ENVIRONMENTAL METEOROLOGY AND CLIMATOLOGY

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Abstract: In the atmosphere, changes occur every year, every month, every day, and even every second. Climate is usually just considered monthly or yearly temperatures. Technically, this is not true. Climate encompasses all forms of weather. Many different conditions of weather, such as precipitation, air temperature levels, dew point, wet bulb, cloud positions and patterns, UV levels, water temperature levels, humidity, pollution levels, etc. are all analyzed for statistics in climate reports. A new condition in the weather that is increasing at an alarming rate is acidic precipitation. Acid Rain has been introduced as a new climatic element due to the rapid industrialization during the Industrial Revolution in various periods of the 1800s and 1900s for various countries in the world. Industrialization caused factories to be constructed, which began releasing lots of toxins into the air and water. The various toxins released, such as sulfuric and sulfurous acid, were absorbed into clouds as part of the water cycle, and rather than being purified of the toxins, the solutions were combined and sent back down as rain. This continuous cycle of acid rain caused many industrialized countries to look for methods of cleaning water to become drinkable so that people would not be poisoned by the water. Determining how much acidity is in the precipitation, we can figure out where the big areas are that need to have serious environmental work done. As we try to make sure the content of our air, water, and ground are clean, we are preparing to have an Earth that is ready for future generations. Without our climate data, we would not be able to determine patterns in the Earth’s atmosphere to determine future weather events. Also, the climate data on rainwater acidity and other pollution factors helps us make it safe for the artificial and natural ecosystems to function properly. In this project, we collected 15 rainwater samples from Jackson and Clinton areas of Mississippi. The rainwater acidity content was analyzed using a pH meter. Neutral water value is pH 7.0. However, most rainwater samples have been indicated to contain pH values of around 5.0 to 7.5. Clinton water is slightly cleaner compared to Jackson water.

Keywords: Weather and Climate, Air and Water Quality, Acid Rain, Ecosystem, High School Pipe Line through NOAA EPP/MSI

Acknowledgements: We would like to thank to Dr. Dmitri Sobolev and Mr. John Shoemake, Jackson State University and Dr. Sharon Gill, Piney Woods High School for their guidance and support through NOAA/MSI CAFAS Program.