
San Francisco Bay Regional Water Quality Control Board

TO: Reza Valiyee, 4500 Appian Way, El Sobrante Property Case File

FROM: Yan A. Nusinovich, P.E.
Water Resource Control Engineer

DATE: Tuesday, August 09, 2016

SUBJECT: Inspection Report for Reza Valiyee Property, May 2016, Contra Costa County

I inspected the property of Mr. Reza Valiyee at 4500 Appian Way, El Sobrante (Site), on May 11, 2016, in response to concerns from the California Department of Fish and Wildlife (Fish and Wildlife) that a culvert and soil backfill were installed in Appian Creek without any of the required permits. This report provides background information for the inspection and documents my observations about the size and impacts of the culvert and soil backfill.

Background

Warden Nicole Kozicki of Fish and Wildlife inspected the Site on April 23, 2015, based on concerns from Contra Costa County staff about illegal fill of Appian Creek at the Site. On June 8, 2015, Warden Kozicki sent an Enforcement Inspection Report requiring that Mr. Valiyee remove the culvert, restore the creek, and report to Fish and Wildlife. Mr. Valiyee did not follow the requirements in the Enforcement Inspection Report, and Warden Kozicki notified the San Francisco Bay Regional Water Quality Control Board (Regional Board) about the violations. Regional Board staff sent a Notice of Violation on October 8, 2015, requiring that Mr. Valiyee remove the culvert, restore the creek, and report to Fish and Wildlife and the Regional Board. Mr. Valiyee did not follow the requirements in the Notice of Violation.

May 11, 2016, Inspection

The objectives of this inspection were to determine the magnitude and possible impacts of the culvert and soil backfill and to determine whether any work had been performed to remove the culvert and restore the creek. Two representatives of the Water Board and conducted the inspection with two Site representatives:

- Yan Nusinovich and Tahsa Sturgis, Water Resource Control Engineers at the Water Board
- Reza Valiyee, Site Owner
- Masood Esmaili, Site Maintenance Manager

The inspection took place from 11:00 a.m. to 12:30 p.m. Mr. Valiyee and Mr. Esmaili met with Water Board staff at the start of the inspection and gave us permission to access the Site and take photographs.

We proceeded around the Site and took photographs, notes, and measurements (see Exhibit A). We told the Site representatives that the current culvert was “unpermitted” and “not properly engineered because it constricted the available flow area of the creek, and that the culvert would

have to be removed and the creek would have to be restored. Mr. Valiyee acknowledged that “in a rain, all these branches come and clog the culvert.”

Based on our measurements during the inspection, we estimate that the culvert placed in Appian Creek was approximately 1,290 cubic feet, and the fill placed in Appian Creek surrounding the culvert was approximately 2,310 cubic feet.

We observed hydromodification of Appian Creek where the culvert was installed. The available volume for flow in the Appian Creek channel is approximately 64 percent smaller in the culverted part of Appian Creek. The water flow area we saw was approximately 90 percent smaller in the culverted part of Appian Creek, going from a wider, deeper stream at the entrance to a narrow trickle within the culvert, and then re-widening and re-deepening only at the exit (Exhibit A, Table A1: Inspection Measurements). The culvert was offset from the apparent original channel of Appian Creek. The channel upstream of the culvert was approximately three inches below the bottom of the culvert entrance. As a result, some of the water flowed under the culvert. The flow in the culvert appeared to move at a faster velocity than the flow in Appian Creek upstream of the culvert (Exhibit A, Inspection Photographs).

Attachments

Exhibit A: May 11, 2016, Inspection Photographs and Measurements

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Figure A1: Inspection Photograph Locations



Image downloaded from Google Earth Pro on May 11, 2016, and modified by Regional Board staff. Light blue arrows show approximate current creek flow. Dark blue arrows show approximate location of creek flow before installation of culvert. Red arrows show approximate culvert flow. Grey arrows with red outline show photograph location and direction.

Inspection Photographs

Photographs 1, 3, 5, 6, and 7 by Yan Nusinovich, and photographs 2, 4, 8, and 9 by Tahsa Sturgis.



Photograph 1: Red arrow show approximate distance of culvert.



Photograph 2: Appian Creek and riparian vegetation upstream of the culvert.



Photograph 3: Entrance of the culvert at upstream end.



Photograph 4: Entrance of the culvert. The bottom of the channel upstream of the culvert was approximately three inches above the bottom of the culvert.

We observed the creek flowing into the culvert (solid arrow) and apparent underflow beneath the culvert (dashed arrow).

Based on our visual observations, the velocity at the entrance of the culvert appeared to be much higher than at the exit of the culvert.



The area between the orange lines had a lower density of vegetation, and the vegetation looked different from the area outside the orange lines. Mr. Valiye said that the creek crossing area was altered so that he could "access the back of his property."





<p>Photograph 5: Crossing constructed across Appian Creek (thin orange lines). The arrows show the approximate location of the culvert below the crossing and the direction of stream flow.</p>	
	
<p>Photograph 6</p>	<p>Photograph 7</p>
<p>The apparent original channel of the creek was approximately 10 feet south of the new channel of the culvert.</p> <p>Our estimates of the course of the original channel of the creek were based on presence and location of the strip of riparian vegetation and a linear depression in the center of it, and our estimate of the location of the culvert was based on visual observations and estimates of the angles and distances we saw from the exposed ends of the culvert.</p>	
	
<p>Photograph 8: Exit of the culvert. We observed a lower velocity than at the entrance.</p>	<p>Photograph 9: Appian Creek and riparian vegetation downstream of the culvert. Appian Creek flows into a tunnel under a neighboring apartment building.</p>

Table A1: Inspection Measurements

Diagrams are simple graphics to aid understanding and are not drawn to scale. All measurements are in inches.

<p>Appian Creek cross-section upstream of culvert</p>	<p>Upstream end of culvert</p>
<p>Appian Creek cross-section downstream of culvert</p>	<p>Downstream end of culvert</p>
<p>Based on the culvert dimensions, the culvert volume is approximately 1,290 cubic feet. Based on the average of the upstream and the downstream cross-sectional areas multiplied by the length culverted, the volume culverted and filled is approximately 3,600 cubic feet. Comparing the two volumes above, the available volume for water flow decreased by 64.2 percent after the addition of the culvert. Assuming approximately rectangular flows, the upstream Appian Creek water flow was approximately 0.9 cubic feet and the upstream culvert water flow was approximately 0.1 cubic feet, a 90 percent decrease in flow area.</p>	<p>Culvert dimensions</p>