



Office of the City Manager

April 24, 2019

To: Honorable Mayor and Members of the City Council

From: *Dee* Dee Williams-Ridley, City Manager

Subject: Cardboard Recycling Truck Fire and Foam in Codornices Creek

As you know, staff from around the City responded to the presence of firefighting foam in Codornices Creek on April 3, 2019. Staff from Public Works, Environmental Health, Fire, and Toxics worked to remove the soap-like foam, notify nearly 20 regulatory agencies and provide information to the California Department of Fish & Wildlife, which investigated the incident.

Fish & Wildlife has let us know that their testing and investigation is clear. They did not find any fault with the City or Berkeley Fire Department for their use of the foam. Their investigation found that the death of the fish was caused by the presence of this foam, and that the use of it by Berkeley Fire was appropriate.

Fish & Wildlife found 64 dead fish – 63 Central Coast California Steelhead Trout and 1 sculpin. They believe the total number of fish killed was not much more. Fish & Wildlife doesn't expect any long-term effect on the creek, in part because this foam biodegrades very quickly and because Codornices Creek has been so dutifully cared for by many, including community members, the City of Berkeley, the City of Albany and the University of California-Berkeley.

Out of an abundance of caution, the City's Environmental Health took the additional step to test the creek's water at multiple locations on April 5 and 8. Those tests found that the surfactant level – amount of fire foam-like materials – were at undetectable levels on April 5, two days after the incident. This is consistent with the material's known quality to biodegrade.

Fish & Wildlife believes the creek will fully recover. They don't believe all of the fish in the creek were affected. As a result, they believe that steelhead trout will likely repopulate Codornices Creek over time.

City staff averted a potentially explosive, deadly disaster and they followed proper protocols regarding foam on the burning cardboard in the truck, in the streets, in the storm drains, and in the creek. Nonetheless, this type of impact is nothing any of us would desire. Staff have been concerned about the impact and we have been collaborating across departments to examine how we might improve, a core value of our organization.

I also wanted to provide you with a full timeline to date of our response.

## Timeline

On Wednesday April 3, the driver of a cardboard recycling truck smelled smoke and immediately pulled over at around 9:54 a.m. in front of 1611 Rose Street near McGee – a heavily residential area that is two blocks from King Middle School. The crew called 9-1-1 and tried to extinguish the cardboard fire with a handheld fire extinguisher. After that failed, they tried to smother the fire by compressing the contents with the truck's compaction blade. That too, failed.

Berkeley Fire Department arrived at 10:03 a.m. and reported fire and smoke coming from the top of the vehicle. Firefighters noticed that flames threatened the truck's two compressed natural gas tanks, creating a highly explosive threat to nearby people and homes. They sprayed the garbage truck with Class A Firefighting Foam. Known commercially as PHOS-CHEK WD881 Class "A" foam, the substance is essentially a very heavily concentrated soap that creates suds when injected into the nozzle. This same product is used by the U.S. Forest Service when fighting wildfires in the wilderness. To help extinguish the fire, the Zero Waste crew ejected the contents onto the street at approximately 10:13 a.m. Per standard operating guidelines for this type of fire threat, the crew used 500 gallons of water per minute. Twenty gallons of foaming soap were injected at the standard, recommended firefighting rate: 0.3% PHOS-CHEK to water.

This type of fire is extremely dangerous. A similar garbage truck fire in Indianapolis in 2015 created [an explosion that sent shrapnel in 360 degrees, including one compressed natural gas tank that flew a quarter of a mile](#). Protecting human life, including firefighters and civilian staff, is always our top priority. The front door of King Middle School was 0.2 miles away.

After the fire was extinguished and the area was safe for civilian staff, Public Works crews arrived onsite at approximately 10:15 a.m. This included a vacuum truck and two street sweeping vehicles. Berkeley Police assisted with traffic control. A video of the cleanup was [captured by a community member](#) at around 12:26 p.m. Public Works crews finished removing the foam and water from the street shortly thereafter.

The nearest storm drain is two blocks from the incident. The heavy volume of water would have made the flow to the storm drain quite fast – minutes or less. From there, the water traveled underneath the street via storm water conveyance pipes another two blocks to enter Codornices Creek. Staff found out that the water was foaming in Codornices Creek at around 2:00 p.m. Environmental Health, Toxics, Fire and Public Works stormwater crews all responded that afternoon. The Fire Department notified more than 20 local, regional, state and federal agencies.

Cleanup and investigation efforts continued the following day, Thursday, April 4, with staff walking the length of the creek and removing foam and assisting regulatory agencies, such as California Fish and Wildlife. Though no foam was visible in the creek on Friday, April 5, Environmental Health tested the water on both April 5 and April 8. As mentioned earlier, the results that came back two weeks later showed that the surfactant levels on both testing dates were undetectable.

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April 24, 2019

Re: Garbage Truck Fire and Foam in Codornices Creek

Attachments:

- Material Safety Data Sheet: PHOS-CHEK® WD881A Class A Foam Concentrate
- PHOS-CHEK® WD 881 CLASS A FOAM Environmental, Safety & Health Issues

cc: Paul Buddenhagen, Deputy City Manager  
Matthai Chakko, Assistant to the City Manager  
Dave Brannigan, Fire Chief  
Phil Harrington, Director, Public Works  
Kelly Wallace, Interim Director, Health, Housing & Community Services  
Timothy Burroughs, Director, Planning  
Karl Busche, Manager, Toxics Division  
Ron Torres, Manager, Environmental Health  
Jenny Wong, City Auditor  
Mark Numainville, City Clerk

## Friends of Five Creeks' comments on City Manager's April 24 memo re April 3 fire and discharge:

We are delighted that the city manager's April 24 memo promises that Berkeley will look for improvements that could lessen the likelihood of future fish kills like that on April 3 in Codornices Creek.

However, we find the memo misleading in several respects:

1. The memo implies that the California Department of Fish and Wildlife (CDFW) has completed its investigation. Clint Garrett, supervising warden for Alameda and Contra Costa Counties, has assured us that the investigation is far from complete.

2. The memo says that tests of water samples taken Friday, April 5, showed no problems. However, we were told that the Division of Environmental Health (Toxics) took samples on April 3. These samples are significant in determining toxicity to trout. What were their results of testing them?

3. The memo repeats what it says are statements by CDFW (probably by spokesperson Peter Tira): that not many more fish were killed than the 64 bodies spotted by wardens, and that trout were likely to recover quickly. While we very much hope that trout will recover on their own, these statements appear at best to be wishful thinking. CDFW and the city should take into account the following specifics:

- Friends of Five Creeks' volunteers' careful April 4 search documented almost 100 dead trout in between San Pablo Avenue and the railroad tracks, less than half the distance from the discharge to the tracks. CDFW wardens were informed of this and given links to our geolocated photographs of individual dead fish<sup>1</sup>.
- Based on our conversations with CDFW spokesperson Peter Tira, forecasts of quick population recovery were based on usual experience in other creeks. They did not take into consideration the following local specifics:
  - Concentrations of the lethal chemical in the creek appear to have been very high, based on the very cloudy water a mile downstream six hours after the discharge (see our photos). In this very small creek, refuge for fish, larvae, and eggs seems unlikely. To our knowledge, no one has seen live fish in the creek since April 3. ***The City of Berkeley and CDFW took early water samples that should make it possible to at least estimate concentrations. CDFW can electrofish the creek to determine whether any fish survived. Results of those tests, as well as our photos of clouded water a mile downstream, should be reflected in any statements about the probability of survival downstream from the discharge.***
  - Studies by professionals and observations by neighbors confirm that trout have not been able to get above Albina Avenue, below the discharge point, for decades<sup>2</sup>. ***Thus, no recovery can be expected from upstream.***
  - No one knows whether the trout (*Oncorhynchus mykiss*) in Codornices Creek came from seagoing steelhead or freshwater rainbow trout. The only tests have indicated that they did not come from steelhead<sup>3</sup>. ***CDFW should test the bodies it collected from the fish kill to determine origin. Without this testing, faith in recovery from the sea is misplaced.***
  - Some trout may have survived in salt marshes downstream from the creek. Freshwater origin, if shown by testing, would make this less likely. In addition, ***trout face a gauntlet***

***of trash and pollution from homeless camps between Second Street and Eastshore Highway (see photos below).***

<sup>1</sup> Geolocated photos of clouded water, foam, and dead fish here:

[https://drive.google.com/drive/folders/1FHD0tz3oUBOLRWKycjhabkz7Pqz6Q\\_pz?usp=sharing](https://drive.google.com/drive/folders/1FHD0tz3oUBOLRWKycjhabkz7Pqz6Q_pz?usp=sharing)

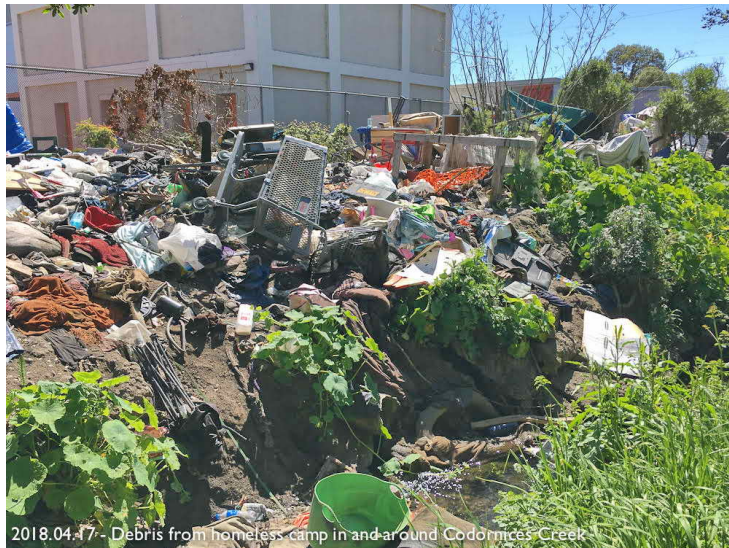
<sup>2</sup> Reports on lack of fish passage above Albina Avenue:

[http://www.fivecreeks.org/background/CCWRAP\\_Monitoring\\_FINAL.2008pdf.pdf](http://www.fivecreeks.org/background/CCWRAP_Monitoring_FINAL.2008pdf.pdf),

<http://www.fivecreeks.org/background/CodornicesPlanUCC.pdf>

<sup>3</sup> Tests showing freshwater origin of Codornices trout:

<http://www.fivecreeks.org/background/CodornicesPreProjectTroutRemovalPhase1.pdf>



2018.04.17 - Debris from homeless camp in and around Codornices Creek



2018.04.24 - Debris from homeless camp in and around Codornices Creek