R2 Water Board Inspection Report

Lehigh Southwest Quarry and Cement Plant, Cupertino – July 30, 2018

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Water Board staff inspected the facility with three objectives:

1. To observe progress in operations, including limestone storage areas and wasterock disposal areas (WMSA and EMSA) pursuant Waste Discharge Requirements (WDRs, Order No. R2-2018-0028);
2. Observe construction of Lower Treatment System; and
3. Evaluate concern that Lehigh used waste material for backfill in the Quarry Pit without seeking Water Board concurrence.

(See attached photos)

WMSA

This area is in similar condition as observed during the 2016 and 2017 inspections. Inverted conical shaped piles of wasterock of variable type and particle size were observed at the surface (including limestone). There is little to no vegetation, indicating that soil amendment and seeding of a final cover will be necessary. This is anticipated in the Reclamation Plan. Surface water controls are in place along the roads.

Talia clarified that the brown rock often referred to as Santa Clara formation in submitted documentation is in some cases actually brown, weathered Franciscan rock (this is in contrast to the actual sedimentary Santa Clara rocks and unweathered Franciscan rocks of grey/blue/purple color). We recommend Lehigh update this naming convention. The list of potential constituents of concern (e.g., leachable metals and metalloids) for these rocks are different, which may cause confusion and potentially inappropriate or unnecessary regulatory requirements or mitigation actions. A clarifying memo may be necessary if the explanation in this document is not accurate, for example if the difference is between type of Franciscan rock (metasedimentary, metavolcanic…) or there are potential water quality implications to historical actions. Otherwise, please clarify in appropriate WDR submittals.

EMSA

The EMSA appears to be completely covered with non-limestone rock. Lehigh confirmed that this interim cover consists of both true Santa Clara Formation rocks and brown, weathered Franciscan rocks. Vegetation coverage is improving; reseeding is planned in the future.

Lower Treatment System

Construction is nearing completion and the system should be on line prior to the start of the wet season.

Quarry Pit and Fill Measurements

The Quarry Pit and temporary limestone storage areas were inspected. As detailed in discussions leading up to adoption of site Waste Discharge Requirements (Order No. R2-2018-0028), neighbors are concerned that the material recently transferred to the bottom of the Quarry Pit may constitute waste. Prohibitions 7 and 8 of the WDRs prohibit the creation of a new waste management unit and the relocation of wastes on-site.

Lehigh provided a memo (see attached) describing the source and nature of this material, indicating it is non-limestone Franciscan rock derived from the Quarry, that was temporarily stored in the Yeager Yard, located above Permanente Creek. Due to concerns that the material was eroding and might potentially discharge to the creek, it was relocated into the pit in October/November 2017. Water Board staff performed a visual inspection of the material and used a handheld X-Ray Fluorescence Spectrometer to measure concentrations of metals and metalloids to confirm (see table below). Results support Lehigh's description.

MDL	6.2	5	5.2	13	26	118	15	26	11	10
SAMPLE	**Pb**	**Se**	**As**	**Hg**	**Ni**	**Co**	**Cr**	**V**	**Sb**	**Cd**
QuarryFill_1	<LOD	<LOD	8.1	10	273	<LOD	280	212	28	20
QuarryFill_2	15.7	<LOD	8.3	<LOD	259	<LOD	386	171	21	19
QuarryFill_3	<LOD	<LOD	5.2	<LOD	321	<LOD	435	205	<LOD	<LOD
QuarryFill_4	9.6	<LOD	6.6	<LOD	241	<LOD	252	228	<LOD	<LOD
QuarryFill_5	7.7	<LOD	<LOD	<LOD	237	<LOD	229	182	<LOD	<LOD
J Flag (outside of +/-20% CRM, 30% Cr)										

As mining wasterock with pollutants that may contribute to pollution if discharged, this material is classified as waste in the WDRs, which prohibits their relocation without Water Board approval. However, this activity took place prior to adoption of the WDRs and therefore does not constitute a violation. In addition, Water Board staff anticipate no significant impacts to water quality due to the limited volume of material and the fact that water coming into contact with the material is treated prior to discharge. **However, please be aware that future filling of the pit or relocation of waste, including overburden, MUST be approved by this agency, as detailed in the WDRs**.

Note also that concentrations of arsenic and nickel were elevated in our measurements. Data quality objectives for our analysis were low given this was a screening level effort. However, please compare this data to your existing dataset for overburden waste and ensure that arsenic and nickel are considered as necessary with respect to site-worker safety concerns, impacts on the treatment system and effluent, and potential constituents of concern for waste containment and reclamation.

WMSA

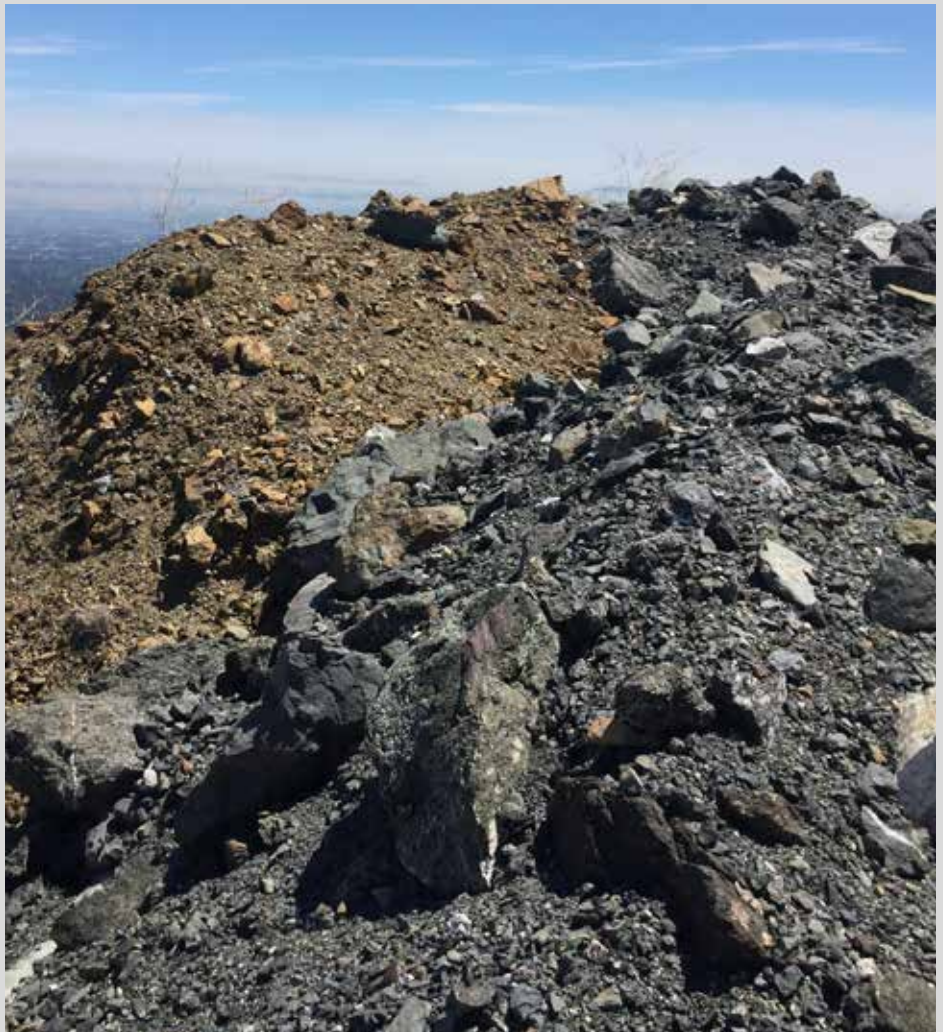
- Top of WMSA, looking east toward Cupertino
- Note lack of vegetation, though this area has been unused for wasterock disposal for several years

- Top of WMSA, looking south toward Permanente Creek
- Note distinct piles from unloading of dump truck

WMSA

Dump piles at top

Note variability of wasterock type and particle size



Limestone

WMSA

Close-ups of waste rock types

(Left) Grey. Unweathered Franciscan

(Right) Brown, Weathered Franciscan

EMSA

(Left) EMSA, cement plant, and cement storage area

(Top right) Interim cover and vegetation

(Bottom left) Close up of vegetation

(Bottom right) Close up of non-limestone cover material (weathered Franciscan and Santa Clara Formation)

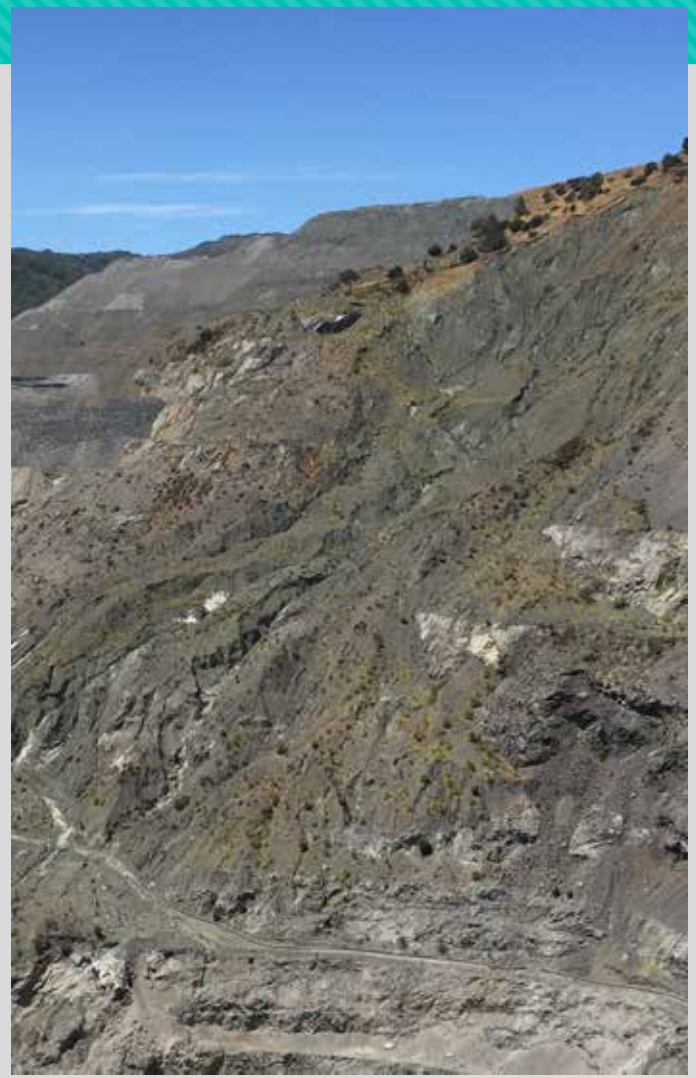
Lower Treatment System

Quarry and Limestone Storage Area

(Left) limestone storage at top of west quarry wall, between quarry and WMSA (on the road to WMSA)

(Middle) bottom of quarry pit, new fill reportedly Franciscan overburden (wasterock)

(Right) Landslide in quarry



Quarry Fill – XRF Analysis