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RECEIVED
By Alameda County Environmental Health 9:30 am, Jan 26, 2016

Mr. Mark Detterman
Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Former Chevron Service Station No. 91153
3135 Gibbons Drive (3126 Fernside Boulevard)
Alameda, CA

Dear Mr. Detterman,

Per our meeting on December 17, 2015, the following path to closure was discussed and agreed upon for LUST site LOP Case # RO000034, CUF Claim # 5990 located at 3126 Fernside Blvd., Alameda, CA (site):

Chevron Environmental Management Company (CEMC), GHD Services Inc. (GHD) and Alameda County Environmental Health (ACEH) agreed that CEMC and GHD will prepare and submit a Remedial Design for Mitigation Plan (Mitigation Plan) to address the following exposure pathways: indoor vapor intrusion (VI) and outdoor direct contact. ACEH also required that the Mitigation Plan address a potential methane risk in the indoor parking garage. ACEH, CEMC and GHD agreed that a Mitigation Plan is the desired alternative for closure, based on the property owner's preference for the least intrusive alternative that does not require excavation or any changes to the building structure of the house and garage.

CEMC and GHD will submit the Mitigation Plan to ACEH. ACEH will complete its review within 60 days following receipt. CEMC, GHD and ACEH agreed that, if the plan is approved and fully implemented, ACEH will deem the mitigation actions sufficient to mitigate the indoor VI pathway, direct exposure pathway and methane potential explosion hazard. The specific elements of the Mitigation Plan are:

- Binding agreement with property owner – ACEH and CEMC recognize that the implementation and long-term maintenance of the Mitigation Plan is subject to written approval by the property owner and will be submitted to ACEH as a separate document. If written approval from the property owner is not obtained, then ACEH, GHD and CEMC will need to evaluate other alternatives to reach closure. CEMC will discuss an agreement with the property owner that will allow the implementation of the Mitigation Plan as well as continuing maintenance of the mitigation systems in place after implementation. Once implemented, the Mitigation Plan will remain in effect until there are modifications to the structure that affect the components of the Mitigation Plan (for example, improvements in the garage or in the garden) or a change in the use of the property. The Mitigation Plan will include the current blueprints of the house. The agreement with the property owner will include a requirement that the property owner provide advance notice to ACEH, GHD and CEMC if any changes to the property are planned. ACEH, GHD and CEMC will review such proposed changes and if the site is already closed, CEMC or the property owner may need to reopen the case, under the voluntary cleanup program, to evaluate if additional mitigation/remediation actions are warranted (e.g. soil management plan for redevelopment). If

warranted, ACEH, GHD and CEMC will modify the existing Mitigation Plan to accommodate the new changes to the property and/or discuss corrective actions.

- Risk communication - The Mitigation Plan will include a discussion of the potential human health risks associated with the exposure pathways (i.e. indoor vapor intrusion for residential receptor, direct contact for residential/utility worker receptor and indoor explosion hazard due to methane) in accordance with applicable State of California guidance, including California Low-Threat Underground Storage Case Closure Policy, State Water Resources Control Board Resolution NO. 2012-0016 and Department of Toxic Control's Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air. Risk communication will include petroleum hydrocarbon impacts as well as lead-impacted soil near the former location of the used oil tank. The Mitigation Plan is intended to address the potential risk for those exposure pathways in order to achieve regulatory closure.
- Indoor vapor mitigation plan actions - potential indoor vapor migration and explosion hazards will be addressed by installing a fan at the garage which will create continuous positive pressure inside the garage to prevent sub-slab soil vapor migration. The fan will include a back-up source of power as well as an operational alarm. In addition to the fan, GHD will cover the existing cracks in the garage slab with a floor sealant to prevent organic soil vapor migration. Fan maintenance, monitoring of the fan and floor integrity over the long term, will be included in the Mitigation Plan as well as a contingency plan for unexpected fan system failure.
- Outdoor direct contact mitigation plan actions –
  - Residential receptor - to remove the potential risk for direct contact to shallow petroleum hydrocarbon impacts and lead in soil (lead in soil was found near the location of the former use oil tank), CEMC and GHD will install a barrier that will cover a portion of the outdoor area with Grasscrete®. Grasscrete® allows for rainwater to percolate to the ground and also subsurface/atmospheric air interaction necessary for natural attenuation of petroleum hydrocarbons occurs while preventing incidental human contact to shallow impacts. The Mitigation Plan will include a site plan map and cross-section figures that will indicate the proposed location and limits of the Grasscrete® barrier as well as location of residual concentrations of petroleum hydrocarbon and lead in soil; and LNAPL presence in monitoring wells. The figures will show the effectiveness of the engineered barrier to isolate subsurface impacts from potential receptors.
  - Utility worker receptor - to remove the potential risk for utility workers, CEMC and GHD will relocate subsurface utilities that are located near the impacted shallow soil. It appears only a water line is currently located in the impacted area but GHD will verify this assessment and will present the plan to relocate subsurface utilities near impacted soil, in the Mitigation Plan.

In addition to the Mitigation Plan, ACEH requested during the meeting that EMC and GHD evaluate if there are groundwater impacts that extend 550 feet east to the estuary and could pose a potential ecological risk. ACEH, GHD and CEMC agreed that ambient groundwater flow carrying dissolved petroleum hydrocarbons/LNAPL from the site to the Oakland Alameda Estuary is unlikely based on historical groundwater monitoring data from the down gradient monitoring wells which have been non-detect for petroleum hydrocarbons since 2001. However, ACEH requested to evaluate migration of groundwater impacts through the shallow underground utility corridor. The following actions were agreed upon:

- GHD will collect a groundwater sample from monitoring well RW-1 during the next groundwater monitoring event. This well is located between the onsite impacts and the utility corridor; and will help potentially evaluate LNAPL migration to the utility corridor.
  - Based on the results of RW-1, GHD and CEMC will evaluate the potential migration of dissolved hydrocarbons into the Oakland Alameda Estuary. If necessary, GHD and CEMC will submit a work plan to ACEH, which will describe the collection of soil and/or groundwater samples across the utility corridor adjacent to the site to evaluate impacts from the site towards the Oakland Alameda

Estuary. In addition to current analytical testing methods used, samples will be tested using chemical fingerprinting test methods to evaluate off-site sources of petroleum hydrocarbons at the utility corridor. The workplan will also include a proposed evaluation of LNAPL thickness over time against water elevations to assess migration potential of the remaining LNAPL in the subsurface (particularly near monitoring well C-1). ACEH will complete its review of the plan within 60-days following receipt. If the investigation identifies a complete groundwater migration pathway to the Oakland Alameda Estuary, CEMC, ACEH and GHD will convene a meeting to discuss next steps.

ACEH also requested that CEMC and GHD undertake an evaluation of potential indoor vapor migration from lead scavengers near the former area of the used oil tank. The results of the potential vapor migration risk evaluation will be submitted along with the results of the utility corridor and Oakland Alameda Estuary evaluation.

Estimated Timeline

- If warranted, based on above criteria, a workplan will be submitted to further evaluate the utility corridor and Oakland Alameda Estuary groundwater impacts and lead impacts in soil. GHD and CEMC will engage property owners for their approval of the path forward 30 days after receipt of ACEH approval of the path forward discussed above.
- GHD and CEMC will submit a Mitigation Plan within 90 days after agreement with the property owners is reached.
- GHD will commence implementation of the Mitigation Plan within 90 days after ACEH approval of the Mitigation Plan.

As a final note, once the work described above is completed and the site moves to closure, ACEH requests that the closure request includes an explanation of why CEMC/GHD consider outdoor air exposure to be an insignificant risk at the site.

Sincerely,

Mark E. Horne

Mark Horne
Project Manager