



**CALIFORNIA STATE SCIENCE FAIR
2015 PROJECT SUMMARY**

Name(s) Aleena R. Ali	Project Number 35830
Project Title Reduction of Nitrate in Ground and Drinking Water by Photocatalysis	
Abstract Objectives/Goals The goal of this project was to effectively measure the concentrations of nitrate found in ground and drinking water and to use a commercially available titanium dioxide photocatalyst called P25 to reduce the concentration of nitrate. Methods/Materials 1)Agilent HP 1100 Series HPLC DAD System Diode Array Detector with Dell Desktop Computer 2)Agilent ZORBAX StableBond C18 HPLC Column 3)UV Lamp 4)Sodium Nitrate (NaNO ₃) 5)Octylamine 6)Titanium Dioxide Photocatalysts (P25) 7)A variety of Water Samples Results P25 paired with a UV light source can effectively reduce the concentrations on nitrate found in water.	
Summary Statement Using titanium dioxide photocatalysts and a UV lamp light source, the concentrations of nitrate found in water can be reduced.	
Help Received Used lab equipment at Thousand Oaks High School under supervision of Dr. Malhotra; received materials from CLU's Dr. Quinlan; received tremendous amounts of information and knowledge from Dr. Cauchon	