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**Desalination and Water Purification Research  
and Development Program Report No. 202**

# **Integrating Management of Sensor Data for a Real Time Decision Making and Response System**

**U.S. Department of the Interior  
Bureau of Reclamation  
Technical Service Center  
Denver, Colorado**

March 2020

REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
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1. REPORT DATE (DD-MM-YYYY) (enter date)		2. REPORT TYPE Final		3. DATES COVERED (From - To) (enter dates of investigation)	
4. TITLE AND SUBTITLE Integrating Management of Sensor Data for a Real Time Decision Making and Response System				5a. CONTRACT NUMBER Agreement No. R15AC00091	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Jeff Neemann, Jay DeCarolis, and Daniel ten Bosch (Black & Veatch) Shane Snyder, Ian Pepper, and Minkyu Park (University of Arizona)  Recipient Project Manager: Justin Mattingly (WateReuse Research Foundation)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) WateReuse Research Foundation 1199 N. Fairfax Street, Suite 410 Alexandria, VA 22314-1483				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Bureau of Reclamation U.S. Department of the Interior Denver Federal Center PO Box 25007, Denver, CO 80225-0007				10. SPONSOR/MONITOR'S ACRONYM(S) Reclamation	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S) DWPR Report No. 202	
12. DISTRIBUTION/AVAILABILITY STATEMENT Available from the National Technical Information Service, Operations Division, 5285 Port Royal Road, Springfield VA 22161					
13. SUPPLEMENTARY NOTES Online at <a href="https://www.usbr.gov/research/dwpr/DWPR_Reports.html">https://www.usbr.gov/research/dwpr/DWPR_Reports.html</a>					
14. ABSTRACT This project developed a framework for a Decision Support System (DSS) including an Excel-based Decision Support Tool (DST) to aid operators and managers of direct potable reuse (DPR) facilities to make appropriate real-time actions based on anomalies and events at critical process control points. The project outcomes summarize the current state of the industry with respect to online sensors applicable to potable reuse; provide information on commercially available software detectors and math models which are applicable to anomaly detection as part of an overall DPR decision support system; propose a framework for an overall DSS applicable to DPR consisting of operational monitoring, data collection, data analysis using software detectors and DST; and provide a functional Excel-based DST for potable reuse facilities which can be configured based on specific facility characteristic and monitoring requirements.					
15. SUBJECT TERMS Keywords: DPR, IPR, potable reuse, sensors, decision support tool, decision support systems, machine learning, artificial intelligence, Bayesian networks, advanced water purification, advanced water treatment, critical Control points, pilot testing.					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	THIS PAGE			Wilson Orvis
U	U	U			19b. TELEPHONE NUMBER (Include area code) (303) 445-2444

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**Prepared for the Bureau of Reclamation Under Agreement  
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*by:*

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Veatch)**

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## **Mission Statements**

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The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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