

2017 AIPG Texas TPG Essay

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The following is an excerpt from an internship report that I drafted during my undergrad studies in Germany back in 2010. At the beginning of the third year of my studies, students were required to do an eight-week internship outside academia. While most of my fellow students interned with smaller consulting companies or the Natural Science Museum in Berlin, I set out to do “something cool” that others had not considered. This internship experience significantly shaped my future by leading me to pursue my PhD at Texas A&M University and manifesting my dream of a career in academic or industry research.

I worked in Central Texas with a small mudlogging consulting company, headquartered in San Angelo, TX. Mudloggers have an interesting job with multiple areas of responsibility that cover technical maintenance of their own equipment, analysis and monitoring of well and drilling parameters, and synoptic view of the subsurface geology. The official short version of the mudlogging job description was: “Determination of position of hydrocarbons with respect to depth, identify downhole lithology, monitor natural gas entering drilling mud stream, draw well log for use by oil company geologist.” That sounded pretty interesting but I didn’t really know what this work would be like and if I even knew enough about geology for the job.

I received the directions to my first well and bought enough food and drinks for about ten days. An important fact about this job is that you do not know how long you will be on a certain well. It can vary from five days to three months and you are working in 12h shifts. I worked on four wells for a total of 35 days. Luckily there was Mike who acted as my mentor. He is a seasoned mudlogger with more than 20 years of experience. Since almost anything was new to me, he explained things in a very understandable way, step by step. So I was able to take over more and more tasks and responsibilities. And after a few days I was able to take samples independently, draw the log and communicate with the drilling crew from rig hand to company geologist.

The job of a mudlogger was only one part. I was introduced to the life of an exploration well from land lease and seismic exploration to the actual drilling and completion. There were no specific requirements for this internship. My geological knowledge was not as important as I thought it would be on this job. Nevertheless, it helps a lot if you are told why things are done, according to depositional systems and its properties for example. The most important characteristic was to be motivated and willing to learn new things. And there is a ton of things to learn if you want to. Every 30 minutes I had to examine the cuttings and estimate the percentage of the lithology. This, by itself, might not sound overly thrilling. But to think of the subsurface depositional environment and to keep track of its changes with depth is really fascinating. Drilling in three kilometers depth is a form of time travel. Imagine a meandering

river of several hundred kilometers length and hundred meters width with well sorted, siliciclastic sediments, flowing into the sea. Now you are standing in the riverbed realize that there is no water flowing down the river but there is oil flowing upstream. And this is because you are in 10,000 feet depth in your target zone, a mind-boggling idea. It was also amazing to see my theoretical university knowledge was put into practice and how more and more pieces of the puzzle called geology fit together. Besides getting great insight into the petroleum industry, this internship made me a better geologist.

Working as a full-fledged worker was a great experience. I acquired a lot of specialized knowledge about downhole lithologies, microfacies and petroleum geology. Beyond that, I gained experience in analytical and interpretational working methods of a mudlogger and operating and maintaining software and equipment from rigging up flow lines to fixing water traps in the gas chromatograph. In small scale, teamwork is definitely an important aspect when you are working in 12h shifts with another person. Getting along with new people and earning their respect is a challenge that is included in such an internship; especially if you are a greenhorn dealing with seasoned workers in a foreign country in a foreign language. Self-confidence and trusting in me and my skills was essential. At the same time, it was an excellent opportunity to see how others perceive me and my work ethics.

The internship was a great opportunity and a challenge at the same time. In the end I gained unforgettable experiences, grew personally and professionally, and enlarged my network of friends and potential employers.