

## **SPG- Jadavpur University Student Chapter Organises Visit to ONGC Drill Site**

The students of DEPARTMENT OF GEOLOGICAL SCIENCES, JADAVPUR UNIVERSITY had the glorious opportunity to maximise their theoretical knowledge through a drill site visit. This has been a long awaited visit by the students, clearly proven by their enthusiasm about the opportunity that had been provided.

Visit to ONGC (Oil and Natural Gas Corporation) drill site in Amdoi village near Arambagh, Hooghly was organised was organised by SPG India –Jadavpur University Student Chapter. The Post Graduate 2<sup>nd</sup> year batch of the Department of Geological Sciences of Jadavpur University, gained very precious experience on 4<sup>th</sup> December, 2015. 27 students participated in the drill site visit.

The drilling operations by ONGC at this drill site were started on 31st July, 2015 and apart from the main drilling operations, several laboratory works are also done, which are the main backbone of the drilling, such as:

- Chemical laboratory works (to determine the mud parameters and the drilled material)
- Electrical laboratory works (to produce the huge power required for rotary drilling, mud pumps, agitators other purposes like the power supply of drill site accommodation).

The visit started by acquiring some fundamental knowledge regarding drilling like; GTO (Geo Technical Order).GTO is a blue print or programme of the entire drilling and associated operations, which must be fixed before actual start of drilling. At first, it is made by geologists, then by drillers and chemists. GTO is based on data from different studies like lithology studies, from mud property studies and from drilling data available from nearby area. We came to know about the various types of data required to produce a proper GTO.

At drill site the students were told about the drilling machine and different parts like the drilling pipe, casing pipe and their diameter, mast, rig floor, bottom box, Kelly etc. Along with that we were taught about the coring and its utility and latter we saw the drill core, which partly shows some bituminous ranked coal along with carbonaceous shale and black shale.

After that students were shown the 4 electrical power generation units. 2 air conditioners of 10 tonne each are deployed to keep the power generation control room cool. Next the students were lead to chemical laboratory, which is very important for mud service especially. Mud is used for the cooling and smooth drilling and for easy uplifting of the cuttings. We were told about the process how the mud parameters are fixed (either by suspension gel or polymer based system). We also came to know about the agents of mud preparation (like viscosity enhancer, weighing agent etc.) and the parameters which were fixed rather considered (like plastic point, yield point etc.), how much effect is created by the presence K<sup>+</sup> ion and why the Potassium concentration is measured and how. It became also known why the salinity test is done and the method, and about the shear thinning property of mud, which is tested in the laboratory to make it perfectly usable having shear thinning at depth and thick enough at surface and the stabilizing methods. It was a very interesting session to boost up our knowledge. And finally the students were shown the most interesting place where all the drilling machines are driven and the process runs. It was

at some elevation from the ground and all the parts of drilling were observed closely by students.

After the visit, we had a great lunch sponsored by ONGC. It would be most ungrateful if acknowledgements are not mentioned herewith as it was not going to be possible without some peoples' earnest help. At first our teachers Dr. Anupam Ghosh and Dr. Susanta Chowdhuri should be thanked without whom this great experience would remain inexperienced. Secondly, all the employees of ONGC, Amdoi, have to be those persons to whom we should be grateful forever. The lessons which were taught to us and how they showed us all the aspects of drilling and associated operations within the short span would be a great knowledge and memories as well, which can be recollected again and again. Their hospitality and their service for our benefits of knowledge were un-parallel.

We once again thank the SOCIETY OF PETROLEUM GEOPHYSISTS (SPG) India, for providing us this opportunity which helped us in big way to bridge the academia-industry gap.



STUDENTS AND FACULTIES POSE AFTER THE VISIT

Team SPG-Jadavpur Univ. Students Chapter