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May 14, 2020

Mr. Adam Harris
Washington State Department of Ecology
300 Desmond Drive SE
Lacey, Washington 98504

Re: Scope of Work for Ongoing Remedial Investigation
Olympia Fuel & Asphalt Inc Tumwater Site
3231 Mottman Road SW
Tumwater, Washington 98512
VCP ID Number SW1297
Facility/Site ID 86612346

TRC Project Number: 391950.0000

Dear Mr. Harris:

TRC Environmental Corporation (TRC) is pleased to present this Scope of Work for Ongoing Remedial Investigation at the Olympia Fuel & Asphalt Inc Tumwater site located at 3231 Mottman Road SW in Tumwater, Washington (Site). TRC is providing this scope of work on behalf of the property owner, Mr. Jim Mell. TRC is the new consultants for the Site and a Change of Contact form is included as Attachment A.

This letter has been prepared in support of our client's ongoing effort to bring the Site into compliance with the Model Toxics Control Act (RCW 70.105D) and its implementing regulations (WAC 173-340; collectively "MTCA"). The Site is currently enrolled in the Washington Department of Ecology (Ecology) Voluntary Cleanup Program (VCP) as Site No. SW1297. Ecology most recently provided Mr. Mell with opinion letters dated June 19, 2017 and March 13, 2020. Those opinion letters are discussed below. For ease of reference Ecology's comments are provided verbatim in italics.

The information requested in the June 19, 2017 opinion letter included:

- *Geologic cross-sections, plots of groundwater elevations and light non-aqueous phase liquid (LNAPL) thickness through time, isoconcentration contour and groundwater elevation maps, boring and well-construction logs, and tabulated water-quality and well data;*
- *A monitoring plan to perform groundwater sampling activities at the Site;*
- *A contingency plan to address NAPH at the Site; and*

- *Information regarding the handling, management, and disposal of recovered product from the Site.*

*Alternatively, Ecology will accept an RI/FS, consistent with the procedures and elements described in **WAC 173-340-350 (Remedial investigation and feasibility study)**.*

It is TRC's understanding that a DRAFT Remedial Investigation and Feasibility Study (RI/FS) was submitted to Ecology on December 20, 2019. Ecology responded with an opinion letter dated March 13, 2020. It appears that the DRAFT RI/FS served to generally meet Ecology's request for information. The follow up March 13, 2020 opinion letter contained the following specific information requests:

1. *Evaluation of how the project has removed free product to the maximum extent practicable, based on the requirements of WAC chapter 173-340-450 (4)(a).*
2. *Reporting of the total volume of product removed. Provide documentation showing how removed free product is handled and disposed.*
3. *Evaluation of how Ecology's June 2017 required actions for continued VCP enrollment have been completed for the cleanup.*
4. *A written work plan detailing the plan and schedule for completing the cleanup.*

The Site conditions and current plans were discussed on a phone call between you and Mr. Eric Koltes of TRC on May 6, 2020. During this call it was acknowledged that Ecology's primary focus for the Site should be LNAPL removal based on the requirements of WAC chapter 173-340-450 (4)(a). LNAPL removal actions would be performed as an Interim Action during the performance of the Remedial Investigation (RI). After completion of the RI a Feasibility Study (FS) will be performed and a Cleanup Action Plan (CAP) will be developed for implementation of the remedy selected in the FS

Also as discussed, based on our review of the available data it is, TRC's opinion that there are critical data gaps that must be filled prior to implementing an automated LNAPL recovery system and in support of the RI.

On behalf of Mr. Mell, TRC intends to implement a scope of work that will fill the critical data gaps and allow for implementing an appropriate interim action. The scope of work will also seek to fill existing data gaps in the RI, with the understanding that additional phases of investigation, beyond what is presented herein, may be required before the RI is substantially complete.

Our review of the currently available data indicates the following critical data gaps.

Data Gap No. 1 – Suspect Well Completions

Hydraulic conditions at the Site appear to be complex with at least two distinct hydrostratigraphic units separate by an aquitard of variable thickness and lateral distribution. Both aquifers are impacted with dissolved-phase contaminants and LNAPL in varying locations. The vertical hydraulic gradients between the two aquifers have not been assessed. The available data indicate that several wells at the Site are screened or completed across the aquitard in areas of both dissolved-phase and LNAPL impacts. Such wells may provide misleading information regarding piezometric conditions and the distribution of contamination. Such completions are also not in compliance with applicable regulation and guidance for resource protection wells.

TRC plans to decommission the wells that are completed across the aquitard and replace them with separate and adjacent wells completed within each aquifer. This will allow for both the characterization of piezometric conditions with the separate aquifers but also vertical and horizontal contaminant distribution between the aquifers. These data are critical to understanding contaminant fate and transport and for designing an effective interim action and for evaluating remedial actions for the FS and CAP

Data Gap No. 2 – LNAPL Distribution

As noted above, neither the lateral nor vertical distribution of LNAPL, not the thicknesses of LNAPL are well understood. This is in part due to the suspect well completions but also to an insufficient number of wells to clearly characterize the lateral extent and thickness of LNAPL. LNAPL distribution can be strongly affected by minor changes in soil type, porosity, and permeability and the extent of LNAPL cannot be readily inferred with only a small number of wells. Large portions of the interior of the subject property, between location of known LNAPL do not have wells to assess whether the LNAPL is continuous or is present in multiple separate locations.

In addition to replacement of the decommissioned wells, additional wells will be installed to better characterize LNAPL distribution.

Data Gap No. 3 – LNAPL Recovery

There are multiple methods for LNAPL recovery ranging from periodic manual removal to mechanical systems such as skimming to total-fluids recovery. The use and effectiveness of these methods depends on both the distribution and apparent volume of LNAPL present but also the rate of recovery within any individual well.

This data gap will be evaluated through pre-design testing such as free-product baildown/recovery tests and total fluids pumping tests. During the replacement of the decommissioned wells, the location which previously had the thickest accumulation of LNAPL, the new well will be constructed of 4-inch diameter well screen to facilitate LNAPL recovery testing. The resulting testing data will then be used to design and install the interim action for LNAPL recovery.

Data Gap No. 4 – Horizontal Plume Characterization

Based on the initial data review, the maximum horizontal extent of the dissolved-phase plume has not been fully characterized. The current data indicate that the plume extends beyond the property boundary to the west and north. TRC intends to install additional wells in off-property locations in an attempt to fill this data gap. Such effort will depend on access to those properties.

Filling these data gaps may identify other gaps in Site characterization, or the current efforts may not be fully sufficient to fill a data gap and additional efforts may be required to complete the RI.

The tasks discussed below are designed primarily to fill Data Gaps No. 1 through 4. After completion of these tasks, TRC will meet with Ecology to discuss our findings and conclusions. TRC will provide Ecology with tabulated summaries of analytical results and graphical representations of the data including interpretive cross-sections of Site conditions. TRC will then discuss with Ecology any remaining data gaps in the RI and develop an understanding of the next phase of investigation (if any) or the preparation of the RI, FS, and CAP. TRC does not propose preparing interim reports which would not present a full RI but can readily respond to specific data requests by Ecology as we develop the data necessary to complete the RI. This approach is more cost-effective for our client and allows us to focus our efforts on more timely completion of the RI.

SCOPE OF INVESTIGATION

In order to address the data gaps presented above, TRC will perform the tasks described below.

Task 1 – Well Decommissioning

Task 1 focuses on resolving Data Gap No. 1. The following suspect wells will be decommissioned:

- MW-NE1
- MW-B4
- MW-B8
- MW-EX1
- MW-SW1
- MW-SW2

Each of the wells slated for decommissioning is indicated on Figure 1.

Each of the wells will be decommissioned by a Washington-licensed well driller in accordance with applicable regulations and guidance. Documentation for the decommissioned wells will be submitted to the Department of Ecology, as required.

Well completion logs are available for each of the wells proposed for decommissioning. Decommissioning will consist of filling the wells with bentonite chips and hydrating the bentonite. The surface monument will be removed, and the surface will be capped with either concrete or asphalt to match the surrounding surface and to limit the potential for trip or fall hazards.

Task 2 – LNAPL Characterization

Task 2 focuses on resolving Data Gap No. 2. After well decommissioning, a total of 13 monitoring wells will be installed with the objective of characterizing the distribution and thickness of LNAPL. Six of these wells will be completed within the shallow aquifer and seven of these wells will be completed within the deeper aquifer. The intent of these newly installed wells will be to supplement the existing well infrastructure to form nested shallow and deep well pairs to further characterize the vertical and horizontal extent of LNAPL at the Site. The location of each well for the LNAPL characterization is shown on Figure 2.

Shallow wells will be installed to terminal depths ranging from 25 to 35 feet, with 10 to 15 feet of screen. Deep wells will be installed to a terminal depth ranging from 50 to 60 feet, also with 10 to 15 feet of screen, or less, depending on the thickness of the deep aquifer. The depths of deep wells may be modified so that no portion of the well screen or filter pack extends into the overlying aquitard.

Each well will be installed using rotosonic drilling techniques. Rotosonic drilling techniques allow for full depth continuous core sampling so that a detailed account of subsurface conditions can be examined and logged. Rotosonic drilling techniques also provide for a fully cased borehole during drilling which seals the overlying aquifer from the deeper aquifer. Each boring will be logged in accordance with the Unified Soil Classification System as described in the American Standard of Testing Materials (ASTM) document D2487 and will be presented on boring logs. During drilling the soil conditions encountered will be field screened for the apparent presence of contamination using a photoionization detector, sheen testing, and observing olfactory indications of contamination. The boring logs will contain the details of field screening as well as well completion details.

During boring advancement, soil samples will be retained for laboratory analysis at not less than 5-foot intervals to further characterize subsurface soil conditions at the Site. Each sample will be submitted for laboratory analysis using NWTPH-Dx methods, using a kerosene standard for quantization. Additional samples may be retained for analysis if specific vertical horizons of apparent impacts are identified during drilling.

All drilling will be performed by a Washington-licensed driller. Each well will be 4-inches in diameter and will consist of 0.010-inch factory slotted screen with appropriate sand pack and bentonite seal. The use of 4-inch diameter wells will facilitate future LNAPL recovery and, if appropriate, the installation of down-well equipment such as pumps or skimmers. The surface will be completed with a traffic-rated, flush mounted monument, set in place with concrete.

Task 3 – Hydraulic Study for LNAPL Recovery Design

This task focuses on resolving Data Gap No. 3. After completion of the well installation, TRC will perform hydraulic studies which may include (but not be limited to) the following:

LNAPL baildown and recovery testing. Up to three wells with a range of LNAPL thickness will be tested. Testing will include manual removal of all recoverable LNAPL and monitoring the recovery of LNAPL to the well over time.

Total fluids pumping. Up to two wells, depending upon the result of the baildown testing, will be tested for sustainable groundwater extraction using a standard 8 hour pumping well test. During the period of the test the water collected will be placed in an appropriately sized tank and allowed to stabilize for at least 48 hours. The thickness of accumulated product in the tank will then be measured and the recovered LNAPL volume will be calculated. Additionally, samples of the water within the tank will be analyzed to assess the dissolved phase concentration present. These data can then be used to assess the potential LNAPL and contaminant mass recovery rates for multiple types of interim remedial systems.

Task 4 – Lateral Plume Characterization

This task focuses on addressing Data Gap No. 4. A total of 16 monitoring wells will be installed to characterize the lateral extent of the dissolved-phase plume. There is currently very little lateral control of the extent of this plume within the shallow or deeper aquifer. Seven of these wells will be completed within the shallow aquifer and nine of these wells will be completed within the deeper aquifer. The intent of these newly installed wells will be to supplement the existing well infrastructure to form nested pairs to further characterize the vertical and horizontal extent of dissolved-phase plume at the Site. The location of each well for the plume characterization is shown on Figure 3.

If the results of Task 2 suggest that impacts to either the shallow or deeper extend beyond the perimeter of newly installed wells, additional investigation may be necessary.

Each well will be installed in the same manner as Task 2. Terminal depths of wells and screen lengths may be altered, depending upon soil lithologies encountered during drilling.

Each well will be installed using rotosonic drilling techniques with full depth continuous core sampling so that a detailed account of subsurface conditions can be examined and logged. Each boring will be logged in the same manner as Task 2.

During boring advancement, two soil samples displaying the highest indications of impact using field screening techniques will be submitted for laboratory analysis. Each sample will be submitted for laboratory analysis using NWTPH-Dx methods, using a kerosene standard for quantization.

All drilling will be performed by a Washington-licensed well driller. The wells will be 4-inches in diameter with 0.010-inch factory slotted screen with appropriate sand pack and bentonite seal. The surface will be completed with a traffic-rated flush mount monument, set in place with concrete.

After completion of all wells under Tasks 2 and 4, each well will be surveyed by a Washington-licensed surveyor to a local absolute datum. The vertical precision will be to 0.01 feet and the horizontal precision will be 0.1 feet.

All drilling cuttings and other investigation-derived waste (IDW) will be placed in 55-gallon DOT-approved drums, labelled and placed in a designated area on-property. After receipt of laboratory data IDW will be disposed according to applicable regulations. Such disposal is anticipated to be as non-hazardous waste at a Subtitle D Landfill.

Prior to all drilling TRC will notify the Washington One-Call service at least 72 hours before any ground-penetrating work. Additionally, TRC will retain a private locator to attempt to further clear drilling locations.

Task 5 – Interim Deliverable

TRC will prepare an interim deliverable consisting of tabulated data, figures, boring logs, and original laboratory attachments. The graphics will include interpretive cross-sections as requested by Ecology in its opinion letters. The intent of the interim deliverable will be to update Ecology on the status of the interim investigation as well as provide a formal response to the data requested by Ecology in the June 19, 2017 and March 20, 2020 opinion letters.

After completion of the interim deliverable, TRC will meet with Ecology to discuss additional data gaps and develop next phase of work toward completing the RI.

SCHEDULE

The work will be split into two phases. After completion of the above scope of work, work will continue to complete the RI of the Site as well as perform LNAPL removal.

The following schedule will be implemented to complete the RI for the Site:

- Submittal of this scope of work – May 15, 2020
- Implement Tasks 1 through 4 – Completed by August 31, 2020 (note: may be delayed due to changes in Covid-19 lockdowns or restrictions)
- Task 5 – September 30, 2020
- Meet with Ecology/Development of follow up assessment work plan – October 31, 2020
- Ecology review and comment – December 15, 2020
- Implement additional assessment work plan – February 1, 2021
- Review data with Ecology and determine if RI is substantially complete – March 15, 2021
- If RI complete, prepare RI Report – June 15, 2021

If additional characterization of the Site is necessary, this schedule may be augmented or extended as appropriate. Neither TRC nor Mr. Mell have control over Ecology's review cycle or the timing of access to off-property locations, both of which may affect this schedule. In addition, there may be Covid-19 related delays that cannot be foreseen.

Upon completion of the RI, TRC will meet with Ecology to discuss the findings of the RI and develop a scope of work and alternatives to be evaluated during the FS. After that meeting, a schedule can be developed for completion of the FS and CAP.

On a parallel track with the RI tasks, Mr. Mell will implement an interim action for LNAPL recovery at the Site. Those actions will seek to adhere to the following schedule:

- Implement Tasks 1 through 3 – Completed July 31, 2020
- Task 3 – Perform pre-design testing and data analysis – August 31, 2020
- Design LNAPL recovery system and provide Ecology with design report – October 15, 2020
- Install LNAPL recovery system – March 15, 2021
- LNAPL system startup – April 15, 2021
- LNAPL recovery system As-Built Report to Ecology – May 31, 2021

Please let us know if you have any questions or concerns. As noted above, it is our current plan to proceed with Tasks 1 through 5 on the currently proposed schedule unless Ecology provides any objections or additional comments.

Mr. Mell has expressed his interest in expeditiously completing the RI and moving toward a full CAP and Site-wide remediation. TRC and Mr. Mell appreciate the opportunity to continue to participate in the VCP. We understand Ecology's prior concerns regarding past delays with the project. It is TRC's intention to move the project forward in a diligent and workmanlike manner.

If you have any questions, please contact us at (425) 395-0010, or by email at ekoltes@trccompanies.com and tmorin@trccompanies.com.

Sincerely,



ERIC MICHAEL KOLTES

Thomas C Morin

Prepared by:
Eric Koltes, L.G.
Senior Geologist

Reviewed and approved by:
Thomas C. Morin, L.G.
Principal Geologist

ENCLOSURES

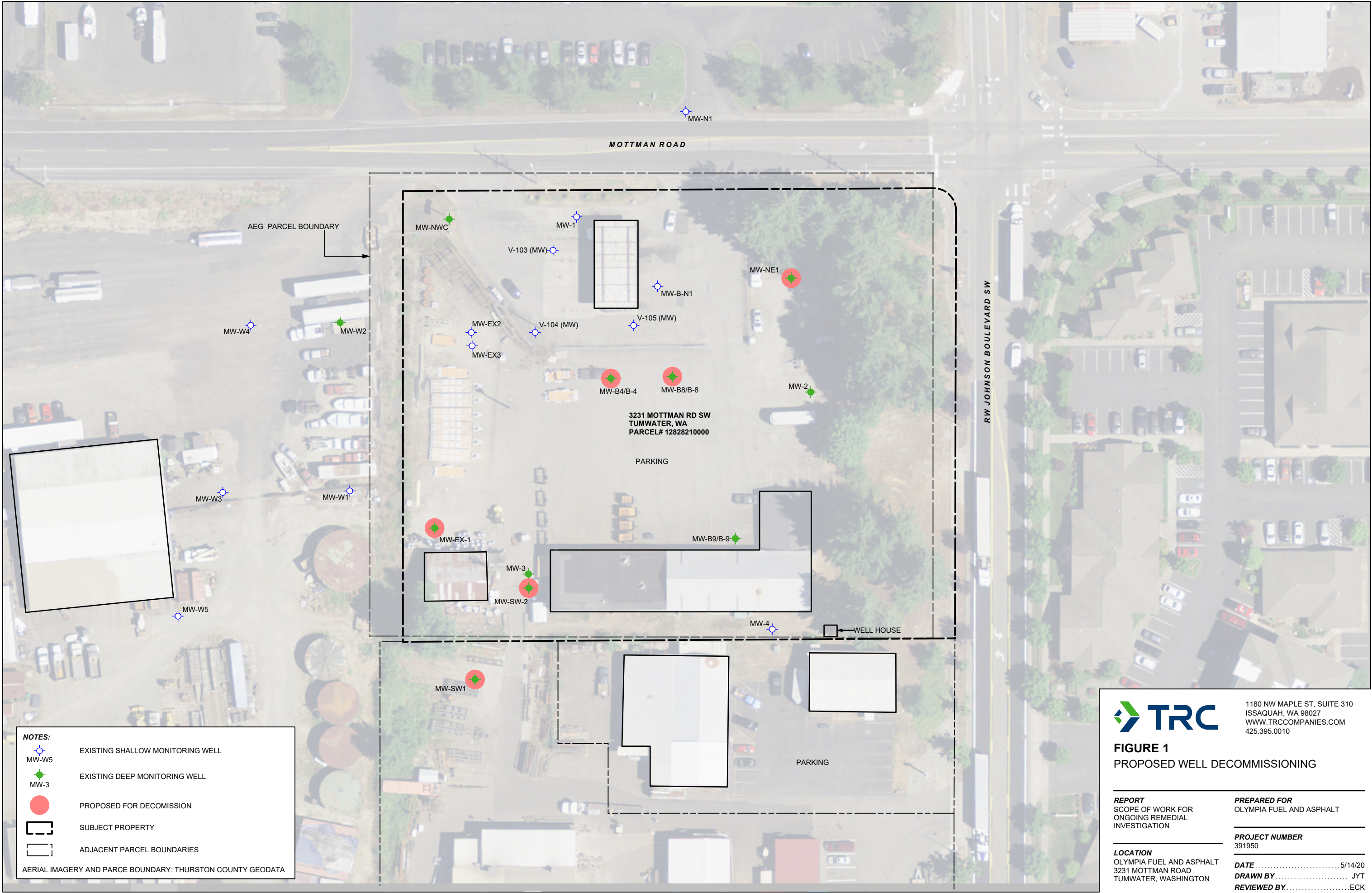
Figures

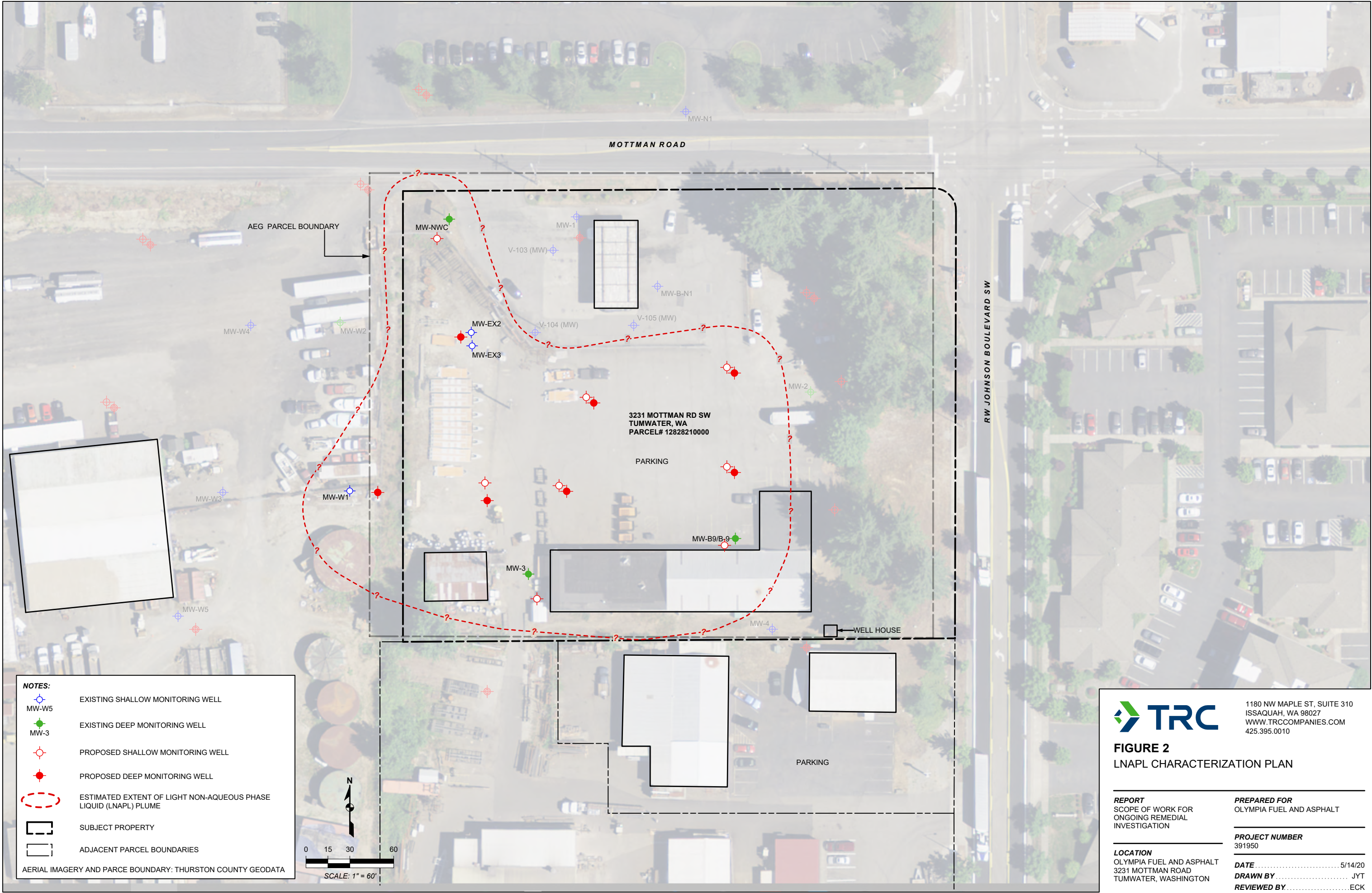
- Figure 1 Proposed Well Decommissioning
- Figure 2 LNAPL Characterization Plan
- Figure 3 Lateral Plume Characterization Plan

Attachments

- Attachment A Change of Contact Form

Figures





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FIGURE 2
LNAPL CHARACTERIZATION PLAN

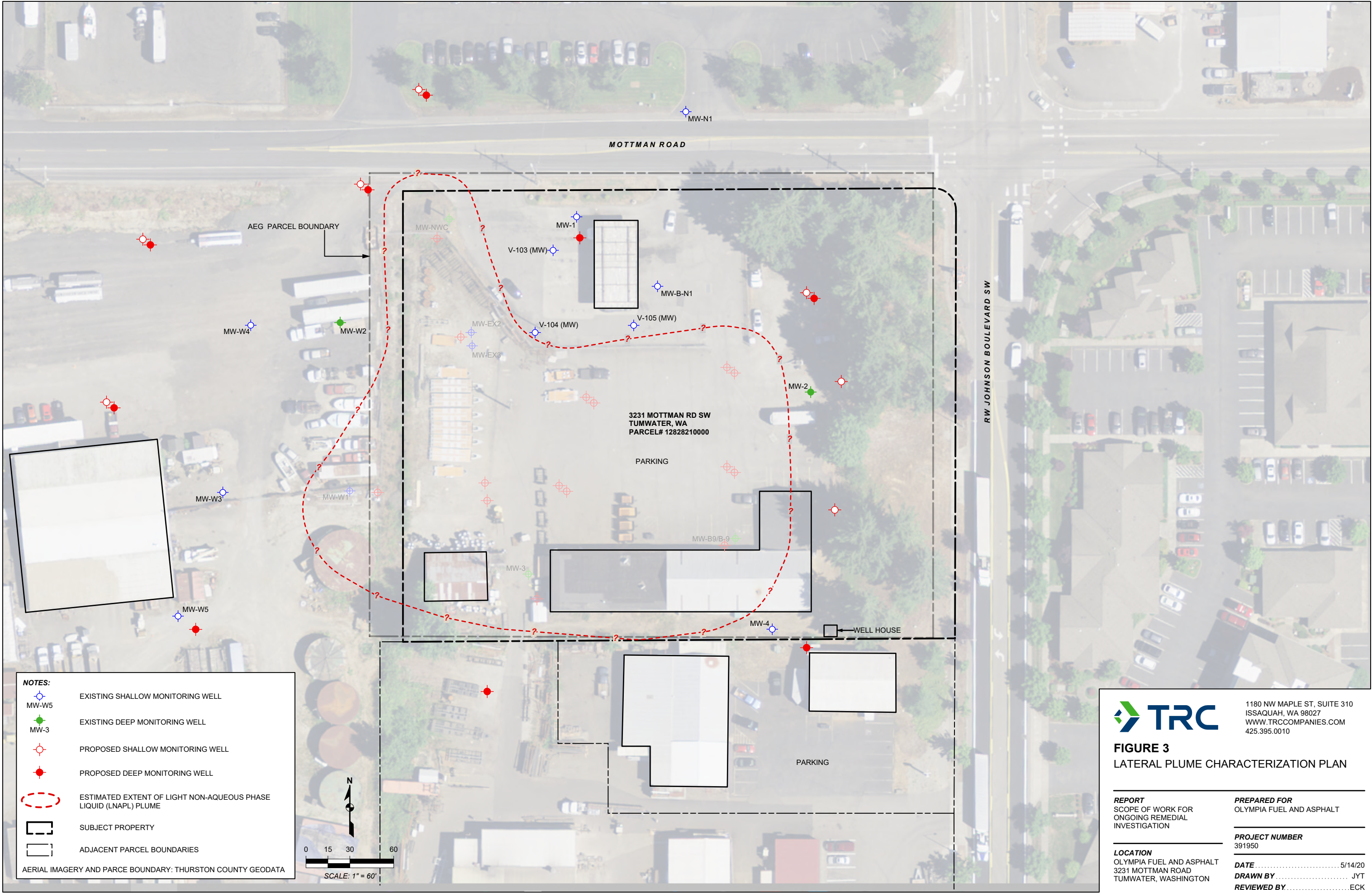
REPORT
SCOPE OF WORK FOR
ONGOING REMEDIAL
INVESTIGATION

PREPARED FOR
OLYMPIA FUEL AND ASPHALT

LOCATION
OLYMPIA FUEL AND ASPHALT
3231 MOTTMAN ROAD
TUMWATER, WASHINGTON

PROJECT NUMBER
391950

DATE 5/14/20
DRAWN BY JYT
REVIEWED BY ECK



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FIGURE 3
LATERAL PLUME CHARACTERIZATION PLAN

REPORT
SCOPE OF WORK FOR
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REVIEWED BY ECK

Attachment A
Change of Contact Form



Voluntary Cleanup Program

Washington State Department of Ecology Toxics Cleanup Program

CHANGE OF CONTACT FORM

Use this form to notify the Department of Ecology (Ecology) of any changes to the designated points of contact for a project under the Voluntary Cleanup Program (VCP). Include any changes to the contact information for those persons (for example: phone number or address). Please submit only one form for each point of contact.

Step 1: IDENTIFY HAZARDOUS WASTE SITE

Please identify below the hazardous waste site for which you are providing new contact information. This information may be found on the VCP Agreement.

Facility/Site Name:

Facility/Site Address:

Facility/Site No:

VCP Project No.:

Step 2: IDENTIFY CONTACT PERSON

Please identify the role of the person for whom you are providing new contact information. Check all that apply.

Project Manager

Project Attorney

Project Billing Contact

Property Owner

Project Consultant

Other – please specify:

Please provide below the new contact information for this person:

Name:

Title:

Organization:

Mailing address:

City:

State:

Zip code:

Phone:

Fax:

E-mail:

Effective date:

Step 3: IDENTIFY PRIOR CONTACT PERSON (IF APPLICABLE)

Is the new contact person replacing an existing point of contact?

Yes

No

If you answered "YES" above, please identify below the person who is being replaced:

Name:

Title:

Organization:

Mailing address:

City:

State:

Zip code:

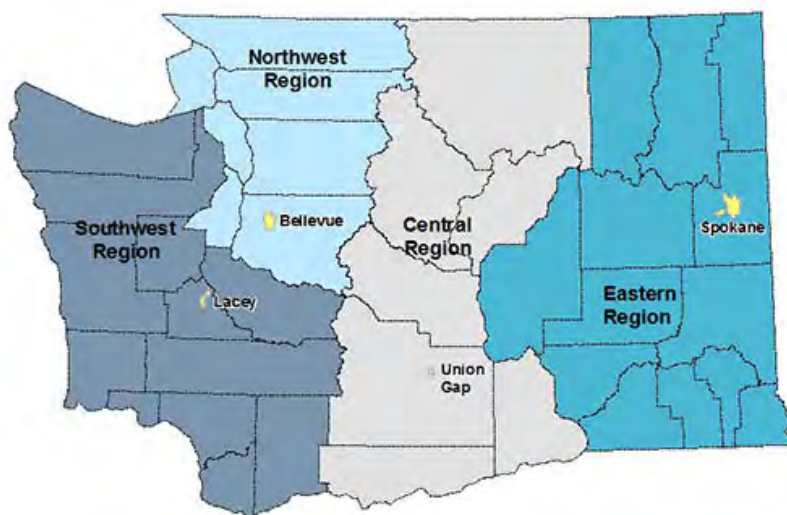
Phone:

Fax:

E-mail:

Step 4: SUBMITTAL

Please mail your completed form to the Ecology site manager assigned to your Site. If a site manager has not yet been assigned, please mail your completed form to the Ecology regional office for the County in which your Site is located.



Northwest Region:

Attn: VCP Coordinator
3190 160th Ave. SE
Bellevue, WA 98008-5452

Central Region:

Attn: VCP Coordinator
1250 West Alder St.
Union Gap, WA 98903-0009

Southwest Region:

Attn: VCP Coordinator
P.O. Box 47775
Olympia, WA 98504-7775

Eastern Region:

Attn: VCP Coordinator
N. 4601 Monroe
Spokane WA 99205-1295

If you need this publication in an alternate format, please call the Toxics Cleanup Program at 360-407-7170. People with hearing loss can call 711 for Washington Relay Service. People with a speech disability can call 877-833-6341.