Industrial Stormwater Community of Interest

Company Spotlight: Associated Petroleum Products

Associated Petroleum Products (APP) is a petroleum product distributor. Their 4.1-acre site on Milwaukee Way in Tacoma contains an office, warehouse, truck terminal, repair shop, and tank farm that stores diesel and biodiesel fuels. They have held an Industrial Stormwater NPDES Individual permit since 2001. Since then, APP has made many changes to the way they manage stormwater at their facility. They continually improve and update their site and treatment system to address parameters that are important for petroleum facilities. Their pollutants of focus are zinc, oil & grease and TSS.

A Look Back at APP's Stormwater Management History

Source Control without Treatment: 2001-2010

Stormwater runoff from paved areas and roof drains was drained directly to a drainage ditch without any treatment. Runoff from the tank farm and loading pad outside of the tank farm was routed through a coalescing plate oil/water separator before discharge. An underground emergency storage tank could be used in case of a spill during loading or unloading at the tank farm, keeping product from being discharged to the drainage ditch.

Treatment System: 2011-2015

APP installed a new stormwater treatment system, including new drainage lines that collect runoff from the roof and paved areas. Collected stormwater goes to a centralized pump station where it is pumped to an above-ground treatment system consisting of the oil/water separator, a "mud tank" that is used to settle out solids, and a pressurized sand and carbon filtration system.

Site Upgrades for Improved Source Control: 2015-2017

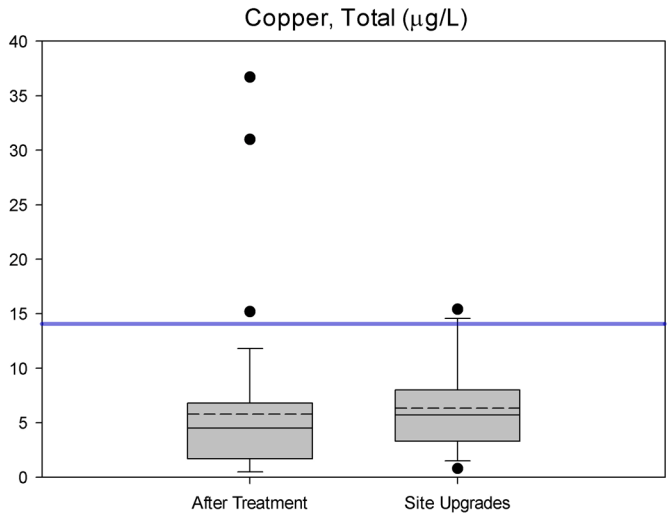
APP started to see random high levels of zinc after several months of success with their new system. During the summer of 2015, APP made several upgrades to the site to improve source control. They re-paved their worn parking lot to repair the "alligator" texture, removed the propane tank storage from the site, placed oyster shells in the mud tank, and re-coated zinc equipment and fittings on their buildings.

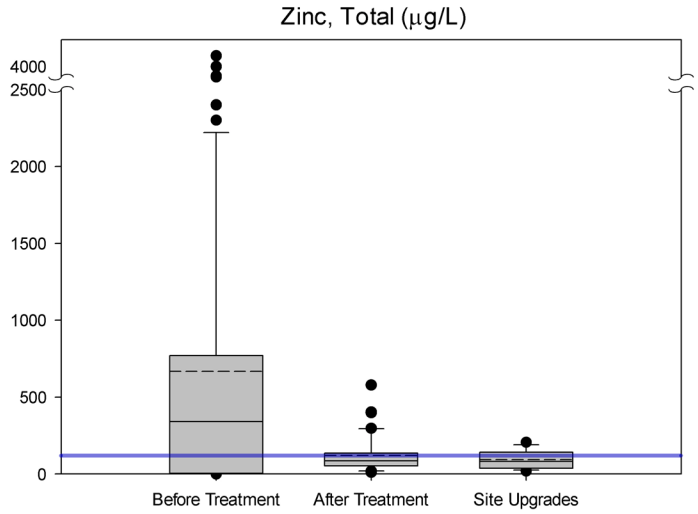
APP Fueling Success

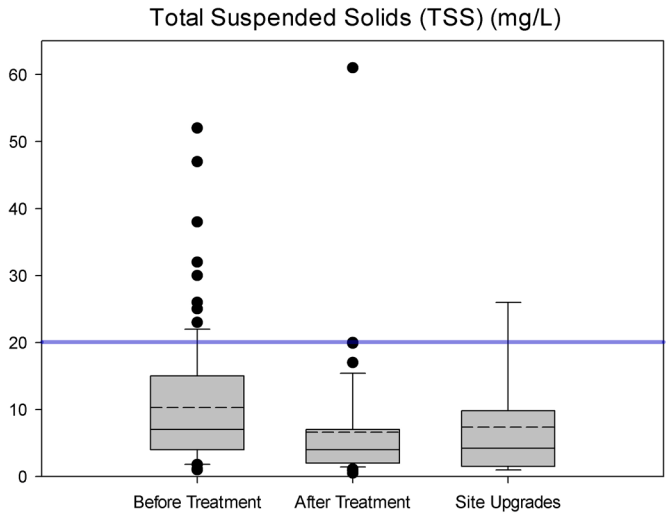
Company Spotlight:
Associated Petroleum Products

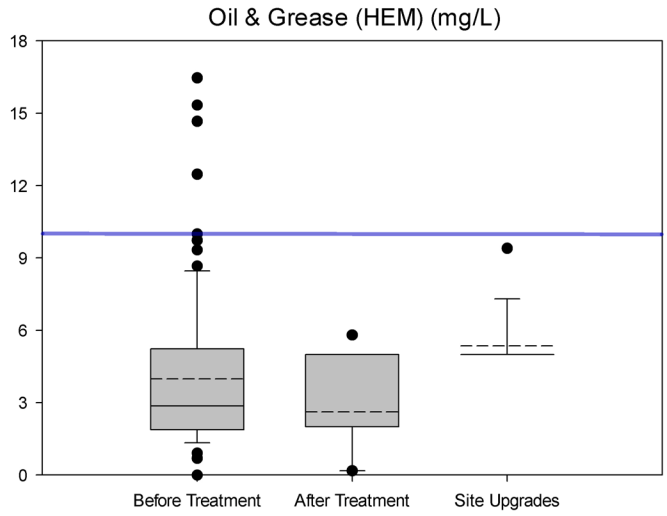
Stormwater Discharge Monitoring Data

The charts below were created using data pulled from the Washington State Department of Ecology PARIS database, which contains monthly DMR data submitted by APP in accordance to their permit. Each chart shows measurements of a single parameter required by the Department of Ecology, with the blue line representing their benchmark limit or monthly average limit. Each box within a chart contains sample measurements over the time periods shown on the previous page. Additional details in notes at the end of the document.





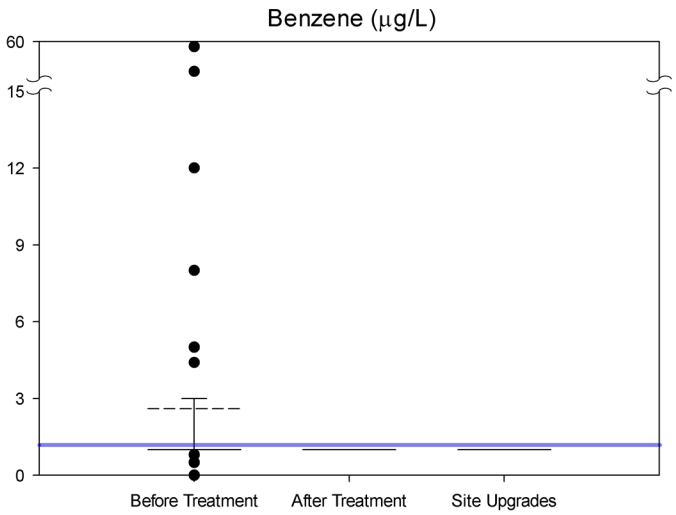


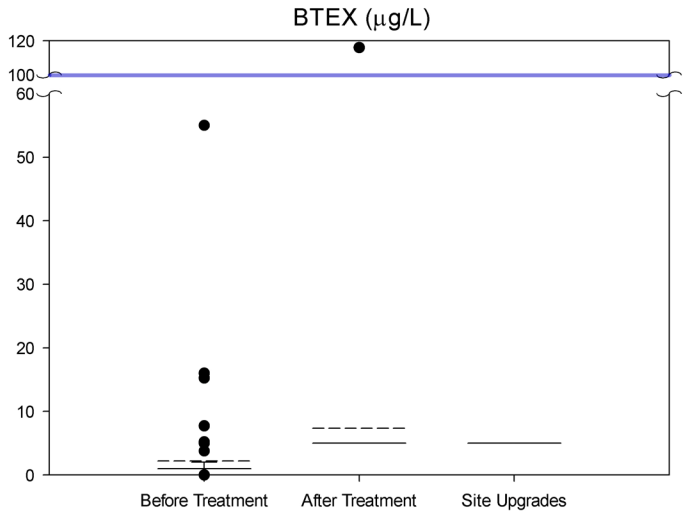


Puyallup Watershed Initiative
Industrial Stormwater

Company Spotlight: Associated Petroleum Products

Stormwater Discharge Monitoring Data Continued





Interpreting the Data

Each of the above charts shows that before APP's treatment was installed they saw more samples with higher concentrations of pollutants. This data shows improvements for all parameters after the changes implemented. With the installation of their treatment system, and the additional site upgrades, APP's pollutant concentrations were brought down near benchmark levels. Half of parameters are consistently below benchmark for most recent samples.

What's Next for APP:

APP has been working closely with the Department of Ecology to determine the best course of action for reaching consistent attainment for all parameters. They recently hired an outside engineering firm to perform a site analysis and make recommendations for additional changes and upgrades to their treatment system. As of late August 2017, APP is initiating work on several upgrades to their stormwater treatment system, with hopes to have all upgrades completed in early 2018.

Company Spotlight: Associated Petroleum Products

References:

1. Fact sheet for NPDES permit WA 0038784. 2011 Sept. Available from WA Department of Ecology.
2. Diamant, John Y. Water Compliance Inspection Report. 2016 Sept 27. Available from WA Department of Ecology.
3. Personal communication with Taryn Olson, HSSE Manager at APP 8/18/2017

Notes:

i. Concentrations in micrograms per liter (µg/L) are equivalent to parts per billion (ppb).

ii. Pollutant levels are reported as the lowest detectable concentration (called a "quantitation limit") when it is too small to be detected. Pollutant may not actually be present in samples that are reported as the quantitation limit.

iii. Copper chart created using 39 data points after installation, and 15 data points after upgrades. APP was not required to sample for copper until after the treatment system was installed. The benchmark limit for copper is 14 µg/L and the quantitation limit is 2.0 µg/L.

iv. Zinc chart created using 61 data points before installation, 47 data points after installation, and 15 data points after upgrades. The benchmark limit for zinc is 117 µg/L and the quantitation limit is 2.5 µg/L.

v. TSS chart created using 90 data points before installation, 47 data points after installation, and 15 data points after upgrades. In this chart the blue line represents APP's monthly average limit for TSS, which is 20 mg/L. The quantitation limit for TSS is 5 mg/L.

vi. Oil & grease chart created using 92 data points before installation, 47 data points after installation, and 15 data points after upgrades. APP's benchmark limit for oil & grease is 10 mg/L, and the quantitation limit is 5 mg/L.

vii. Benzene chart created using 89 data points before installation, 47 data points after installation, and 15 data points after upgrades. The benchmark limit for benzene is 1.2 µg/L.