

Biographical Sketch

Kyle E. Murray

Hydrogeologist, Geologist IV
Oklahoma Geological Survey
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Norman, OK 73019

A. PROFESSIONAL PREPARATION

Shippensburg University	Shippensburg, PA	Geography/Environmental Studies	B.A., 1995
Wright State University	Dayton, OH	Hydrogeology	M.S., 1997
Colorado School of Mines	Golden, CO	Geological Engineering	Ph.D., 2003

B. APPOINTMENTS

2011–Present	Hydrogeologist, Oklahoma Geological Survey, University of Oklahoma, Norman, OK
2013–Present	Adjunct Professor, ConocoPhillips School of Geology & Geophysics, University of Oklahoma, Norman, OK
2006–2011	Assistant Director for Undergraduate Research Development, Honors College, University of Texas at San Antonio, San Antonio, TX
2004–2011	Assistant Professor, Department of Geological Science, University of Texas at San Antonio, San Antonio, TX
2003–2004	Research Associate, Department of Geology & Geological Engineering, Colorado School of Mines, Golden, CO
1999–2003	GIS Specialist, Earth Surface Processes Team, U.S. Geological Survey, Denver, CO
1997–1999	Hydrogeologist, Harding Lawson Associates, Engineering and Environmental Services, Denver, CO
1995–1997	Instructor, Center for Ground Water Management, Wright State University, Dayton, OH

C. PRODUCTS

(i) Most Closely Related to the Proposed Project

1. **Murray, K. E.** 2017. Final Report of: Lake Thunderbird CEC Study. Prepared for Central Oklahoma Master Conservancy District (COMCD), Prepared by Oklahoma Geological Survey, University of Oklahoma. Norman, OK. pp. 21.
2. **Murray, K.E.**, Manitou-Alvarez, E.I., Inniss, E.C., Healy, F.G., and Bodour, A.A. 2015. Assessment of Oxidative and UV-C Treatments for Inactivating Bacterial Biofilms from Groundwater Wells: *Frontiers of Environmental Science & Engineering*. 1(1): 39-49. <http://dx.doi.org/10.1007/s11783-014-0699-0>
3. **Murray, K.E.** 2013. State-scale Perspective on Water Use and Production Associated with Oil and Gas Operations, Oklahoma, U.S. *Environmental Science & Technology*. 47(9): 4918-4925. <http://dx.doi.org/10.1021/es4000593>
4. **Murray, K. E.**, Thomas, S. M., and Bodour, A. A. 2010. Prioritizing Research for Trace Pollutants and Emerging Contaminants in the Freshwater Environment. *Environmental Pollution*. 158:3462-3471. <http://dx.doi.org/10.1016/j.envpol.2010.08.009>
5. Thomas, S.M., Bodour, A.A., **Murray, K.E.**, and Inniss, E.C. 2009. Sorption Behavior of a Synthetic Antioxidant, Polycyclic Musk, and an Organophosphate Insecticide in Wastewater Sludge: *Water Science & Technology*. 60(1):145-154. <http://dx.doi.org/10.2166/wst.2009.284>

(ii) *Other Significant Products*

1. Scanlon, B.R., Weingarten, M.B., **Murray, K.E.**, and Reedy, R.C. 2019. Managing Basin-Scale Fluid Budgets to Reduce Injection-Induced Seismicity from the Recent U.S. Shale Oil Revolution. *Seismological Research Letters*. 90(1):171-182. <http://dx.doi.org/10.1785/0220180223>
2. Haffener, J., Chen, X., and **Murray, K.** 2018. Multiscale Analysis of Spatiotemporal Relationship Between Injection and Seismicity in Oklahoma. *Journal of Geophysical Research: Solid Earth*. 123 (10):8711-8731. <http://dx.doi.org/10.1029/2018JB015512>
3. Goebel, T.H.W., Walter, J.I., **Murray, K.**, and Brodsky, E.E. 2017. Comment on “How Will Induced Seismicity in Oklahoma Respond to Decreased Saltwater Injection Rates?” by C. Langenbruch and M. D. Zoback. *Science Advances*. 3(8). <http://dx.doi.org/10.1126/sciadv.1700441>
4. Kroll, K. A., Cochran, E. S., and **Murray, K. E.** 2017. Poroelastic Properties of the Arbuckle Group in Oklahoma Derived from Well Fluid Level Response to the 3 September 2016 Mw5.8 Pawnee and 7 November 2016 Mw5.0 Cushing Earthquakes. *Seismological Research Letters*. 88(4):963-970. <http://dx.doi.org/10.1785/0220160228>
5. **Murray, K.E.**, Shields, J.A., Garcia, N.D., and Healy, F.G. 2012. Productivity, Carbon Utilization, and Energy Content of Mass in Scalable Microalgae Systems. *Bioresource Technology*. 114:499-506. <http://dx.doi.org/10.1016/j.biortech.2012.03.012>

D. SYNERGISTIC ACTIVITIES

- Representative: for the Mewbourne College of Earth and Energy (MCEE) on the University of Oklahoma (OU) Community Engagement Working Group
- Technical Chair: Workshop: Seismicity in Oklahoma, held Feb 2018, Norman, OK
- Group Leader: Water, Environmental, and Engineering Group at the Oklahoma Geological Survey (OGS) University of Oklahoma (OU)
- Member: Oklahoma’s Coordinating Council for Seismicity, working group of stakeholders including state agencies, universities, industry representatives, and non-governmental organizations
- Associate Editor: Hydrogeology Journal for the International Association of Hydrogeologists (IAH)