

## Contents

BAINES, S.J. & WORDEN, R.H. Geological storage of carbon dioxide	1
GALE, J. Why do we need to consider geological storage of CO <sub>2</sub> ?	7
CHADWICK, R.A., HOLLOWAY, S., BROOK, M.S. & KIRBY, G.A. The case for underground CO <sub>2</sub> sequestration in northern Europe	17
PEARCE, J., CZERNICHOWSKI-LAURIOL, I., LOMBARDI, S., BRUNE, S., NADOR, A., BAKER, J., PAUWELS, H., HATZIYANNIS, G., BEAUBIEN, S. & FABER, E. A review of natural CO <sub>2</sub> accumulations in Europe as analogues for geological sequestration	29
SHIPTON, Z.K., EVANS, J.P., KIRSCHNER, D., KOLESAR, P.T., WILLIAMS, A.P. & HEATH, J. Analysis of CO <sub>2</sub> leakage through 'low-permeability' faults from natural reservoirs in the Colorado Plateau, east-central Utah	43
BAINES, S.J. & WORDEN, R.H. The long-term fate of CO <sub>2</sub> in the subsurface: natural analogues for CO <sub>2</sub> storage	59
ROCHELLE, C., CZERNICHOWSKI-LAURIOL, I. & MILODOWSKI, A.E. The impact of chemical reactions on CO <sub>2</sub> storage in geological formations: a brief review	87
JOHNSON, J.W., NITAO, J.J. & KNAUSS, K.G. Reactive transport modelling of CO <sub>2</sub> storage in saline aquifers to elucidate fundamental processes, trapping mechanisms and sequestration partitioning	107
GUNTER W.D., BACHU, S. & BENSON, S. The role of hydrogeological and geochemical trapping in sedimentary basins for secure geological storage of carbon dioxide	129
HOVORKA, S.D., DOUGHTY, C., BENSON, S.M., PRUESS, K. & KNOX, P.R. The impact of geological heterogeneity on CO <sub>2</sub> storage in brine formations: a case study from the Texas Gulf Coast	147
ZWEIGEL, P., ARTS, R., LOTHE, A.E. & LINDEBERG, E.B.G. Reservoir geology of the Utsira Formation at the first industrial-scale underground CO <sub>2</sub> storage site (Sleipner area, North Sea)	165
ARTS, R., EIKEN, O., CHADWICK, A., ZWEIGEL, P., VAN DER MEER, B. & KIRBY, G. Seismic monitoring at the Sleipner underground CO <sub>2</sub> storage site (North Sea)	181
LAENEN, B., VAN TONGEREN, P., DREESEN, R. & DUSAR, M. Carbon dioxide sequestration in the Campine Basin and the adjacent Roer Valley Graben (North Belgium): an inventory	193
WORDEN, R.H. & SMITH, L.K. Geological sequestration of CO <sub>2</sub> in the subsurface: lessons from CO <sub>2</sub> injection enhanced oil recovery projects in oil fields	211
BACHU, S. & GUNTER, W.D. Acid-gas injection in the Alberta Basin, Canada: a CO <sub>2</sub> -storage experience	225
STENHOUSE, M.J. & SAVAGE, D. Monitoring experience associated with nuclear waste disposal and its application to CO <sub>2</sub> sequestration projects	235
Index	249