



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Jasleen K. Bains	Project Number J0901
Project Title Investigating the Bioremediation Effectiveness of Oil-Eating Bacteria under Various Environmental Conditions	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of my project was to investigate the bioremediation effectiveness of oil-eating bacteria under various environmental conditions. Oil spreads rapidly and covers huge areas quickly. The reason I did this experiment was to determine if oil-eating bacteria is an efficient and quick way to remove oil.</p> <p>Methods/Materials I filled each Petri dish with 25 mL of salt or fresh water and placed them in their designated environment (warm or cold). I had 10 trials each and an average with the fresh water in a cold and warm temperature and the salt water in a cold and warm temperature. I then added three drops of motor oil and 5 mL oil-eating bacteria suspension, recording the rate of bioremediation. I also made an oil slick in three different beach soils (fine sand, coarse gravel, and medium sand) and added the bacteria suspension, recording how long it took for the oil-slick to disappear. In my control groups, the same steps told above were done, except the bacteria was not added. I used Petri dishes, salt/fresh water, oil eating bacteria, motor oil, pipette, beaker, magnifying glass, fine sand, coarse gravel, and medium sand. The warm environment was in a room upstairs and the cold environment was inside my refrigerator. The salt water was taken from Pismo Beach.</p> <p>Results The results of my investigation on the bioremediation effectiveness of oil-eating bacteria under various environmental conditions indicates that fresh water in a warm environment and coarse gravel are the most efficient and quickest variables for oil remedy. The least efficient environment and beach material was the salt water in a cold temperature and the fine sand.</p> <p>Conclusions/Discussion Both of the environments and the beach soils allowed the bacteria to eat the oil successfully. When all of the oil was gone, the bacteria died. This means that the bacteria live and thrive off of oil and oxygen. They are a quick and successful way to remove oil from a river to the ocean. Since I used "real" sea water, I am sure that these bacteria can be used in the ocean. In conclusion, response to cleaning up an oil spill must be fast to minimize its impact on the environment. I feel that we are ruining our future and destroying the earth. Poor animals are becoming endangered because of human activity. I hope my project has made a new turn in the remedy of an oil spill.</p>	
Summary Statement My project was investigating the bioremediation effectiveness of oil-eating bacteria under various environmental conditions.	
Help Received Teacher helped get oil-eating bacteria	