State of Washington
Department of Ecology

In the Matter of Remedial Action by:
Coleman Oil Company
Chevron Environmental Management Company
BNSF Railway Company

Agreed Order
No. DE 23182

To: Jim Cach
Coleman Oil Company
529 E. Kennewick, WA 99336
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TABLE OF CONTENTS

1. Introduction

The mutual objective of the State of Washington, Department of Ecology (Ecology), and the Subject PLPs Coleman Oil Company, LLC (Coleman Oil), BNSF Railway Company (BNSF), and Chevron Environmental Management Company (CEMC) on behalf of Chevron U.S.A. Inc. (CUSA) under this Agreed Order (Order) is to provide for remedial action at a facility where there has been a release or threatened release of hazardous substances. This Order requires the Subject PLPs to implement remedial actions as specified in the Cleanup Action Plan (CAP) (Exhibit B) in accordance with WAC 173-340-400, Cleanup action implementation, and with the attached Scope of Work and Schedule (Exhibit C), which contains the deliverables required by this Order. These remedial actions include, but are not limited to:

a. Groundwater extraction

b. Ex situ groundwater treatment, and

c. In situ groundwater treatment via injection of treated groundwater augmented with surfactants and biological amendments.

Ecology believes the actions required by this Order are in the public interest.

2. Jurisdiction

This Order is issued pursuant to the Model Toxics Control Act (MTCA), RCW 70A.305.050(1).

3. Parties Bound

This Agreed Order shall apply to and be binding upon the Parties to this Order, their successors and assigns. The undersigned representative of each Party hereby certifies that he or she is fully authorized to enter into this Order and to execute and legally bind such Party to comply with this Order. The Subject PLPs agree to undertake all actions required by the terms and conditions of this Order. No change in ownership or corporate status shall alter the Subject PLPs' responsibility under this Order. The Subject PLPs shall provide a copy of this Order to all agents, contractors, and subcontractors retained to perform work required by this Order and shall ensure that all work undertaken by such agents, contractors, and subcontractors complies with this Order.

4. Definitions

Unless otherwise specified herein, the definitions set forth in RCW 70A.305 and WAC 173-340 shall control the meanings of the terms in this Order.

4.1 Site

The Site is referred to as Coleman Oil Yakima Bulk Plant. The Site constitutes a facility under RCW 70A.305.020(8). The Site is defined by where a hazardous substance, other than a consumer product in consumer use, has been deposited, stored, disposed of, or placed, or otherwise come to be located. Based upon factors currently known to Ecology, the Site is generally located in the vicinity of 1 East I Street, Yakima as shown in the Remedial Action Location Diagram (Exhibit A).

4.2 Parties

Refers to Ecology, Coleman Oil, BNSF, and CEMC on behalf of CUSA.

4.3 Potentially Liable Persons (PLP(s))

Refers to the PLPs identified by Ecology for the Site: Coleman Oil; BNSF; Carol Jean Wondrack; and CEMC on behalf of CUSA.

Carol Ann Wondrack and Wondrack Distributing, Inc., while named PLPs, are not parties to this Agreed Order.

4.4 Subject PLP(s)

Refers to the PLPs that are subject to this Order: Coleman Oil; BNSF; and CEMC on behalf of CUSA.

4.5 Agreed Order or Order

Refers to this Order and each of the exhibits to this Order. All exhibits are integral and enforceable parts of this Order.

4.6 Nonaqueous phase liquid (NAPL)

Refers to a hazardous substance that is present in soil, bedrock, groundwater, or surface water as a liquid not dissolved in water. The term includes both light nonaqueous phase liquid (LNAPL) and dense nonaqueous phase liquid (DNAPL).

5. Findings of Fact

Ecology makes the following findings of fact, without any express or implied admissions of such facts by the PLPs:

5.1

A. Based upon factors currently known to Ecology, the Site is generally located at 1 East I Street, Yakima, Washington (46°36'52.7"N 120°30'47.6"W) as shown in the Remedial Action Location Diagram (Exhibit A). The Site is listed in Ecology's Hazardous Sites List as the "Coleman Oil Yakima Bulk Plant Site," Facility Site ID No. 4233, Cleanup Site ID No. 13200.

B. Contamination at the Site is related to a bulk fuel distribution business. Title records show that parcel number 18131314070 was acquired by Standard Oil Company of California (Standard Oil) on March 30, 1908 and sold by CUSA on October 29, 1986. Standard Oil Company was a predecessor of CUSA.

C. Wondrack Distribution, Inc. was the operator of the bulk fuel distributing facility located at the Site from 1976 to August 1, 2015.

D. Carol Jean Wondrack is the current owner of parcel number 181313-14070 on which the business operated by Coleman Oil is located. Title records show that the property was owned by both Joseph E. Wondrack and Carol J. Wondrack between October 29, 1986 and August 2, 2011, and then solely by Carol J. Wondrack since August 2, 2011.

E. Coleman Oil is the current owner of the western portion of the property on which Coleman Oil is located. The western portion of the property was owned by BNSF until October 19, 2018, when it was sold to Coleman Oil.

F. Coleman Oil Company, LLC is the current operator of the bulk fuel distribution facility located at l East I Street in Yakima (the Site). Coleman Oil acquired the assets of the business from Wondrack Distributing, Inc. in a transaction that closed on August 1, 2015. The first issuance date for liquid fuel meter at this Yakima location for Coleman Oil Company, LLC is listed as August 4, 2015 as shown on the Washington State Department

of Revenue website. Title records indicated Coleman Oil Company began leasing the property at 1 East I Street from Carol J. Wondrack on August 11, 2015.

G. CEMC never owned or operated at the Site. Without admitting liability for itself or CUSA, CEMC agrees to be bound by and be a Party to this Order.

H. The west portion of the bulk fuel distribution facility was situated on property that was formerly designated as BNSF right-of-way and is listed as parcel 181313-12030. The west portion was impacted from operations by other parties at the property on which Coleman Oil is located. In 2018, a quit claim deed conveyed a portion of parcel 181313--12030 to Coleman Oil Company, LLC. The portion of parcel 181313-12030 that was conveyed to Coleman Oil is depicted on the Yakima County assessor's website as being part of parcel 181313-14070.

5.2

A. In early 2015, PBS Engineering and Environmental Inc. (PBS) conducted a soil investigation at the Site on behalf of Wondrack Distributing. The findings and conclusions of that investigation were presented in a report titled “Site Characterization Report, Yakima Bulk Plant, 1 East I St, Yakima, Washington” dated June 2015. PBS found evidence of a release or releases based on the presence of petroleum-contaminated soil consisting of diesel and motor oil compounds in concentrations above the MTCA Method A cleanup levels in multiple areas of the site: inside the tank farm, the out-of-use tank and drum storage area within the tank farm, and the loading rack. PBS also found that soil near a waste oil tank inside the tank farm exceeded the cleanup levels for metals cadmium and lead, and for carcinogenic polycyclic aromatic hydrocarbons (PAHs). Although gasoline-range soil contamination was detected during the site characterization, it did not exceed MTCA cleanup levels.

B. Another release was discovered on March 21, 2016, when an employee observed fuel product seeping to the ground surface through a crack in the asphalt pavement. At the time of the observation, diesel fuel was being pumped through a subsurface distribution line beneath the release location. This release was promptly reported to the Department of Ecology as ERTS #663825. The release impacted both soil and groundwater.

C. Evidence of an additional release was discovered and reported to the Department of Ecology on January 17, 2017 as ERTS #670092. The contaminant is gasoline which was released from a subsurface distribution line. Indications of a gasoline release were indicated earlier while investigating the diesel release but were not confirmed until January of 2017.

D. On March 29, 2018, the Parties and others entered Agreed Order DE 15639, which required the PLPs to conduct a remedial investigation/feasibility study (RI/FS) and to prepare a Draft Cleanup Action Plan (DCAP) for the Site.

E. Release(s) of hazardous substances occurred at the Site. The final RI and FS reports dated October 11, 2023 and October 6, 2023, respectively and prepared by PBS on behalf of the PLPs documented the nature and extent of hazardous substances in various media including soil and groundwater.

F. The following hazardous substances at the Site have been detected at concentrations above MTCA cleanup levels. In soil, the following contaminants are present: gasoline-range, diesel-range and heavy-oil range organics, cadmium, lead, and naphthalene. In groundwater, the following contaminants are present: gasoline-range and diesel-range organics, benzene, toluene, ethylbenzene, and total xylenes. These hazardous substances have been, and may continue to be, released at the Site into the environment including groundwater.

G. As documented in the CAP (Exhibit B), Ecology has chosen a final cleanup action to be implemented at the Site.

6. Ecology Determinations

Ecology makes the following determinations, without any express or implied admissions of such determinations (and underlying facts) by the PLPs.

6.1

A. Coleman Oil is an "owner or operator" as defined in RCW 70A.305.020(22) of a "facility" as defined in RCW 70A.305.020(8).

B. BNSF is an "owner or operator" as defined in RCW 70A.305.020(22) of a "facility" as defined in RCW 70A.305.020(8).

C. Carol Jean Wondrack is an "owner or operator" as defined in RCW 70A.305.020(22) of a "facility" as defined in RCW 70A.305.020(8).

D. CUSA or a corporate predecessor(s) was an "owner or operator" as defined in RCW 70A.305.020(22) of a "facility" as defined in RCW 70A.305.020(8).

6.2

Based upon all factors known to Ecology, a "release" or "threatened release" of "hazardous substance(s)" as defined in RCW 70A.305.020(32), (13), respectively, has occurred at the Site.

6.3

Based upon credible evidence, Ecology issued a PLP status letter to Coleman Oil dated March 30, 2017, pursuant to RCW 70A.305.040, .020(26), and WAC 173-340-500. After providing for notice and opportunity for comment, reviewing any comments submitted, and concluding that credible evidence supported a finding of potential liability, Ecology issued a determination that Coleman Oil is a PLP under RCW 70A.305.040 and notified Coleman Oil of this determination by letter dated May 26, 2017.

6.4

Based upon credible evidence, Ecology issued a PLP status letter to BNSF Railway dated March 30, 2017, pursuant to RCW 70.105D.040, .020(26), and WAC 173-340-500. After providing for notice and opportunity for comment, reviewing any comments submitted, and concluding that credible evidence supported a finding of potential liability, Ecology issued a determination that BNSF Railway is a PLP under RCW 70.105D.040 and notified BNSF Railway of this determination by letter dated May 26, 2017.

6.5

Based upon credible evidence, Ecology issued a PLP status letter to Carol Jean Wondrack dated March 30, 2017, pursuant to RCW 70.105D .040, .020(26), and WAC 173-340-500. After providing for notice and opportunity for comment and concluding that credible evidence supported a finding of potential liability, Ecology issued a determination that Carol Jean Wondrack is a PLP under RCW 70.105D .040 and notified Carol Jean Wondrack of this determination by letter dated May 26, 2017.

6.6

Based upon credible evidence, Ecology issued a PLP status letter to CUSA c/o CEMC dated October 20, 2017, pursuant to RCW 70.105D.040, .020(26), and WAC 173-340-500. After providing for notice and opportunity for comment, reviewing any comments submitted, and concluding that credible evidence supported a finding of potential liability, Ecology issued a determination that CUSA is a PLP under RCW 70.105D.040 and notified CUSA of this determination by letter dated December 12, 2017.

6.7

CEMC is a signatory to this Order both for itself and on behalf of CUSA. CEMC manages certain environmental matters on CUSA's behalf. By signing this Order, CEMC voluntarily accepts status as a PLP for the Site. CEMC waives any rights it may have to notice and comment period under WAC 173-340-500. Ecology accepts CEMC as a signatory and Subject PLP under this Order without waiving any statutory authority Ecology may have with respect to CUSA or any corporate successor, including enforcement against CUSA and any such successors in the event of noncompliance with this Order.

6.8

Pursuant to RCW 70A.305.030(1), .050(1), Ecology may require PLPs to investigate or conduct other remedial actions with respect to any release or threatened release of hazardous substances, whenever it believes such action to be in the public interest. Based on the foregoing facts, Ecology believes the remedial actions required by this Order are in the public interest.

7. Work to be Performed

Based on the Findings of Fact and Ecology Determinations, it is hereby ordered that the Subject PLPs take the following remedial actions at the Site. The area within the Site where remedial action is necessary under RCW 70A.305 is described in the Remedial Action Location Diagram (Exhibit A). These remedial actions must be conducted in accordance with WAC 173-340:

7.1

The Subject PLPs shall conduct a final cleanup action at the Site by implementing and completing the Cleanup Action Plan (CAP) attached as Exhibit B and incorporated in this Order. The cleanup action employs surfactant enhanced bioremediation using a designed injection/recovery treatment system. The surfactants will desorb contamination from soil surfaces, or from NAPL layers making the petroleum more available for in-situ or ex-situ remediation. The liberated contaminated water is then more biologically available for microbial and associated enzymatic degradation.

Once desorbed by the surfactants, the NAPL will be recovered through a set of extraction wells to remove liquids (water and NAPL). This liquid will be processed through an above ground separator to capture the separate phase petroleum, then surfactant and biologic solutions will be added, and the water is reintroduced through injection wells to create a closed loop system to effectively treat the area. Recovered separate phase petroleum will then be removed from the Site for proper disposal. The injection wells will be placed at intervals to saturate areas of contaminated soil as well as the vadose zone areas above the water table zone.

The Subject PLPs will prepare an Engineering Design Report (EDR), an Operation and Maintenance (O&M) Plan, and a Compliance Monitoring Plan (CMP) which comprise the elements necessary to implement the CAP. These decision documents will be prepared and submitted to Ecology as Agency Review preliminary drafts. These drafts will be revised after Ecology comment. Ecology will issue a written approval to designate each document as Final.

A pilot test will be conducted to determine the spacing and placement of injection and recovery wells to ensure an appropriate zone of influence for the wells. The study will

include measurement of physical and chemical parameters of the NAPL and of the injected surfactant/enzyme reagent at specified wells in the proximity to selected injection and extraction wells.

The Subject PLPs will prepare and submit an Agency Review preliminary draft of the Cleanup Action Plan (CAP) completion report. After receipt of Ecology's comments, the Subject PLPs will produce a Public Review draft that incorporates those comments that are judged to be relevant by Ecology after discussion with the Subject PLPs. Based on the public comments, the Public Review draft will be then revised for those comments, if any, that Ecology deems to be substantive. Ecology will issue a written approval to designate this document as Final.

Groundwater monitoring will be conducted at compliance wells during the performance of the remedial system and in accordance with the Compliance Monitoring Plan (CMP). The CMP will identify and list the monitoring wells to be sampled, the sampling frequency, and the analytes to be assessed. Groundwater monitoring will consist of performance and confirmation compliance monitoring as required under the CAP (Exhibit B).

7.2

To effectuate the work to be performed under this Order in the most efficient manner, Coleman Oil has elected to take the lead in performing various aspects of the work required under this Order. Language in this Order, and the exhibits attached hereto, may reflect this agreement among the PLPs. However, the PLPs remain strictly, jointly, and severally liable for the performance of any and all obligations under this Order. In the event the party identified as a lead should fail to timely and properly complete performance of all or any portion of its work, all PLPs must perform that remaining work, if any.

7.3 The Subject PLPs will implement and complete the selected cleanup action in accordance with the Scope of Work and Schedule (Exhibit C).

7.4

If the Subject PLPs learn of a significant change in conditions at the Site, including but not limited to a statistically significant increase in contaminant and/or chemical concentrations in any media, the Subject PLPs, within seven (7) days of learning of the change in condition, shall notify Ecology in writing of said change and provide Ecology with any reports or records (including laboratory analyses, sampling results) relating to the change in conditions.

7.5

The Subject PLPs shall submit to Ecology written monthly Progress Reports that describe the actions taken during the previous month to implement the requirements of this Order. All Progress Reports shall be submitted by the tenth (10th) day of the month in which they are due after the effective date of this Order. Unless otherwise specified by Ecology, Progress Reports and any other documents submitted pursuant to this Order shall be sent by electronic mail to Ecology's project coordinator. If requested in writing by Ecology, the Subject PLPs shall send progress reports via certified U.S. mail, return receipt requested. The Progress Reports shall include the following:

7.5.1

A list of on-site activities that have taken place during the month.

7.5.2

Detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests.

7.5.3

Description of all deviations from the Scope of Work and Schedule (Exhibit C) during the current month and any planned deviations in the upcoming quarter.

7.5.4

For any deviations in schedule, a plan for recovering lost time and maintaining compliance with the schedule.

7.5.5

All raw data (including laboratory analyses) received during the previous month (if not previously submitted to Ecology), together with a detailed description of the underlying samples collected.

7.5.6

A list of deliverables for the upcoming month.

7.6

Pursuant to WAC 173-340-440(11), the PLPs shall maintain sufficient and adequate financial assurance mechanisms to cover all costs associated with the operation and maintenance of the remedial action at the Site, including institutional controls, compliance monitoring, and corrective measures.

7.6.1

Within sixty (60) days of the effective date of this Order, the PLPs shall submit to Ecology for review and approval an estimate of the costs under this Order for operation and maintenance of the remedial actions at the Site, including institutional controls, compliance monitoring and corrective measures. Within sixty (60) days after Ecology approves the aforementioned cost estimate, The PLPs shall provide proof of financial assurances sufficient to cover all such costs in a form acceptable to Ecology.

7.6.2

The PLPs shall adjust the financial assurance coverage and provide Ecology's project coordinator with documentation of the updated financial assurance for:

7.6.2.1

Inflation, annually, within thirty (30) days of the anniversary date of the entry of this Order; or if applicable, the modified anniversary date established in accordance with this section, or if applicable, ninety (90) days after the close of the PLPs' fiscal year if the financial test or corporate guarantee is used.

7.6.2.2

Changes in cost estimates, within thirty (30) days of issuance of Ecology's approval of a modification or revision to the cleanup action plan (CAP) that result in increases to the cost or expected duration of remedial actions. Any adjustments for inflation since the most recent preceding anniversary date shall be made concurrent with adjustments for changes in cost estimates. The issuance of Ecology's approval of a revised or modified CAP will revise the anniversary date established under this section to become the date of issuance of such revised or modified CAP.

7.7

All plans or other deliverables submitted by the Subject PLPs for Ecology's review and approval under the Scope of Work and Schedule (Exhibit C) shall, upon Ecology's approval, become integral and enforceable parts of this Order. The PLPs shall take any action required by such deliverable.

7.8

If Ecology determines that the Subject PLPs have failed to make sufficient progress or failed to implement the remedial action, in whole or in part, Ecology may, after notice to the PLPs, perform any or all portions of the remedial action or at Ecology's discretion allow the PLPs opportunity to correct. In an emergency, Ecology is not required to

provide notice to the PLPs, or an opportunity for dispute resolution. The PLPs shall reimburse Ecology for the costs of doing such work in accordance with Section 8.1 (Payment of Remedial Action Costs). Ecology reserves the right to enforce requirements of this Order under Section 10 (Enforcement).

7.9

Except where necessary to abate an emergency situation or where required by law, the Subject PLPs shall not perform any remedial actions at the Site outside those remedial actions required by this Order to address the contamination that is the subject of this Order, unless Ecology concurs, in writing, with such additional remedial actions pursuant to Section 8.11 (Amendment of Order). In the event of an emergency, or where actions are taken as required by law, the Subject PLPs must notify Ecology in writing of the event and remedial action(s) planned or taken as soon as practical but no later than within twenty-four (24) hours of the discovery of the event.

8. Terms and Conditions

8.1 Payment of Remedial Action Costs

The PLPs shall pay to Ecology costs incurred by Ecology pursuant to this Order and consistent with WAC 173-340-550(2). These costs shall include work performed by Ecology or its contractors for, or on, the Site under RCW 70A.305, including remedial actions and Order preparation, negotiation, oversight, and administration. These costs shall include work performed subsequent to the issuance of this Order. Ecology's costs shall include costs of direct activities and support costs of direct activities as defined in WAC 173 340 550(2). For all Ecology costs incurred, the PLPs shall pay the required amount within thirty (30) days of receiving from Ecology an itemized statement of costs that includes a summary of costs incurred, an identification of involved staff, and the amount of time spent by involved staff members on the project. A general statement of work performed will be provided upon request. Itemized statements shall be prepared quarterly. Pursuant to WAC 173-340-550(4), failure to pay Ecology's costs within ninety (90) days of receipt of the itemized statement of costs will result in interest charges at the rate of twelve percent (12%) per annum, compounded monthly.

In addition to other available relief, pursuant to RCW 19.16.500, Ecology may utilize a collection agency and/or, pursuant to RCW 70A.305.060, file a lien against real property Subject to the remedial actions to recover unreimbursed remedial action costs.

8.2 Designated Project Coordinators

The project coordinator for Ecology is:

John Mefford, LHG
Department of Ecology, Toxics Cleanup Program
1250 W. Alder St., Union Gap, WA 98903
(509) 731-9613
John.Mefford@ecy.wa.gov

The project coordinator for the Subject PLPs is:

Jim Cach, Regional Manager
Coleman Oil Company
529 E. Kennewick Ave
Kennewick, WA 99336
Tel: (509) 396-2177
jim@colemanoil.com

Each project coordinator shall be responsible for overseeing the implementation of this Order. Ecology's project coordinator will be Ecology's designated representative for the Site. To the maximum extent possible, communications between Ecology and the Subject PLPs, and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Order shall be directed through the project coordinators. The project coordinators may designate, in writing, working level staff contacts for all or portions of the implementation of the work to be performed required by this Order.

Any Party may change its respective project coordinator. Written notification shall be given to the other Party at least ten (10) calendar days prior to the change.

8.3 Performance

All geologic and hydrogeologic work performed pursuant to this Order shall be under the supervision and direction of a geologist or hydrogeologist licensed by the State of Washington or under the direct supervision of an engineer registered by the State of Washington, except as otherwise provided for by RCW 18.43 and 18.220.

All engineering work performed pursuant to this Order shall be under the direct supervision of a professional engineer registered by the State of Washington, except as otherwise provided for by RCW 18.43.130.

All construction work performed pursuant to this Order shall be under the direct supervision of a professional engineer or a qualified technician under the direct supervision of a professional engineer. The professional engineer must be registered by the State of Washington, except as otherwise provided for by RCW 18.43.130.

Any documents submitted containing geologic, hydrogeologic, or engineering work shall be under the seal of an appropriately licensed professional as required by RCW 18.43 and 18.220.

The Subject PLPs shall notify Ecology in writing of the identity of any supervising engineer(s) and geologist(s), contractor(s), subcontractor(s), and other key personnel to be used in carrying out the terms of this Order, in advance of their involvement at the Site.

8.4 Access

Ecology or any Ecology authorized representative shall have access to enter and freely move about all property at the Site that Subject PLPs either owns, controls, or has access rights to at all reasonable times for the purposes of, inter alia: inspecting records, operation logs, and contracts related to the work being performed pursuant to this Order; reviewing the Subject PLPs' progress in carrying out the terms of this Order; conducting such tests or collecting such samples as Ecology may deem necessary; using a camera, sound recording, or other documentary type equipment to record work done pursuant to this Order; and verifying the data submitted to Ecology by the Subject PLPs. Ecology or any Ecology authorized representative shall give reasonable notice before entering any Site property owned or controlled by the PLPs unless an emergency prevents such notice. All persons who access the Site pursuant to this section shall comply with any applicable health and safety plan(s). Ecology employees and their representatives shall not be required to sign any liability release or waiver as a condition of Site property access.

For access to BNSF's property necessary for any activity related to the terms of this Order, BNSF agrees to facilitate such access. All persons who access BNSF's property pursuant to this section shall be escorted by BNSF personnel (or their designees) and shall comply with all applicable health and safety plan(s). Ecology recognizes that BNSF's property shall be used in such a manner to not be a source of danger to or unreasonably interfere with the existence or use of tracks, roadbed, or property of BNSF. If an emergent source of danger or unreasonable interference with railroad operations occurs, Ecology will cease using the affected property at the Site when requested by BNSF personnel. Ecology's agreement to temporarily cease using the property shall not limit Ecology's authority to conduct further remedial actions pursuant to any applicable state law. Ecology employees and their representatives shall not be required to sign any liability release or waiver as a condition of Site property access.

8.5 Sampling, Data Submittal, and Availability

With respect to the implementation of this Order, the Subject PLPs shall make the results of all sampling, laboratory reports, and/or test results generated by it or on its behalf

available to Ecology. Pursuant to WAC 173-340-840(5), all sampling data shall be submitted to Ecology in both printed and electronic formats in accordance with Section 7 (Work to be Performed), Ecology's Toxics Cleanup Program Policy 840 (Data Submittal Requirements), and/or any subsequent procedures specified by Ecology for data submittal.

If requested by Ecology, the Subject PLPs shall allow Ecology and/or its authorized representative to take split or duplicate samples of any samples collected by the Subject PLPs pursuant to implementation of this Order. The Subject PLPs shall notify Ecology seven (7) days in advance of any sample collection or work activity at the Site. Ecology shall, upon request, allow the Subject PLPs and/or its authorized representative to take split or duplicate samples of any samples collected by Ecology pursuant to the implementation of this Order, provided that doing so does not interfere with Ecology's sampling. Without limitation on Ecology's rights under Section 8.4 (Access), Ecology shall notify the Subject PLPs prior to any sample collection activity unless an emergency prevents such notice.

In accordance with WAC 173-340-830(5)(a) and (b), all hazardous substance analyses shall be conducted by a laboratory accredited under WAC 173-50 for the specific analyses to be conducted, unless otherwise approved by Ecology, and laboratories must achieve the lowest practical quantitation limits consistent with the selected method and WAC 173-340-707.

8.6 Public Participation

Ecology shall maintain the responsibility for public participation at the Site. However, the Subject PLPs shall cooperate with Ecology, and shall:

8.6.1

If agreed to by Ecology, develop appropriate mailing lists and prepare drafts of public notices and fact sheets at important stages of the remedial action, such as the submission of work plans, remedial investigation/feasibility study reports, cleanup action plans, and engineering design reports. As appropriate, Ecology will edit, finalize, and distribute such fact sheets and prepare and distribute public notices of Ecology's presentations and meetings.

8.6.2

Notify Ecology's project coordinator prior to the preparation of all press releases and fact sheets, and before meetings related to remedial action work to be performed at the Site with the interested public and/or local governments. Likewise, Ecology shall notify the Subject PLPs prior to the issuance of all press releases and fact sheets related to the Site, and before meetings related to the

Site with the interested public and local governments. For all press releases, fact sheets, meetings, and other outreach efforts by the Subject PLPs that do not receive prior Ecology approval, the Subject PLPs shall clearly indicate to its audience that the press release, fact sheet, meeting, or other outreach effort was not sponsored or endorsed by Ecology.

8.6.3

When requested by Ecology, participate in public presentations on the progress of the remedial action at the Site. Participation may be through attendance at public meetings to assist in answering questions or as a presenter.

8.6.4

When requested by Ecology, arrange and maintain a repository to be located at:

a. **Yakima Central Library**
   102 N 3rd Street
   Yakima, WA 98901

b. **Department of Ecology**
   Central Region Office
   1250 W. Alder Street
   Union Gap, WA 98903

At a minimum, copies of all public notices, fact sheets, and documents relating to public comment periods shall be promptly placed in these repositories. A copy of all documents related to this Site shall be maintained in the repository at Ecology's Central Regional Office in Union Gap, Washington.

8.7 Access to Information

The Subject PLPs shall provide to Ecology, upon request, copies of all records, reports, documents, and other information (including records, reports, documents, and other information in electronic form) (hereinafter referred to as "Records") within the Subject PLPs' possession or control or that of their contractors or agents relating to activities at the Site or to the implementation of this Order, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information regarding the work. The Subject PLPs shall also make available to Ecology, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the work.

Nothing in this Order is intended to waive any right the Subject PLPs may have under applicable law to limit disclosure of Records protected by the attorney work-product privilege and/or the attorney-client privilege. If the Subject PLPs withholds any requested Records based on an assertion of privilege, the Subject PLPs shall provide Ecology with a privilege log specifying the Records withheld and the applicable privilege. No Site-related data collected pursuant to this Order shall be considered privileged, including: (1) any data regarding the Site, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, radiological, biological, or engineering data, or the portion of any other record that evidences conditions at or around the Site; or (2) the portion of any Record that Respondents are required to create or generate pursuant to this Order.

Notwithstanding any provision of this Order, Ecology retains all of its information gathering and inspection authorities and rights, including enforcement actions related thereto, under any other applicable statutes or regulations.

8.8 Retention of Records

During the pendency of this Order, and for ten (10) years from the date of completion of the work performed pursuant to this Order, the Subject PLPs shall preserve all records, reports, documents, and underlying data in its possession relevant to the implementation of this Order and shall insert a similar record retention requirement into all contracts with project contractors and subcontractors.

8.9 Resolution of Disputes

8.9.1

In the event that the Subject PLPs elects to invoke dispute resolution the Subject PLPs must utilize the procedure set forth below.

8.9.1.1 Upon the triggering event (receipt of Ecology's project coordinator's written decision or an itemized billing statement), the Subject PLPs have fourteen (14) calendar days within which to notify Ecology's project coordinator in writing of its dispute (Informal Dispute Notice).

8.9.1.2 The Parties' project coordinators shall then confer in an effort to resolve the dispute informally. The Parties shall informally confer for up to fourteen (14) calendar days from receipt of the Informal Dispute Notice. If the project coordinators cannot resolve the dispute within those fourteen (14) calendar days, then within seven (7) calendar days Ecology's project coordinator shall issue a written decision (Informal Dispute Decision) stating: the nature of the dispute; the Subject PLPs' position with regards to the dispute; Ecology's position with regards to

the dispute; and the extent of resolution reached by informal discussion.

8.9.1.3 The Subject PLPs may then request regional management review of the dispute. The Subject PLPs must submit this request (Formal Dispute Notice) in writing to the [region] Region Toxics Cleanup Section Manager within seven (7) calendar days of receipt of Ecology's Informal Dispute Decision. The Formal Dispute Notice shall include a written statement of dispute setting forth: the nature of the dispute; the Subject PLPs' position with respect to the dispute; and the information relied upon to support its position.

8.9.1.4 The Section Manager shall conduct a review of the dispute and shall endeavor to issue a written decision regarding the dispute (Decision on Dispute) within thirty (30) calendar days of receipt of the Formal Dispute Notice. The Decision on Dispute shall be Ecology's final decision on the disputed matter.

8.9.2

The Parties agree to only utilize the dispute resolution process in good faith and agree to expedite, to the extent possible, the dispute resolution process whenever it is used.

8.9.3

Implementation of these dispute resolution procedures shall not provide a basis for delay of any activities required in this Order, unless Ecology agrees in writing to a schedule extension.

8.9.4

In case of a dispute, failure to either proceed with the work required by this Order or timely invoke dispute resolution may result in Ecology's determination that insufficient progress is being made in preparation of a deliverable, and may result in Ecology undertaking the work under Section 7.1 (Work to be Performed) or initiating enforcement under Section 10 (Enforcement).

8.10 Extension of Schedule

8.10.1

The Subject PLP's request for an extension of schedule shall be granted only when a request for an extension is submitted in a timely fashion, generally at least thirty (30) days prior to expiration of the deadline for which the extension

is requested, and good cause exists for granting the extension. All extensions shall be requested in writing. The request shall specify:

8.10.1.1 The deadline that is sought to be extended.

8.10.1.2 The length of the extension sought.

8.10.1.3 The reason(s) for the extension.

8.10.1.4 Any related deadline or schedule that would be affected if the extension were granted.

8.10.2

The burden shall be on the Subject PLPs to demonstrate to the satisfaction of Ecology that the request for such extension has been submitted in a timely fashion and that good cause exists for granting the extension. Good cause may include, but may not be limited to:

8.10.2.1 Circumstances beyond the reasonable control and despite the due diligence of the Subject PLPs including delays caused by unrelated third parties or Ecology, such as (but not limited to) delays by Ecology in reviewing, approving, or modifying documents submitted by the Subject PLPs.

8.10.2.2 A shelter in place or work stoppage mandated by state or local government order due to public health and safety emergencies.

8.10.2.3 Acts of God, including fire, flood, blizzard, extreme temperatures, storm, or other unavoidable casualty.

8.10.2.4 Endangerment as described in Section 8.12 (Endangerment).

However, neither increased costs of performance of the terms of this Order nor changed economic circumstances shall be considered circumstances beyond the reasonable control of the Subject PLPs.

8.10.3

Ecology shall act upon any of the Subject PLP's written request for extension in a timely fashion. Ecology shall give the Subject PLPs written notification of any extensions granted pursuant to this Order. A requested extension shall not be effective until approved by Ecology. Unless the extension is a substantial change, it shall not be necessary to amend this Order pursuant to Section 8.11 (Amendment of Order) when a schedule extension is granted.

8.10.4

At the Subject PLPs' request, an extension shall only be granted for such period of time as Ecology determines is reasonable under the circumstances. Ecology may grant schedule extensions exceeding ninety (90) days only as a result of one of the following:

8.10.4.1 Delays in the issuance of a necessary permit which was applied for in a timely manner.

8.10.4.2 Other circumstances deemed exceptional or extraordinary by Ecology.

8.10.4.3 Endangerment as described in Section 8.12 (Endangerment).

8.11 Amendment of Order

The project coordinators may verbally agree to minor changes to the work to be performed without formally amending this Order. Minor changes will be documented in writing by Ecology within seven (7) days of verbal agreement.

Except as provided in Section 8.12 (Reservation of Rights), substantial changes to the work to be performed shall require formal amendment of this Order. This Order may only be formally amended by the written consent of both Ecology and the Subject PLPs. Ecology will provide its written consent to a formal amendment only after public notice and opportunity to comment on the formal amendment.

When requesting a change to the Order, the Subject PLPs shall submit a written request to Ecology for approval. Ecology shall indicate its approval or disapproval in writing and in a timely manner after the written request is received. If Ecology determines that the change is substantial, then the Order must be formally amended. Reasons for the disapproval of a proposed change to this Order shall be stated in writing. If Ecology does not agree to a proposed change, the disagreement may be addressed through the dispute resolution procedures described in Section 8.9 (Resolution of Disputes).

8.12 Endangerment

In the event Ecology determines that any activity being performed at the Site under this Order is creating or has the potential to create a danger to human health or the environment on or surrounding the Site, Ecology may direct the Subject PLPs to cease such activities for such period of time as it deems necessary to abate the danger. The Subject PLPs shall immediately comply with such direction.

In the event the Subject PLPs determines that any activity being performed at the Site under this Order is creating or has the potential to create a danger to human health or the environment, the Subject PLPs may cease such activities. The Subject PLPs shall

notify Ecology's project coordinator as soon as possible, but no later than twenty-four (24) hours after making such determination or ceasing such activities. Upon Ecology's direction, the Subject PLPs shall provide Ecology with documentation of the basis for the determination or cessation of such activities. If Ecology disagrees with the Subject PLPs' cessation of activities, it may direct the Subject PLPs to resume such activities.

If Ecology concurs with or orders a work stoppage pursuant to this section, the Subject PLPs' obligations with respect to the ceased activities shall be suspended until Ecology determines the danger is abated, and the time for performance of such activities, as well as the time for any other work dependent upon such activities, shall be extended in accordance with Section 8.10 (Extension of Schedule) for such period of time as Ecology determines is reasonable under the circumstances.

Nothing in this Order shall limit the authority of Ecology, its employees, agents, or contractors to take or require appropriate action in the event of an emergency.

8.13 Reservation of Rights

This Order is not a settlement under RCW 70A.305. Ecology's signature on this Order in no way constitutes a covenant not to sue or a compromise of any of Ecology's rights or authority. Ecology will not, however, bring an action against the Subject PLPs to recover remedial action costs paid to and received by Ecology under this Order. In addition, Ecology will not take additional enforcement actions against the Subject PLPs regarding remedial actions required by this Order, provided the Subject PLPs complies with this Order.

Ecology nevertheless reserves its rights under RCW70A.305, including the right to require additional or different remedial actions at the Site should it deem such actions necessary to protect human health or the environment, and to issue orders requiring such remedial actions. Ecology also reserves all rights regarding the injury to, destruction of, or loss of natural resources resulting from the release or threatened release of hazardous substances at the Site.

By entering into this Order, the Subject PLPs do not admit to any liability for the Site. Although the Subject PLPs are committing to conducting the work required by this Order under the terms of this Order, the Subject PLPs expressly reserve all rights available under law, including but not limited to the right to seek cost recovery or contribution against third parties, and the right to assert any defenses to liability in the event of enforcement.

8.14 Transfer of Interest in Property

No voluntary conveyance or relinquishment of title, easement, leasehold, or other interest in any portion of the Site shall be consummated by the Subject PLPs without

provision for continued implementation of all requirements of this Order and implementation of any remedial actions found to be necessary as a result of this Order.

Prior to the transfer of any interest in all or any portion of the Site, and during the effective period of this Order, the PLP shall provide a copy of this Order to any prospective purchaser, lessee, transferee, assignee, or other successor in said interest; and, at least thirty (30) days prior to any transfer, the PLP shall notify Ecology of said transfer. Upon transfer of any interest, the PLP shall notify all transferees of the restrictions on the activities and uses of the property under this Order and incorporate any such use restrictions into the transfer documents.

8.15 Compliance with Applicable Laws

8.15.1 Applicable Laws

All actions carried out by the Subject PLPs pursuant to this Order shall be done in accordance with all applicable federal, state, and local requirements, including requirements to obtain necessary permits or approvals, except as provided in RCW 70A.305.090. At this time, no federal, state, or local requirements have been identified as being applicable to the actions required by this Order. The Subject PLPs have a continuing obligation to identify additional applicable federal, state, and local requirements which apply to actions carried out pursuant to this Order, and to comply with those requirements. As additional federal, state, and local requirements are identified by Ecology or the Subject PLPs, Ecology will document in writing if they are applicable to actions carried out pursuant to this Order, and the Subject PLPs must implement those requirements.

8.15.2 Relevant and Appropriate Requirements.

All actions carried out by the Subject PLPS pursuant to this Order shall be done in accordance with relevant and appropriate requirements identified by Ecology. The relevant and appropriate requirements that Ecology has determined apply have been identified in Exhibit [D]. If additional relevant and appropriate requirements are identified by Ecology or the Subject PLPs, Ecology will document in writing if they are applicable to actions carried out pursuant to this Order and the Subject PLPs must implement those requirements.

8.15.3

Pursuant to RCW 70A.305.090(1), the Subject PLPs may be exempt from the procedural requirements of RCW 70A.15, 70A.205, 70A.300, 77.55, 90.48, and 90.58 and of any laws requiring or authorizing local government permits or approvals. However, the Subject PLPs shall comply with the substantive requirements of such permits or approvals. For permits and approvals covered

under RCW 70A.305.090(1) that have been issued by local government, the Parties agree that Ecology has the non-exclusive ability under this Order to enforce those local government permits and/or approvals. At this time, no state or local permits or approvals have been identified as being applicable but procedurally exempt under this section.

8.15.4

The Subject PLPs have a continuing obligation to determine whether additional permits or approvals addressed in RCW 70A.305.090(1) would otherwise be required for the remedial action under this Order. In the event either Ecology or the Subject PLPs determines that additional permits or approvals addressed in RCW 70A.305.090(1) would otherwise be required for the remedial action under this Order, it shall promptly notify the other Party of its determination. Ecology shall determine whether Ecology or the Subject PLPs shall be responsible to contact the appropriate state and/or local agencies. If Ecology so requires, the Subject PLPs shall promptly consult with the appropriate state and/or local agencies and provide Ecology with written documentation from those agencies of the substantive requirements those agencies believe are applicable to the remedial action. Ecology shall make the final determination on the additional substantive requirements that must be met by the Subject PLPs and on how the Subject PLPs must meet those requirements. Ecology shall inform the Subject PLPs in writing of these requirements. Once established by Ecology, the additional requirements shall be enforceable requirements of this Order. The Subject PLPs shall not begin or continue the remedial action potentially subject to the additional requirements until Ecology makes its final determination.

Pursuant to RCW 70A.305.090(2), in the event Ecology determines that the exemption from complying with the procedural requirements of the laws referenced in RCW 70A.305.090(1) would result in the loss of approval from a federal agency that is necessary for the state to administer any federal law, the exemption shall not apply and the Subject PLPs shall comply with both the procedural and substantive requirements of the laws referenced in RCW 70A.305.090(1), including any requirements to obtain permits or approvals.

8.16 Periodic Review

So long as remedial action continues at the Site, the Parties agree to review the progress of remedial action at the Site, and to review the data accumulated as a result of monitoring the Site as often as is necessary and appropriate under the circumstances. Unless otherwise agreed to by Ecology, at least every five (5) years after the initiation of cleanup action at the Site the Parties shall confer regarding the status of the Site and the need, if any, for further remedial action at the Site.

At least ninety (90) days prior to each periodic review, the Subject PLPs shall submit a report to Ecology that documents whether human health and the environment are being protected based on the factors set forth in WAC 173 340 420(4).

Ecology reserves the right to require further remedial action at the Site under appropriate circumstances. This provision shall remain in effect for the duration of this Order.

8.17 Indemnification

The Subject PLPs agree to indemnify and save and hold the State of Washington, its employees, and agents harmless from any and all claims or causes of action (1) for death or injuries to persons, or (2) for loss or damage to property, to the extent arising from or on account of acts or omissions of the Subject PLPs, their officers, employees, agents, or contractors in entering into and implementing this Order. However, the Subject PLPs shall not indemnify the State of Washington nor save nor hold its employees and agents harmless from any claims or causes of action to the extent arising out of the negligent acts or omissions of the State of Washington, or the employees or agents of the State, in entering into or implementing this Order.

9. Satisfaction of Order

The provisions of this Order shall be deemed satisfied upon the Subject PLPs' receipt of written notification from Ecology that the Subject PLPs have completed the remedial activity required by this Order, as amended by any modifications, and that the Subject PLPs have complied with all other provisions of this Agreed Order.

10. Enforcement

Pursuant to RCW 70A.305.050, this Order may be enforced as follows:

10.1

The Attorney General may bring an action to enforce this Order in a state or federal court.

10.2

The Attorney General may seek, by filing an action, if necessary, to recover amounts spent by Ecology for investigative and remedial actions and orders related to the Site.

10.3

A liable party who refuses, without sufficient cause, to comply with any term of this Order will be liable for:

10.3.1

Up to three (3) times the amount of any costs incurred by the State of Washington as a result of its refusal to comply.

10.3.2

Civil penalties of up to twenty-five thousand dollars ($25,000) per day for each day it refuses to comply.

10.4

This Order is not appealable to the Washington Pollution Control Hearings Board. This Order may be reviewed only as provided under RCW 70A.305.070.

Effective date of this Order: August 19, 2024

Coleman Oil Company

James C. Cach

Jim Cach, Regional Manager
529 E. Kennewick, WA Avenue
Kennewick, WA 99336
(509) 396-2177

BNSF Railway Company

Jill Mulligan, EVP and Chief Legal Officer
2301 Lou Menk Drive; Attn: Ann Lawler
Fort Worth, TX 76131
817.352.2353

Chevron Environmental Management Company, for itself and as attorney in fact for Chevron U.S.A. Inc.

Harpreet K. Tiwana, Assistant Secretary
5001 Executive Parkway #200
San Ramon, CA 94583

State of Washington
Department of Ecology

Valerie Bound, Section Manager
Toxics Cleanup Program
Central Regional Office
(509) 901-7107

10.3.1

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529 E. Kennewick, WA Avenue
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_____

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2500 Lou Menk Drive; Attn: Ann Lawler
Fort Worth, TX 76131
817.352.2353

Chevron Environmental Management Company, for itself and as attorney in fact for Chevron U.S.A. Inc.

DocuSigned by:
Harpreet K. Tiwana
5093F566A32543B...

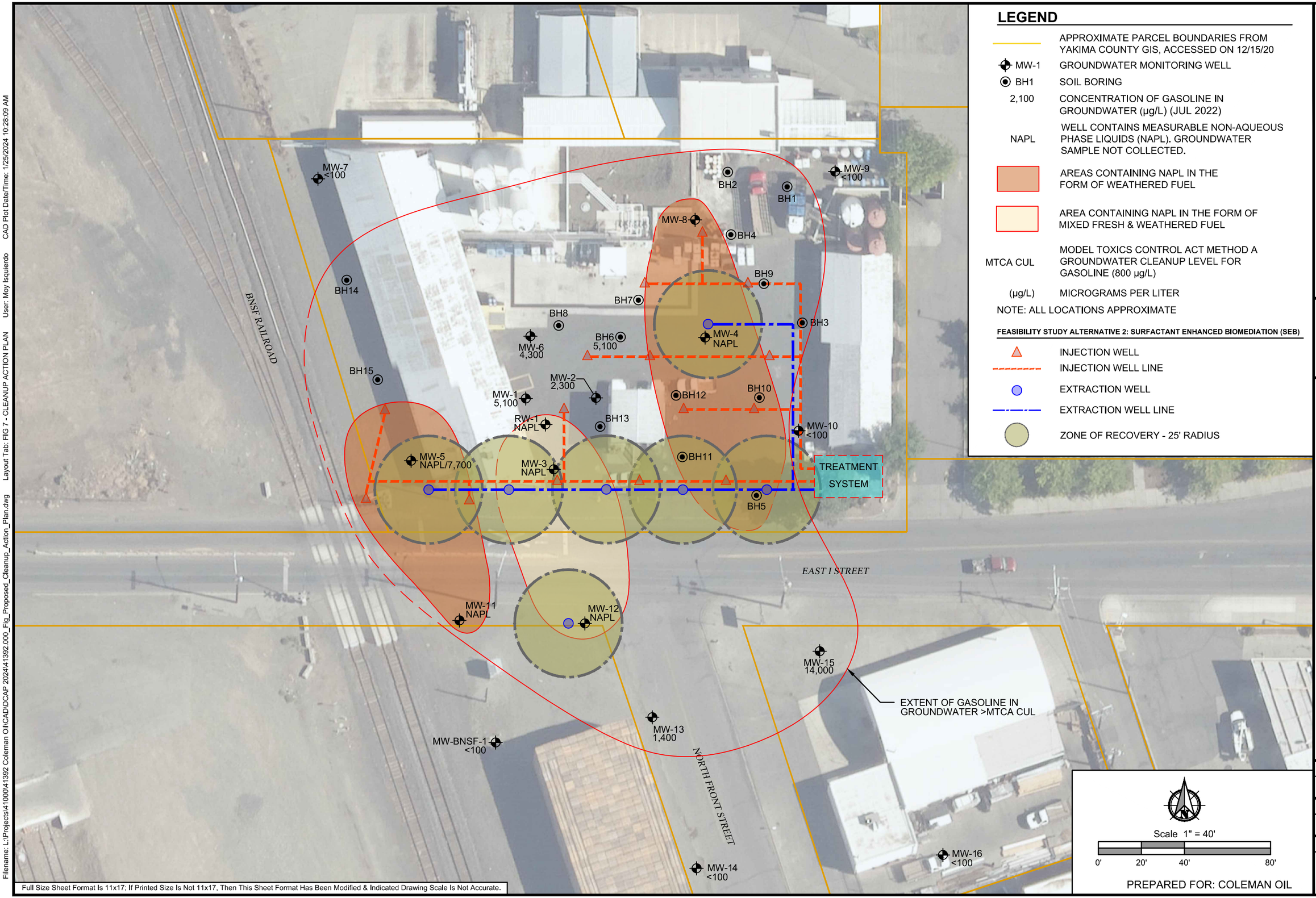
Harpreet K. Tiwana, Assistant Secretary
5001 Executive Parkway #200
San Ramon, CA 94583

State of Washington
Department of Ecology

Valerie Bound

Valerie Bound, Section Manager, Toxics Cleanup Program, Central Region Office
1250 W. Alder Street
Union Gap, WA 98903
(509) 901-7107

Exhibit A - Remedial Action Location Diagram



LEGEND

	APPROXIMATE PARCEL BOUNDARIES FROM YAKIMA COUNTY GIS, ACCESSED ON 12/15/20
MW-1	GROUNDWATER MONITORING WELL
BH1	SOIL BORING
2,100	CONCENTRATION OF GASOLINE IN GROUNDWATER (µg/L) (JUL 2022)
NAPL	WELL CONTAINS MEASURABLE NON-AQUEOUS PHASE LIQUIDS (NAPL). GROUNDWATER SAMPLE NOT COLLECTED.
	AREAS CONTAINING NAPL IN THE FORM OF WEATHERED FUEL
	AREA CONTAINING NAPL IN THE FORM OF MIXED FRESH & WEATHERED FUEL
MTCA CUL	MODEL TOXICS CONTROL ACT METHOD A GROUNDWATER CLEANUP LEVEL FOR GASOLINE (800 µg/L)
(µg/L)	MICROGRAMS PER LITER

NOTE: ALL LOCATIONS APPROXIMATE

FEASIBILITY STUDY ALTERNATIVE 2: SURFACTANT ENHANCED BIOMEDIATION (SEB)

	INJECTION WELL
	INJECTION WELL LINE
	EXTRACTION WELL
	EXTRACTION WELL LINE
	ZONE OF RECOVERY - 25' RADIUS

Scale 1" = 40'

0' 20' 40' 80'

PREPARED FOR: COLEMAN OIL

PBS Engineering and Environmental Inc.
214 East Galer Street, Ste. 300
Seattle, WA 98102
206.233.9639
pbsusa.com

PBS

PROPOSED CLEANUP ACTION PLAN
COLEMAN OIL
1 EAST I STREET, YAKIMA, WASHINGTON

PROJECT	41392.000
DATE	MAR 2024
FIGURE	7

Full Size Sheet Format Is 11x17; If Printed Size Is Not 11x17, Then This Sheet Format Has Been Modified & Indicated Drawing Scale Is Not Accurate.

Filename: L:\Projects\41000\41392 Coleman Oil\CAD\DCAP 2024\41392.000_Fig_Proposed_Cleanup_Action_Plan.dwg Layout Tab: FIG 7 - CLEANUP ACTION PLAN User: Moy Isquierdo CAD Plot Date/Time: 1/25/2024 10:28:09 AM

Exhibit B - Cleanup Action Plan

Cleanup Action Plan
Coleman Oil Yakima Bulk Plant

Site Name:	Coleman Oil Yakima Bulk Plant
Site Address:	1 East I Street, Yakima 98901
Agreed Order:	DE 23182
ERTS ID Nos.:	663825, 670092
Ecology Site Cleanup ID:	13200
Facility/Site ID:	4233

Prepared for:
Washington Department of Ecology
Under Agreed Order DE 15639
Washington Department of Ecology Toxics Cleanup Program
Central Region Office
Union Gap, WA

PBS Project No. 41392.000

March 25, 2024

Table of Contents

Supporting Data

FIGURES

TABLES

ACRONYMS AND ABBREVIATIONS

ARAR	Applicable or Relevant and Appropriate Requirements
AST	Aboveground Storage Tank
Bgs	below ground surface
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAP	Cleanup Action Plan
COC	Contaminant/Chemical of Concern
CMP	Compliance Monitoring Plan
CPOC	Conditional Points of Compliance
CSID	Cleanup Site Identification number
CSM	Conceptual Site Model
CUL	Cleanup Levels
DCA	Disproportionate Cost Analysis
DCAP	draft Cleanup Action Plan
Ecology	Washington State Department of Ecology
EDR	Engineering Design Report
FS	Feasibility Study
FSID	Facility Site identification number
MPE	Multiphase Extraction
MTCA	Model Toxics Control Act
NAPL	Non-aqueous phase liquid
PAHs	Polycyclic Aromatic Hydrocarbons
PCS	Petroleum contaminated soil
COPC	Contaminants of Potential Concern
PLP	Potential Liable Parties
POC	Point of Compliance
PRB	Permeable Reactive Barrier
RI	Remedial Investigation
RCW	Revised Code of Washington
SEB	Surfactant Enhanced Bioremediation
TPH	Total Petroleum Hydrocarbons
UST	Underground Storage Tank
VCP	Voluntary Cleanup Program
VOCs	Volatile Organic Compounds
WAC	Washington State Administrative Code

EXECUTIVE SUMMARY

This document presents the Cleanup Action Plan (CAP) for the Coleman Oil Yakima Bulk Facility Site in Yakima, Washington. This CAP was prepared by Coleman Oil in collaboration with the Washington State Department of Ecology (Ecology). This CAP has been prepared to meet the requirements of the Model Toxics Control Cleanup Act (MTCA) administered by Ecology under Chapter 173-340 of the Washington Administrative Code (WAC). This CAP describes Ecology's proposed cleanup action for this site and sets forth the requirements that the cleanup must meet.

Background

The Property has operated as a bulk petroleum storage and distribution facility for over 60 years. The Site is impacted by two discrete and apparent releases of diesel and gasoline fuels to the subsurface which were identified in March and December of 2016, respectively. There is evidence of more weathered petroleum in both the gasoline and diesel ranges that indicated prior undefined releases at the Site. The locations of both 2016 releases are well understood and are depicted on Figure 2. The exact volumes of the respective releases are currently unknown.

Nonaqueous phase liquid (NAPL), also referred to as floating product, remains present at the Site following release discovery and performance of interim actions. Analysis and visual assessment of NAPL samples by the laboratory indicate that the NAPL plume contains three distinguishable compositions.

- A mixture of fresh and weathered gasoline and diesel fuels
- A mixture of fresh and weathered diesel fuel only
- Weathered diesel fuel only

Cleanup Action Overview

The selected cleanup action will employ surfactant enhanced bioremediation (SEB) using a designed injection/recovery treatment system. Surfactant technology has the unique ability to selectively desorb contaminants and make NAPL miscible in the aqueous phase for enhanced mass removal. The surfactants will also desorb contamination from the soil surfaces, or from NAPL layers making them more available for in-situ or ex-situ remediation. The liberated contaminated water is then more biologically available for microbial (bacteria) and associated enzymatic degradation. The NAPL and contaminated water is collected through recovery wells, pumped into a treatment system, and then reinjected into the impacted areas to create a recirculation treatment zone.

Bioventing as a remedy component may be used in conjunction on a contingent basis with the selected SEB alternative to address vadose zone contamination.

1 INTRODUCTION

1.1 Purpose

This Cleanup Action Plan (CAP) was prepared for the Department of Ecology and on behalf of the Coleman Oil Company for the Coleman Oil Yakima Bulk Fuel Plant Site (Site) located at 1 East I Street in Yakima, Washington. The CAP was prepared in accordance with the Washington State Model Toxics Control Act (MTCA) Chapter 173-340-380 under Washington Administrative Code (WAC). The general location of the Site is depicted on Figure 1 – Site Vicinity.

A CAP is required as part of the site cleanup process under MTCA. The purpose of the CAP is to identify the proposed cleanup action for the Site and to provide an explanatory document for public review. More specifically, this CAP:

- Describes the Site,
- Summarizes current site conditions,
- Summarizes the cleanup action alternatives considered in the remedy selection process,
- Describes the selected cleanup action for the Site and the rational for selecting this alternative,
- Identifies site-specific cleanup levels and points of compliance for each hazardous substance and medium of concern for the proposed cleanup action.

Ecology has made a preliminary determination that a cleanup conducted in conformance with this CAP will comply with the requirements for selection of a remedy under WAC 173-340-360.

1.2 Previous Studies

Concentrations of petroleum in shallow soil were confirmed to be present at the Property in 2015 prior to the 2016 diesel and gasoline releases (PBS, 2015). Groundwater samples were not collected in the 2015 Site investigation, and as such, it is unknown if contaminants confirmed to be present in soil in 2015 had reached the groundwater table prior to discovery of the 2016 diesel and gasoline releases.

The diesel release was discovered in March of 2016. The release was reported to the Department of Ecology (Ecology) within 24 hours on March 21, 2016, and was assigned the Environmental Report Tracking System (ERTS) number 663825. Following initial response and remedial excavation, monitoring wells were installed to assess impacts to groundwater. The locations of both 2016 releases are well understood and are depicted on Figure 2. Petroleum contaminated soil (PCS) removal conducted on March 23 and 30, 2016 included the excavation and off-site disposal of approximately 212 tons of material. Interim action also included dual phase vacuum extraction of diesel fuel and water from RW1 over eight removal events for a total removal of 50 gallons of diesel product. Analysis of samples collected from the wells in May of 2016 confirmed the presence of Total Petroleum Hydrocarbons (TPHs) and BTEX constituents in groundwater in exceedance of their respective cleanup levels (CULs). Additionally, gauging of newly installed onsite wells confirmed the presence of non-aqueous phase liquids (NAPL) approximately 4.5 feet thick in wells RW1 and MW3. (*"Site Characterization and Interim Actions" (PBS 2016).*

The gasoline release was discovered in December of 2016. Following discovery of the gasoline release, additional monitoring wells (MW4 through MW6) were installed to further assess and bound the extents of COCs in groundwater. Analysis of groundwater samples collected from MW1 through MW6 on December 13, 2016, confirmed the presence of TPHs and BTEX constituents already known to be present in groundwater at the Site. In addition to already known contaminants of concern (COCs) at the Site, naphthalene was detected in exceedance of the CUL in well MW6.

Site characterization and interim action activities were completed at the Site from 2016 to 2023 as detailed in the *"Remedial Investigation and Interim Action Report, Coleman Oil Yakima Bulk Fuel" PBS, dated October 11, 2023,* and included the following:

- Advancement of 26 soil borings with soil samples analyzed at various depths.
- Installation of 16 groundwater monitoring wells to permit groundwater sample and analysis.
- Installation of one recovery well (RW-1)
- Shallow soil sampling to identify sources of contamination.
- (1) Heating oil underground storage tank (UST) decommissioning by removal and associated UST site assessment
- Excavation and offsite disposal of petroleum contaminated soil
- Ongoing multiphase extraction (MPE) of non-aqueous phase liquid (NAPL) and contaminated water from the recovery well, RW-1.
- Quarterly groundwater monitoring
- Vapor intrusion evaluation of adjacent structures.

The Remedial Investigation (RI) report concluded that the Site is impacted by two discrete and apparent releases of diesel and gasoline fuels to the subsurface which were identified in March and December of 2016, respectively. The location and extent of the soil impacts are shown on Figure 4. There is evidence of more weathered petroleum in both the gasoline and diesel ranges that indicated prior undefined releases at the Site. The locations of both 2016 releases are well understood. The exact volumes of the respective releases are currently unknown. The nature and extent of contamination in soil are well characterized. Petroleum contaminated soil with COCs in exceedance of cleanup levels (CULs) remain at the Site in defined areas. The potential for petroleum vapor intrusion was evaluated and found to not be present in the existing on-site structures.

Groundwater flow direction is consistently to the southeast with an average gradient of approximately 0.015 feet/foot as shown on Figure 3. The extent of groundwater contamination has been defined in the upgradient, downgradient and lateral direction, except for directly to the west, where impacted MW5 is the furthest explored before the site extends onto the BNSF property in that direction. Nonaqueous phase liquid (NAPL) is present at several locations on the Site including wells: RW-1, MW-3, MW-4, MW-5, MW-8, MW-11, and MW-12. See Figures 5 - 7 for distribution of NAPL. Concentrations of dissolved petroleum COCs in groundwater exceed the CULs throughout most of the Site.

It is suspected that a preexisting TPH as diesel plume in groundwater originating from near the northern property boundary and former ASTs was present at the Site prior to the discovery of the 2016 diesel and gasoline releases.

The Feasibility Study (FS) for the Coleman Yakima Bulk Fuel Plant Site was prepared in accordance with WAC 173-340-350(8) and presented in general accordance with the FS Checklist Guidance (Publication No. 16-09-007). The FS evaluated various remedial alternatives for the Site using disproportionate cost analysis (DCA). The remedial alternatives and selected alternative were evaluated in the *"Feasibility Study, Coleman Oil Yakima Bulk Fuel," PBS, dated October 6, 2023,* and are further described in Section 3 of this DCAP.

1.3 Regulatory Framework

Coleman Oil entered an Agreed Order (No. DE 15639) with other potentially liable parties (PLPs) and Ecology. The effective date of the Agreed Order is March 29, 2018. The PLPs are currently:

- Coleman Oil Company, LLC (Coleman Oil)
- BNSF Railway Company (BNSF)
- Carol Jean Wondrack
- Wondrack Distributing, Inc.
- Chevron Environmental Management Company (Chevron)

The Agreed Order requires the PLPs to complete a Remedial Investigation (RI), Feasibility Study (FS), and to prepare a DCAP for the site. Currently, no additional local, state, or federal regulatory agencies are involved in the cleanup process at the Site.

Final versions of the RI and FS were submitted to Ecology as described in this document. The RI and FS for the Site were approved as final in Ecology's opinion letter issued to the Coleman Oil Company on January 8, 2024.

2 SITE DESCRIPTION

2.1 Site History

The approximate 1.0-acre property comprises one parcel (181313-14070) in Yakima, Washington at the northeast corner of the intersection of East I Street and the BNSF Railroad (see Vicinity Map - Figure 1). The site is currently developed as a bulk fuel storage and distribution facility.

The property is currently developed as a petroleum storage, distribution and active fueling facility. Site features include four active ASTs, associated fuel transfer components, a secondary containment structure, an out-of-use fueling canopy and several structures used as office space and equipment storage. There are currently no proposed plans for change of land use or redevelopment for the site. See Site Plan - Figure 2 for layout of the property.

Tax parcel #181313-14070 was acquired by Standard Oil Company in 1908. It was owned by the Standard Oil Company and thereafter its successor in interest, Chevron U.S.A., until 1986 when it was acquired by Joseph E. Wondrack and Carol J. Wondrack. It has been owned by Carol Jean Wondrack since February 2010. It is understood that Coleman Oil is in a purchase agreement for the

parcel with Carol Jean Wondrack. The west adjacent parcel formerly known as 181313-99997 is owned by BNSF Railroad as successor in interest to the Northern Pacific Railway Company, which acquired its interest in the parcel from the United States of America, pursuant to Section 2 of the Northern Pacific Land Grant Act of 1864.

It is noted that the western portion of the facility was formerly mapped on the Yakima County Assessor's website as being part of west adjacent tax parcel 181313-99997. Previous PBS reports reference both parcels as comprising the site. It is understood that a transaction and re-parceling took place and the property is now a single parcel, owned by Carol Jean Wondrack on the County Assessors webpage on the date of this report. The entirety of the property currently owned by Ms. Wondrack is mapped as tax parcel 181313-14070. After the re-parceling, the BNSF parcel was renumbered to 181313-12030.

Wondrack Distributing, Inc. operated the bulk fuel distributing facility located at the property from 1976 to August 1, 2015. Since August 1, 2015, the bulk fuel distributing facility has been operated by the Coleman Oil Company.

During late 2017 to early 2018, Coleman Oil made several modifications to the fuel transfer and storage infrastructure. Six aboveground storage tanks (ASTs) were removed from the north central and northeastern portions of the property, and a new secondary containment and fueling area was constructed in their place. Four active ASTs remain in the northwestern portion of the property.

Underground product piping is not utilized in the current system. Fuel in the ASTs is bottom loaded and unloaded at the south and eastern sides of the ASTs within the secondary containment system. The fueling canopy in the southcentral portion of the site is no longer in use. One heating oil underground storage tank (UST) was discovered and removed from the site during excavation of a subsurface diesel fuel line in 2017.

2.2 Human Health and Environmental Concerns

Typical concerns for the petroleum contamination in soil and groundwater identified at the Site include direct contact with the soil, migration of contaminants to groundwater resources such as supply or irrigation wells, seeping of contamination into surface water bodies, and vapor intrusion into nearby occupied structures. Evaluation for potential exposure to these contaminants includes determining if there are complete pathways to these contaminants through site investigation data and understanding of the site use and conditions.

Direct contact with contaminated soil and/or groundwater by site workers conducting excavation earthworks or cleanup activities was identified as a complete exposure pathway by the conceptual site model (CSM) presented in the RI. The drinking water pathway is a potential future source of drinking water and is a complete exposure pathway. Ingestion of contaminated groundwater above MTCA Method A cleanup levels is considered a potential complete exposure pathway for the Site. Based on WAC 173-340-720(2), groundwater is considered potable regardless of whether it is currently being used at or near the facility. Please refer to Conceptual Site Model, Figure 8 for visual depiction of contaminated media and exposure pathways.

2.3 Cleanup Standards

2.3.1 *Contaminants of Concern*

The Site is impacted by two discrete and apparent releases of diesel and gasoline fuels to the subsurface which were identified in March and December of 2016, respectively. There is evidence of more weathered petroleum in both the gasoline and diesel ranges that indicated prior undefined releases at the Site. The following contaminants of concern (COCs) were identified in soil and groundwater at the Site.

Soil

- TPH in the gasoline range
- TPH in the diesel range
- TPH in the heavy oil range
- Cadmium
- Lead
- Naphthalene

Groundwater

- TPH as gasoline range organics
- TPH as diesel range organics
- BTEX
- Naphthalene

2.3.2 *Cleanup Levels*

In accordance with MTCA, cleanup levels were developed to include identified potential exposure pathways for human and environmental receptors based on the current and future planned land use. The property is currently zoned for industrial use, and future zoning is not anticipated to change. The current and near-term use of the property is a commercial bulk storage and fueling station, although future uses are unknown and, as such, the adopted cleanup criteria are protective for unrestricted land use.

The proposed cleanup criteria for soil at the Site will be the MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses (MTCA Method A) as defined in WAC 173-340-720, 173-340-740, and 173 340-747.

The proposed cleanup criteria for groundwater at the Site will be the MTCA Method A Groundwater Cleanup Levels (MTCA Method A) as defined in WAC 173-340-720,173-340-740, and 173-340-747.

Cleanup standards are presented by media (i.e., soil or groundwater) for each COC in Table 4.

3 CLEANUP ACTION ALTERNATIVES AND ANALYSIS

3.1 Cleanup Action Alternatives

This section describes the cleanup alternatives that were developed and evaluated in the Feasibility Study. For a more detailed discussion of the cleanup alternatives and selection process refer to the Feasibility Study. The Feasibility Study presented four cleanup alternatives to remediate Site soil and groundwater.

Alternative 1 – Multiphase Extraction Enhanced Monitored Natural Attenuation

Alternative 1 included periodic performance of multiphase extraction (MPE) events and groundwater monitoring. MPE events performed monthly would be utilized to remove contaminant

mass via non-aqueous phase liquid (NAPL) and contaminated groundwater from the subsurface as well as control the migration of contaminants from the Site. Groundwater monitoring would be used to track the attenuation of NAPL and contaminant concentrations in groundwater due to MPE and natural degradation of dissolved phase-contaminants.

Alternative 2: Surfactant Enhanced Bioremediation

Alternative 2 would employ Surfactant Enhanced Bioremediation (SEB) using an injection/recovery treatment system. Surfactant technology has the unique ability to selectively desorb contaminants and make NAPL miscible in the aqueous phase for enhanced mass removal. The surfactants will also desorb contamination from the soil surfaces, or from NAPL layers making them more available for in-situ or ex-situ remediation. The liberated contaminated water is then more biologically available for microbial (bacteria) and associated enzymatic degradation. Once desorbed by the surfactants, the NAPL will be recovered though a set of extraction wells to remove liquids (water and NAPL). This liquid will be processed through an above ground separator to capture the free phase petroleum, then surfactant and biologic solutions will be added, and the water is reintroduced through injection wells to create a closed loop system to effectively treat the area. Recovered free phase petroleum would be removed from the Site for disposal. The injection wells will be placed at intervals to saturate areas of contaminated soil as well as the vadose zone areas above the water table zone.

Pilot testing will be conducted with limited remedial injections and passive flow meters to determine the effect on contaminant mass reduction as groundwater flows downgradient from the source area.

Alternative 3 – Surfactant Enhanced Dual Phase Extraction

Alternative 3 included implementation of Surfactant Enhanced Dual Phase Extraction (SEDPE) using an injection/extraction system (liquid + vapor), ex situ treatment of groundwater, and reinjection of treated water enhanced with surfactant. The injection of a surfactant into the vadose and groundwater zone will liberate NAPL and dissolved petroleum in the groundwater. Groundwater extraction wells will be strategically placed to capture the groundwater and pump into an oil/water separator, treated using aeration and then recirculated with surfactants into the injection wells. The recovery wells are designed to enhance soil vapor extraction (SVE) from the vadose zone. The petroleum vapors will be conveyed from the recovery wells using high vacuum regenerative blowers to an exhaust system equipped with an activated carbon filter system.

Alternative 3 was very similar to Alternative 2. The primary difference between Alternatives 2 and 3 is that Alternative 3 proposed the use of dual phase extraction to treat and remove contaminant mass within the vadose zone while Alternative 2 has a greater focus on treatment and removal of contaminants in the 'smear zone' using bioremediation.

Alternative 4 – Targeted Soil Excavation with Passive Reactive Barrier

Alternative 4 included demolition of property structures, soil removal to 20-feet below ground surface (bgs) within areas of remaining soil contamination, installation of a passive reactive barrier downgradient of the Site across I Street, and performance of MPE events downgradient of the Site. Excavated soil would be removed from the Site for offsite disposal. A 4-inch diameter recovery well

would be installed downgradient from the Site in the vicinity of MW-12. MPE events would be conducted quarterly using a vacuum truck and the newly installed recovery well for up to five years, or until MPE events were determined to have no significant reduction in the presence of NAPL at the Site for four consecutive quarters.

In addition, a passive reactive barrier (PRB) would be installed to deal with dissolved contaminants in the groundwater down gradient of the Property along and south of I-Street. The PRB would be installed using a remedial injection solution composed of granular activated carbon, a microbial solution of bacteria concentrates, as well as amendments added to serve as an ongoing food and respiratory source for continued biological degradation of contaminants. The objective of injections within this area is to create a reactive curtain of remedial solution through which groundwater leaving the source area and moving downgradient will flow.

Contingent Remedial Technology:
Bioventing/biosparging was not evaluated as a stand-alone cleanup remedy, although there is value in adding bioventing as a contingent remedy component forming part of a combined remedy to address shallow soil impacts in the areas around S39, S26/S27/S28, and MW-1/VB1/BH13/RW-1 where diesel contamination exists as shallow as 1 to 3 feet deep or gasoline and diesel extends as deep as 18 feet, below the surface covering at the facility. This shallow contamination exists in the vadose zone that the surfactant enhanced bioremediation is unlikely to fully address. Bioventing can be added as a contingent component to the selected remedy based on the requirements under WAC 173-340-360, especially as it relates to permanence, protectiveness, and completing the cleanup action in a reasonable restoration timeframe.

3.2 Initial Screening of Alternatives

In accordance with WAC 173-340-360(2), there are minimum requirements that must be met for a selected cleanup action. These minimum requirements are defined in terms of Threshold Requirements and Other Requirements. Threshold Requirements which must be met by the selected cleanup action include the following:

- Protect Human Health and the environment,
- Comply with cleanup standards,
- Comply with applicable state and federal laws; and
- Provide for compliance monitoring.

When appropriate, MTCA allows for an initial screening of remedial technologies such that the number of alternatives carried forward to the evaluation is reduced. MTCA stipulates that the following remedial action alternatives or components may be eliminated from further consideration in the Feasibility Study:

- Alternatives or components that clearly do not meet the minimum requirements established for cleanup actions under WAC 173-340-360, including those alternatives for which costs are clearly disproportionate.
- Alternatives or components which are not technically possible.

For the initial screening process, Table 3 summarizes the potential remedial technologies and components. Retained components were assembled into remedial alternatives for further evaluation against MTCA criteria for cleanup actions. The following four remedial alternatives were developed using the technologies retained in the initial screening:

- Alternative 1 – Multiphase Extraction Enhanced Monitored Natural Attenuation (MPE MNA)
- Alternative 2 – Surfactant Enhanced Bioremediation (SEB)
- Alternative 3 – Surfactant Enhanced Dual Phase Extraction (SEDPE)
- Alternative 4 – Targeted Soil Excavation with Passive Reactive Barrier (PRB) and MPE

3.3 Detailed Evaluation of Alternatives

To further evaluate the selected alternatives to support the remedy selection, Ecology evaluated four alternatives for the remediation of contaminated soil and groundwater at the Coleman Oil Site. The evaluation compared the adequacy of each alternative relative to MTCA criteria (WAC 173-340-360), as well as a ranking of criteria by disproportionate cost analysis (DCA), in accordance with WAC 173-340-350.

When selecting a cleanup action, MTCA requires that Ecology give preference to actions that use permanent solutions to the maximum extent practicable. To select the most practicable permanent solution from among those cleanup action alternatives that are protective of human health and the environment, Ecology conducts a disproportionate cost analysis (DCA). The DCA allows for a comparison of the costs and benefits of the alternatives and evaluation of alternatives according to criteria identified in Section 360(f) of MTCA [WAC 173-340-360(f)]. These criteria include:

- Protectiveness
- Permanence
- Cost
- Effectiveness over the long term
- Management of short-term risks
- Technical and administrative implementability
- Consideration of public concerns

A detailed DCA evaluation is included as Table 3. As described in MTCA, the comparison of benefits and costs may be quantitative, but will often be qualitative and require the use of best professional judgment. It's important to recognize that Ecology has the discretion to favor or disfavor qualitative benefits and use that information in selecting a cleanup action. [WAC 173-340-360(3)(e)(ii)(C)].

Consistent with MTCA evaluation criteria (WAC 173-340-360, starting with the alternatives that meet the threshold requirements, Alternatives 1 through 4, the overall weighted benefit score and cost of Alternatives 1 through 3 are compared to the scores and costs for the most permanent alternative, Alternative 4. Alternative 4 includes the most aggressive means of source reduction by excavating NAPL and contaminated soil and represents the most permanent remedial alternative evaluated in this FS. As such, Alternative 4 represents the benchmark against which the incremental costs and benefits of the other alternatives were evaluated.

An evaluation of remedial alternatives is presented in Table 1. All four alternatives evaluated in the FS met the threshold and other requirements of MTCA and were further evaluated by conducting a DCA. Table 2 compares costs between various alternatives. Table 3 presents the DCA performed for the four alternatives using alternative 4 as the baseline, or most permanent remedy.

- The Alternative 1 remedy was not expected to result in a reasonable restoration timeframe as it would not efficiently treat or remove contaminants. The restoration timeframe for this remedy was estimated to be at least 30 years. Alternative 1 was not selected as the proposed cleanup action for the Site.
- Alternative 4 received an overall weighted benefit score less than that of Alternatives 2 and 3 but greater than that of Alternative 1. Alternative 4 had the highest estimated cost for implementation of the four alternatives evaluated. The cost of Alternative 4 was determined to be disproportionate to its incremental benefits. Based on these findings, Alternative 4 was not selected as the proposed cleanup action for the Site.
- Evaluation of the alternatives determined Alternative 2 to be a more effective alternative with a lower cost than Alternative 3. As such, Alternative 3 was not selected as the proposed cleanup action.
- Alternative 2 meets the threshold and other MTCA requirements and was selected as the preferred remedy based on the DCA. Alternative 2 was determined to be the most permanent remedy and had an overall weighted benefit score of 6.4 points in the DCA.

4 DESCRIPTION OF SELECTED REMEDY

4.1 Site Description

This CAP applies to the portions of the Site where soil and groundwater concentrations exceed applicable cleanup levels. The Site boundary is depicted on Figures 4 through 6 as the extent of groundwater with concentrations of gasoline and/or diesel exceeding the MTCA Method A CUL.

The contamination identified on the Coleman property has migrated in the groundwater media south toward I Street and beyond the property boundary, and to the west toward the BNSF railway corridor. The contamination present under and south of I Street is primarily dissolved petroleum compounds in the groundwater. There is also a plume of NAPL consisting of diesel fuel present on the western boundary of the Site that extends south of I Street toward monitoring well MW 12. The western extent of the petroleum in groundwater at the Site extends toward the BNSF railway line located approximately 20-feet west of the Coleman Oil property line.

4.2 Description of the Cleanup Action

Based on a detailed review of remedial alternatives, including the DCA, Ecology selected Alternative 2 (Surfactant Enhanced Bioremediation). The selected cleanup action complies with MTCA requirements and addresses concerns of Coleman Oil Company and the public and maximize the benefit/cost ratio.

Alternative 2 employs surfactant enhanced bioremediation using an injection and recovery treatment system. Surfactant technology has the unique ability to selectively desorb contaminants and make NAPL miscible in the aqueous phase for enhanced mass removal. The surfactants will also

desorb contamination from the soil surfaces, or from NAPL layers making them more available for in-situ or ex-situ remediation. The liberated contaminated water is then more biologically available for microbial (bacteria) and associated enzymatic degradation.

Once desorbed by the surfactants, the NAPL will be recovered though a set of extraction wells to remove liquids (water and NAPL). This liquid will be processed through an aboveground oil/water separator to capture the free-phase petroleum, then surfactant and biologic solutions will be added, and the enhanced water is reintroduced through injection wells to create a closed loop system to effectively treat the area. Recovered free-phase petroleum would be removed from the Site for disposal. The injection wells will be placed at intervals to saturate areas of contaminated soil as well as the vadose zone areas above the groundwater table.

Alternative 2 injects water enhanced with surfactants and microbial amendments into the vadose zone to treat contaminated soil above the water table and within the smear zone. These contaminants would be treated in-situ by microbial amendments and ex-situ in the above ground system following removal from the subsurface by extraction wells. In addition to the on-property SEB treatment system, Alternative 2 includes installation of an additional recovery well(s) downgradient of the property near MW-12. MPE events would be performed on the well(s) on a quarterly basis for 5 years. Elements of the proposed cleanup action are shown on Figure 7. Groundwater monitoring will be conducted on a semiannual basis until groundwater cleanup levels are achieved. Once the groundwater at the standard points of compliance meets the cleanup level, final groundwater compliance monitoring will be performed on a quarterly basis for the equivalent of one year.

Alternative 2 can include an evaluation of bioventing as a contingent technology during pilot testing activities. This contingent technology can supplement the selected SEB remedy, to further reduce COCs in the soil media.

Bioventing may be effective to address shallow soil impacts in the areas around S39, S26/S27/S28, and MW-1/VB1/BH13/RW-1 where diesel contamination exists as shallow as 1 to 3 feet deep or gasoline and diesel extends as deep as 18 feet, below the surface covering at the facility. This shallow contamination exists in the vadose zone that the surfactant enhanced bioremediation is unlikely to fully address. The bioventing component would be combined with the preferred remedy based on the requirements under WAC 173-340-360.

A pilot study would be performed to determine spacing and placement of injection and recovery wells to ensure an appropriate zone of influence for the wells. The study would include measurement of physical and chemical parameters of NAPL as well as injected surfactant/enzyme at specified wells in proximity to selected injection and extractions wells. Additionally, an improved understanding of localized groundwater flow conditions within the site would aid in system design. This could be achieved via the use of tracer dye studies, passive flow meters, or other means implemented during the pilot test.

Performance monitoring will be performed with the frequency and specific well locations to be defined in the Engineering Design Report (EDR). The preliminary groundwater performance monitoring frequency will be semi-annual and use selected key monitoring wells during the performance monitoring period.

Performance monitoring for NAPL in groundwater includes a proposed remediation level for NAPL thickness of 0.05 feet, indicating recovery of NAPL to a practicable limit that is not consistently recoverable, and the remaining NAPL impacts are immobile. NAPL transmissivity testing will be completed during the pilot test period to confirm the remediation performance NAPL level metrics. Per WAC 173-340-355, a remediation level defines the concentration of a hazardous substance in an environmental medium at which a particular cleanup action component will be used. If the proposed cleanup action does not result in a reduction of NAPL thickness to below the remediation level within the restoration timeframe, additional cleanup actions will be performed to further reduce NAPL thickness.

Additional cleanup actions may consist of further performance of the actions included in the selected alternative if these actions are shown to result in sufficient reduction of NAPL thickness but are unable to achieve remediation levels within the restoration timeframe. Additional cleanup actions may also include other methods if the proposed cleanup action is determined to be a suboptimal technique for reducing NAPL thickness during implementation of the cleanup action.

4.3 Cleanup Standards and Points of Compliance

4.3.1 *Soil Cleanup Standards and Points of Compliance*

The cleanup criteria for soil at the Site are the MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses (MTCA Method A) as defined in WAC 173-340-740 and 173-340-747. Soil CULs are provided in Table 4.

Standard points of compliance for soil are established to evaluate the cleanup action. The standard point of compliance for soil is defined as throughout the Site from ground surface to 15 feet bgs.

4.3.2 *Groundwater Cleanup Standards and Points of Compliance*

Groundwater cleanup levels are established based on estimates of the highest beneficial use and the reasonable maximum exposure expected to occur under both current and potential future site use conditions. Ecology has determined that at most sites use of groundwater as a source of drinking water is the beneficial use requiring the highest quality of groundwater and that exposure to hazardous substances through ingestion of drinking water and other domestic uses represents the reasonable maximum exposure.

At this site, MTCA Method A groundwater cleanup levels (CULs) were determined to be applicable to Coleman Oil site cleanup actions. The cleanup criteria for groundwater at the Site are the MTCA Method A Groundwater CULs (MTCA Method A) as defined in WAC 173-340-720,173-340-740, and 173-340-747. Groundwater CULs are provided in Table 4.

Groundwater standard points of compliance are for protection of drinking water and would extend vertically from the uppermost level of the saturated zone to the lowest depth potentially impacted by the releases. Standard points of compliance for groundwater are established under this CAP.

4.3.3 *Applicable, Relevant and Appropriate Requirements (ARAR)*

A detailed list of applicable, relevant, and appropriate requirements (ARARs) applicable to the selected cleanup actions is included as Table 5. The list of ARARs is from Section 2 of the 2023 Feasibility Study.

4.4 Restoration Timeframe

The proposed cleanup action can be completed within a reasonable time frame. The proposed cleanup action will be implemented upon Ecology approval of the Engineering Design Report. The selected alternative offers an effective remedy that meets the criteria for selection of a cleanup action under MTCA.

The proposed cleanup action will greatly reduce the risk posed by COCs to human health and the environment by:

- Groundwater extraction
- Ex situ groundwater treatment
- In situ groundwater treatment via injection of treated groundwater augmented with surfactants and biological amendments

It is expected that the Alternative 2 SEB recirculating system NAPL recovery and supplemental biological treatment may take 5 years of operation to reach the CULs. Achievement of CULs would be evaluated and confirmed by groundwater monitoring performed throughout and following remediation.

Compliance groundwater monitoring will be required during and following completion of the cleanup action. When groundwater monitoring results indicate that cleanup objectives have been met, a Groundwater Completion Report will be prepared and submitted to Ecology for their review and approval. After the cleanup standards have been met, the monitoring wells will be removed and closed in accordance with the Minimum Standards for Construction and Maintenance of Wells, WAC 173-160- 151 and Water Well Construction, Chapter 18.104.040 of the Revised Code of Washington.

4.5 Compliance Monitoring

A Compliance Monitoring Plan (CMP) will be developed for the cleanup action that meets the requirements of WAC 173-340-410. Compliance monitoring for the cleanup actions includes protection monitoring (during construction), performance monitoring (collection of soil and groundwater samples) following implementation of the cleanup action, and confirmation monitoring (long-term groundwater monitoring until cleanup levels are achieved). The details of the monitoring will be specified in the forthcoming EDR.

Compliance monitoring of soil will be performed via drilling investigation following implementation of the cleanup remedy. As described in Section 4.3.2, Method A CULs are established for soil. Compliance monitoring of soil will be further detailed in the EDR.

Groundwater confirmation monitoring will be conducted as specified in the Compliance Monitoring Plan (CMP). It is anticipated that groundwater compliance monitoring will include groundwater sampling and analysis of TPH as diesel and gasoline, naphthalene, and BTEX The compliance monitoring will be based on the monitoring well network at the wells to be selected in the CMP.

4.6 Schedule for Implementation

The cleanup action will be implemented following the approval of the DCAP. The preliminary sequence and implementation schedule for the cleanup action is as follows:

Item	Task	Preliminary Schedule
1	Perform Pilot Testing on Site	3rd Quarter 2024
2	Engineering Design Report (EDR)	4th Quarter 2024
3	Ecology Review and Approval of the EDR	4th Qtr 2024 or 1st Qtr 2025
4	Contract and schedule contractors and equipment	1st half 2025
5	SEB recirculation system implementation a. Install specified wells, pumps, and system components. b. Bioventing will be implemented on a contingent basis.	*start date: 2025* Concurrent with implementation of SEB recirculation system
6	Operate treatment system(s) conduct performance monitoring.	5-year period
7	Compliance Monitoring	2030-2031
8	Periodic Review	5 years after first operation of the SEB recirculation system
9	Request Ecology Review and Closure	2032
10	Remove Systems and Restore Site	2033

4.7 Institutional/Engineering Controls

The cleanup action includes engineering and institutional controls to protect human health and the environment from residual contamination in soil and groundwater in accordance with WAC 173-340- 440.

During implementation of the cleanup action, interim engineering controls including construction fencing/securing the work area would be used to minimize exposure to contaminated soil. Following construction, engineering controls will include replacement of asphalt pavement over excavation or trench areas, removal of the treatment system components, and the decommissioning of monitoring or recovery wells in accordance with WAC 173-160-460.

Land Use Restrictions (LURs) or Engineering Controls (ECs) such as an environmental covenant recorded for the source property may be implemented with any of the above alternatives as appropriate. LURs or ECs would be implemented if CULs are unable to be reached in a reasonable timeframe using proper implementation of the selected alternative, including potential optimization of the treatment system if initial milestones are not met. Milestones and metrics for system performance and triggers for system optimization will be specified later in system design and operations and maintenance (O&M) documents. LURs or ECs would address residual contaminants which are likely to be part of the proposed remedy alternative.

Institutional controls will likely be required in the form of a restrictive environmental covenant on the property to protect human health and the environment from exposure to soil remaining on site exceeding MTCA Method A cleanup levels. The restrictive covenant would, at a minimum, require notifications for conducting intrusive activities at the Site within the zone of residual soil contamination. The use of Site groundwater as a drinking water source would also be prohibited.

The restrictive covenant would be recorded prior to completion of the cleanup actions. An Institutional Controls (IC) Plan will be developed prior to completion of the cleanup action. The IC Plan would prescribe periodic inspections of the Site, including the integrity of asphalt pavement. The IC Plan would be reviewed and updated every 5 years as part of the periodic review process. Appendix C to the Cleanup Action Plan Agreed Order includes a template for an environmental covenant.

4.8 Likely Vulnerable Populations and Overburdened Communities

An assessment was performed to determine whether the population threatened by the Site includes a vulnerable population or overburdened community. This review process is described in the Toxics Cleanup Program's Implementation Memorandum No. 25. This memorandum calls for a review of the census tract that encompasses the Site.

Information relevant to the assessment is accessible at the Washington State Department of Health's Environmental Health Disparities web portal and at the EPA's EJScreen web portal. Based on a review of this information, a potentially exposed population exists in Census Tract No. 53077000200 that may be subject to environmental impacts, as defined in RCW 70A.02.005 (aka the HEAL Act). The term, potentially exposed population, refers to vulnerable populations and overburdened communities.

4.9 Public Participation

As provided under WAC 173-340-600, members of the public will be invited to review and comment on the draft CAP before it is finalized during a formal public comment period. Comments received during this period will be entered into the site's formal record, considered by cleanup staff, and responded to in a responsiveness summary before the draft CAP is final.

Notice for this comment period will include mailings to nearby businesses and residents, email

notification distributed to an email listserv, posting in Ecology's Site Register, website updates, and newspaper legal ad. Contingent on public interest, Ecology will hold a public meeting where detailed information about the site and DCAP will be available.

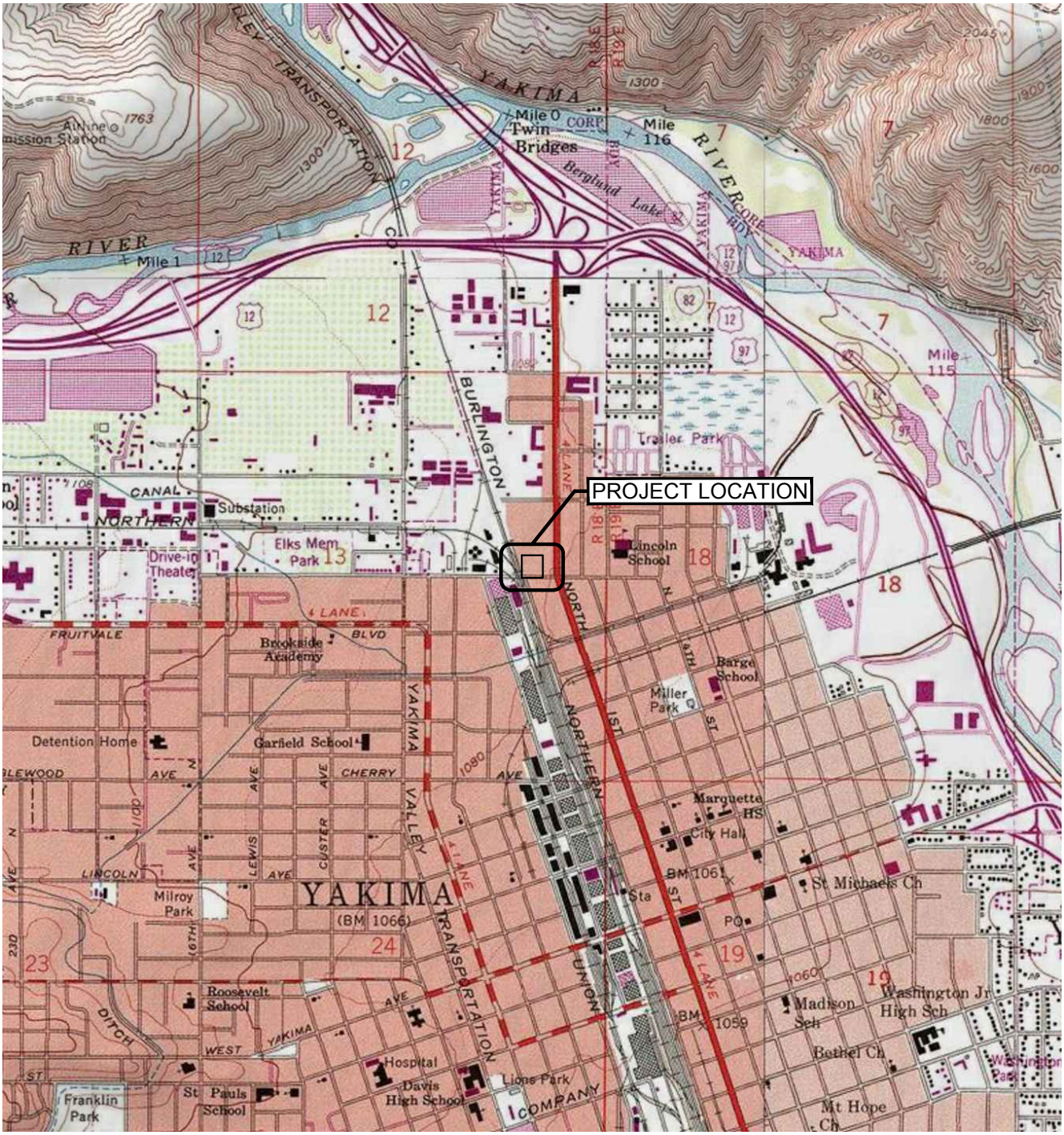
Public comment will also be provided for other components of the final CAP as described in WAC 173-340-600(15).

5 REFERENCES

(PBS, 2023a) Feasibility Study, Coleman Oil Yakima Bulk Fuel, prepared by PBS, dated October 6, 2023.

(PBS, 2023b) Remedial Investigation and Interim Action Report – Coleman Oil Yakima Bulk Fuel, prepared by PBS, October 11, 2023.

Figures



SOURCE: USGS YAKIMA WEST, WA QUADRANGLE 1985

WASHINGTON

Scale 1" = 2,000'

0' 1,000' 2,000' 4,000'

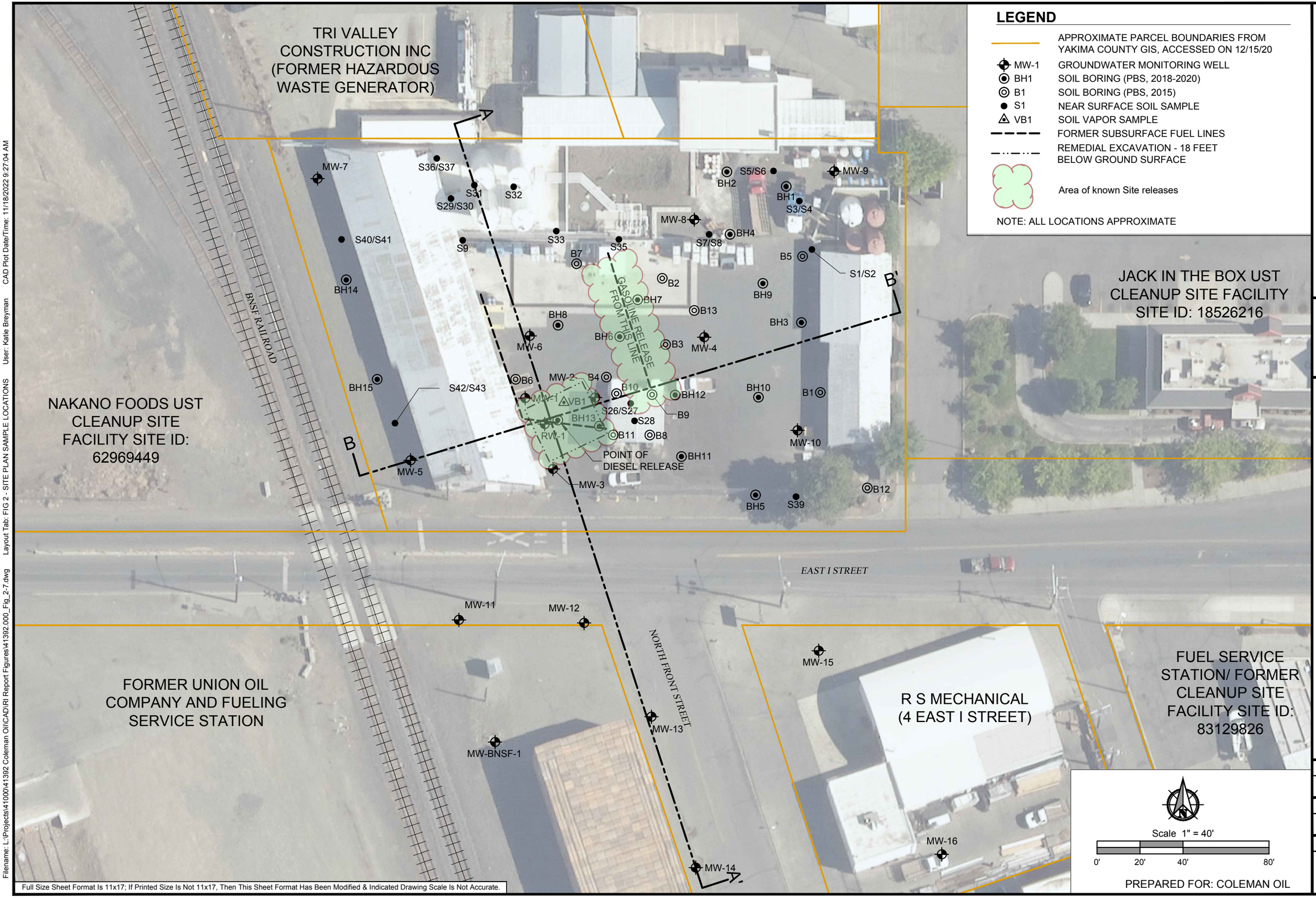
PREPARED FOR: COLEMAN OIL

VICINITY MAP

1 EAST I STREET
YAKIMA, WASHINGTON

MAR 2024
41392.000

FIGURE
1



LEGEND

- APPROXIMATE PARCEL BOUNDARIES FROM YAKIMA COUNTY GIS, ACCESSED ON 12/15/20
- MW-1 GROUNDWATER MONITORING WELL
- BH1 SOIL BORING (PBS, 2018-2020)
- B1 SOIL BORING (PBS, 2015)
- S1 NEAR SURFACE SOIL SAMPLE
- VB1 SOIL VAPOR SAMPLE
- FORMER SUBSURFACE FUEL LINES
- REMEDIAL EXCAVATION - 18 FEET BELOW GROUND SURFACE
- Area of known Site releases

NOTE: ALL LOCATIONS APPROXIMATE

Scale 1" = 40'

0' 20' 40' 80'

PREPARED FOR: COLEMAN OIL

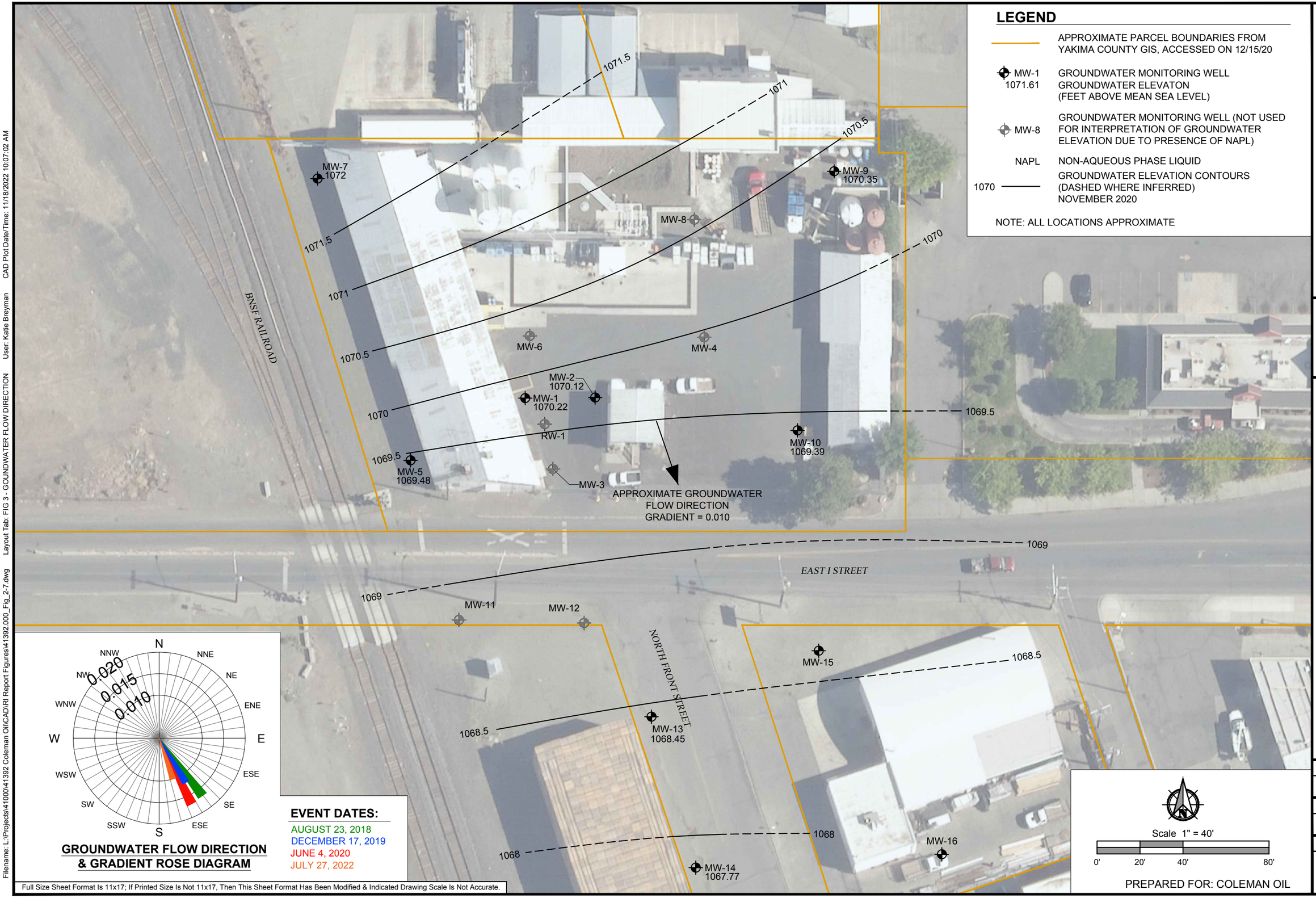
PBS Engineering and Environmental Inc.
214 East Galer Street, Ste. 300
Seattle, WA 98102
206.233.9639
pbsusa.com

SITE PLAN: SAMPLE LOCATIONS
COLEMAN OIL
1 EAST I STREET, YAKIMA, WASHINGTON

PROJECT
41392.000
DATE
MAR 2024
SHEET ID
2

Full Size Sheet Format Is 11x17; If Printed Size Is Not 11x17, Then This Sheet Format Has Been Modified & Indicated Drawing Scale Is Not Accurate.

Filename: L:\Projects\41000\41392 Coleman Oil\CAD\RI Report Figures\41392.000_Fig_2-7.dwg Layout Tab: FIG 2 - SITE PLAN SAMPLE LOCATIONS User: Katie Breyman CAD Plot Date/Time: 11/18/2022 9:27:04 AM



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PBS

SITE PLAN - GROUNDWATER ELEVATION CONTOUR MAP

COLEMAN OIL

1 EAST I STREET, YAKIMA, WASHINGTON

PROJECT
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MAR 2024
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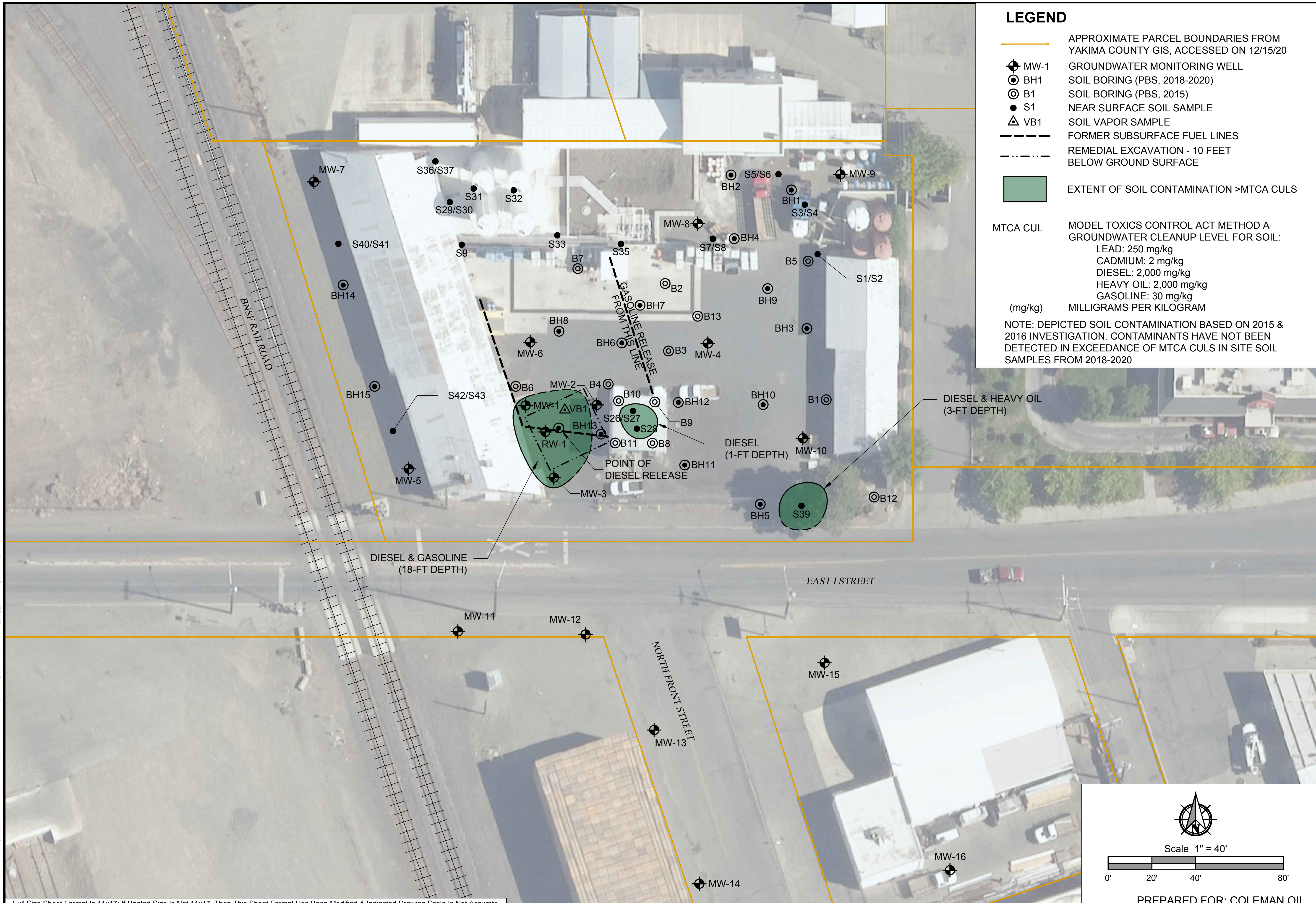
3

Filename: L:\Projects\41000\41392 Coleman Oil\CAD\RI Report Figures\41392.000_Fig_2-7.dwg Layout Tab: FIG 3 - GOUNDWATER FLOW DIRECTION User: Katie Breyman CAD Plot Date/Time: 11/18/2022 10:07:02 AM



LEGEND

(orange line)	APPROXIMATE PARCEL BOUNDARIES FROM YAKIMA COUNTY GIS, ACCESSED ON 12/15/20
MW-1	GROUNDWATER MONITORING WELL
BH1	SOIL BORING (PBS, 2018-2020)
B1	SOIL BORING (PBS, 2015)
S1	NEAR SURFACE SOIL SAMPLE
VB1	SOIL VAPOR SAMPLE
(dashed line)	FORMER SUBSURFACE FUEL LINES
(dash-dot line)	REMEDIAL EXCAVATION - 10 FEET BELOW GROUND SURFACE
(green area)	EXTENT OF SOIL CONTAMINATION >MTCA CULS
MTCA CUL	MODEL TOXICS CONTROL ACT METHOD A GROUNDWATER CLEANUP LEVEL FOR SOIL: LEAD: 250 mg/kg CADMIUM: 2 mg/kg DIESEL: 2,000 mg/kg HEAVY OIL: 2,000 mg/kg GASOLINE: 30 mg/kg
(mg/kg)	MILLIGRAMS PER KILOGRAM

NOTE: DEPICTED SOIL CONTAMINATION BASED ON 2015 & 2016 INVESTIGATION. CONTAMINANTS HAVE NOT BEEN DETECTED IN EXCEEDANCE OF MTCA CULS IN SITE SOIL SAMPLES FROM 2018-2020

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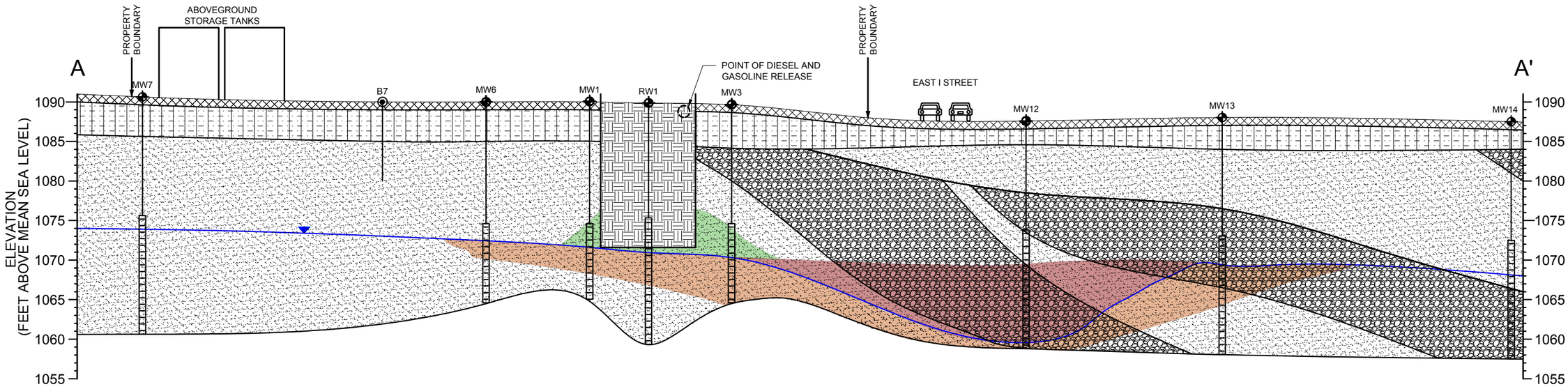
EXTENT OF DIESEL AND HEAVY OIL IN SOIL

COLEMAN OIL

1 EAST I STREET, YAKIMA, WASHINGTON

PROJECT	41392.000
DATE	MAR 2024
SHEET ID	4

Filename: L:\Projects\41000\41392 Coleman Oil\CAD\RI Report Figures\41392.000_Fig_2-7.dwg Layout Tab: FIG 4- CONTAMINATION IN SOIL User: Katie Breyman CAD Plot Date/Time: 11/18/2022 10:07:52 AM



1

CROSS-SECTION A-A'

0' 20' 40' 80'

2X VERTICAL EXAGGERATION

LEGEND

BH-1	DIRECT PUSH/SONIC SOIL BORING		ASPHALT/ ARTIFICIAL FILL
MW1/RW1	MONITORING WELL		SILTY SAND WITH GRAVEL (SM)
	WELL SCREEN		WELL GRADED SAND WITH GRAVEL AND SILT (SW)
			WELL GRADED GRAVEL WITH SAND (GW)
	GROUNDWATER (NOV 2020)		AREA OF SOIL EXCAVATION AND CLEAN BACKFILL
	FORMER SUBSURFACE FUEL LINE		NAPL (NOV 2020)
NAPL	NON-AQUEOUS PHASE LIQUID		GROUNDWATER WITH CONCENTRATION OF GASOLINE AND/OR DIESEL >MTCA CUL
MTCA CUL	MODEL TOXINS CONTROL ACT METHOD A CLEANUP LEVEL		SOIL CONTAMINANT CONCENTRATIONS >MTCA CUL

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CONCEPTUAL SITE MODEL - CROSS-SECTIONS

COLEMAN OIL

1 EAST I STREET, YAKIMA, WASHINGTON

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MAR 2024
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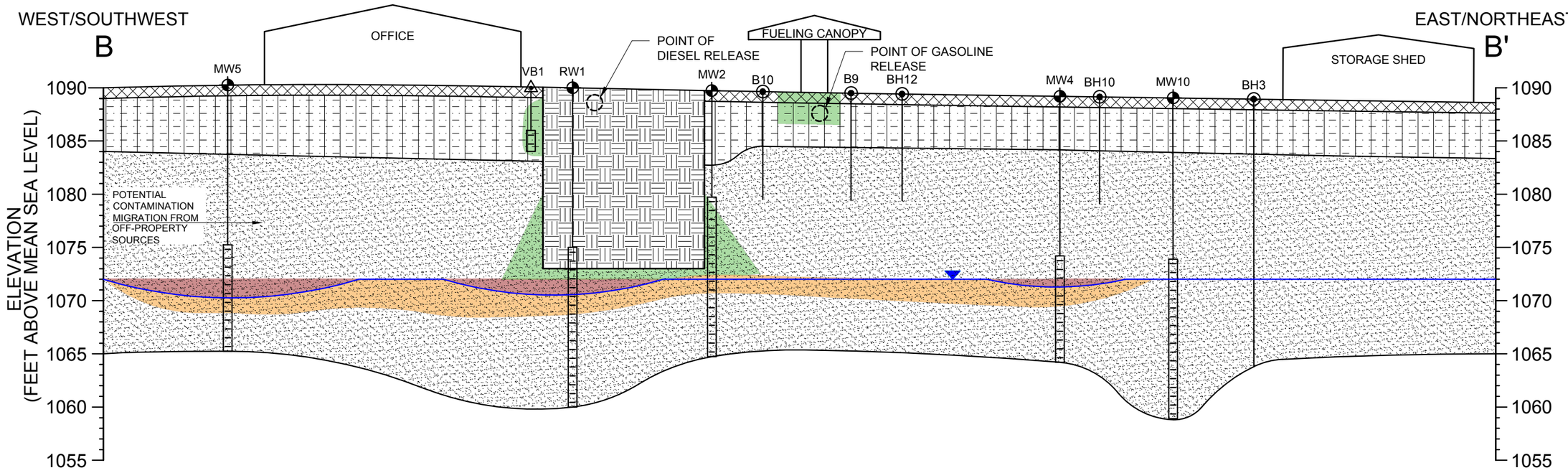

1 CROSS-SECTION B-B'

0' 20' 40' 80'

2X VERTICAL EXAGGERATION

LEGEND

BH-1	DIRECT PUSH/SONIC SOIL BORING		ASPHALT/ ARTIFICIAL FILL
MW1/RW1	MONITORING WELL		SILTY SAND WITH GRAVEL (SM)
	WELL SCREEN		WELL SORTED SAND WITH GRAVEL AND SILT (SW)
VB1	SOIL VAPOR WELL		AREA OF SOIL EXCAVATION AND CLEAN BACKFILL
	WELL SCREEN		NAPL (NOV 2020)
	GROUNDWATER (NOV 2020)		GROUNDWATER WITH CONCENTRATION OF GASOLINE AND/OR DIESEL >MTCS CUL
	FORMER SUBSURFACE FUEL LINE		SOIL CONTAMINANT CONCENTRATIONS >MTCA CUL
NAPL	NON-AQUEOUS PHASE LIQUID		
MTCA CUL	MODEL TOXINS CONTROL ACT METHOD A CLEANUP LEVEL		

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CONCEPTUAL SITE MODEL - CROSS-SECTIONS

COLEMAN OIL

1 EAST I STREET, YAKIMA, WASHINGTON

PROJECT
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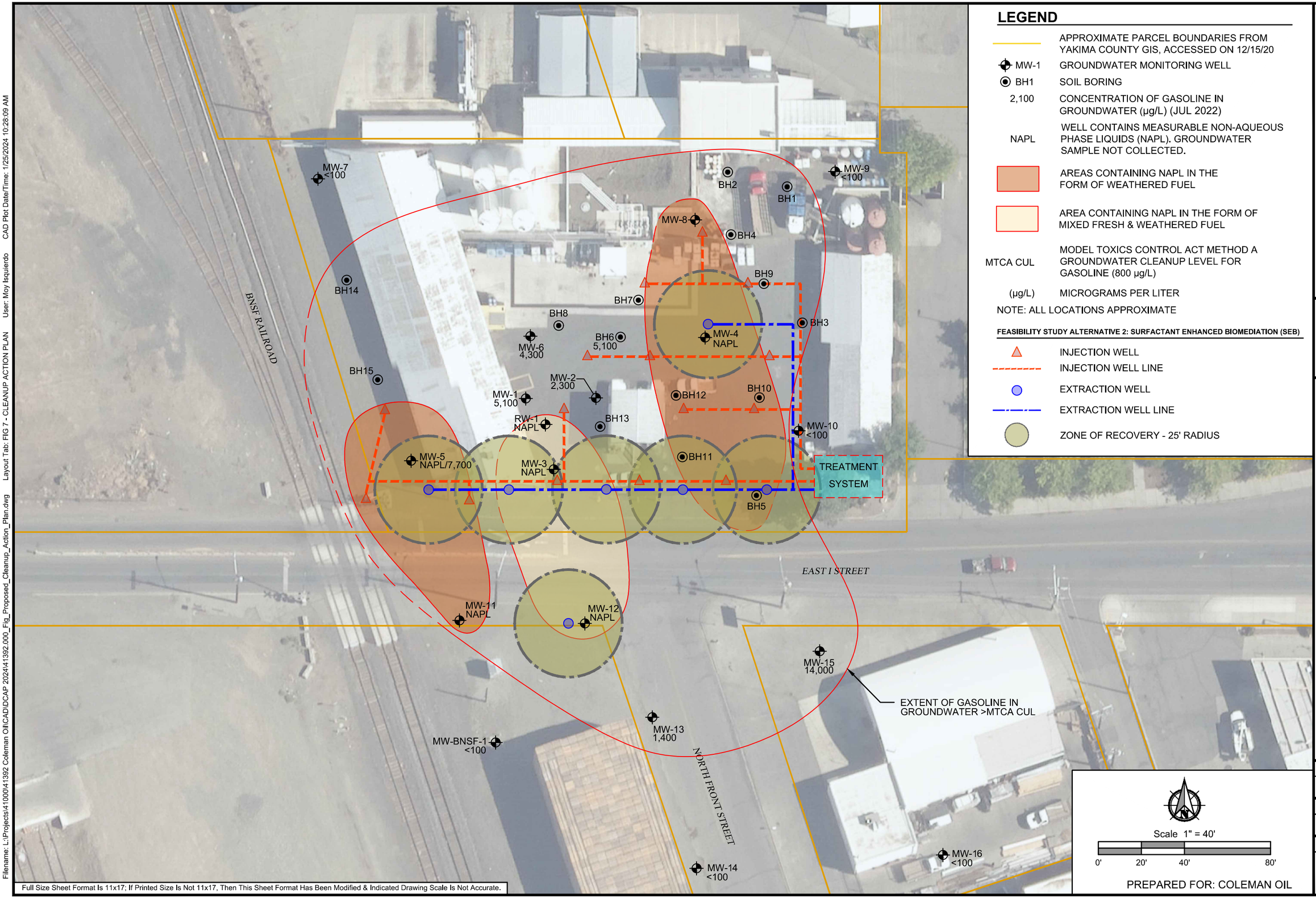
6



LEGEND

	APPROXIMATE PARCEL BOUNDARIES FROM YAKIMA COUNTY GIS, ACCESSED ON 12/15/20
MW-1	GROUNDWATER MONITORING WELL
BH1	SOIL BORING
2,100	CONCENTRATION OF GASOLINE IN GROUNDWATER (µg/L) (JUL 2022)
NAPL	WELL CONTAINS MEASURABLE NON-AQUEOUS PHASE LIQUIDS (NAPL). GROUNDWATER SAMPLE NOT COLLECTED.
	AREAS CONTAINING NAPL IN THE FORM OF WEATHERED FUEL
	AREA CONTAINING NAPL IN THE FORM OF MIXED FRESH & WEATHERED FUEL
MTCA CUL	MODEL TOXICS CONTROL ACT METHOD A GROUNDWATER CLEANUP LEVEL FOR GASOLINE (800 µg/L)
(µg/L)	MICROGRAMS PER LITER

NOTE: ALL LOCATIONS APPROXIMATE

FEASIBILITY STUDY ALTERNATIVE 2: SURFACTANT ENHANCED BIOMEDIATION (SEB)

	INJECTION WELL
	INJECTION WELL LINE
	EXTRACTION WELL
	EXTRACTION WELL LINE
	ZONE OF RECOVERY - 25' RADIUS

Scale 1" = 40'

0' 20' 40' 80'

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PROPOSED CLEANUP ACTION PLAN
COLEMAN OIL
1 EAST I STREET, YAKIMA, WASHINGTON

PROJECT	41392.000
DATE	MAR 2024
FIGURE	7

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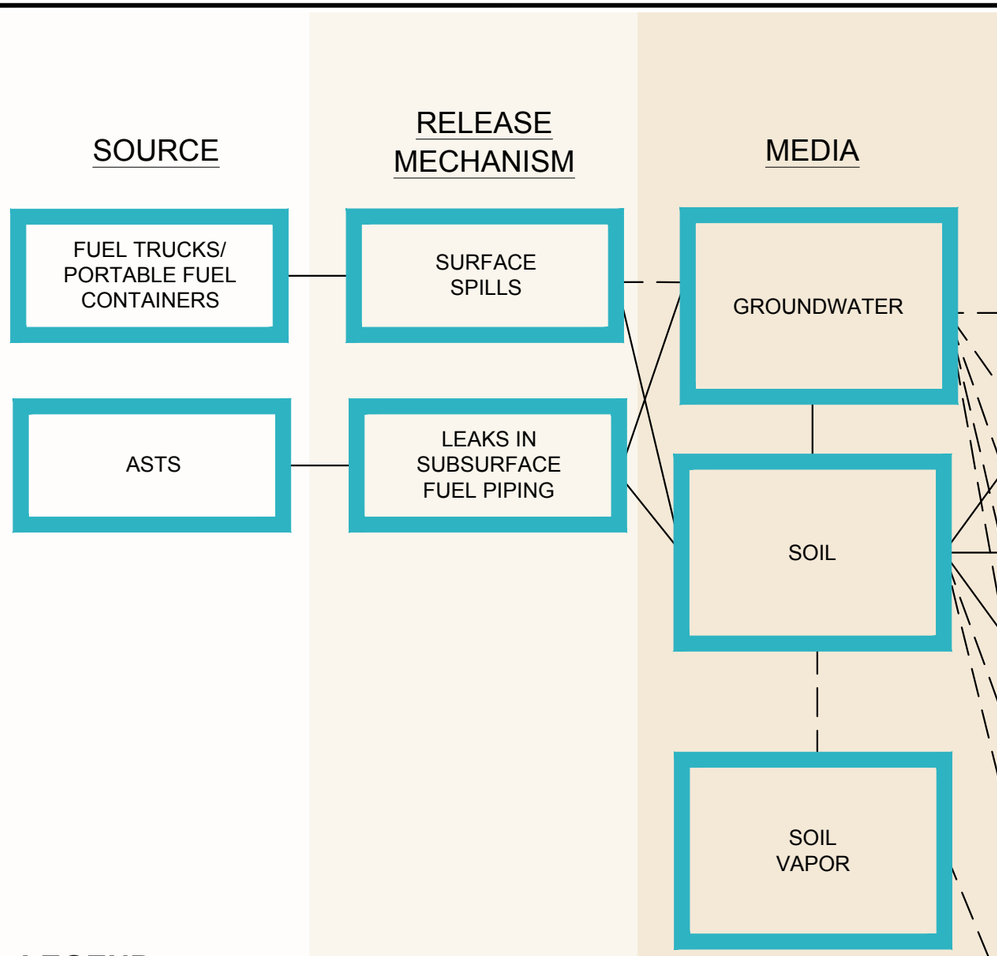
Filename: L:\Projects\41000\41392 Coleman Oil\CAD\DCAP 2024\41392.000_Fig_Proposed_Cleanup_Action_Plan.dwg Layout Tab: FIG 7 - CLEANUP ACTION PLAN User: Moy Isquierdo CAD Plot Date/Time: 1/25/2024 10:28:09 AM



HUMAN RECEPTOR		ENVIRONMENTAL EXPOSURE ROUTE		
RESIDENTS	SITE WORKERS	TERRESTRIAL	AQUATIC	
IP	CP	IP	IP	INGESTION
IP	CP	IP	IP	INHALATION
IP	CP	IP	IP	DERMAL CONTACT
IP	CP	IP	IP	INGESTION
IP	CP	IP	IP	INHALATION
IP	CP	IP	IP	DERMAL CONTACT
IP	CP	IP	IP	INGESTION
IP	CP	IP	IP	INHALATION
IP	CP	IP	IP	DERMAL CONTACT
IP	IP	IP	IP	INGESTION
IP	IP	IP	IP	INHALATION
IP	IP	IP	IP	DERMAL CONTACT
IP	IP	IP	IP	INGESTION
IP	IP	IP	IP	INHALATION
IP	IP	IP	IP	DERMAL CONTACT

LEGEND

— — — INCOMPLETE PATHWAY (IP)

———— COMPLETE PATHWAY (CP)

GENERAL NOTES

1. GROUNDWATER HAS BEEN MEASURED IN ON-SITE MONITORING WELLS RANGING IN DEPTH FROM 16 FEET TO 25 FEET BGS.
2. THE ENTIRE PROPERTY IS CURRENTLY COVERED WITH ASPHALT OR CONCRETE, PREVENTING EXPOSURE TO PLANTS AND/OR WILDLIFE.
3. SUB-SLAB SOIL VAPOR SAMPLES COLLECTED AT THE PROPERTY INDICATE VAPOR INTRUSION IS NOT A COMPLETE PATHWAY.

Filename: L:\Projects\41000\41392 Coleman Oil\CAD\RI Report Figures\41392.000_Fig_2-7.dwg Layout Tab: FIG 11 - CSM FLOW CHART User: Katie Breyman CAD Plot Date/Time: 11/18/2022 11:10:19 AM

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CONCEPTUAL SITE MODEL - FLOW CHART

COLEMAN OIL

1 EAST I STREET, YAKIMA, WASHINGTON

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Tables

Table 1. Evaluation of Remedial Alternatives
Coleman Oil, Yakima, Washington

MTCA Evaluation Criteria	Alternative 1: MPE Enhanced MNA	Alternative 2: Surfactant Enhanced Bioremediation	Alternative 3: Surfactant Enhanced Dual Phase Extraction	Alternative 4: Targeted Soil Excavation with PRB and MPE
Threshold Requirements				
Protect human health and the environment	This remedy is protective of human health and the environment because it provides capture of nonaqueous phase liquid (NAPL) and contaminated groundwater via multiphase extraction (MPE) to prevent plume migration and ongoing groundwater (GW) monitoring to ensure plume reduction or stability.	This remedy is protective of human health and the environment because it provides recovery of NAPL, treatment of GW and includes GW monitoring to ensure plume reduction or stability.	This remedy is protective of human health and the environment because it provides recovery of NAPL, treatment of GW and includes GW monitoring to ensure plume reduction or stability.	This remedy is protective of human health and the environment because it would remove the source of contamination that has impacted GW, eventually reducing GW concentrations, along with MPE, installation of a passive reactive barrier (PRB) to prevent downgradient plume migration, and GW monitoring.
Comply with cleanup standards	Alternative 1 is expected to eventually result in compliance with GW cleanup standards at standard or conditional points of compliance.	Alternative 2 would comply with GW cleanup standards at standard points of compliance.	Alternative 3 would comply with GW cleanup standards at standard points of compliance.	Alternative 4 would comply with GW cleanup standards at standard or conditional points of compliance.
Comply with applicable state and federal laws	Alternative 1 will comply with applicable state and federal laws by eventually reducing GW concentrations to below cleanup standards.	Alternative 2 will comply with applicable state and federal laws by reducing GW concentrations to below cleanup standards.	Alternative 3 will comply with applicable state and federal laws by reducing GW concentrations to below cleanup standards.	Alternative 4 will comply with applicable state and federal laws by eventually reducing GW concentrations to below cleanup standards.
Provide for compliance monitoring	This option includes compliance monitoring.	This option includes compliance monitoring.	This option includes compliance monitoring.	This option includes compliance monitoring.
Does remedy meet all Threshold Requirements?	*Yes*	*Yes*	*Yes*	*Yes*

Table 1. Evaluation of Remedial Alternatives
Coleman Oil, Yakima, Washington

Other Requirements				
Permanent to the Maximum Extent Practicable	This alternative serves as a permanent remedy removing some NAPL and conducting GW monitoring to confirm that contaminants may be reduced by natural attenuation.	This alternative serves as a permanent remedy by enhancing NAPL recovery and allowing in situ bioremediation to treat GW contamination to concentrations that pose no threat to human health or the environment.	This alternative serves as a permanent remedy by enhancing NAPL recovery, and physically removing and treating GW contamination to concentrations that pose no threat to human health or the environment.	This alternative serves as a permanent remedy by removing the residual source of contamination to groundwater and PRB to treat and prevent downgradient plume migration.
Provide for reasonable restoration timeframe	This remedy does not provide a reasonable restoration time as it would not efficiently remove or treat contamination. The timeframe for this alternative is at least 30 years.	This remedy would provide a restoration time of approximately 5 years with physical and biological treatment of GW.	This remedy would provide a restoration time of approximately 5 years with physical treatment of GW and soil vapor.	This remedy would provide a reasonable restoration time, estimated at 10 years. Although this alternative would remove residual contamination in soil, which is expected to reduce GW concentrations, the remaining restoration timeframe is uncertain, therefore, 10 years is assumed, as that timeframe may be needed for GW monitoring.
Consider public concerns	The public may be concerned that active reduction of contamination in soil and groundwater are not being conducted.	No public concerns are identified with this alternative presuming GW monitoring confirms no downgradient migration of plume.	No public concerns are identified with this alternative presuming GW monitoring confirms no downgradient migration of plume.	The public may be concerned with impacts to adjacent public right of way (ROW) needed to facilitate soil excavation. Additionally, public concerns may exist regarding the environmental/greenhouse gas impacts of hauling contaminated media for offsite disposal rather than the in situ destruction of contamination.

Notes:
GW - groundwater

Table 1. Evaluation of Remedial Alternatives
Coleman Oil, Yakima, Washington

MNA – Monitored Natural Attenuation
MPE – Multiphase extraction
MTCA – Model Toxics Control Act
NAPL – Nonaqueous phase liquid
ROW – right of way
PRB – Passive reactive barrier

Table 2 - Comparison of Remedial Action Alternative Costs
Coleman Oil, Yakima, Washington

Task	Alternatives			
	1	2	3	4
	MPE Enhanced MNA	Surfactant Enhanced Bioremediation	Surfactant Enhanced Dual Phase Extraction	Targeted Soil Excavation with PRB and MPE
Capital Cost Totals				
Capital Direct Costs	$104,000	$735,400	$783,000	$6,399,000
Contractor Contingency Assumed	30%	35%	35%	30%
Capital Indirect Costs	$152,800	$425,353	$444,000	$1,300,000
Total Capital Costs	**$257,000**	**$1,161,000**	**$1,227,000**	**$7,699,000**
O&M Cost Totals				
Total O&M Costs	$2,760,000	$1,076,000	$1,261,000	$420,000
Total Capital and O&M Costs	$3,017,000	$2,237,000	$2,488,000	$8,119,000
Years of O&M	30	5	5	10
Annualized O&M Costs	$92,000	$215,200	$252,200	$42,000
PW O&M Costs	$2,311,000	$1,034,000	$1,212,000	$390,000
Project Totals				
Total Capital and PW O&M Costs	**$2,600,000**	**$2,200,000**	**$2,400,000**	**$8,100,000**
Total Project Cost	**$2.6 M**	**$2.2 M**	**$2.4 M**	**$8.1 M**

Notes:
M - million
MNA - monitored natural attenuation
MPE - multiphase extraction
O&M - operation and maintenance
PRB - Passive Reactive Barrier
PW - Present Worth assumes a 2.0% interest rate for 30 years, 1.3% for 5 years and 1.5% for 10 years per OMB Circular A-94, revised 3/2023

Table 3. Disproportionate Cost Analysis Relative Benefits Ranking Evaluation
Coleman Oil, Yakima, Washington

Evaluation Criteria (Weighting Factor %)	Alternative 1: Multiphase Extraction Enhanced Monitored Natural Attenuation	Alternative 2: Surfactant Enhanced Bioremediation	Alternative 3: Surfactant Enhanced Dual Phase Extraction	Alternative 4: Targeted Soil Excavation with PRB and MPE
	Relative Benefits Ranking for DCA			
Overall Protectiveness 30%	**Fair** This remedy is protective of human health and the environment because reduces contamination by removal of NAPL and provides soil confirmation sampling and ongoing groundwater monitoring during remediation to ensure that the contaminant plume remains stable or is reduced and exposure pathways remain incomplete.	**Excellent** This remedy is protective of human health and the environment because it removes NAPL and reduces contamination in place and provides soil confirmation sampling and ongoing groundwater monitoring during remediation to ensure that the contaminant plume remains stable or is reduced and exposure pathways remain incomplete.	**Excellent** This remedy is protective of human health and the environment because it reduces contamination in place and provides soil confirmation sampling and ongoing groundwater monitoring during remediation to ensure that the contaminant plume remains stable or is reduced and exposure pathways remain incomplete.	**Excellent** This remedy is protective of human health and the environment because it provides removal of the source to groundwater contamination and includes soil confirmation sampling and ongoing groundwater monitoring to ensure the contaminant plume is stable and exposure pathways remain incomplete.
Benefit Score[a]: Raw/(Weighted)	**3/(0.9)**	**7/(2.1)**	**7/(2.1)**	**8/(2.4)**
Permanence 20%	**Fair** Permanent remedy by removing some NAPL and conducting monitoring to confirm that contaminants will be further reduced by natural attenuation. Contaminants will be reduced by MPE although concentrations above cleanup standards may remain.	**Excellent** Permanent remedy by enhancing NAPL recovery and allowing in situ bioremediation to treat GW contamination to concentrations that pose no threat to human health or the environment.	**Excellent** Permanent remedy by enhancing NAPL recovery and physically removing and treating GW contamination to concentrations that pose no threat to human health or the environment.	**Excellent** Permanent remedy by removing the source of contamination to GW and PRB to treat and prevent downgradient plume migration. Contaminants will be further reduced by natural attenuation to concentrations that pose no threat to human health or the environment.
Benefit Score[a]: Raw/(Weighted)	**3/(0.6)**	**8/(1.6)**	**8/(1.6)**	**8/(1.6)**

Table 3. Disproportionate Cost Analysis Relative Benefits Ranking Evaluation
Coleman Oil, Yakima, Washington

Evaluation Criteria (Weighting Factor %)	Alternative 1: Multiphase Extraction Enhanced Monitored Natural Attenuation	Alternative 2: Surfactant Enhanced Bioremediation	Alternative 3: Surfactant Enhanced Dual Phase Extraction	Alternative 4: Targeted Soil Excavation with PRB and MPE
	Relative Benefits Ranking for DCA			
Long-Term Effectiveness 20% Benefit Score[a]: Raw/(Weighted)	**Fair** If MPE is unable to reduce contaminant concentrations to below cleanup standards, long term effectiveness of this remedy would be reduced. **4/(0.8)**	**Excellent** Permanent destruction of contaminants and reduction of concentrations to below cleanup levels will remain very effective in the long term. **8/(1.6)**	**Excellent** Permanent destruction of contaminants and reduction of concentrations to below cleanup levels will remain very effective in the long term. **8/(1.6)**	**Excellent** Removal of source of contamination by excavation and monitoring to ensure groundwater concentrations attenuate to below cleanup levels will remain very effective in the long term. **8/(1.6)**
Management of Short-Term Risks 10% Benefit Score[a]: Raw/(Weighted)	**Excellent** While this remedy may eventually achieve cleanup standards for groundwater, the time frame for contaminant reduction is long, and thus risks of contamination remain in the short-term. However, there is minimal short-term risk for workers during implementation. **7/(0.7)**	**Good** Moderate risk of contact with contaminated soil and groundwater during drilling, installation of injection and extraction wells, and during treatment system operation. **6/(0.6)**	**Good** Moderate risk of contact with contaminated soil and groundwater during drilling, installation of injection and extraction wells, and during treatment system operation. **5/(0.5)**	**Poor** Moderate to high risk of contact with contaminated soil and groundwater during excavation and offsite disposal, but this risk can be managed with proper controls. Following excavation of source, short term risk is greatly reduced. **2/(0.2)**

Table 3. Disproportionate Cost Analysis Relative Benefits Ranking Evaluation
Coleman Oil, Yakima, Washington

Evaluation Criteria (Weighting Factor %)	Alternative 1: Multiphase Extraction Enhanced Monitored Natural Attenuation	Alternative 2: Surfactant Enhanced Bioremediation	Alternative 3: Surfactant Enhanced Dual Phase Extraction	Alternative 4: Targeted Soil Excavation with PRB and MPE
	Relative Benefits Ranking for DCA			
Implementability 10% Benefit Score[a]: Raw/(Weighted)	**Superior** This remedy can be implemented with mobile equipment that visits the Site periodically on an as needed basis. The scope of this remedy is easily expanded or reduced to meet Site needs based on monitoring. **10/(1.0)**	**Good** • Technical implementation moderately complex with significant impacts to current on-site operations. • Administrative implementation challenges include installation of system, particularly injection/extraction wells and horizontal piping, during continued operation of the Site as a bulk fueling facility. **5/(0.5)**	**Good** • Technical implementation moderately complex with significant impacts to current on-site operations. • Administrative implementation challenges include installation of system, particularly injection/extraction wells and horizontal piping, during continued operation of the Site as a bulk fueling facility. **5/(0.5)**	**Poor** • Technical implementation is not complex but very impactful to Site; excavation to depths of 20 feet bgs involves logistical challenges in an area with adjacent structures. • Building demolition and reconstruction is required, presenting a significant impact to Site relative to other alternatives. **2/(0.2)**
Consideration of Public Concerns 10%	This criterion will be evaluated after the public comment period	This criterion will be evaluated after the public comment period	This criterion will be evaluated after the public comment period	This criterion will be evaluated after the public comment period

Table 3. Disproportionate Cost Analysis Relative Benefits Ranking Evaluation
Coleman Oil, Yakima, Washington

Evaluation Criteria	Alternative 1: Multiphase Extraction Enhanced Monitored Natural Attenuation	Alternative 2: Surfactant Enhanced Bioremediation	Alternative 3: Surfactant Enhanced Dual Phase Extraction	Alternative 4: Targeted Soil Excavation with PRB and MPE
	DCA Summary			
Estimated Cost[b]	**$2.6M**	**$2.3M**	**$2.5M**	**$8.1M**
Overall Weighted Benefit Score	**4 Fair**	**6.4 Good**	**6.3 Good**	**6 Good**
Overall Alternative Benefit Ranking	4	1 (Most Beneficial)	2	3
Relative Cost/Benefit Ratio	650K	359K	397K	1,350K
Remedy Permanent to the Maximum Extent Practicable?	No	Yes	No	No
Is the Alternative's Cost Disproportionate to its Incremental Benefits?	Yes	No	Yes	Yes

[a] – Ratings used: Poor (1-2), Fair (3-4), Good (5-6), Excellent (7-8), Superior (9-10).
[b] – Estimated Cost = Total Project Present Worth Cost (see Table 5 Comparison of Remedial Action Alternative Costs and Appendix A Remedial Action Alternative Cost Estimates).

Notes:
DCA – disproportionate cost analysis
GW - groundwater
MNA – monitored natural attenuation
MPE – Multiphase extraction
NAPL – non-aqueous phase liquid
O&M – operation and maintenance
PRB – passive reactive barrier

Table 4. Cleanup Levels and Remediation Levels
Coleman Oil Yakima

Chemicals of Concern	Groundwater Cleanup Levels (MTCA Method A[a]) (µg/L)	Soil Cleanup Levels (MTCA Method A [b]) (mg/kg)	Remediation Levels (feet)
TPH-D	500	2,000	N/A
TPH-G	800	30	
Benzene	5	0.03	
Toluene	1,000	7	
Ethylbenzene	700	6	
Total Xylenes	1,000	9	
Naphthalene	160	5	
Cadmium	5	2	
Lead	15	250	
NAPL	N/A	N/A	0.05

Notes:

[a] Groundwater cleanup levels based on MTCA Method A Groundwater cleanup levels
[b] Soil cleanup levels based on MTCA Method A Soil cleanup levels for unrestricted land use

MTCA – Model Toxics Control Act
mg/kg – milligrams per kilogram
N/A – not applicable. The CAP does not establish remediation levels for COCs or cleanup standards for NAPL.
NAPL – nonaqueous phase liquid
TPH – Total Petroleum Hydrocarbons
TPH-D – Diesel range TPH
TPH-G – Gasoline range TPH
µg/L – micrograms per liter

Table 5. Applicable or Relevant and Appropriate Requirements
Coleman Oil, Yakima, Washington

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/Relevant and Appropriate
Chemical-Specific			
Federal National Primary Drinking Water Regulations	40 CFR 141 and 142	Establishes health-based standards, maximum contaminant levels (MCL) and maximum contaminant level goals (MCLG), for public water systems.	Relevant and Appropriate
Federal Regional Screening Levels for soil and water	Source: epa.gov/risk/regional-screening-levels-rsls	Provides risk-based concentrations that are intended to assist risk assessor and others in initial screening-level evaluations of environmental regulations	Applicable
Washington State Model Toxics Control Act (MTCA) Cleanup Levels (CULs) for Groundwater	WAC 173-340	Requires groundwater cleanup levels be based on the estimates of the highest beneficial use and the reasonable maximum potential exposure under current and future site uses	Applicable
MTCA - Selection of Cleanup Actions	WAC 173-340-360(2)(f)	Limits on use of remediation levels	Relevant and Appropriate
Washington State Water Quality Standards for Groundwater	WAC 173-200	Establishes maximum contaminant concentrations for the protection of beneficial uses of groundwater	Potentially Relevant and Appropriate
Washington Dangerous Waste Regulations	WAC 173-303	This regulation implements chapter 70.105 RCW, the Hazardous Waste Management Act as amended, and implements, in part, chapters 70.95E, 70.105D, and 15.54 RCW, and Subtitle C of Public Law 94-580, the Resource Conservation and Recovery Act of 1976, which the legislature has empowered the department to implement.	Potentially Relevant and Appropriate
Action-Specific			
MTCA - Selection of Cleanup Actions	WAC 173-340-360(2)(a)&(b)	Establishes the minimum requirements and procedures for selecting cleanup actions; defines threshold requirements and other requirements	Applicable
MTCA - Selection of Cleanup Actions	WAC 173-340-360(2)(c)	Establishes the minimum requirements for groundwater cleanup actions	Applicable
MTCA - Selection of Cleanup Actions	WAC 173-340-360(2)(e)	Requirements for institutional controls	Applicable
Washington MTCA - Limits on dilution and dispersion	WAC 173-340-360(2)(g)	Addresses reliance on dilution and dispersion overactive remedial measures	Applicable

Table 5. Applicable or Relevant and Appropriate Requirements
Coleman Oil, Yakima, Washington

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/Relevant and Appropriate
Washington State Regulation and Licensing for Well Contractors and Operators	RCW 18.104 WAC 173-162	Establishes procedures for examination, licensing, and regulation of well contractors and operators	Relevant and Appropriate
Washington State Standards for Construction and Maintenance of Water Wells	RCW 18.104 WAC 173-160	Establishes minimum standards for construction of water and monitoring wells and for the decommissioning of wells.	Relevant and Appropriate
Washington Underground Injection Control Program	WAC 173-218	Requirements for underground injection control applicable to cleanup alternatives that include injection of materials into subsurface groundwater and soil.	Relevant and Appropriate
Washington Solid Waste Management Handling Standards and Regulations	RCW 70.95WAC 173-350	Solid waste requirements are potentially applicable to the offsite disposal of solid nonhazardous wastes that may be generated as part of well installation or excavation.	Relevant and Appropriate
Location-Specific			
Endangered Species Act	16 USC 1531-1543; 50 CFR 402; 50 CFR 17	Requirements to protect fish, wildlife and plants that are threatened or endangered with extinction. This act requires consultation with resource agencies for projects that may affect threatened or endangered species.	Potentially Relevant and Appropriate
Fish and Wildlife Conservation Act	16 USC 2901; 50 CFR 83	Requirements for federal agencies to use their authority to conserve and promote conservation of non-game fish and wildlife, and evaluated in conjunction with the Endangered Species Act consultation.	Potentially Relevant and Appropriate
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Table 5. Applicable or Relevant and Appropriate Requirements
Coleman Oil, Yakima, Washington

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/Relevant and Appropriate
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State Waste Discharge Permit Program	WAC 173-216	Requirements for discharge of treated water directly to the ground.	Potentially Relevant and Appropriate
State Environmental Policy Act	RCW 43.21C; WAC 197-11; WAC 173-802	State law intended to ensure state and local government officials consider environmental values when making decisions or taking an official action such as approving the Cleanup Action Plan.	Relevant and Appropriate

Notes:
CFR – code of federal regulations
CULs – cleanup levels
IBC – International Building Code
MCL – maximum contaminant level
MCLG – maximum contaminant level goals
MTCA – Model Toxics Control Act
RCW – Revised Code of Washington
WAC – Washington Administrative Code
USC – United States Code
YMC – Yakima Municipal Code
YRCAA - Yakima Regional Clean Air Agency

EXHIBIT C – SCOPE OF WORK AND SCHEDULE

SCOPE OF WORK

PURPOSE

The work under this Agreed Order (AO) involves the implementation of the Cleanup Action Plan (CAP) and the submittal of a Cleanup Action Report.

Coleman Oil shall coordinate with Ecology throughout the implementation of the CAP and shall keep Ecology informed of changes to any Work Plans or other project plans, and of any issues or problems as they develop.

The Scope of Work (SOW) consists of three major tasks as follows:

Task 1. Prepare an Engineering Design Report (EDR), an Operation and Maintenance (O&M) Plan, and a Compliance Monitoring Plan (CMP) which comprise the elements necessary to implement the CAP. The O&M Plan and CMP can be incorporated into the EDR. This task will also include the performance of a pilot study to inform the EDR. The EDR will include information collected from MW-6 at the Nakano Foods Site to help define the west boundary of the groundwater plume.

Task 2. Implement the cleanup actions listed in the CAP and associated work products including EDR, O&M Plan, and CMP.

Task 3. Prepare and submit the CAP completion report upon the fulfillment of all its required elements.

TASK 1. PERFORMANCE OF PILOT TEST AND PREPARATION OF PLANS REQUIRED TO IMPLEMENT THE CAP

The selected cleanup alternative is Alternative 2 in the Feasibility Study. This alternative involves surfactant-enhanced bioremediation (SEB) which includes the following:

- Groundwater extraction
- Ex situ groundwater treatment
- In situ groundwater treatment via injection of treated groundwater augmented with surfactants and biological amendments.

Coleman Oil will prepare the elements of the CAP under this Agreed Order. These elements include the EDR, the O&M Plan, and a CMP.

A pilot study will be conducted to determine the spacing and placement of injection and recovery wells to ensure an appropriate zone of influence for the wells. The results of the pilot study will be incorporated into the EDR.

Coleman Oil shall prepare an electronic copy of the Agency Review draft EDR and submit it in Word (.doc) and Adobe (.pdf) formats for Ecology review and comment.

After incorporating Ecology's comments on the Agency Review draft EDR and after Ecology approval, Coleman Oil shall prepare two (2) copies of the final EDR and submit them, including one electronic copy each in Word (.doc) and Adobe (.pdf) formats, to Ecology.

TASK 2. IMPLEMENTATION OF CAP AND ASSOCIATED PLANS

Coleman Oil will continue implementing the cleanup action in accordance with the CAP and EDR.

Groundwater monitoring will be conducted to evaluate the effectiveness of the treatment for groundwater cleanup on a yearly basis or as specified in the Compliance Monitoring Plan (or associated decision documents).

Coleman Oil shall prepare an electronic copy of the Agency Review draft groundwater monitoring report and submit it in Word (.doc) and Adobe (.pdf) formats for Ecology review and comment.

After incorporating Ecology's comments on the Agency Review draft groundwater monitoring report and after Ecology approval, Coleman Oil shall prepare two (2) copies of the final monitoring report and submit them, including one electronic copy each in Word (.doc) and Adobe (.pdf) formats, to Ecology.

TASK 3. PREPARATION OF CLEANUP ACTION REPORT

Coleman Oil will submit an Agency Review draft CAP completion report to Ecology as established in the Schedule below. The draft CAP completion report when finalized will document the results and performance of the cleanup action.

Coleman Oil shall prepare an electronic copy of the Agency Review draft CAP completion report and submit it in Word (.doc) and Adobe (.pdf) formats for Ecology review and comment.

After incorporating Ecology's comments on the Agency Review draft CAP completion report and after Ecology approval, Coleman Oil shall prepare two (2) copies of the final

public review CAP completion report and submit them, including one electronic copy each in Word (.doc) and Adobe (.pdf) formats, to Ecology.

If the remedial treatment actions have not lowered contaminant levels to compliance within the projected restoration time frame, then additional active remedial actions may be necessary.

EXHIBIT C – SCOPE OF WORK AND SCHEDULE

SCHEDULE OF DELIVERABLES

The schedule for deliverables described in the Agreed Order and the Scope of Work is presented below. If the date for submission of any item or notification required by this Schedule of Deliverables occurs on a weekend, state or federal holiday, the date for submission of that item or notification is extended to the next business day following the weekend or holiday.

Where a deliverable due date is triggered by Ecology notification, comments or approval, the starting date for the period shown is the date Coleman Oil received such notification, comments, or approval by certified mail, return receipt requested, unless otherwise noted below. Where triggered by Ecology receipt of a deliverable, the starting date for the period shown is the date Ecology receives the deliverable by certified mail, return receipt requested, or the date of Ecology signature on a hand-delivery form.

Deliverables/Activities	Timeframe
Begin Implementation of Cleanup Action Plan (CAP) – Perform Pilot Testing on Site	3rd Quarter 2024
Submit Agency Review Draft of Engineering Design Report (EDR). The EDR will incorporate the O&M Plan and the CMP.	4th Quarter 2024
Submit revised EDR based on Ecology comments.	4th Quarter 2024
Submit Final Draft EDR to Ecology for approval.	4th Quarter 2024 or 1st Quarter 2025
Submit Groundwater Monitoring Reports	On a yearly basis or as specified in the Compliance Monitoring Plan (or associated decision documents)
Evaluate remedy performance during operation of the remedial system	5 years after first operation of the SEB recirculation system
Submit Agency Review preliminary draft version of the CAP completion report.	Within 60 calendar days after completion of all work required under the CAP.
Submit revised CAP completion report for public review	Within 45 calendar days of receipt of Ecology's comments on the Agency Review CAP report.
Submit final public review CAP completion report, if required.	Within 45 calendar days of receipt of Ecology's comments on the public review CAP completion report.
Submit progress reports.	Monthly, due by the 10th day during performance monitoring, unless otherwise approved by Ecology

Exhibit D - Applicable or Relevant and Appropriate Requirements

Table 5. Applicable or Relevant and Appropriate Requirements
Coleman Oil, Yakima, Washington

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/Relevant and Appropriate
Chemical-Specific			
Federal National Primary Drinking Water Regulations	40 CFR 141 and 142	Establishes health-based standards, maximum contaminant levels (MCL) and maximum contaminant level goals (MCLG), for public water systems.	Relevant and Appropriate
Federal Regional Screening Levels for soil and water	Source: epa.gov/risk/regional-screening-levels-rsls	Provides risk-based concentrations that are intended to assist risk assessor and others in initial screening-level evaluations of environmental regulations	Applicable
Washington State Model Toxics Control Act (MTCA) Cleanup Levels (CULs) for Groundwater	WAC 173-340	Requires groundwater cleanup levels be based on the estimates of the highest beneficial use and the reasonable maximum potential exposure under current and future site uses	Applicable
MTCA - Selection of Cleanup Actions	WAC 173-340-360(2)(f)	Limits on use of remediation levels	Relevant and Appropriate
Washington State Water Quality Standards for Groundwater	WAC 173-200	Establishes maximum contaminant concentrations for the protection of beneficial uses of groundwater	Potentially Relevant and Appropriate
Washington Dangerous Waste Regulations	WAC 173-303	This regulation implements chapter 70.105 RCW, the Hazardous Waste Management Act as amended, and implements, in part, chapters 70.95E, 70.105D, and 15.54 RCW, and Subtitle C of Public Law 94-580, the Resource Conservation and Recovery Act of 1976, which the legislature has empowered the department to implement.	Potentially Relevant and Appropriate
Action-Specific			
MTCA - Selection of Cleanup Actions	WAC 173-340-360(2)(a)&(b)	Establishes the minimum requirements and procedures for selecting cleanup actions; defines threshold requirements and other requirements	Applicable
MTCA - Selection of Cleanup Actions	WAC 173-340-360(2)(c)	Establishes the minimum requirements for groundwater cleanup actions	Applicable
MTCA - Selection of Cleanup Actions	WAC 173-340-360(2)(e)	Requirements for institutional controls	Applicable
Washington MTCA - Limits on dilution and dispersion	WAC 173-340-360(2)(g)	Addresses reliance on dilution and dispersion overactive remedial measures	Applicable

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Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/Relevant and Appropriate
Washington State Regulation and Licensing for Well Contractors and Operators	RCW 18.104 WAC 173-162	Establishes procedures for examination, licensing, and regulation of well contractors and operators	Relevant and Appropriate
Washington State Standards for Construction and Maintenance of Water Wells	RCW 18.104 WAC 173-160	Establishes minimum standards for construction of water and monitoring wells and for the decommissioning of wells.	Relevant and Appropriate
Washington Underground Injection Control Program	WAC 173-218	Requirements for underground injection control applicable to cleanup alternatives that include injection of materials into subsurface groundwater and soil.	Relevant and Appropriate
Washington Solid Waste Management Handling Standards and Regulations	RCW 70.95WAC 173-350	Solid waste requirements are potentially applicable to the offsite disposal of solid nonhazardous wastes that may be generated as part of well installation or excavation.	Relevant and Appropriate
Location-Specific			
Endangered Species Act	16 USC 1531-1543; 50 CFR 402; 50 CFR 17	Requirements to protect fish, wildlife and plants that are threatened or endangered with extinction. This act requires consultation with resource agencies for projects that may affect threatened or endangered species.	Potentially Relevant and Appropriate
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