissions caused the release was not and is not an employee or agent of the owner or operator of the impacted property; (c) the acts or omissions of the person causing the release did not occur in connection with a contractual relationship existing directly or indirectly with the owner or operator of the impacted property; and (d) there is no other basis for the impacted property owner or operator to be liable for the contamination. (Oregon Department of Environmental Quality, Land Quality Division, Off-Site Contaminant Migration Policy, DEQ 12-LQ-041, December 2012)

Other Issues of Concern. Issues that could potentially result in adverse environmental impacts to the subject property. They are not included as recognized environmental conditions because insufficient evidence was collected during the course of this study to come to the conclusion that the condition(s) has resulted in the “presence or likely presence” of contamination to soil and/or groundwater on the subject property.

Petroleum Products. Those substances included within the meaning of the petroleum exclusion to CERCLA, 42 U.S.C. §9601(14), as interpreted by the courts and EPA; that is: petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under Subparagraphs (A) through (F) of 42 U.S.C. § 9601(14), natural gas, natural gas liquids, liquefied natural gas, and synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas). (The word fraction refers to certain distillates of crude oil, including gasoline, kerosene, diesel oil, jet fuels, and fuel oil, pursuant to Standard Definitions of Petroleum Statistics.) (ASTM E1527-21, Section 3.2.61)

Practically Reviewable. Information that is practically reviewable means that the information is provided by the source in a manner and in a form that, upon examination, yields information relevant to the property without the need for extraordinary analysis of irrelevant data. The form of the information shall be such that the User can review the records for a limited geographic area. Records that cannot be feasibly retrieved by reference to the location of the property or a geographic area in which the property is located are not generally practically reviewable. Most databases of public records are practically reviewable if they can be obtained from the source agency by the county, city, zip code, or other geographic area of the facilities listed in the record system. Records that are sorted, filed, organized, or maintained by the source agency only chronologically are not generally practically reviewable. Listings in publicly available records which do not have adequate address information to be located geographically are not generally considered practically reviewable. For large databases with numerous records (such as RCRA hazardous waste generators and registered underground storage tanks), the records are not practically reviewable unless they can be obtained from the source agency in the smaller geographic area of zip codes. Even when information is provided by zip code for some large databases, it is common for an unmanageable number of sites to be identified within a given zip code. In these cases, it is not necessary to review the impact of all of the sites that are likely to be listed in any given zip code because that information would not be practically reviewable. In other words, when so much data is generated that it cannot be feasibly reviewed for its impact on the property, it is not practically reviewable. (ASTM E1527-21, Section 3.2.65)

Publicly Available. Information that is publicly available means that the source of the information allows access to the information by anyone upon request. (ASTM E1527-21, Section 3.2.69)

Reasonably Ascertainable. Information that is (1) publicly available, (2) obtainable from its source within reasonable time and cost constraints, and (3) practically reviewable. (ASTM E1527-21, Section 3.2.72)

Recognized Environmental Condition (REC). The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to 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. *De minimis* conditions are not recognized environmental conditions. (ASTM E1527-21, Section 3.2.73)

Subject Property (ASTM standard uses the term Property). The real property that is the subject of this Environmental Site Assessment. Real property includes buildings and other fixtures and improvements located on the property and affixed to the land. (ASTM E1527-21, Section 3.2.66)

User. The party seeking to use ASTM Practice E1527 to complete an Environmental Site Assessment of the property. A User may include, without limitation, a potential purchaser of property, a potential tenant of property, an owner of property, a lender, or a property manager. The User has specific obligations for completing a successful application of this practice as outlined in Section 6 of Practice E1527. (ASTM E1527-21, Section 3.2.94)

11.3 Cross-Reference for ASTM E1527-21 Requirements

This table provides an easy cross reference for ensuring that the Apex Phase I ESA report complies with ASTM E1527-21. The ASTM recommended format is found in Appendix X5 of the standard.

ASTM Recommended Format	Provided in Apex Report Page/Section Number
X5.1 Executive Summary	Executive Summary
X5.2 Introduction	Sections 1 and 2
X5.3 User Provided Information	Sections 1, 4, and 6, Appendix F
X5.4 Site Reconnaissance	Section 5, Appendix E
X5.5 Records Review	Sections 3 and 4, Appendices B, C, and D
X5.6 Interviews	Section 6
X5.7 Non-Scope Services	Section 7
X5.8 Findings and Opinions	Section 8
X5.12 Appendices	Appendices A, B, C, D, E, and F

Appendix B

Geophysical Survey Report (Geopotential 2007)

Appendix F

Questionnaires

Property Owner/Representative Questionnaire

Client/User Questionnaire



ENVIRONMENTAL & EXPLORATION GEOPHYSICS

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SUMMARY REPORT

*SUBSURFACE MAPPING SURVEY
TO DETECT
POSSIBLE UNDERGROUND STORAGE TANKS*

*RIGHT-OF-WAY SURVEY
NORTH G STREET
LAKEVIEW, OREGON*

CLIENT:

*Oregon Department of
Transportation
Bend, Oregon*

February 20, 2007

GeoPotential Project Number: 7756

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FIGURES

- Figure 1. Site Location Map
- Figure 2. Magnetic Contour Map - Location 1 Downtown
- Figure 3. Magnetic Contour Map – Location 2 Don’s Market

APPENDICES

- Appendix A – Magnetometer Surveys
- Appendix B – Ground Penetrating Radar Surveys

SUMMARY

A geophysical survey was conducted at two different locations along the North G Street right-of-way in Lakeview, Oregon. The purpose of the survey was to detect possible underground storage tanks (USTs) that could be encountered during forthcoming road construction.

A Geometrics G-858 cesium vapor magnetometer combined with several handheld metal detectors and ground penetrating radar (GPR) were used to investigate the subsurface for possible USTs.

Location 1 included the east and west sidewalks along North G Street between N 4th Street and N 5th Street. No surface features indicated the existence of USTs at this location. Several magnetic anomalies were found; however none appeared to be caused by USTs.

The second survey was conducted at Don's Market, near the intersection of North G Street and N 9th Street. Two UST fill ports were observed at this location. Two USTs were detected and marked using GPR.

INTRODUCTION

Subsurface mapping surveys are geophysical surveys utilizing geophysical methods and data to detect and locate natural and manmade subsurface features. The Geometrics G-858 Cesium magnetometer used to obtain the magnetic data for this survey is a geophysical tool specifically designed to detect buried **ferrous** (iron-bearing) objects, including utilities, drums and USTs.

Once suspicious magnetic anomalies are detected, small hand-held metal detectors are used to locate the peaks and edges of the magnetic anomalies. If a buried object appears to be three-dimensional, as expected over a possible UST, GPR is used in an attempt to determine the size, shape and depth of burial of the object.

SURVEY OBJECTIVES

The objective of this survey was to detect possible USTs located within the North G Street right-of-way in Lakeview, Oregon.

SURVEY SITES

Location 1 included both sides of the street between N 4th Street and N 5th Street. The survey right-of-way extended outward 30 feet from the centerline of the road. An additional 20 feet was covered in the parking lot northwest of the N 4th Street intersection. The parking area west of the restaurant northeast of the intersection was also surveyed. The survey was conducted across the concrete sidewalk and asphalt parking areas. No evidence of USTs was seen at Location 1.

Metallic surface objects can adversely effect the interpretation of magnetic data. At this location interference was caused by the buildings, metal signposts, telephone poles, monitoring wells, etc.

Location 2 included the gravel-and grass-covered areas south, east and north of Don's Market at the intersection of North G Street and N 9th Street. Two UST fill ports were seen at this location. A large freezer located along the east wall of the building caused significant interference.

TIMING

Jeff Mann and Nikos Tzetos conducted the fieldwork for GeoPotential on February 20, 2007. Mr. Ryan Franklin of the Bend, Oregon ODOT office was on Site and directed the survey. This report was written by Jeff Mann, reviewed by Nikos Tzetos and emailed in PDF format to Mr. Franklin on February 26, 2007.

SURVEY EQUIPMENT AND LIMITATIONS

The following geophysical instruments were used to conduct the survey:

- Geometrics G-858 Cesium Vapor Magnetometer (Magnetic Survey)
- Mala RAMAC Ground Penetrating Radar System with a 500 and 250 MHz antenna (Radar Survey)
- Aqua-Tronics A6 Electromagnetic Tracer (EMA6 Survey)
- Schonstedt GA92xtD Magnetic Gradiometer (GA92 Survey)

This equipment and the procedures used to meet the survey objectives of this project have been proven effective in detecting natural metallic ore bodies and manmade objects such as utilities and USTs.

A magnetometer is a very sensitive electronic instrument capable of detecting minute changes in the earth's local magnetic field. These "magnetic anomalies" are caused by **ferrous** (iron-bearing) objects on or below the ground surface. Surface objects can make the interpretation of a magnetometer survey difficult. A buried object of interest may be missed if it is too close to a large metallic surface object. Common surface objects that present interpretation problems include vehicles, buildings and fences.

The success of a GPR survey is greatly controlled by site conditions. Clayey-soil, wet-soil and reinforced concrete severely attenuate signal penetration even at different locations on the same site. USTs and utilities may be missed if they are deeper than the signal penetration, or if they are located under metallic and non-metallic debris, reinforced concrete, disturbed soils or utilities. The only operator-controlled variable is the frequency of the radar antenna; however, there is a tradeoff between high and low frequency antennas. Lower frequency antennas provide better depth penetration but give poorer resolution. Small objects including small utilities may be missed with lower frequency antennas. Strong radar reflections depend on an adequate electrical contrast between the target object and the surrounding material. Highly rusted USTs may not have an adequate electrical contrast and may be missed. At this site, radar signal penetration was approximately 4 feet.

GPR does not enable the operator to actually "see" below the ground surface. Like aircraft and weather radar, signals radiated from the antenna reflect off a wide variety of objects. Changes in soil moisture content, mineralogy and grain size, among others, and from natural and man-made objects including rocks and stones, tanks and utilities all produce radar reflections that the operators interpret based upon experience. Radar data are ambiguous, i.e. reflections caused by stones can look similar to reflections produced by utilities. Boulders can produce reflections that are commonly observed over known tanks. Not all USTs produce the classic hyperbolic-shaped reflections.

Geophysical techniques are excellent at detecting changes in the subsurface caused by natural and manmade objects; however, they are poor at actually identifying subsurface features. Complementary methods may be used to assist in the interpretation; however, the only sure way of identifying a buried feature is by excavation.

PROCEDURE

Two separate right-hand orthogonal survey grids were established at Location 1. The origin (0,0) of each survey grid is located at the southwestern corner of each site, as shown in Figure 2. All geographic features shown on the figures are measured from the origins.

Magnetic data were collected at roughly 6" intervals along survey lines having a spacing of 2.5 feet. Data were downloaded to a laptop computer and processed in the field. Lastly, contour maps of the data were printed.

Figure 2 is a colored magnetic contour map of the data collected at Location 1, contoured at an interval of 250 nT. This contour interval is sufficient to detect USTs. Figure 3 is a contour map of the magnetic data collected at Location 2, contoured at an interval of 250 nT. GPR traverses are shown as pink lines.

Magnetic "lows" are generally caused by objects located above the magnetometer sensor and are shown in blue, and may also be hachured. At this Site magnetic lows are caused by buildings, signs and signposts, poles, etc.

Magnetic "highs", shown in red, are generally produced by ferrous objects below the sensor and are of most importance since pipes, utilities and USTs produce magnetic highs. Often a "high/low" pair of anomalies may be produced by buried objects depending on the size, shape, orientation of the buried object with respect to the earth's local magnetic field, and the depth of burial of the object. The transition point from high (red) to low (blue) is arbitrary and can be adjusted. Its main use is to differentiate between highs and lows.

Magnetic anomalies produced by buried metallic objects were located on the site using a measuring wheel and were labeled on the contour map for further exploration using other instruments. The actual anomaly peaks and the edges of the buried metallic objects producing them were then located using hand-held metal detectors. Metallic objects appearing to be three-dimensional in nature were subsequently marked for further investigating using GPR. Although GPR does not enable the operator to actually "see" a buried object, it may give valuable information regarding the size, shape and depth of the object.

RESULTS

Location 1 - Figure 2 shows the magnetic data collected at Location 1. Several anomalies were detected; however most appear to be caused by surface features. Four magnetic anomalies (A-D) are marked on this figure. Handheld metal detectors and GPR were used to investigate the subsurface at these points.

No large 3D objects were seen in GPR profiles across the peak of Anomaly A. This could be related to a buried pipe associated with a former gasoline station formerly located on this property. There was some evidence of a former pump island in this vicinity.

Anomaly B appeared to be caused by a small 3D object detected using the Tracer, but no tank-like reflections were seen in GPR profiles across the feature.

Anomaly C may be caused by a pipe or utility. The concrete parking area at this location appears to be reinforced. Reinforced concrete can severely limit the effectiveness of the handheld metal detectors and can attenuate the GPR signal. No large 3D objects were seen in radar profiles across the anomaly.

The feature producing anomaly D could not be determined; however it is probably caused by several underground pipes or utilities located within a trench.

Location 2 - Figure 3 shows the result of the magnetic survey conducted at Don's Market. Two UST fill ports were observed; however, interference caused by the building (and/or metallic material along the walls in the building), the metal porch supports and the freezer "masked" the anomalies produced by the USTs.

The handheld metal detectors and GPR were used to mark the approximate edges of the two USTs.

The north UST appears to be approximately 6 feet in diameter and 9 feet long. It is approximately 24" deep (bgs). The fill port was not removed.

The UST located at the front of the store was difficult to detect. The metal detectors were affected by surface metal. The UST was faintly seen in two radar profiles, but not in a third. The UST is approximately 4 feet in diameter, 8 feet long and possibly as deep as 3 to 4 feet (bgs).

One vent pipe was seen associated with the north tank, and three vent pipes were seen coming through the roof by the south wall. At least one of the three is possibly associated with the south UST. No additional USTs were seen in the vicinity of the south corner, suggesting either that the remaining two vents are also venting the south tank, or that two tanks have been removed.

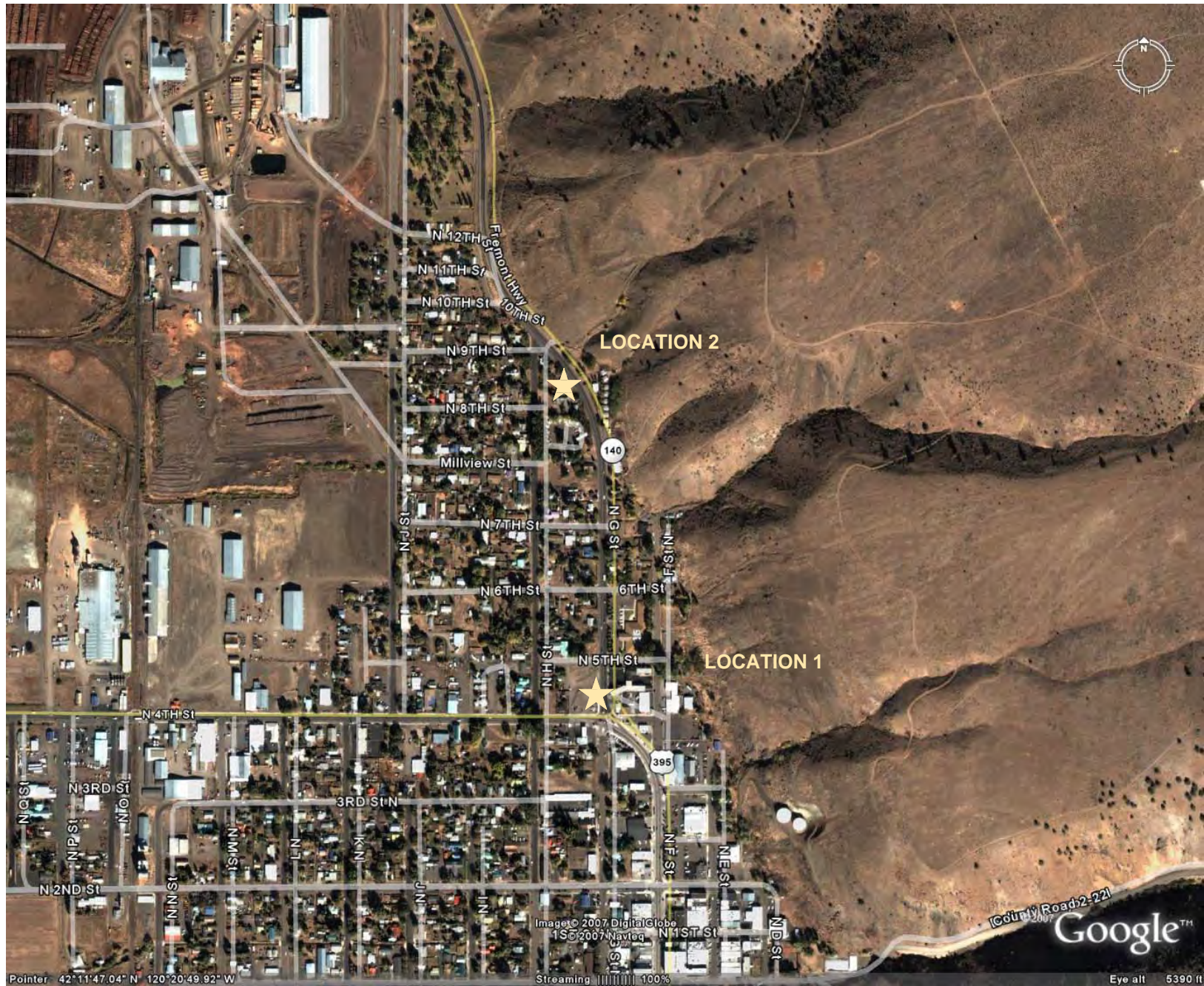
LIMITATIONS

Geophysical surveys consist of interpreting geophysical responses from subsurface features. Since a variety of subsurface features can produce identical geophysical responses, it is necessary to confirm the geophysical interpretation with intrusive investigations such as excavating or drilling. In addition, many subsurface features may produce no geophysical response. The use of this subsurface mapping survey is the sole responsibility of the client.

**Jeff Mann, MS, PG
GeoPotential**

February 2007





Pointer 42°11'47.04" N 120°20'49.92" W

Image © 2007 DigitalGlobe
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 Streaming 100%

County Road 2-221
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 Eye alt 5390 ft



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DATE: FEBRUARY 20, 2007

SUBSURFACE MAPPING SURVEY

PROJECT No. 7756

LOCATION:

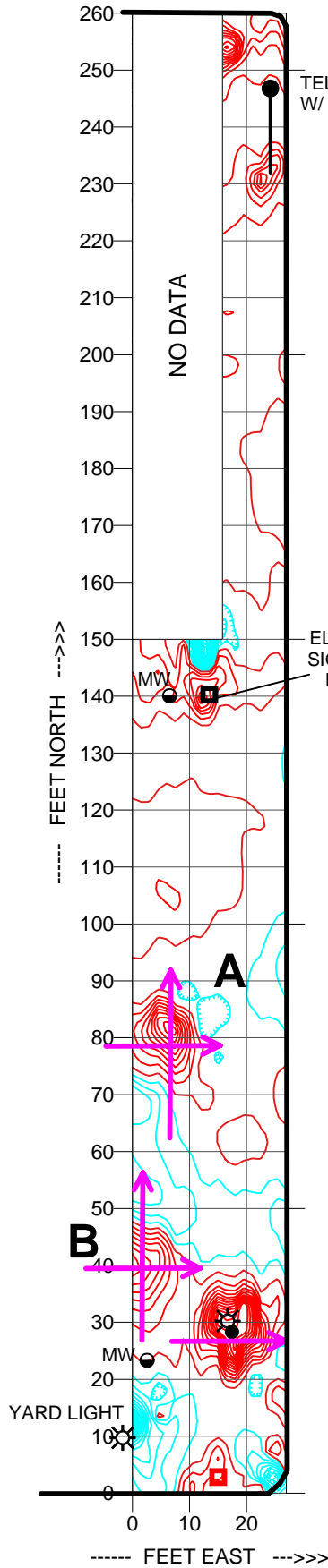
ODOT
 RIGHT OF WAY SURVEY
 LAKEVIEW, OREGON

CLIENT:

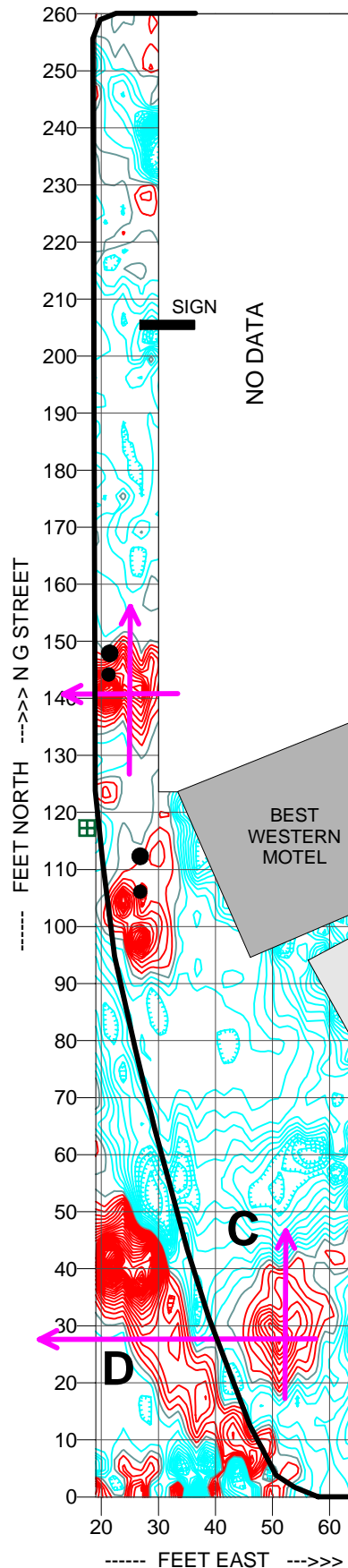
ODOT, BEND, OREGON

FIGURE 1.
 LOCATION OF SITES

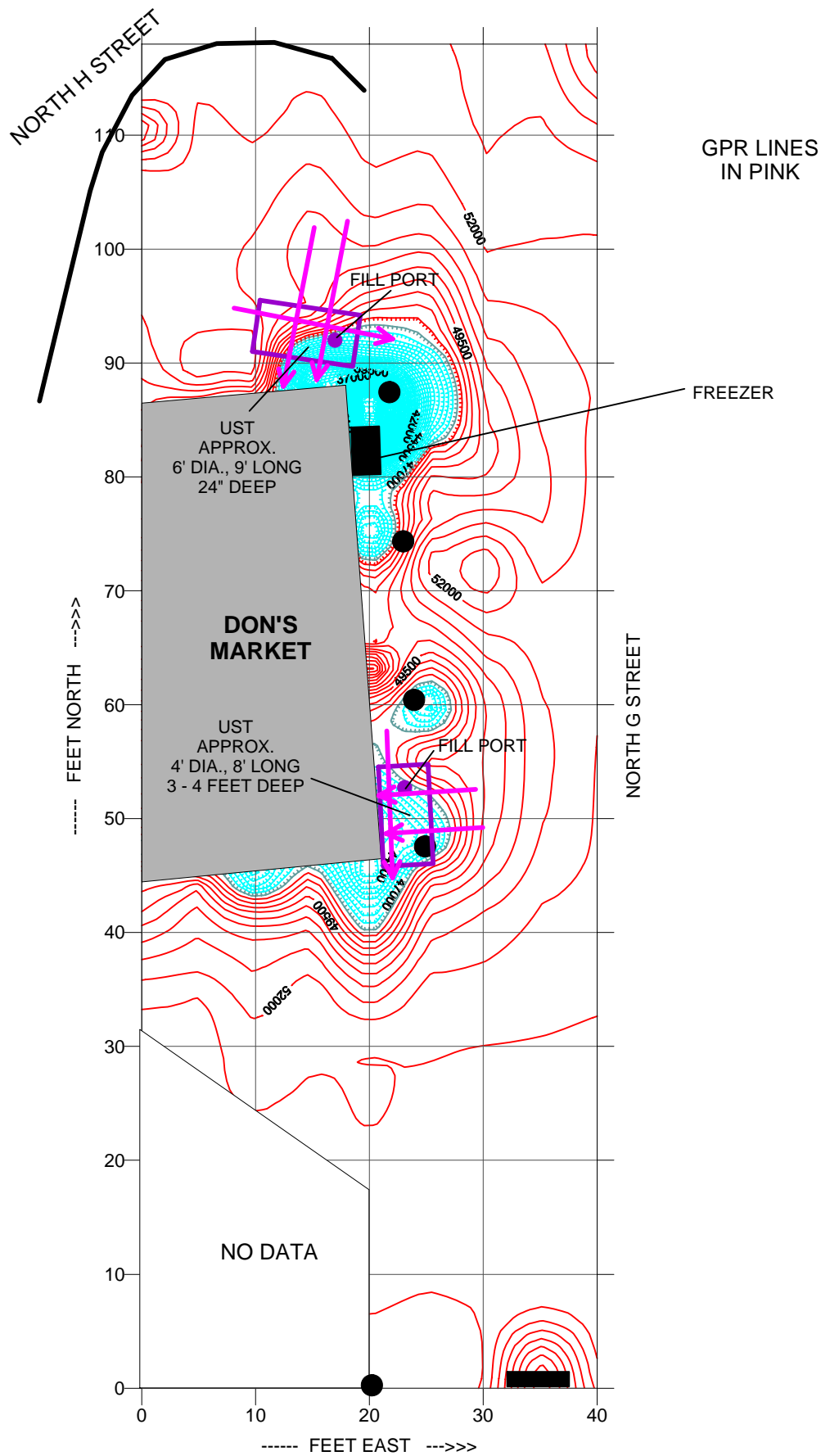
N 5TH STREET



NORTH G STREET



SURFACE FEATURES IN BLACK
GPR LINES IN PINK



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DATE: FEBRUARY 20, 2007 **SUBSURFACE MAPPING SURVEY** PROJECT No. 7756

LOCATION:
 RIGHT OF WAY SURVEY
 NORTH G STREET
 LAKEVIEW, OREGON

CLIENT: ODOT, BEND, OREGON

FIGURE 3.
 LOCATION 2 - DON'S MARKET
 MAGNETIC CONTOUR MAP
 WITH INTERPRETATION
 CI = 250 NT

APPENDIX MAGNETOMETER SURVEYS

The earth's magnetic field, measured in "nanoTeslas" (nT), behaves like a bar magnet, with the strongest magnetic field located at the poles, and the weakest field located near the equator. In the United States, the average field intensity varies widely; however, the average value is about 50,000 NT. Also, like the magnetic field around the bar magnet, the earth's magnetic field is inclined. This inclination varies between 60 and 75 degrees, generally depending upon the latitude of the measuring location. The earth's magnetic field varies constantly and, during sunspot activity, quite dramatically. A magnetometer is an electronic device that measures the intensity of the earth's magnetic field.

Naturally occurring geologic features and buried ferrous metal objects such as underground storage tanks, drums, ordnance, pipes and debris filled trenches produce both horizontal and vertical disturbances to the earth's local magnetic field. The objects causing these "anomalies" can be detected quickly and reliably using portable magnetometers.

The intensity of an anomaly is a function of the amount of ferrous material present in the object, and its size and depth of burial. As a rule of thumb, single drums buried several feet below the surface produce anomalies of about 200 nT relative to the normal undisturbed background and can be detected at a horizontal distance of about 15 feet, while large caches of drums can produce anomalies of many thousands of nT and may be detectable 50 feet away.

Magnetometers generally measure horizontal variations in the local magnetic field. A magnetic gradiometer is a variant of the magnetometer that measures both the horizontal and the vertical magnetic field at each survey point. It consists of two identical sensors located vertically on a staff and having a fixed separation. The intensity of the magnetic field caused by a buried metal object varies inversely with the distance between the object and the sensor. The relative intensities measured simultaneously at each sensor are used to determine the relative depth of burial of an object.

Relative depth estimates of buried metal objects can be made using a single sensor. In general, for a given mass object, the deeper the object is buried, the lower the amplitude and the wider the anomaly. Shallowly buried objects produce higher amplitude anomalies with closely spaced contour lines.

Magnetic surveys can only detect **ferrous metal** objects and cannot be used to identify the buried object. Estimates of the total mass of a buried object are difficult due to the physical properties of the object and other factors. Interference caused by observed surface metal objects limits the accuracy of the survey. The anomalies produced by fences, power lines, cars and buildings can easily mask the anomaly caused by an underground target.

Magnetic surveys are cost effective. Using the standard "step and wait" magnetometer, data from approximately 1000 points can be obtained in one field day corresponding to between 1 acre and about 5 acres depending on site conditions and survey goals. More modern cesium magnetometers collect up to 10 readings per second continuously, thus the operator can proceed without stopping. Many modern magnetometers use an audible signal to call attention to anomalous data as it is obtained. At some sites metallic objects can be detected and marked in the field at the time of the survey.

The use of a second, automatically recording "base station" magnetometer is highly recommended due to temporal variations in the earth's magnetic field. These changes must be removed from the field data before an accurate interpretation can be made, particularly when searching for small-buried objects.

Magnetic data are most commonly presented in two contour maps. The TOTAL MAGNETIC FIELD CONTOUR MAP shows the horizontal magnetic field and, therefore, the areal extent of anomalies. The GRADIOMETER CONTOUR MAPS show the vertical magnetic field and indicate the relative depth of burial of the objects causing those anomalies. Color versions of these maps may be produced showing only the magnetic highs and lows.

APPENDIX GROUND PENETRATING RADAR SURVEYS

Ground Penetrating Radar (GPR) can be a valuable tool to accurately locate both metallic and non-metallic UST's and utilities, buried drums and hazardous material at some sites. It may detect objects below reinforced concrete floors and slabs. GPR may delineate trenches and excavations and, under some conditions, it may be used to locate contaminant plumes. It has been used as an archaeological tool to look for buried artifacts. It may accurately profile fresh water lake bottoms either from a boat or from a frozen lake surface. GPR may be used to locate voids below roads and runways. GPR has numerous engineering applications. It can be used in non-destructive testing of engineering material, for example, locating rebar in concrete structures and determining the thickness of concrete and other structural material.

GPR uses short impulses of high frequency radio waves directed into the ground to acquire information about the subsurface. The energy radiated into the ground is reflected back to the antenna by features having different electrical properties to that of the surrounding material. The greater the contrast, the stronger the reflection. Typical reflectors include water table, bedrock, bedding, fractures, voids, contaminant plumes and man-made objects such as UST's and metal and plastic utilities. Materials having little electrical contrast like clay and concrete pipes may not produce strong reflections and may not be seen. Data are digitally recorded or downloaded to a laptop computer for filtering and processing.

The frequency of the radar signal used for a survey is a trade off. Low frequencies (250 Mhz – 50 Mhz) give better penetration but low resolution so that pipes and utilities may not be seen. Pipes and utilities may be seen using higher frequencies (500 Mhz) but the depth of penetration may be limited to only a few feet especially in the wet, clayey soils found in the NW USA . The GPR frequency is dependent upon the antenna. Once an antenna is selected, nothing the operator can do can increase the depth of penetration.

Radar data is ambiguous. Many buried objects produce echoes that may be similar to the echo expected from the target object. Boulders and debris produce reflections that are similar to pipes and tanks. Subtle changes in the electrical properties along a traverse caused by changes in soil type, mineralogy, grain size, and moisture content all produce “noise” that can make interpretation difficult. Interpreting radargrams is an art as much as a science.

Under some conditions, although a UST itself may not be clearly visible in a GPR record, the excavation or trench in which the UST is buried is evident. Usually GPR data is used to compliment data from other “tools”. For example, a trench-like reflection but no clear UST reflection, combined with a “tank” shaped magnetic anomaly suggests the presence of a UST. Although the UST itself could not be seen using GPR, the radar showed a trench-like reflection. The magnetic data showed a large ferrous object. We would report a possible UST at that location.

GPR is often used in conjunction with magnetometer surveys. Magnetometer Surveys are very fast and large areas can be covered cost effectively. Magnetic anomalies are marked in the field, then may be further investigated using radar.

GPR, like other geophysical tools, is excellent at detecting changes across a site, but it is poor at actually identifying the cause of the change. **The only sure way to identify buried objects is through excavation.**

ADVANTAGES - General

- GPR provides continuous records along traverses which, depending on the goal of the survey, may be interpreted in the field.
- At flat, open sites, for reconnaissance purposes, the antenna can be towed behind a vehicle at several mph.
- Many GPR antennas are shielded and are unaffected by surface and overhead objects and power lines.
- GPR can be used in conjunction with magnetic or EM surveys to accurately locate buried objects.

ADVANTAGES – Site specific

- With a low frequency antenna, in clean, dry, sandy soil, reflections from targets as deep as 100 feet are possible. Geologic features such as bedrock and cross bedding may be seen at some sites.
- The resolution of data is very high particularly for high frequency antennas.
- Shallow, man-made objects generally can be detected.
- Fiberglass UST's and plastic pipes can be detected using GPR.

LIMITATIONS - General

To acquire the highest quality data, proper coupling between the antenna and the ground surface is necessary. Poor data may be obtained at sites covered with debris, an uneven surface, tall grass and brush. Objects located at curbs are difficult to see.

Acquiring GPR data is slow. The antenna must be over the target. The signal from the antenna is cone-shaped. Reflections from objects to the side of the antenna may be seen, but their actual location relative to the antenna is not obvious.

Penetration of the GPR signal is "site specific" and its depth of penetration at a particular site can not be predicted ahead of time. Near surface conductive material, such as salty or contaminated ground water and wet, clay-rich soil, may attenuate the radar signal, limiting the effective depth of the survey to several feet. Reinforced concrete also can attenuate the signal. Rebar may produce reflections that look like pipes.

GPR may not be cost-effective for some projects. For a detailed survey mapping underground storage tanks and utilities, it may be necessary to collect data in orthogonal directions at 5-foot line spacing.

LIMITATIONS – Interpretation

Interpretation can be difficult. Radar data are ambiguous. Subsurface objects can be detected but, in general, they cannot be identified. USTs and utilities have a characteristic reflection, however, large rocks and boulders have a similar reflection.

The reflection visible in a GPR record is very complex and may be caused by small changes in the electrical properties of the soil. The reflection may not be produced by the target in mind. Due to “noise”, the target may be missed. USTs and deep utilities may be missed if they are under debris and/or other pipes.

Other methods may be necessary to aid in the interpretation of the data (use a magnetometer to detect a large metallic mass, then GPR to determine if the object is tank-like, or a utility locator to determine if there are feed lines and fill pipes leading to the object).

Adequate contrast between the ground and the target is required to obtain reflections. UST’s may be missed if they are badly corroded. Utilities made of “earth” materials like clay and concrete may not be detected since their electrical properties are similar to the surrounding soil.

To determine the depth to an object without "ground truth", assumptions must be made regarding soil properties. Even with ground truth at several locations on the same site, changes in material across a site (therefore changes in signal velocity) can cause errors in depth measurements at other locations.

Appendix C

Limited Asbestos & Lead-Based Paint Report (Cardno 2020)

Asbestos and Lead-Based Paint Report

– Don's Market

859 North G Street

Lakeview, Lake County, Oregon

Prepared for:

South Central Oregon Economic Development District
Coalition (SCOEDD)



Asbestos and Limited Lead-Based Paint Report – Don's Market

Prepared for: Ms. Betty Riley
South Central Oregon Economic Development District
803 Main Street, Suite 202
Klamath Falls, OR 97601

Project Name: **Asbestos and Limited Lead-Based Paint Survey – Don's Market**
859 North G Street
Lakeview, Lake County, Oregon 97630

Project Number: 0002422000 Phase C35

Acres ID: 242303

Date: May 5, 2020

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Appendices

A	Excerpts of approved Site Specific Quality Assurance Project Plan
B	Pre-Demolition Asbestos Survey – CCC – Don's Market
C	Lead Paint Survey – CCC – Don's Market

1 Background Summary

1.1 Purpose

The purpose of this Asbestos and Limited Lead-Based Paint Survey is to evaluate non-scope considerations identified in Cardno's March 23, 2020 Phase I Environmental Site Assessment (ESA) conducted on the Don's Market building, located at 859 North G Street, in Lakeview, Oregon, herein referred to as the "Site" or the "Subject Property". Given the development of the Subject Site before the general discontinuance of lead-based paints and asbestos-containing building materials, as well as the identification of several suspect materials and paints, such as ceramic tiles, caulking, floor tiles, wall boards, mold, etc., Cardno determined the existence of these materials is likely.

In summary, the purpose of this assessment was to identify the following:

- Presence of asbestos containing materials (ACMs)
- Presence of lead-based paints (LBPs)

The surveys that served to quantify these concerns were completed by Mr. David Fawcett of Coleman Creek Consulting (CCC), an Oregon certified and licensed asbestos-containing materials inspector and lead-based paint inspector. Said surveys were conducted on April 9, 2020.

1.2 Quality Assurance Project Plan

This survey was completed under guidelines set forth in the Environmental Protection Agency (EPA) approved, March 24, 2020, Site-Specific Quality Assurance Project Plan (SSQAPP). Excerpts of the SSQAPP are included in **Appendix A**.

1.3 Property Description

The Subject Site is comprised one land parcel located in the downtown area of Lakeview, Oregon. The Subject Site is an 0.08 lot with one 1,692 square foot structure that was formerly used as a retail store/convenience market. The structure on the site was built in 1943. The Subject Property is bound by North H Street to the West, North G Street to the east, vacant land to the north, and residential property to the south. According to the Lake County Tax Assessor's website, the Subject Property (Tax ID 39S20E10CA07600) consists of one 0.08-acre parcel with one structure.

1.4 Site History

According to aerial photograph, the Subject Property appears to have been developed as a gasoline filling station/convenience store since approximately 1943.

1.5 Previous Assessments

Cardno completed a Phase I ESA of the property in March 2020 on behalf of the Client. Cardno made the following recommendations for the Subject Property:

- The two USTs identified to be present on the Subject Property should be removed or closed in place per ODEQ guidance. The potential for impacted soils and groundwater should be evaluated and addressed. Based on the orientation of the tanks relative to the building, and given the poor condition of the building, it is recommended that the building be demolished to

facilitate the tank removal. The potential for the presence of a third UST referenced by the environmental database report should also be evaluated.

- To facilitate the building demolition, EPA has granted South Central Oregon Economic Development District (SCOEDD) approval to move forward with a pre-demolition asbestos and lead paint survey.
- In addition to asbestos and lead, Cardno noted a compressor under a rear addition to the building that may contain Freon or other Chlorofluorocarbons (CFCs). The compressor and fixed and free standing refrigeration equipment in the former retail space should be managed and disposed in accordance with applicable state and federal regulations prior to building demolition.

Based on Cardno's previous investigations and information obtained from the current and former property owners, no prior asbestos or lead-based paint assessments have been conducted on the on-site buildings.

1.6 Limitations / Exceptions of Assessment

Pre-Demolition Asbestos and Lead-Based Paint surveys were completed by Coleman Creek Consulting, Inc. (CCC) to identify potential ACM and LBP. Any suspect building materials not sampled and analyzed for asbestos during this investigation should be treated as presumed asbestos containing materials (PACM) until further sampling by a certified inspector indicates otherwise. Any suspect LBP not sampled and analyzed for lead during this survey should be treated as LBP until further sampling by a certified inspector indicates otherwise.

No other warranty is expressed or implied.

1.7 Special Terms and Conditions (User Reliance)

This report is for the use and benefit of the SCOEDD or "Client" and may be relied upon by these entities as well as any of their respective affiliates, successors, and assigns, in connection with a commercial real estate transaction involving the property, and in accordance with the terms and conditions in place between Cardno and the Client for this project. Any third party agrees by accepting this report that any use or reliance on this report shall be limited by the exceptions and limitations set forth within this report, and with the acknowledgment that actual site conditions may change with time, and that hidden conditions may exist at the property that were not discovered within the authorized scope of the assessment. Any use by or distribution of this report to third parties without the express written consent of Cardno is at the sole risk and expense of such third party.

Cardno makes no other representation to any third party except that it has used the degree of care and skill ordinarily exercised by environmental consultants in the preparation of the report and in the assembling of data and information related thereto. No other warranties are made to any third party, either expressed or implied.

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2 Sampling Activities

The following section provides a concise summary of the asbestos and limited lead-based paint survey reports completed relative to the Subject Property. As noted, copies of said documents are included as **Appendix B** and **Appendix C**. Each appended report contains analytical summaries, general figures outlining the building footprint, as well as photographs and diagrams outlining collected sample locations.

2.1 Asbestos Containing Materials Survey

An asbestos survey was conducted on April 9, 2020 and performed by Mr. David Fawcett, an Oregon licensed and accredited asbestos inspector.

In accordance with National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR 61-Subpart M, paragraph 145, all asbestos containing materials (ACMs) must be identified and removed prior to disturbance, either during a renovation or demolition. ACM is defined by OSHA as materials that contain greater than 1% asbestos fibers. Additionally, sample collection activities were conducted in accordance to applicable rules and regulations as defined in Chapter 340, Division 248 of the Oregon Department of Environmental Quality.

The ACM inspection included a visual inspection of all accessible interior/exterior areas. Per CCC's Pre-Demolition Asbestos Survey, roofing materials were accessed from an area collapsed into the back office and the balance of the roof was not accessed. Non-destructive testing was performed to verify the existence and extent of ACM in all building materials.

All suspect materials, or homogeneous areas (HAs) were visually identified. Each HA was visually assessed for condition, friability, and quantity. All identified ACMs were classified by their category as denoted by EPA AHERA/ASHARA and OSHA. These categories include:

- Thermal System Insulation (TSI) – insulation typically over pipes, fittings, elbows, boilers, tanks, ducts, etc.
- Surfacing material – material that is sprayed, troweled-on, or otherwise applied to surfaces.
- Miscellaneous – All other ACMs
- Friable – ACM that can be crumbled pulverized or reduced to a powder by hand pressure when dry
- Category I Non-Friable – ACM consisting of packing material, gaskets, resilient floor covering, and asphalt roofing products
- Category II Non-Friable – All ACM that is not listed in Category I Non-Friable ACM
- Presumed Asbestos Containing Material (PACM) – all potential ACM not analytically analyzed indicating it is not ACM.

During the inspection, Mr. Fawcett collected forty-seven (47) samples from twenty-four (24) different HAs. All bulk samples were collected and stored in appropriate sample containers, labeled, and delivered to Eurofins EMLab P&K (Eurofins) labs in Irvine, California. This laboratory is accredited by the National Institute of Standards of Technology (NIST) and is recognized under the National Voluntary Laboratory Accreditation Program (NVLAP). Eurofins analyzed all samples using Polarized

Light Microscopy (PLM) via EPA Method 600/R-93/116. A copy of the completed asbestos-containing materials survey is included as **Appendix B**.

2.1.1 **ACM Analytical Summary**

Based on results outlined on the Asbestos PLM Report by Eurofins, the following samples were reported as asbestos-containing:

- Tan vinyl floor located in the main store area and bathroom, encompassing approximately 1,300 square feet (sf.)
- Wall and ceiling materials located in the bathroom, encompassing approximately 230 sf.
- Roof sealant and built-up roof located on the roof, encompassing approximately 1,800 sf.
- White duct and furnace insulation on furnace and metal ductwork located in the basement, encompassing approximately 60 sf.

The tan vinyl floor was observed throughout the main store area and the bathroom. Overall, this material was in poor condition and is considered a miscellaneous Category I friable material.

The wall and ceiling materials were located in the bathroom. Overall, this material was in poor condition and is considered a miscellaneous Category I friable material.

The roof sealant and built-up roof were located on the roof. Roof samples were collected from a dilapidated ceiling/roof area in the back office. Overall, this material was in poor condition and is considered a miscellaneous Category I friable material.

The white duct and furnace insulation on furnace and metal ductwork was located in the basement. Overall, this material was in poor condition and is considered a thermal system insulation (TSI) friable material.

Overall, the identified ACMs are in poor condition and may become friable during disturbance. Photos of the identified ACMs are included in **Appendix B**. The laboratory report and summarized results are also included in **Appendix B**.

2.2 **Limited Lead-based Paint Survey**

A limited lead-based paint (LBP) inspection was conducted on April 9, 2020. The survey was performed by Mr. David Fawcett, an Oregon and EPA-accredited LBP inspector. All testing was completed in accordance with applicable state, and federal regulations regarding LBP inspections. No previous LBP sampling information was provided by the Client or the property owner.

Painted surfaces were tested by collecting paint chips of various painted surfaces throughout the interior and exterior of the building. LBP is defined by EPA as containing greater than 0.5% lead in painted materials.

During the inspection, CCC collected ten (10) paint chip samples from unique locations throughout the interior and exterior of the on-site structure.

The paint chip samples were collected into appropriate containers, labeled, and delivered to International Asbestos Testing Laboratory (IATL) in Mt. Laurel, New Jersey. This laboratory is accredited by the NIST program, and is recognized under the NVLAP. The laboratory analyzed the samples using flame atomic absorption spectrometry (FAAS) via National Institute for Occupational Safety and Health (NIOSH) Method 7082. A copy of the completed lead-based paint survey is included as **Appendix C**.

2.2.1 LBP Analytical Summary

Based on the Lead Paint Sample Analysis Summary Report, submitted by IATL, the following painted surface tested positive for lead-based paint:

- Exterior brown paint on entry door trim: The material was located on the front door frame entrance and totaled approximately 50 linear feet (lf).
- Interior orange paint on walk-in cooler door: The material was located on the walk-in cool door and totaled approximately 50 sf.
- Interior yellow paint on display area back shelves: The material was located on shelves located in the display area and totaled approximately 100 sf.
- Exterior red paint on front door: The material was located on the front door entrance and totaled approximately 20 sf.

According to CCC's Lead Paint Survey report, lead paint sample analysis is reported in parts per million (ppm). However, according to Chapter 7 of the EPA Housing and Urban Development (HUD) Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing, LBP is defined as containing greater than 0.5% lead in painted materials and is reported in percent (%) by weight. These results can be found in IATL's Lead Paint Sample Analysis Summary.

Overall, the identified LBPs are in poor condition with cracking and peeling paint. Photos of the identified LBPs are included in CCC's report included as **Appendix C**. The laboratory report and summarized results are also included in **Appendix C**.

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3 Recommendations

Based on the above-referenced reports, Cardno recommends the following:

- The identified ACM associated with the on-site building appeared to be relatively intact and overall in good condition with no significant deterioration or damage. The identified ACM has a low probability of disturbance during ordinary use. Prior to any renovation or demolition that may disturb the ACM, it should be removed or abated by a qualified asbestos abatement contractor.
- Lead-based paint identified by CCC appeared to be peeling and in poor condition. There are OSHA regulations and requirements which should be taken into consideration during demolition activities that may disturb any concentration of lead containing building materials or paint. As the property is anticipated to be demolished, due to the presence of lead on various painted surfaces, toxicity characteristic leachate procedure (TCLP) analysis for lead should be conducted on any construction debris to verify that the demolition debris may be managed as a non-hazardous waste.
- Given the deteriorated and dilapidated condition of the building and amount of identified ACM and LBP, there is a significant public health and safety issue associated with on-site building. Cardno recommends the building should not be entered unless appropriate personal protection equipment (PPE) is worn.

Please note: This is a cursory summary of findings. The full reports must be read in their entirety for a comprehensive understanding of the stated conclusions/recommendations

“The remainder of this page intentionally left blank.”

4 References

Phase I Environmental Site Assessment - Don's Market - Cardno, dated March 23, 2020

Pre-Demolition Asbestos Survey of Don's Market - Coleman Creek Consulting, Inc., received April 23, 2020

Lead Paint Survey of Don's Market - Coleman Creek Consulting, Inc., received April 23, 2020

"The remainder of this page intentionally left blank."

5 Qualifications/Signatures of Environmental Professional(s)

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in 40 CFR Part 312.10. I certify that this report has been prepared in general accordance with 40 CFR Part 312 and ASTM E 1527-13 Standard Practice for Environmental Site Assessments.

I further certify that, in my professional judgment, this report meets the requirements of 40 CFR Part 312, Standards and Practices for All Appropriate Inquiries. I have the specific qualifications based on training, experience and registration to perform and/or assist in the assessment of a property of the nature, history and setting of the Subject Property.

for Cardno



W. Ashton Smithwick
Geologist I

Date: May 5, 2020

I declare the attached reports meet or exceed Cardno's standards for editorial content, technical accuracy, and quality assurance verification. All data and calculations presented herein have been checked for accuracy and the basis for all conclusions and recommendations have been described.

for Cardno



Keith Ziobron, PE
Project Manager

Date: May 5, 2020

Appendix A

Excerpts of approved Site Specific Quality Assurance Project Plan

A1. TITLE AND APPROVAL PAGE

SITE-SPECIFIC QUALITY ASSURANCE PROJECT PLAN
For Preliminary Environmental Site Activities (Pre-demolition Asbestos and Lead
Paint Survey)

Don's Market Site, Lakeview, Oregon

Conducted under
the South Central Oregon Economic Development District Coalition (SCOEDD)
Brownfield Assessment Grant Program
EPA Brownfield Cooperative Agreement Recipient (CAR) BF-01J53301-0

*This document and work performed under this Site-Specific QAPP, is prepared in accordance with the
EPA Region 10 Brownfields Program and the Generic QAPP document for the
South Central Oregon Economic Development District Coalition approved on 03.14.2019*

Prepared for:



South Central Oregon Economic Development District
803 Main Street, Suite 202
Klamath Falls, OR 97601

Prepared by:



6611 Bay Circle, Suite 220
Norcross, Georgia 30071
678.443.1197

Submittal Date:
February 28, 2020

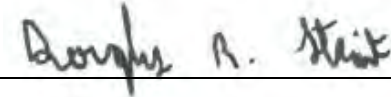
Signature Approval:

Cardno Project Manager:



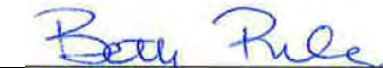
Signature
Keith Ziobron, P.E. 2.28.2020
Printed Name / Date

Cardno QA/QC Reviewer:




Signature
Doug Strait, P.E. 2.28.2020
Printed Name / Date

SCOEDD Project Administrator



Signature
Betty Riley 2.28.2020
Printed Name / Date

EPA Project Officer/ EPA Designated Approving Official
(DAO):



Signature
Madison Sanders-Curry 3/24/2020
Printed Name / Date

US EPA Quality Assurance Officer:



Signature
Raymond Wu 3/24/2020
Printed Name / Date

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- Appendix B: Site Boundary Map
- Appendix C: Signed Eligibility Verification
- Appendix D: EmLab Laboratory Asbestos QAM Excerpt (asbestos analysis laboratory)
IAT Laboratories Lead QAM Excerpt (lead analysis laboratory)

A3. DISTRIBUTION LIST

The following individuals will/may receive copies of the approved Site Specific Quality Assurance Project Plan (SSQAPP) and any subsequent revisions:

- Madison Sanders-Curry, Brownfields Project Officer and Coordinator & Designated Approving Official, United States Environmental Protection Agency (EPA) Region 10 – 1200 Sixth Avenue, Suite 155, ECL-13, Seattle, WA 98101; Phone: (206) 553-1889 ; Email::sanders-curry.madison@epa.gov
- Raymond Wu, Quality Assurance Manager, United States Environmental Protection Agency (EPA) Region 10 - 1200 Sixth Avenue, Suite 155, ECL-13, Seattle, WA 98101; Phone: (206) 553-1413; Email: Wu.Raymond@epa.gov
- Betty Riley, Executive Director and Brownfields Project Administrator, South Central Oregon Economic Development District (SCOEDD), 803 Main Street, Klamath Falls, OR 97601; Phone: (541) 884-5593; Email: Betty@scoedd.org
- Keith Ziobron, P.E., Project Manager, Cardno, 6611 Bay Circle, Suite 220, Norcross, GA 30071; Phone: (678) 787-4511; Email: Keith.Ziobron@cardno.com
- Douglas Strait, P.E., Deputy Project Manager / Quality Control Officer, Cardno, 6611 Bay Circle, Suite 220, Norcross, GA 30071; Phone: (678) 433-1194; Email: Douglas.Strait@cardno.com
- Ashton Smithwick, Field Effort Leader, Cardno, 6611 Bay Circle, Suite 220, Norcross, GA 30071; Phone: (229) 224-0164; Email: William.Smithwick@cardno.com
- David Fawcett, Field Team Leader, Coleman Creek Consulting, 810 Leonard Street, Ashland, OR 97520; Phone: (541) 535-7108; Email: Fawbro@ccountry.net
- Angela Hetherington, Lab Manager, EMLab P&K, LLC. (EMLab), South San Francisco, CA 30340; Phone: (623) 298-1014; Email: Ahetherington@emlabpk.com
- Frank Ehrenfeld, Laboratory Director, International Asbestos Testing Laboratory (IATL), 9000 Commerce Parkway, Suite B, Mount Laurel, New Jersey; Phone: (877) 428-4285; Email: Frankehrenfeld@iatl.com

A4. PROJECT/TASK ORGANIZATION

Cardno, Inc. (Cardno) was selected by the South Central Oregon Economic Development Division (SCOEDD) as their Qualified Environmental Professional (QEP) and is responsible for conducting the Phase I/II Site Assessments and other associated activities as well as assisting the City in programmatic support services and grant management activities under their EPA Cooperative Agreement Recipient Number BF 01J53301-0. An organizational chart, summarizing agencies and individuals involved with this project is included as **Appendix A**. The following are the individuals participating in the project and their specific roles and responsibilities.

Madison Sanders-Curry, EPA Region 10 Brownfields Project Manager – The EPA Project Officer and Coordinator / Designated Approving Official has the responsibility to oversee and monitor the grant and will provide technical reviews of the Generic QAPPs, Site Specific QAPP Addendum and Addenda that are generated. This includes the approval of the Generic QAPP and Site Specific QAPP Addendum and Addenda QAPPs, respectively and any revisions.

Raymond Wu, Quality Assurance Manager, US EPA - This individual will provide quality assurance, and if need be, provide technical reviews of the Site Specific QAPP addendum and addenda that are generated. This includes the approval of the Generic QAPP and Site Specific QAPP Addendum and Addenda QAPPs, respectively and any revisions.

Betty Riley, Executive Director and Brownfields Project Administrator, SCOEDD – This individual will be the primary decision maker and is responsible for providing approvals for all programmatic reporting (including quarterly, annual and closure documents) and ensure the process described in the work plan is followed and the terms and conditions of the grant are met. Duties may also include ensuring the project schedule and budget are implemented according to plan. In addition, Ms. Riley (or her assign) will coordinate site eligibility determinations and provide project updates to the EPA Project Officer and ODEQ Brownfields Coordinator (as required) on a regular basis.

Keith Ziobron, Project Manager, Cardno – The Project Manager and/or his assign (for site-specific assessments) will be the primary decision maker for each environmental assessment project and primary user of the data to determine whether or not further action is required at a project site. He will also coordinate the activities for each environmental assessment project and her specific responsibilities include the following:

1. Approving the QAPP and subsequent revisions in terms of Brownfields specific requirements;
2. Overall responsibility of the investigation;
3. Coordinating field and laboratory activities;
4. Conducting project activities in accordance with the QAPP and work order;
5. Validating field data;
6. Reporting to the GAEPD Project Manager and the City's Brownfields Program Director regarding the project status per the work order and preparing interim and final reports to GAEPD and the City;
7. Making final project decisions with the authority to commit the necessary resources to conduct the project;
8. Instituting corrective actions for problems encountered in the field sampling activities;
9. Communicating corrective actions to the Field Team Leader to remedy problems encountered in the field and coordinating with the lab director to correct any corresponding problems encountered in the chemical analyses; and
10. Compiling documentation detailing any corrective actions and providing them to the GAEPD Project Manager.

Douglas Strait, PE, Deputy Project Manager and Quality Assurance/Quality Control (QA/QC) Building Systems Officer, Cardno – The Deputy Project Manager will support the Project Manager in all tasks referenced above and in making environmental assessment determinations. The QC/QA Officer will remain independent of the activities included in data generation and will provide QA/QC technical assistance to the Project Manager. He will also be responsible for final internal review and approval of the QAPP documents, internal QA audits, and QC implementation of the Brownfields projects. The QC/QA Officer will report audit results to the Project Manager and review all implemented corrective actions.

Ashton Smithwick, Cardno Field Effort Leader – Mr. Smithwick will perform the following duties:

1. Coordinate with subcontractor personnel
2. Ensure subcontractor personnel conduct the field activities per the approved QAPP documents and supervise the field sampling team.
3. Upon receipt from the Project Manager, make available the approved QAPP documents and subsequent revisions to the members of the field sampling team.
4. Report problems to the Project Manager.
5. Implement corrective actions in the field as directed by the Project Manager. Corrective actions will be documented in the field logs and provided to the Project Manager.

Dave Fawcett, Field Team Leader – This individual will perform the actual fieldwork per the QAPP documents and at the direction of the Field Effort Leader.

Laboratory Director, Angela Hetherington, EMLab (asbestos analysis) –The Laboratory Director is responsible for the following:

1. Coordinating the analysis of the samples and the laboratory validation of the data;
2. Coordinating the receipt of the samples at the laboratory, selecting the analytical team, ensuring internal laboratory audits are conducted per the Laboratory's Quality Assurance Manual (QAM), and distributing the applicable sections of the QAPP and subsequent revisions to members of the analytical team; and
3. Instituting corrective actions for problems encountered in the chemical analyses and reporting laboratory problems affecting the project data to the Cardno Project Manager and Cardno QA/QC Reviewer. Corrective actions for chemical analyses will be detailed in a QA report that will be provided via electronic and conventional mail.

Laboratory Director, Frank Ehrenfeld, IATL (lead analysis) –The Laboratory Director is responsible for the following:

1. Coordinating the analysis of the samples and the laboratory validation of the data;
2. Coordinating the receipt of the samples at the laboratory, selecting the analytical team, ensuring internal laboratory audits are conducted per the Laboratory's Quality Assurance Manual (QAM), and distributing the applicable sections of the QAPP and subsequent revisions to members of the analytical team; and
3. Instituting corrective actions for problems encountered in the chemical analyses and reporting laboratory problems affecting the project data to the Cardno Project Manager and Cardno QA/QC

Reviewer. Corrective actions for chemical analyses will be detailed in a QA report that will be provided via electronic and conventional mail.

A5. PROBLEM DEFINITION/BACKGROUND

The subject site (herein referred to as the Subject Site or Subject Property) is approximately 0.09 acres in size and is bounded to the south, east and west by residential developments, and to the North by Highway 395 and undeveloped land.

The Subject Property includes one, approximately 1,692 square-foot, vacant structure, formerly utilized as a local market and automotive fueling station. The Subject Site location is depicted on the Site Location Map included as **Appendix B**.

Don's Market was constructed pre-1971 and contains several suspect asbestos containing materials (ACM). Based on conditions noted during a visit to the site in November 19, suspect asbestos containing materials include wall board and joint compound, mastic, caulking, roof membrane, etc. Prior to the disturbance of any presumed-asbestos containing materials, it is recommended that they be tested and abated for any asbestos. Further, based on the age of the building, it is likely that lead based paint residues may be present.

An ASTM E1527-13 compliant Phase I ESA is currently underway. The current owners of the site intend to donate the property to the Town of Lakeview. The Town intends to repurpose the site as greenspace with a welcome kiosk or gazebo. As a result, the existing building will be leveled to facilitate this use.

There are two (2) underground storage tanks (USTs), as confirmed via a ground penetrating Radar (GPR) survey conducted by GeoPotential, Inc of Brightwood, Oregon, in February 2007. These tanks were associated with historic automotive fueling practices. Furthermore, these tanks will be removed as part of the Phase II ESA. This work will be completed under a separate QAPP addendum later in the year. However, due to fact that the tanks are adjacent to the building, it is possible that the building will have to be demolished to facilitate the safe removal of the tanks.

This being said, EPA has granted approval to move forward with a pre-demolition asbestos and lead survey, so that appropriate legal means may be employed to protect workers and manage and dispose of building debris.

To characterize the building materials, Cardno recommended that further assessment by a qualified inspector be completed to address the above asbestos and lead-based paint environmental considerations.

The purpose of this investigation is to identify and quantify the existence and/or extent of said asbestos and lead-painted surfaces associated with or adhering to interior and exterior building materials of the Subject Property.

The investigation proposed was deemed eligible and will be funded with the FY-2018 SCOEDD EPA Brownfields Assessment Grant, as documented in the signed site eligibility form included in **Appendix C**. Furthermore, the work prepared herein will determine the scope of abatement required to remediate any identified hazardous materials within the referenced building, prior to renovation.

A6. PROJECT/TASK DESCRIPTION AND SCHEDULE

Based on observed site conditions, the following section details recommended actions to be conducted as part of this additional investigation:

Limited Asbestos and Lead-Based Paint Survey

The primary purpose of this investigation includes an assessment of suspect building materials that potentially contain asbestos and painted surfaces/substrates that potentially contain lead and/or lead-based paint *(It is assumed that the fieldwork will be performed utilizing the appropriate respiratory protection when handling potential asbestos containing materials in accordance with OSHA regulations).*

Asbestos sampling will be conducted by a trained and accredited inspector in accordance with AHERA requirements, as well as federal, state, and local regulations. Lead-based paint sampling will be conducted by trained inspectors, certified by the EPA and the state of Oregon. This assessment will determine if abatement actions and special waste management and disposal measures must take place in order to facilitate the removal of the site structure.

Based on the size, former use, and general condition of the building, Cardno proposes that a total of thirty (30) to sixty (60) building material samples be collected and analyzed for asbestos containing materials and a total of ten (10) to twenty-five (25) paint chip samples to be analyzed for the presence of lead.

The exact locations of these samples will be determined by an accredited inspector during the field effort within the building's interior and exterior. Roofing materials will be collected and destructive sampling techniques will be utilized.

The validity of the data will be confirmed via the adherence to AHERA asbestos sampling and analytical protocols. In addition one duplicate sample will be submitted for every 5 lead chip samples.

Project Schedule

It is anticipated that fieldwork will be completed during the course of one (1) to two (2) business days. Collected samples will be delivered to the laboratory for analysis within the established holding time as defined in the Generic QAPP. Laboratory results will be provided to the Cardno Project Manager within ten (10) business days of sample receipt.

The final laboratory sample reports will summarize project results, and will include the QC data. The raw data package will be maintained and be available to the Project Manager and the QA/QC Officer. The laboratory report will be submitted to SCOEDD, ODEQ, and the EPA Project Officer as part of the final report.

As previously noted, the owners of Don's Market site are interested in donating the property to the Town of Lakeview. If conditions warrant, the Town of Lakeview may elect to apply for a EPA Cleanup grant, or apply for Business Oregon funding to complete any remedial activities required to address environmental concerns associated with the site.

A proposed implementation schedule is provided below. This schedule assumes a one week schedule to carry out the field investigation activities.

Table 1 – Project Schedule

Task	Approximate Start Date	Approximate Completion Date
Site Eligibility Authorized	January 20, 2020	January 21, 2020
Site Specific QAPP	February 15, 2020	March 1, 2020
Site HASP	February 24, 2020	March 10, 2020
Field Work Activities	Mid-/March 2020	Mid-/March 2020
Laboratory Analysis	Late March/Early April 2020	Late March/Early April 2020
Report	Early April 2020	Early April 2020

A7. QUALITY OBJECTIVES AND CRITERIA FOR MEASUREMENT

As outlined in the Generic QAPP, the following seven steps are used to determine the criteria for project specific data quality objectives (DQO) when performing assessment projects and funded under this EPA Brownfields Community Wide Cooperative Agreement (CAR) No. BF-01J53301-0.

1) State the Problem:

Based upon the age of construction, as well as observations made during Cardno’s site reconnaissance, the potential for asbestos and lead-based paints within the interior and exterior building materials exists.

2) Identify the Decision:

Perform a pre-demolition lead-based paint and asbestos-containing materials survey in anticipation of redevelopment

3) Identify Inputs to the Decision:

Historical records, visual inspections, and documents were evaluated to develop the sampling plans. To the degree possible, method detection limits and associated data quality objectives will comply with State and Federal Lead and Asbestos regulations.

4) Define the Study Area Boundaries:

The site consists of one parcel, located at 859 N. G Street, in Lakeview, OR. The Phase II ESA will be completed within the on-site building’s footprint. A Site Overview Map is included in **Appendix B**.

5) Develop a Decision Rule:

Cardno was authorized to proceed with additional investigation activities by the City and EPA on January 21, 2020. The Site Eligibility Verification form is included in **Appendix C**. Future decisions will be based on a comparison of sampling results to the standards outlined in Section 3 above.

6) Specify Limits on Data Gaps/Errors:

No specific limits and/or data gaps/errors are noted within this SSQAPP. Limits on data gaps and errors associated with analytical sampling are specified in the Generic QAPP.

7) Optimize Design:

The optimized design consists of the sampling plan as discussed in Section B1 below.

A8. SPECIAL TRAINING REQUIREMENTS/CERTIFICATIONS

Special training requirements and certifications associated with this project are detailed on page 9 of the Generic QAPP. Lead based paint survey activities will be conducted by an EPA-certified and Oregon licensed inspector. Asbestos-containing materials assessment will be conducted by an EPA-certified and AHERA trained professional.

A9. DOCUMENTATION AND RECORDS

The documentation and records maintenance requirements for this project are outlined on pages 10 through 13 of the Generic QAP; including project records, sample collection and submission, chain of custody, investigative-derived waste, and laboratory results apply to this project.

Records retention for this project will be as outlined within the Generic QAPP for this Grant.

B1. SAMPLING DESIGN PROCESS

Asbestos and Lead-Based Paint

Collection and analysis of asbestos and lead-based paint are intended to initially identify the presence or absence of hazardous materials such that informed decisions can be made regarding the building demolition plan. All testing locations will be determined during the limited asbestos and lead-based paint investigation and will be mapped and documented in the final report. Any identified or presumed asbestos containing materials and/or lead-based paint will be identified by type and condition, photographed, and locations mapped in the final report.

Cardno estimates that thirty (30) to sixty (60) building material samples be collected and analyzed for asbestos by polarized light microscopy (PLM) via EPA Method 600/R-93-116. A minimum of ten (10) paint chip surfaces are anticipated to be collected and analyzed for total lead content via the National Institute for Occupational Safety and Health (NIOSH) Method 7082.

B2. SAMPLING AND ANALYTICAL METHODS REQUIREMENTS

Sampling and analytical method requirements for the sampling activities proposed for this project are outlined in detail within the Generic QAPP.

No investigative derived waste (IDW) are anticipated during this course of this assessment.

B3. SAMPLE HANDLING AND CUSTODY REQUIREMENTS

Sample handling and custody procedures applicable to this project are outlined on pages 17 through 18 of the Generic QAPP.

B4. ANALYTICAL METHODS AND REQUIREMENTS

Analytical methods and requirements applicable to this project are outlined on pages 19 and 20 of the corresponding Generic QAPP, and the relevant asbestos and lead laboratory SOPs are included in Appendix H of the Generic QAPP. Samples collected under the scope of this project will be submitted for laboratory analysis of constituents as specified in Section B1. A laboratory turnaround time of seven (7) business days is anticipated.

B5. FIELD QUALITY CONTROL REQUIREMENTS

Field quality control guidelines for sampling procedures are provided on pages 19 through 20 of the Generic QAPP and will be followed for this project. Specifically, one duplicate sample will be obtained for every 10 samples collected in the field for each respectful survey (asbestos & lead-based paint). All quality control samples will be submitted for laboratory analysis of the project constituent suite. Chain-of-Custody procedures will be as outlined in Appendix F of the Generic QAPP.

B6. LABORATORY QUALITY CONTROL REQUIREMENTS

The selected laboratories (EmLab/IATL), will follow quality control procedures at all times for asbestos and lead-based paint samples, respectfully, to be analyzed. The selected labs will perform analytical tests on the following materials:

- Asbestos analysis: EMLab P&K, LLC
- Lead analysis: International Asbestos Testing Laboratory (IATL)

Laboratory quality documentation is *provided* in the Generic QAPP. Relevant asbestos and lead laboratory quality assurance manual (QAM) documentations are included as **Appendix D**.

B7. FIELD EQUIPMENT AND CORRECTIVE ACTION

Field equipment calibration and inspection procedures are outlined in the Generic QAPP. Reusable sampling equipment including chisels, gloves, hammers, and other miscellaneous sampling equipment will be decontaminated and/or disposed of between uses.

B8. LAB EQUIPMENT AND CORRECTIVE ACTION

Relevant asbestos and lead analytical instrumentation testing, inspection, and maintenance procedures are addressed in the Generic QAPP and more explicitly in the laboratory quality documentation provided as appendices in the Generic QAPP.

B9. ANALYTICAL SENSITIVITY AND PROJECT CRITERIA

Analytical method sensitivity and project criteria for the analytical methods within the scope of this project is determined by the selected laboratories, EMLab and IATL. Their Quality Assurance Manuals (excerpts) specifying the analytical method sensitivity and project criteria for analytical methods is included in the Generic QAPP. Relevant asbestos and lead laboratory quality assurance manual (QAM) documentations are included within **Appendix D**.

B10. DATA MANAGEMENT AND DOCUMENTS

Data and document management procedures provided in the Generic QAPP are applicable to this project.

B11. INVESTIGATION DERIVED WASTE

Any investigation derived waste generated during any assessment activities (disposable personal protection equipment, etc.) will be characterized and properly disposed of at designated facilities.

C1. ASSESSMENT AND RESPONSE ACTIONS

Assessment and response action procedures provided in the Generic QAPP are applicable to this project.

C2. PROJECT REPORTS

Execution of the planned assessment activities will not commence until this Site-Specific QAPP is approved by the EPA. In addition to the development of this Site-Specific QAPP Addendum, a Phase II ESA report will be created based on the findings of the planned assessment. The Generic QAPP provides a report outline and submittal process which will be followed for this project.

D1. FIELD DATA EVALUATION

Field data evaluation procedures provided in the Generic QAPP are applicable to this project.

D2. LABORATORY DATA EVALUATION

Laboratory data evaluation procedures provided in the Generic QAPP are applicable to this project.

D3. DATA USABILITY AND PROJECT VERIFICATION

Data usability and project verification procedures provided in the Generic QAPP are applicable to this project.

REFERENCES

- 1) U.S. Environmental Protection Agency. 2006. Guidance on Systematic Planning Using the Data Quality Objectives Process. EPA QA/G-4 240/B-06/001. February.
- 2) U.S. Environmental Protection Agency. 2002. Guidance for Quality Assurance Project Plans. EPA QA/G-5. EPA 240/R-02/009. December.
- 3) U.S. Environmental Protection Agency. 2006. EPA Requirements for Quality Assurance Project Plans. EPA QA/R-5. EPA 240/B/01/003. Reissued May.
- 4) U.S. Environmental Protection Agency. 2006. Data Quality Assessment: Statistical Methods for Practitioners. EPA QA/G-9S. EPA 240-B-06-003. February.
- 5) U.S. Environmental Protection Agency Region 4, Science and Ecosystem Support Division (SESD), Field Branches Quality System and Technical Procedures, <http://www.epa.gov/region4/sesd/fbqstp/index.html>.
- 6) US Environmental Protection Agency Region 4, Brownfields Quality Assurance Project Plans Interim Instructions, Generic QAPP and Site Specific QAPP Addendum for Brownfield Site Assessments and/or Cleanup, Revision No. 3, July 2010.

LIST OF ABBREVIATIONS

ABCA	Analysis of Brownfields Cleanup Alternatives
AOC	Area of Concern
ASTM	American Society for Testing and Materials
Bgs	Below Ground Surface
BS	Blank Spike
BSD	Blank Spike Duplicate
BSA	Brownfields Site Assessment
BSRA	Brownfields Site Rehabilitation Agreement
BTEX	Benzene, Toluene, Ethylbenzene, and Total Xylenes
C	Celsius
CD	Compact Disc
COC	Contaminants of Concern
CTL	Cleanup Target Levels
DAO	(EPA) Designated Approving Official
DEFT	Decision Error Feasibility Trials
DO	Dissolved Oxygen
DPT	Direct Push Technology
DQO	Data Quality Objective
DRO	Diesel Range Organics
e.g.	exempli gratia - for example
ESA	Environmental Site Assessment
ECD	Electron Capture Device
FID	Flame Ionization Detector
GC	Gas Chromatography
GC-MS	Gas Chromatography – Mass Spectrometry

GIS	Geographic Information Systems
GPS	Global Positioning Satellite
GRO	Gasoline Range Organics
HAZWOPER	Hazardous Waste Operations and Emergency Response
HPLC	High Performance Liquid Chromatography
ICP	Inductively Coupled Plasma
ID	Identification
i.e.	<i>id est</i> - that is
ISHB	Inactive Hazardous Sites Branch
IUPAC	International Union of Pure and Applied Chemistry
Kg	kilogram
L	Liter
LCS	Laboratory Control Sample
LIMS	Laboratory Information Management System
MCL	Maximum Contaminant Level
MDLs	Method Detection Limits
MIP	Membrane Interface Probe
mL	Milliliter
MNA	Monitored Natural Attenuation
MTBE	Methyl tert-butyl ether
MW	Monitor Well
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
NC	North Carolina
NCBP	North Carolina Brownfields Program
NELAC	National Environmental Laboratory Accreditation Conference
NCDEQ	North Carolina Department of Environmental Quality
ORP	Oxidation Reduction Potential
OSHA	Occupational Safety and Health Administration
OVA	Organic Vapor Analyzer
PAHs	Polynuclear Aromatic Hydrocarbons
PCB	Polychlorinated biphenyl
PE	Performance Evaluation
P.E.	Professional Engineer
P.G.	Professional Geologist
PID	Photo-ionization Detector
PQLs	Practical Quantification Limits
QA	Quality Assurance
QAM	Quality Assurance Manual
QAP	Quality Assurance Plan
QAPP	Quality Assurance Project Plan
QC	Quality Control
RAP	Remedial Action Plan

RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RL	Reporting Limit
RPD	Relative Percent Difference
ROAO	Regional Quality Assurance Designated Approving Official
RSC	Regional Screening Levels
SESD	Science and Ecosystem Support Division
SPLP	Synthetic Precipitate Leaching Procedures
SRG	Soil Remediation Goals
SS	Soil Sample
SW	Solid Waste
SVOC	Semi-Volatile Organic Compounds
SOP	Standard Operating Procedure
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbons
TQM	Total Quality Management
USC	United Soil Classification
U.S. EPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank
µg	microgram
VOC	Volatile Organic Compounds

Appendix A

USEPA Region 10 Brownfields SSQAPP Review Checklist

USEPA REGION 10 BROWNFIELDS QAPP REVIEW CHECKLIST

QAPP Title: SSQAPP for Don's Market, FY 2018 SCOEDD, OR BF Assessment Program
 Cooperative Agreement Recipient: South Central Oregon Economic Development District (SCOEDD)
 Grant Number: BF – 01J53301
 QAPP Preparer: Thomas Causey
 QAPP Date: February 22, 2020
 Transmittal Date: February 22, 2020
 DAO Reviewer:

*This is **not** an exhaustive list of requirements and is not intended as guidance for developing a QAPP. Refer to the Preparation of Quality Assurance Project Plans for EPA Brownfields Projects in the Southeast for comprehensive requirements.

**For DAOs, mark each element in the right-hand column with one of the following abbreviations:
P = Present & Acceptable; **NP** = Not Present; **I** = Incomplete; **NA** = Not Applicable

ELEMENT	Page Number & Paragraph	EPA Use
A1. Title and Approval Sheet	Pg. 1 – 2	
Title (Including CAR's name and revision #)	Pg. 1	
Grant Number	Pg. 1	
Name of organization that prepared the QAPP	Pg. 1	
Dated signature of approving officials: printed names, titles, organizations, date, and signatures	Pg. 1	
Other signatures, as needed	Pg. 1	
A2. Table of Contents	Pg. 2	
A3. Distribution List	Pg. 3	
A4. Project/Task Organization	Pg. 3 – 6	
Key individuals, technical disciplines, and responsibilities	Pg. 3 – 5	
Organizational chart/table depicting lines of authority and reporting responsibilities	Pg. 3 – 6	
A5. Problem Definition/Background	Pg. 6; Par. 6 - 8	
Clearly state the problem or decision to be resolved	Pg. 6; Par. 6 - 8	
Provide historical and background information	Pg. 6 – 7	
A6. Project/Task Description	Pg. 7 – 8	
List measurements to be made	Pg. 7 – 8	
Cite applicable technical, regulatory, or program-specific quality standards, criteria, and/or objectives	Pg. 7; Par. 2 – 7	
Note special personnel or equipment requirements	N/A	
Provide work schedule	Pg. 8; Table	
Note required project and QA records/reports	Pg. 8	
A7. Quality Objectives and Criteria for Measurement Data	Pg. 8 – 9	
State project objectives and limits, both qualitatively and quantitatively	Pg. 8; Bullet 1 & 2	
State and characterize measurement quality objectives to applicable action levels or criteria	Pg. 8; Bullet 3	

ELEMENT	Page Number & Paragraph	EPA Use
A8. Special Training /Certification	Pg. 9	
State trainings, date of trainings, expirations, and where applicable records are maintained	Pg. 9; Par. 2	
A9. Documentation and Records	Pg. 9	
List information and records to be included for this project	Pg. 9; par. 3	
State requested lab turnaround time	Pg. 9; par. 3	
Give retention time and location for records and reports	Pg. 9; par. 3	
B1. Sampling Process Design and Site Figures	Pg. 9; par. 4 – 5	
Type and number of samples required	Pg. 9; par. 4 – 5	
Sampling design and rationale	Pg. 9; par. 4 – 5	
Sampling locations and frequency	Pg. 9; par. 4 – 5	
Sample matrices	Pg. 9; par. 4 – 5	
Classification of each measurement parameter as either critical or needed for information only	Pg. 9; par. 4 – 5	
Describe/list SOPs used to characterize and dispose of IDW	Pg. 9; par. 6 – 7	
B2. Sampling and Analytical Procedures	Pg. 9; Par. 8 – 9	
Describe the sampling methods and procedures or cite the specific SOPs to be used to guide the sample collection	Pg. 9; Par. 8 – 9	
Describe how problems (lost samples, broken equipment, etc.) will be resolved and documented	N/A	
If SOPs are referenced, include a table listing all field sampling SOPs that will be used. Include the title of SOP, date, revision number and organization that wrote the SOP. Describe any modifications to the SOPs that are necessary for your project.	N/A	
B3. Sample Handling and Custody	Pg. 10; Par. 1	
Sample handling requirements	Pg. 10; Par. 1	
Chain-of-custody procedures	Pg. 10; Par. 1	
B4. Analytical Methods and Requirements	Pg. 10; Par. 2	
Identify the extraction, digestion, analytical methodologies to be followed	Pg. 10; Par. 2	
Specify the turnaround time for hardcopy/electronic laboratory data deliverables	Pg. 10; Par. 2	
Provide the laboratory SOPs as appropriate	App. C of Site Specific QAPP	
Identify the individual(s) responsible for overseeing the analysis and implementing corrective actions	As outlined in the Test America QAM/SOP	
B5. Field Quality Control Requirements	Pg. 10; Par. 3	
Design the field QC program that will be routinely performed, and provide a corresponding field sampling QC table in the QAPP	Pg. 10; Par. 3	
Include field duplicate samples for each matrix and parameter, trip blanks for VOC samples, temperature blanks, and QA/QC samples as necessary	Pg. 10; Par. 3	

ELEMENT	Page Number & Paragraph	EPA Use
B6. Laboratory Quality Control Requirements	Pg. 10; Par. 4 – 6	
Determine the laboratory QC data to be routinely included with the laboratory's data package, and provide a corresponding laboratory analytical QC table.	Pg. 10; Par. 4 – 6	
B7. Field Equipment Calibration and Corrective Action	Pg. 10; Par. 7	
If contained in SOPs, reference that appendix in this section of the QAPP. Otherwise, provide a field equipment calibration table for the types of field equipment routinely used	Pg. 10; Par. 7	
Discuss the corrective actions taken in the field when the control limits are not met	Pg. 10; Par. 7	
B8. Laboratory Equipment Calibration and Corrective Action	Pg. 11; Par. 1	
If contained in laboratory SOPs, reference that appendix in this section. Otherwise, provide a laboratory equipment calibration table for each analytical method	Appendix C of Site Specific QAPP	
Note responsible individuals	Pg. 11; Par. 1	
B9. Analytical Sensitivity and Project Criteria	Pg. 11; Par. 2	
Provide an analytical method sensitivity and project criteria table for the analytical methods that will be routinely performed	Pg. 11; Par. 2	
If the laboratory provides only one analytical method limit, note in the table whether it is the MDL or the QL/RL that is being reported	Pg. 11; Par. 2	
B10. Data Management and Documentation	Pg. 11; Par. 3	
Describe standard record-keeping, data storage, and retrieval requirements for digital and hard copies of field data, laboratory data, and manipulated data; Include any checklists used for data management	Pg. 11; Par. 3	
Describe the control mechanism for detecting and correcting errors, and ensuring accuracy	Pg. 11; Par. 3	
Include the name, title, and organization of the person(s) responsible for these activities	Pg. 11; Par. 3	
B11. Investigation Derived Waste	Pg. 11; Par. 4	
Describe methodology of disposing investigation derived waste	Pg. 11; Par. 4	
C1. Assessments and Corrective Actions	Pg. 11; Par. 5	
Assessments/oversight that will be performed and frequency	Pg. 11; Par. 5	
The person(s) responsible for performing the assessments/oversight, and where the results will be documented	Pg. 11; Par. 5	
Identify who will receive the assessment/oversight report; who will be responsible for dealing with corrective actions; and follow up on assessments/oversight	Pg. 11; Par. 5	
C2. Project Reports	Pg. 11; Par. 6	
Identify the types of reports that will be routinely generated	Pg. 11; Par. 6	
Provide a detailed description of the contents of project final reports to establish expectations between report preparer and client	Pg. 11; Par. 6	
D1. Field Data Evaluation	Pg. 11; Par. 7	

ELEMENT	Page Number & Paragraph	EPA Use
Describe the final data evaluation process that will be routinely performed on the field data	Pg. 11; Par. 7	
Indicate how the results of the evaluation will be documented, and what will be presented the final report(s). Indicate the position(s) of the person(s) who will be performing the field data evaluation	Pg. 11; Par. 7	
D2. Laboratory Data Evaluation	Pg. 11; Par. 8	
Describe the final data evaluation process that will be routinely performed on the laboratory data	Pg. 11; Par. 8	
Perform a completeness check of the laboratory data package to ensure it is compliant with the requirements in the QAPP	Pg. 11; Par. 8	
Document the presence or absence of any problems with the data, and note any relevant sample data that may be impacted.	Pg. 11; Par. 8	
Evaluate the field QC sample results including data qualifiers for sample results	Pg. 11; Par. 8	
D3. Evaluating Data in Terms of User Needs	Pg. 12; Par. 1	
Describe the overall project evaluation process that will be routinely performed to determine the usability of the data, update the conceptual site model, and determine if the objectives of the project have been met	Pg. 12; Par. 1	
Tabulate the field sample data together with the state/federal standards for presentation in the final report	Pg. 12; Par. 1	
Using the summary tables and graphical presentations, evaluate the usability of the individual field sample results at the parameter level. Document any limitations	Pg. 12; Par. 1	
Document observations, trends, anomalies, or data gaps that may exist. Evaluate how the results have impacted the conceptual site model, and if the objectives of the project have been met. Draw conclusions and recommendations from all the information	Pg. 12; Par. 1	

Final QAPP disposition:

Approved, no comments

*Approved with comments, resubmittal **not** required*

Conditionally approved, comments must be addressed, resubmittal required

Not approved, comments must be addressed, resubmittal required

References

EPA Requirements for Quality Assurance Project Plans, EPA QA/R-5, March 2001, EPA/240/B-01/003,


Guidance for Quality Assurance Project Plans, EPA QA/G-5, December 2002, EPA/240/R-02/009

(Available from EPA's Website: <http://www.epa.gov/quality>)

Appendix B

Site Boundary Map

LEGEND

 Approximate Site Boundary (For reference purposes only, not a surveyed boundary)



Source: Google Earth



"This is not a map of survey."



Phase I ESA
Don's Market
859 North G Street
Lake County, Oregon
SCOEDD
Cardno Project Number: 0002422000

Site Boundary Map

Appendix C

Signed Eligibility Verification



Oregon

Kate Brown, Governor

Department of Environmental Quality
Northwest Region
700 NE Multnomah Street, Suite 600
Portland, OR 97232
(503) 229-5263
FAX (503) 229-6945
TTY 711

January 21, 2020

Madison Sanders-Curry
Environmental Cleanup Office
US Environmental Protection Agency, Region 10
1200 Sixth Ave, Suite 155 (Mail Code 15-H04)
Seattle, Washington 98101

Re: Petroleum Eligibility Determination – SCOEDD’s Brownfield Coalition
Don’s Market
859 N “G” St., Lakeview, OR 97630
(Map ID 39S20E10CA07600)
UST Facility No. 1600

Dear Ms. Sanders-Curry:

The Oregon Department of Environmental Quality (DEQ) has reviewed information associated with the Don’s Market Property located at 859 N “G” St. in Lakeview, Lake County, Oregon. The review was performed to determine if the site is eligible to receive funding from South Central Oregon Economic Development District’s Brownfield Coalition. Based on the review of available information, DEQ has determined that site meets eligibility criteria and is eligible to receive funding.

In order to determine the site’s eligibility, DEQ used the criteria provided by EPA in a document entitled *Information on Sites Eligible for Brownfields Funding under CERCLA § 104(k)* and referenced in EPA’s “FY20 Guidelines for Brownfields Assessment Grants” EPA-OSWER-OBLR-19-05 as a guide.

Section 1.3.2 *Contamination by Petroleum or Petroleum Product* states...

“For a petroleum-contaminated site(s) that otherwise meets the definition of a brownfield site to be eligible for funding, EPA or the state must determine:

1. There is no viable responsible party.
2. The site will not be assessed, investigated or cleaned up by a person that is potentially liable for cleaning up the site.
3. The site must not be subject to a corrective action order under the Resource Conservation and Recovery Act (RCRA) § 9003(h).”

“A Site for Which There is No Viable Responsible Party”

Section 1.3.2 states “...A petroleum-contaminated site may be determined to have no responsible party if the site was last acquired (regardless of whether the site is owned by the applicant/recipient) through tax foreclosure, abandonment, or equivalent government

proceedings, and that site meets the criteria in (1) below. Any petroleum-contaminated site not acquired by a method will be determined to have a responsible party if the site fails to meet the criteria in both (1) and (2) below.

1. No responsible party has been identified for the site through:
 - a. an unresolved judgment rendered in a court of law or an administrative order that would require any party (including the applicant/recipient) to conduct the activities (including assessment, investigation, or cleanup) contemplated by the grant proposal/submitted as part of a site eligibility determination;
 - b. an unresolved enforcement action by federal or state authorities that would require any party (including the applicant/recipient) to conduct the activities (including assessment, investigation, or cleanup) contemplated by the grant proposal/submitted as part of a site eligibility determination; or
 - c. an unresolved citizen suit, contribution action or other third party claim brought against the current or immediate past owner for the site that would, if successful, require the activities (including assessment, investigation, or cleanup) proposed in the grant proposal to be conducted/submitted as part of a site eligibility determination.

2. The current and immediate past owner did not dispense or dispose of, or own the subject property during the dispensing or disposal of, any contamination at the site, did not exacerbate the contamination at the site, and took reasonable steps with regard to the contamination at the site.”

Response: 1. DEQ has not identified any unresolved judgments rendered in a court of law or an administrative order that would require a party to assess, investigate, or cleanup the site. DEQ does not have any unresolved enforcement actions against any party to assess, investigate, or cleanup the site. DEQ is unaware of any unresolved citizen suit, contribution action or other third party claim brought against the current or former owners that would require a party to assess, investigate, or cleanup the site.

2. Daniel Bach has owned the property since September 16, 2009. The immediate past owners were four individuals James Schmit, Dennis Christensen, John Bogardus, Donald Liddycoat. Mr. Bach has not dispensed or dispose of, or own the subject property during the dispensing or disposal of, any contamination at the site. It is likely the immediate past owners dispensed fuel or owned the property during dispensing. Two of the individuals moved from the area and their locations are unknown, one individual recently past away, and one individual remains in the community. EPA will generally deem an individual responsible party to be not viable. All three remaining individuals are in their 70s or 80s and unlikely to have the financial resources to address the site.

“Cleaned Up by a Person Not Potentially Liable”

Section 1.3.2 states “Brownfields funding may be awarded for the assessment and cleanup of petroleum-contaminated sites provided they meet the requests below.

- 1) The applicant/recipient has not dispensed or disposed of or owned the property during the dispensing or disposal of petroleum or petroleum product at the site; and

Don's Market Property

January 21, 2020

Page 3

- 2) The applicant/recipient did not exacerbate the contamination at the site and took reasonable steps with regard to the contamination at the site."

Response: SCOEDD (the applicant) has not dispensed or disposed of or owned the property during the dispensing or disposal of petroleum or petroleum product at the site. SCOEDD has not exacerbated the contamination at the site.

"Is not subject to any order issued under Resource Conservation and Recovery Act (RCRA) §9003(h)"

Response: The Don's Market Property is not subject to a corrective action order under the Solid Waste Disposal Act of RCRA.

Based on the above discussion, DEQ has determined the Don's Market Property is eligible for petroleum funding from the SCOEDD's Brownfield Coalition. This determination should be updated after the Phase I ESA has been completed and more information about the site history has been compiled.

If you have any questions or need clarification of any of the issues addressed in this letter, please do not hesitate to me at (503) 229-6748.

Sincerely,

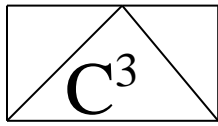
Katie Daugherty

Katie Daugherty, R.G.
Project Manager
Cleanup Program

ecc: Betty Riley, SCOEDD, betty@scoedd.org
Keith Ziobron, Cardno, keith.ziobron@cardno.com

Appendix B

Pre-Demolition Abestos Survey – CCC – Don’s Market



PRE-DEMOLITION ASBESTOS SURVEY
OF
DON'S MARKET
859 NORTH G STREET, LAKEVIEW, OREGON
FOR
CARDNO

INTRODUCTION

Coleman Creek Consulting, Inc. (CCC) was retained by Cardno to perform a pre-demolition asbestos survey of the Don's Market building at the above address. The purpose of the survey was to determine the presence of asbestos containing materials, prior to demolition activities.

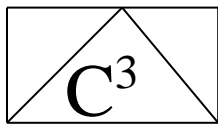
ASBESTOS SURVEY

David W. Fawcett of CCC visited the Don's Market building on April 9, 2020, and reviewed the building with Daphene, property owner. It was noted that contents within the building obscured large areas of floor, and the back office area access was blocked with file cabinets collapsed into the floor, and the back stair door blocked with debris. Roofing materials were accessed from an area collapsed into the back office. The balance of the roof was not accessed. Mr. Fawcett collected representative bulk samples from the interior and exterior of the Don's Market building, meeting AHERA sampling guidelines. See Site Sample Record Sheets (pages 3-5) for a description of the samples and locations. See Asbestos Sample Location Diagram in Appendix A for a visual review of sample locations. Bulk sample location photographs are attached in Appendix B.

ASBESTOS ANALYSIS

All samples collected were sent overnight delivery to EMLab P&K. Samples were analyzed for asbestos using Polarized Light Microscopy (PLM) techniques (EPA Method 600/R-93/116). The following samples were reported with asbestos.

1. Tan vinyl floor (Samples 20-045A.1-4) in main store area and bathroom. 20% Chrysotile asbestos. Approximately 1,300 sf.
2. Wall and ceiling materials (Samples 20-045A.11-14) in bathroom. <1% and 2% Chrysotile asbestos. Approximately 230 sf.
3. Roof sealant and built-up roofing (Samples 20-045A.19, 20, 23, and 24) on roof. <1% and 2% Chrysotile asbestos. Approximately 1,800 sf.
4. White duct and furnace insulation (Sample 20-045A.41, 42, 44) on furnace and metal ductwork in basement. 40% Chrysotile asbestos. Approximately 60 sf.



Coleman Creek Consulting, Inc.

The other thirty-three (33) samples collected were reported none detected for asbestos. See the laboratory analytical results in Appendix C. A visual representation of the areas of asbestos materials within the building are included in Appendix D.

DISCUSSION OF <1% ASBESTOS MATERIALS

The Department of Environmental Quality DEQ exempts materials reported with <1% asbestos from asbestos abatement regulations. Oregon OSHA has certain training and engineering control requirements for disturbing and handling <1% asbestos materials. The transfer station or landfill receiving the <1% asbestos materials should be contacted to inquire if additional packaging or disposal requirements must be met.

ASBESTOS ROOFING MATERIAL AND SEALANT DISCUSSION

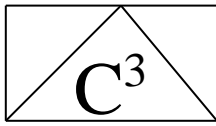
The asbestos roof material and sealant that contains an asphaltic component and is considered non-friable is exempt from most DEQ asbestos removal and disposal requirements, as long as certain engineering controls and work practices are observed. OSHA requires asbestos roofing awareness training for those workers impacting asbestos roofing materials.

RECOMMENDATIONS

Asbestos abatement specifications should be prepared to define engineering controls and scope of asbestos abatement of asbestos materials described above. Asbestos flooring, wall and ceiling materials, and basement duct insulation should all be removed by a licensed asbestos abatement contractor prior to demolition activities. Certain asbestos materials including roofing may remain during demolition activities if determined to be non-friable asphalt-based. An asbestos trained competent person should be present during demolition activities to help determine if additional suspect asbestos materials are present in inaccessible areas.

If materials not sampled in this survey are uncovered during renovation activities, a sample(s) should be collected and analyzed for asbestos content.

David W. Fawcett
Director of Asbestos Services



Coleman Creek Consulting, Inc.

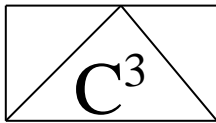
SITE SAMPLE RECORD SHEET

BUILDING: Don's Market
ADDRESS: 859 North G Street
Lakeview, Oregon

DATE: 04-09-20
INSPECTOR: David W. Fawcett

SAMPLE #	DESCRIPTION	LOCATION	FRIABLE
20-045A.1	Tan Vinyl Floor	Front Entry Under Carpet	Yes
20-045A.2	Tan Vinyl Floor	Middle Display Area	Yes
20-045A.3	Pattern Vinyl Floor	Bath at Toilet	Yes
20-045A.4	Pattern Vinyl Floor	Bath at Toilet	Yes
20-045A.5	Drywall	Front Entry Wall at Window	No
20-045A.6	Drywall	Front Corner Wall	No
20-045A.7	Peg Board	Wall at Pepsi Cooler	No
20-045A.8	Peg Board	Wall at Walk-in Cooler	No
20-045A.9	Drywall/Mud	Entry Wall to Office	Yes*
20-045A.10	Drywall/Mud	Office Above Desk	Yes*
20-045A.11	Drywall/Mud	Bath Wall at Sink	Yes*
20-045A.12	Drywall/Texture	Bath Wall Opposite Sink	Yes*
20-045A.13	Drywall/Texture	Bath Wall Above Toilet	Yes*
20-045A.14	Drywall/Texture	Bath Wall Above Toilet	Yes*
20-045A.15	Wallboard	Back Wall at Shelves	Yes
20-045A.16	Wallboard	Wall Behind Counter	Yes
20-045A.17	Ceiling Panel	On Floor at Soda Machine	Yes
20-045A.18	Ceiling Panel	On Floor Display Area	Yes
20-045A.19	Silver Roof Coating	Office, Roof Cave-in	No
20-045A.20	Silver Roof Coating	Office, Roof Cave-in	No

Comments: Friability of sample does not indicate presence or absence of asbestos. *Indicates damaged, friable. Concrete floor noted in walk-in cooler.



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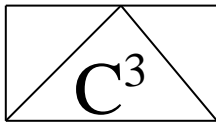
SITE SAMPLE RECORD SHEET

BUILDING: Don's Market
ADDRESS: 859 North G Street
Lakeview, Oregon

DATE: 04-09-20
INSPECTOR: David W. Fawcett

SAMPLE #	DESCRIPTION	LOCATION	FRIABLE
20-045A.21	Brown Roll Roof/Sealant	Office, Roof Cave-in	No
20-045A.22	Brown Roll Roof/Sealant	Office, Roof Cave-in	No
20-045A.23	Black Built-up Roofing	Office, Roof Cave-in	No
20-045A.24	Black Built-up Roofing	Office, Roof Cave-in	No
20-045A.25	Tar Paper	Wall Above Walk-in Cooler Door	No
20-045A.26	Tar Paper		No
20-045A.27	Red Tab Roof	Porch, North Side, Top Layer	No
20-045A.28	Red Tab Roof	Porch, South Side, Top Layer	No
20-045A.29	Brown Tab Roof	Porch, North Side, 2nd Layer	No
20-045A.30	Brown Tab Roof	Porch, South Side, 2nd Layer	No
20-045A.31	Tar Paper	Porch, North Side, 3 rd Layer	No
20-045A.32	Tar Paper	Porch, South Side, 3 rd Layer	No
20-045A.33	Tan Brick	NE Corner Exterior Wall	No
20-045A.34	Tan Brick	SE Corner Exterior Wall	No
20-045A.35	Mortar	NE Corner Exterior Wall	No
20-045A.36	Mortar	SE Corner Exterior Wall	No
20-045A.37	Red Brick	Wall Foundation at Chimney	No
20-045A.38	Red Brick	Wall Foundation at Chimney	No
20-045A.39	Mortar	Wall Foundation at Chimney	Yes
20-045A.40	Mortar	Wall Foundation at Chimney	Yes

Comments: Friability of sample does not indicate presence or absence of asbestos. Sawdust and fiberglass batt insulation noted above walk-in cooler, no sample collected.



Coleman Creek Consulting, Inc.

SITE SAMPLE RECORD SHEET

BUILDING: Don's Market
ADDRESS: 859 North G Street
Lakeview, Oregon

DATE: 04-09-20
INSPECTOR: David W. Fawcett

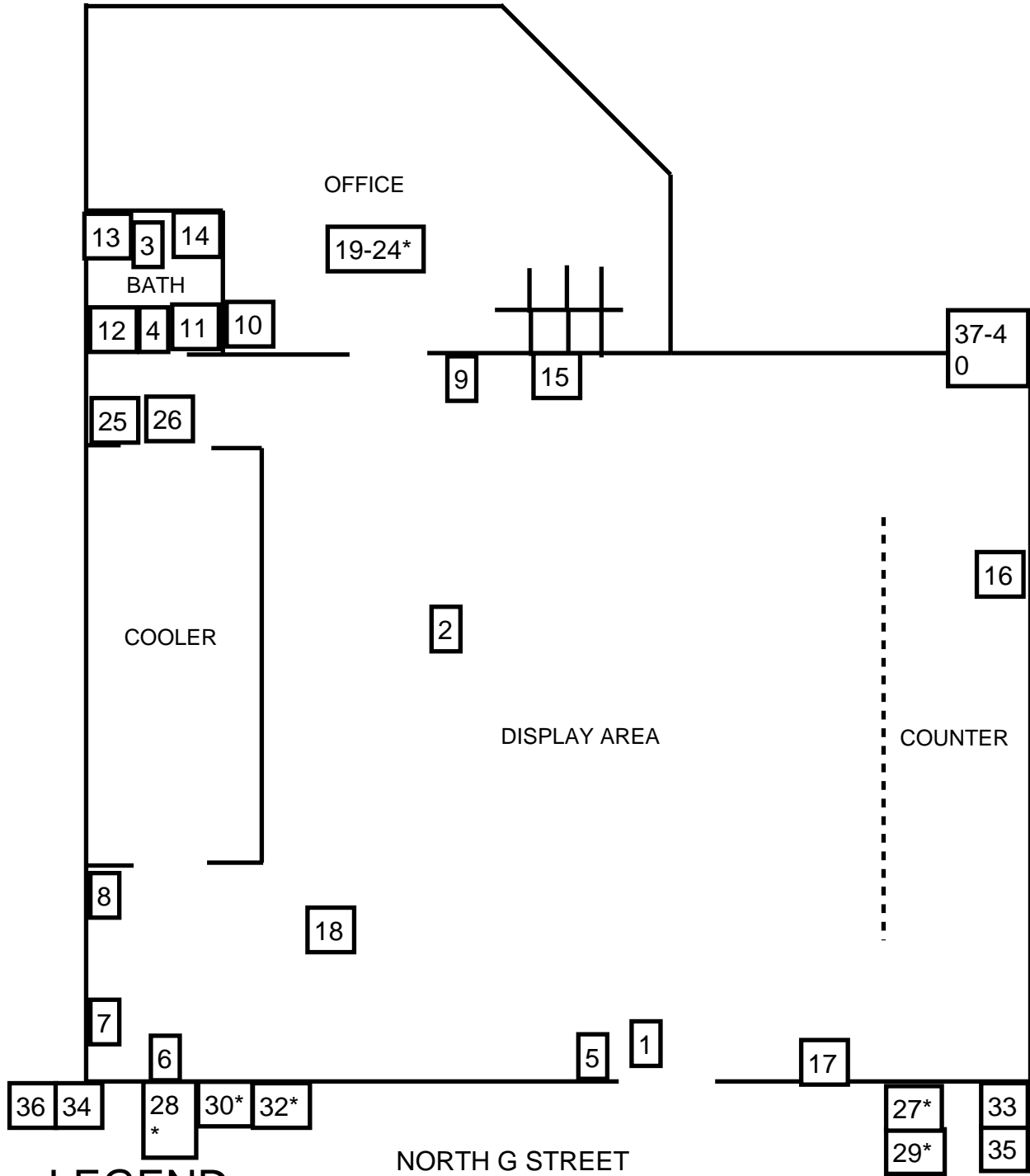
SAMPLE #	DESCRIPTION	LOCATION	FRIABLE
20-045A.41	White Duct Insulation	Basement Furnace Duct	Yes
20-045A.42	White Duct Insulation	Basement Furnace Duct	Yes
20-045A.43	Pipe Insulation	Basement, Loose on Metal	Yes
20-045A.44	Furnace Insulation Cover	Basement Furnace	Yes
20-045A.45	Window Glaze	Basement, Window Stored on Floor	No
20-045A.46	Window Glaze	Basement, Window Stored on Floor	No
20-045A.47	Drywall/Mud	Back Stair Wall to Office	Yes*

Comments: Friability of sample does not indicate presence or absence of asbestos. *Indicates damaged, friable.

APPENDIX A

ASBESTOS SAMPLE LOCATION DIAGRAMS MAIN FLOOR AND BASEMENT

ASBESTOS SAMPLE LOCATION DIAGRAM
 Don's Market Main Floor - 859 North G Street,
 Lakeview

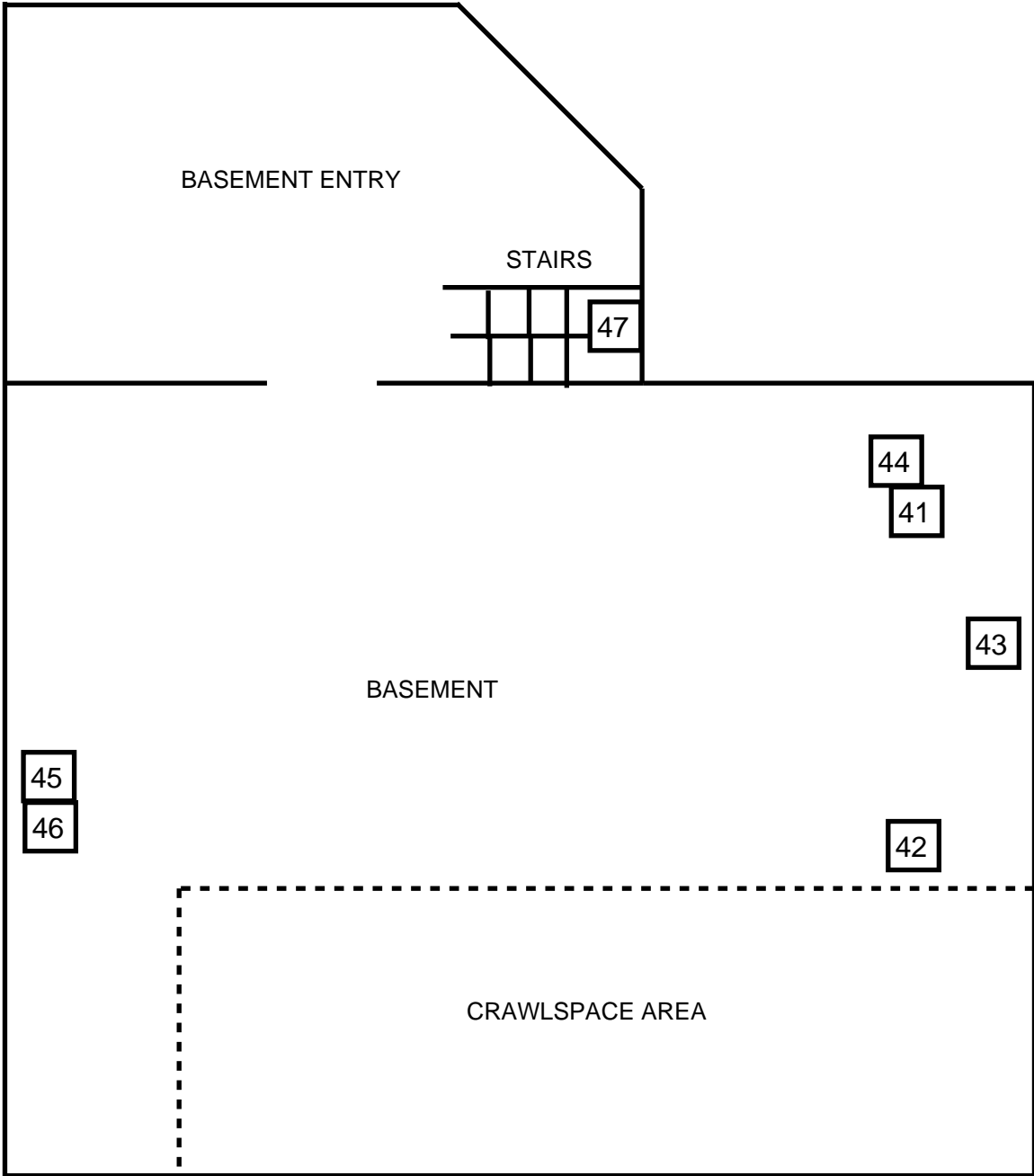


LEGEND:

6 = Asbestos Sample Location

19-24* = Roof Asbestos Sample Location

ASBESTOS SAMPLE LOCATION DIAGRAM
Don's Market Basement - 859 North G Street,
Lakeview



NORTH G STREET

LEGEND:

42 = Asbestos Sample Location

APPENDIX B

ASBESTOS SAMPLE LOCATION PHOTOGRAPHS



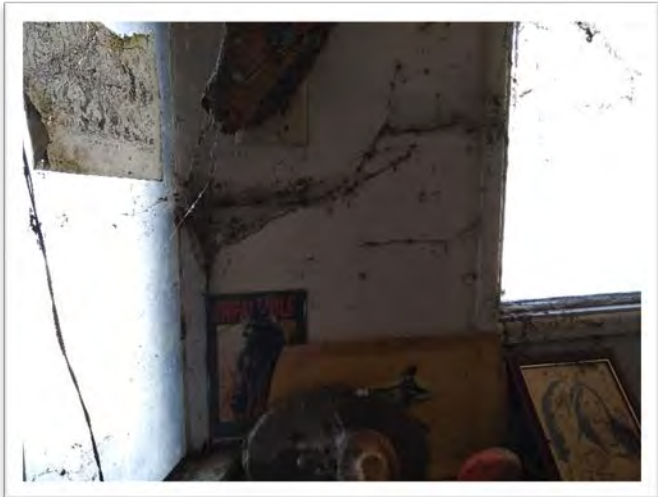
Sample 20-045A.1, Vinyl Floor, 20% Asbestos



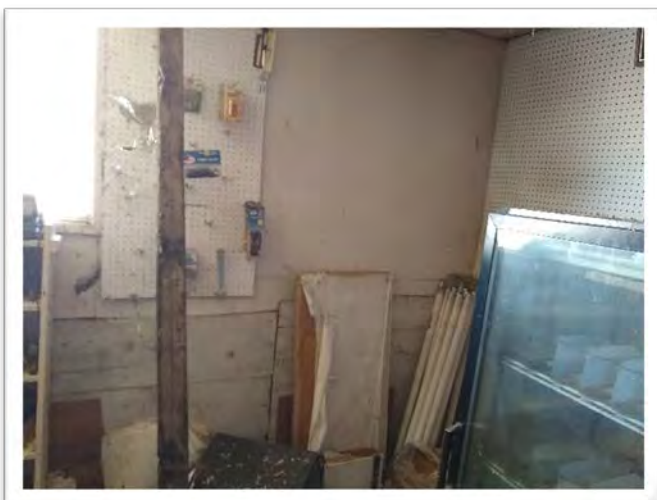
Sample 20-045A.2, Vinyl Floor, 20% Asbestos



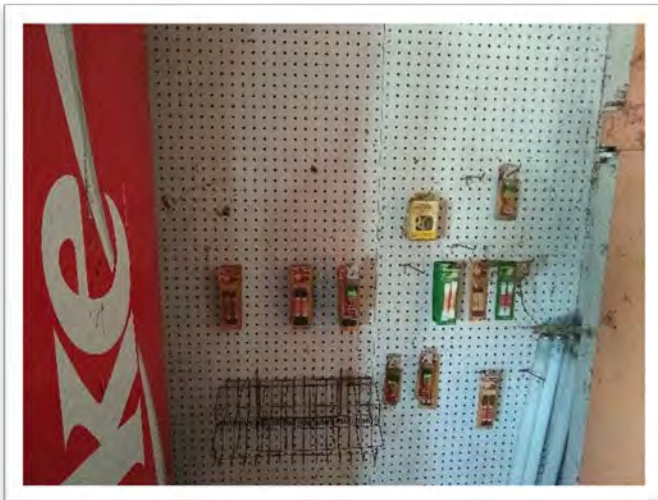
Sample 20-045A.3, Vinyl Floor, 20% Asbestos
Sample 20-045A.4, Vinyl Floor, 20% Asbestos



Sample 20-045A.5, Drywall, Non-ACM



Sample 20-045A.6, Drywall, Non-ACM
Sample 20-045A.7, Pegboard, Non-ACM



Sample 20-045A.8, Pegboard, Non-ACM



Sample 20-045A.9, Wall Materials, Non-ACM



Sample 20-045A.10, Wall Materials, Non-ACM



Sample 20-045A.11, Wall Materials, <1% Asbestos



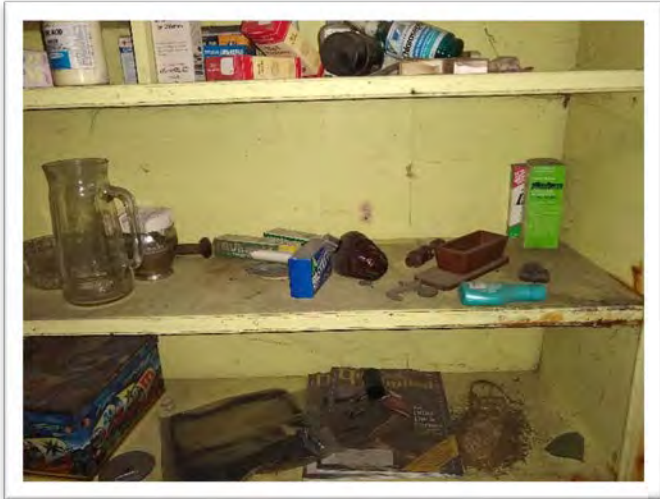
Sample 20-045A.12, Wall Materials, <1% Asbestos



Sample 20-045A.13, Wall Materials, <1% Asbestos
Sample 20-045A.14, Wall Materials, 2% Asbestos



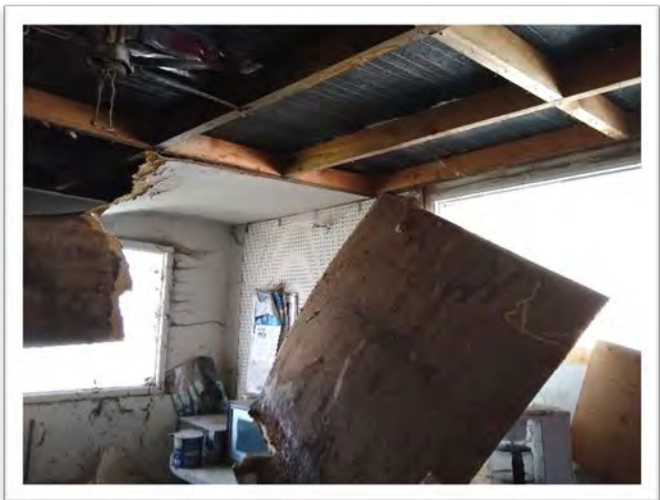
Sample 20-045A.15, Wallboard, Non-ACM



Sample 20-045A.16, Wallboard, Non-ACM



Sample 20-045A.17, Ceiling Panel, Non-ACM

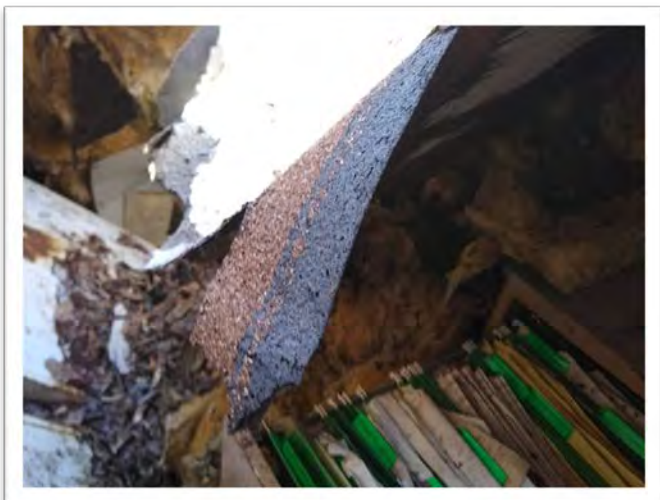


Sample 20-045A.18, Ceiling Panel, Non-ACM



Sample 20-045A.19, Roof Coating, 2% Asbestos

Sample 20-045A.20, Roof Coating, 2% Asbestos



Sample 20-045A.21, Brown Roof, Non-ACM

Sample 20-045A.22, Brown Roof, Non-ACM



Sample 20-045A.23, Built-up Roof, <1% Asbestos

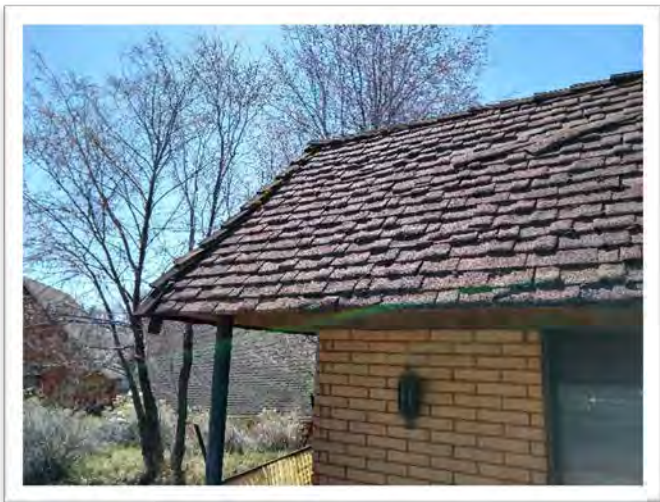
Sample 20-045A.24, Built-up Roof, <1% Asbestos



Sample 20-045A.25, Tar Paper, Non-ACM
Sample 20-045A.26, Tar Paper, Non-ACM



Samples 20-045A.27, 29, 31, Roof Layers, Non-ACM



Samples 20-045A.28, 30, 32, Roof Layers, Non-ACM



Sample 20-045A.33, Tan Brick, Non-ACM
Sample 20-045A.35, Mortar, Non-ACM



Sample 20-045A.34, Tan Brick, Non-ACM
Sample 20-045A.36, Mortar, Non-ACM



Samples 20-045A.37, 38, Red Brick, Non-ACM
Samples 20-045A.39, 40, Mortar, Non-ACM



Sample 20-045A.41, Duct Insulation, 40% Asbestos



Sample 20-045A.42, Duct Insulation, 40% Asbestos



Samples 20-045A.43, Pipe Insulation, Non-ACM



Sample 20-045A.44, Furnace Insulation, 40% Asbestos



Samples 20-045A.45, Window Glaze, Non-ACM
Samples 20-045A.46, Window Glaze, Non-ACM



Sample 20-045A.47, Drywall/Mud, Non-ACM

APPENDIX C

EMLAB P&K ASBESTOS PLM REPORT

Report for:

Mr. David Fawcett
Coleman Creek Consulting, Inc.
810 Leonard Street
Ashland, OR 97520

Regarding: Project: 20-045A; Don's Market
EML ID: 2389985

Approved by:



Approved Signatory
Danny Li

Dates of Analysis:
Asbestos PLM: 04-14-2020

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 200757-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Client: Coleman Creek Consulting, Inc.
C/O: Mr. David Fawcett
Re: 20-045A; Don's MarketDate of Sampling: 04-09-2020
Date of Receipt: 04-13-2020
Date of Report: 04-14-2020**ASBESTOS PLM REPORT****Total Samples Submitted:** 47**Total Samples Analyzed:** 47**Total Samples with Layer Asbestos Content > 1%:** 11**Location: 20-045A.1**

Lab ID-Version‡: 11397354-1

Sample Layers	Asbestos Content
Beige Sheet Flooring with Fibrous Backing	20% Chrysotile
Tan Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Good

Location: 20-045A.2

Lab ID-Version‡: 11397355-1

Sample Layers	Asbestos Content
Beige Sheet Flooring with Fibrous Backing	20% Chrysotile
Tan Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Good

Location: 20-045A.3

Lab ID-Version‡: 11397356-1

Sample Layers	Asbestos Content
Beige Sheet Flooring with Fibrous Backing	20% Chrysotile
Tan Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Good

Location: 20-045A.4

Lab ID-Version‡: 11397357-1

Sample Layers	Asbestos Content
Beige Sheet Flooring with Fibrous Backing	20% Chrysotile
Tan Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Good

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Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: Coleman Creek Consulting, Inc.
 C/O: Mr. David Fawcett
 Re: 20-045A; Don's Market

Date of Sampling: 04-09-2020
 Date of Receipt: 04-13-2020
 Date of Report: 04-14-2020

ASBESTOS PLM REPORT

Location: 20-045A.5

Lab ID-Version‡: 11397358-1

Sample Layers	Asbestos Content
White Drywall	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Good

Location: 20-045A.6

Lab ID-Version‡: 11397359-1

Sample Layers	Asbestos Content
White Drywall	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Good

Location: 20-045A.7

Lab ID-Version‡: 11397360-1

Sample Layers	Asbestos Content
Brown Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	90% Cellulose
Sample Composite Homogeneity:	Good

Location: 20-045A.8

Lab ID-Version‡: 11397361-1

Sample Layers	Asbestos Content
Brown Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	90% Cellulose
Sample Composite Homogeneity:	Good

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Client: Coleman Creek Consulting, Inc.
C/O: Mr. David Fawcett
Re: 20-045A; Don's MarketDate of Sampling: 04-09-2020
Date of Receipt: 04-13-2020
Date of Report: 04-14-2020**ASBESTOS PLM REPORT****Location: 20-045A.9**

Lab ID-Version‡: 11397362-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Good

Location: 20-045A.10

Lab ID-Version‡: 11397363-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Good

Location: 20-045A.11

Lab ID-Version‡: 11397364-1

Sample Layers	Asbestos Content
White Joint Compound	< 1% Chrysotile
White Drywall	ND
Composite Asbestos Fibrous Content:	< 1% Asbestos
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Good

Comments: Composite asbestos content provided is only for Drywall/Joint compound. Composite content provided for this analysis has been performed by following the NESHAP guidelines.

Location: 20-045A.12

Lab ID-Version‡: 11397365-1

Sample Layers	Asbestos Content
White Joint Compound	< 1% Chrysotile
White Drywall	ND
Composite Asbestos Fibrous Content:	< 1% Asbestos
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Good

Comments: Composite asbestos content provided is only for Drywall/Joint compound. Composite content provided for this analysis has been performed by following the NESHAP guidelines.

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Client: Coleman Creek Consulting, Inc.
 C/O: Mr. David Fawcett
 Re: 20-045A; Don's Market

Date of Sampling: 04-09-2020
 Date of Receipt: 04-13-2020
 Date of Report: 04-14-2020

ASBESTOS PLM REPORT

Location: 20-045A.13

Lab ID-Version‡: 11397366-1

Sample Layers	Asbestos Content
White Joint Compound	2% Chrysotile
White Drywall	ND
Composite Asbestos Fibrous Content:	< 1% Asbestos
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Good

Comments: Composite asbestos content provided is only for Drywall/Joint compound. Composite content provided for this analysis has been performed by following the NESHAP guidelines.

Location: 20-045A.14

Lab ID-Version‡: 11397367-1

Sample Layers	Asbestos Content
White Compound	2% Chrysotile
Sample Composite Homogeneity:	Good

Location: 20-045A.15

Lab ID-Version‡: 11397368-1

Sample Layers	Asbestos Content
Beige Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	90% Cellulose
Sample Composite Homogeneity:	Good

Location: 20-045A.16

Lab ID-Version‡: 11397369-1

Sample Layers	Asbestos Content
Beige Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	90% Cellulose
Sample Composite Homogeneity:	Good

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Client: Coleman Creek Consulting, Inc.
 C/O: Mr. David Fawcett
 Re: 20-045A; Don's Market

Date of Sampling: 04-09-2020
 Date of Receipt: 04-13-2020
 Date of Report: 04-14-2020

ASBESTOS PLM REPORT

Location: 20-045A.17

Lab ID-Version‡: 11397370-1

Sample Layers	Asbestos Content
Beige Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	90% Cellulose
Sample Composite Homogeneity:	Good

Location: 20-045A.18

Lab ID-Version‡: 11397371-1

Sample Layers	Asbestos Content
Beige Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	90% Cellulose
Sample Composite Homogeneity:	Good

Location: 20-045A.19

Lab ID-Version‡: 11397372-1

Sample Layers	Asbestos Content
Silver Paint	2% Chrysotile
Sample Composite Homogeneity:	Good

Location: 20-045A.20

Lab ID-Version‡: 11397373-1

Sample Layers	Asbestos Content
Silver Paint	2% Chrysotile
Sample Composite Homogeneity:	Good

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 Re: 20-045A; Don's Market

Date of Sampling: 04-09-2020
 Date of Receipt: 04-13-2020
 Date of Report: 04-14-2020

ASBESTOS PLM REPORT

Location: 20-045A.21

Lab ID-Version‡: 11397374-1

Sample Layers	Asbestos Content
Black Roofing Shingle With Gravel	ND
Composite Non-Asbestos Content:	30% Glass Fibers
Sample Composite Homogeneity:	Good

Location: 20-045A.22

Lab ID-Version‡: 11397375-1

Sample Layers	Asbestos Content
Black Roofing Shingle With Gravel	ND
Composite Non-Asbestos Content:	30% Glass Fibers
Sample Composite Homogeneity:	Good

Location: 20-045A.23

Lab ID-Version‡: 11397376-1

Sample Layers	Asbestos Content
Silver Paint	< 1% Chrysotile
Black Roofing Shingle With Gravel	ND
Composite Non-Asbestos Content:	30% Glass Fibers
Sample Composite Homogeneity:	Good

Location: 20-045A.24

Lab ID-Version‡: 11397377-1

Sample Layers	Asbestos Content
Silver Paint	< 1% Chrysotile
Black Roofing Shingle With Gravel	ND
Composite Non-Asbestos Content:	30% Glass Fibers
Sample Composite Homogeneity:	Good

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Client: Coleman Creek Consulting, Inc.
C/O: Mr. David Fawcett
Re: 20-045A; Don's MarketDate of Sampling: 04-09-2020
Date of Receipt: 04-13-2020
Date of Report: 04-14-2020**ASBESTOS PLM REPORT****Location: 20-045A.25**

Lab ID-Version‡: 11397378-1

Sample Layers	Asbestos Content
Black Felt	ND
Composite Non-Asbestos Content:	60% Cellulose
Sample Composite Homogeneity:	Good

Location: 20-045A.26

Lab ID-Version‡: 11397379-1

Sample Layers	Asbestos Content
Black Felt	ND
Composite Non-Asbestos Content:	60% Cellulose
Sample Composite Homogeneity:	Good

Location: 20-045A.27

Lab ID-Version‡: 11397380-1

Sample Layers	Asbestos Content
Black Roofing Shingle With Gravel	ND
Composite Non-Asbestos Content:	30% Cellulose
Sample Composite Homogeneity:	Good

Location: 20-045A.28

Lab ID-Version‡: 11397381-1

Sample Layers	Asbestos Content
Black Roofing Shingle With Gravel	ND
Composite Non-Asbestos Content:	30% Cellulose
Sample Composite Homogeneity:	Good

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Client: Coleman Creek Consulting, Inc.
C/O: Mr. David Fawcett
Re: 20-045A; Don's Market

Date of Sampling: 04-09-2020
Date of Receipt: 04-13-2020
Date of Report: 04-14-2020

ASBESTOS PLM REPORT

Location: 20-045A.29

Lab ID-Version‡: 11397382-1

Sample Layers	Asbestos Content
Black Roofing Shingle With Gravel	ND
Composite Non-Asbestos Content:	30% Cellulose
Sample Composite Homogeneity:	Good

Location: 20-045A.30

Lab ID-Version‡: 11397383-1

Sample Layers	Asbestos Content
Black Roofing Shingle With Gravel	ND
Composite Non-Asbestos Content:	30% Cellulose
Sample Composite Homogeneity:	Good

Location: 20-045A.31

Lab ID-Version‡: 11397384-1

Sample Layers	Asbestos Content
Black Felt	ND
Composite Non-Asbestos Content:	60% Cellulose
Sample Composite Homogeneity:	Good

Location: 20-045A.32

Lab ID-Version‡: 11397385-1

Sample Layers	Asbestos Content
Black Felt	ND
Composite Non-Asbestos Content:	60% Cellulose
Sample Composite Homogeneity:	Good

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C/O: Mr. David Fawcett
Re: 20-045A; Don's Market

Date of Sampling: 04-09-2020
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Date of Report: 04-14-2020

ASBESTOS PLM REPORT

Location: 20-045A.33

Lab ID-Version‡: 11397386-1

Sample Layers	Asbestos Content
Beige Cementitious Material	ND
Sample Composite Homogeneity: Good	

Location: 20-045A.34

Lab ID-Version‡: 11397387-1

Sample Layers	Asbestos Content
Beige Cementitious Material	ND
Sample Composite Homogeneity: Good	

Location: 20-045A.35

Lab ID-Version‡: 11397388-1

Sample Layers	Asbestos Content
Red Cementitious Material	ND
Sample Composite Homogeneity: Good	

Location: 20-045A.36

Lab ID-Version‡: 11397389-1

Sample Layers	Asbestos Content
Red Cementitious Material	ND
Sample Composite Homogeneity: Good	

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Client: Coleman Creek Consulting, Inc.
C/O: Mr. David Fawcett
Re: 20-045A; Don's Market

Date of Sampling: 04-09-2020
Date of Receipt: 04-13-2020
Date of Report: 04-14-2020

ASBESTOS PLM REPORT

Location: 20-045A.37

Lab ID-Version‡: 11397390-1

Sample Layers	Asbestos Content
Red Cementitious Material	ND
Sample Composite Homogeneity: Good	

Location: 20-045A.38

Lab ID-Version‡: 11397391-1

Sample Layers	Asbestos Content
Red Cementitious Material	ND
Sample Composite Homogeneity: Good	

Location: 20-045A.39

Lab ID-Version‡: 11397392-1

Sample Layers	Asbestos Content
Beige Cementitious Material	ND
Sample Composite Homogeneity: Good	

Location: 20-045A.40

Lab ID-Version‡: 11397393-1

Sample Layers	Asbestos Content
Beige Cementitious Material	ND
Sample Composite Homogeneity: Good	

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Client: Coleman Creek Consulting, Inc.
C/O: Mr. David Fawcett
Re: 20-045A; Don's Market

Date of Sampling: 04-09-2020
Date of Receipt: 04-13-2020
Date of Report: 04-14-2020

ASBESTOS PLM REPORT

Location: 20-045A.41

Lab ID-Version‡: 11397394-1

Sample Layers	Asbestos Content
White Fibrous Material	40% Chrysotile
Composite Non-Asbestos Content:	20% Cellulose
Sample Composite Homogeneity:	Good

Location: 20-045A.42

Lab ID-Version‡: 11397395-1

Sample Layers	Asbestos Content
White Fibrous Material	40% Chrysotile
Composite Non-Asbestos Content:	20% Cellulose
Sample Composite Homogeneity:	Good

Location: 20-045A.43

Lab ID-Version‡: 11397396-1

Sample Layers	Asbestos Content
White Compound	ND
Sample Composite Homogeneity:	Good

Location: 20-045A.44

Lab ID-Version‡: 11397397-1

Sample Layers	Asbestos Content
Tan Fibrous Material	40% Chrysotile
Composite Non-Asbestos Content:	20% Cellulose
Sample Composite Homogeneity:	Good

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Client: Coleman Creek Consulting, Inc.
 C/O: Mr. David Fawcett
 Re: 20-045A; Don's Market

Date of Sampling: 04-09-2020
 Date of Receipt: 04-13-2020
 Date of Report: 04-14-2020

ASBESTOS PLM REPORT

Location: 20-045A.45

Lab ID-Version‡: 11397398-1

Sample Layers	Asbestos Content
White Window Putty	ND
Sample Composite Homogeneity:	Good

Location: 20-045A.46

Lab ID-Version‡: 11397399-1

Sample Layers	Asbestos Content
White Window Putty	ND
Sample Composite Homogeneity:	Good

Location: 20-045A.47

Lab ID-Version‡: 11397400-1

Sample Layers	Asbestos Content
White Joint Compound	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Good

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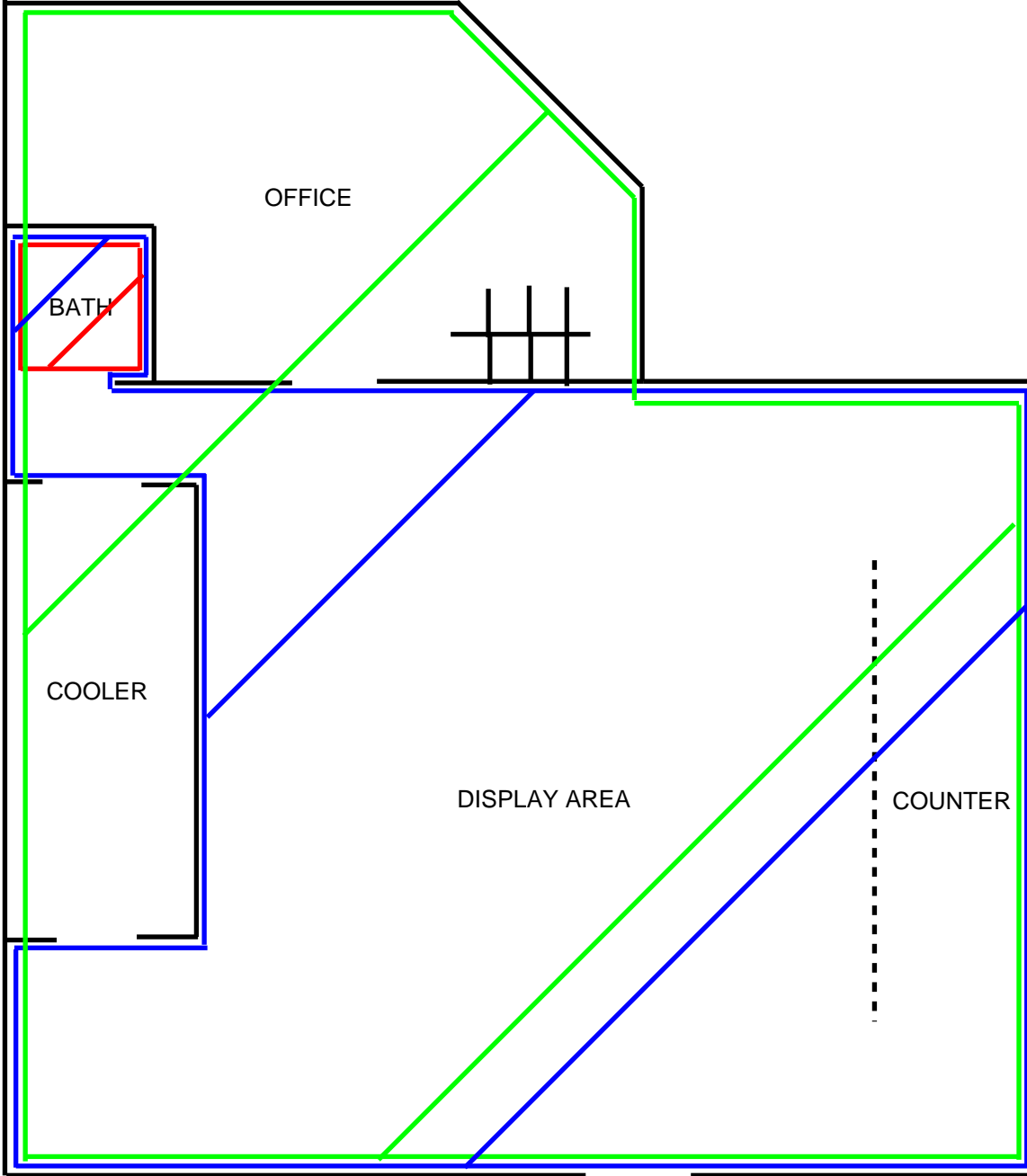
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APPENDIX D

ASBESTOS MATERIALS LOCATION DIAGRAMS MAIN FLOOR AND BASEMENT

ASBESTOS MATERIAL LOCATION DIAGRAM
Don's Market Main Floor - 859 North G Street,
Lakeview

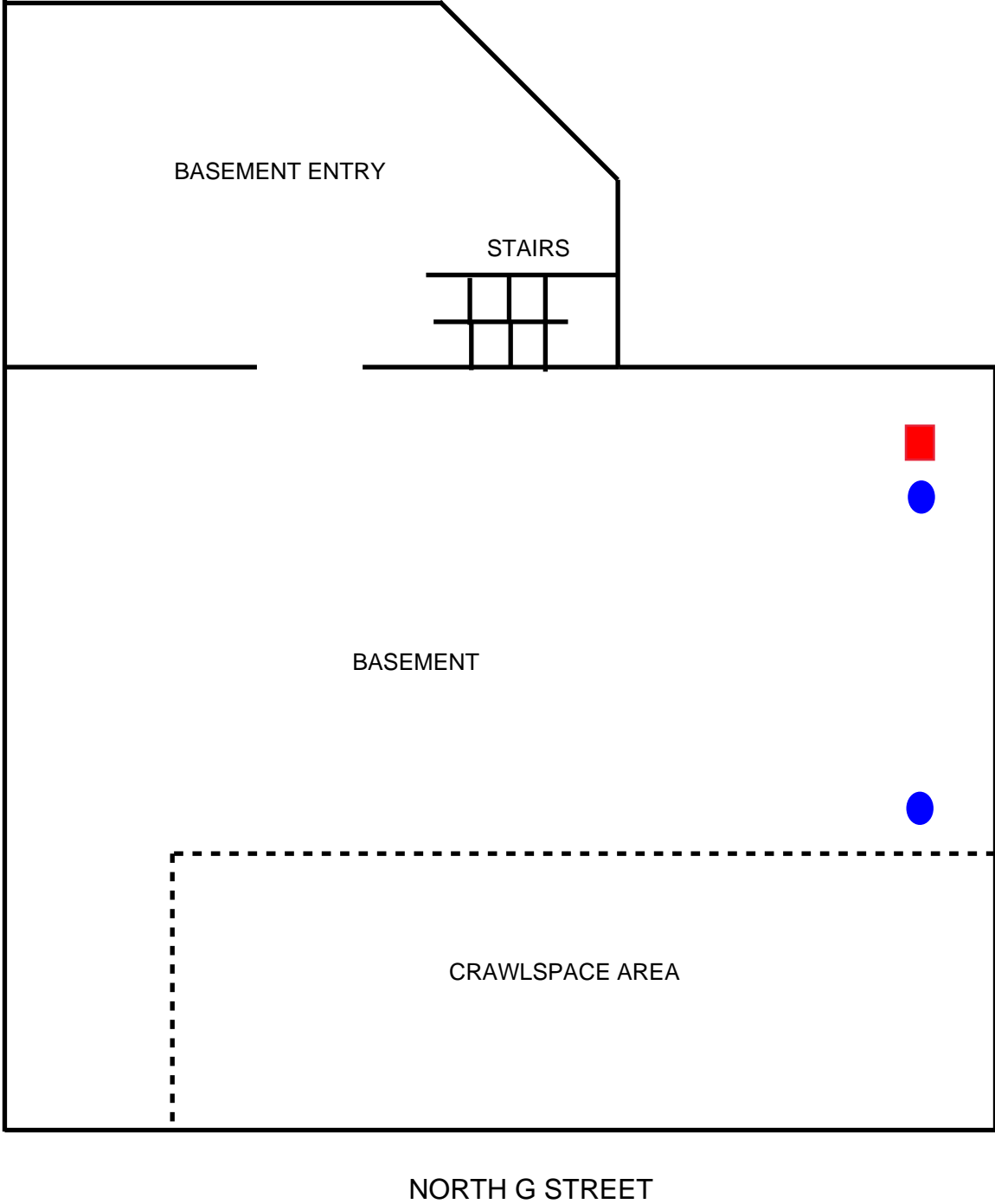


NORTH G STREET



LEGEND:

- = Asbestos Vinyl Floor Location
- = Asbestos Wall/Ceiling Location
- = Asbestos Roofing/Sealant Location

ASBESTOS MATERIAL LOCATION DIAGRAM
Don's Market Basement - 859 North G Street,
Lakeview



LEGEND:

-  = Asbestos Furnace Top Insulation
-  = Asbestos Duct Insulation

APPENDIX E

**AHERA INSPECTOR REFRESHER
ACCREDITATION**

THIS IS TO CERTIFY THAT

DAVID FAWCETT

HAS SUCCESSFULLY COMPLETED THE TRAINING COURSE

for

**ASBESTOS INSPECTOR / MANAGEMENT
PLANNER REFRESHER**

In accordance with TSCA Title II, Part 763, Subpart E, Appendix C of 40 CFR

Course Date: 02/14/2020

Course Location: Corvallis, OR

Certificate: IMR-20-1025A



AHERA is the Asbestos Hazard
Emergency Response Act enacting Title II
of Toxic Substance Control Act (TSCA)

Expiration Date: 02/14/2021

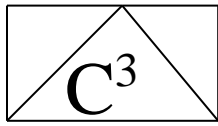
For verification of the authenticity of this
certificate contact:
PBS Environmental
4412 SW Corbett Avenue
Portland, OR 97239
(503) 248-1939

A handwritten signature in cursive script that reads 'Andy Fridley'.

Andy Fridley, Instructor

Appendix C

Lead Paint Survey – CCC – Don’s Market



Coleman Creek Consulting, Inc.

LEAD PAINT SURVEY OF DON'S MARKET BUILDING 859 NORTH G STREET, LAKEVIEW, OREGON FOR CARDNO

INTRODUCTION

Coleman Creek Consulting, Inc. (CCC) was retained by Cardno to perform a pre-demolition lead paint survey of Don's Market building at the above location. The purpose of the lead paint survey was to determine the concentration of lead in paint prior to demolition activities.

LEAD PAINT SURVEY

David W. Fawcett of CCC visited Don's Market building April 9, 2020, and reviewed the building with the property owner, Daphne. Mr. Fawcett collected representative paint samples from interior and exterior areas of the building. See Lead Paint Site Sample Record Sheet (page 3) for description and location of samples. See Lead Paint Sample Diagram in Appendix A for a visual representation of the sample locations. See photographs of paint sample locations in Appendix B. Mr. Fawcett packaged the paint samples for overnight delivery to IATL for lead paint analysis.

LEAD PAINT SAMPLE ANALYSIS

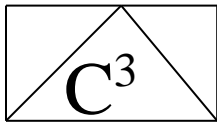
The submitted paint samples were analyzed by IATL with the following method: ASTM D3334-85A "Standard Method To Test For Low Concentrations of Lead In Paint By Atomic Absorption Spectrophotometry". Lead paint concentration results are listed below:

1. The exterior paint samples (Samples 20-045A.L1-L3, L10) were reported with lead concentrations ranging from <64 to 16,000 parts per million (ppm).
2. The interior paint samples collected (Samples 20-045A.L4-L9) were reported with lead concentrations ranging from <75 to 12,000 ppm.

The IATL Lead Paint Sample Analysis Summary is enclosed in Appendix C.

LEAD REGULATORY STANDARDS

OSHA requires an assessment of lead paint exposure during disturbance of lead painted materials. The Oregon Health Authority lead abatement requirements and standards do not apply to demolition projects that impact lead painted materials. EPA requires lead safe work practices be performed during disturbance of lead based painted materials in child-occupied buildings.

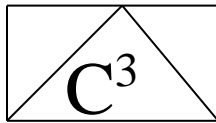


Coleman Creek Consulting, Inc.

RECOMMENDATIONS

Specifications to address disturbance of lead painted materials during demolition activities should be established regarding contractor requirements, engineering controls, worker protections, and post-abatement site conditions and testing. Lead exposure should be evaluated during renovation activities to meet OSHA employee exposure requirements. Soil should be tested for lead concentrations after completion of demolition activities.

David W. Fawcett
Director of Consulting Operations



Coleman Creek Consulting, Inc.

LEAD PAINT SITE SAMPLE RECORD SHEET

BUILDING: Don's Market
ADDRESS: 859 North G Street
Lakeview, Oregon

DATE: 04-09-20
INSPECTOR: David W. Fawcett

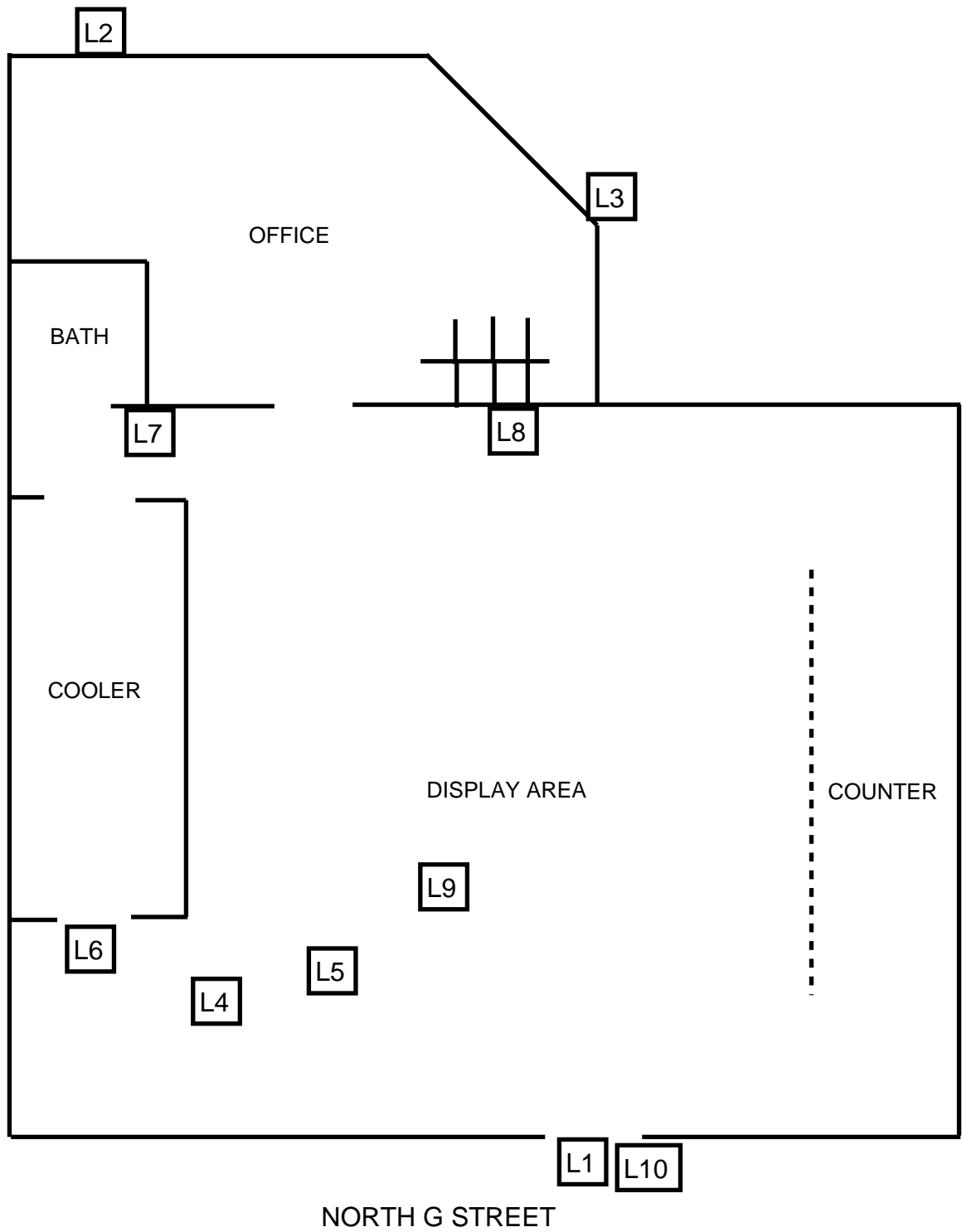
SAMPLE #	DESCRIPTION	LOCATION
20-045A.L1	Brown Exterior Paint	Entry Door Trim
20-045A.L2	Green Exterior Paint	Plywood Cover at Back Stairs
20-045A.L3	Brown Exterior Paint	Exterior Siding at Fuel Tank
20-045A.L4	White Interior Paint	Display Area Ceiling on Wood Strips
20-045A.L5	White Interior Paint	Display Area Ceiling Panel
20-045A.L6	Orange Interior Paint	Walk-in Cooler Door
20-045A.L7	White Interior Paint	Walk-in Cooler Wall at Bath
20-045A.L8	Green Interior Paint	Display Area Back Shelves
20-045A.L9	Yellow Interior Paint	Front Display Case
20-045A.L10	Red Exterior Paint	Front Door

Comments: All samples are multi-layer down to substrate surface.

APPENDIX A

LEAD PAINT SAMPLE LOCATION DIAGRAM

LEAD PAINT SAMPLE LOCATION DIAGRAM
Don's Market Main Floor - 859 North G Street,
Lakeview



LEGEND:

L6 = Lead Paint Sample Location

APPENDIX B

**REPRESENTATIVE PAINT SAMPLE
PHOTOGRAPHS**



Sample 20-045A.L1, Brown Paint, 11,000 ppm Lead



Sample 20-045A.L2, Green Paint, <64 ppm Lead



Sample 20-045A.L3, Brown Paint, <82 ppm Lead



Sample 20-045A.L4, White Paint, 3,300 ppm Lead



Sample 20-045A.L5, White Paint, 550 ppm Lead



Sample 20-045A.L6, Orange Paint, 12,000 ppm Lead



Sample 20-045A.L7, White Paint, <75 ppm Lead



Sample 20-045A.L8, Yellow Paint, 68,000 ppm Lead



Sample 20-045A.L9, Yellow Paint, 700 ppm Lead



Sample 20-045A.L10, Red Paint, 16,000 ppm Lead

APPENDIX C

**IATL LEAD PAINT SAMPLE ANALYSIS
SUMMARY**

CERTIFICATE OF ANALYSIS

Client: Coleman Creek Consulting
810 Leonard Street
Ashland OR 97520


Report Date: 4/14/2020
Report No.: 612696 - Lead Paint
Project: Don's Market
Project No.: 20-045A

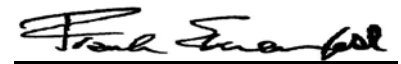
Client: COL227

LEAD PAINT SAMPLE ANALYSIS SUMMARY

Lab No.: 7000607 Client No.: 20-045A.L1	Description: Location:	Result (% by Weight): 1.1 Result (ppm): 11000 Comments: ***
Lab No.: 7000608 Client No.: 20-045A.L2	Description: Location:	Result (% by Weight): <0.0064 Result (ppm): <64 Comments: ***
Lab No.: 7000609 Client No.: 20-045A.L3	Description: Location:	Result (% by Weight): <0.0082 Result (ppm): <82 Comments:
Lab No.: 7000610 Client No.: 20-045A.L4	Description: Location:	Result (% by Weight): 0.33 Result (ppm): 3300 Comments:
Lab No.: 7000611 Client No.: 20-045A.L5	Description: Location:	Result (% by Weight): 0.055 Result (ppm): 550 Comments:
Lab No.: 7000612 Client No.: 20-045A.L6	Description: Location:	Result (% by Weight): 1.2 Result (ppm): 12000 Comments:
Lab No.: 7000613 Client No.: 20-045A.L7	Description: Location:	Result (% by Weight): <0.0075 Result (ppm): <75 Comments:
Lab No.: 7000614 Client No.: 20-045A.L8	Description: Location:	Result (% by Weight): 6.8 Result (ppm): 68000 Comments:

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 4/13/2020
Date Analyzed: 04/14/2020
Signature: 
Analyst: Chad Shaffer

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

Client: Coleman Creek Consulting
810 Leonard Street
Ashland OR 97520

Report Date: 4/14/2020
Report No.: 612696 - Lead Paint
Project: Don's Market
Project No.: 20-045A

Client: COL227

LEAD PAINT SAMPLE ANALYSIS SUMMARY

Lab No.: 7000615
Client No.: 20-045A.L9

Description:
Location:


Result (% by Weight): 0.070
Result (ppm): 700
Comments: ***


Lab No.: 7000616
Client No.: 20-045A.L10

Description:
Location:

Result (% by Weight): 1.6
Result (ppm): 16000
Comments:

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 4/13/2020
Date Analyzed: 04/14/2020
Signature: 
Analyst: Chad Shaffer

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

Client: Coleman Creek Consulting
810 Leonard Street
Ashland OR 97520

Report Date: 4/14/2020
Report No.: 612696 - Lead Paint
Project: Don's Market
Project No.: 20-045A

Client: COL227

Appendix to Analytical Report:

Customer Contact: Dave Fawcett

Method: ASTM D3335-85a, US EPA SW846 3050B:7000B

This appendix seeks to promote greater understanding of any observations, exceptions, special instructions, or circumstances that the laboratory needs to communicate to the client concerning the above samples. The information below is used to help promote your ability to make the most informed decisions for you and your customers. Please note the following points of contact for any questions you may have.

iATL Customer Service: customerservice@iatl.com

iATL Office Manager: wchampion@iatl.com

iATL Account Representative: Kelly Klippel

Sample Login Notes: See Batch Sheet Attached

Sample Matrix: Paint

Exceptions Noted: See Following Pages

General Terms, Warrants, Limits, Qualifiers:

General information about iATL capabilities and client/laboratory relationships and responsibilities are spelled out in iATL policies that are listed at www.iATL.com and in our Quality Assurance Manual per ISO 17025 standard requirements. The information therein is a representation of iATL definitions and policies for turnaround times, sample submittal, collection media, blank definitions, quantification issues and limit of detection, analytical methods and procedures, sub-contracting policies, results reporting options, fees, terms, and discounts, confidentiality, sample archival and disposal, and data interpretation.

iATL warrants the test results to be of a precision normal for the type and methodology employed for each sample submitted. iATL disclaims any other warrants, expressed or implied, including warranty of fitness for a particular purpose and warranty of merchantability. iATL accepts no legal responsibility for the purpose for which the client uses test results. Any analytical work performed must be governed by our Standard Terms and Conditions. Prices, methods and detection limits may be changed without notification. Please contact your Customer Service Representative for the most current information.

This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA LAP LLC, or any agency of local, state or province governments nor of any agency of the U.S. government.

This report shall not be reproduced except in full, without written approval of the laboratory.

Information Pertinent to this Report:

Analysis by ASTM D3335-85a by AAS

Certification:

- National Lead Laboratory Program (NLLAP): AIHA-LAP, LLC No. 100188

- NYSDOH-ELAP No. 11021

This report meets the standards set forth in the EPA's National Lead Laboratory Accreditation Program (NLLAP) through the Laboratory Quality System Requirements (LQSR) Revision 3.0 November 5, 2007. All Environmental Lead Proficiency Analytical Testing (ELPAT) is through the AIHA-PAT established program.

Regulatory limit is 0.5% lead by weight (EPA/HUD guidelines). Recommend multiple sampling for all samples less than regulatory limit for confirmation. All results are based on the samples as received at the lab. iATL assumes that appropriate sampling methods have been used and that the data upon which these results are based have been accurately supplied by the client.

Method Detection Limit (MDL) per EPA Method 40CFR Part 136 Appendix B.

Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies.

LSD=0.2 ppm MDL=0.005% by weight. RL= 0.010% by weight (based upon 100 mg sampled).

Disclaimers / Qualifiers:

There may be some samples in this project that have a "NOTE:" associated with a sample result. We use added disclaimers or qualifiers to inform the client about something that requires further explanation. Here is a complete list with highlighted disclaimers pertinent to this project. For a full explanation of these and other disclaimers, please inquire at customerservice@iatl.com.

CERTIFICATE OF ANALYSIS

Client: Coleman Creek Consulting
810 Leonard Street
Ashland OR 97520

Report Date: 4/14/2020
Report No.: 612696 - Lead Paint
Project: Don's Market
Project No.: 20-045A

Client: COL227

- * Insufficient sample provided to perform QC reanalysis (<200 mg)
- ** Not enough sample provided to analyze (<50 mg)
- *** Matrix / substrate interference possible.

< less than sign, signifies none-detected below the empirical value based upon sub-sampled mass. This is often below the Reporting Limit (see above).

Chain of Custody

– Environmental Lead –

Contact Information

<p>Client Company: <u>Coleman Creek Consulting, Inc.</u></p> <p>Office Address: <u>810 Leonard Street</u></p> <p>City, State, Zip: <u>Ashland, OR 97520</u></p> <p>Fax Number: _____</p> <p>Email Address: <u>fawbro@ccountry.net</u></p>	<p>Project Number: <u>20-0451A</u></p> <p>Project Name: <u>Don's Market</u></p> <p>Primary Contact: <u>Dave Fawcett</u></p> <p>Office Phone: _____</p> <p>Cell Phone: <u>541-944-5318</u></p>
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iATL is accredited by the National Lead Laboratory Accreditation Program (NLLAP) to perform analytical testing of environmental samples for lead (Pb). The accreditation is through AIHA-LAP, LLC and several other nationally recognized state programs.

Matrix/Method:

- Paint by AAS: ASTM D3335-85a, 2009
- Wipe/Dust by AAS: SW 846: 3050B: 700B, 2010
- Air by AAS: NIOSH 7082, 1994
- Soil by AAS: EPA SW 846 (Soil)
- Water by AAS-GF: ASTM D3559-03D, US EPA 200.9
- Other Metals (Cd, Zn, Cr) by AAS
- Toxicity Characteristic Leaching Procedure (TCLP) by AAS: US EPA 1311
- Other _____

Special Instructions:

Samples 20-0451A, L1 - L10

Turnaround Time

Preliminary Results Requested Date: _____ Verbal Email Fax

Specific date / time

10 Day 5 Day 3 Day 2 Day 1 Day* 12 Hour** 6 Hour** RUSH**

* End of next business day unless otherwise specified. ** Matrix Dependent. ***Please notify the lab before shipping***

Chain of Custody

Relinquished (Name/Organization): <u>D. Fawcett</u>	Date: <u>4-10-20</u>	Time: <u>1230</u>	
Received (Name / iATL): _____	Date: _____	Time: _____	RECEIVED
Sample Login (Name / iATL): _____	Date: _____	Time: _____	
Analysis(Name(s) / iATL): <u>6/24/20</u>	Date: _____	Time: _____	
QA/QC Review (Name / iATL): _____	Date: _____	Time: _____	
Archived / Released: _____ QA/QC InterLAB Use: _____	Date: _____	Time: _____	

DAILY QUALITY CONTROL DATA

LEAD SAMPLE ANALYSIS

(DATE: 04 / 14 / 20)

Standard	Total Lead (mg)	Percent Recovery **
Reagent Blank	0.000	< LOQ
Blank Spike	0.500	105
Lab Control Std	1.430	92
Matrix Spike - LBP *	0.36	89
Matrix Spike - Wipe *	0.54	97
Matrix Spike - Soil *		
Matrix spike - Air *	0.050	94
2.5 ppm Standard	0.25	97
10.0 ppm Standard	1.0	96
40.0 ppm Standard	4.0	101

AIHA-LAP, LLC No. 100188

NYSDOH-ELAP No. 11021

Analysis Method: ASTM D3335-85A
NIOSH 7082
EPA SW846 3050B 7000B

Comments: IATL assumes that all sampling complies with accepted methods.
All client supplied sampling data is assumed to be correct when calculating results.
Detection limit based upon 0.2 mg/L reporting limit and sample size.
* NIST Traceable.
** 80-120% acceptable limits.

Analyzed By: C. Shafer
C. Shafer
Date: 4/14/20

Approved By: Frank E. Ehrenfeld, III
Frank E. Ehrenfeld, III
Laboratory Director