

# N9, J19, and J21W Phase I Bond Release

# J16, J19, and J21 Phase II Bond Release

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- Reclamation stages at the Kayenta Mine
- Bond Release Process
- Phase I, N9, J19, and J21W Bond Release Application
- Phase II, J16, J19, J21 Bond Release Application



# Reclamation at the Kayenta Mine

- **SMCRA requires that mined land be reclaimed to an equal or better land use than what existed prior to mining.**

## 1) Backfilling & Rough Grading

- Backfilling and grading occurs contemporaneously
- The spoil material will be used to backfill any highwalls and depressions in order to eliminate these features.
- The backfilled material will then be graded utilizing machinery to provide both stability to the area and a growth medium for vegetation.
- Postmining graded slopes must approximate pre-mining natural slopes and support post-mine land uses.



# Reclamation at the Kayenta Mine

## 2) Final Grading & Channel Construction

- Final graded slopes shall not exceed either the approximate premining slopes or any lesser slope specified by OSMRE.
- This is based on consideration of soil, climate, or other characteristics of the surrounding area.
- Temporary Channels are professionally designed to direct water flows away from disturbed areas.
- Permanent Channels are professionally designed to safely drain the reclaimed landscape in a stable and naturally functioning manner that supports the post-mine land use. Mines utilize fluvial geomorphic principles in their final surface configurations, thus maximizing the creation of natural acting landscapes after mining.





# Reclamation at the Kayenta Mine

## 3) Topsoil Placement

- Topsoil is very important as it supports revegetation of reclaimed landscapes. To do this, topsoil is salvaged from lands prior to mining and saved for later use. This is done by:
  - Stripping topsoil from the premined area.
  - Stockpiling the topsoil for later use.
  - Protecting the topsoil from wind and water erosion and any contaminants.
  - Redistributing the topsoil on the re-shaped landscape in an approved manner.



# Reclamation at the Kayenta Mine

## 4) Seeding and Mulching

- After the topsoil has been redistributed on an approved backfilled and regraded section of the mine, a diverse, effective, and permanent vegetative cover of species that will support the approved postmining land uses must be re-established. This also includes culturally significant plants. This is done by:
  - Determining the post mining land use and corresponding vegetative cover requirements.
  - Establishing vegetative cover and recovery of productivity levels compatible with approved land uses
  - Stabilizing the soil surface with mulch on all regraded and topsoiled areas to control erosion, promote germination of seeds, and increase the moisture retention of the soil.
- The revegetation will begin during the first normal period during the early stages of revegetation for favorable planting conditions.
- Significant erosion features that preclude the successful establishment of vegetation or the achievement of the postmining land use must be regraded or stabilized before seeding and mulching



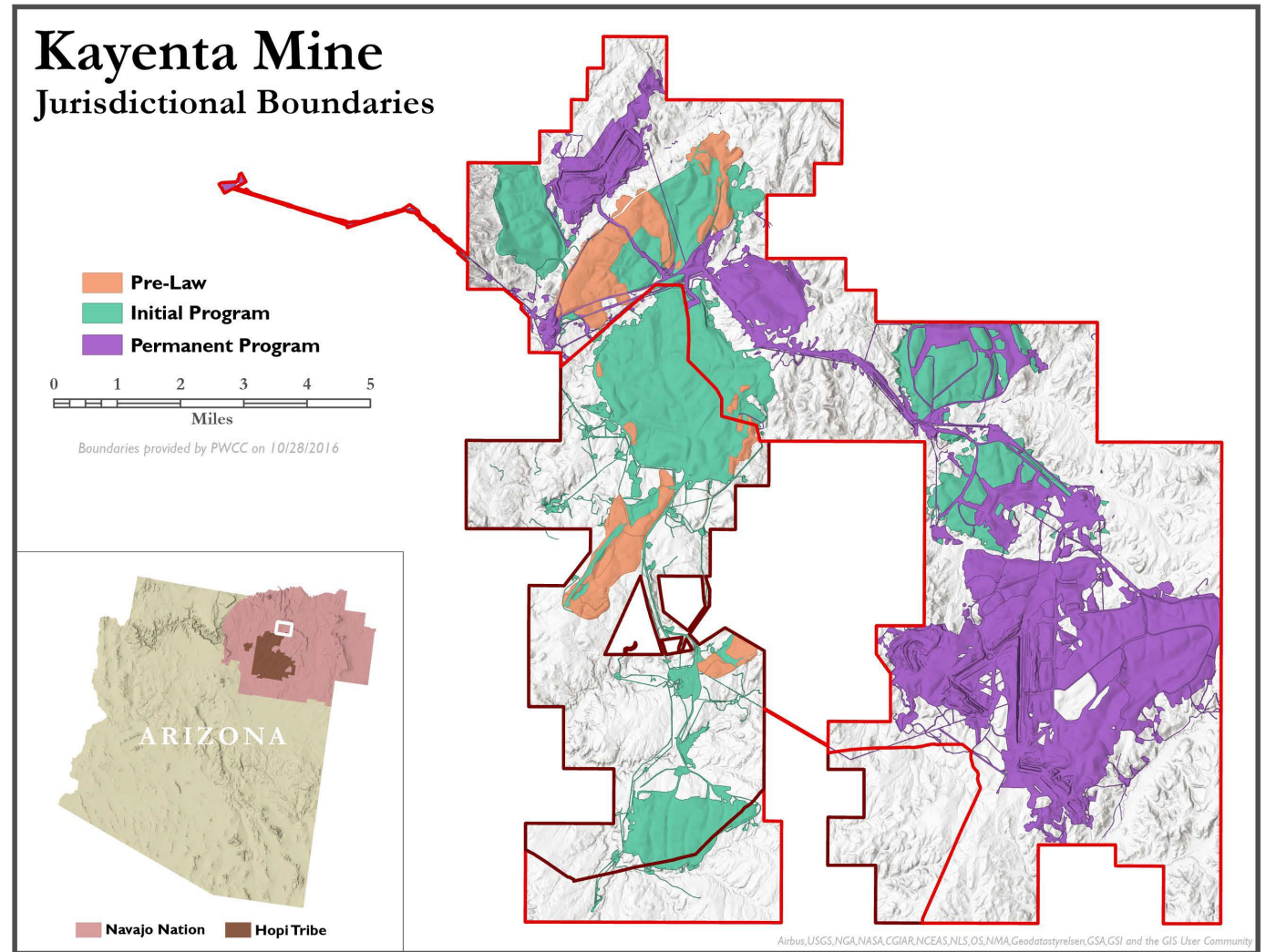
# Reclamation at the Kayenta Mine

## 5) Reclamation Bond Release

- . The coal mining company must make demonstrations that its final reclamation meets all the required performance standards of SMCRA before the Reclamation Bond is released by OSMRE.



- OSMRE holds \$178.5 million in surety bonds
- Three phase process
  - Phase 1 - backfilling and grading to the final surface configuration, construction of final hydraulic features
  - Phase 2 - topsoil/topdressing replacement, seeding and mulching
  - Phase 3 (TOJ) - vegetation success, hydrology documentation and a final check on the entire reclamation as a whole
- Noticed, comment period, and opportunity for to request informal conferences and or field inspection
- Bond releases applications are distributed to BLM, BIA and to the Navajo Nation and Hopi Tribal Governments for their technical review and field participation





# J19, J21W, N9 Application

## Phase I

### . **Backfilling and Grading Requirements**

- . Drainage reestablished
- . Regraded areas drain into the approved sediment control system
- . Reconstructed topography.
- . Blending of regraded land to undisturbed areas

### . **Mine Soil Reconstruction**

- . Graded spoil sampling to ensure adequate coverage of potentially acid-forming or toxic materials
- . Topsoil verification
- . Physical and chemical analyses results of topsoil substitute/subsoil material

### . **Bond Release Calculation**

- . No more than 60 percent be released at Phase I
- . Sufficient bond amount must be retained to complete the remaining phases
- . Any bond release calculation must consider the cost of abating any current or potential surface or subsurface water pollution.



# J16, J19, J21 Application

## Phase II

- . Only those areas where Phase I has been released are eligible for Phase II release

### . **Vegetation Requirements**

- . A permittee may request Phase II bond release upon the establishment of vegetation which supports the post-mining land use

### . **Mine Soil Reconstruction**

- . Topsoil verification
- . Physical and chemical analyses results of topsoil substitute/subsoil material

### . **Water Quality**

- . No contribution of suspended solids to streamflow outside the permit area

### . **Bond Release Calculation**

- . Sufficient bond must be retained to cover the costs of reestablishing vegetation during the remainder of the liability period
- . Estimated costs of any remaining reclamation work will also be accounted for in the bond retained following Phase II release.



## Phase III

- . Third step in the 3 phased bond release process
- . Currently there are no Phase III applications under OSMRE review.
- . Only those areas where Phase I and II has been released are eligible for Phase III release
- . A permittee may request Phase III release no sooner than ten years in areas where the annual precipitation is 26 inches or less.
- . **Vegetation Requirements**
  - . Revegetation success must be demonstrated in any two years following Year 6 of the liability period.
  - . Documentation that revegetation success criteria have been achieved
  - . Vegetation cover, herbaceous production, species diversity, seasonality, and woody plant density are evaluated as required by the approved permit's success standards
- . **Sediment Control Structures**
  - . Reclaimed sediment pond sites and associated reclaimed temporary diversion and collection ditches must be included in the release request, if logically contained within the bond release area
  - . The ten-year liability period requirement does not apply to reclaimed sediment control structures, but they are otherwise subject to the same reclamation criteria as adjacent areas
- . **Hydrology**
  - . Documentation showing that surface and or subsurface water pollution is not occurring, the probability of future occurrence, and the estimated cost of abating pollutions if it has occurred or is predicated to occur
- . **Bond Release Calculation**
  - . 100% of the bond amount can be released and the released area can be removed from the SMCRA permit area
  - . Lands approved for a Phase III release are no longer under OSMRE's jurisdiction but rather BIA until the lease is relinquished.
  - . Once the lease is relinquished the land management is under the jurisdiction of the Tribe and BIA

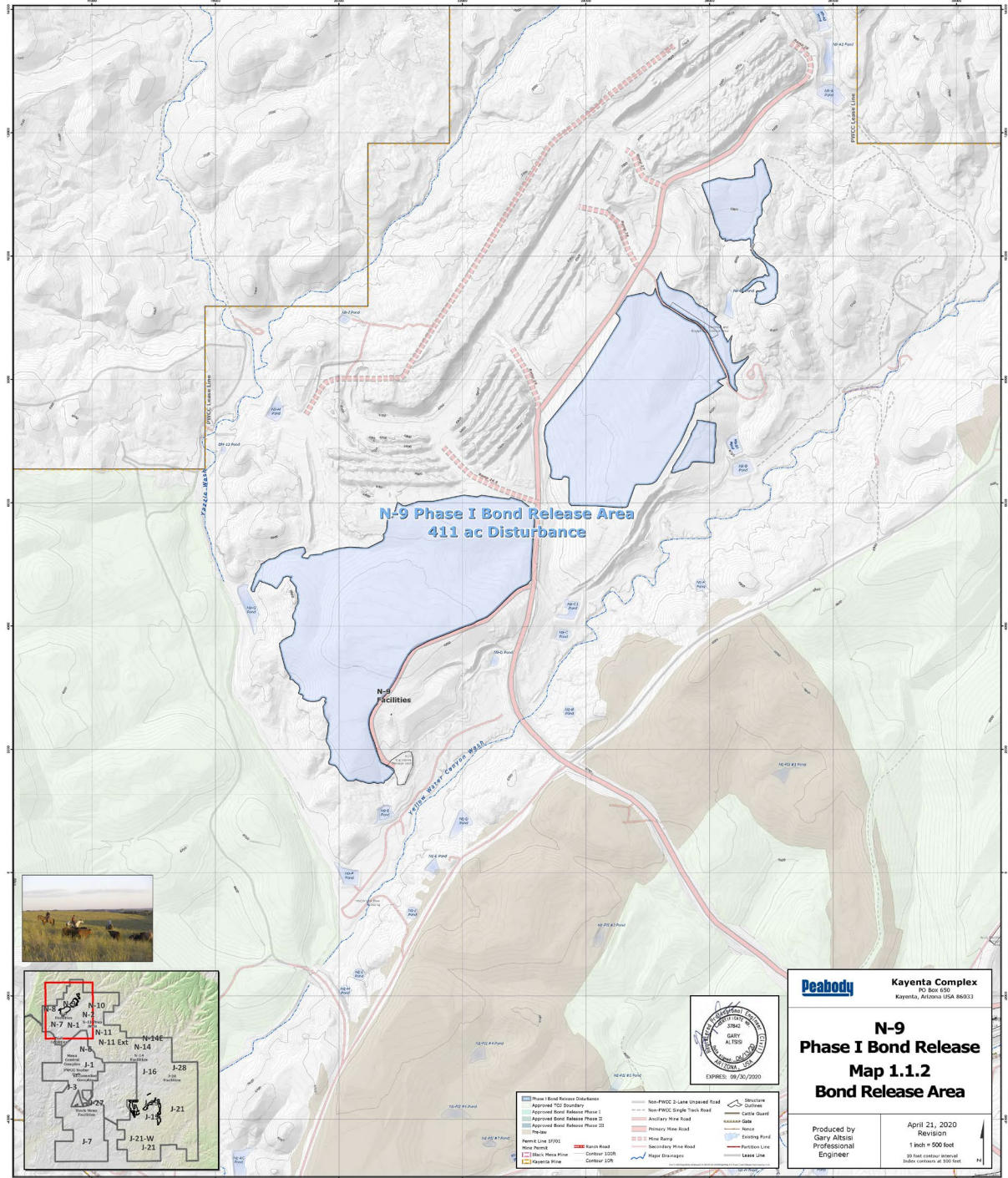


# J19, J21W, N9 Application

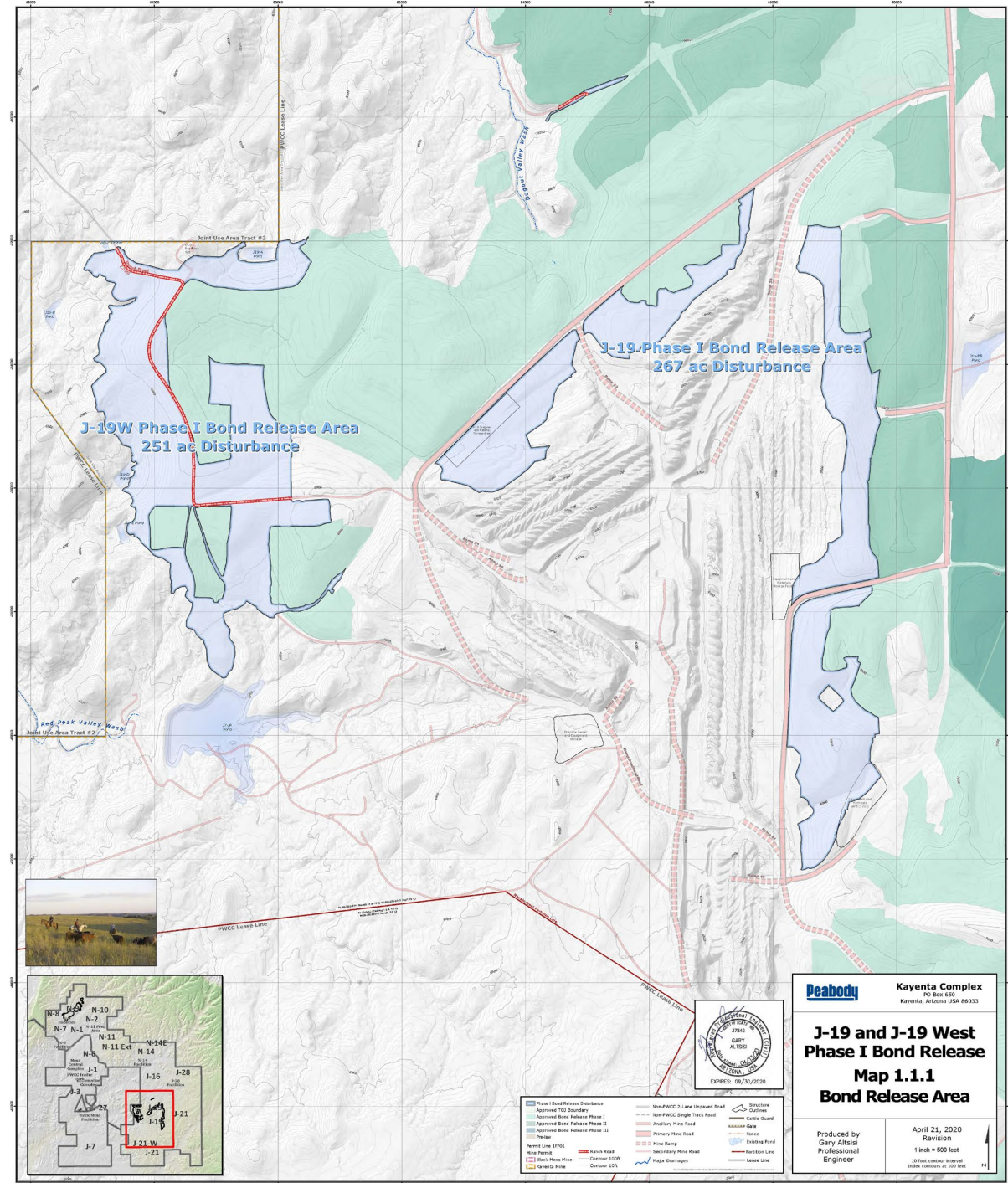
- PWCC seeking a reduction of bond \$20,299,758
- Total Bond a Kayenta Mine is \$178,569,992
- Backfilling, grading, and replacement of suitable spoil or plant growth media
- Mitigation of unsuitable material and drainage control construction
- 929 Acres in release area
  - 267 acres in J19
  - 251 acres in J19W
  - 411 acres in N9
- Reclamation was completed between 1999 and 2019











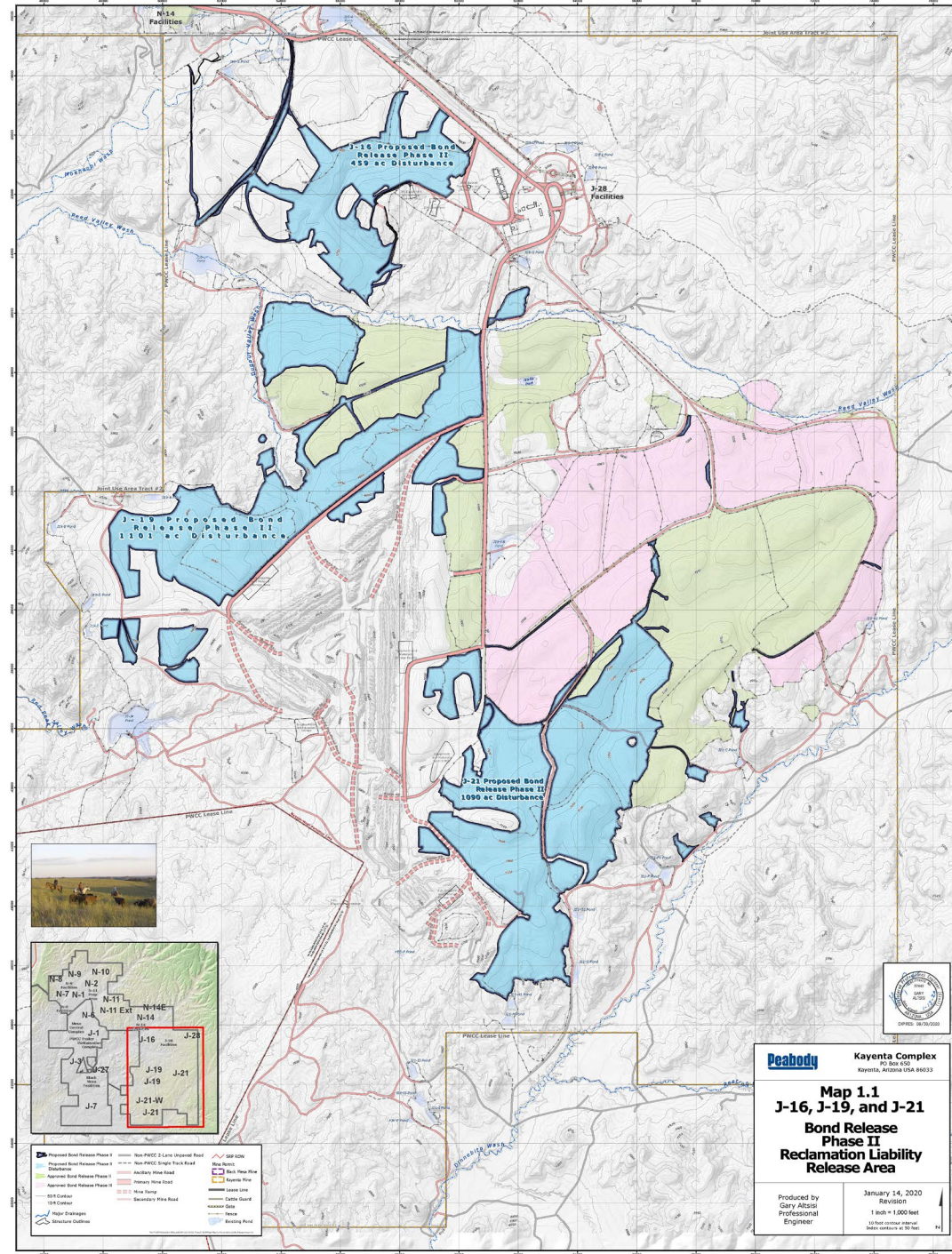


## J16, J19, J21 Phase II bond release

- PWCC seeking a reduction of bond \$4,506,706
- Total Bond a Kayenta Mine is \$178,569,992
- Backfilling, grading, and replacement of suitable spoil or plant growth media
- Mitigation of unsuitable material and drainage control construction
- Topsoil Placement and seeding and mulching
- 2,650 Acres in release area
  - 1,101 acres in J19
  - 1,090 acres in J21
  - 459 acres in J16
- Reclamation was completed between 1984 and 2019











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# Drone Videos





# N9 Coal Resource Area





# N9 Coal Resource Area Navajo Language





# J16 Coal Resource Area





# J16 Coal Resource Area Navajo Language





# J19 Coal Resource Area





# J19 Coal Resource Area Navajo Language







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