



CHINA AUSTRALIA  
GEOLOGICAL STORAGE OF CO<sub>2</sub>  
中澳二氧化碳地质封存

# CAGS3 Scientific Exchange in China

Liuqi Wang, Geoscience Australia





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## Visits (15 September to 28 October 2017)

- ❖ Visiting Xinjiang Oilfield on CO<sub>2</sub>EOR Modelling, Karamay
- ❖ Visiting China Geological Survey, Baoding
- ❖ Other Visits: CUP (Beijing), Head Office of CGS

# CAGS Scientific Exchange Program

- ❑ Mapping groundwater resources in potential geological storage regions;
- ❑ **Reservoir modelling of geological storage of CO<sub>2</sub>-Enhanced Water Recovery (CO<sub>2</sub>-EWR) and/or CO<sub>2</sub>-EOR projects;**
- ❑ Geomechanics;
- ❑ Risk assessment;
- ❑ Geological storage site selection and assessment; and
- ❑ Monitoring.



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# Visiting Xinjiang Oilfield, PetroChina, Karamay

15 – 30 September 2017

Research Institute of Petroleum  
Exploration and Development,  
Xinjiang Oil Field  
Karamay



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# Scientific Exchange with Local Researchers

## Exchange work in Karamay:

- Several presentations on reservoir modelling for CO<sub>2</sub> storage in the saline aquifer, and Australia's activities on CCS, particularly on geological storage and monitoring.
  - The local oilfield experts introduced their understanding and planning on CO<sub>2</sub>EOR in the Zhungeer Basin.
  - The local experts and I went through together the static reservoir modelling and dynamic simulation related to CO<sub>2</sub>EOR work done and/or undergoing in the research institute. The people from both sides improved the understanding on CO<sub>2</sub>EOR.
- Due to the data confidentiality, it is not feasible to do any data analysis or numerical modelling with the local oilfield data,



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# Understanding on CO<sub>2</sub>EOR in the Zhungeer Basin

- ❖ The geological reserves suitable for CO<sub>2</sub>EOR project: 1.16 billion tonnes, including 62% of conglomerate reservoirs and 38% of sandstone reservoirs.
- ❖ Miscible drive: 590 million tonnes
- ❖ Immiscible drive: 570 million tonnes
- ❖ **The recoverable reserve: 120 million tonnes**
- ❖ **CO<sub>2</sub> storage: 360 million tonnes**

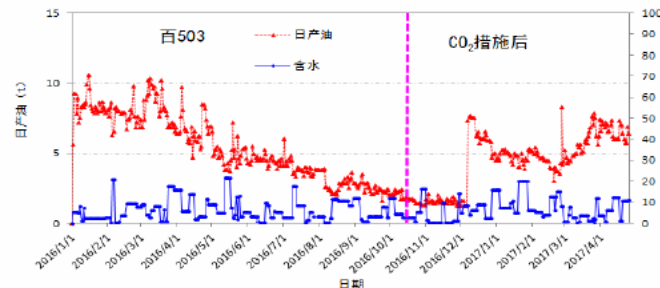
## 新疆油田CO<sub>2</sub>-EOR的实践与探索

顾鸿君

Ghj-1@petrochina.com.cn

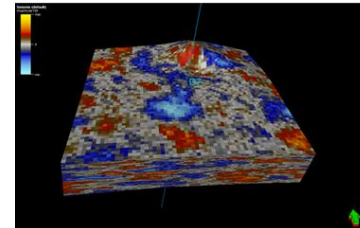
中国石油新疆油田公司

二〇一七年六月

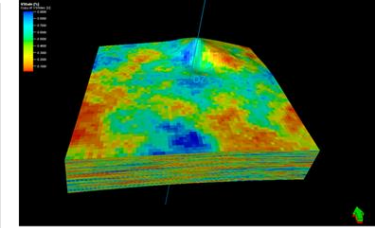


# Visiting CHEGS, CGS, Baoding

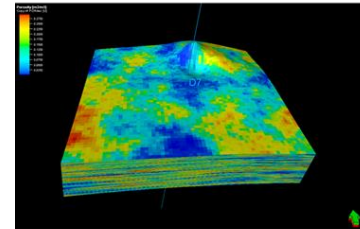
8 – 28 October 2017



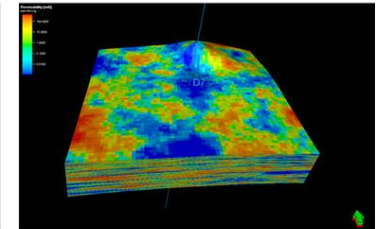
Seismic Amplitude



V\_Shale



Reservoir Porosity



Reservoir Permeability



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# Scientific Exchange in Baoding

- Giving a series of presentations on reservoir modelling for CO<sub>2</sub> storage in the saline aquifer, and Australia's activities on CCS, particularly on geological storage and monitoring.
- The scientists from both sides discussed on the static reservoir modelling and dynamic simulation plan for CO<sub>2</sub>EWR project in the Zhungeer Basin.
- Working together on the available data for both the static and dynamic modelling
- Part of the research results will be published at the GHGT14, October 2018.

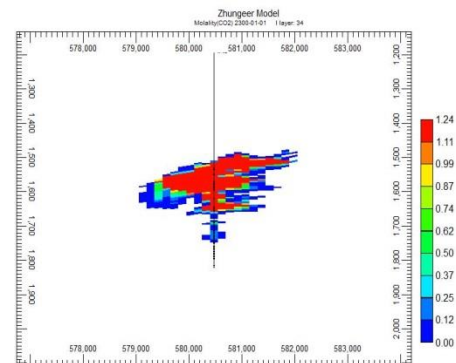
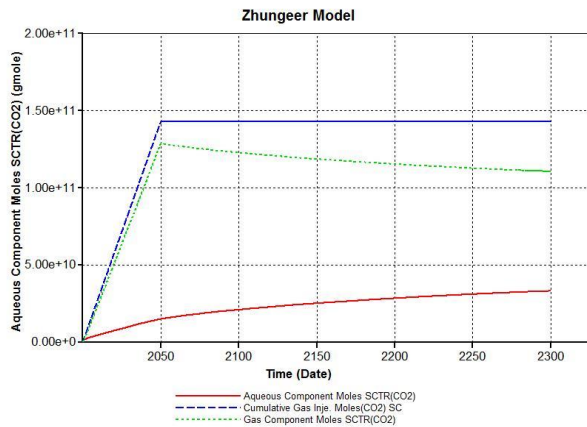
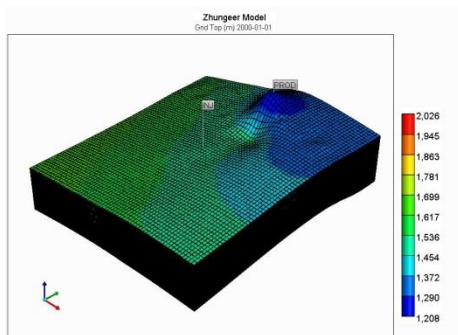
*“Combined study of static and dynamic reservoir modelling for the CO<sub>2</sub> storage project in deep saline aquifer in Zhundong, Xinjiang, China”*



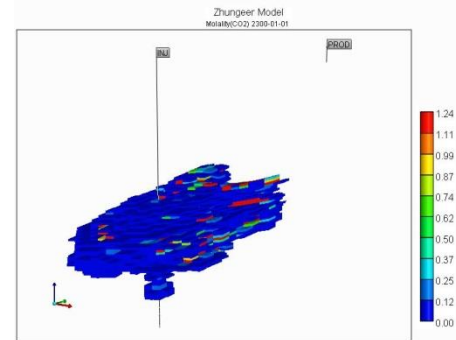
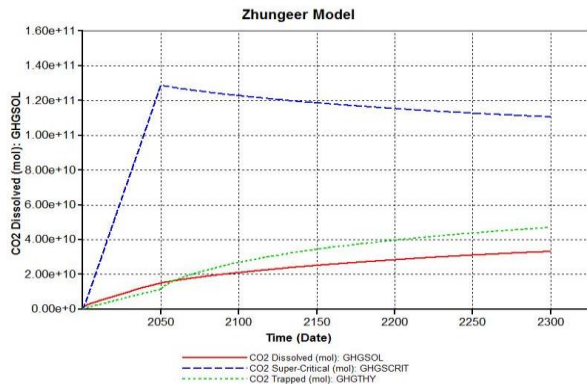
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# Dynamic Modelling



**Total injection: 4.022 million tonnes in 50 years**



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# Other Visits

## China University of Petroleum (Beijing), Karamay campus:

Giving a presentation on “Geological storage of CO<sub>2</sub> in the saline aquifer”

## Head office of CGS, Beijing:

- ✓ Meeting the officers related to CCS and CAGS project
- ✓ Giving a presentation on “Australian CCS activities and the progress on CAGS3 project”



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# Exciting Trip



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***Thank You!***

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