



Nevada Site Specific Advisory Board (NSSAB)

Full Board Meeting Valley Electric Association's Valley Conference Center Pahrump, Nevada

4:00 p.m. – January 18, 2023

Members Present: Erik Anderson, Joycelyn Austin-Mabe, Lisa Blandi, John Cole, William DeWitt, William Dolan, Gary Elgort, Anthony Graham (Chair), Mark Hilton (Vice-Chair), Bruce Jabbour, Janice Six, Kevin Trainor, Favil West, Eddie Williams

Members Absent: Dan Peterson

Liaisons Present: Christine Andres (State of Nevada Division of Environmental Protection [NDEP]), Richard Friese (National Park Service [NPS]), John Klenke (Nye County Natural Resources and Federal Facilities Office [NRFFO]), Phil Klevorick (Clark County) Frank Bonesteel, and Patrick Lazenby (Nye County Emergency Management [NCEM]); Delon Winsor (Esmeralda County)

Liaisons Absent: Richard Arnold (Consolidated Group of Tribes and Organizations [CGTO]), Jared Brackenbury (Lincoln County Commission), Vacant (Nye County Commission)

Department of Energy (DOE): **Environmental Management (EM) Nevada Program:** Robert Boehlecke (Deputy Designated Federal Officer [DDFO]), Catherine Hampton, John Myers, Bill Wilborn
National Nuclear Security Administration/Nevada Field Office (NNSA/NFO): John Daniels, Kathryn Gladden

Government Contractors: **Navarro Research and Engineering, Inc. (Navarro):** Marilew Bartling, George DeLullo, Grant Johnson, Kevin Knapp, Glenn Puit, Ari Rosenberg, Barbara Ulmer
Mission Support and Test Services, LLC (MSTS): Reed Poderis

Members of the Public Signed In: John Pawlak and Dina Williamson-Erdag (Pahrump, NV)

Open Meeting

Chair Anthony Graham thanked everyone for their attendance and for the use of the beautiful facility for the meeting. New NSSAB members were welcomed to their first official meeting. He reminded the Board to foster a spirit of collaboration and mutual respect while working on items and that the opinions and positions of each member and liaison are welcomed and valued. Member William DeWitt moved to approve the draft agenda as presented. The motion was seconded and passed unanimously.

Public Comment

There was no public comment.

Liaison Updates

Clark County (*Phil Klevorick*)

Liaison Phil Klevorick noted that he will be attending the Waste Management Symposia (WMS) in Phoenix, AZ from February 27 – March 2, 2023.

NCEM (*Scott Lewis*)

Liaison Patrick Lazenby stated that NCEM will be hosting the Local Emergency Planning Committee meeting on February 2nd and DOE's Low-Level Waste Stakeholders Forum on February 8th. Using DOE's Emergency Preparedness Working Grant funding, NCEM is forming a firefighting foam task force to oversee a stretch of Highway 95 in Nye County.

NRFFO (*John Klenke*)

Liaison John Klenke thanked the NSSAB for hosting its meeting in Pahrump, NV. He shared that these meetings are a great opportunity for Nye County citizens to educate themselves on the ongoing missions and history of the Nevada National Security Site (NNSS) and to voice any concerns.

Liaison Klenke updated on the Nye County Tritium and Sampling Program (TSaMP), an independent program performed by Nye County with the mission of sampling water at locations downgradient of the NNSS. The TSaMP is funded through a DOE grant and is now in its eighth consecutive year. Recently completing the 2022 season, water samples were collected at 17 wells and three springs in the areas of Beatty, Amargosa Valley, and Crystal Valley, NV. These samples are currently being analyzed by a laboratory with the results expected next month. Over the prior six years (2015 to 2021), Liaison Klenke concluded that the results of TSaMP sampling in 70 different locations all resulted in nondetects and under the minimum detection limits for tritium.

NDEP (*Christine Andres*)

Liaison Christine Andres reported that she and her staff will also be attending the WMS and will be a panelist at one of the sessions for the Energy Communities Alliance. She added that NDEP staff also attended DOE's Intergovernmental Meeting last November/December 2022 in New Orleans. NDEP is currently reviewing waste management reports for inspections conducted at the end of calendar year 2022. Liaison Andres concluded that NDEP has issued a 30-day public comment period on the renewal of a groundwater pollution discharge permit for the NNSS E-tunnel that can be accessed [here](#).

NPS (*Richard Friese*)

Liaison Richard Friese commented that much of Death Valley National Park (DVNP) remains closed due to the southern summer flooding that caused an estimated \$150 million of damage to roads, utilities, and facilities. Subsequent winter flooding has delayed the start of the repairs. At this time, it is unclear if the additional precipitation will result in a super bloom, although the Park is anticipating a significant wildflower bloom that will lead to a substantial increase in visitation. Liaison Friese added that Park management is expecting funding relief from the Great American Outdoors Act to replace the First Creek and Cow Creek water systems over the next few years. Updates on closures, reopenings, and the wildflower season are available on the DVNP website.

Esmeralda County Commission (*Delon Winsor*)

Liaison Delon Winsor reported that Centurion Mining Company is slated to start its building program sometime this year. Loneer is developing a lithium and boron project on Rhyolite Ridge.

NNSA/NFO Update (*John Daniels, NNSA/NFO*)

Mr. John Daniels, Federal Public Affairs Officer, welcomed the new NSSAB members. He reported that there have recently been several field visits, including NNSA Headquarters internal assessments personnel, North Atlantic Treaty Organization (NATO) allies, and NNSA deputy field office managers from sites across the country. NNSA tours have not been impacted by weather conditions as most of the stops are at locations in lower elevations. Mr. Daniels announced that the 2023 Nevada High School Science Bowl will be held on February 4, 2023. Winners will compete in the National Science Bowl sponsored by DOE's Office of Science in the spring of 2023.

U.S. DOE Update (*Robert Boehlecke, DOE*)

DDFO Robert Boehlecke welcomed the new members and recognized the good turnout of NSSAB members, liaisons, and the public.

He reported on the following Program updates:

- The EM Nevada Program recently commenced work on perlite removal at the NNSA's Test Cell C (TCC). Additional prep work for demolition at TCC and the Engine Maintenance Assembly and Disassembly (EMAD) facilities, also continued, meeting a stated 2022 goal. The work encompasses characterization and hazard reduction activities for upcoming demolition/closure of the two legacy nuclear facilities. EMAD, along with the TCC, both have ties to historical nuclear propulsion rocket development and testing. This demolition and closure are part of the ongoing focus of the Program's current Industrial Sites mission.
- Regarding the Underground Test Area (UGTA) Activity, NSSAB Vice-Chair Mark Hilton previously reported on the external peer review that was conducted in the summer of 2022 that included presentations and field visits for the independent panel. The resulting Peer Review Panel Report was delivered to the DOE at the end of September 2022. DOE is preparing responses to Peer Review comments, and those comments will ultimately be shared with the NDEP before the end of January 2023. NDEP and DOE will then jointly agree on the responses and the path forward.

- Regarding the Radioactive Waste Acceptance Program (RWAP), in July of 2019 there was an issue with one of the generators mischaracterizing some waste that led to a Notice of Alleged Violation and ultimate Settlement Agreement that imposed several corrective actions for the EM Nevada Program. All corrective tasks have been completed and the Program has met all requirements under the Settlement Agreement. This includes revisions to the NNSW Waste Acceptance Criteria (WAC) documentation, the updating of the waste profile form, and the development of training materials for the generators. These are all very positive changes resulting from that corrective action. RWAP continues to conduct facility evaluations at generator sites using the revised NNSWAC that went into effect in January 2023.
- DDFO Boehlecke noted that he also attended the 2022 Intergovernmental Meeting in New Orleans, LA, and proved to be a very beneficial trip. The EM Nevada Program facilitated a Waste Coordination Leadership Group in conjunction with the conference.
- The science, technology, engineering, and mathematics (STEM) grant program recently completed the second year of grant awards. Grant eligibility is open to public, private, and charter schools in the Nevada counties of Clark, Elko, Esmeralda, Lincoln, Nye, and White Pine. More details will be provided at the February NSSAB meeting.
- On October 2, 2022, many NSSAB members attended the very successful Groundwater Open House event in Amargosa Valley, NV. Dozens attended and had the opportunity to interact one-on-one with scientists to learn more about EM mission progress, the latest modeling, and ongoing EM work to ensure the safety and security of the communities near the NNSW. Two Navarro staffers also visited schools in Amargosa Valley, NV to hold a discussion with students about groundwater.
- Navarro recently carried out some philanthropic endeavors aimed at supporting the Las Vegas Rescue Mission. This included a sock drive and an employee raffle that raised money for the mission.
- EM Nevada Program had the opportunity to host Jack Zimmerman, Director of EM Consolidated Business Center, this month to tour the ongoing work at EMAD and TCC and to discuss the path forward of future work.

Follow-up to Groundwater Open House (Work Plan Item #1) (John Myers, DOE)

During the September 28th NSSAB meeting, John Myers, UGTA Activity Lead, briefed on work plan item #1. The NSSAB was asked to provide a recommendation, from a community perspective, on ways that the EM Nevada Program could enhance or improve communication to the public on groundwater topics on the NNSW. Prior to the meeting, the NSSAB members who attended the Groundwater Open House in Amargosa Valley, NV were encouraged to review their notes to refamiliarize themselves with the topic to come prepared to have meaningful discussion with Chair Graham on recommendations for this work plan item. The NSSAB was encouraged to view the posters from the Groundwater Open House posted around the meeting room.

Mr. Myers thanked everyone that attended the Groundwater Open House and answered any additional questions during the meeting to assist the Board in formulating recommendations.

In response to Board questions, the following clarifications were provided:

- A separate visit to the Amargosa Valley School was conducted to provide a groundwater presentation to over 50 students the week before the Groundwater Open House. Flyers for the Open House were provided to students to take home and engage their parents. The school also included in announcements to the students.
- The Open House was held from 4-6 p.m. in anticipation of attracting parents picking up their students as the school is next to the Amargosa Community Center.
- Flyers regarding the event were available in English and Spanish and distributed to the community. Other advertising included social media for the NNSS and Nye County Sheriff's Office, Amargosa Valley Yard Sale Facebook Page, Twitter, Tonopah Indoor Yard Sale Facebook Page, NNSS press release, and newspaper ads.
- The population of the entire Amargosa Valley is around 1,800 people.
- Attendance at past Open Houses have averaged several dozen people.
- Typical questions asked during the event focus on the following: water resources in general and how it relates to the local communities, migration of water on the NNSS, how groundwater is monitored, current EM activities, etc.
- From a modeling perspective, the 1,000-year timeframe was chosen as the parameter to forecast the migration of any contaminants that would provide a level of confidence in the models. Additional data from continuing activities provide many iterations of input and feedback that addresses changes within the model.
- Feedback forms were available at the welcome table.

Chair Graham led Board discussion on work plan item #1 with potential recommendations provided by members during the meeting on how to enhance or improve communication to the public on NNSS groundwater topics during future Groundwater Open House events:

- Provide career information/opportunities
- Offer additional interactive eye-catching visuals
- Add a video to offer information up front at the location and/or online, such as the groundwater cycle "ant farm" video
- Schedule in conjunction with another community event
- Provide a QR sign-in for feedback, such as attendance, and to link to online resources
- Use Instagram as a form of communication and marketing
- Change name from Open House to a catchier title
- Expand operating hours
- Schedule a future Open House in relation to release of well data
- Put informational content online with the ability to submit questions

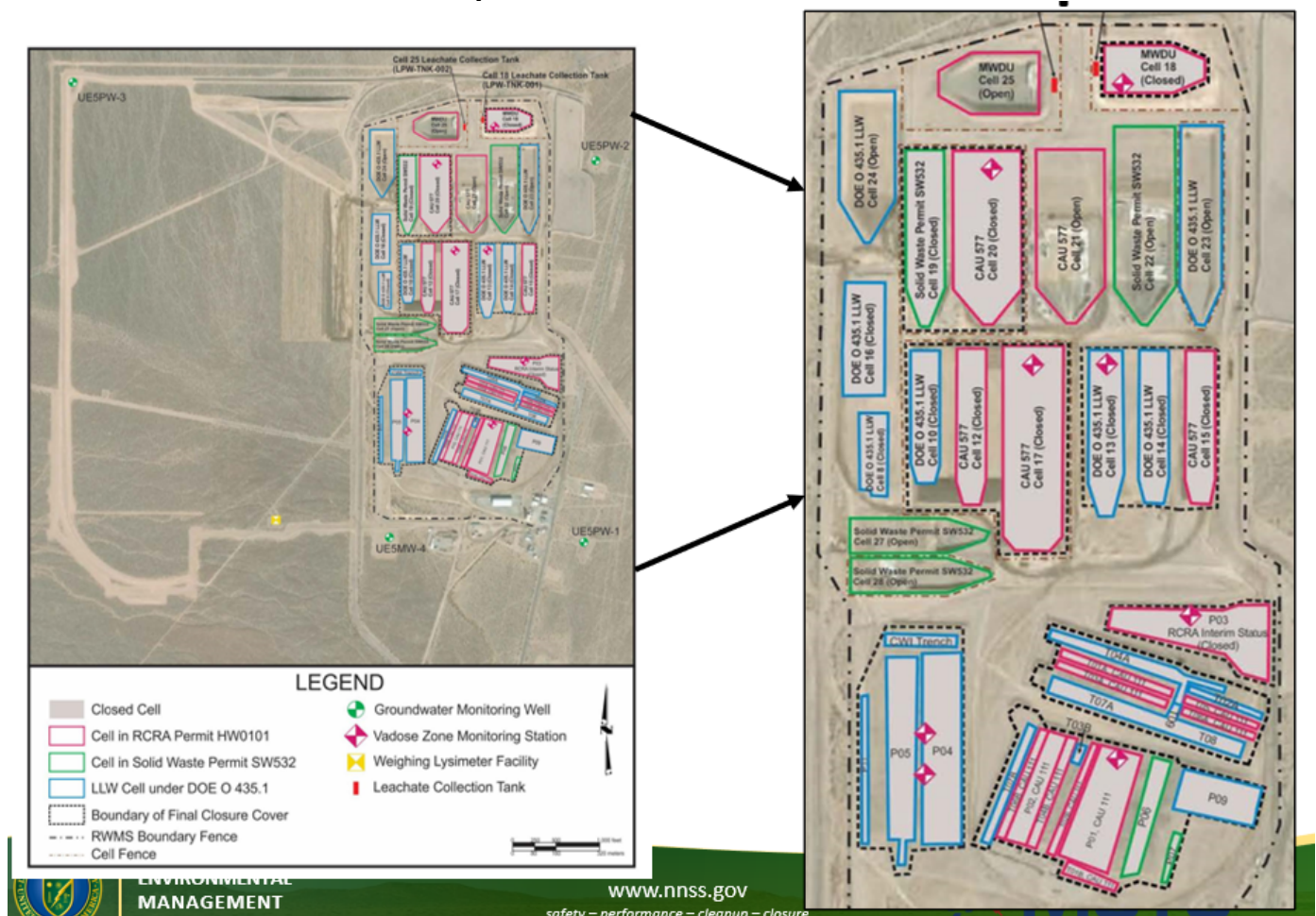
- Provide additional directional signs to guide through the displays
- Provide flyers with a QR code

Member Kevin Trainor made a motion that the potential recommendation above be approved as a recommendation for work plan item #1. The motion was seconded. The motion passed with a majority.

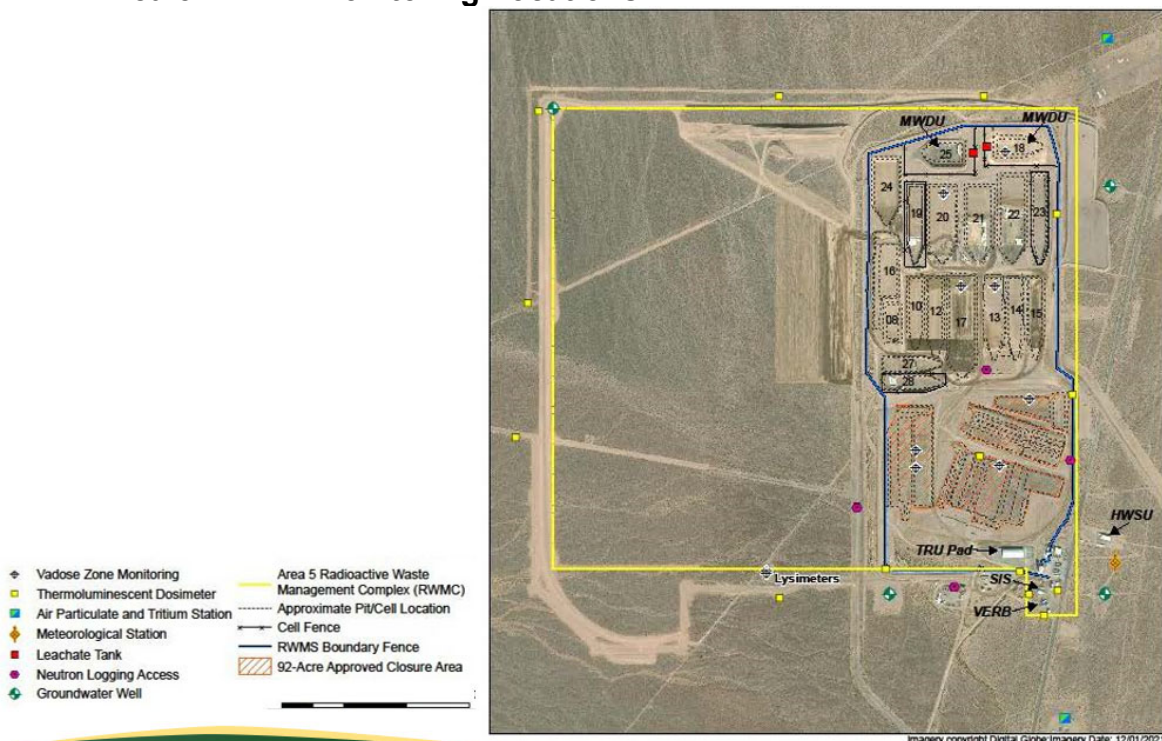
Chair Graham commended the Board for its diligence in providing recommendations for Groundwater Open House - work plan item #1. The NSSAB Office will draft the NSSAB recommendation letter and submit to the EM Nevada Program for its consideration and response.

Waste Disposal Permits and Environmental Monitoring at Area 5 Radioactive Waste Management Complex (RWMC) (Reed Poderis, MSTs)

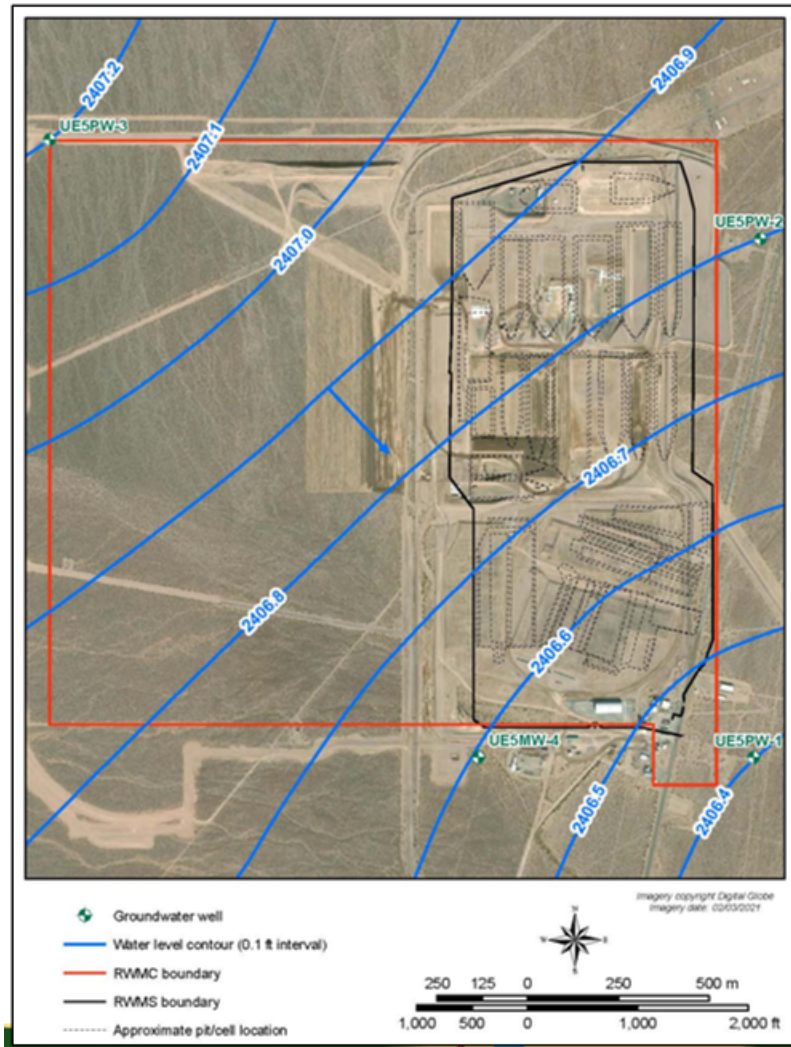
- **Discussion Topics**
 - Active Permits/Compliance Agreements for Area 5 RWMC waste disposal:
 - Resource Conservation and Recovery Act (RCRA) Permit NEV HW0101
 - Class III Solid Waste Disposal Site, Permit SW 532
 - United States Department of Agriculture (USDA) Compliance Agreement NV-101-NNSS-21
- **Area 5 RWMC – Permit Map**



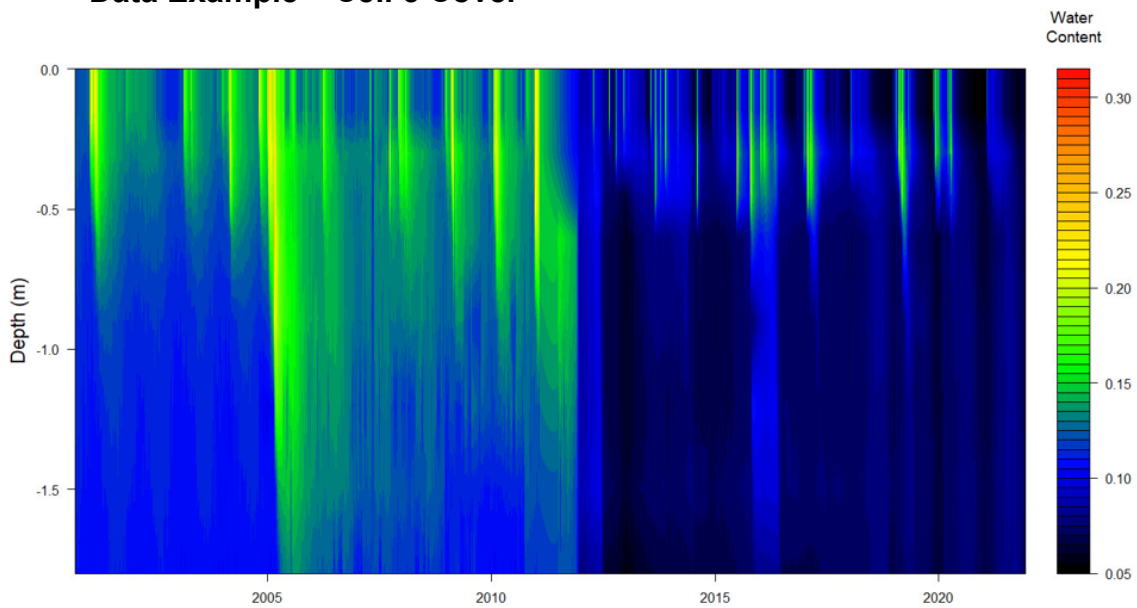
- **RCRA Permit NEV HW0101**
 - Mixed low-level waste (MLLW) storage and disposal [Mixed Waste Storage Unit (MWSU) and Mixed Waste Disposal Unit (MWDU)]
 - Two non-environmental management (EM) managed units also covered in the permit
 - Hazardous Waste Storage Units (HWSU)
 - Explosive Management Unit (EMU) [former Explosive Ordnance Disposal Unit (EODU)]
 - Revised application submitted 1/18/2022
 - NNSWAC implements requirements for waste disposal
 - Monitoring and Reporting Requirements
 - Groundwater sampling/reporting – annual for 2023 (was biannual)
 - Leachate monitoring (Cells 18 and 25)
 - Lined cells with sumps to collect leachate and pump into tanks
 - Quarterly Asbestos Waste Reporting
 - Post closure monitoring of closed cells
 - Cell 18 MWDU
 - Corrective Action Units (CAUs) 111 and 577 at the RWMC, and five others (90, 91, 92, 110, 112)
 - Monitoring Results
 - The groundwater table below the Area 5 RWMC is essentially flat with negligible flow
 - Infiltrated precipitation does not percolate below the plant root zone and local aquifer recharge is negligible
 - Data show that there is no measurable impact to the uppermost aquifer from the Area 5 RWMC
 - No contaminants have been detected in the leachate from Cells 18 and 25 requiring disposal as hazardous waste
- **Area 5 RWMC Monitoring Locations**



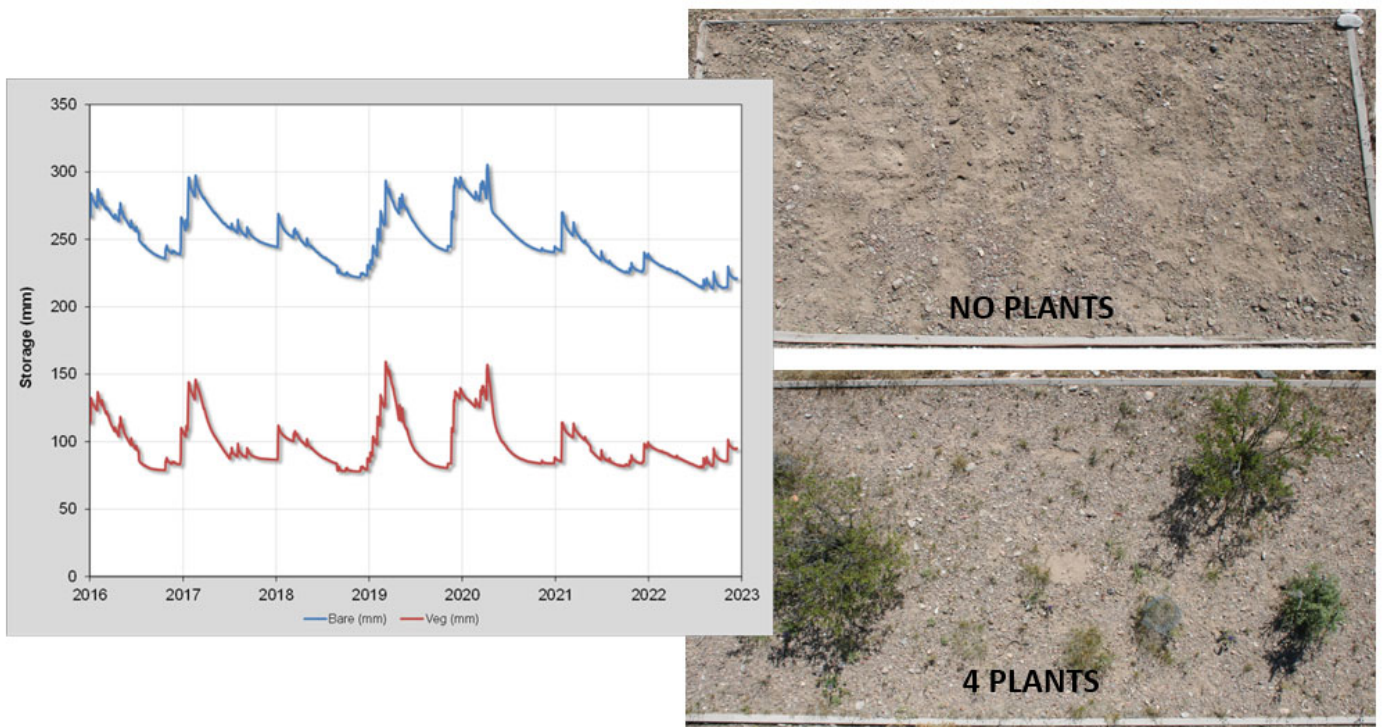
- Area 5 RWMC Groundwater Flow Map



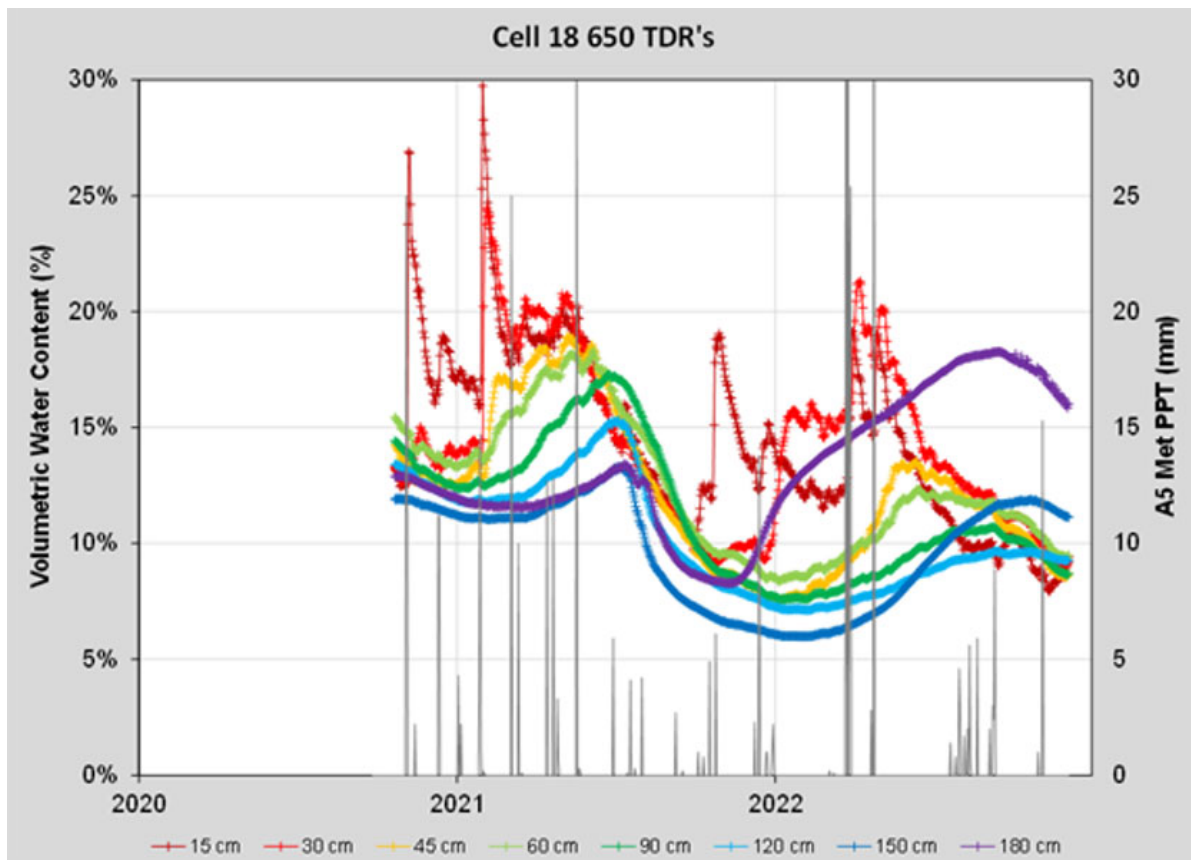
- Data Example – Cell 5 Cover



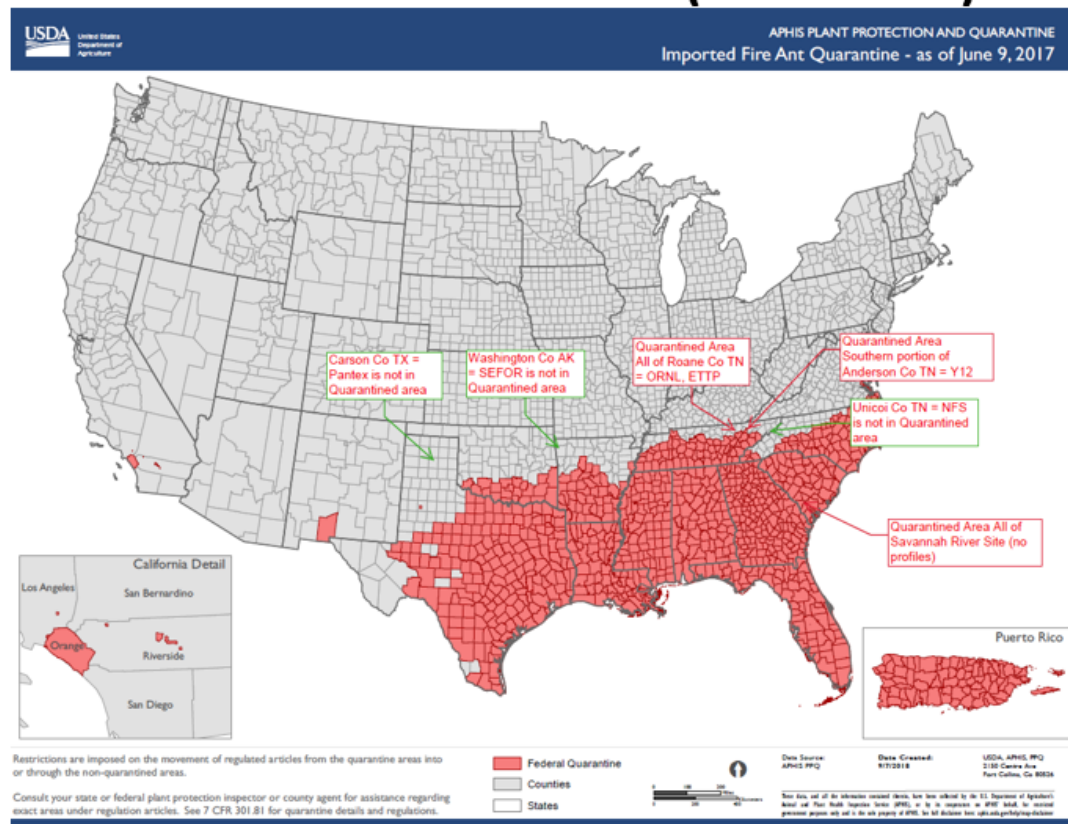
- Data Example – Area 5 Lysimeters



- Data Example – Cell 18 Time Domain Reflectometers (TDRs)



- **HW0101 Major Revisions**
 - Updated flood study for Area 5 RWMC
 - Revised Groundwater Monitoring Plan to add Well 4 and enhance discussion of vadose zone monitoring
 - Plans to expand vadose zone monitoring under way
 - Included a Post-Closure Plan for Cell 18
 - Revised Waste Analysis Plan with input from NDEP to remove use of the NNSSWAC as acceptance basis
 - Updated facility drawings to include new well, new water/power, and berm/channel
 - Reduced area of MWSU in the TRU Pad Cover Building to only occupy a portion of the building
 - Incorporated NDEP comments from June 2020 formal submittal
- **Class III Solid Waste Disposal Site Permit SW 532**
 - Low-level waste, primarily with asbestos
 - Non-radioactive, non-hazardous Classified Waste
 - Revised application submitted 1/18/2022
 - Monitoring and Reporting Requirements
 - Post-Closure monitoring of closed cells will begin in 2023
- **USDA Compliance Agreement, NV-101-NNSS-21**
 - Compliance agreement for disposal of soils from fire ant regions signed in March 2019
 - Several active waste profiles will fall under the agreement
 - Received first shipments in April 2019
 - No reporting required
 - Annual briefing for RWMC staff required
 - Designated cells are required to be posted



In response to Board questions, the following clarifications were provided:

- Area 5 RWMC started accepting onsite waste in 1961.
- There have been no contaminants found in the leachate collected from the MLLW Cells. Leachate samples from Cell 18 were analyzed three-four times a year. Now that Cell 18 has been closed with an engineered cover, there has been no leachate for the past two years. The open MLLW Cell 25 has minimal leachate due to dry conditions.
- If contamination would be discovered in the leachate, NDEP would be notified, and the waste treated as hazardous and disposed properly.
- Cells 18 and 25 are designed for the disposal of MLLW and regulated under the RCRA permit that requires leachate collection.
- Leachate is collected in a sealed double-walled tank with a secondary containment pad in case of a rupture. Leachate is sampled periodically. As there has been no contamination detected in the leachate, the water has been used for dust control on the same cell it was collected.
- The amount of waste that contains fire ants is relatively small, and the waste containers used are secure to prevent any spread. USDA must approve these shipments and then the waste also requires approval for disposal under the NNSSWAC. This is an agricultural concern to eliminate the spread of fire ants, as there is not a risk to the waste.
- Since it is very effective in the dry environment of the NNSS, soil is used for a closure cover on waste cells. Soil covers are straightforward to build and maintain and efficient to prevent precipitation reaching the waste once revegetated. As an added safety check, the NNSS has sensors at the bottom of the waste cells that has not detected any water at that depth.
- The Tribal Revegetation Committee, along with Navarro, maintained test plots using various plant mixes, mulching, and irrigation regimes. One of the lessons learned is that planting in February is optimal for growth in the environment at the Area 5 RWMC. The germination period is such that the seeds sprout, but the weeds do not have time to react and grow. Several other lessons learned are use of seed mix is effective, mulching supports growth but not critical, and using topsoil from undisturbed areas around the area is not as effective as once thought as it contains an abundance of weed seeds.
- Plants that have roots that go down several inches, like rice grasses and small shrubs, are preferred for the closure covers. Plants with deep root systems, like creosote bushes and trees, are prohibited by regulations and removed from the cover.
- Area 5 RWMC is conducive to disposal of waste due the low precipitation of about five inches a year, the sun and heat create evaporation, and the sandy soil does not hold water.
- Liquid waste is not disposed at the Area 5 RWMC as it is prohibited.
- The number of acres irrigated varies from cover to cover at the Area 5 RWMC. A wheel line is used for irrigation rather than sprinkler systems that do not tolerate the sun well. Plants are irrigated for a year or two so as not to become dependent on the water and adapt to the climate.

The Board thanked Mr. Poderis for his presentation and for answering questions.

Lessons Learned from RWAP Annual Report (Marilew Bartling, Navarro)

- **RWAP 2021 Annual Report – Lessons Learned**
 - The Report provided a synopsis of RWAP activities and included opportunities for improvement
 - While the primary focus was RWAP and NNSS generator activities, the lessons learned from the wider DOE Complex were included
 - Sources were the DOE Occurrence Reporting and Processing System (ORPS) and DOE Operating Experience (OPEX) Program
 - These two sources were reviewed for information pertaining to waste operations, waste management, and transportation
 - Lessons learned, best practices, and innovative ideas were extracted and placed in a table format within the RWAP 2021 Annual Report
 - Feedback in July 2022 from the NSSAB included a request for more detail regarding the entries describing the ORPS and OPEX issues
 - As a result, to increase clarity in the 2022 Report, entries on packaging and transportation were broken down into four subcategories:
 - Transportation of waste using motor vehicles
 - Violation of Hazardous Materials Regulations
 - Unauthorized deviation from a designated route
 - Issues with packaging
 - The table in the 2022 Report will also include clarifying language on items identified for sharing with the generators
 - As examples, two items were identified for sharing with the NNSS Waste Certification Officials to enhance lessons learned and briefed tonight to demonstrate to the NSSAB the types of information identified
 - Neither of the lessons learned to be discussed involved waste destined for the NNSS
 - RWAP determined these issues warranted discussion with the NNSS Waste generator community to help others learn from issues across the DOE Complex
 - Items shared with the generators were:
 - A generator allowed improper modifications to drum transfer bags used in waste containers. The transfer bags were improperly modified by the contractor to use in waste drums. Some of these bags had seams that failed and, as a result, personnel conducted unauthorized modifications so they could be used.
 - A shipment was identified as non-radioactive by the generator, but review by the shipment receiving department determined it was radioactive. A calculation was erroneously attached to the shipment that was not associated with the shipped packages.
- **Key Lessons Learned from the 2021 RWAP Annual Report**
 - Primarily focus and discuss packaging and transportation and management concerns and issues with Working Groups (WGs) as noted from the ORPS data trend
 - Evaluate and use annual report correlations and trends to enhance the revised NNSS Waste Acceptance Criteria and RWAP facility evaluation checklists
 - Continue generating, revising, and providing enhanced profile, verification, and facility evaluation tools in working with WGs and RWAP's clients – DOE EM Nevada Program and NDEP

- **RWAP 2021 Annual Report – Key Message**
 - RWAP will continue to work to share lessons learned and ensure the RWAP Annual Report is a self-critical assessment to drive continuous improvement

In response to Board questions, the following clarifications were provided:

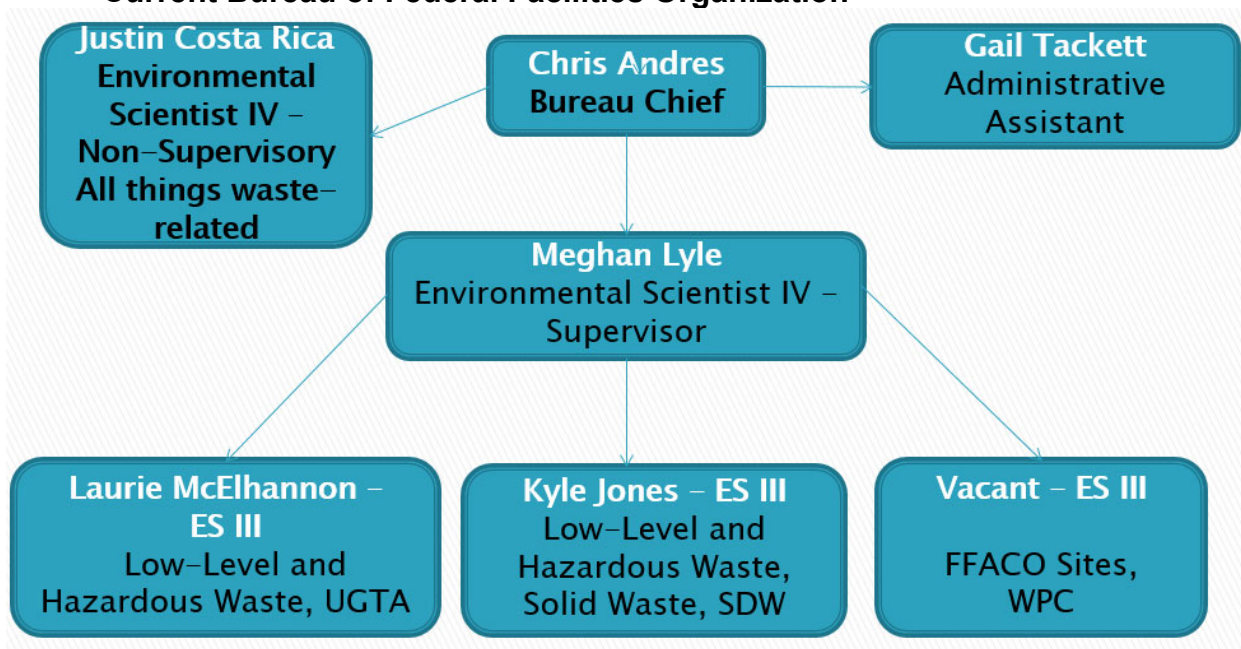
- Based on the NSSAB recommendation from last September, a non-technical person reviewed the RWAP Annual Report and provided feedback to produce improved future reports.
- For shipments released from a DOE site, every package has calculations associated with the samples taken or meter measurements. These calculations carry through to shipment of the waste and included on the shipping manifest, so the receiving facility is aware of the activity present, the radionuclides, and the total activity. In the lessons learned example, there was a miscue between the data and the packaging.
- When errors are discovered for onsite shipments, DOE investigates and holds generators accountable through their fee award. If the error is discovered offsite, the U.S. Department of Transportation (DOT) has the authority to impose fines on the generator.
- Personnel who handle radioactive material are required to have DOT training commensurate with their responsibilities, including those who load the truck to the person completing the paperwork. In the lessons learned example, the issues were attributed to the control of the paperwork within the generator’s systems and having the proper checks at the right places.
- Since Area 5 RWMC does not accept biohazardous waste, RWAP did not recorded any lessons learned in response to the pandemic regarding the disposal of waste at the NNSS.

The Board thanked Ms. Bartling for her presentation and for answering questions.

Roles and Responsibilities of the State of Nevada Division of Environmental Protection at Department of Energy Sites *(Christine Andres, NDEP)*

- **Questions that I will answer tonight?**
 - Who we are
 - What we do
 - What we do not do
 - Why we do what we do
 - When we do it
 - How we do it
 - Where we do it
- **Nevada Department of Conservation and Natural Resources (DCNR) Divisions and Programs:**
 - Conservation Districts Program
 - Conserve Nevada Program
 - [Environmental Protection](#)
 - Forestry
 - Historic Preservation Office (SHPO)
 - Off-Highway Vehicles Program
 - Outdoor Recreation

- Sagebrush Ecosystem Program
- State Lands
- State Parks
- [Water Resources](#)
- Natural Heritage
- **NDEP Bureaus:**
 - Administrative Services
 - Air Pollution Control
 - Air Quality Planning
 - Corrective Actions
 - [Federal Facilities](#)
 - Industrial Sites Cleanup
 - Mining Regulation and Reclamation
 - Safe Drinking Water
 - Sustainable Materials Management
 - Water Pollution Control
 - Water Quality Planning
- **Current Bureau of Federal Facilities Organization**

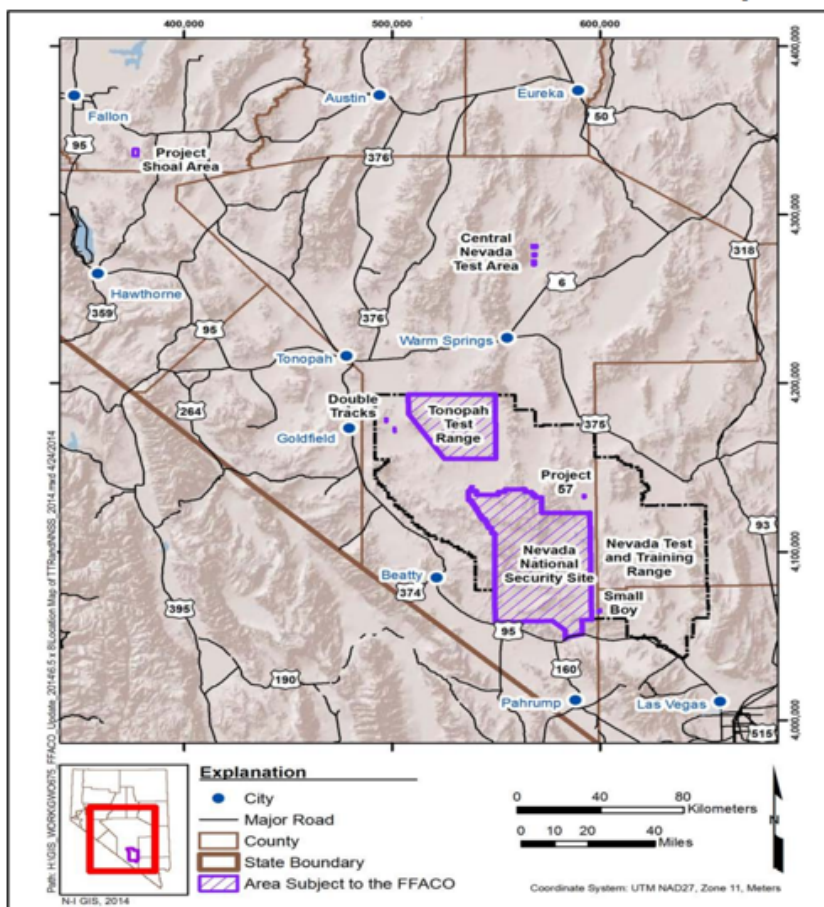


The Bureau of Federal Facilities is housed entirely in the Division of Environmental Protection's Las Vegas Office. All individuals may be reach at 702-668-3900.

- **Division of Environmental Protection's Mission**
 - "To preserve and enhance the environment of the state in order to protect public health, sustain healthy ecosystems and contribute to a vibrant economy."
- **Bureau of Federal Facilities (BFF)**
 - The NDEP's BFF provides programmatic and regulatory oversight of the DOE Environmental Restoration, Environmental Health and Safety, and Waste Management programs at the NNSS, Tonopah Test Range (TTR), Central Nevada Test Area (CNTA) and Project Shoal Area
- **The NNSS, TTR, CNTA and Project Shoal Area – Nuclear Weapons Testing Sites**

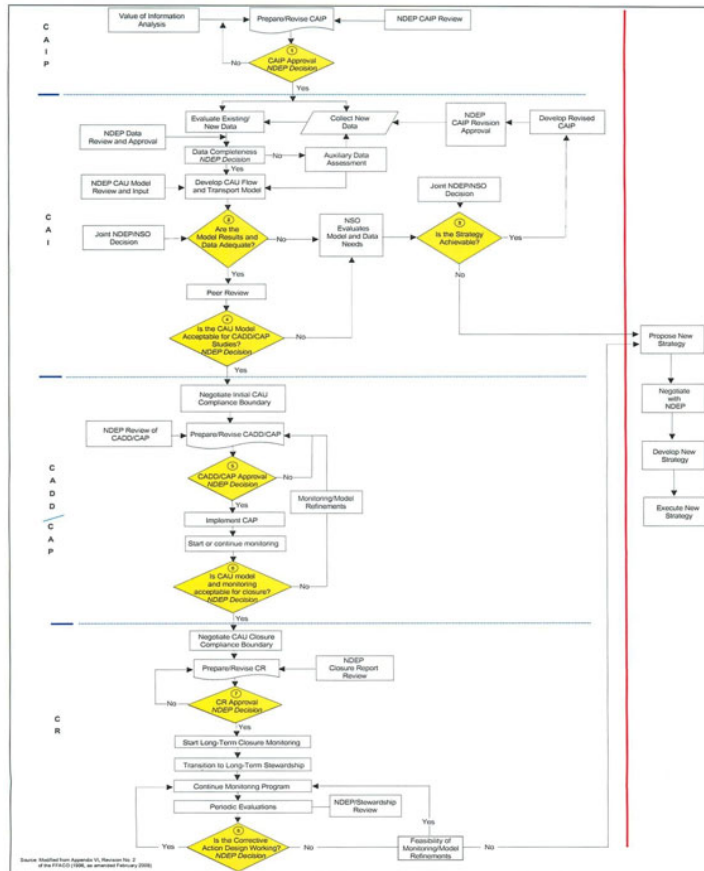
- **Yucca Mountain – the proposed deep geological repository storage facility for spent nuclear fuel and other high-level radioactive waste**
- **BFF Applicable Agreements, Laws, and Regulations**
 - The Federal Facility Agreement and Consent Order (FFACO) – 1996
 - RCRA
 - Federal Facility Compliance Act of 1992
 - Agreement in Principle
 - Nevada Administrative Code, Chapter 445A – Water Controls
- **The FFACO**
 - A three-party compliance agreement for DOE and U.S. Department of Defense (DOD) sites within Nevada – 24 months of negotiations – effective May 1996
 - The NDEP has regulatory oversight of cleanup operations at federal facilities in Nevada
 - Specifically covers the following sites:
 - The NNSS
 - The TTR
 - The Nevada Test and Training Range
 - The CNTA
 - The Project Shoal Area
- **Area Subject to the FFACO**

FFACO, Appendix I
Section: 1.0
Revision: 5
Date: June 2014
Page 2 of 12



- Ensures the government entities work together in a cost-effective manner
- The DOE Offices of EM and Legacy Management (LM) are responsible for remediating the sites and maintaining the sites
- Defines the regulations the State of Nevada will use to direct and enforce corrective action activities
- Provides public involvement opportunities
- Establishes a corrective action strategy for cleanup activities
- Has six appendices:
 - I. Facility descriptions
 - II. Corrective Action Sites / Units
 - III. Corrective Action Investigations
 - IV. Closed Corrective Action Units
 - V. Public Involvement Plan
 - VI. Corrective Action Strategy
- **Corrective Action Strategy**
 - Corrective Action ranges from no action to clean closure
 - Corrective action sites grouped into units having common contaminants, geology, location, or other factors
 - These groups, called Corrective Action Units (CAUs), are prioritized based on:
 - Potential risk to workers and public
 - Available technology
 - Future land use
 - Agency and stakeholder concerns
 - Other criteria
 - Under the FFACO, NNSA/NFO and DOD propose and discuss priorities with the state
 - State makes recommendations
 - Recommendations presented for review by the public and NSSAB for NNSS programs
 - Following public's input, the State, NNSA/NFO and DOD develop a final prioritization of units for investigation and corrective action
- **Three types of Activities Under DOE's Environmental Restoration Project that the EM Nevada Program handles and NDEP oversees and regulates:**
 - Industrial Sites
 - Soils Sites
 - Underground Test Area Sites
- **To ensure compliance with the FFACO, a specific closure approach is chosen to investigate and remediate an Industrial, Soils or UGTA Site**
 - The three methods for achieving closure are:
 1. Housekeeping
 - Corrective Action Investigation Plan (CAIP)
 - Corrective Action Decision Document (CADD)
 - Corrective Action Plan (CAP)
 - Closure Report (CR)
 - Notice of Completion
 2. Complex Closure
 3. SAFER Plan – Streamlined Approach for Environmental Restoration process

- Section 3, Appendix VI of the FFACO Process Flow Diagram for UGTA CAUs



- UGTA Interim Documents**

- Hydrostratigraphic Model (Geology)
- Source Term
- Hydrologic Data Documentation package
- Transport Data Documentation Package
- Modeling Approach Strategy
- Groundwater Model
- Transport Model
- NDEP's oversight and input at every step along the way
- Iterative process

- Nevada Off-Sites**

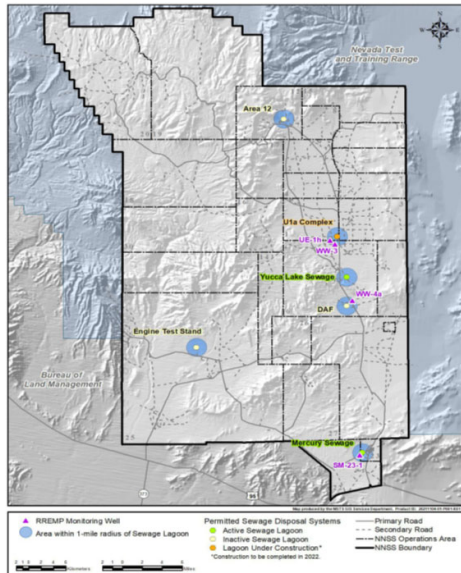
- Underground nuclear testing activities conducted in five states for various purposes
- DOE Office of LM assumed responsibilities for all activities associated with underground testing and long-term surveillance and maintenance at the Off-Sites on October 1, 2006
- The two Nevada Off-Sites continue to fall under the regulatory authority of the FFACO administered by the NDEP

- TTR**

- Industrial and Soil Sites
- DOE Office of LM assumed responsibility for all long-term monitoring activities on the TTR on September 30, 2020
- The TTR continues to fall under the regulatory authority of the FFACO administered by the NDEP

- **Agreement in Principle (AIP) - 1999**
 - Parties to the Agreement:
 - Office of the Governor – Agency Integrator
 - DCNR through NDEP, BFF
 - Department of Public Safety through Division of Emergency Management
 - EM Nevada Program
 - NNSA/NFO
- **Regulatory Considerations**
 - At DOE facilities, the BFF implements existing State regulations for:
 - Storage, treatment, and disposal of waste
 - Underground storage tanks
 - Water Pollution Control
 - Safe Drinking Water
 - Corrective actions
 - BFF implements authorities of other bureaus in NDEP. Consistency of regulatory decisions is critical to maintain credibility.
 - The original intent was to support “non-regulatory” oversight and environmental monitoring. DOE’s intent was to gain public confidence through enhanced State oversight.
 - Intent is to work cooperatively to assure citizens of Nevada that the public’s health and safety, as well as the environment, are protected
 - Nevada’s oversight will encompass only environmental cleanup activities that fall outside those encompassed by the scope of the FFAO
 - Five Attachments describe, in part, each of Nevada’s Agencies’ commitments and activities in carrying out the AIP
- **Water Pollution Control – Nevada Administrative Code Chapter 445A – Water Controls**
 - General Provisions 445A.070 – 445A.117
 - Action Levels for Contaminated Sites 445A.226 – 445A.22755
 - Discharge Permits 445A.228 – 445.263
 - General Permits 445A.266 – 445A.272
 - Corrective Action 445A.273 – 445A.2739
 - Use of Treated Effluent 445A.274 – 445A.280
 - Treatment Works 445A.283 – 445A.292
 - Notification of Release of Hazardous Substance 445A.345 – 445A.348
 - Permits for Facilities 445A.390 – 445A.240
 - Operation and Design of Facilities 445A.424 – 445A.447

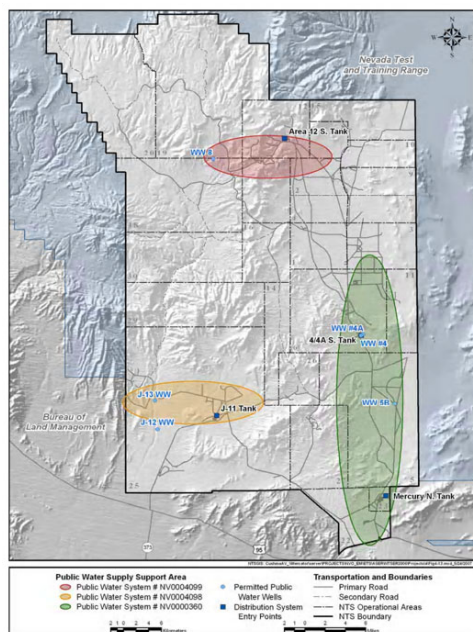
- **Map of Wastewater Ponds at the NNSS**



- **Safe Drinking Water Public Water Systems NAC 445A – Water Controls**

- Water Quality 445A.450 – 445A.492
- Treatment of Water: Generally 445A.495 – 445A.540
- Treatment of Water: Groundwater 445A.54022 – 445A.5405
- Certification of Laboratories to Analyze Drinking Water 445A.542 – 445A.54296
- Operation of Community Water System or Non-transient Water System 445A.591 – 445A.5926
- Permits to Operate Privately Owned Systems 445A.595 – 445A.614
- Certification of Operators 445A.617 – 445A.652
- Design, Construction, Operation and Maintenance 445A.65505 – 445A.6731
- Environmental Review of Proposed Water Projects 445A.6758 – 445A.67611
- Requirements for Water Projects 445A.67624 – 445A.67644

- **Water Supply Wells and Drinking Water Systems on the NNSS**



- **Solid Waste Disposal/Resource Conservation and Recovery and Major Amendments**
 - The Solid Waste Disposal Act – passed in 1965 as Title II of the Clean Air Act of 1965
 - The Resource Recovery Act of 1970
 - RCRA - 1976
 - Subtitle C
 - Hazardous and Solid Waste Amendments of 1984
 - Federal Facility Compliance Act of 1992
- **MLLW Disposal**
 - Supports DOE Complex-wide cleanup
 - LLW and hazardous waste
 - Management separately from LLW
 - Governed by RCRA, which Nevada authorized to regulate
 - Disposal Facility
 - “Old’ mixed waste disposal cell
 - Permitted by NDEP under RCRA Interim Status
 - Fully closed in January 2012
 - Fully lined Cell 18 permitted by NDEP
 - Fully RCRA compliant
 - Opened in January 2011 – closed in August 2021
 - Fully lined Cell 25 permitted by NDEP
 - Fully RCRA compliant
 - Opened in 2019
- **LLW Disposal**
 - Supports DOE Complex-wide cleanup
 - Compliance with Orders and Directives
 - DOE Order 435.1
 - AIP
 - Stakeholder commitments
 - Disposal in several cells in Area 5 RWMC
- **MLLW and LLW Acceptance Program**
 - RWAP and approval process by the Waste Acceptance Review Panel (WARP)
 - Reviews generator programs and procedures
 - Reviews all specific waste stream profiles
 - Conducts site audits/waste generator evaluations
 - Waste verification
 - At NNSS
 - Waste Acceptance Criteria
 - Inspections
 - Paperwork verification
 - Monitoring
 - Regulatory compliance and enforcement
- **LLW and MLLW**
 - Performance Assessment on Area 5 RWMC
 - Extensive complex modeling
 - Gauges potential risks – conservative, short and long-term
 - Environmental Monitoring
 - Air, groundwater, and soil
 - Long-term groundwater monitoring (UGTA)
 - No indication of any offsite migration

- Closure Program
 - Earthen cap research and development
 - Focus on erosion control
- **RCRA Part B Permit for Four Units at the NNSS**
 - A Hazardous Waste Storage Unit
 - An Explosive Ordnance Disposal Unit
 - MLLW Cells
 - A MLLW Storage Facility
- **RCRA Part D Permits for Solid Waste in the Following Locations on the NNSS:**
 - One near Mercury in Area 23
 - One near CP Basin in Area 6
 - One near the northern border of Area 9
 - One in Area 5 in the RWMC
- **Transportation**
 - The NDEP does not regulate transportation to and from the NNSS. The Nevada DOT Statutes and Regulations would apply.

In response to Board questions, the following clarifications were provided:

- NDEP responds to public comments received, and the number of comments vary.
- E-Tunnel is in the northcentral region of the NNSS in Area 12. Due to the geology and the rock structure around this tunnel, the portal closing the entrance is seeping water. Subsequent investigations by experts determined that there are no permanent solutions. There are discharge ponds collecting the water that is contained, monitored, sampled, and permitted by NDEP. The discharge contains tritium that decays relatively quickly as it has a half-life of 12.5 years. Contaminated groundwater from E-Tunnel is not expected to reach public water supplies due to the immobility of some contaminants, the extremely slow movement of others, and the natural decay process.

The Board thanked Liaison Andres for her presentation and for answering questions.

Other NSSAB Business *(Anthony Graham, Chair)*

EM Site-Specific Advisory Board (SSAB) National Chairs Meeting

Chair Graham shared that he would not be available to attend the EM SSAB National Chairs meeting in Washington, DC in March 2023, as he will be defending his dissertation during that time. This provides an opportunity for another member of the Board to attend, and Chair Graham asked if there were any members that were interested. Members Eddie Williams and Lisa Blandi expressed interest. A ballot vote was held, and Member Williams was chosen to accompany Vice-Chair Hilton to the EM SSAB National Chairs Meeting. Member Blandi will be an alternate should Member Williams be unable to attend.

Vice-Chair Hilton will be presenting the round robin to EM HQ Senior Management during this meeting. The round robin highlights key topics of importance to the NSSAB. Chair Graham asked that members start thinking about potential topics for the round robin and be prepared to discuss during the February NSSAB meeting.

Meeting Wrap-Up and Adjournment

Upcoming calendar of events:

- LLW Stakeholders Forum – Pahrump, NV – February 8, 2023 (Members DeWitt and Blandi to attend)
- NSSAB Intergovernmental Liaisons meeting – Molasky Corporate Center, Las Vegas, NV at 3 p.m. (Chair Graham and Vice-Chair Hilton to attend) – February 15, 2023
- NSSAB Full Board meeting – Molasky Corporate Center, Las Vegas, NV at 4 p.m. – February 15, 2023
- Waste Management Symposia – Phoenix, AZ – February 27 – March 2, 2023 (Member Elgort to attend)
- EM SSAB National Chairs Meeting – Washington, DC (Vice-Chair Hilton and Member Williams to attend) – March 20 – 24, 2023
- NSSAB Tour of EMAD and TCC on the NNSS – May 17, 2023

Any questions on the calendar of events, please contact the NSSAB Office at 702-523-0894.

Member DeWitt made a motion to adjourn the meeting. The motion was seconded and passed with a majority. The meeting was adjourned at 8:35 p.m.