

CHARACTERISTICS OF STORMWATER RUNOFF FROM HIGHWAY CONSTRUCTION SITES IN CALIFORNIA

ABSTRACT

Fifteen highway construction sites were monitored by the California Department of Transportation (Caltrans) to assess the water quality of stormwater runoff exiting from the sites. This study was conducted by Caltrans to generate sufficient water quality data to further develop management strategies and evaluate existing best management practices (BMPs). A wide range of construction sites were selected for monitoring throughout the State. Both flow-paced composite and single grab samples were collected and analyzed at these sites for a total of 72 station-storm events during the 1998/99 and 1999/00 wet seasons. Results obtained during the two-year characterization study indicate that:

- Caltrans' construction site runoff constituent concentrations detected during this study are less than typical Caltrans' and Non-Caltrans' highway runoff constituent concentrations with the exception of total chromium, total nickel, total phosphorus, TSS, and turbidity.
- The concentrations of TSS and turbidity are likely due to the distributed soils present at most construction sites.
- The origin of the high concentrations of total chromium, total nickel, and total phosphorus concentrations is unknown. Concentrations of these constituents varied between sites so it is possible site-specific soils and vegetative conditions may have contributed to the concentration of these constituents.
- A correlation (R^2 values greater than 0.5) was observed between TSS runoff concentrations and particulate runoff concentrations of chromium, copper, and zinc, indicating that minimizing particulate matter may reduce total metals concentrations.