

August 25<sup>th</sup>, 2009

Regarding: Kathleen Alexander's work at CRI.

Dates of Employment: June 3, 2009- August 16<sup>th</sup>, 2009

Carbon Recycling International (CRI) is a carbon dioxide utilization company headquartered in Reykjavik, Iceland. CRI's process currently produces methanol from CO<sub>2</sub>, water, and renewable energy. The renewable methanol that is produced by the CRI process is intended for blending with traditional fossil gasoline. There are a variety of technical concerns for introducing methanol blends in the Icelandic fuel economy including both logistic and vehicle operation concerns.

I came to CRI as an intern for the summer of 2009 to work on a project entitled "Life Cycle Material Compatibility Analysis: Fuels and Fuel Blends". I had just finished my sophomore year studying Materials Science and Engineering at MIT when I came to work at CRI. Though I had little engineering experience, I had the research experience, chemistry background, and dedication to high quality work necessary to complete the project.

I compiled my work on the assigned project in two documents: *RM3 in Existing Automobiles and Infrastructure* and *CRI's Logistics Book*. *RM3 in Existing Automobiles and Infrastructure* synthesizes information from a range of studies regarding the use of methanol in gasoline blends. The *Logistics Book* presents the framework which CRI will follow for the implementation of methanol in fuel blends in Iceland as RM3 including specifics of all storage, transportation, transition and blending points in the fuel supply chain.

In addition to the work I performed on fuels and fuel blends, I worked on several other projects over the course of the summer including: drafting a patent, developing documents for a DOE Grant application, and researching the market potential for direct and indirect methanol fuel cells in Iceland.

I had the opportunity to expand my technical knowledge and develop my professional and communication skills. Through the mentorship of my supervisor, Kiran Kumar, I learned: to construct presentations which clearly and effectively related the desired information; to make presentations which were tailored to the audience to which I was presenting; to approach projects with a logical and defined framework; to be aware of appropriate protocol and procedures when operating in the business world.

Due to the structure of CRI, I had the opportunity to interact regularly with coworkers involved in a variety of fields including market research, financial engineering, and process modeling. I leave CRI having valuable experience in the clean tech industry and having gained a realistic perspective on working in the private sector. I have gained confidence and clarity in presenting my work and have developed a personal passion for the clean fuel industry and the future of CO<sub>2</sub> recycling.