

WM2015 Conference Panel Report

PANEL SESSION 072: **US DOE Featured Site: Nevada National Security Site (NNSS) - Groundwater Characterization Progress**

Session Co-Chairs: **Sam Marutzky**, *Navarro*
Bill Wilborn, *US DOE, National Nuclear Security Administration Nevada Field Office*

Panel Reporter: **Dona Merritt**, *Navarro*

Panelists:

- **Dr. Irene Farnham**, *Science Advisor, Underground Test Area Activity, Navarro-Intera*
- **Charles E. Russell**, *Associate Research Hydrogeologist, Desert Research Institute*
- **Donna Hruska**, *Chair, Nevada Site Specific Advisory Board*
- **Justin Marble**, *Hydrologist, Office of Soil and Groundwater Remediation, US DOE*
- **Christine Andres**, *Federal Facilities Bureau Chief, State of Nevada Division of Environmental Protection*

A panel was convened at the 2015 Waste Management Symposium which brought together representatives of organizations involved with the Underground Test Area (UGTA) activity, a groundwater characterization program that studies the impacts of 828 underground nuclear tests conducted at the NNSS from 1951 to 1992. The speakers discussed efficiencies and consolidation of groundwater sampling to include simplification of well types; evolution of the Community Environmental Monitoring Program; the Nevada Site Specific Advisory Board view on communicating progress to stakeholders; the application of Advanced Simulation Capability for Environmental Management (ASCEM) transport code; and the State of Nevada's regulatory perspective on approach and progress. A summary of the panel discussion and audience questions are presented below.

Summary of Presentations:

The session was introduced by co-chairs Sam Marutzky and Bill Wilborn who provided a quick overview on the background of the NNSS to include location, current missions, historical significance, need for groundwater characterization, and partner organizations.

Following the overview, **Dr. Irene Farnham** presented an overview of NNSS groundwater sampling to include historical collection methodologies, subsequent sampling/monitoring programs, current UGTA strategy, and the newly-developed sampling plan. She also provided details on the sampling plan objectives, radionuclides monitored and recent results, well identification, characterization analytes, sampling criteria, and reporting levels. Throughout her presentation, Dr. Farnham highlighted that the sampling plan is a collaborative effort by many UGTA participants.

Leveraging on Dr. Farnham's presentation, **Charles Russell** provided more detailed information on the Community Environmental Monitoring Program (CEMP), which involves members of the public collecting samples from stations in their communities. Mr. Russell discussed the evolution of CEMP which includes agencies that historically conducted offsite monitoring of nuclear testing. In addition, Mr. Russell provided results for tritium in groundwater, web address for near real-time results of CEMP air monitoring, responsibilities of community monitors, and recent changes to CEMP.

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Transitioning to a more public perspective, **Donna Hruska**, Chair of the Nevada Site Specific Advisory Board (NSSAB), provided insight on her organization and how it has been involved with UGTA activities. Specifically, Ms. Hruska covered the details of NSSAB recommendations on: the assessment of quality assurance plans; enhancing stakeholder communications (including development of an animation and revisions to a Questions & Answers brochure), the CEMP and integrated sampling plan; additional representatives for UGTA peer review panels; ways to support a Nye County proposal on groundwater drilling, sampling and monitoring; and siting a well on Pahute Mesa. Ms. Hruska also noted the importance and value of technical briefings and tours provided for NSSAB members, and the opportunity for NSSAB members to attend technical meetings to improve their knowledge base for making informed recommendations. She also expressed the importance of attending national advisory board meetings to share knowledge and experiences throughout the Department of Energy complex.

Playing off the complex-wide theme, **Justin Marble** with DOE's Office of Soil and Groundwater Remediation gave a briefing on Advanced Simulation Capability for Environmental Management (ASCEM) application at the NNSS. Mr. Marble indicated that ASCEM, a team effort through the national laboratories, is a beneficial collaborative development that helps the ASCEM program and the NNSS. Presenting a background on ASCEM and the NNSS UGTA activity, Mr. Marble went on to focus on applying ASCEM to the Pahute Mesa area of the NNSS. Details presented include charts, graphics and short animations (drawdown, particle tracking and convolution integral transport, and preliminary test-bed model results) that are based on collected data.

Wrapping up the session, **Christine Andres**, Federal Facilities Bureau Chief with the Nevada Division of Environmental Protection (NDEP), presented an overview on her organization's missions and geographic areas of interest. Central to her discussion was the regulatory authority afforded her agency through the Federal Facility Agreement and Consent Order (FFACO) and the UGTA strategy contained within it. Ms. Andres highlighted that frequent interactions promote progress within UGTA and this contributed to acceptance of the Frenchman Flat Flow & Transport Model in December 2010 – a first for UGTA. She also noted the acceptance of the final model evaluation report (which moves the Frenchman Flat corrective action unit into closure – another UGTA first) and anticipation of the draft closure report due next March which will be another first for UGTA. Ms. Andres further emphasized that completion of all these milestones would not have happened without extensive communications and collaborations.

Synopsis of Audience Question/Response

- *Advanced model simulations v. well drilling to aid regulatory decision-making* – Both are needed for getting the most out of available data to achieve the best value for the financial investment.