Chapter 6
Conclusions

The conclusions are summarized as following:

1. The angle-band stacks show that the gas sands have stronger amplitude anomalies on the far-angle stack than on the near- or middle-angle stack.

2. The AVO modeling results show that the gas sands have positive AVO trends (class III or II type AVO). The wet sands have flat to slightly positive AVO trends. The coal beds have negative AVO trends.

3. The reprocessed surface seismic data correlate well with the AVO modeling results, showing the same AVO characters as the modeling.

4. The elastic impedances for near and far offsets show separable clusters for different lithology and fluid types. The gas sands, wet sands, and coal beds could be separated by AVO-based elastic impedance inversion.

5. The acoustic impedance and the reflection coefficient relationships at the top and the bottom of gas sands, wet sands, and coal beds maintain the separable cluster groups, indicating that the thin-layer tuning effects might not cancel the AVO characters.

6. AVO modeling based on in-situ well logs is necessary to confirm the desirable approach for AVO analysis and interpretation.

7. The results of this study on the gas-sand AVO characters can be applied to other adjacent areas.