



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

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| Name(s) Marisa K. OBrien | Project Number 34648 |
| Project Title Does Gasoline Affect the pH of Soil? | |
| Objectives/Goals The purpose of this science experiment is to study the effects of gas stations on the surrounding environment. My goal is to determine whether local gas stations and its surrounding environment are a contributing factor to the issue of soil pollution and if it will affect the soil sample's pH. If the soil is too acidic or alkaline because of the gasoline, it can prevent plants and organisms to grow and thrive. Abstract Methods/Materials To conduct my experiment, I first traveled around to different areas of the city to collect soil samples from gas stations. I also received soil samples from rural areas, suburban areas, and urban areas, or areas with a lot of commute. Those are the first two steps. The third step is to gather all your materials which are your soil samples, a marker, Petri dishes, water, a plastic dropper, a tablespoon, a universal pH indicator with a color table, and some plastic bags. The third step is to place a small portion of your samples on a Petri dish and use the universal pH indicator to test its pH. I then used the pH levels to record my data. Results My results were that all samples were close to being neutral or they were basic (alkaline), ranging anywhere from 7 to 8 on the pH scale with the exception of my suburban samples, which were on the acidic side. The suburban samples' pH levels ranged from 6 to 7 on the pH scale. Conclusions/Discussion My hypothesis was proven incorrect. Surprisingly, my results were the complete opposite. The urban area soil sample was actually tested as basic, not acidic. The gasoline did not affect a soil's pH and pollution in an urban area did not affect the soil's pH as much as I expected. There was little difference in the pH of my gasoline station soil samples in comparison to my control samples. | |
| Summary Statement The central focus of my project is see whether gasoline combustion from cars and gasoline stations can alter the pH of its surrounding environment's soil. | |
| Help Received My science teacher helped in revising my typed report to correct grammatical and spelling mistakes and make sure I was on the right track in researching. | |