

Curtis M Oldenburg

List of Publications by Year in descending order

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145
papers

5,593
citations

61984

43
h-index

95266

68
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154
all docs

154
docs citations

154
times ranked

3648
citing authors

#	ARTICLE	IF	CITATIONS
1	Process Modeling of CO ₂ Injection into Natural Gas Reservoirs for Carbon Sequestration and Enhanced Gas Recovery. <i>Energy & Fuels</i> , 2001, 15, 293-298.	5.1	260
2	Code intercomparison builds confidence in numerical simulation models for geologic disposal of CO ₂ . <i>Energy</i> , 2004, 29, 1431-1444.	8.8	174
3	Joule-Thomson cooling due to CO ₂ injection into natural gas reservoirs. <i>Energy Conversion and Management</i> , 2007, 48, 1808-1815.	9.2	165
4	A shallow subsurface controlled release facility in Bozeman, Montana, USA, for testing near surface CO ₂ detection techniques and transport models. <i>Environmental Earth Sciences</i> , 2010, 60, 227-239.	2.7	146
5	Dispersive Transport Dynamics in a Strongly Coupled Groundwater-Brine Flow System. <i>Water Resources Research</i> , 1995, 31, 289-302.	4.2	145
6	T2Well—An integrated wellbore—reservoir simulator. <i>Computers and Geosciences</i> , 2014, 65, 46-55.	4.2	137
7	Dynamic mixing in magma bodies: Theory, simulations, and implications. <i>Journal of Geophysical Research</i> , 1989, 94, 9215-9236.	3.3	134
8	Thermodynamic analysis of a compressed carbon dioxide energy storage system using two saline aquifers at different depths as storage reservoirs. <i>Energy Conversion and Management</i> , 2016, 127, 149-159.	9.2	125
9	CO ₂ migration and pressure evolution in deep saline aquifers. <i>International Journal of Greenhouse Gas Control</i> , 2015, 40, 203-220.	4.6	119
10	Numerical simulation of salt precipitation in the fractures of a CO ₂ -enhanced geothermal system. <i>Geothermics</i> , 2012, 44, 13-22.	3.4	115
11	Carbon Dioxide as Cushion Gas for Natural Gas Storage. <i>Energy & Fuels</i> , 2003, 17, 240-246.	5.1	111
12	Numerical Simulation of Ferrofluid Flow for Subsurface Environmental Engineering Applications. <i>Transport in Porous Media</i> , 2000, 38, 319-344.	2.6	107
13	On numerical modeling of capillary barriers. <i>Water Resources Research</i> , 1993, 29, 1045-1056.	4.2	104
14	Economic feasibility of carbon sequestration with enhanced gas recovery (CSEGR). <i>Energy</i> , 2004, 29, 1413-1422.	8.8	101
15	Modeling of recent volcanic episodes at Phlegrean Fields (Italy): geochemical variations and ground deformation. <i>Geothermics</i> , 2004, 33, 531-547.	3.4	100
16	Certification framework based on effective trapping for geologic carbon sequestration. <i>International Journal of Greenhouse Gas Control</i> , 2009, 3, 444-457.	4.6	99
17	A mechanistic treatment of the dominant soil nitrogen cycling processes: Model development, testing, and application. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	97
18	On Leakage and Seepage from Geologic Carbon Sequestration Sites: Unsaturated Zone Attenuation. <i>Vadose Zone Journal</i> , 2003, 2, 287-296.	2.2	95

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19	Surface CO ₂ leakage during two shallow subsurface CO ₂ releases. Geophysical Research Letters, 2007, 34, .	4.0	90
20	Comparison of Aerobic and Anaerobic Biotreatment of Municipal Solid Waste. Journal of the Air and Waste Management Association, 2004, 54, 815-822.	1.9	84
21	HYBRID MODEL FOR SOLIDIFICATION AND CONVECTION. Numerical Heat Transfer, Part B: Fundamentals, 1992, 21, 217-229.	0.9	79
22	Experimental Studies of the Flow of Ferrofluid in Porous Media. Transport in Porous Media, 2000, 41, 61-80.	2.6	79
23	Brine flow up a well caused by pressure perturbation from geologic carbon sequestration: Static and dynamic evaluations. International Journal of Greenhouse Gas Control, 2011, 5, 850-861.	4.6	79
24	Screening and ranking framework for geologic CO ₂ storage site selection on the basis of health, safety, and environmental risk. Environmental Geology, 2008, 54, 1687-1694.	1.2	78
25	Comparison of compressed air energy storage process in aquifers and caverns based on the Huntorf CAES plant. Applied Energy, 2016, 181, 342-356.	10.1	78
26	On leakage and seepage of CO ₂ from geologic storage sites into surface water. Environmental Geology, 2006, 50, 691-705.	1.2	75
27	Simulations of convection with crystallization in the system KAlSi ₂ O ₆ -CaMgSi ₂ O ₆ ; implications for compositionally zoned magma bodies. American Mineralogist, 1995, 80, 1188-1207.	1.9	71
28	Transient CO ₂ leakage and injection in wellbore-reservoir systems for geologic carbon sequestration. , 2011, 1, 335-350.		71
29	Fully coupled two-phase flow and poromechanics modeling of coalbed methane recovery: Impact of geomechanics on production rate. Journal of Natural Gas Science and Engineering, 2017, 45, 474-486.	4.4	71
30	The National Risk Assessment Partnership's integrated assessment model for carbon storage: A tool to support decision making amidst uncertainty. International Journal of Greenhouse Gas Control, 2016, 52, 175-189.	4.6	70
31	Analytical solution for Joule-Thomson cooling during CO ₂ geo-sequestration in depleted oil and gas reservoirs. International Journal of Greenhouse Gas Control, 2010, 4, 806-810.	4.6	68
32	The Northwest Geysers EGS Demonstration Project, California: Pre-stimulation Modeling and Interpretation of the Stimulation. Mathematical Geosciences, 2015, 47, 3-29.	2.4	67
33	Analytical solution for two-phase flow in a wellbore using the drift-flux model. Advances in Water Resources, 2011, 34, 1656-1665.	3.8	65
34	Layered Thermohaline Convection in Hypersaline Geothermal Systems. Transport in Porous Media, 1998, 33, 29-63.	2.6	64
35	Porous Media Compressed-Air Energy Storage (PM-CAES): Theory and Simulation of the Coupled Wellbore-Reservoir System. Transport in Porous Media, 2013, 97, 201-221.	2.6	63
36	Buoyancy Effects on Upward Brine Displacement Caused by CO ₂ Injection. Transport in Porous Media, 2011, 87, 525-540.	2.6	62

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37	Linear and Monte Carlo uncertainty analysis for subsurface contaminant transport simulation. <i>Water Resources Research</i> , 1997, 33, 2495-2508.	4.2	60
38	Coupled Vadose Zone and Atmospheric Surface Layer Transport of Carbon Dioxide from Geologic Carbon Sequestration Sites. <i>Vadose Zone Journal</i> , 2004, 3, 848-857.	2.2	51
39	Monitoring deformation at the Geysers Geothermal Field, California using C-band and X-band interferometric synthetic aperture radar. <i>Geophysical Research Letters</i> , 2013, 40, 2567-2572.	4.0	50
40	Eddy covariance observations of surface leakage during shallow subsurface CO ₂ releases. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	49
41	Coupled thermal-hydrological-mechanical modeling of CO ₂ -enhanced coalbed methane recovery. <i>International Journal of Coal Geology</i> , 2017, 179, 81-91.	5.0	49
42	Wellbore flow model for carbon dioxide and brine. <i>Energy Procedia</i> , 2009, 1, 71-78.	1.8	48
43	Self-organization in convective magma mixing. <i>Earth-Science Reviews</i> , 1990, 29, 331-348.	9.1	45
44	An improved strategy to detect CO ₂ leakage for verification of geologic carbon sequestration. <i>Geophysical Research Letters</i> , 2005, 32, n/a-n/a.	4.0	45
45	Modeling Gas Transport in the Shallow Subsurface During the ZERT CO ₂ Release Test. <i>Transport in Porous Media</i> , 2010, 82, 77-92.	2.6	45
46	Numerical modeling of solidification and convection in a viscous pure binary eutectic system. <i>International Journal of Heat and Mass Transfer</i> , 1991, 34, 2107-2121.	4.8	44
47	Pressure perturbations from geologic carbon sequestration: Area-of-review boundaries and borehole leakage driving forces. <i>Energy Procedia</i> , 2009, 1, 47-54.	1.8	43
48	Flow and transport in unsaturated fractured rock: effects of multiscale heterogeneity of hydrogeologic properties. <i>Journal of Contaminant Hydrology</i> , 2003, 60, 1-30.	3.3	42
49	The role of optimality in characterizing CO ₂ seepage from geologic carbon sequestration sites. <i>International Journal of Greenhouse Gas Control</i> , 2008, 2, 640-652.	4.6	42
50	Effect of subsurface soil moisture variability and atmospheric conditions on methane gas migration in shallow subsurface. <i>International Journal of Greenhouse Gas Control</i> , 2016, 55, 105-117.	4.6	40
51	Analysis of potential leakage pathways at the Cranfield, MS, U.S.A., CO ₂ sequestration site. <i>International Journal of Greenhouse Gas Control</i> , 2013, 18, 388-400.	4.6	36
52	A controlled field pilot for testing near surface CO ₂ detection techniques and transport models. <i>Energy Procedia</i> , 2009, 1, 2143-2150.	1.8	35
53	Methane Diffusion and Adsorption in Shale Rocks: A Numerical Study Using the Dusty Gas Model in TOUGH2/EOS7C-ECBM. <i>Transport in Porous Media</i> , 2018, 123, 521-531.	2.6	34
54	Injection, Flow, and Mixing of CO ₂ in Porous Media with Residual Gas. <i>Transport in Porous Media</i> , 2011, 90, 201-218.	2.6	33

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55	Utilization of CO ₂ as cushion gas for porous media compressed air energy storage. , 2013, 3, 124-135.		33
56	Assessing health impacts of CO ₂ leakage from a geological storage site into buildings: Role of attenuation in the unsaturated zone and building foundation. International Journal of Greenhouse Gas Control, 2012, 9, 322-333.	4.6	31
57	Regional evaluation of brine management for geologic carbon sequestration. International Journal of Greenhouse Gas Control, 2013, 14, 39-48.	4.6	31
58	On the use of Darcy's law and invasion-percolation approaches for modeling large-scale geologic carbon sequestration. , 2016, 6, 19-33.		30
59	Quantification of Risk Profiles and Impacts of Uncertainties as part of US DOE's National Risk Assessment Partnership (NRAP). Energy Procedia, 2013, 37, 4765-4773.	1.8	29
60	Vadose Zone Remediation of Carbon Dioxide Leakage from Geologic Carbon Dioxide Sequestration Sites. Vadose Zone Journal, 2004, 3, 858-866.	2.2	29
61	Simulation of propagating fronts in geothermal reservoirs with the implicit Leonard total variation diminishing scheme. Geothermics, 2000, 29, 1-25.	3.4	28
62	Simulation of CO ₂ -EGS in a Fractured Reservoir with Salt Precipitation. Energy Procedia, 2013, 37, 6617-6624.	1.8	28
63	Mixing of Stably Stratified Gases in Subsurface Reservoirs: A Comparison of Diffusion Models. Transport in Porous Media, 2004, 54, 323-334.	2.6	27
64	System-level modeling for economic evaluation of geological CO ₂ storage in gas reservoirs. Energy Conversion and Management, 2007, 48, 1827-1833.	9.2	27
65	On Leakage and Seepage from Geologic Carbon Sequestration Sites: Unsaturated Zone Attenuation. Vadose Zone Journal, 2003, 2, 287-296.	2.2	27
66	Leakage risk assessment of the In Salah CO ₂ storage project: Applying the certification framework in a dynamic context. Energy Procedia, 2011, 4, 4154-4161.	1.8	26
67	Plume separation by transient thermohaline convection in porous media. Geophysical Research Letters, 1999, 26, 2997-3000.	4.0	24
68	Aqueous and gaseous nitrogen losses induced by fertilizer application. Journal of Geophysical Research, 2009, 114, .	3.3	24
69	The consequences of failure should be considered in siting geologic carbon sequestration projects. International Journal of Greenhouse Gas Control, 2009, 3, 658-663.	4.6	23
70	Modeling the effects of topography and wind on atmospheric dispersion of CO ₂ surface leakage at geologic carbon sequestration sites. Energy Procedia, 2009, 1, 1925-1932.	1.8	23
71	Numerical simulations of the Macondo well blowout reveal strong control of oil flow by reservoir permeability and exsolution of gas. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 20254-20259.	7.1	22
72	Percolation-theory and fuzzy rule-based probability estimation of fault leakage at geologic carbon sequestration sites. Environmental Earth Sciences, 2010, 59, 1447-1459.	2.7	21

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73	Modeling the Aliso Canyon underground gas storage well blowout and kill operations using the coupled well-reservoir simulator T2Well. Journal of Petroleum Science and Engineering, 2018, 161, 158-174.	4.2	21
74	Water flow within a fault in altered nonwelded tuff. Water Resources Research, 2001, 37, 3043-3056.	4.2	19
75	Detection of CO ₂ leakage by eddy covariance during the ZERT project's CO ₂ release experiments. Energy Procedia, 2009, 1, 2301-2306.	1.8	19
76	Simulation-based estimates of safety distances for pipeline transportation of carbon dioxide. , 2013, 3, 66-83.		19
77	Approximate solutions for diffusive fracture-matrix transfer: Application to storage of dissolved CO ₂ in fractured rocks. Water Resources Research, 2017, 53, 1746-1762.	4.2	19
78	Origin of the patchy emission pattern at the ZERT CO ₂ release test. Environmental Earth Sciences, 2010, 60, 241-250.	2.7	18
79	Fault-matrix interactions in nonwelded tuff of the Paintbrush Group at Yucca Mountain. Journal of Contaminant Hydrology, 2003, 62-63, 269-286.	3.3	17
80	Probability estimation of CO ₂ leakage through faults at geologic carbon sequestration sites. Energy Procedia, 2009, 1, 41-46.	1.8	17
81	Simulations of CO ₂ injection into fractures and faults for improving their geophysical characterization at EGS sites. Geothermics, 2017, 69, 189-201.	3.4	17
82	On uncertainty in remediation analysis: variance propagation from subsurface transport to exposure modeling. Reliability Engineering and System Safety, 1998, 62, 117-129.	8.9	16
83	Revisiting the Analytical Solutions of Heat Transport in Fractured Reservoirs Using a Generalized Multirate Memory Function. Water Resources Research, 2019, 55, 1405-1428.	4.2	15
84	Simulations of long-column flow experiments related to geologic carbon sequestration: effects of outer wall boundary condition on upward flow and formation of liquid CO ₂ . , 2012, 2, 279-303.		14
85	The role of CO ₂ in CH ₄ exsolution from deep brine: Implications for geologic carbon sequestration. , 2013, 3, 359-377.		14
86	Magma zonation: Effects of chemical buoyancy and diffusion. Geophysical Research Letters, 1989, 16, 1387-1390.	4.0	13
87	Short-Range Atmospheric Dispersion of Carbon Dioxide. Boundary-Layer Meteorology, 2009, 133, 17-34.	2.3	13
88	The risk of induced seismicity: is caprock integrity on shaky ground?. , 2012, 2, 217-218.		13
89	Commemorating Dr. Gudmundur Böðvarsson (1951-2006), a Leader of the Deep Unsaturated Flow and Transport Investigations. Water (Switzerland), 2018, 10, 18.	2.7	13
90	Advanced monitoring and simulation for underground gas storage risk management. Journal of Petroleum Science and Engineering, 2022, 208, 109763.	4.2	13

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91	Reply [to a Comment on "Dispersive Transport Dynamics in a Strongly Coupled Groundwater-Brine Flow System" by Curtis M. Oldenburg and Karsten Pruess]. <i>Water Resources Research</i> , 1996, 32, 3411-3412.	4.2	12
92	Interpreting Velocities from Heat-Based Flow Sensors by Numerical Simulation. <i>Ground Water</i> , 2006, 44, 386-393.	1.3	12
93	Coupled geomechanics and flow modeling of thermally induced compaction in heavy oil diatomite reservoirs under cyclic steaming. <i>Journal of Petroleum Science and Engineering</i> , 2016, 147, 474-484.	4.2	12
94	Thermodynamic analysis of a novel fossil-free energy storage system with a trans-critical carbon dioxide cycle and heat pump. <i>International Journal of Energy Research</i> , 2020, 44, 7924-7937.	4.5	12
95	On Leakage and Seepage from Geologic Carbon Sequestration Sites. <i>Vadose Zone Journal</i> , 2003, 2, 287.	2.2	12
96	Coupled Hydromechanical Modeling of Induced Seismicity From CO ₂ Injection in the Illinois Basin. <i>Journal of Geophysical Research: Solid Earth</i> , 2022, 127, .	3.4	12
97	Implementation and Usability Evaluation of a Cloud Platform for Scientific Computing as a Service (SCaaS). , 2011, , .		10
98	Estimating the probability of CO ₂ plumes encountering faults. , 2011, 1, 160-174.		10
99	Are we all in concordance with the meaning of the word conformance, and is our definition in conformity with standard definitions?. , 2018, 8, 210-214.		10
100	Major CO ₂ blowouts from offshore wells are strongly attenuated in water deeper than 50Am. , 2020, 10, 15-31.		10
101	Revisiting the Fundamental Analytical Solutions of Heat and Mass Transfer: The Kernel of Multirate and Multidimensional Diffusion. <i>Water Resources Research</i> , 2017, 53, 9960-9979.	4.2	9
102	CO ₂ plume evolution in a depleted natural gas reservoir: Modeling of conformance uncertainty reduction over time. <i>International Journal of Greenhouse Gas Control</i> , 2020, 97, 103026.	4.6	9
103	Mixing with first-order decay in variable-velocity porous media flow. <i>Transport in Porous Media</i> , 1996, 22, 161-180.	2.6	8
104	Why we need the and in CO ₂ utilization and storage. , 2012, 2, 1-2.		8
105	A metric for evaluating conformance robustness during geologic CO ₂ sequestration operations. <i>International Journal of Greenhouse Gas Control</i> , 2019, 85, 100-108.	4.6	8
106	Geologic Carbon Sequestration: CO ₂ Transport in Depleted Gas Reservoirs. , 2006, , 419-426.		8
107	Case studies of the application of the Certification Framework to two geologic carbon sequestration sites. <i>Energy Procedia</i> , 2009, 1, 63-70.	1.8	7
108	Geologic carbon sequestration injection wells in overpressured storage reservoirs: estimating area of review. , 2016, 6, 775-786.		7

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109	Fast estimation of dense gas dispersion from multiple continuous CO ₂ surface leakage sources for risk assessment. International Journal of Greenhouse Gas Control, 2016, 49, 323-329.	4.6	7
110	Numerical investigation of air intrusion and aerobic reactions in municipal solid waste landfills. Waste Management, 2022, 147, 60-72.	7.4	7
111	Predictions of long-term behavior of a large-volume pilot test for CO ₂ geological storage in a saline formation in the Central Valley, California. Energy Procedia, 2009, 1, 3291-3298.	1.8	5
112	Selected papers from the 11 th US annual conference on Carbon Capture, Utilization, and Sequestration. , 2013, 3, 1-2.		5
113	Will mercury impurities impact CO ₂ injectivity in deep sedimentary formations? I. Condensation and net porosity reduction. , 2015, 5, 64-71.		5
114	Informing Geologic CO ₂ Storage Site Management Decisions under Uncertainty: Demonstration of NRAP's Integrated Assessment Model (NRAP-IAM-CS) Application. Energy Procedia, 2017, 114, 4330-4337.	1.8	5
115	Revisiting underground gas storage as a direct analogue for geologic carbon sequestration. , 2018, 8, 4-6.		5
116	Restricted interval guelph permeameter: Theory and application. Water Resources Research, 2000, 36, 1373-1380.	4.2	4
117	Delineating Area of Review in a System with Pre-injection Relative Overpressure. Energy Procedia, 2014, 63, 3715-3722.	1.8	4
118	How the low price of oil can spur CCS research innovation. , 2016, 6, 1-2.		4
119	On producing CO ₂ from subsurface reservoirs: simulations of liquid-gas phase change caused by decompression. , 2019, 9, 194-208.		4
120	Vadose Zone Remediation of Carbon Dioxide Leakage from Geologic Carbon Dioxide Sequestration Sites. Vadose Zone Journal, 2004, 3, 858-866.	2.2	4
121	Measuring and modeling fault density for CO ₂ storage plume-fault encounter probability estimation. AAPG Bulletin, 2012, 97, 597-618.	1.5	3
122	Modeling CO ₂ flow in support of a shallow subsurface controlled leakage field test. , 2019, 9, 1027-1042.		3
123	Time-window-based filtering method for near-surface detection of leakage from geologic carbon sequestration sites. Environmental Earth Sciences, 2010, 60, 359-369.	2.7	2
124	Transport in Geologic CO ₂ Storage Systems. Transport in Porous Media, 2010, 82, 1-2.	2.6	2
125	Health, safety, and environmental risks from energy production: a year-long reality check. , 2011, 1, 102-104.		2
126	LUCI: A facility at DUSEL for large-scale experimental study of geologic carbon sequestration. Energy Procedia, 2011, 4, 5050-5057.	1.8	2

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127	Impact of Induced Seismic Events on Seal Integrity, Texas Gulf Coast. Energy Procedia, 2014, 63, 4807-4815.	1.8	2
128	Will mercury impurities impact CO ₂ injectivity in deep sedimentary formations? II. Mineral dissolution and precipitation. , 2015, 5, 72-90.		2
129	Pressure transient analysis during CO ₂ push-pull tests into faults for EGS characterization. Geothermics, 2018, 75, 180-191.	3.4	2
130	Simulation Study Comparing Offshore Versus Onshore CO ₂ Well Blowouts. , 2019, , .		2
131	Modeling of Near-Surface Leakage and Seepage of CO ₂ for Risk Characterization. , 2005, , 1205-1216.		2
132	Downwind dispersion of CO ₂ from a major subsea blowout in shallow offshore waters. , 2022, 12, 321-331.		2
133	Comparative Assessment of Status and Opportunities for Carbon Dioxide Capture and Storage and Radioactive Waste Disposal in North America. Advances in Global Change Research, 2011, , 367-393.	1.6	1
134	On carbon footprints and growing energy use. , 2011, 1, 5-7.		1
135	Effects of "soil-like" particle size on gas transport and water retention properties in aged municipal solid waste from a Sri Lankan open dumpsite. Soil Science Society of America Journal, 2020, 84, 1080-1093.	2.2	1
136	Thermo-hydrologic processes in maar eruptions: The role of vapor transport and condensation. Journal of Volcanology and Geothermal Research, 2020, 393, 106809.	2.1	1
137	Radial storage efficiency for CO ₂ injection: Quantifying effectiveness of local flow control methods. , 2021, 11, 795-806.		1
138	Reply to comments by Schnaar et al. on "Brine flow up a well caused by pressure perturbation from geologic carbon sequestration: Static and dynamic evaluations" by Birkholzer et al. (2011). International Journal of Greenhouse Gas Control, 2013, 17, 544-545.	4.6	0
139	Introduction to the Special Issue on Simulation of Geologic Carbon Sequestration with the TOUGH codes. , 2013, 3, 425-426.		0
140	Bringing research findings to the real world is an essential and rewarding experience. , 2017, 7, 4-5.		0
141	Simulations of carbon dioxide push-pull into a conjugate fault system modeled after Dixie Valley" Sensitivity analysis of significant parameters and uncertainty prediction by data-worth analysis. Geothermics, 2018, 74, 121-134.	3.4	0
142	Research Advances in Vadose Zone Hydrology through Simulations with the TOUGH Codes: Preface from the Guest Editors. Vadose Zone Journal, 2004, 3, 737-737.	2.2	0
143	Storage Integrity Preface. , 2005, , 685-686.		0
144	Geologic Carbon Sequestration: Sustainability and Environmental Risk. , 2018, , 1-17.		0

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145	Geologic Carbon Sequestration: Sustainability and Environmental Risk. , 2019, , 219-234.		0