

WIPP Update

Water and Natural Resources Committee
September 5-6, 2019

U.S. Department of Energy

New CBFO Acting Manager

- Todd Shrader is now the Principal Deputy Assistant Secretary for Environmental Management (EM-2)
- Kirk Lachman, Acting Manager of CBFO
- Previously served as DOE/EM Deputy Chief for Field Operations, (EM-3 deputy) from 2017-2018
- Over 28 years of DOE experience
- Underground design, safety, and operations experience since 1991
- WIPP is 7th underground facility in his career
- Previous DOE experience at Nevada National Security Site (NNSS) and Yucca Mountain Project
- Waste acceptance auditor experience



- 1.3 million safe hours worked since last lost time injury
- Increased focus on heat stress & construction safety
- Preparing for our annual emergency preparedness exercise scheduled for September 11, 2019
- Kicked off a Mine Safety Advisory Team with academia and mine Subject Matter Experts (SME)



Recent Accomplishments

- Averaging 8 - 10 shipments/week
 - Total Shipments 12,558
 - FY19 - 281
 - Since restart - 661 shipments
- 406 Columns of waste emplaced - Target 515
- Awarded Utility Shaft contract
- Received our first battery-electric vehicle

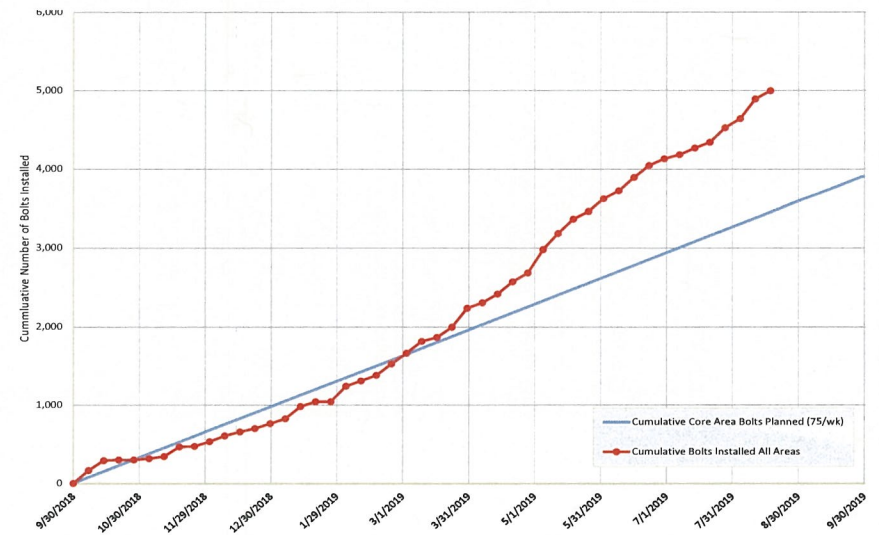


Recent Accomplishments

- Mined over 58,000 tons of salt from Panel 8
- +5,000 bolts installed in FY19
- Construction of south end closures complete
- Over 12,500 shipments received
- Over 15 million loaded miles without a major incident



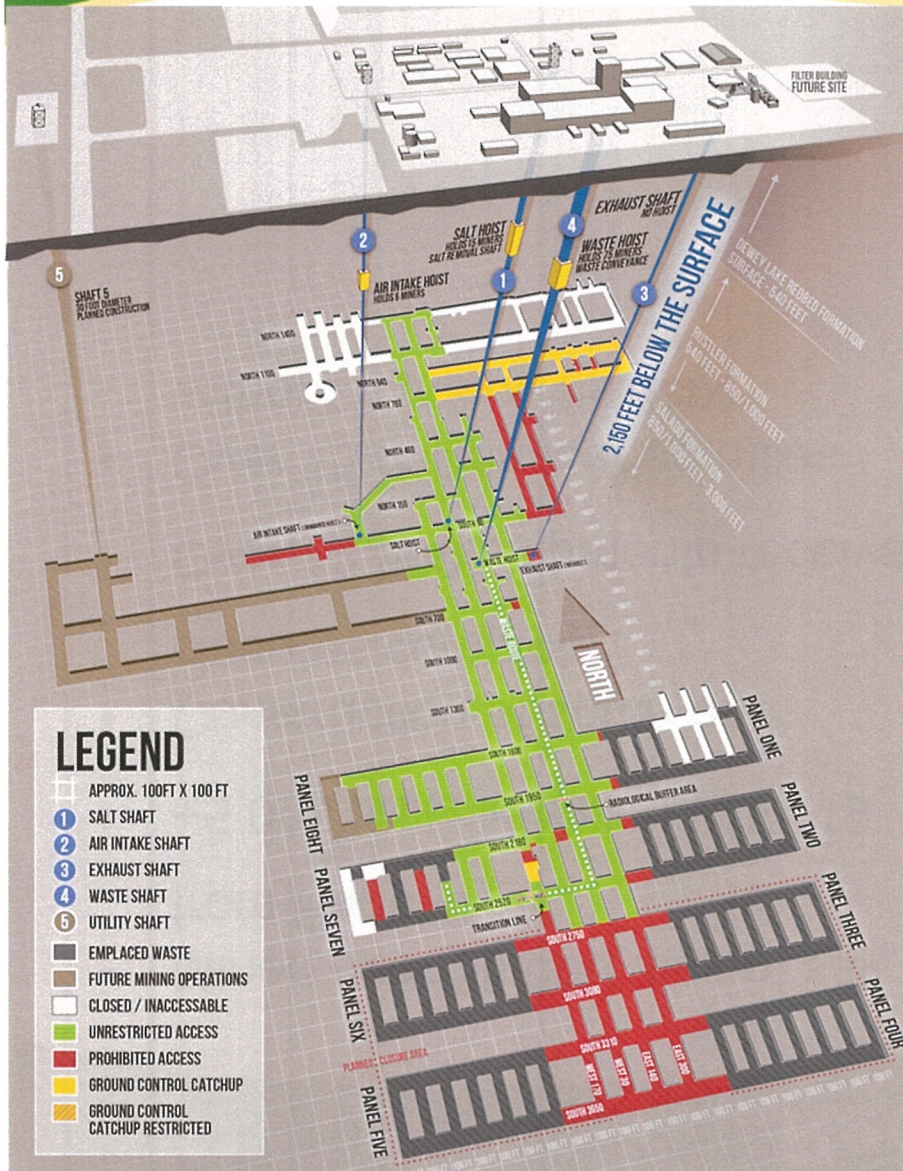
Bolting Production Metric



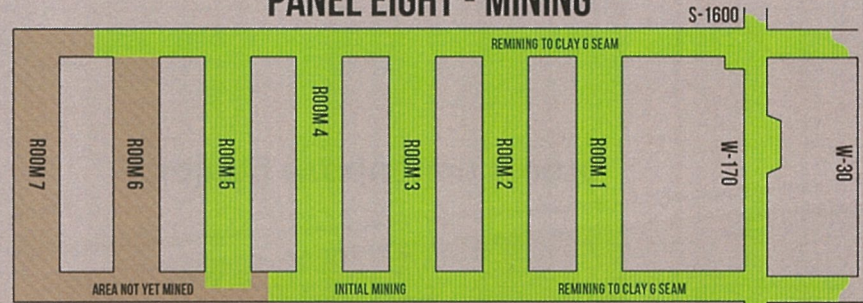
Site Overview

WASTE ISOLATION PILOT PLANT

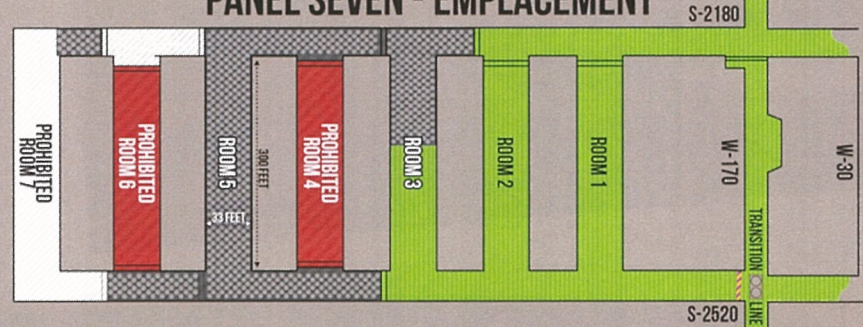
SERVING OUR NATION FOR FUTURE GENERATIONS. SAFELY DISPOSING THE NATION'S TRANSURANIC WASTE



ENLARGEMENT OF PANEL EIGHT - MINING



ENLARGEMENT OF PANEL SEVEN - EMPLACEMENT



UPDATED: AUGUST 12, 2019

- **Safety Significant Confinement Ventilation System (SSCVS)**
 - SSCVS Fabrication Assembly Building foundation slab has been poured
 - Subcontractor is making preparations for steel erection
 - First filter housing has successfully passed formal housing and filter banks testing
 - Two diesel generators manufactured and delivered to New Mexico
 - De-duster components fabricated and tested in Germany, sent to Grand Junction CO for full scale testing
 - Exhaust Fans are being fabricated in Pulaski, Tennessee



- **Utility Shaft**

- Installing utility duct bank from the site to the general shaft area
- Final grading of the 22 acre section required for the Shaft and Drifts contractor has been completed

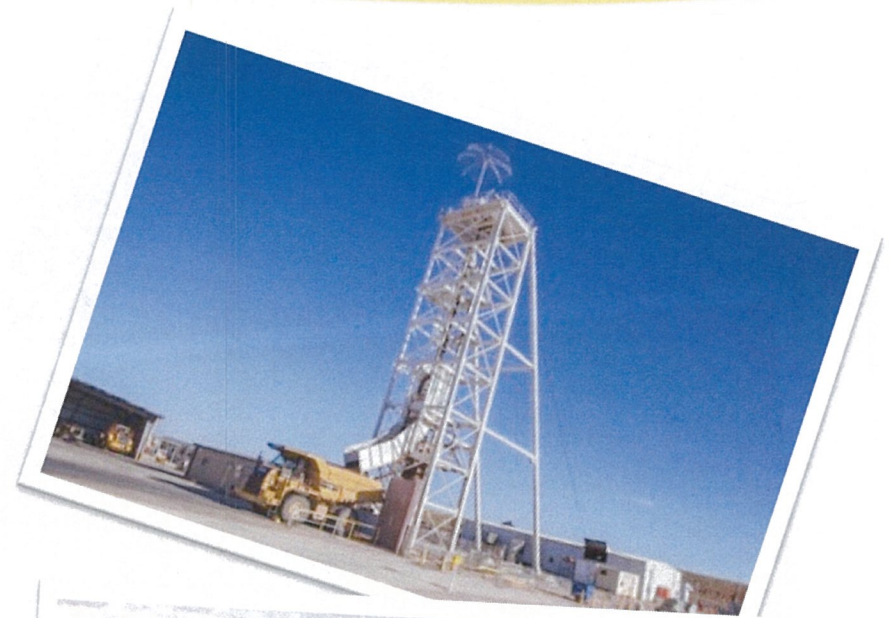
- **North Access Road Bypass**

- Cut and fill has been completed with about 80% of the road now covered in the geotextile material and the first course of stone
- Cattle crossings have been installed and the wing walls and concrete access and egress slabs are being formed
- City of Carlsbad has installed the water line valves and thrust blocks, which ensure the integrity of the City's water line and their agreement with DOE for providing an uninterrupted water supply



General Plant Projects

- Replacement air compressors
- Salt hoist repair
- Underground substation replacement
- Substations 1 & 3 Replacement
- Above Ground Airline Replacement
- WIPP Site Fire Loops Phases 1-4
- Central Monitoring Room Upgrades

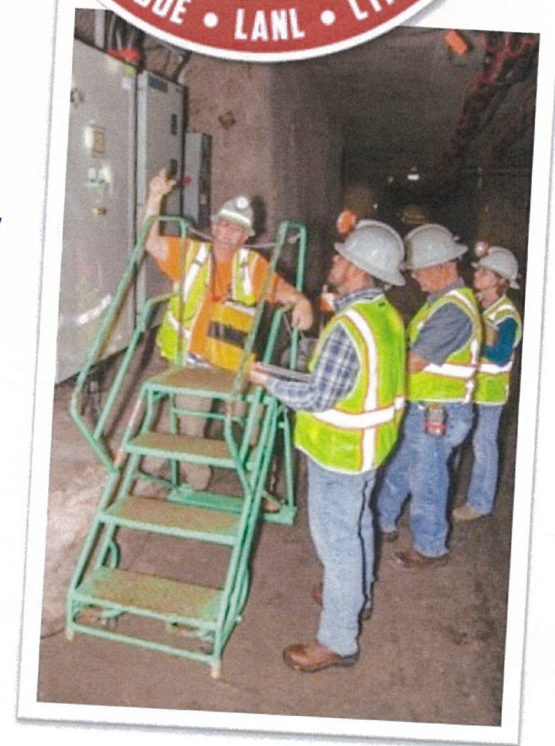
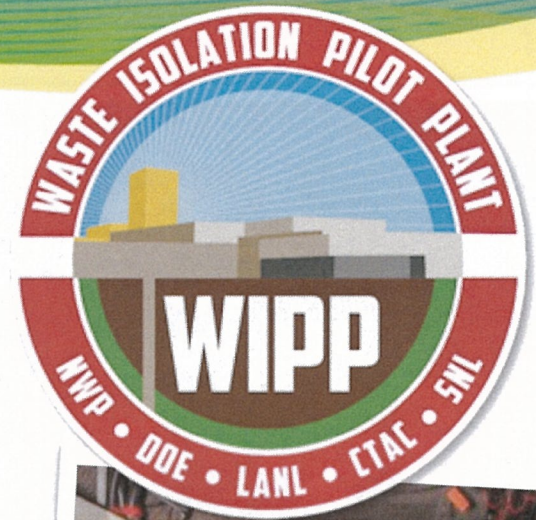


General Plant Projects

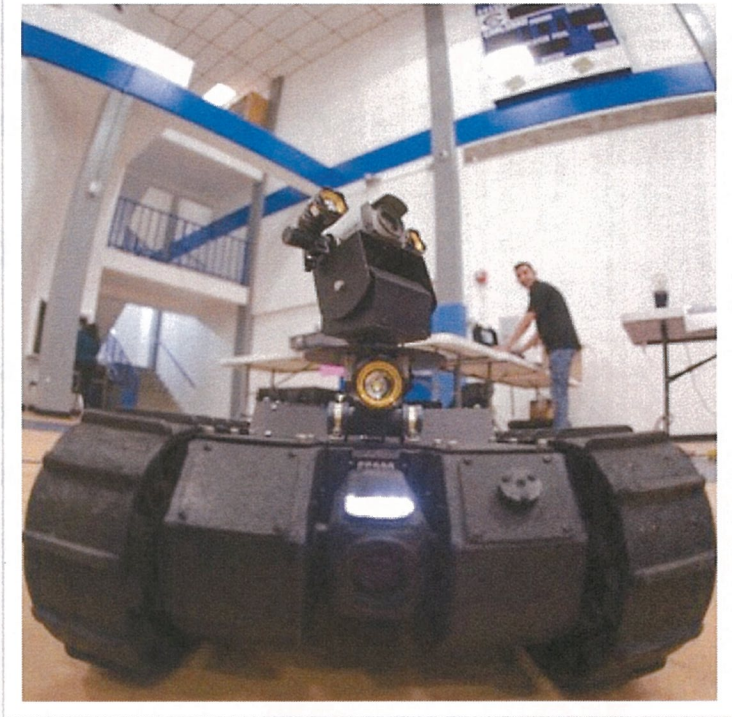
- Site Infrastructure Backbone Upgrade
- Lightning Array Upgrade
- Building 411/412 Safety Significant Fire Suppression Design
- Public Address System Upgrade Design



- 2020 President's budget
 - \$398 million request shows continued strong support for WIPP
 - Congressional committees and NM delegation continue to provide strong support for WIPP, as do our local officials and state delegation
- Working with our Regulators and Engaging our Stakeholders
 - Continuing to build on our good working relationship with the New Mexico Department of the Environment, the US Environmental Protection Agency, and Nuclear Regulatory Commission
 - Regularly meet with the Mine Safety and Health Administration as well
 - Increasing stakeholder engagement by holding public meetings
 - Meetings announcements in English and Spanish
 - Translator on hand at Permit meetings
 - Additional meetings – more than regulatory requirements

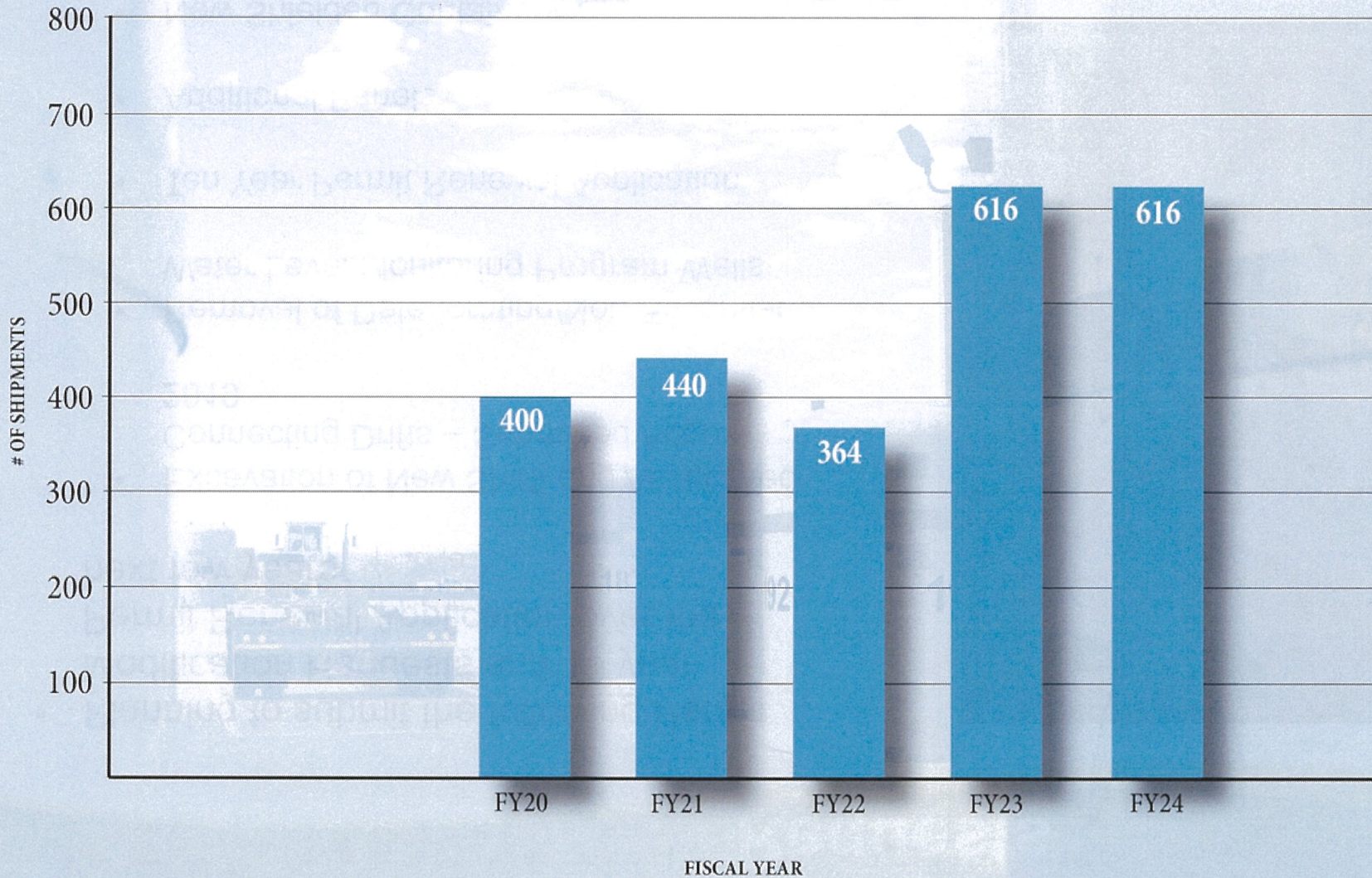


- WIPP must implement modern technologies to improve performance
- There are opportunities for modernization at WIPP in both the underground and the surface facilities
 - Challenged NWP to create a modernization plan to implement new technologies at WIPP
 - Semi-autonomous vehicles/autonomous vehicles with sensor suites for monitoring ground control performance, air quality, etc.
 - Potential for machine learning on rockbolt status was demonstrated by Sandia National Laboratories earlier this year
 - Virtual Reality of the Underground and Surface facilities for stakeholder engagement as well as training opportunities
 - Opportunities for automation of repetitive tasks



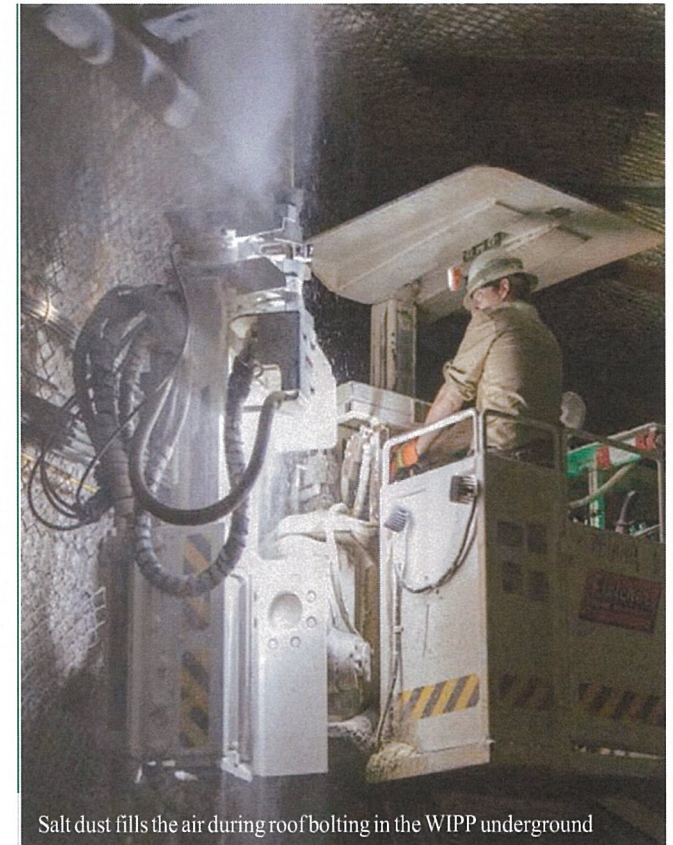
Potential Shipments by Fiscal Year

SHIPMENT PLANNING ASSUMPTION
(FY19 - FY24, For Planning Purposes only)



Upcoming Permit Modification Requests

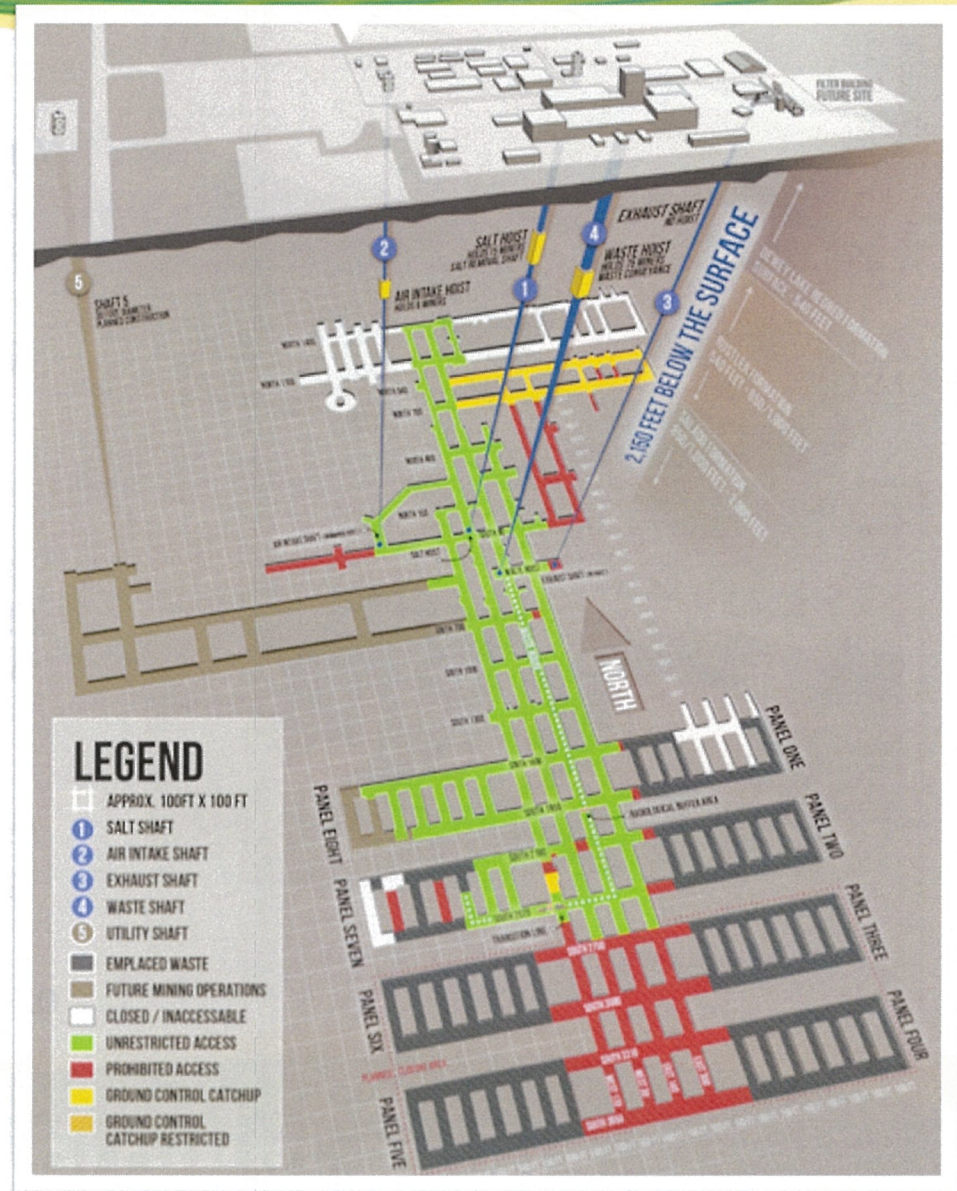
- Planning to submit the following Permit Modification Requests and 10 year Permit Renewal Application over the next few years
 - Excavation of New Shaft and Associated Connecting Drifts – Submitted August 2019
 - Removal of Deteriorating/Non-Essential Water Level Monitoring Program Wells
 - Ten Year Permit Renewal Application
 - Additional Panels
 - New Shielded Containers



Salt dust fills the air during roof bolting in the WIPP underground

Repository Plans

- Additional panels are needed to complete the cleanup mission and support the national security mission.
- Panel Status
 - Panel 7 will be filled by mid to late 2021
 - Panel 8 coming on line in mid to late 2021
 - Equivalent Panels 9 & 10
 - Panel 11 and beyond



Underground Safety

- Focused on implementing measures to improving air quality for the underground workers during this time when the underground ventilation flow rate is limited
 - Continuing to research use of battery-electric vehicles and moving to Tier IV final (low-emissions) diesel powered equipment in the underground
 - Deploying multiple workplace enhancements to help with air quality
 - Fleet size of battery-electric and low emissions diesel-operated equipment will be increased to improve air quality and modernize mining and ground control capability over time



Conclusion

- WIPP has made significant progress recently thanks to our workforce and strong financial support
- We are continuing to move forward in order to complete our important mission
- We are improving our outreach and stakeholder interactions
- We are looking for ways to modernize WIPP



Questions?