

Field Excursion to Wintershall in Emlichheim

26th of June 2017

On Monday the 19th of June our, Group of 7 SPE Members went from Clausthal to Emlichheim to visit the Wintershall drilling and Production site.

We started our trip at 5:30am in Clausthal. Using a faster route through the Netherlands, we arrived in Emlichheim at 9:30am. After a short introduction with Mr. Taubayev (a former student of the TU Clausthal), he showed us a PowerPoint presentation about the Wintershall site Emlichheim.

The production in Emlichheim started in 1944. Wintershall is the Operator in this joint venture (90% Wintershall 10% ExxonMobil). To maintain a steady production, sucker rod pumps are used. Additionally, Wintershall started to use steamflooding. To produce from the Bentheimer and thinner Gildehaus formation, Wintershall built a huge steam flooding plant, to decrease the viscosity of the oil. Instead of buying energy, the associated gas is directly burned in a gas turbine yielding 16 Megawatt, making them independent of the public power grid. The heat and electricity is used to produce 50-60 tons of steam. With this amount, Wintershall is estimating to accomplish an ORF of 50%. Currently Emlichheim consists of 251 producer wells and 8 cold water and 9 steam injectors.

After a thorough safety instruction and equipped with safety gear and a escape mask, because Emlichheim produces sour gas (H₂S), we went together with Mr. Taubayev and the intern Fabian Barganski to a production site. There we could take a closer at the BOP and the sucker rod pump with their sophisticated load sensing system. An interesting fact is that the BOP is theoretically not needed because of the low pressure of the reservoir. The second well on this site was under maintenance, one of the two workover/drilling rigs in Emlichheim was used to remove the production liner to then clean out sand by circulating water through the well.

The second station was the warehouse, where we looked at the different tools used in Emlichheim, such as packers, BOPs, valves, scrappers and tubing.

After a delicious lunch, we went to the steam powerplant, where Mr. Taubayev explained us the way of the oil, gas, steam/water through the different filtration, separation stages. The cleaning process of the produced water, which is later vaporized, had an interesting process stage where actual walnut shell are used to adsorb residual oil from the water.

We finished the excursion with the visit of the oldest production well Emlichheim 1 (1944) and a group picture in front of the sucker rod pump.

A big thank you to Mr. Taubayev for showing us around, explaining all the processes and answering all our questions. Furthermore, a big thank you to Wintershall letting us visit their Production facility. We hope to give other members of the SPE TU Clausthal the opportunity to visit Wintershall next semester.

