

WaterReuse Research Foundation  
Direct Potable Reuse Program  
2011 - 2015

Project #	Research Project Title	Principal Investigator	Research Focus	Expected Publication	WRRF contribution	In Kind Contribution
WRRF-11-01	Monitoring for Reliability and Process Control of Potable Reuse Applications	Ian Pepper, University of Arizona	Regulatory, Utility	Nov-15	400,000	\$1,298,817
WRRF-11-02	Equivalency of Advanced Treatment Trains for Potable Reuse	Rhodes Trussell, Trussell Technologies	Regulatory, Utility	Sep-15	375,000	\$868,000
WRRF-11-05	Demonstrating the Benefits of Engineered DPR versus Unintentional Indirect Potable Reuse Systems	Glen Boyd, The Cadmus Group Inc	Community, Regulatory	published May-2014	49,558	\$10,000
WRRF-11-10	Risk Reduction Principles for DPR	Andy Salveson, Carollo	Regulatory	published Jul-2014	73,407	\$71,555
WRRF-12-06	Guidelines for Engineered Storage for Direct Potable Reuse	Andy Salveson, Carollo	Regulatory, Community, Utility	Aug-15	100,000	\$111,788
WRRF-12-07	Methods for Integrity Testing of NF and RO Membranes	Joe Jacangelo, MWH	Regulatory	Dec-16	300,000	\$296,965
WRRF-13-02	Model Public Communication Plan for Advancing DPR Acceptance	Mark Millan, Data Instincts	Community	published January 2015	337,125	\$272,606
WRRF-13-03	Critical Control Point assessment to quantify robustness and reliability of multiple treatment barriers of DPR scheme	Troy Walker, Hazen & Sawyer	Regulatory, Utility	Apr-16	300,000	\$238,969
WRRF-13-12	Evaluation of Source Water Control Options and the Impact of Selected Strategies on DPR	Alan Rimer, Black & Veatch	Utility, Regulatory	Jun-16	150,000	\$81,150
WRRF-13-13	Development of Operation and Maintenance Plan and Training and Certification Framework for Direct Potable Reuse (DPR) Systems	Troy Walker, Hazen & Sawyer	Utility	Apr-16	250,000	\$85,000
WRF4508 (WRRF-13-14)	Assessment of Techniques to Evaluate and Demonstrate the Safety of Water from DPR Treatment Facilities	Channah Rock, University of Arizona	Utility, Regulatory	Dec-16	WRF 275,000	WRF 144,177
WRF4536 (WRRF-13-15)	Blending Requirements for Water from Direct Potable Reuse Treatment Facilities	Andy Salveson, Carollo Engineers	Utility, Regulatory	Dec-16	WRF 325,000	WRF 403,310
WRRF-14-01	Integrated Management of Sensor Data for Real Time Decision Making and Response	Jeff Neeman, Black & Veatch	Regulatory, Utility	Nov-17	350,000	\$553,380.00
WRRF-14-02	Establishing additional log reduction credits for WWTPs	Zia Bukhari, American Water	Regulatory	Apr-18	400,000	190546
WRRF-14-03	Develop Methodology of comprehensive (fiscal/triple bottom line) analysis of alternative water supply projects compared to DPR	Ben Stanford, Hazen & Sawyer	Utility	Nov-16	250,000	\$207,774
WRRF-14-08	Economics of DPR	Bob Raucher, Stratus Consulting	Utility, Community	Oct-14	25,000	0
WRRF-14-10	Enhanced Pathogen and Pollutant Monitoring of the Colorado River Municipal Water District Raw Water Production Facility at Big Spring, TX	Eva Steinle-Darling, Carollo	Regulatory	Aug-16	100,000	\$561,755
WRRF-14-12	Demonstrating Redundancy and Monitoring to Achieve Reliable Potable Reuse	Shane Trussell, Trussell Technologies	Utility, Regulatory	Apr-17	n/a	\$3,088,313
WRA-14-01	Developing Direct Potable Reuse Guidelines	Jeff Mosher, NWRI	Regulatory	Mar-15	53,120	0
WRRF-14-13	From Sewershed to Tap: Resiliency of Treatment Processes for DPR	TBD	Regulatory	TBD in 2017	200,000	TBD
WRRF-14-14	Framework for Public Health Monitoring: White paper	TBD	Regulatory, Community	TBD in 2017	25,000	TBD
WRRF-14-15	Application of bioanalytical tools to assess biological responses associated with water at DPR facilities	TBD	Regulatory	TBD in 2017	300,000	TBD
WRRF-14-16	Operational, Monitoring, and Response Data from Unit Processes in Full-Scale Water Treatment, IPR, and DPR	TBD	Utility, Regulatory	TBD in 2017	200,000	TBD
WRRF-14-17	White Paper on the Application of Molecular Methods for Pathogens for Potable Reuse	TBD	Regulatory	TBD in 2017	50,000	TBD
WRRF-14-18	Ensuring stable microbial water quality in Direct Potable Reuse distribution systems	TBD	Regulatory	TBD in 2017	25,000	TBD
WRRF-14-19	Predicting RO removal of toxicologically relevant unique organics	TBD	Utility	TBD in 2017	225,000	TBD
WRRF-15-01	DPR Research Compilation: Synthesis of Findings from DPR Initiative Projects	TBD	Regulatory, Utility, Community	TBD in 2018	75,000	
WRRF-15-02	Creating a Roadmap for Bioassay Implementation in Reuse Waters: A cross disciplinary workshop	TBD	Regulatory	TBD in 2018	75,000	
WRRF-15-04	Characterization and Treatability of TOC from DPR Processes Compared to Surface Water Supplies	TBD	Regulatory	TBD in 2018	350,000	
WRRF-15-05	Developing Curriculum and Content for DPR Operator Training	TBD	Utility	TBD in 2018	100,000	
WRRF-15-07	Molecular Methods for Measuring Pathogen Viability/Infectivity	TBD	Regulatory	TBD in 2018	350,000	
WRRF-15-10	Optimization of ozone-BAC treatment processes for potable reuse applications	Zia Bukhari, American Water	Utility	TBD in 2018	120,000	\$512,798
WRRF-15-11	Demonstration of High Quality Drinking Water Production Using Multi-Stage Ozone-Biological Filtration (BAF): A Comparison of DPR with Existing IPR Practice	Dr. Kati Bell, CDM Smith & Denise Funk, Gwinnett County	Utility	TBD in 2018	100,000	\$922,718
WRRF-15-13	NDMA Precursor Control Strategies for DPR	Roshanak Afkari, LASAN	Utility	TBD in 2018	120,000	\$4,234,260
					<b>5,828,210</b>	<b>13,606,394</b>
					<b>Total Value:</b>	<b>\$19,434,604</b>