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July 1, 2003

Ms. Linda Gertler
Lockheed Martin Corporation
2550 N. Hollywood Way, 3rd Floor
Burbank, CA 91505

Subject: Installation and Sampling of MW-67
Beaumont Site 1, Beaumont, California

Dear Ms. Gertler:

Per Lockheed Martin Corporation's (LMC) request, Tetra Tech has installed a groundwater monitoring well downgradient (west) of MW-16, furthest existing downgradient groundwater monitoring well. The purpose of the well installation, and subsequent groundwater sampling was to evaluate the potential presence of volatile organic compounds (VOCs), 1,4-dioxane, and perchlorate.

Prior to the commencement of any drilling activities, the proper permits were obtained from the County of Riverside Department of Environmental Health (DEH). On June 12, 2003, Tetra Tech attempted to drill and construct groundwater monitoring well MW-67 at the location identified as Option A (see Figure 1). An Air Rotary Casing Hammer (ARCH) drill rig equipped with a 6-inch outer diameter drill bit was utilized to drill the well. Soil cuttings were observed by the Tetra Tech geologist and recorded on a boring log using the United Soils Classification System (USCS). The boring was advanced to a total depth of 70 feet below ground surface (bgs). No water was encountered in the boring at Option A and the boring was abandoned in accordance with the County of Riverside DEH. The abandonment of the borehole was conducted using a concrete and bentonite slurry mix, as specified by the County of Riverside DEH permit. Following the abandonment of the borehole a site reconnaissance was conducted by Tetra Tech to determine other suitable locations for the proposed groundwater monitoring well, MW-67.

Based upon the site reconnaissance conducted on June 12, 2003, Tetra Tech developed three additional options (Option B, C, and D) for the proposed downgradient groundwater monitoring well location. On June 19, 2003, Tetra Tech utilized a limited-access rig (LAR) to drill and set a monitoring well at the Option B location (see Figure 1). Soil samples were collected in a California Split-Spoon sampler lined with 2-inch by 18-inch acetate sleeves. Continuous-core soil samples were observed by the Tetra Tech geologist, and the lithology was recorded on the boring log using USCS guidelines. Please see Option B Boring Log in Attachment A. At a depth of three feet bgs, the Mt. Eden Formation contact was observed, and water had not been encountered. It was determined that the shallow borehole would be abandoned, and the LAR would be mobilized to the Option C location (see Figure 1).

Drilling was commenced at the Option C location, and groundwater was observed at a depth of approximately 17-inches bgs. Please see the attached Option C, MW-67 Boring Log. The non-water bearing Mt. Eden Formation was observed at a depth of 12 feet bgs, and the soil boring was completed to a total depth of 17 feet bgs. Based upon field observations, water was present to a total depth of 12 feet bgs, but was not apparent within the Mt. Eden Formation below 12 feet. As a result of these observations, groundwater monitoring well MW-67 was installed to a total depth of 12 feet bgs. The monitoring well was constructed using 2-inch Schedule 40 PVC, with a 0.020-inch screen extending from 7 feet bgs to 12 feet bgs. Blank PVC extends from 7 feet bgs to 3 feet above surface grade. A filter pack using #2/12 sand was placed into the borehole around the outside of the well casing, and extends to approximately 2 feet above the top of the well screen (5 feet bgs). Transition sand, type #0/30, was placed above the filter pack, from 4 to 5 feet bgs. The sanitary seal was installed using bentonite chips placed in the annulus between the PVC well casing and the borehole wall, and hydrated in place. The monitoring well was completed with an above ground protective steel monument with a locking lid, and set in place with a 3-foot square concrete apron. Figure 2 presents the monitoring well construction diagram for MW-67.

On June 21, 2003, approximately 48 hours after well MW-67 was constructed, Tetra Tech developed the well using a combination of bailing, swabbing, and pumping. The monitoring well was initially bailed to remove any sediment from the bottom of the well. Following the bailing process, the well was swabbed for twenty minutes using a 2-inch vented surge block. The swabbing technique helps mobilize any fine-

grained material within the filter pack, which then can be removed by bailing and pumping. Once the well was sufficiently swabbed, the bailer was once again lowered into the well to remove any fine grained sediment, which may have entered the well during swabbing. Once all sediment was removed from the well, a 2-inch Grundfos pump was lowered into the well, and the well was pumped dry several times to remove as much suspended solids as possible.

On June 23, 2003, Tetra Tech sampled the groundwater from the newly installed monitoring well MW-67. The monitoring well was purged and sampled using the low-flow sampling method. Samples were collected through the discharge line using the submersible pump after water quality parameters stabilized. Groundwater samples were collected, placed into the appropriate containers, placed in a cooler containing ice and maintained at approximately 4-degrees Celsius, and delivered to Calscience Environmental Laboratories (Calscience), a state certified laboratory, in Garden Grove, California. A chain-of-custody form, filled out when the samples were collected, accompanied the samples to the laboratory. Field data log sheet for the well purging information is presented in Attachment B.

The groundwater samples were analyzed by Calscience for the presence of VOCs by EPA Method 8260, 1,4-dioxane by EPA Method SW8270SIM, and perchlorate by EPA Method 314.0. Only 1,4-dioxane was reported above the laboratory detection limit, at a concentration of 3.9 µg/L. No VOCs or perchlorate were reported above their respective detection limit in the groundwater sample collected from MW-67. The laboratory analytical data is provided in Attachment C. A summary of the analytical results is presented in Table 1.

Table 1
Summary of Analytical Results

Sample I.D.	Volatile Organic Compound (µg/L)	Perchlorate (µg/L)	1,4-Dioxane (µg/L)
EB-1	All compounds were Non Detect	< 2	< 2
MW-67	All compounds were Non Detect	< 2	3.9
Action Levels		**4**	**2**

Should you have any questions or need clarification, please feel free to contact Mr. Tom Villeneuve at (909) 381-1674 or myself at (626) 470-2421.

Sincerely,

Neil Shukla
Burbank Program Manager
Tetra Tech, Inc.

Figures: Figure 1 – Well Location Map
Figure 2 – MW-67 Monitoring Well Construction Diagram

Attachments: Attachment A – Boring Logs
Attachment B – Field Data Log Sheets
Attachment C – Laboratory Report

cc: Gene Matsushita, LMC
Tom Villeneuve, Tt-Engineering
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