

2D SEISMIC INTERPRETATION OF MEYAL AREA



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**M.Sc. GEOPHYSICS
2009-2011**

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

ACKNOWLEDGEMENT

In the name of Allah, The Most Gracious and the Most Merciful, Alhamdulillah. I bear witness that Holly Prophet Muhammad (PBUH) is the last messenger, whose life is perfect model for the whole mankind till the Day of Judgment. I am thankful to Allah for the strengths and His blessing in completing this thesis.

Special appreciation goes to my supervisor Mr. Faisal Shehzad Rana for his supervision and constant support. His invaluable help of constructive comments and suggestions throughout the experimental and thesis works have contributed in the success of this research. Not forgotten, my appreciation to Mr. Shujjat Ali and Mr. Razi Abbas for their support and knowledge regarding this topic.

I would like to express my appreciation to my whole family, specially my parents and my elder brothers for their support and help without which I was unable to reach at this stage.

I also wish to thank the whole faculty of my department for providing me with an academic base, which has enabled me to take up this study.

I sincerely thank to all my friends especially for their endless love, care and moral support during my study. Thanks for the friendship and memories.

I am extremely thankful to all my teachers for their endless love, prayers and encouragement and my special appreciation to those who indirectly contributed in this research.

USMAN ALI

ABSTRACT

Meyal oil field is one of the major oil and gas producing fields in the Potwar plateau upper Indus basin, northern Punjab, Pakistan. The field was discovered by Pakistan Oilfields Limited POL in 1968 after the seismic data acquisition. The field has produced 16 wells and has produced over 36 MMBL oil and 250 BCF gas from fractured Paleocene and Eocene shallow marine shelf carbonate deposits of the Lockhart-Ranikot and Chorgali-Sakesar formation. Most of the wells drilled in the central part of the Eocene structure. The Himalayan Collision system represents an active collision orogen between Indian and Eurasian subcontinents. The collision is active since about 55 Ma involves continuous uplifting, erosion and deposition of the sediments.

Data for the 2D seismic interpretation involves five seismic lines, three dip lines and two strike lines were provided including Base map of the given seismic lines.

For the interpretation of seismic data three reflectors R1, R2, R3, have been marked depending on prominent wiggles and named as, Chorgali formation, Nammal formation and basement on the basis of given seismic lines. Faults were also marked to examine the subsurface structure. A pop-up structure can be seen in the marked seismic section. Time section is converted into the depth section to view the real picture of the interpreted horizons. Time and depth contour maps of Chorgali and Nammal formations are also prepared at a particular level to analyze the variations on the basis of time and depth and for the identification of structures.

For calculation of average velocities, TWT is picked from the horizon and the RMS velocity which is given above the seismic section in windows. The respective travel time to their respective RMS is interpolated and then we obtain TWT and its respective distance on excel sheet. The average velocity is calculated by taking the average of respective RMS velocities and depth is obtained by multiplying the average velocity with TWT.

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