

Curriculum Vitae

John C. Walton, Ph.D., P.E.

University of Texas at El Paso

El Paso, Texas 79968-0516

Ph: (915) 747-8699

Email: walton@utep.edu

Home Page: <http://windowoutdoors.com>

Professional Experience

- (6/93 - *Professor, Dept. Civil Engineering, University of Texas at El Paso, El Paso, Texas. Teaching and research in environmental engineering, hydraulics, ground water, and materials degradation. Development of new teaching methods.*
- (8/03 - 8/05) *Interim Director, Center for Environmental Resource Management.*
- (12/03 - *Adjunct Professor in Environmental Sciences, University of Texas School of Public Health.*
- (9/02 - 8/05) *Program Director, Environmental Science and Engineering Program.*
- (1/92 - 5/93) *Senior Research Engineer, Southwest Research Institute, San Antonio, Texas. Analysis of engineered barriers performance in support of Nuclear Regulatory Commission evaluation of the proposed high level nuclear waste repository at Yucca Mountain. Developed a generalized reactive transport code for release rate and corrosion applications.*
- (9/87 - 1/92) *Scientific Specialist, EG&G Idaho, Idaho National Engineering Laboratory, Idaho Falls, Idaho. This position involved a combination of research and site support work. Projects included: migration of actinides through fractured rock in the unsaturated zone; regional scale contaminant migration in the Snake River Plain Aquifer; fluid flow and mass transport through concrete vaults and waste forms used to isolate nuclear waste; development of predictive models for concrete degradation; theoretical modeling of the electrochemistry inside localized corrosion cavities; release and migration of chlorinated solvents from a waste disposal site; cleanup of volatile organic compound spills by soil venting; modeling of *in situ* bioremediation; and leakage from flaws in geomembrane liners used in landfills and surface impoundments.*
- (1/91 - 12/91) *Affiliate Faculty, University of Idaho, Moscow, Idaho. Instruction of classes at the University Center located in Idaho Falls.*
- (4/84 - 9/87) *Senior Engineer, Rockwell ⇒ Westinghouse Hanford Operations (BWIP Project), Richland, Washington. Probabilistic risk assessment of natural hazards and operational accidents which could result in release of radioactive or hazardous materials to the environment. Performance assessment of nuclear waste disposal options.*

(10/79 - 4/84) *Air Quality Specialist, Utah Bureau of Air Quality, Salt Lake City, Utah.* Air dispersion modeling, ambient air monitoring, air pollution control engineering, regulation development, and data analysis. Development of probabilistic emissions limitations.

Education

- (1991) University of Idaho; Ph.D. Chemical Engineering. Thesis: Mathematical Models of Waste Isolation Performance.
- (1988) University of Washington; M.S. Chemical Engineering. Thesis: Mathematical Modeling Of Galvanic Corrosion Cells: Coupling of Corrosion and Geochemical Processes in Nuclear Waste Isolation.
- (1981) University of Virginia; M.S. Environmental Science. Thesis: Redox Equilibria in a Freshwater Lake.
- (1977) Western Illinois University; B.S. Biology. Minor Geology.

Professional Societies

American Chemical Society
American Geophysical Union
Association of Ground Water Scientists and Engineers
Sigma Xi

Research Interests

Hydrology. Influence of topography and solar radiation on plant communities. Contamination and recovery of river ecosystems. Surface and ground water interactions as they influence water quality. Mathematical modeling of saturated and unsaturated flow. Flow around and through waste disposal facilities. Monitoring, chemical analysis, and modeling of lake chemistry.

Environmental Remediation. Analysis of leach rates from various wasteforms including cementitious, glass, and spent fuel. Co-precipitation of metals with calcite.

Desalination. Membrane treatment of brackish water. Management of concentrates produced from desalination. Membrane distillation using solar energy.

Waste Disposal Technology. Leakage through flaws in geomembrane liners. Design and performance assessment of concrete vaults for waste disposal. Coupling between corrosion processes and localized geochemistry. Waste package design for high level nuclear waste disposal. Coupled modeling of thermal, hydrologic and chemical processes near nuclear waste packages. Influence of carbonation and oxidation on leaching from cementitious wasteforms.

Materials Performance. Long term degradation of concrete. Theoretical modeling of the electrochemistry inside localized corrosion cavities. Estimation of long term corrosion rates of copper and steel.

Chairman for Graduate Students

- 1/95 Charles Anker, *Analysis of Four Theoretical Methods to Improve Soil Venting*, MS Thesis.
- 4/95 Krishna Mohan Gadicherla, *The Role of Oxygen Diffusion in the Release of Technetium from Reducing Cementitious Waste Forms*, MS Thesis.
- 4/95 Ravishankar T. Kalyana, *Design of an Experimental Setup to Test the Effect of Carbonation on Cementitious Wasteforms*, MS Project.
- 4/95 Girish Havildar, *Long Term Performance of Cementitious Wasteform in the Unsaturated Zone: The Role of Soil Gases*, MS Project.
- 5/95 Ashwathagowda S. Kalappa, *Chemical Characterization of Pore Water of a Contaminated Soil*, MS Project.
- 6/95 Masudur Rahman, *Flow Through Flaws in Geomembranes*, MS Thesis.
- 7/95 Saifuddin Ahmed, *Analysis of Fluid Flow Through Intact and Degraded Below Ground Concrete Vaults*, MS Thesis.
- 8/95 Surya Kumar Gowrappa, *Transport of Radionuclides Through Fractured Concrete Barriers Used in Low-level Radioactive Waste Disposal*, MS Thesis.
- 1/96 Ahmad Arif Shahjahan, *Flow Through Degraded Below Ground Concrete Vaults*, MS Project.
- 5/96 MD. Sazzad Bin - Shafique, *The Long-term Performance of Cementitious Wasteform: The Role of Soil Gases*, MS Thesis.
- 8/96 Rudy Antonio Machorro Sagastume, *Water Quality at Lago de Izabal, Guatemala: Geochemical Characterization and Assessment of Trophic Status*, Ph.D. Thesis in Geology (co-chair with Phillip Goodell).
- 8/96 David Casey, *Optimization of Contaminant Removal for Heterogeneous Systems by Soil Venting*, MS Thesis.
- 5/97 Neyda V. Gutierrez, *Effects of Carbonation on the Long-Term Leaching Behavior of Cementitious Wasteforms*, MS Thesis.
- 8/97 Murtaza Mohsin Kutianawala, *Numerical Modeling of Surface and Ground Water: Canutillo Well Field Area - Texas, New Mexico*, MS Thesis
- 9/97 Chris Lynton Bailey, *Modeling of Soil Humidity Effects on Organic Compound Sorption During SVE*, MS Thesis.
- 7/98 Roxanna M. Rivera, *Treatment of Trinitrotoluene Contaminated Groundwater Using Parrot Feather Plants*, MS Thesis.
- 8/99 Floyd Johnson, *Self Sealing of Soil Through Alternating Sequences of Sodium*

- Silicate and Sodium Carbonate Application with Ion Exchange Regenerate Resin Concentrate*, MS Thesis.
- 12/99 Sergio Saul Solis, *Water Desalination by Membrane Distillation Coupled with a Solar Pond*, MS Thesis.
- 5/01 Huanmin Lu, *Zero Discharge Desalination*, Ph.D. Dissertation.
- 5/01 Juan W. Santiago Clague Romero, *Experimental and Theoretical Investigation of the Mobilization, Immobilization and Sequestration of Subsurface Metals Through Manipulation of Carbonate Equilibria*, Ph.D. Dissertation (co-chair with N. Pingitore).
- 12/01 Mike Landis, *The "Forgotten River" of the Rio Grande/Rio Bravo: Investigation into The Reclamation of an Arid Riparian Ecosystem*, MS Thesis
- 12/01 Adrian Stresow, *Hazardous Waste Containment Cell, Help Model Comparison*, MS Project.
- 8/02 Kadambari Reddy, *Modeling And Remediation Design of the Sun Metro Oil Spill*, MS Thesis
- 12/02 Francisco Martinez, *Influence of Solar Radiation Factors on Desert Flora Site Selection*, Ph.D. Dissertation.
- 5/03 Juan Gomez, *Mobilization and Immobilization of Heavy Metals in Contaminated Soils by CO₂ Partial Pressure Manipulation*, Ph.D. Dissertation.
- 5/03 René Hilton, *Removal of Heavy Metals from Soils with Fulvic Acid Fractions, EDTA, and Citrate Chelates*, Ph.D. Dissertation.
- 12/03 Drew Hall, *A Conceptual Model for Physical Separation Processes in Mineral and Brine Formation at Yucca Mountain*, MS Thesis.
- 5/04 Jaime Romero, *Adsorption of Cr from Aqueous Solution onto Agave lechuguilla biomass*, Ph.D. Dissertation.
- 12/04 Ana Loya, *Mobilization, Immobilization, and Sequestration of Metals and Radionuclides in the Subsurface by Manipulation of the Aqueous Carbonate System*, MS Thesis.
- 12/04 Robert Rice, *Risk Prediction and Design of Disposal Systems*, Ph.D. Dissertation.
- 12/04 Jose Humberto Garcia, *Determination of PM Compositions and Sources in the El Paso del Norte Region Using Time-Resolved Integrated Source and Receptor Models*, Ph.D. Dissertation.
- 5/2005 Vamsee Veera, *Hydrology and Solar Radiation as Factors for Desert Vegetation Patterns*, MS Thesis.
- 5/06 Bill Hutchison, *Groundwater Management in El Paso, Texas*, Ph.D. Dissertation

Professional Activities and Consulting

- 1992 EG&G Idaho; Performance assessment of concrete vault performance for low level radioactive waste disposal.
- 1993 Intera, Inc.; Degradation of concrete vaults as applied to the DOE Savannah River Low Level Radioactive Waste disposal E-Area vaults.
- 1993 -1999 Southwest Research Institute; Waste package performance assessment; modeling of coupled processes; container corrosion; waste package environment.
- 1995 Electric Power Research Institute; Yucca Mt. radioactive source term review.
- 1995-1996 Chem-Nuclear, Inc.; Degradation of concrete canisters and poly liners for North Carolina Low Level Radioactive Waste site.
- 1998 El Paso Water Utilities; External expert for review of hydrogeology examination.
- 1998 Idaho National Engineering and Environmental Laboratory; Expert panel on vadose zone processes and modeling.
- 1998 - 1999 Sandia National Laboratories; Yucca Mountain High Level Nuclear Waste Repository, near field geochemistry.
- 1996 - 2000 US Department of Justice; Expert witness on issues of contaminant transport. To date I have worked on three cases covering ground water contamination and air pollution.
- 2000 - Portage Environmental; Degradation assessment of high level waste steel tank and vaults at the INL.
- 2001 - Nye County, Nevada; Oversight of Yucca Mountain. Water chemistry monitoring.
- 2002 - 2005 Resolution Law Group, Expert witness, hydrogen sulfide exposure.

Publications and Presentations

℞ = refereed publication

- 1) ℞ Rice, R. W. and J. C. Walton, Factors Affecting Risk Predictions: Can Some Risk Metrics be More Accurately Predicted Than Others?, Accepted for publication in Nuclear Technology.
- 2) ℞ Woocay A. and J. C. Walton, Multivariate Analyses of Water Chemistry: Surface and Ground Water Interactions, Ground Water. (in press).
- 3) Danko, G., Walton, J., and Bahrami, D., Increased Storage Capacity at Yucca Mountain Favors Thermal Management for A Cold Repository., Journal of Nuclear Technology, (accepted for publication).
- 4) Pekar, Katrins, Phillip Goodell, John Walton, Elizabeth Anthony, and MinhuaRen, Equation fitting U-Series Radionuclide Transport Through Soil at Pena Plana, Chihuahua, Mexico, American Geophysical Union 2007 Joint Meeting, May 22, 2007, Acapulco, Mexico (abstract and presentation).
- 5) Walton, John, August 2006 El Paso Flooding: Technical and Policy Factors, Universities Council on Water Resources, Boise Idaho, Plenary Speaker, July, 2007.

- 6) Woocay, A., and J.C. Walton, (2007). "Climate Change Effects on Groundwater Recharge East of Yucca Mountain." *Eos Trans. AGU*, 88(52), Fall Meet. Suppl., Abstract H11F-0843, 2007. Presented at: American Geophysical Union Fall Meeting, San Francisco, CA, December 10, 2007.
- 7) Walton, John, A. Jaimes and A. Woocay, (2007). "Infiltration History and Spatial Variability Derived from Chloride Mass Balance." *Eos Trans. AGU*, 88(52), Fall Meet. Suppl., Abstract H11C-0674, 2007. Presented at: American Geophysical Union Fall Meeting, San Francisco, CA, December 10, 2007.
- 8) Agrawala G.K., A. Woocay and J.C. Walton, (2007). "Statistical and Spatial Analysis of Borderland Ground Water Geochemistry." *Eos Trans. AGU*, 88(52), Fall Meet. Suppl., Abstract H11C-0677, 2007. Presented at: American Geophysical Union Fall Meeting, San Francisco, CA, December 10, 2007.
- 9) Woocay, A. and J. Walton, Infiltration History and Spatial Variability Derived from Chloride Mass Balance and Groundwater Chemistry, Presented at: Devils Hole Workshop, Death Valley, May 2007.
- 10) ☞ Bahrami, D., G. Danko, and J. Walton, Water, Vapor, and Salt Dynamics in a Hot Repository, Materials Research Society , Scientific Basis for Nuclear Waste Management XXX, Editors: Darrrell Dunn, Christophe Poinssot, and Bruce Begg, Materials Research Society, Pennsylvania, 2007.
- 11) ☞ Rice, Robert and John Walton, Design factors affecting the flow of water through below-ground concrete vaults, *J. Envir. Engr.*, Volume 132, Issue 10, pp. 1346-1354, October 2006.
- 12) Woocay, Arturo and Walton, John C., (2006), Groundwater Chemistry Analysis by Multivariate Statistical Methods, *Eos Trans. AGU*, 85(47), Fall Meet. Suppl., Abstract H41B-0405, 2006. Presented at: American Geophysical Union Fall Meeting, San Francisco, CA, December 14, 2006
- 13) ☞ José H. García, Wen-Whai Li, Nidia Cárdenas, Richard Arimoto, John Walton and David Trujillo, Determination of PM2.5 sources using time-resolved integrated source and receptor models, *Chemosphere*, Volume 65, Issue 11, December 2006, Pages 2018-2027.
- 14) Woocay, Arturo and Walton, John C., (2006), Evidence of Past Focused Infiltration at Fortymile Wash, *Geological Society of America Abstracts with Programs*, Vol. 38, No. 7, p. 335, 2006. Presented at: GSA Annual Meeting, Philadelphia, PA, October 24, 2006.
- 15) Walton, J, G. Danko, and D. Bahrami, Effect of cyclic, sporadic, or episodic processes on evolution of environments in a repository in Yucca Mountain, Invited Presentation at the Nuclear Waste Technical Review Board Corrosion Workshop, Las Vegas, NV, September, 2006.
- 16) Agrawala, Gautam K., Woocay, Arturo and Walton, John C.,(2006) Multivariate Statistical Analysis of the Hueco-Mesilla Basin Groundwater Aquifer System-Presented at 2006 Groundwater Summit in San Antonio,TX,2006
- 17) Agrawala, Gautam K. and Walton, John C.,(2006),Multivariate Statistical Analysis of the Tularosa Basin, Presented at 2006 New Mexico Water Research Symposium, Socorro, NM,2006
- 18) Agrawala, Gautam K and Walton, John C.,(2006),Multivariate Statistical Analysis of the Hueco-Tularosa Basin, Presented at 2006 AGU Fall Meeting, San Francisco, CA,2006
- 19) ☞ Hall, Drew and John Walton, Conceptual model for flow separation processes affecting waste package chemical environment, Yucca Mountain, Nevada, *Applied Geochemistry*, Volume 21, Issue 6, Pages 859-869, June 2006.
- 20) ☞ Veranth, John M, Moss, Tyler A., Chow, Judith C., Labban, Raed, Nichols, William K., Walton, John C., Watson, John G, Yost, Garold S., Correlation of In Vitro Cytokine Responses With the Chemical Composition of Soil-Derived Particulate Matter, *Environ Health Perspect.* 2006 March; 114(3): 341–349.

- 21) Woocay, Arturo and Walton, John C., Climate Change Effects on Yucca Mountain Region Groundwater Recharge, *IHLRWM 2006*, Las Vegas, NV, April 30-May 4, 2006, 191-198, 2006
- 22) Rice, Robert and John Walton, **Factors Affecting Risk Predictions: Proposed Rule And Other Risk Metrics**, *IHLRWM 2006*, Las Vegas, NV, April 30-May 4, 2006, 191-198.
- 23) Woocay, Arturo and Walton, John C., (2006), **Multivariate Statistical Methods Applied to Surface and Groundwater Interactions**, *Abstract Book of the 2006 Ground Water*, p. 94, 2006. Presented at: NGWA 2006 Ground Water Summit, San Antonio, TX, April 22-27, 2006.”
- 24) Romero-Gonzalez, J, J.C. Walton, J. R. Peralta-Videa, E. Rodr’guez, S. L. Ramirez, J.L. Gardea-Torresdey. Study of the advective and dispersive transport of the binding of Cr(III) from aqueous solution onto Agave lechuguilla biomass, *Journal of Hazardous Materials*, in review.
- 25) Woocay, Arturo and Walton, John C., **Infiltration Dates Derived from Chloride Mass Balance**, Poster presented at: Devil’s Hole Workshop, Furnace Creek, CA, April, 2006.
- 26) Walton, John and Arturo Woocay, Nye County Ground Water Chemistry Analysis Report for the Early Warning Drilling Program April 2004 - March 2005, NWRPO-2005-01, May 2005.
- 27) Goodell, Philip, Walton, John, and Rodriguez, Alfredo, Future Studies At Pena Blanca: Radionuclide Migration In The Vadose Zone Of An Alluvial Fan, *Geological Society of America Abstracts with Programs*, Vol. 37, No. 7, p. 453, 2005.
- 28) Walton, John, Goodell, Philip, Beshears, Charles, French, Diana, and Kelts, Aaron, Radionuclide Dispersion Rates By Aeolian, Fluvial, and Porous Media Transport, *Geological Society of America Abstracts with Programs*, Vol. 37, No. 7, p. 268, 2005.
- 29) Woocay, Arturo Walton, John C., and King, Michael, **Multivariate Statistical Methods Applied to Interpretation of Hydrological Data**, Presented at: 2005 New Mexico Water Research Symposium, Socorro, NM, August 16, 2005.
- 30) Woocay, Arturo and Walton, John C., **Focused Infiltration Effects on Amargosa Desert Regional Groundwater Chemistry**, Presented at: Devil’s Hole Workshop, Furnace Creek, CA, May, 2005.
- 31) Woocay, Arturo and John Walton, (2005), **Statistical Analysis of Yucca Mountain Regional Groundwater Chemistry Evolution**, Presented at: Waste Management Symposium, Mar, 2005.
- 32) Agrawala, Gautam K. and Walton, John C., Source Analysis for VOC Data at The Camino Real Landfill, Sunland Park, NM, Presented at the Twentieth International Conference on Solid Waste Technology & Management, Philadelphia, PA, 2005.
- 33) Agrawala, Gautam K. and Walton, John C.,(2005),Multivariate Statistical Analysis of the Membres Basin Groundwater Aquifer System-Presented at 2005 New Mexico Water Research Symposium, Socorro, NM,2005
- 34) Romero-Gonzalez, J., Cano-Rodriguez, I., Walton, J.C., Peralta-Videa, J.R., Rodriguez, E., Gardea-Torresdey, J.L. Column studies of the adsorption and reduction of Cr(VI) from an aqueous solution by Agave lechuguilla biomass. *Revista Mexicana de Ingenieria Quimica* 4, 257-268, 2005

- 35) Rodr'guez-Pineda, J. Alfredo, Goodell, Philip, Dobson, Patrick F., Walton, John, Oliver, Ronald D., De La Garza, Rodrigo, And Harder, Steve, Regional Hydrology of The Nopal I Site, Sierra De Pe-a Blanca, Chihuahua, Mexico, Geological Society of America Abstracts with Programs, Vol. 37, No. 7, p. 196, 2005.
- 36) Woocay, Arturo and Walton, John C., (2005), **Groundwater Evidence of Past Climate Change in The Amargosa Desert**, *Geological Society of America Abstracts with Programs*, Vol. 37, No. 7, p. 468, 2005. Presented at: GSA Annual Meeting, Salt Lake City, UT, October 19, 2005.
- 37) Walton, John and Woocay, Arturo, (2005), **Nye County Ground Water Chemistry Analysis Report for the Early Warning Drilling Program April 2004 - March 2005**, *NWRPO-2005-01*, May 2005.
- 38) Li, W. -W., N. Cardenas, R. Arimoto, J. Walton, D. Trujillo, H. Morales. 2004. PM source identification at Sunland Park, New Mexico using a simple heuristic meteorological and chemical analysis. *Journal Air and Waste Management Association*, 55:352-364, March 2005.
- 39) Walton, J.C., F. Martinez-Gonzalez, and R. Worthington, Desert Vegetation and Timing of Solar Radiation, *Journal of Arid Environments*, Volume 60, Issue 4, Pages 697-707, March 2005.
- 40) H. Becerra, J. Walton, H. Lu, Salinity Gradient Solar Ponds: A Useful Technology in Concentrate Management and Desalination?, Presented at: 2004, National Salinity Management and Desalination Summit, Las Vegas, December 13-14, 2004.
- 41) A. Woocay and J. Walton, *Multivariate Analysis of Amargosa Valley, NV Groundwater Chemistry*, Presented at: AGU Fall Meeting, San Francisco, 2004.
- 42) A. Woocay and J. Walton, *Groundwater Flow Paths and Trends in Nye County, Nevada Based Upon Correspondence Analysis of Major Ion Chemistry*, Presented at: Devil's Hole Workshop, Pahrump, NV, June 2-4, 2004.
- 43) H. Becerra, J. Dowdy, H. Lu, and J. Walton, Zero Discharge Waste Brine Management for Solar Desalination Plants, World Renewabel Energy Congress VIII, August 29 - September 3, 2004, Denver, Colorado.
- 44) Walton, J.C. and D. Hall, *Alternate Conceptual Models for Engineered Barrier System Chemistry and Performance*, Presented to: Nuclear Waste Technical Review Board, January 19, 2004, Las Vegas.
- 45) Arimoto, R., W.-W. Li, N. Cardenas, J. Walton, D. Trujillo, H. Morales, S. Sage, C. Schloesslin, 2003. *Investigations of the Low Wind Particulate Matter Spikes at the Sunland Park, New Mexico Monitoring Site*. Paper presented in the 2004 Border Regional Environmental Conference, Feb. 10 - 12, 2004, Laredo, TX
- 46) J. H. Garc'a, W.-W. Li, J. Walton, R. Arimoto, C. Schloeesslin, S. Sage, R. Okrasinski, J. Greenlee, 2004. Characterization and Implication of Potential Fugitive Dust Sources in the Paso del Norte Region, *Jl. Science of the Total Environment*. Volume 325, Issues 1-3, Pages 95-112
- 47) Danko, George, Davood Bahrami, and John Walton, Status of Nye County Ventilation Studies, Invited presentation to: Nuclear Waste Technical Review Board, January 19, 2004, Las Vegas.
- 48) Peralta-Videa, J.R., J.L. Gardea-Torresdey, J. Walton, W. P. Mackay, M. Duarte-Gardea, Effects of Zinc upon Tolerance and Heavy Metal Uptake in Alfalfa Plants (*Medicago sativa*), *Bull. Environ. Contam. Toxicol.* 70:1036-1044, 2003.

- 49) Garcia, J. H., W.-W. Li, J. Walton, R. Arimoto, C. Schloesslin, S. Sage, R. Okrasinski, J. Greenlee, W. Gutman. 2003. Implications on Contributing Sources by Chemical Composition in Regional Surficial Soil, Paper presented in the North American Research Strategy for Tropospheric Ozone (NARSTO) Workshop on Innovative Methods for Emission Inventory and Evaluation, Oct. 14 - 17, 2003, Austin, Texas
- 50) Hall, Drew and John Walton, Patterns and Trends in the Water Chemistry of Nye County Wells. Presented at: Devil's Hole Workshop and Death Valley Regional Flow Model Technical Interaction Meeting, May, 2003.
- 51) Hall, Drew and John Walton, Nye County Ground Water Chemistry Monitoring, Sampling and Analysis Report for the Early Warning Drilling Program Fiscal Year 2002, May, 2003.
- 52) Walton, John and Drew Hall, Evaporation, Reconstitution, and Water Chemistry, Invited presentation at: NRC and DOE Performance Assessments: Assumptions and Differences, Washington, DC, March 25-27, 2003.
- 53) Paschold, H., H. Morales, W. Li, and J. Walton. 2002. Evaporative Cooler Effects on Indoor PM concentrations under laboratory conditions. Paper presented in the Rio Bravo/Rio Grande Environmental Conference, South Padre Island, Texas, Feb. 20 - 23, 2002.
- 54) Hall, Drew and John Walton, Physical Separation Processes and EBS Water Chemistry – A Modeling Study, 10th International High Level Waste Management Conference, American Nuclear Society, Las Vegas, Nevada, April, 2003.
- 55) Paschold, H, W. Li, H. Morales, and J. Walton, Laboratory Study of the Impact of Evaporative Coolers on Indoor PM Concentrations, *Atmospheric Environment*, 37:1075-1086 (2003).
- 56) Lu, H., J. Walton, S. Irvine, and H. Remmers, Memorandum Report: Conceptual Application and Feasibility of Salinity Gradient Solar Pond Technology in San Joaquin Valley, California, DWR of California, 2002.
- 57) Paschold, H., H. Morales, W. Li, and J. Walton. 2002. Field study of the impact of evaporative coolers on PM concentrations. Paper presented in the Rio Bravo/Rio Grande Environmental Conference, South Padre Island, Texas, Feb. 20 - 23, 2002.
- 58) Walton, John and Huanmin Lu, US Experience with Solar Ponds: Current and Future Trends, Presented at: Euromed Conference on Solar Ponds, Tunis, Tunisia, December, 2001.
- 59) Garcia, J., W. Li, J. Walton, 2001. Multivariate analysis of wintertime inorganic PM data. The 2001 SCERP Conference: Promoting Policies to Implement the Vision. October 17-19, 2001, Universidad Autonoma de Baja California, Mexico.
- 60) Lu, Huanmin, John Walton, Andrew Swift, and Herbert Hein, Fundamentals of Solar Pond Operation and Technology Advancements at the El Paso Solar Pond, Presented at: Euromed Conference on Solar Ponds, Tunis, Tunisia, December, 2001.
- 61) Walton, John and Huanmin Lu, Solar Pond Coupled Desalination and Electricity Production, Presented at: Euromed Conference on Solar Ponds, Tunis, Tunisia, December, 2001.
- 62) Gomez, J.D., J. Walton, and N.E. Pingitore, Mobilization of Heavy Metals in Contaminated Soils Using CO₂ Manipulation, 2001 American Water Resources Conference, Albuquerque, 2001.

- 63) Hilton, R.V., J. Walton, and N.E. Pingitore, Mobilization and Sequestration of Subsurface Metals Through pCO₂ Manipulation, 2001 American Water Resources Conference, Albuquerque, 2001.
- 64) Walton, John, Upstream Water Reuse and Development Impacts on Rio Grande Water Quality, The Southwest Center for Environmental Research and Policy's 2001 Annual Technical Conference, entitled "Sustainable Development in the U.S.-Mexico Border Region," Mexicali, B.C., Mexico on October, 2001.
- 65) ʘ Lu, H., J. Walton and A. Swift, "Desalination Coupled with Salinity-Gradient Solar Ponds," *Desalination* 136 (2001) 13-23.
- 66) ʘ Walton, John and Gregory Ohlmacher, Surface and Ground Water Interactions: El Paso – Ciudad Juarez Region, SCERP Monograph Series, No. 2, Water issues along the U.S.-Mexican border, Ed: Paul Westerhoff, .pp. 21-29, San Diego State University Press, 2000.
- 67) Walton, J.C., H. Lu, C. Turner, A. Swift, Desalination in the Inland Desert, Invited Keynote Presentation at: *International Conference on Desalination Strategies in South Mediterranean Countries*, Jerba, Tunisia, September, 2000.
- 68) ʘ Lu, H. J. Walton and A. Swift, "Zero Discharge Desalination," *Desalination & Water Reuse*, Vol. 10. No. 3, November/December 2000.
- 69) ʘ Walton, C.L. and J.C. Walton, Efficiency of bicycle chain drives – results at constant velocity and supplied power, *Human Power* No. 51, IHPVA, San Luis Obispo, CA., pp. 14-15, 2000.
- 70) Garcia, Jose H., John C. Walton, and Wen-Whai Li, Oxone Prediction Based on Simple Meteorological Models, Proceedings Texas Section-ASCE Fall 2000 Meeting, El Paso, Texas, p. 11-20, 2000.
- 71) Clague, Juan, W., Nicholas E. Pingitore, and John C. Walton, Induced Subsurface Mineral Growth to Sequester Radionuclides and Toxic Elements by Coprecipitation with Calcite, Proceedings Texas Section-ASCE Fall 2000 Meeting, El Paso, Texas, p. 33-42, 2000.
- 72) Magallon, Angel G. and John C. Walton, Development Impacts on Rio Grande Water Quality, Proceedings Texas Section-ASCE Fall 2000 Meeting, El Paso, Texas, p. 281-290, 2000.
- 73) Lu, Huanmin, John C. Walton, and Herbert Hein, Thermal Desalination Using MEMS and Salinity-Gradient Solar Pond Technology, US Bureau of Reclamation, Desalination Research and Development Program Report, (in press).
- 74) Walton, John, Huanmin Lu, Charles Turner, Sergio Solis, and Herb Hein, Solar and Waste Heat Desalination by Membrane Distillation, US Bureau of Reclamation, Desalination Research and Development Program Report, (in press).
- 75) ʘ Lu, H. and J.C. Walton, Operation of Multi-Effect Multi-Stage Desalination Coupled with a Salinity-Gradient Solar Pond, ASME/ASES Solar Energy Conference, June 16-21, 2000, Madison, Wisconsin, 2000.
- 76) ʘ Walton, J.C., H. Lu, and S. Solis, Air Gap Membrane Distillation by Salinity Gradient Solar Pond, ASME/ASES Solar Energy Conference, June 16-21, 2000, Madison, Wisconsin, 2000.
- 77) Lu, Huanmin, J.C. Walton, A.H.P. Swift, and C. Turner, Zero Discharge Desalination, American Desalination Association (ADA) North American Biennial Conference, August 6-9, 2000, Lake Tahoe, Nevada.

- 78) Walton, John, Sergio Solis, Huanmin Lu, Charles Turner, Herbert Hein, Membrane Distillation Desalination with a Salinity Gradient Solar Pond, 17th Annual Conference on Technology/Planning, Newton Marriott, Boston, Business Communications Co., Norwalk, Connecticut, 1999 (presentation and paper in proceedings), 1999.
- 79) Turner, C. D., J. C. Walton, E. Bermea, M. Quezada, Salinity and TOC Removal Using Nanofiltration, US Bureau of Reclamation, Contract No. 1425-97-FC-81-30006E, US Bureau of Reclamation Water Treatment Technology Program Report No. XXX, 1999.
- 80) Turner, C. D., J. C. Walton, J. D. Moncada, M. Tavares, Brackish Groundwater Treatment and Concentrate Disposal for the Homestead Colonia El Paso, Texas, US Bureau of Reclamation Water Treatment Technology Program Report No. 32, 1999.
- 81) R Walton, J., G. Ohlmacher, D. Utz, M. Kutainawala, Response of the Rio Grande and Shallow Ground Water in the Mesilla Bolson to Irrigation, Climate Stress, and Pumping, *Environmental and Engineering Geoscience*, Vol. V, No. 1, pp. 41-50, 1999.
- 82) R MD. Sazzad Bin Shafique, John C. Walton, Neyda Guterrez, Robert W. Smith, and Anthony Tarquin, Influence of Carbonation on Leaching of Cementitious Wasteforms, *ASCE Journal of Environmental Engineering*, Vol. 124, No. 5, 1998.
- 83) Walton, John, Charles Turner, Gregory Ohlmacher, and Dennis Utz, Interaction of Shallow Groundwater and the Rio Grande, Presented at: Cross Currents in Water Policy UCOWR 98, Portland, Oregon, August, 1998.
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