

A decorative graphic on the left side of the slide, consisting of white and light blue lines and circles that resemble a circuit board or a stylized tree structure. The lines are vertical and horizontal, with small circles at various points, creating a grid-like pattern.

PUMAS AND BOND RELEASE

AUGUST 27, 2020

INDUSTRY TRAINING

Permitting Life of a Deep Mine

PHC, HRP, SCP, CHIA

Deep Mine Issued

Renewed every 5 years

Mineral Removal Complete
&
Closing

MINERAL REMOVAL COMPLETE & CLOSING

ARTICLE 3 ABANDONMENT REVISION

Submitted after mining,
prior to Phase release
application

PUMA Determination

No

Yes

PUMA

PUMA POLICIES

Clarification of November 15, 2012 policy issued on *June 13, 2016*

All underground mine permits must be evaluated to determine the need for a PUMA, with such determination documented in the permit record

DEEP MINE ABANDONMENT PLAN

WHAT ARE DEEP MINE ABANDONMENT REVISIONS?

- PUMA determination revisions
- PHC/HRP/SCP conclusions upheld
- Put on MR-6 deep mine abandonment revision is required
- Insignificant
- Provide mine pool information
- Geologist IV makes written determination

PUMA DETERMINATIONS AND BOND RELEASE

- Must have for deep mine phase release application
 - Phase I
 - Phase II
 - Phase III
- PUMA determinations are reviewed by OSMRE

OSMRE & PUMAS

OSMRE reviews the PUMA determination narrative

Review the narrative *after* field visit

14 days to submit concerns

PUMA DETERMINATIONS AND BOND RELEASE

PUMA Determination based on condition of the mine pool

Water Quality

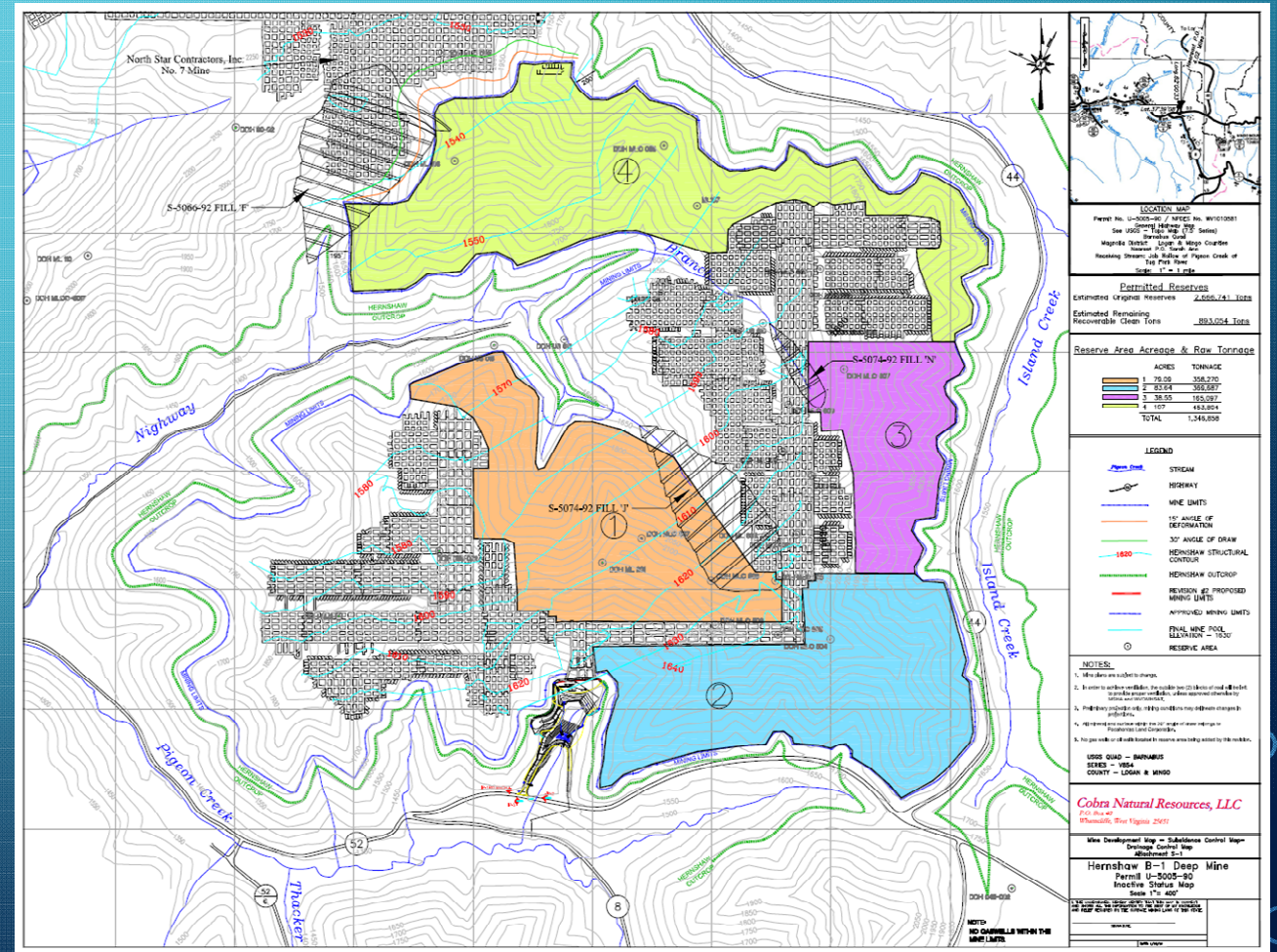
Water Quantity

WHO DOES NOT NEED A PUMA?

Above drainage

No blowout potential

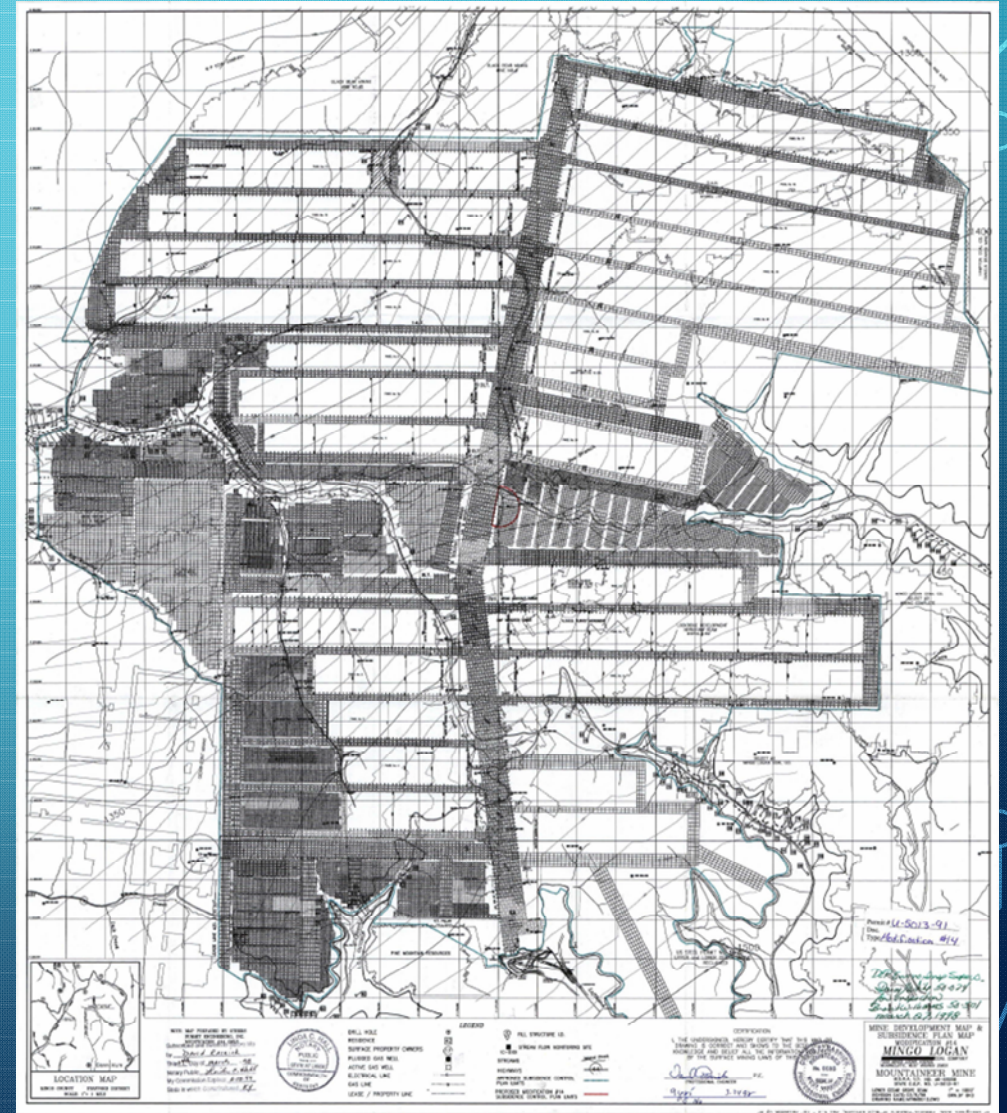
No water quality issues



WHO NEEDS A PUMA?

Below drainage

Treating water



PUMA DETERMINATIONS

Seems easy enough...

...Not everything is what it seems

How does the Geologist review for a PUMA?

PUMA DETERMINATION AND RELEASE OF MINE POOL WITH MORE THAN ONE ARTICLE 3 PERMIT NUMBER

Due to past permitting practices

Pools become hydrologically connected during/after mining

Mine Pools must be considered together

PUMA DETERMINATION AND RELEASE OF MINE POOL WITH MORE THAN ONE ARTICLE 3 PERMIT NUMBER

Due to past permitting practices

Permit “A” issued

WVDEP required Permit “B” issued for same SCP

Permit “A” and “B” have same mine pool

If “A” has treatment, “B” has treatment

PUMA DETERMINATION AND RELEASE OF MINE POOL WITH MORE THAN ONE ARTICLE 3 PERMIT NUMBER

Pools become hydrologically connected during/after mining

Permit "A" mine pool and Permit "B" mine pools combine

Permit "A" and Permit "B" are the same mine pool

PUMA determination is for the mine pool; applies to "A" and "B"

It does not matter if "A" and "B" belong to the same company

PUMA DETERMINATION AND RELEASE OF MINE POOL WITH MORE THAN ONE ARTICLE 3 PERMIT NUMBER

Pools become hydrologically connected during/after mining

Permit "A" mine pool overlies Permit "B" mine pool

Permit "A" gets UIC permit into "B"

Permits "A" and "B" must be evaluated together

Because UIC is treatment neither "A" or "B" will qualify for release

UIC IS TREATMENT

If a mine pool is permitted to receive UIC injectate,
the permit associated with that mine pool cannot be released

If a mine is permitted to perform injection with a UIC permit
the permit associated with that injection is not eligible
for full release

Does not matter if UIC injection holes are not constructed

PUMPING IS TREATMENT



PUMA DETERMINATION AND BOND RELEASE OF MULTIPLE MINE POOLS AND ONE ARTICLE 3 NUMBER

Deep Mine Permit “A” is issued in coal seam “A”

Deep Mine Permit “A” adds coal seam “B”

Seams “A” and “B” have to be evaluated

If either has treatment, neither seam is eligible for release

PUMA DETERMINATION AND BOND RELEASE OF FOR OVERBONDED MINE POOLS

Deep Mine Permit "A" overbonds Deep Mine Permit "B"

The mine pool for "A" and "B" must be considered together

Surface Mine "A" overbonds Deep Mine Permit "B"

5 years water history

PUMA DETERMINATION AND BOND RELEASE OF FOR OVERBONDED MINE POOLS

Deep Mine Permit “A” had a PUMA determination

Deep Mine Permit “A” then overbonds “B”

The PUMA determination must be reperformed

The PUMA determination originally made for Permit “A” is invalid

PUMA “WAIVERS”

Issued in emails and without a revision submitted

Now are invalid

PUMAS AND BOND RELEASE

