**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**REGION IX**
**75 Hawthorne Street**
**San Francisco, CA 94105**

October 7, 2021

Mr. Kurt Batsel
The Dextra Group, Inc.
On behalf of Northrup Grumman Corp
batsel@dextra-group.com

SENT VIA EMAIL

**Re: EPA Site Visit and Vapor Intrusion Field Assessment, 825 Stewart Avenue Sunnyvale, CA, TRW Microwave Superfund Site (CERCLIS ID# CAD009159088)**

Dear Mr. Batsel:

Thank you for organizing for me and Matt Plate to conduct the August 19, 2021 site visit of the 825 Stewart Drive building, which is currently leased by Apple, Inc. (Apple). The site visit was attended by Michael Shannon with Northrup Grumman Corp (NGC), you, and NGC's consultant Holly Holbrook with AECOM. During the site visit an Apple leasing manager provided access throughout the building. The purpose of the site visit was for EPA to inspect the following items to assess the potential for vapor intrusion into the building:

- The sub-slab depressurization (SSD) system that was installed underneath the three connected site buildings that passively vents soil gas vapors to the atmosphere.
- The building's concrete slab and the April 2015 cracks that where sealed to prevent potential vapor intrusion.
- The building's concrete slab and penetrations from pipes or seams.
- The previously installed soil gas sampling vapor ports.
- The locations where past indoor air sampling has been conducted.
- The operation of the HVAC system and the HVAC air venting and intakes on the roof.
- The location where contaminated soil was excavated in 2014 from underneath the building.
- The location where the spaces between the walls of the three buildings' sections were sealed in 2015.
- A review of any post-2015 building modifications or changes to the buildings.
- The groundwater emulsified vegetable oil in-situ bioremediation system.
- The location of groundwater monitoring wells.

Based on EPA's inspection of the building and real-time indoor pressure readings, the building HVAC system is well balanced to maintain a positive pressure within the occupied building areas, and the likelihood for vapor intrusion is low and not expected. EPA understands that

Apple intentionally operates the HVAC system to balance room pressures, heating, and air turn-over to support long-term product development operations. EPA also noted that the exposed concrete floor was present throughout the building with adequately sealed cracks. However, during the site visit EPA did identify the following items that EPA asks NGC to address.

- **SSD System Vent Pipes:** From Matt Plate's visual inspection on the roof, four of the SSDS exhaust vents are approximately 10-feet of the HVAC's intakes vents and lower or at a comparable height to the intakes. This distance is an acceptable building code distance; however, a distance greater than 10-feet and/or a height that is elevated above the building ventilation system components need to be considered as the SSD system may vent low concentrations of site contaminants of concern outside, creating the potential for contaminates to be pulled into the HVAC intakes and into the building. This scenario and potential impacts to indoor air quality need to be evaluated and mitigated and EPA asks NGC to provide a proposal to do so. As the interior SSD system vertical vent pipes cannot be easily moved and rerouting of piping on the roof may compromise the effectiveness of the passive SSD system, consideration needs to be given to extending the height of vent pipes. For vent pipes that cannot be extended (e.g., under the east building chiller), consideration should be given to rerouting the vent pipes away from HVAC intakes and converting the SSD system to an active system with a blower fan.

- **HVAC Operation:** EPA's observations of the HVAC system and pressures within the building were limited to the day of the site visit and the operation of the building at the time. While a balanced HVAC system was observed maintaining a positive pressure, EPA requests that HVAC and building test and balance information for the HVAC systems be provided to EPA to confirm this.

- **Sub-slab Sampling Ports:** The historical concrete sub-slab vapor sampling ports, left in place, have not been regularly sampled or maintained and several could not be located (SS-10 and SS-11). These ports need to be located and maintained where future sub-slab sampling will be conducted, or decommissioned if a justification is provided that the ports are no longer needed. EPA also requests an updated figure for the building showing all sub-slab vapor sampling port locations including measurements from exterior and interior walls, their ID names, and callouts presenting historical VOC detections. The figure used to locate the sub-slab ports in the field only showed approximate locations.

- **SSD System Maintenance and Inspections:** In May 2021 GES, on behalf of NGC, prepared the first Annual Maintenance Inspection memorandum for the 825 Steward Ave SSD System. The memorandum documented a November 2020 inspection and NGC prepared the memorandum to address the 2019 EPA Five Year Review Report recommendation to incorporate "long-term stewardship measures for the current vapor mitigation measures in place." EPA asks that NGC document in a work plan or technical memorandum the scope of the annual SSD system maintenance inspections, including how and when the inspections will be reported to EPA.

EPA requests that NGC provide a written response in the next 30-days addressing EPA's comments above. Please feel free to contact me anytime at schulman.michael@epa.gov or

415-972-3064 if you have any questions or comments. Thank you again for your cooperation and participation in the site visit and these follow-up items.

Sincerely,

Digitally signed by MICHAEL SCHULMAN
Date: 2021.10.07 18:38:47 -07'00'

Michael Schulman
Remedial Project Manager
Superfund & Emergency Response Division

cc: Joshua Nandi, Northrop Grumman Corp.