STATE OF CALIFORNIA MEETING DATE: November 13, 2019
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ITEM: 4
SUBJECT: **EXECUTIVE OFFICER'S REPORT**

Items in this Report (Author[s])

Lehigh Permanente Quarry Inspection (Lindsay Whalin)

During a joint inspection with Santa Clara County in May of 2019, Water Board staff observed erosion from an overburden stockpile in the Yeager Yard area that reached Permanente Creek (Figure 1). In addition to concerns about sediment pollution, some types of overburden (mining wasterock) at the site contain leachable metal(loid)s, like selenium that threaten aquatic life. We and the County both issued notices of violation, requiring immediate corrective actions to prevent future slides. Lehigh responded, attributing the slide to an especially wet year, which caused seeps that led to slope instability and erosion. They quickly upgraded stormwater controls and are currently regrading the slope to improve drainage.

Figure 1. Top Left: Slide origin, note lack of vegetation and change in color. Top right: Slide material near creek in background. Bottom Left: Slide material in Permanente Creek bank and bed. Bottom Left: Permanente Creek upstream from slide (note difference is sediment and turbidity).

Water Board staff concur that seepage caused the erosion and concur with the approach Lehigh outlined to address stormwater. However, cracks and fissures on the slope (Figure 2) suggest additional factors, like oversteepening may contribute to slope instability. This needs to be evaluated and if necessary, actions must be taken to prevent future slides. In addition, Lehigh's response to our requirement to chemically characterize the material discharged was insufficient to evaluate potential impacts. We are coordinating with the County to determine how best to ensure Lehigh addresses these outstanding issues.

Figure 2. Cracks and fissures on slope above Permanente Creek.

Lehigh Permanente Plant Wastewater Treatment System and Pollutant Fate (John Madigan)

At the July 2019 Board meeting, some Board members requested clarification regarding how Lehigh's treatment processes work, what materials go into and are produced by these processes, and the fates of the outputs from these processes, particularly with respect to total dissolved solids (TDS), selenium, and other pollutants. The Board members asked if Lehigh's onsite use of treatment system byproducts, such as reverse osmosis concentrate, could transfer pollutants to other media, such as air. They were particularly concerned about concentrate used for dust control and in Lehigh's kiln. We required Lehigh to submit a technical report to provide additional information, and Lehigh provided the information summarized below.

Wastewater Treatment Processes. Lehigh has two wastewater treatment systems, the upper treatment system and the lower treatment system. Both systems use ultrafiltration and reverse osmosis (UF/RO) to remove dissolved solids, and biological treatment to remove selenium and other pollutants. The upper treatment system splits influent flow between UF/RO and biological treatment (i.e., these treatment processes are in parallel); Lehigh uses UF/RO concentrate from the upper treatment system onsite (discussed below). The lower treatment system treats all influent by UF/RO and sends the concentrate for biological treatment (i.e., these treatment processes are in series). Both treatment systems blend the "clean" water (also called "permeate") from the UF/RO process with the biologically treated effluent prior to discharge to Permanente Creek.

Treatment System Inputs and Outputs. The influent to the treatment systems contains water from quarry dewatering (i.e., quarry water), process wastewater, and industrial stormwater. Lehigh injects antiscalant, sodium hypochlorite, sodium bisulfite, hydrochloric acid, and citric acid into the UF/RO units to prevent scaling; introduces nutrients to the biological treatment units to support microbial growth; and adds hydrogen peroxide to the biological treatment effluent to add dissolved oxygen and oxidize sulfide to sulfate before discharge.

Treatment system outputs consist of "clean" UF/RO process effluent (i.e., permeate) and biologically treated effluent, which are blended before discharge to Permanente Creek; UF/RO concentrate used onsite; UF/RO unit cleaning water used onsite; and solid wastes disposed of offsite. The solid wastes consist of carbon media from the biological treatment units (used as a solid matrix for biofilm growth) and settled sludge from biological treatment unit backwash settling tanks.

Fate of Outputs and Pollutants of Concern. Lehigh states that dissolved solids in UF/RO concentrate consist predominantly of calcium and silica. Lehigh uses some UF/RO concentrate from the upper treatment system to control dust generated by processing mined material (e.g., crushing and screening) and transporting mined material via conveyor belts. Lehigh states that the UF/RO concentrate used in this way either evaporates or is retained by the mined material, and thus goes with it through subsequent processes, leaving the facility with finished cement and aggregate.

Lehigh does not use UF/RO concentrate for general dust control (e.g., on roads) or to cool kiln emissions. Moreover, Lehigh does not use any UF/RO concentrate from the lower treatment system for dust control or cooling. Lehigh may send unused UF/RO concentrate to a thickening tank, where it is combined with other plant flows. Thickener effluent is reused to condition kiln and cement mill emissions, and to cool ball bearings in plant equipment. Lehigh applies thickener effluent to kiln and cement mill emissions as a fine mist to cool the emissions, and thus to make the emissions more amenable to Lehigh's air pollution controls. The thickener effluent evaporates through this process; remaining matter would be removed by the emissions controls to meet air quality standards.

Biological treatment unit solid wastes contain selenium and other pollutants. Lehigh has disposed of biological treatment unit sludge once, as non-hazardous waste. Lehigh has yet to dispose of carbon media from the biological treatment units, but it anticipates disposal in a non-hazardous waste landfill.

Staff Presentations

14th Biennial State of the San Francisco Estuary Conference (Xavier Hernandez).

On October 21 and 22, Xavier Fernandez, Christina Toms, Keith Lichten, Thomas Mumley, and James McGrath presented at the 14th Biennial State of the San Francisco Estuary Conference. Melissa Gunter helped coordinate a session titled "Humanizing Homelessness for Healthier Creeks and Communities. During the plenary session on the first day, former Water Board Chair Dr. Terry Young was awarded the Jean Auer Award to honor her significant contribution toward improving environmental quality in the Bay-Delta Estuary. During the concurrent sessions on the first day, Xavier partnered with Luisa Valiela (EPA) to co-present information on the Wetland Regional Monitoring Program, and Christina presented the latest information on the Water Board's wetland and climate change policy update. During the plenary session on the second day, Thomas led the session, and Keith presented information on navigating constraints and issues of scale in implementing green infrastructure. Mr. McGrath represented the Water Board in a panel discussion on regional governance for climate adaptation. The audience of several hundred included federal, state, and local agencies, environmental consultants, and environmental non-profit organizations.

Regional Monitoring Program (RMP) Annual Meeting (Bill Johnson).

On October 10, Water Board Staff Bill Johnson, Tom Mumley, Robert Schlipf, and Xavier Fernandez spoke at the Regional Monitoring Program (RMP) Annual Meeting in Berkeley. This year's RMP focused on four major pollutant pathways to San Francisco Bay: (1) municipal wastewater, (2) stormwater, (3) industrial wastewater, and (4) dredging and dredged material disposal. For each pollutant pathway, there were speakers representing a regulator, discharger, and science perspective. Bill Johnson spoke about regulating municipal wastewater treatment plants. He covered various aspects of the Clean Water Act and how these regulations are translated into permit requirements. Tom Mumley spoke about regulating stormwater. He gave an overview of stormwater permitting, described efforts to reduce impairing pollutants such as mercury and PCBs, and discussed recent studies to address contaminants of emerging of concern. Robert Schlipf spoke about regulating industrial wastewater treatment plants, specifically petroleum refineries. He gave an overview of significant treatment plant improvements to reduce toxicity and selenium and described how reduced selenium loadings improved water quality in North San Francisco Bay. Xavier Fernandez spoke about regulating dredging and dredged material disposal. He spoke about the origins of the long-term management strategy for dredged material and the need to incorporate dredged material into restoration projects to keep up with rising sea levels.

Bay Area Clean Water Agencies' Collection Systems Committee (Jessica Watkins).

On October 24, Jessica Watkins spoke at the quarterly meeting of the Bay Area Clean Water Agencies (BACWA) Collection Systems Committee. She discussed the Regional Water Board's enforcement priorities, including continued prioritization of sanitary sewer overflows from agencies with inadequate sewer infrastructure rehabilitation programs. She also talked about the Regional Water Board's role in the State Water Board's process to reissue the statewide Sanitary Sewer System Waste Discharge Requirements.

Western Groundwater Congress (Cheryl Prowell)

On September 19, Alyx Karpowicz and Cheryl Prowell participated in part of a three-day event in Sacramento hosted by the Groundwater Resources Association that included a range of presentations and panel discussion on topics related to groundwater sustainability and cleanup. Cheryl Prowell presented in a session about vapor intrusion. Her presentation highlighted recent updates to Regional Water Board guidance, including the Environmental Screening Levels, and the new fact sheet on vapor mitigation at redevelopments. Her presentation also summarized lessons learned from several vapor intrusion mitigation system failures observed by our staff. The lessons learned support the changes to our guidance to require more monitoring and ability to identify and fix problems with mitigation systems in a timely manner.

Environmental Law Conference at Yosemite (Cheryl Prowell)

On October 19, Cheryl Prowell participated in part of a four-day event hosted by the California Lawyers Association. Cheryl Prowell presented in a panel discussion titled "Excuse the [Soil Vapor] Intrusion, but Your Site is Neither Clean nor Safe: New Challenges and Changing Standards for Soil and Groundwater Remediation." Cheryl provided the introduction to vapor intrusion and our legal basis to regulate vapor intrusion. She then discussed recent updates to Regional Water Board Guidance including the Environmental Screening Levels (ESLs), and the new fact sheet on vapor mitigation at redevelopments. The question and answer session was a lively discussion of whether the attenuation factor used in the ESLs is appropriate for California, what is the appropriate regulatory response to vapor mitigation risk in the midst of California's housing shortage, and what to anticipate from upcoming CalEPA guidance.

International Conference on Mercury as a Global Pollutant (Carrie Austin)

In September, Carrie Austin spoke at the 14th International Conference on Mercury as a Global Pollutant during the workshop on Assessment and Management of Mercury-Contaminated Sites. Carrie spoke on the Challenges of Mercury and Gold Mine Remediation: California Case Study. These mines are widespread throughout California and vulnerable to erosion, which transports mercury downstream. California has many aquatic environments in which mercury has bioaccumulated to levels unsafe for human and wildlife consumption of fish.

In-house Training (Carrie Austin)

Our October training topic was Building Resilience in the Workplace. This training was very useful to bolster our psychological resilience to stress and adversity in our role as regulators. Our outside trainer was Nick LeForce, who is a counselor, personal coach, and trainer in Neuro-Linguistic Programming (NLP). NLP provides specific "how to" skills to create change in one's self and assist others in becoming more resourceful and effective. The training was organized by the Toxics Cleanup Division (Laurent Meillier).

Enforcement Actions (Jessica Watkins and Brian Thompson)

There were no proposed or settled enforcement actions since October's report.

401 Water Quality Certification Applications Received (Abigail Smith)

The table below lists those applications received for Clean Water Act section 401 water quality certification from September 11 through October 4, 2019. A check mark in the right-hand column indicates a project with work that may be in BCDC jurisdiction.

#	Project Name	City/Location	County	May have BCDC Jurisdiction
1	Alameda Point Bulkhead Repair Project	Alameda	Alameda	✓
2	Magee Preserve Development	Danville	Contra Costa	
3	James Donlon Boulevard Extension Project	Pittsburg		
4	Old School Road Property - Culvert Replacement Project	Pleasanton		
5	Giordano Residence Bluff Erosion	Richmond		
6	Rodeo Outfall Cleaning	Rodeo		
7	449 La Casa Via Minor Subdivision	Walnut Creek		
8	Contra Costa County Routine Maintenance Program manual	Walnut Creek		
9	9 Strawberry Landing Bulkhead Replacement	Mill Valley	Marin	✓
10	Bayfront-Hauke Park-Sycamore Ave Pedestrian Bridge Emergency Repairs	Mill Valley		✓
11	Simmons Slough Water Management	Novato		
12	San Anselmo Creek Restoration	San Anselmo		
13	Marina Vista Improvement District Dredging	San Rafael		✓

14	The Caprice Restaurant Repair	Tiburon		✓
15	2250 Cuttings Wharf Bank Restoration	Napa	Napa	✓
16	Napa River Emergency Bank Stabilization Project	Oakville		
17	Opus One Pipe Replacement	Oakville		
18	Heron's Head Shoreline Resilience Project	San Francisco	San Francisco	✓
19	Southeast Bay Outfall Islais Creek Crossing Replacement Project	San Francisco		✓
20	Raw Water Intake Bypass Flow Study	Los Gatos	Santa Clara	
21	R-1035 L-300a, L-300b, L-100 Thompson Creek Permament Repair Project	San Jose		
22	I 80 - I 680 - Sr 12 Interchange Project	Fairfield	Solano	
23	Vallejo Yacht Club Maintenance Dredging	Vallejo		✓
24	Petaluma Community Sports Fields Baseball Diamond Installation Project	Petaluma	Sonoma	