

Abstract

POST LAS CONCHAS FIRE IMPACTS ON WATER QUALITY IN THE RIO GRANDE DURING 2011

Ralph E. Ford-Schmid

New Mexico Environment Department, DOE Oversight Bureau, 2905 Rodeo Park Drive East Building 1, Santa Fe, NM, 87501, ralph.ford-schmid@state.nm.us

The June 2011 Las Conchas fire burned more than 150,000 acres and the resulting flash flooding from the burned watersheds had the potential to significantly impact water quality in the Rio Grande. The cities of Santa Fe and Albuquerque draw surface water from the Rio Grande for municipal water supply and concerns over potential degraded water quality prompted the New Mexico Environment Department (NMED) and the City of Santa Fe Buckman Direct Diversion (BDD) to conduct extensive stormwater quality monitoring at the BDD intake. NMED has been monitoring stormwater quality in the Rio Grande at the Otowi Bridge on San Ildefonso Pueblo lands, the BDD intake and upstream of the intake for the City of Albuquerque San Juan-Chama Drinking Water Project since 2009 and in 2011 we collaborated with the BDD to install five ISCO automatic samplers triggered by telemetry based on flow from lower Los Alamos Canyon and/or a 500 CFS increase in flow in the Rio Grande. Samples were collected during 13 storm flow events at the BDD intake, 3 flow events at the Otowi Bridge and 3 flow events above the City of Albuquerque San Juan-Chama Drinking Water Project intake during 2011. In most cases, multiple samples were collected during the storm hydrograph. Water samples were analyzed for suites of filtered and unfiltered radionuclides (gross alpha/beta, Pu-239/240, Pu-238, Am-241, Sr-90, U-234, U-235, U-238, Cs-137 and other gamma emitting isotopes), 23 metals plus cyanide (filtered and unfiltered), polychlorinated biphenyl, dioxin/furan, total organic carbon, perchlorate, particle size, carbonate and bicarbonate and SSC. Suspended sediments were separated from the water and analyzed for the same radioisotopes, 23 metals plus cyanide, total alkalinity and carbonate/ bicarbonate alkalinity. Box and whisker plots are used to display data and comparisons to applicable water quality criteria are provided. Results for suspended sediments are compared to previously reported background benchmarks.

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