May 31, 2018

Mr. Adam Brandenburg
McDonald's USA, LLC
409 Maynard Avenue South
Seattle, Washington 98104

RE: Well Installation and Quarterly Groundwater Monitoring Final Work Plan
Olympia McDonald's (46-0220)
715 Plum Street Southeast
Olympia, Thurston County, Washington 98501
RGI Project No. 2017-282A

Dear Mr. Brandenburg:

The Riley Group, Inc. (RGI) is pleased to present our proposed Well Installation and Quarterly Groundwater Monitoring Work Plan (Work Plan) for the above-referenced property (herein referred to as the Property). The Work Plan has been revised and approved by the Washington State Department of Ecology (Ecology) Southwest Regional Office. The layout of the Property is shown on the attached Figure 1 and 2.

PROJECT BACKGROUND

RGI recently completed a review of all Ecology records related to the former cleanup activities and groundwater monitoring events previously completed on the Property by others. The previous reports provided to, and reviewed by, RGI included the following:

- *Resolved Issues and Request for No Further Action Status Under the Voluntary Cleanup Program (VCP) Regarding McDonald's Site at 715 Plum Street Olympia*; prepared for McDonald's Corporation; prepared by IT Corporation; November 19, 1999.
- *Site Characterization and Remediation Report*; prepared for McDonald's Corporation; prepared by EMCON Northwest; October 23, 1992.
- *Soil Quality Assessment/Remediation*; prepared for West Star Corporation; prepared by Parametrix, Inc.; January 22, 1990.

Based on our discussions with Mr. Panjini Balaraju, the Ecology Site Manager assigned to this project, a summary of findings, conclusions, and/or recommendations regarding the above-referenced reports is not provided herein, and was not considered warranted at this time. The reader is directed to the above-referenced reports in their entirety.

As part of preparing this Work Plan, RGI attempted to locate any of the former and/or existing groundwater monitoring wells located on the Property. This site inspection was performed by Tait Russel on April 5, 2018 and Stafford Larsen on April 19, 2018. RGI visually inspected the Property including asphalt paved areas, drive-thru lanes, landscaped areas, as well as traversing the Property with a metal detector in an attempt to locate any buried or paved over steel well monuments. Select photographs taken during our April 5th site inspection are attached for reference.

In summary, monitoring well MW6D was found on the Property - located in the landscaped area in the northeast portion of the Property (see attached Figure 1 and Photograph 1). Monitoring well MW6D was constructed of 2-inch diameter SCH40 PVC well screen (slot size unknown) and well casing and had a lockable J-plug. RGI was able to remove the J-plug, and using a water level indicator and a bailer, RGI determined the well extends to a depth of 21 feet below ground surface (bgs). Overall, the monitoring well appears to be intact and usable for continued groundwater monitoring. No other monitoring wells were observed on the Property. The status of any other previous groundwater monitoring wells located on the Property are unknown (removed, abandoned, or were decommissioned by others).

DISCUSSIONS WITH ECOLOGY

Following the Property inspections, RGI (Stafford Larsen) had several discussions with Mr. Panjini Balaraju, the Ecology Site Manager regarding next steps. Mr. Balaraju stated that Ecology feels MW6D, after proper development, is acceptable to utilize as one of the three monitoring wells for future groundwater sampling events.

Mr. Balaraju stated that soil samples are not required to be collected and analyzed during the installation of two additional groundwater monitoring wells (as discussed below).

Mr. Balaraju stated that Ecology requires four rounds of quarterly groundwater monitoring data before it will consider any changes to the groundwater monitoring and sampling frequency (less frequent sampling) and/or the proposed analytical testing procedure (as discussed below).

Based on our discussions with Ecology, the Ecology approved scope of work is provided below.

SCOPE OF WORK

Prior to drilling, RGI will locate the existing and known underground metallic utilities using One Call (public locates) and a private underground utility locator.

The well installation scope of work as described below is based on the known artesian conditions present on the Property. The wells for the Property will likely penetrate a shallow perched water bearing zone (within or above a peat horizon). This shallow water bearing zone must be sealed properly from the underlying artesian water bearing zone.

RGI will install two permanent groundwater monitoring wells on the Property to a maximum depth of 20 feet bgs. One monitoring well (referred to as MWA) will be located in the landscaping south of the building and one monitoring well (MWB) will be located in the parking area in the northwest portion of the Property (see Figure 2). Well MW6D will also be developed and sampled as part of the ongoing groundwater monitoring events.

Well construction will consist of 2-inch diameter SCH40 PVC well screen and casing. A 10-foot section of well screen (0.010 slot) will be installed from 10 feet bgs to 20 feet bgs. Well casing will be installed from 10 feet bgs to grade and will be completed with a traffic-rated steel monument and lockable J-plug.

RGI's drilling subcontractor (to be determined) will install these wells using a Geoprobe 8140LC Sonic® drill rig. The Sonic rig and tooling is capable of installing an eight-inch diameter, 3 to 4-foot thick, bentonite seal between the shallow and artesian water bearing zone. Once the bentonite seal fully hydrates, smaller diameter tooling (4-inch/6-inch diameter) tooling will be used to complete the well installation including sand pack around the screened interval.

The well installation and well development will require up to one full day of drilling, The drilling and well installation will likely obstruct egress/ingress and or parking during this work.

After installation of the wells, RGI or its drilling subcontractor, will use disposable bailers, surge blocks, and /or pumps to properly develop the wells.

RGI will survey the well top of casing elevations (in order to calculate a groundwater flow direction) and will tie the well elevations to NAVD88.

At least 48-hours after well development, RGI will collect groundwater samples following well purging under low flow conditions from all three monitoring wells.

Depth to static groundwater will be measured from well top of casing (TOC) using an electronic water level meter. Using depth to groundwater measurements, and corresponding elevations.

All wells will be purged using a peristaltic and/or submersible pump. Investigation-derived waste, including soil cuttings and purge water, will be stored in two 20 or 55 gallon steel drums. The drums will need to be left on the Property for a period of time until the drummed contents can be properly characterized as a waste and scheduled for proper pick-up and off-site disposal. A representative soil sample will be collected from the drummed water and/or the drummed soil for laboratory analysis.

Groundwater recovery, startup time, the field parameter measurements (pH, temperature and specific conductivity) and duration of the purging operations will be recorded on field data sheets.

Quality Assurance/Quality Control (QA/QC) will consist of collecting one field (blind) blank sample consisting of distilled water. The field blank will be identified as sample number MWC-H20.

Sampling will commence when field parameters have stabilized. All wells will be sampled under low-flow conditions. Groundwater samples will be collected in laboratory-supplied sample containers and will be placed in an ice-chilled cooler and transported to the analytical laboratory under proper chain-of-custody documentation.

Soil (drummed soil) and groundwater samples will be submitted to an Ecology-accredited third-party analytical laboratory, for laboratory testing as outlined below.

- Gasoline-range TPH using Northwest Test Method NWTPH-Gx and benzene, ethylbenzene, toluene, xylenes (BTEX) using EPA Test Method 8021.
- Diesel- and oil-range TPH (TPHd and TPHo) using Ecology Test Method NWTPH-Dx.
- Total lead using EPA Test Method 200.8.

After the first round of groundwater sampling, and after discussions with Ecology, RGI will sample groundwater from the wells three additional times on a quarterly basis. This sampling will account for one full year of quarterly groundwater monitoring. Based on recommendations from Ecology, the frequency of sampling and analytical testing may change moving forward.

INVESTIGATION-DERIVED WASTE (IDW)

All IDW will include personal protective equipment, soil cuttings generated during drilling, purge, and decontamination water. All IDW will be stored on the Property in properly labeled and covered steel drum(s) and will be property removed and disposed off-site, on as needed basis, or as required by McDonalds USA.

DATA ANALYSIS AND REPORTING

RGI will prepare a report for each groundwater sampling event presenting our findings and conclusions. The first groundwater monitoring report will include the well logs and well completion diagrams. Groundwater monitoring reports will include groundwater flow directions and gradient.

The drillers' well logs will be submitted to the Southwest Regional Office of Ecology's Water Resources division within 30 days of the installation event (to satisfy RCW 18.104). Per WAC 173-340-840(2) RGI will submit two hard copies and one electric copy of all reports. Per WAC 173-340-840(5) and Ecology policy 840, all generated data will be entered into Ecology's EIM database.

Analytical results will be compared to the following regulation:

- Washington State Department of Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for Unrestricted Land Uses (WAC 173-340-900, Tables 720-1 and 740-1).

RGI requests that this Work Plan be submitted to Mr. Panjini Balaraju at Ecology for review, comment, and/or approval prior to proceeding with the above-outlined scope of work.

If you have any questions, or need additional information, please contact us at (425) 415-0551.

Sincerely,

THE RILEY GROUP, INC.

for Stafford Larsen
Project Geologist

Paul D. Riley, LG, LHG
Principal

Report Distribution: *Mr. Adam Brandenburg – McDonalds USA (PDF)*

Mr. Panjini Balaraju, Ecology Southwest Regional Site Manager (two hard copies and PDF)

Attachments: *Figure 1 – Site Vicinity Map*

Figure 2 – Existing and Approved-Future Groundwater Monitoring Well Locations

Appendix A – Site Photograph

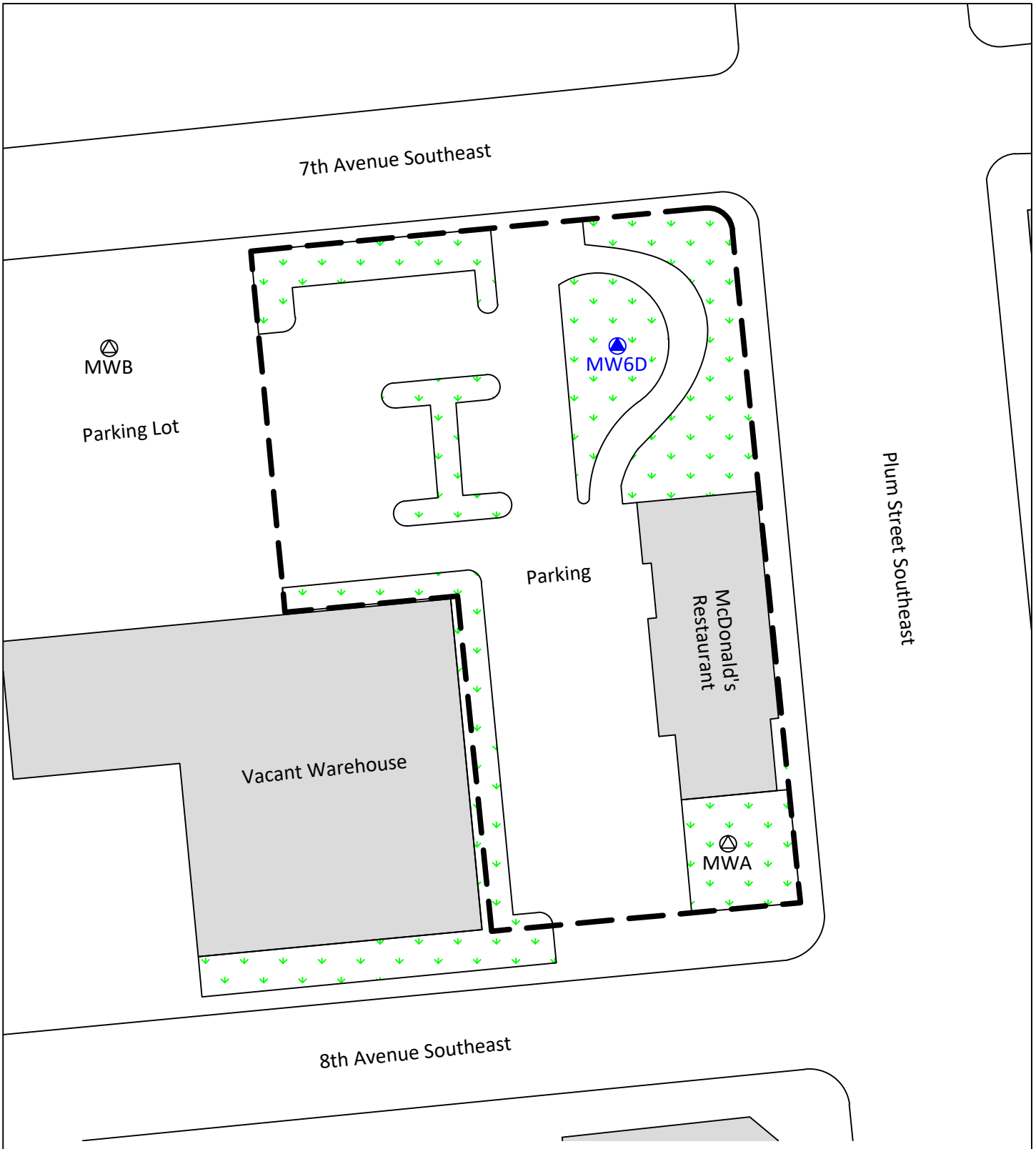
USGS, 2017, Tumwater, Washington
7.5-Minute Quadrangle

Approximate Scale: 1"=1000'

0 500 1000 2000

N

Corporate Office 17522 Bothell Way Northeast Bothell, Washington 98011 Phone: 425.415.0551 Fax: 425.415.0311	Olympia McDonald's, 46-0220	Figure 1
	RGI Project Number 2017-282A	Site Vicinity Map	Date Drawn: 05/2018
	Address: 715 Plum Street Southeast, Olympia, Washington 98501	



= Future monitoring well location (approximate)
= Existing monitoring well installed by EMCON Northwest, Inc., 12/21/91
= Site boundary

Approximate Scale: 1"=50'
0 25 50 100
N

RILEYGROUP
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Olympia McDonald's, 46-0220		Figure 2
RGI Project Number 2017-282A	Existing and Approved-Future Groundwater Monitoring Well Locations	Date Drawn: 05/2018
Address: 715 Plum Street Southeast, Olympia, Washington 98501		

Photograph 1: MW6D well monument and location.

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Olympia McDonald's, 46-0220		Figure A-1
RGI Project Number 2017-282A	Site Photographs	Date Drawn: 05/2018
Address: 715 Plum Street Southeast, Olympia, Washington 98501		