

**FINAL
ABANDONED UST CLOSURE
AND
ENHANCED NATURAL ATTENUATION TREATABILITY STUDY
WORK PLAN
CHELAN CHEVRON SITE
CLEANUP SITE ID: 6660
Chelan, Washington**

August 15, 2023

**Prepared for:
Washington State Department of Ecology – Central Region Office
1250 West Alder Street
Union Gap, Washington 98903**

**Prepared by:
Leidos, Inc.
11824 North Creek Parkway N, Suite 101
Bothell, Washington 98011**

**On Behalf of:
Resource Environmental, LLC
925 Salida Del Sol Drive
Paso Robles, California 93446**

**FINAL
ABANDONED UST CLOSURE
AND
ENHANCED NATURAL ATTENUATION TREATABILITY STUDY
WORK PLAN
CHELAN CHEVRON SITE
CLEANUP SITE ID: 6660
Chelan, Washington**

August 15, 2023

Prepared for:
Washington State Department of Ecology – Central Region Office
1250 West Alder Street
Union Gap, Washington 98903

Prepared by:
Leidos, Inc.
11824 North Creek Parkway N, Suite 101
Bothell, Washington 98011

On Behalf of:
Resource Environmental, LLC
Paso Robles, California 93446



Russell S. Shropshire, PE

TABLE OF CONTENTS

1	INTRODUCTION AND OBJECTIVES	1
2	BACKGROUND.....	1
2.1	UST Closure Action Development.....	1
2.2	Treatability Study Development.....	3
3	UST CLOSURE ACTION SCOPE OF WORK	3
3.1	Applicable Regulations and Project Roles	3
3.2	Property Information	4
3.3	Access Coordination.....	4
3.4	Permitting/Documentation Requirements	4
3.4.1	Washington State Department of Ecology	4
3.4.2	City/County of Chelan.....	4
3.5	Utility Locate	5
3.6	UST Closure	5
3.7	UST Site Assessment.....	5
3.8	Site Restoration.....	6
3.9	UST Closure Reporting	6
4	TREATABILITY STUDY SCOPE OF WORK.....	6
4.1	Permitting	7
4.1.1	Washington State Department of Ecology	7
4.1.2	City/County of Chelan.....	7
4.2	Injection Well Installation	7
4.3	Oxygen Emitter System Installation.....	8
4.3.1	Oxygen Emitter Equipment	8
4.3.2	Piping Network.....	8
4.3.3	Compressed Gas Supply and Venting System.....	8
4.4	System Operation, Maintenance, and Monitoring	8
4.4.1	System Operation.....	8
4.4.2	Maintenance.....	9
4.4.3	Performance Monitoring.....	9
5	ANTICIPATED SCHEDULE.....	9
6	REFERENCES.....	9

FIGURES

- Figure 1: Site Map
Figure 2: SRI Investigation Locations 221 E. Woodin Avenue
Figure 3: Anticipated Work Zone Extents
Figure 4: Conceptual Layout of Oxygen Emitter System

FINAL
ABANDONED UST CLOSURE AND ENHANCED NATURAL ATTENUATION
TREATABILITY STUDY WORK PLAN
CHELAN CHEVRON SITE

1 INTRODUCTION AND OBJECTIVES

Leidos, Inc. (Leidos), on behalf of Resource Environmental, LLC (RELLC), an environmental service provider to Chevron Environmental Management and Real Estate Company (Chevron), has prepared this work plan to conduct underground storage tank (UST) closure activities, and to perform a treatability study for enhanced natural attenuation, at the Chelan Chevron Site (the Site) in Chelan, Washington. A Site map is included as Figure 1.

The objective of the UST closure activities is to address three abandoned USTs present on the property at 221 E. Woodin Avenue. These USTs are believed to remain from gasoline service station operations that began on the property as early as 1910 and continued into the 1970s. This work would be performed to eliminate any potential for future releases of petroleum products from these USTs, as well as to address concerns regarding the structural integrity of the abandoned tanks.

The objective of the treatability study is to evaluate the effectiveness of using oxygen emitting equipment to enhance naturally occurring biodegradation processes of petroleum hydrocarbons in groundwater at the Site. The results of this work are expected to be incorporated into the Supplemental Feasibility Study (SFS), which will be prepared to enable selection of a future cleanup action for the Site.

The work activities described in this work plan are being proposed in association with the requirements of Agreed Order No. DE 10629 for the Site, which was entered into by Chevron and the Washington State Department of Ecology (Ecology) in June 2014.

2 BACKGROUND

2.1 UST CLOSURE ACTION DEVELOPMENT

The existence of abandoned USTs on the property at 221 E. Woodin Avenue was first suggested by the results of a geophysical survey performed in October 2018, in association with Phase 4 of the Supplemental Remedial Investigation (SRI) for the Site (Leidos, 2019). The presence of at least three legacy single-wall steel USTs was later confirmed during SRI Phase 5 field activities in November 2020 by shallow “pothole” excavations using air-knife excavation equipment (Leidos, 2021). The approximate locations of these USTs are shown on Figure 2. The following information regarding the USTs was also collected during the SRI Phase 5 field activities:

- The westernmost UST (designated as UST-1 for the investigation) was estimated to be approximately 4 feet in diameter and 12 feet long (approximately 1,000 gallons). The top of this UST was encountered at a depth of approximately 2.5 feet below ground surface (bgs). A capped fill port for the UST was found approximately 4 inches bgs, which allowed access to the tank. The UST was found to contain residual liquid, which was sampled (Sample ID: 221E Woodin UST-1) and identified as leaded gasoline by laboratory analysis (Leidos, 2021).

- The central UST (designated as UST-2) was estimated to be approximately 4 feet in diameter and 5 feet long (approximately 500 gallons). The top of this UST was encountered at a depth of approximately 3 feet bgs. While air-knifing down to this UST, the top of the tank was perforated by the high-pressure air wand, due to extensive corrosion of the tank walls. UST-2 did not appear to contain any residual liquids; however, a sample of residual solids was collected from the base of this UST. Laboratory analysis of this sample (221EW-UST2-S-201108) indicated that it contained concentrations of gasoline-range organics (GRO); diesel-range organics (DRO); heavy-oil-range organics (HRO); benzene, toluene, ethylbenzene, and xylenes (BTEX); naphthalenes (naphthalene, 1-methyl naphthalene, and 2-methyl naphthalene); tetrachloroethylene (PCE); lead; and carcinogenic polycyclic aromatic hydrocarbons (cPAHs); at concentrations exceeding MTCA Method A cleanup levels (Leidos, 2021).
- The easternmost UST (UST-3) was estimated to be approximately 3.5 feet in diameter and 14 feet long (approximately 1,000 gallons). The top of this UST was encountered at a depth of approximately 3 feet bgs. UST-3 was accessed through a vent pipe connection near the top of the tank. Leidos was not able to assess the extent of tank-bottom debris materials that may have been present due to access limitations through the fill/vent pipe, and no samples were able to be collected from this UST. However, a tape measure inserted into the tank through the vent pipe opening showed no indications of wetness. Therefore, this UST is believed to not contain any residual liquid waste (Leidos, 2021).

The November 2020 SRI Phase 5 field activities also included soil sampling at three boring locations (SRI5-4 through SRI5-6) adjacent to the abandoned USTs. The approximate locations of these borings are shown on Figure 2. Soil sampling results for these borings indicated high levels of GRO and BTEX at each location, as well as naphthalenes in soil borings SRI5-5 and SRI5-6. GRO was detected at a maximum concentration of 20,600 milligrams per kilogram (mg/kg) and benzene was detected at a maximum concentration of 64 mg/kg. However, high levels of these petroleum-related compounds were not encountered in soils shallower than 14.5 feet bgs at these locations (Leidos, 2021). The depth at which petroleum impacts were first encountered in these borings (approximately 15.5 to 17 feet bgs) is consistent with the transition from coarse grained alluvial deposits, consisting of sand with varying degrees of gravel and cobbles, to finer grained lacustrine deposits, including laminated silt with varying amounts of clay, that has been observed throughout much of the Site.

By email on September 1, 2021, Ecology proposed conducting an interim action to address the abandoned USTs. In response to this proposal, RELLC agreed to evaluate the feasibility of conducting this work, including the possibility of over-excavation to achieve some amount of contaminated soil source mass removal in conjunction with closure of the USTs. However, based on that evaluation, RELLC has concluded that the cost and technical/logistical effort to achieve some limited amount of source mass removal by over-excavation would be disproportionate relative to the minimal benefit that would be provided, given the extent of petroleum impacted soil in the vicinity that would not be accessible for removal. This is primarily due to the shoring, or other soil stabilization measures, that would be necessary to access the petroleum contaminated soil interval that begins at approximately 15 feet bgs, and considering the size and location constraints of the work area. Therefore, the scope of the proposed UST closure action is limited to achieving regulatory closure of the USTs, in order to

eliminate any potential for future releases of petroleum products, and to address concerns regarding their structural integrity.

2.2 TREATABILITY STUDY DEVELOPMENT

Following recognition that source mass removal through excavation could not be feasibly integrated into the UST closure action, Leidos evaluated other potential cleanup strategies that could benefit from being performed in conjunction with this work. Performance of a treatability study to evaluate the effectiveness of using oxygen emitting equipment to enhance naturally occurring biodegradation processes of petroleum hydrocarbons in groundwater was selected for the following reasons:

- This technology has the potential to increase rates of naturally occurring hydrocarbon biodegradation by supplying oxygen to sustain long-term continuation of more efficient hydrocarbon breakdown by aerobic processes.
- This technology can be implemented with a minimal amount of infrastructure. Therefore, installation and operation of this technology are expected to have minimal impact on the public or businesses in the vicinity.
- This technology relies simply on diffusion of oxygen into groundwater; therefore, there are no concerns with:
 - Chemical exposure, chemical by-products, heat generation, corrosion, or other concerns that may be associated with injection of chemical oxidants;
 - Potential increased hydrocarbon mobility that may be associated with injection of surfactants to enhance hydrocarbon recovery; and
 - Potential for increased vapor intrusion risk that may be associated with technologies injecting larger amounts of air into the subsurface, such as air sparging.
- This technology can be implemented with a low level of operation, maintenance, and monitoring, which will minimize concerns regarding system operations downtime that could result from a lack of specialized employee resources in the Chelan area.
- The treatability study results can be incorporated into the future SFS to facilitate selection of a future cleanup action for the Site.

The proposed treatability study would consist of installing oxygen emitting equipment (e.g., Waterloo Emitters or equivalent) at 12 injection wells installed along the southern boundary of the 221 E. Woodin Avenue property. Compressed oxygen would be supplied to the system from one or more compressed gas cylinders that would be connected to the oxygen emitter system through a network of subgrade piping. Additional details regarding the scope of the proposed treatability study are presented in Section 4.

3 UST CLOSURE ACTION SCOPE OF WORK

3.1 APPLICABLE REGULATIONS AND PROJECT ROLES

Installation, operation, and closure of USTs, in the State of Washington, is regulated by Chapter 173-360A of the Washington Administrative Code (WAC). WAC 173-360A-0930 specifies the certification requirements of service providers performing work on UST systems. For the UST removal action proposed in this work plan, work to be performed under WAC 173-360A may include site assessment and decommissioning activities.

- Leidos will serve as the Site Assessor for the project. The Leidos Site Assessor will be licensed as a professional engineer or hydrogeologist in Washington State or will be otherwise certified in accordance with WAC 173-360A-0930(3), Site Assessment.
- The Decommissioner for the project will be subcontracted to Leidos. The Decommissioner will be certified as having sufficient education and experience by the International Code Council (UST Decommissioning – U2) or will be otherwise certified in accordance with WAC 173-360A-0930(4), Decommissioning.

3.2 PROPERTY INFORMATION

- **Address:** 221 E. Woodin Avenue, Chelan, WA 98816
- **Parcel Number:** Chelan County 272213512413
- **Property ID:** 44490
- **Township/Range/Section:** 27N 22EWM 13
- **Property Owner:** Wall Properties LLC Et Al
- **Legal Description (abbreviated form):** Lot 16, 17, and 18, Block 29, original government townsite of Chelan
- **Property Area:** 0.29 acre
- **Township/Range/Section:** 27N 22EWM 13
- **Ecology USTID:** 620470
- **Ecology FSID:** 73281

3.3 ACCESS COORDINATION

The work proposed by this work plan is contingent upon RELLC obtaining an amended access agreement from the property owner that will allow this work to be conducted. RELLC will engage the property owner to discuss access coordination for this project upon Ecology approval of the scope of work presented in this work plan.

3.4 PERMITTING/DOCUMENTATION REQUIREMENTS

3.4.1 Washington State Department of Ecology

The following documentation will be submitted to Ecology to comply with the UST closure requirements established by WAC 173-360A.

- **30-Day Notice for Underground Storage Tank Systems:** A 30-Day Notice form will be submitted to Ecology to provide notice of intent to close the USTs at least 30 days prior to the start of the work.
- **Permanent Closure Notice for Underground Storage Tanks:** A Permanent Closure Notice form will be submitted to Ecology within 30 days of completing the closure activities. The Permanent Closure Notice will be signed by the UST Decommissioner.

3.4.2 City/County of Chelan

The right-of-way for the 200 block of E. Woodin Avenue and the adjacent sidewalks is controlled and maintained by the City of Chelan. Work activities associated with the UST removal are expected to impact use of the sidewalk and street parking areas immediately south of the project area (Figure 3).

Closure of the USTs may also require a permit and/or inspection by the local fire department.

Leidos will work with the City Engineer, Department of Public Works, and Chelan County Fire Department to confirm the applicable local City and County permitting requirements for the project.

3.5 UTILITY LOCATE

Prior to the start of any ground disturbing activities, Leidos will contact the Utilities Location Center to request location of all public utilities in the vicinity of proposed excavation, or other land disturbance activities. In addition, Leidos will subcontract a private utility locating contractor to locate on-site utilities, infrastructure, or other subsurface objects that are not typically identified through the public utility locating process. The private utility survey will use a combination of ground-penetrating radar and electromagnetic locating techniques.

3.6 UST CLOSURE

Field activities associated with the UST closure process will generally be performed as follows:

- Asphalt/concrete surface cover and overburden soil above the USTs will be removed to delineate the lateral extents of the tanks. Asphalt/concrete surface cover materials will be segregated for disposal and overburden soils will be stockpiled for reuse as backfill.
- A marine chemist will be present to evaluate the tanks for potential hazardous vapor conditions and will inert the tanks, if necessary, to facilitate access to evaluate their contents.
- If present, residual materials in the tanks will be removed and containerized for waste characterization sampling and disposal. Each tank will then be rinsed clean and any rinsate will be collected and containerized for waste characterization sampling and disposal.
- If possible, each UST will be completely excavated and removed for offsite disposal. However, if the Decommissioner determines that removal of a UST is likely to result in undermining of adjacent or nearby infrastructure, then the UST will be closed in place by filling the entirety of the tank with controlled density fill or other suitable backfill material.
- Prior to backfilling the UST basin, soil samples will be collected for field screening and possible laboratory analysis by the Leidos Site Assessor (see Section 3.7 for additional details).
- The UST basin will be backfilled and the area restored as further described in Section 3.8.

3.7 UST SITE ASSESSMENT

Based on the results of the SRI Phase 5 soil sampling activities completed in November 2020, a confirmed release has been reported to Ecology and the 221 E. Woodin Avenue property has been assigned a UST site identifier (620470) and a Facility/Site identifier (73281). The property is also considered a cleanup unit, with the name “Unocal Station”, of the Chelan Chevron site (Cleanup Site ID: 6660).

Therefore, as part of a site with already-reported contamination, where remediation is necessary, a site assessment meeting the requirements of WAC 173-360A-730 is not required to close the legacy service station USTs remaining on the property, as specified by WAC 173-360A-0810(3). However, Leidos field staff meeting the certification requirements established by WAC 173-

360A-0930(3) will be present to observe the UST closure activities and will be prepared to collect soil samples for field screening or laboratory analysis, if warranted.

Field screening analyses will consist of qualitative observations of sample appearance and odor, sheen testing, and headspace vapor measurements using a photo-ionization detector. Samples collected for laboratory analysis will be submitted to Pace Analytical for one or more of the following analyses:

- GRO by Ecology NWTPH-Gx;
- DRO and HRO by Ecology NWTPH-Dx;
- BTEX, methyl tertiary butyl ether (MTBE), ethylene dibromide (EDB), and ethylene dichloride (EDC) by USEPA method 8260;
- Naphthalenes by USEPA 8270;
- Carcinogenic polycyclic aromatic hydrocarbons (cPAHs) by USEPA method 8270 SIM;
- Polychlorinated biphenyls (PCBs) by USEPA method 8082;
- Halogenated volatile organic compounds (HVOCs) by USEPA method 8260; and
- Total lead by USEPA method 6010.

3.8 SITE RESTORATION

Following completion of all UST closure and assessment activities, the UST basin will be backfilled with stockpile overburden soils (if deemed suitable for backfill) and 5/8-minus gravel, or equivalent material, and compacted. Asphalt or concrete surface covers will be restored to previously existing conditions, including replacement of parking stop blocks and parking space striping. Timing of final site restoration activities is expected to be coordinated with well installation and piping installation work described in Section 4.

3.9 UST CLOSURE REPORTING

Following receipt of all UST closure documentation and laboratory analytical reports, Leidos will prepare and submit a report to Ecology that summarizes the work performed and findings of the UST closure action activities.

4 TREATABILITY STUDY SCOPE OF WORK

As previously described in Section 2.2, the proposed treatability study would consist of installing oxygen emitting equipment (e.g., Waterloo Emitters or equivalent) at 12 injection wells installed along the southern boundary of the 221 E. Woodin Avenue property. Compressed industrial-grade oxygen would be supplied to the system from one or more compressed gas cylinders that would be connected to the oxygen emitter system through a network of subgrade piping. A conceptual layout of the injection wells and piping alignment are shown on Figure 4.

Waterloo Emitters™ (Emitters) operate based on the principle of diffusion to provide a controlled and uniform release of oxygen (or other gases) to groundwater without “bubbling off” of excess gases. When oxygen is used, the Emitters increase the bioavailability of molecular oxygen to sustain the growth of microorganisms capable of aerobic biodegradation of petroleum hydrocarbons.

The intent of the system is to create an “oxygenation curtain” immediately downgradient of the Former Unocal service station source area, with the goal of enhancing aerobic biodegradation of

petroleum impacts to groundwater in the immediate vicinity and downgradient of the oxygen emitter well network.

Details regarding construction and installation of oxygen emitting equipment provided in this work plan are conceptual only. Therefore, further design details for the oxygen emitter system will be developed following Ecology's approval of this proposed work scope.

4.1 PERMITTING

4.1.1 Washington State Department of Ecology

Ecology permitting requirements for installation and performance of the treatability study are anticipated to include:

- Well Construction Notice of Intent (NOI) for installation of 13 new monitoring wells; and
- Underground Injection Control (UIC) permitting to allow use of the above-referenced monitoring wells for release of oxygen to the subsurface.

4.1.2 City/County of Chelan

Leidos will work with the City Engineer, Department of Public Works, Planning Department, and Chelan County Fire Department to confirm the applicable local City and County permitting requirements for the project. Elements of the treatability study scope of work that may be subject to local permitting requirement include:

- Right-of-way use and/or sidewalk closure associated with the installation of new monitoring wells; and
- Pressure vessel operation/oxygen tank use associated with the gas supply for the oxygen emitter system.

4.2 INJECTION WELL INSTALLATION

Twelve 4-inch diameter monitoring wells will be installed for the oxygen emitter system. Each well is expected to be screened from approximately 20 to 40 feet bgs, using a 0.010-inch machine slotted well screen and 12/20 silica sand (or equivalent) sandpack. Wells will be spaced at a distance of approximately 10 feet along the southern boundary of the 221 E. Woodin Avenue property (Figure 4). The proposed well spacing is based on manufacturer recommendations regarding the effective radius of influence for oxygen emitters installed in a 4-inch diameter monitoring well.

Prior to beginning drilling for well installation activities, each well location will be checked for the presence of subgrade utilities. This work will be performed in association with the utility location survey previously described in Section 3.5 for the UST closure action. In addition, the upper 8 feet of each well boring will be cleared using air-knife excavation equipment. Within this interval, soil samples will be collected at an interval of every 2 feet, for field screening and possible laboratory analysis.

Wells will be installed by a Washington State licensed driller using hollow-stem auger or sonic drilling equipment. Within the drilled boring interval, below 8 feet bgs, soil samples will be collected at a continuous basis for field screening and possible laboratory analysis.

Samples collected for laboratory analysis will be submitted to Pace Analytical for one or more of the analyses previously presented in Section 3.7.

4.3 OXYGEN EMITTER SYSTEM INSTALLATION

4.3.1 Oxygen Emitter Equipment

Oxygen emitter equipment for the treatability study is expected to consist of 13 Waterloo Emitters™ for 4-inch diameter wells (or equivalent). Each Emitter will be approximately 3.8 inches in diameter and 51 inches long, and will be equipped with silicone tubing, which provides a higher diffusion coefficient than the alternative, low density polyethylene (LDPE) tubing.

4.3.2 Piping Network

To provide a supply of compressed oxygen to the Emitters, a network of small diameter (approximately ½-inch) piping, of a material that is suitable for low-level compressed air service in below-ground installations, will be installed. The piping network will consist of one main trunk line with branch lines to each well for air supply, and a second main trunk line with branch lines from each well for venting the compressed air supply network to the atmosphere. Each trunk line will be routed back to the location of the compressed gas supply and venting system.

4.3.3 Compressed Gas Supply and Venting System

The compressed gas supply system will consist of one or more tanks of oxygen for supply to the Emitters. It is expected that compressed gas cylinders providing a volume of approximately 300 cubic feet of gas will be utilized. These tanks are approximately 9 inches in diameter and approximately 60 inches tall. However, smaller tanks may be utilized if storage limitations or permitting prevent use of the 300 cubic feet tanks. The compressed gas supply system will also include a pressure regulator and gauge to limit the oxygen supply pressure to the Emitters to less than 20 pounds per square inch.

The compressed gas supply venting system provides control for venting of the system, which is required to replenish the concentration of oxygen in the Emitter tubing to drive continuous diffusion. Venting of low-oxygen gases from the Emitters will be achieved through a needle control valve that will be set to allow vent gases from the system at a rate of approximately 1 to 2 liters per minute.

The compressed oxygen tanks, regulator, and venting control valve will be housed within a small exterior shed (approximately 2 feet by 2 feet). The proposed location for this shed is shown in Figure 4.

4.4 SYSTEM OPERATION, MAINTENANCE, AND MONITORING

4.4.1 System Operation

Following startup and any initial adjustments required for the oxygen emitter system, on-going operations of the system are expected to require a minimal amount of effort. The system will continue to drive oxygen diffusion through the Emitters as long as oxygen supply to the Emitters is maintained. Based on oxygen consumption rate information provided by the manufacturer, an oxygen consumption rates of approximately 2 to 3.5 liters/day/Emitter are expected, or up to approximately 50 liters per day for a system with 12 Emitters and allowing for venting of the gas

supply system. Therefore, a 300 cubic foot (approximately 8,500 liters) compressed oxygen tank is expected to provide approximately 130 days of service.

Based on the anticipated oxygen use rate for the system, routine inspection of the system and change out of oxygen tanks is expected to be performed on an approximate quarterly basis.

4.4.2 Maintenance

Maintenance of the Emitter system is expected to be minimal. Following approximately the first 6 months of continuous operation, the Emitters will be removed from the wells for inspection and cleaned, if necessary. A schedule for future maintenance of the system will be developed based on the findings of the initial 6-month maintenance event.

4.4.3 Performance Monitoring

Performance monitoring for the system will be provided by evaluation trends in petroleum constituent concentrations in groundwater in nearby downgradient monitoring wells. These data will be provided by on-going semiannual groundwater sampling that is performed for the Site. In addition to evaluation of groundwater sampling data, performance monitoring may also include field measurements of dissolved oxygen and oxidation reduction potential levels in nearby downgradient monitoring wells using an optical dissolved oxygen meter, or similar field instrument.

5 ANTICIPATED SCHEDULE

Implementation of the field work described by this plan is anticipated to begin in October 2023. However, the actual schedule will be dependent on the status of property access, contractor and equipment availability, permitting, weather, and availability of Leidos field staff. Field activities of the nature described by this plan can generally not be executed after about the middle of November due to winter-like weather conditions. Therefore, if necessary, some or all elements of the scope of work proposed by this plan may be delayed until the spring of 2024.

6 REFERENCES

- Leidos (2019). "Agency Review Draft - Supplemental Remedial Investigation Report – Phase 4, Chelan Chevron – Cleanup Site ID 6660." July 8.
- Leidos (2021). "Agency Review Draft - Supplemental Remedial Investigation Report – Phase 5, Chelan Chevron – Cleanup Site ID 6660." April 27.

LIMITATIONS

This technical document was prepared on behalf of RELLC and is intended for their sole use and for use by the local, state, or federal regulatory agency that the technical document was sent to by Leidos. Any other person or entity obtaining, using, or relying on this technical document hereby acknowledges that they do so at their own risk, and Leidos shall have no responsibility or liability for the consequences thereof.

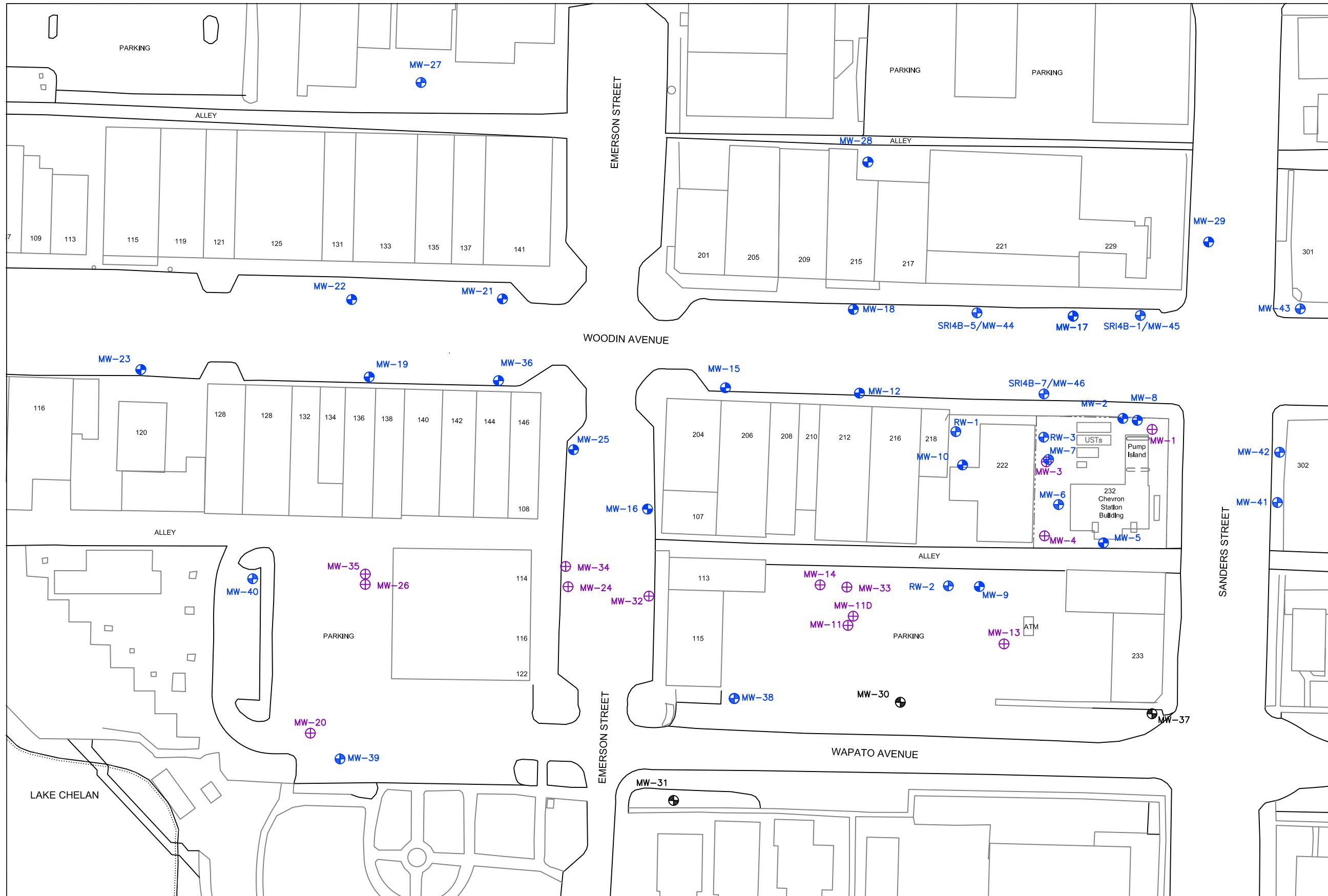
Site history and background information provided in this technical document are based on sources that may include interviews with environmental regulatory agencies and property management personnel and a review of acquired environmental regulatory agency documents and property information obtained from RELLC and others. Leidos has not made, nor has it been asked to make, any independent investigation concerning the accuracy, reliability, or completeness of such information beyond that described in this technical document.

Recognizing reasonable limits of time and cost, this technical document cannot wholly eliminate uncertainty regarding the vertical and lateral extent of impacted environmental media.

Opinions and recommendations presented in this technical document apply only to site conditions and features as they existed at the time of Leidos site visits or site work and cannot be applied to conditions and features of which Leidos is unaware and has not had the opportunity to evaluate.

All sources of information on which Leidos has relied in making its conclusions (including direct field observations) are identified by reference in this technical document or in appendices attached to this technical document. Any information not listed by reference or in appendices has not been evaluated or relied on by Leidos in the context of this technical document. The conclusions, therefore, represent our professional opinion based on the identified sources of information.

Figures



- LEGEND**
- MW-2 PERCHED GROUNDWATER MONITORING WELL
 - MW-30 DEEP GROUNDWATER MONITORING WELL
 - MW-1 ABANDONED DRY MONITORING WELL

NOTES

Base Map from City of Chelan, 1994

Additional Reference Material:
Aerial Photograph from September 1991
(Washington State Department of Natural Resources)

0 80' 160'



Chelan Chevron Site
232 East Woodin Avenue
Chelan, Washington







FIGURE 1
Site Map

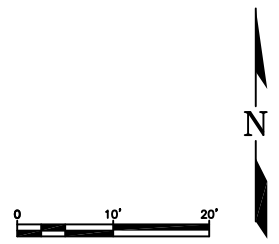
FILE NAME: Chelan_Site_Map_2021.dwg DATE: 08/09/2021



221 EAST WOODIN AVENUE

LEGEND

-  UST CONFIRMATION "POTHOLE" EXCAVATION LOCATION
-  SRI5-4 SRI PHASE 5 SOIL BORING LOCATION
-  UHP-6 UVOST-HP BORING LOCATION
-  MW-17 MONITORING WELL LOCATION
-  SVP-1 SOIL VAPOR SAMPLING PROBE LOCATION
-  APPROXIMATE OUTLINE OF CONFIRMED UST AS DELINEATED BY GROUND PENETRATING RADAR



Chelan Chevron Site
 232 East Woodin Avenue
 Chelan, Washington

FIGURE 2
 SRI Investigation Locations
 221 E. Woodin Avenue

FILE NAME: 221 E. Woodin Figure.dwg	DATE: 7/28/2023
--	--------------------

221 EAST WOODIN AVENUE



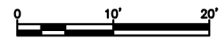
LEGEND



APPROXIMATE OUTLINE OF CONFIRMED UST AS DELINEATED BY GROUND PENETRATING RADAR



ANTICIPATED EXTENTS OF WORK ZONE FOR UST REMOVAL ACTION AND INSTALLATION OF OXYGEN EMITTER SYSTEM MONITORING WELLS AND PIPING NETWORK



Chelan Chevron Site
232 East Woodin Avenue
Chelan, Washington

FIGURE 3
Anticipated Work Zone Extents

FILE NAME:
221 E. Woodin Figure.dwg

DATE:
7/28/2023



221 EAST WOODIN AVENUE

PROPOSED LOCATION FOR APPROX. 2' X 2' EXTERIOR STORAGE SHED FOR COMPRESSED OXYGEN CYLINDER STORAGE

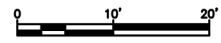
LEGEND



PROPOSED OXYGEN EMITTER INSTALLATION WELL LOCATION



APPROXIMATE ALIGNMENT FOR OXYGEN EMITTER COMPRESSED GAS SUPPLY AND VENTING PIPING



Chelan Chevron Site
232 East Woodin Avenue
Chelan, Washington

FIGURE 4
Conceptual Layout of Oxygen Emitter System

FILE NAME:
221 E. Woodin Figure.dwg

DATE:
7/28/2023