



July 28, 2022

G-Logics File Number 01-041-R

Mr. Dale Myers
Department of Ecology
Northwest Regional Office
15700 Dayton Avenue North
Shoreline, WA 98133

**SUBJECT: Memorandum Addendum Modification to Pilot Test Workplan
Boeing Field Chevron
10805 East Marginal Way South
Tukwila, Washington**

Dear Mr. Myers:

G-Logics has prepared this Memorandum Addendum to request a change to the Final Boeing Field Chevron Pilot Test Workplan prepared by G-Logics and dated June 21, 2022 (Pilot Test Workplan). The proposed change involves using a direct-push drilling rig instead of a hollow-stem auger drilling rig to install Upper Saturated Zone monitoring wells TW-4 and TW-5. The monitoring wells are planned to augment the current monitoring well network for monitoring groundwater conditions during the pilot test at the Boeing Field Chevron site. The Washington State Department of Ecology (Ecology) approved the Pilot Test Workplan on June 13, 2022.

Requested Modification to the Pilot Test Workplan

G-Logics is requesting modification of the Pilot Test Workplan to use a direct-push drilling rig to install monitoring wells TW-4 and TW-5 with pre-pack monitoring well screens. Direct-push drilling is preferred over hollow-stem auger drilling for the well installation for the following reasons:

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- G-Logics recently used a similar approach to complete the installation of monitoring wells at another site in the Duwamish River Valley. Although the wells were installed deeper than the monitoring wells planned at the Boeing Field Chevron Site, G-Logics found that the monitoring wells were easy to install and produced water quality and quantity comparable to nearby wells that had been installed using a hollow-stem auger.
- There will be a reduction in the total time needed for the drilling and installation of the monitoring wells TW-4 and TW-5 which will reduce the potential for worker/vehicle conflict at a busy service station and reduce potential congestion for the business access.
- Since soils in the planned well installation locations are expected to contain high concentrations of gasoline-range petroleum hydrocarbons and, potentially, free product, the reduced drilling time will also reduce overall worker exposure risks.
- The direct-push drilling method will minimize the volume of contaminated soil returned to the surface, further reducing worker contaminant exposure risk by reducing soil handling required for containerization of drill cuttings.
- The direct-push drilling will reduce the amount of waste soil to be disposed.
- Direct push drill rigs are somewhat more available to schedule this summer than hollow-stem auger rigs, which will allow the project a better chance to remain on schedule.

General Well Installation Procedures

The groundwater monitoring wells TW-4 and TW-5 will be installed by first driving to the proposed depth of the well using a core barrel with a diameter of approximately 2 inches. Recovered soil cores from the entire boring will be used for lithological logging and will be screened for evidence of petroleum hydrocarbons using methods described in the Pilot Test Workplan.

Once the initial boring is completed, a core barrel with an interior diameter of approximately 4 inches will be used to overdrill the borehole to the target depth of the monitoring well. The pre-pack well assembly is then lowered into the probe barrel attached to a threaded Schedule 40 polyvinyl chloride (PVC) riser pipe. Other than use of direct-push drilling and pre-pack

well screens, well construction details for both wells will be similar as outlined in the Pilot Test Work Plan.

Once the well assemblies are lowered to the bottom of the casing, the casing will be retracted. As the casing is retracted, additional sand pack will be installed directly above the well screen. Bentonite will be installed in the annular space above the sand pack, and the wells will be finished at the surface with a concrete seal and a standard flush-with-grade monument. The design and construction of the monitoring well with a pre-pack well screen meets the design and construction required for resource protection wells under Chapter 173-160 Washington Administrative Code.

Closing

G-Logics appreciates this opportunity to work with Ecology to implement the Boeing Field Chevron pilot test. Please contact us if you have questions regarding this request.

Sincerely,
G-Logics

Thomas Cammarata

Thomas Cammarata LG, LHG
Technical Resource Expert



Mike Arnold, LG, LHG
Director of Technical Services

cc: Rajbir Sandhu, Boeing Field Chevron
Ryan Hultgren, Kennedy Jenks
Bridget Schuster, Williams Kastner
Lynn Manolopoulos, Davis Wright Tremaine
Russ Shropshire, Leidos
Nathan Blomgren, Chevron