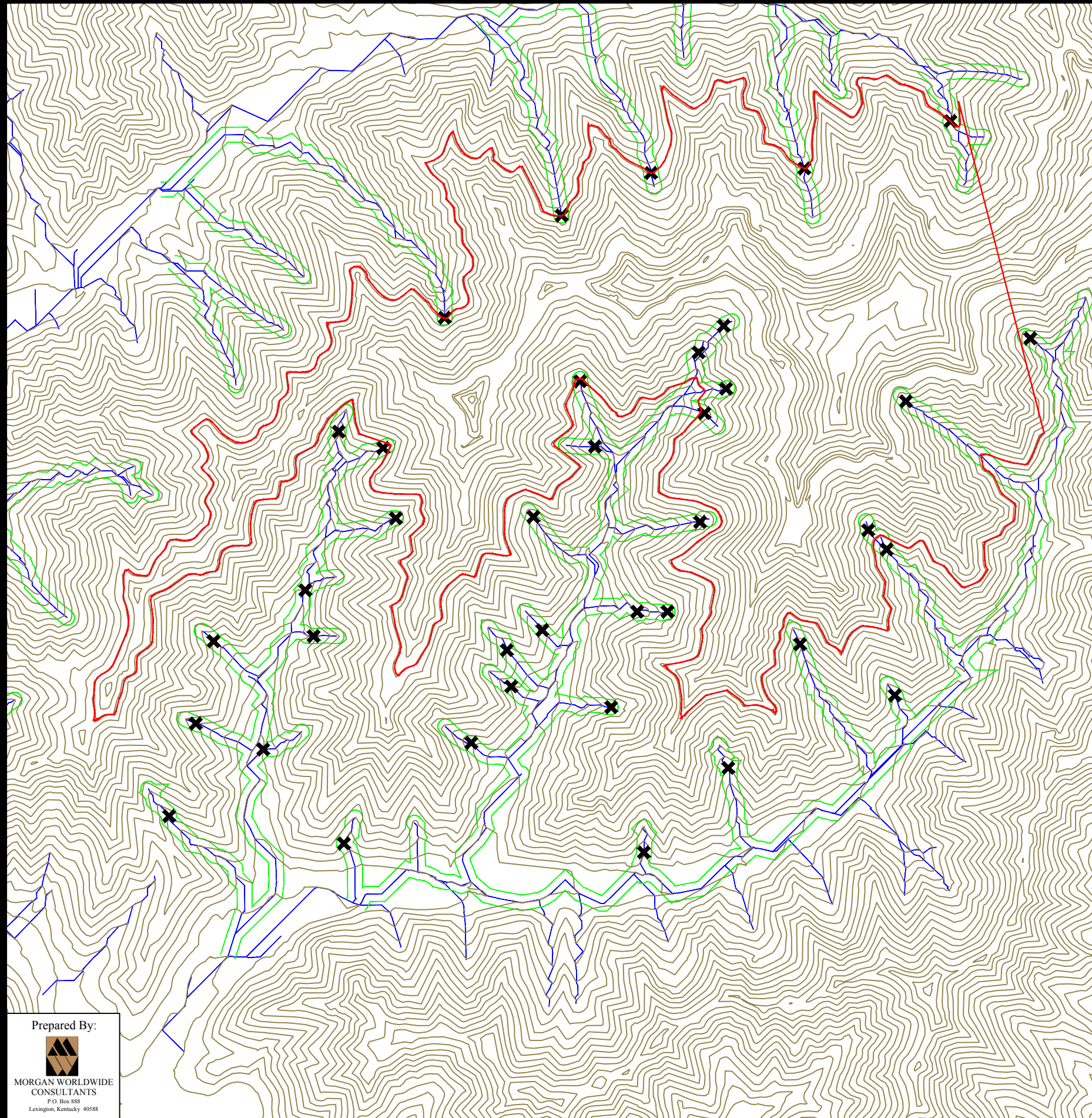
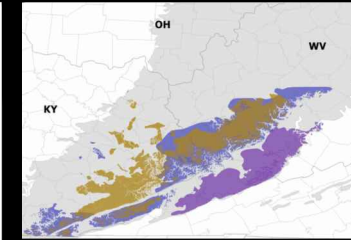


Appendix C contains numerous maps showing the model mines used in the analysis and is not Section 508 compliant. Please contact Mark Gehlhar at OSMRE 202-208-2716 for assistance.








Pre-Mining

- 50 ft contours taken from USGS Seamless Server
- 14.5 acre ephemeral drainage requirement based on "Defining perennial, intermittent, and ephemeral channels in Eastern Kentucky: Application to forestry best management practices" by JR Svec, RK Kolka, and JW Stringer, 2005.
- Ephemeral/Intermittent points found using coal seam outcrop on down-dip side (North) and 19.8 acre drainage requirement on up-dip side (South), also from Svec, Kolka, and Stringer, 2005.



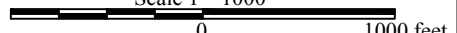
Legend

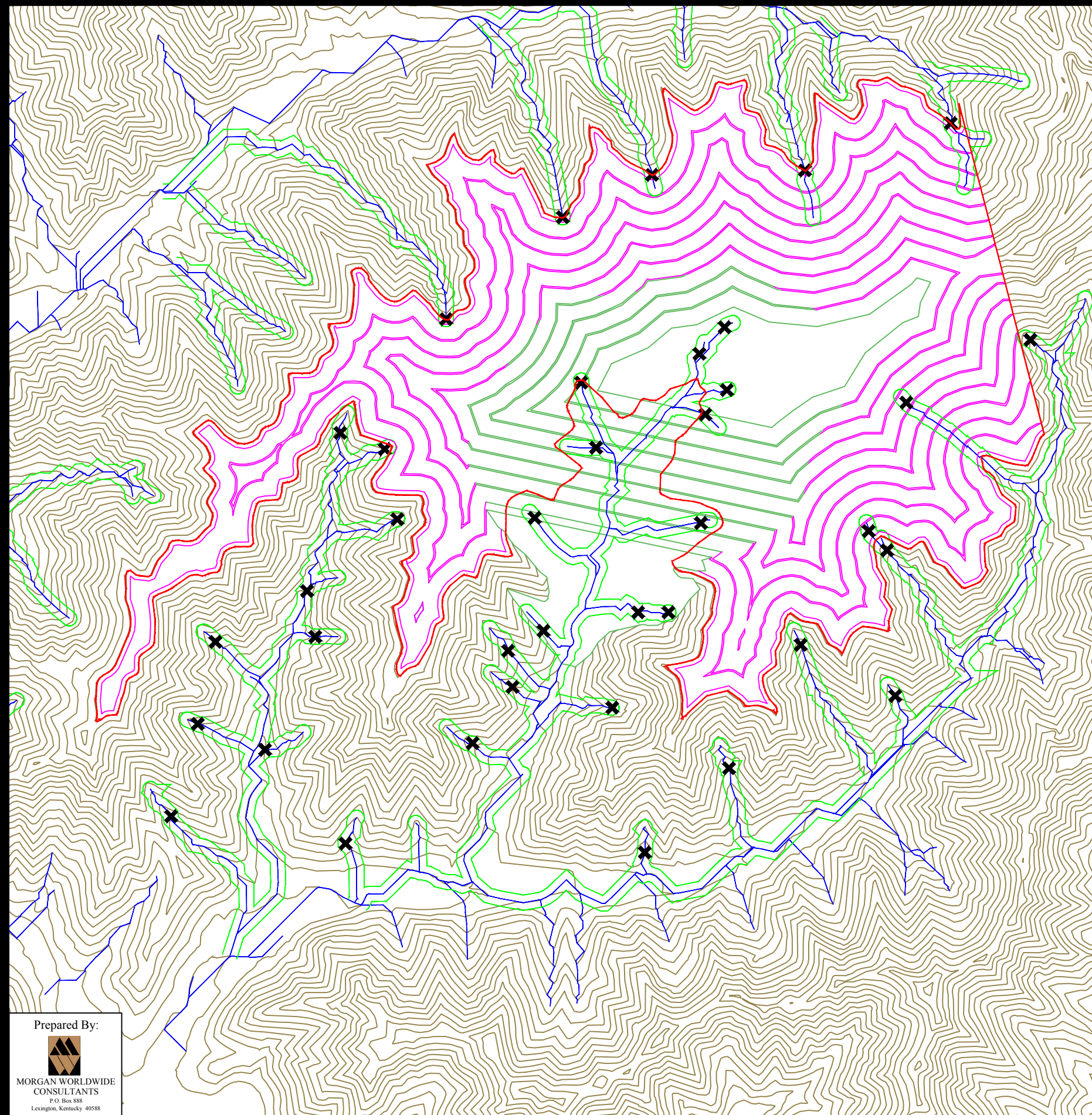
-  Original Topography (50 ft Ctrs)
-  Generated Streams (14.5 acre drainage)
-  100 ft stream offset
-  Mineral Removal Area
-  Ephemeral/Intermittent Point

Prepared By:

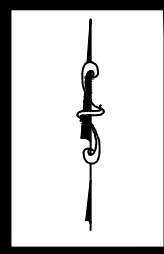
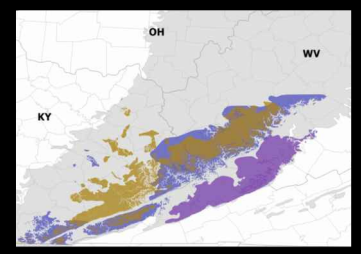
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 Lexington, Kentucky 40588

Central Appalachia Region
Surface Area Mine
Pre-Mining

Scale 1"=1000'

 0 1000 feet



- Alternative 1
- 2.3 million tpy mined
 - 37 million tons coal resource
 - 16.1:1 mining ratio
 - 487 million CY initial backfill
 - 251 million LCY excess spoil
 - 37% outside mineral removal area
 - 36.4 million LCY fill below lowest seam mined
 - 1,260 disturbed acres
 - Stream Impacts:
 - 2,156 ft ephemeral stream mined through
 - 1,624 ft ephemeral stream filled
 - 1,444 ft intermittent stream mined through
 - 12,258 ft intermittent stream filled

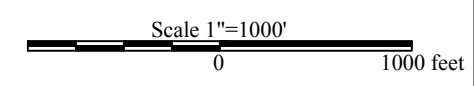


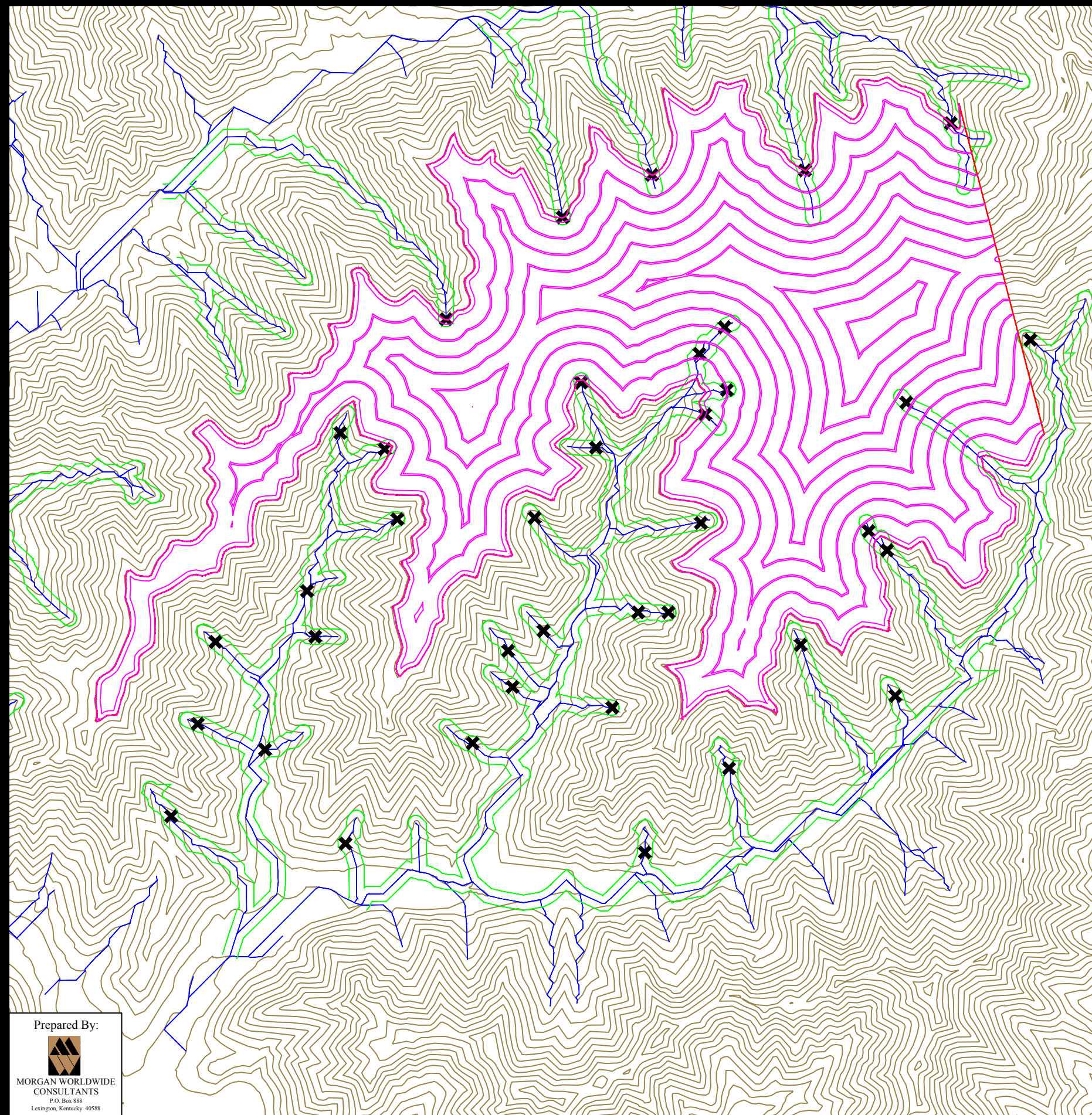
- Legend**
- Original Topography (50 ft Ctrs)
 - Generated Streams (14.5 acre drainage)
 - 100 ft stream offset
 - Mineral Removal Area
 - Post-Mining Topography
 - Excess Spoil Topography
 - Ephemeral/Intermittent Point

Prepared By:

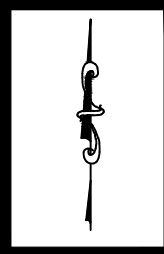
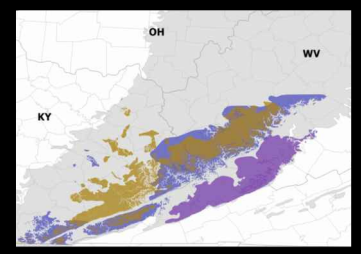
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**Central Appalachia
 Region**
 Surface Area Mine
 Alternative 1





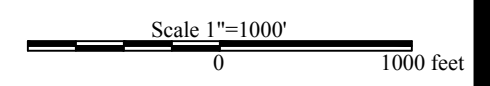
- Alternative 2
- 2.3 million tpy mined
 - 37 million tons coal resource
 - 16.1:1 mining ratio
 - 487 million CY initial backfill
 - 251 million LCY excess spoil
 - All excess spoil must be located to an offsite storage area
 - 1,116 disturbed acres
 - Stream Impacts:
 - 2,156 ft ephemeral stream mined through
 - 1,444 ft intermittent stream mined through



Legend

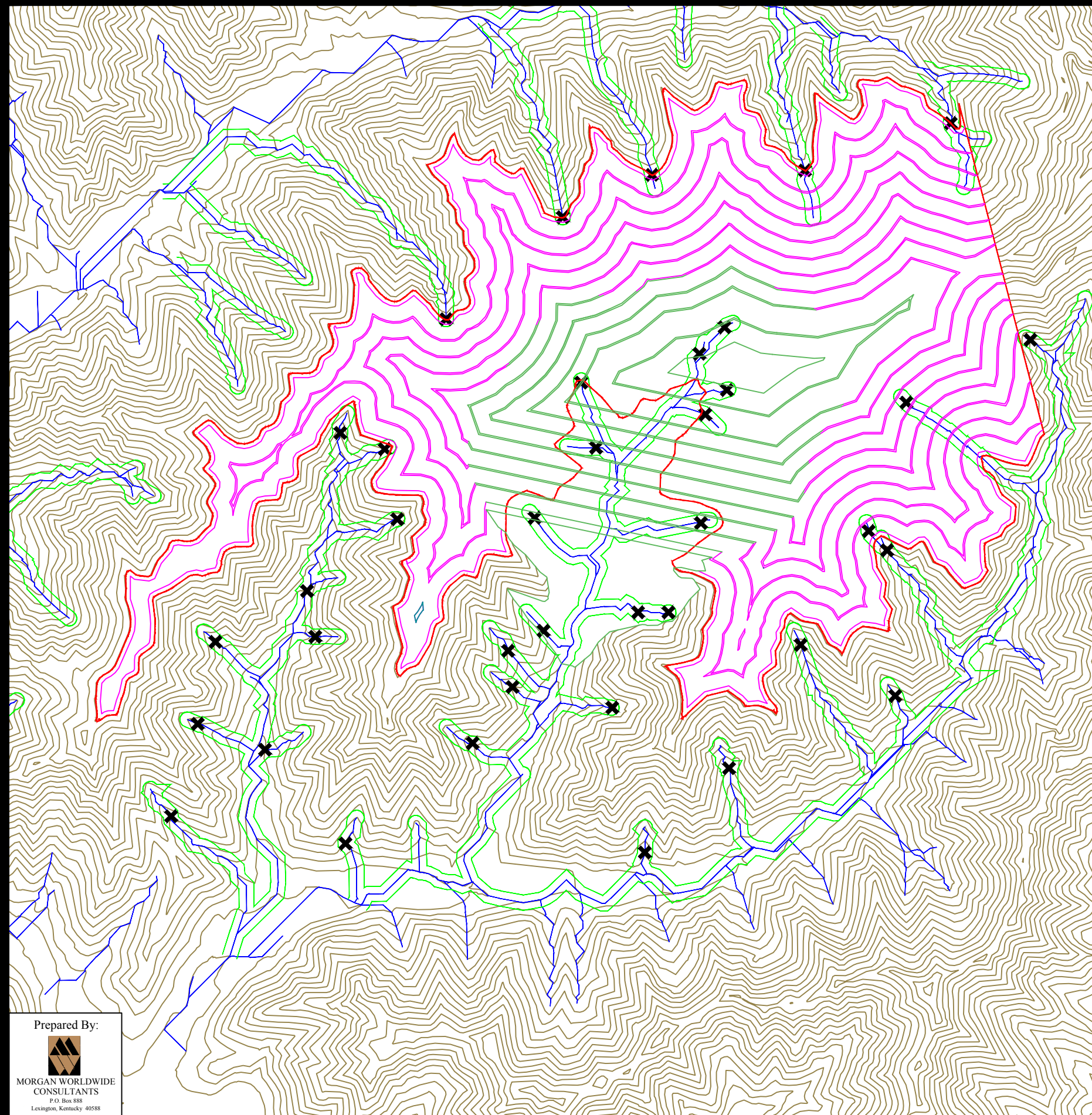
- Original Topography (50 ft Ctrs)
- Generated Streams (14.5 acre drainage)
- 100 ft stream offset
- Mineral Removal Area
- Post-Mining Topography
- Excess Spoil Topography
- Ephemeral/Intermittent Point

**Central Appalachia
Region**
Surface Area Mine
Alternative 2

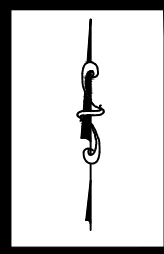
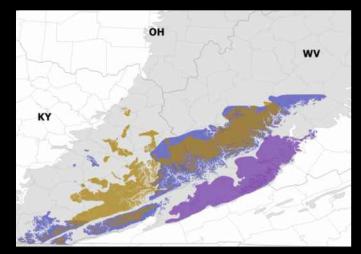


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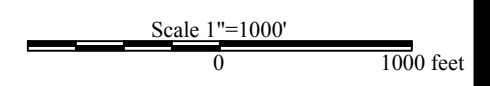
- Alternative 3
- 2.3 million tpy mined
 - 37 million tons coal resource
 - 16.1:1 mining ratio
 - 487 million CY initial backfill
 - 251 million LCY excess spoil
 - 37% outside mineral removal area
 - 36.4 million LCY fill below lowest seam mined
 - 1,260 disturbed acres
 - Stream Impacts:
 - 2,156 ft ephemeral stream mined through
 - 1,624 ft ephemeral stream filled
 - 1,444 ft intermittent stream mined through
 - 12,258 ft intermittent stream filled



Legend

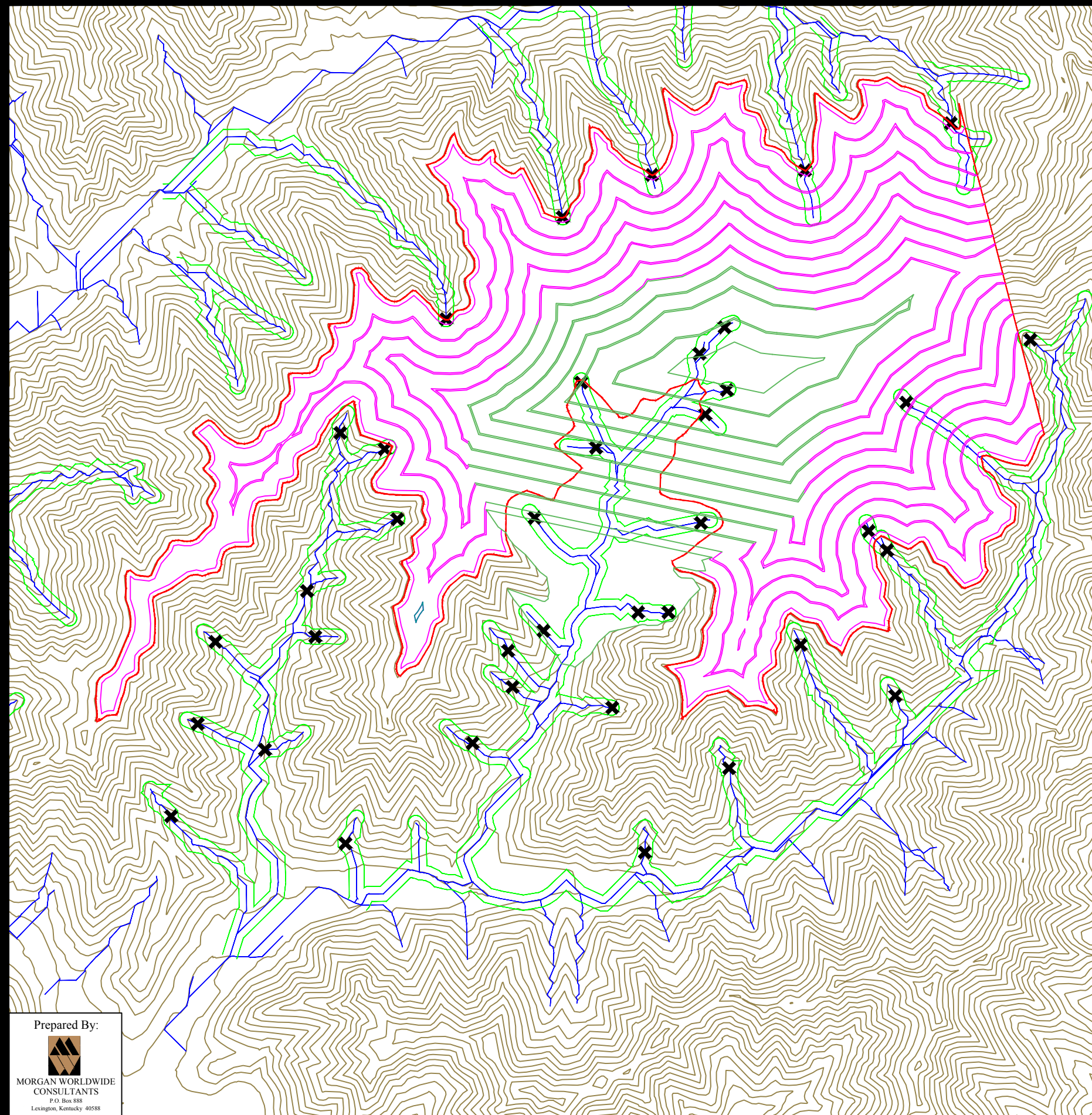
- Original Topography (50 ft Ctrs)
- Generated Streams (14.5 acre drainage)
- 100 ft stream offset
- Mineral Removal Area
- Post-Mining Topography
- Excess Spoil Topography
- Ephemeral/Intermittent Point

**Central Appalachia
Region**
Surface Area Mine
Alternative 3

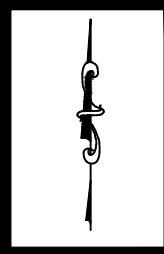
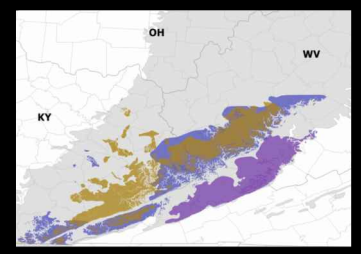


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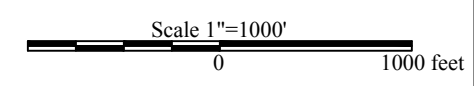
- Alternative 4
- 2.3 million tpy mined
 - 37 million tons coal resource
 - 16.1:1 mining ratio
 - 487 million CY initial backfill
 - 251 million LCY excess spoil
 - 37% outside mineral removal area
 - 57.7 million LCY fill below lowest seam mined
 - 1,260 disturbed acres
 - Stream Impacts:
 - 2,156 ft ephemeral stream mined through
 - 1,624 ft ephemeral stream filled
 - 1,444 ft intermittent stream mined through
 - 12,258 ft intermittent stream filled



Legend

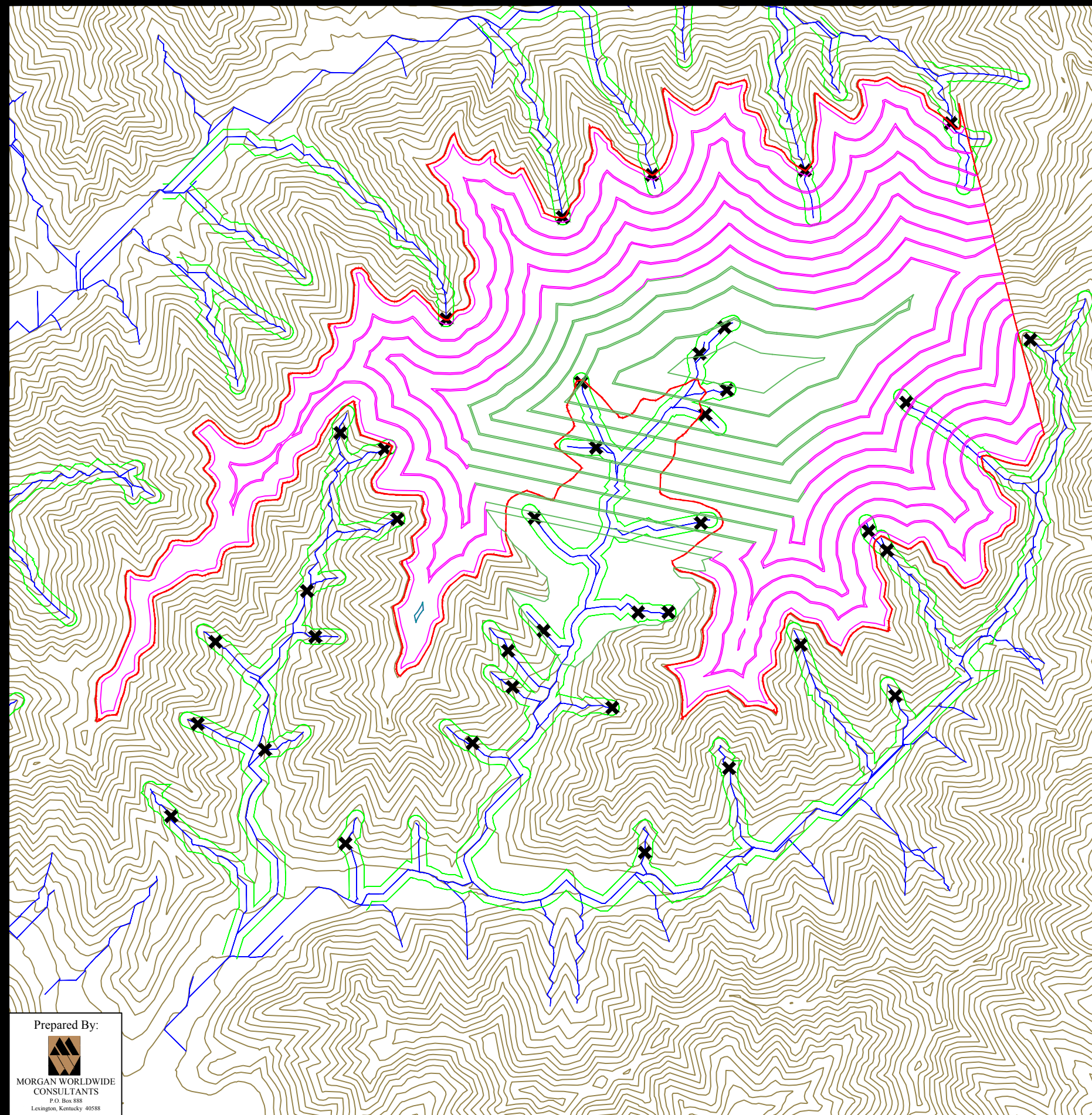
- Original Topography (50 ft Ctrs)
- Generated Streams (14.5 acre drainage)
- 100 ft stream offset
- Mineral Removal Area
- Post-Mining Topography
- Excess Spoil Topography
- Relocated Stream
- Ephemeral/Intermittent Point

**Central Appalachia
Region**
Surface Area Mine
Alternative 4

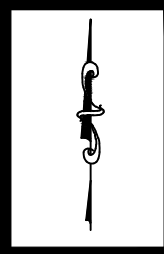
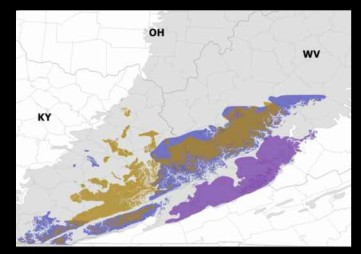


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- Alternative 5
- 2.3 million tpy mined
 - 37 million tons coal resource
 - 16.1:1 mining ratio
 - 487 million CY initial backfill
 - 251 million LCY excess spoil
 - 37% outside mineral removal area
 - 57.7 million LCY fill below lowest seam mined
 - 1,260 disturbed acres
 - Stream Impacts:
 - 2,156 ft ephemeral stream mined through
 - 1,624 ft ephemeral stream filled
 - 1,444 ft intermittent stream mined through
 - 12,258 ft intermittent stream filled

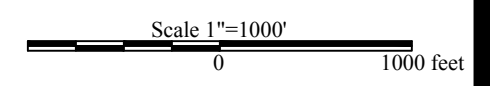


Legend

- Original Topography (50 ft Ctrs)
- Generated Streams (14.5 acre drainage)
- 100 ft stream offset
- Mineral Removal Area
- Post-Mining Topography
- Excess Spoil Topography
- Relocated Stream
- Ephemeral/Intermittent Point

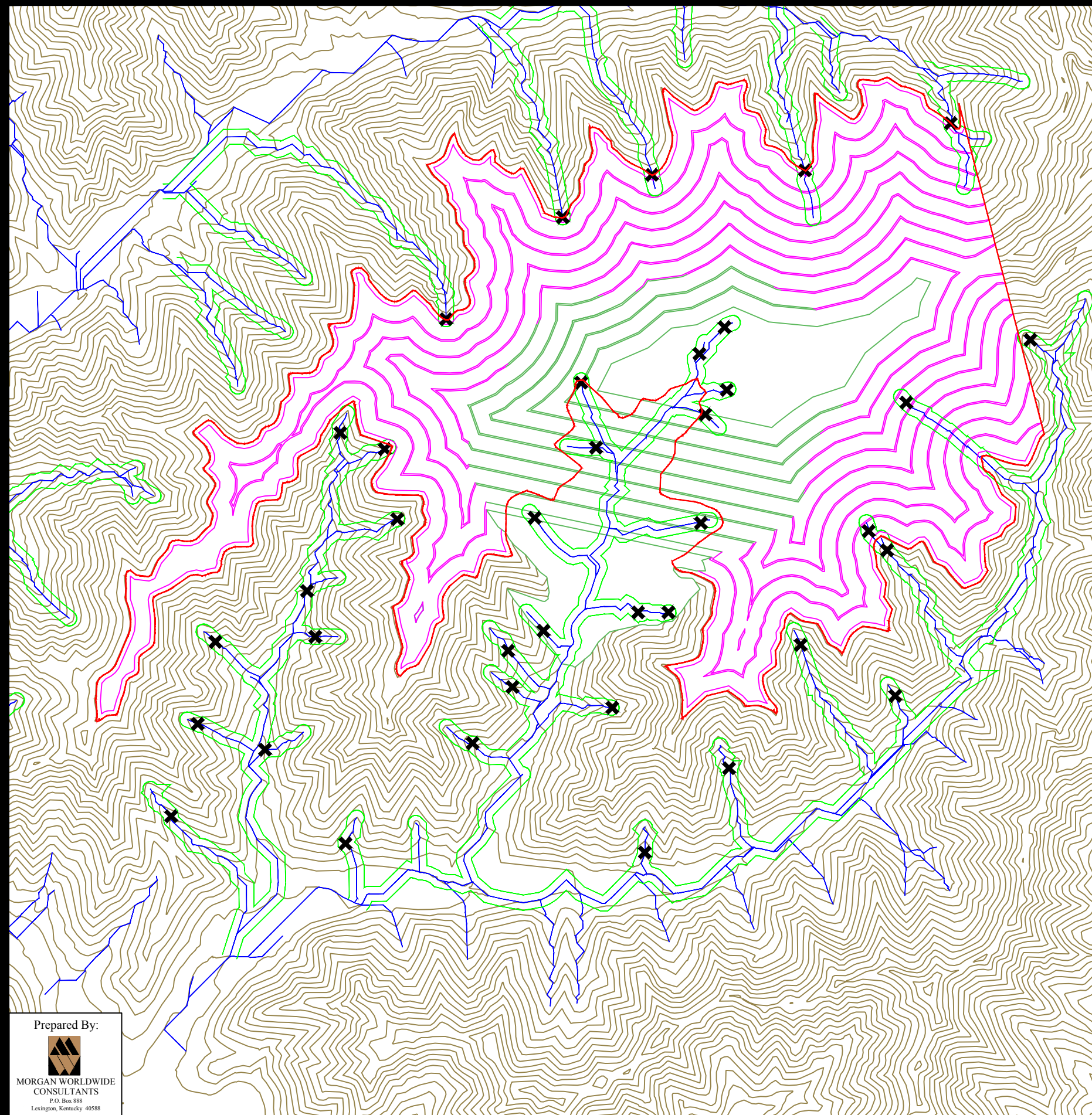
Central Appalachia Region

Surface Area Mine Alternative 5

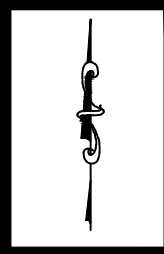
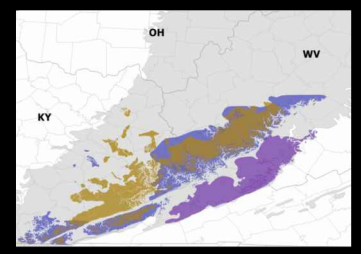


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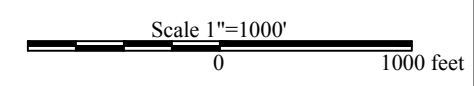
- Alternative 6
- 2.3 million tpy mined
 - 37 million tons coal resource
 - 16.1:1 mining ratio
 - 487 million CY initial backfill
 - 251 million LCY excess spoil
 - 37% outside mineral removal area
 - 57.7 million LCY fill below lowest seam mined
 - 1,260 disturbed acres
 - Stream Impacts:
 - 2,156 ft ephemeral stream mined through
 - 1,624 ft ephemeral stream filled
 - 1,444 ft intermittent stream mined through
 - 12,258 ft intermittent stream filled



Legend

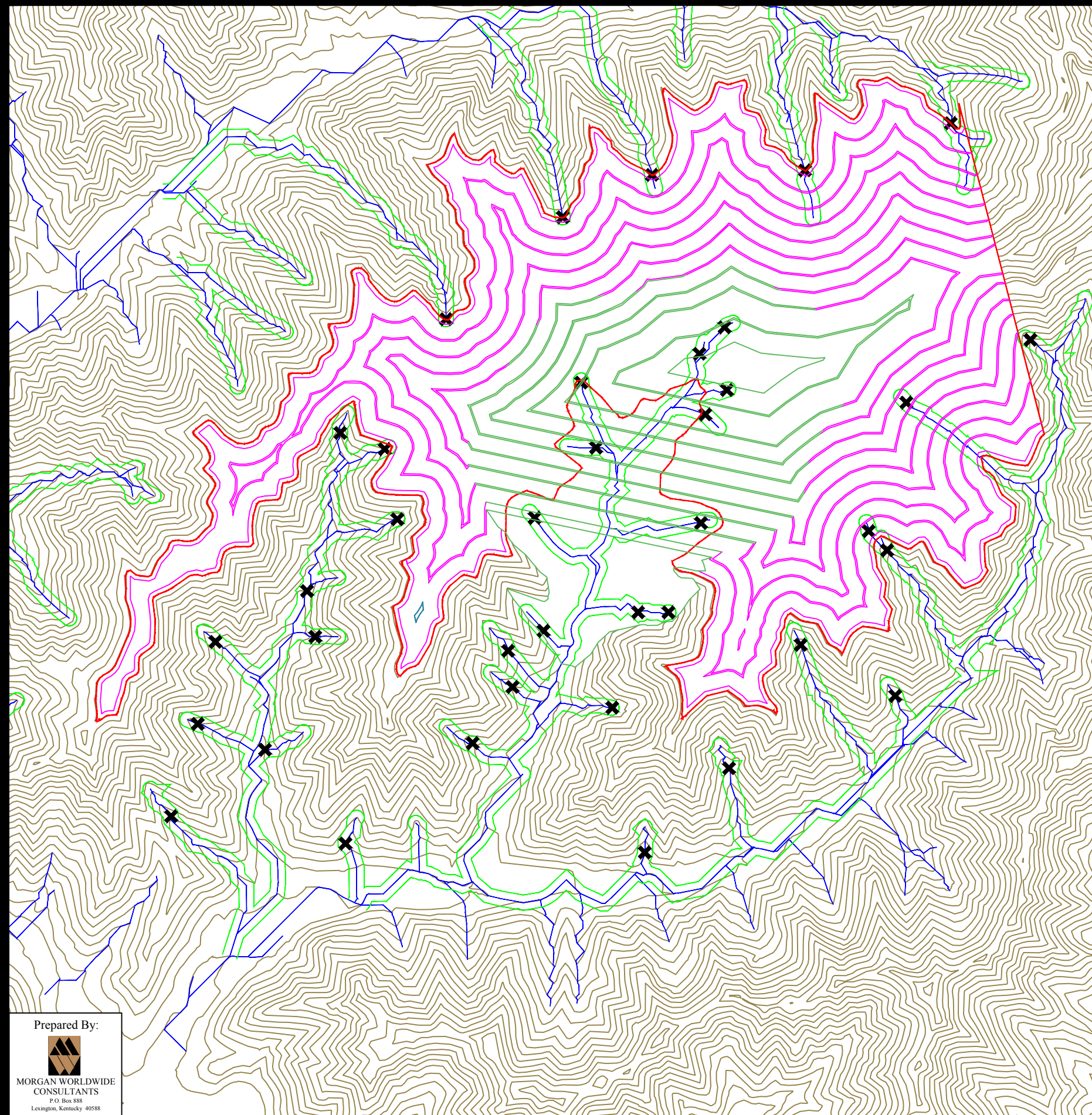
- Original Topography (50 ft Ctrs)
- Generated Streams (14.5 acre drainage)
- 100 ft stream offset
- Mineral Removal Area
- Post-Mining Topography
- Excess Spoil Topography
- Relocated Stream
- Ephemeral/Intermittent Point

**Central Appalachia
Region**
Surface Area Mine
Alternative 6

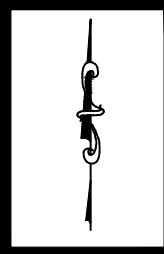
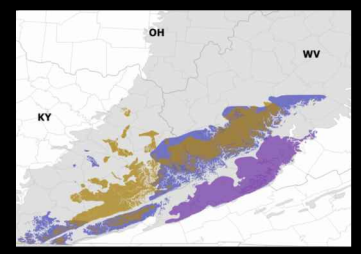


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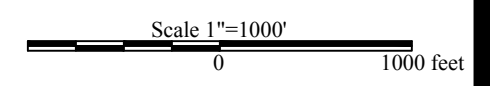
- Alternative 7
- 2.3 million tpy mined
 - 37 million tons coal resource
 - 16.1:1 mining ratio
 - 487 million CY initial backfill
 - 251 million LCY excess spoil
 - 37% outside mineral removal area
 - 57.7 million LCY fill below lowest seam mined
 - 1,260 disturbed acres
 - Stream Impacts:
 - 2,156 ft ephemeral stream mined through
 - 1,624 ft ephemeral stream filled
 - 1,444 ft intermittent stream mined through
 - 12,258 ft intermittent stream filled



Legend

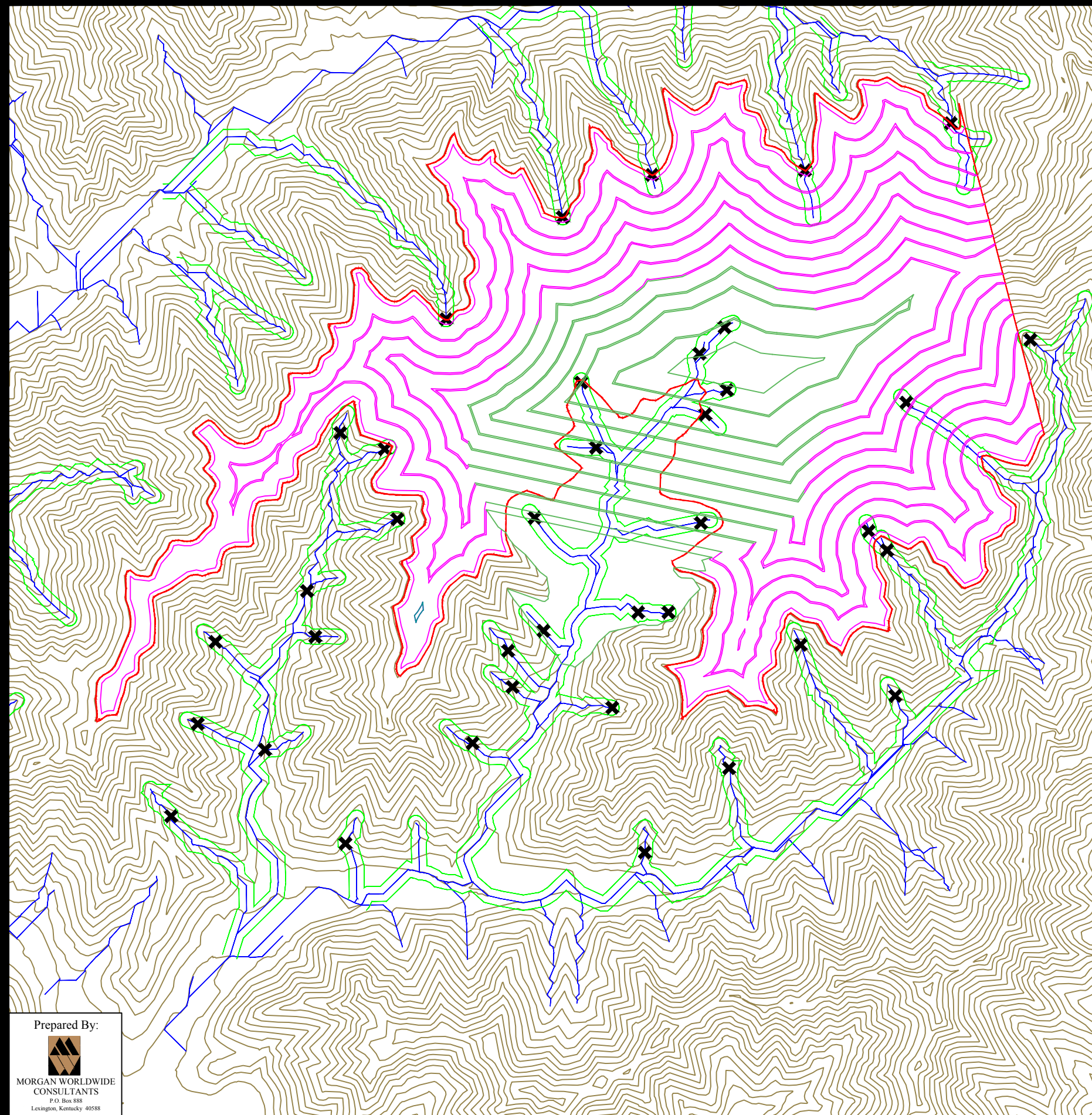
- Original Topography (50 ft Ctrs)
- Generated Streams (14.5 acre drainage)
- 100 ft stream offset
- Mineral Removal Area
- Post-Mining Topography
- Excess Spoil Topography
- Relocated Stream
- Ephemeral/Intermittent Point

**Central Appalachia
Region**
Surface Area Mine
Alternative 7

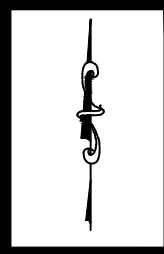
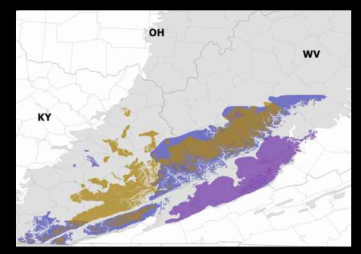


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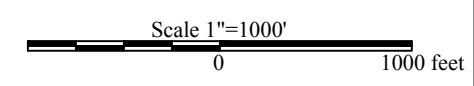
- Alternative 8
- 2.3 million tpy mined
 - 37 million tons coal resource
 - 16.1:1 mining ratio
 - 487 million CY initial backfill
 - 251 million LCY excess spoil
 - 37% outside mineral removal area
 - 57.7 million LCY fill below lowest seam mined
 - 1,260 disturbed acres
 - Stream Impacts:
 - 2,156 ft ephemeral stream mined through
 - 1,624 ft ephemeral stream filled
 - 1,444 ft intermittent stream mined through
 - 12,258 ft intermittent stream filled



Legend

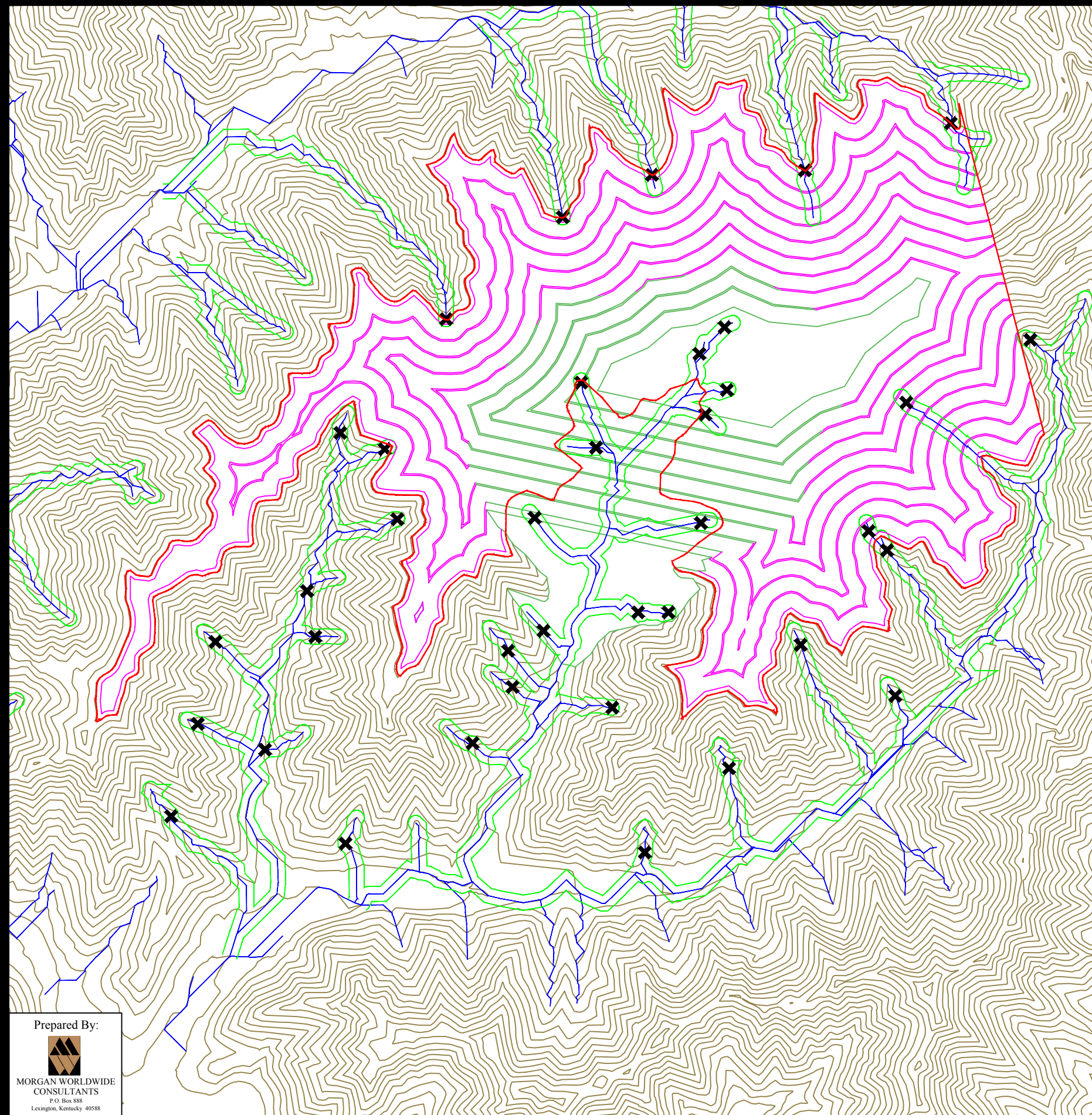
- Original Topography (50 ft Ctrs)
- Generated Streams (14.5 acre drainage)
- 100 ft stream offset
- Mineral Removal Area
- Post-Mining Topography
- Excess Spoil Topography
- Relocated Stream
- Ephemeral/Intermittent Point

**Central Appalachia
Region**
Surface Area Mine
Alternative 8



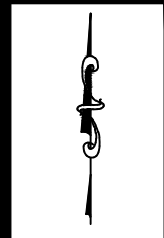
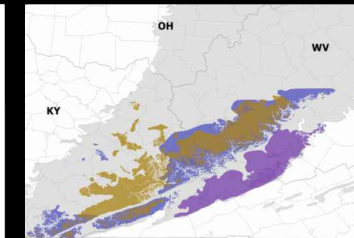
Prepared By:

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Alternative 9

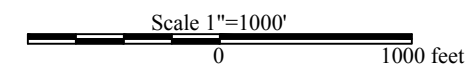
- 2.3 million tpy mined
- 37 million tons coal resource
- 16.1:1 mining ratio
- 487 million CY initial backfill
- 251 million LCY excess spoil
 - 37% outside mineral removal area
 - 36.4 million LCY fill below lowest seam mined
- 1,260 disturbed acres
- Stream Impacts:
 - 2,156 ft ephemeral stream mined through
 - 1,624 ft ephemeral stream filled
 - 1,444 ft intermittent stream mined through
 - 12,258 ft intermittent stream filled



Legend

-  Original Topography (50 ft Ctrs)
-  Generated Streams (14.5 acre drainage)
-  100 ft stream offset
-  Mineral Removal Area
-  Post-Mining Topography
-  Excess Spoil Topography
-  Ephemeral/Intermittent Point

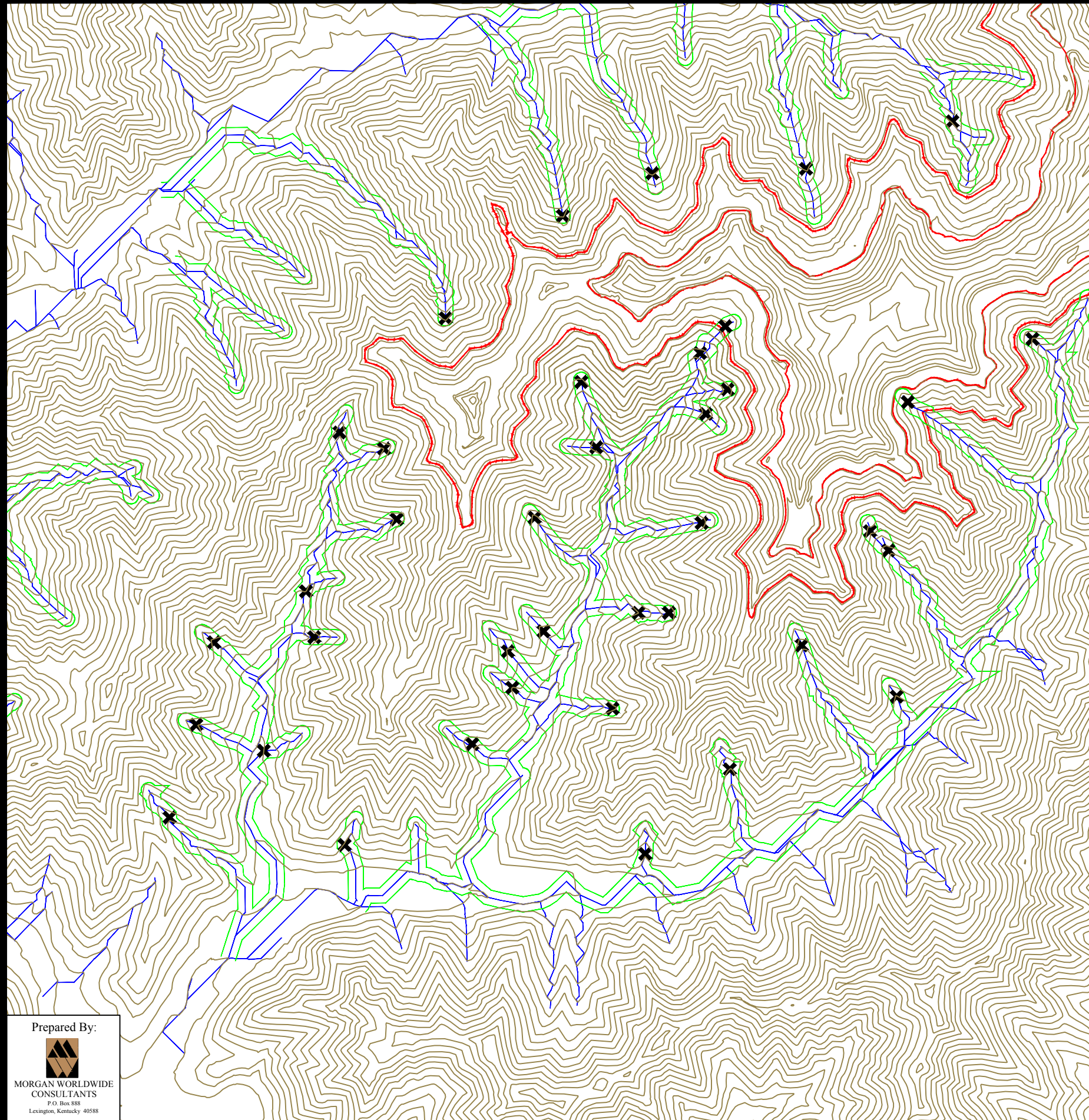
**Central Appalachia
Region
Surface Area Mine
Alternative 9**



Prepared By:

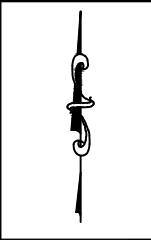
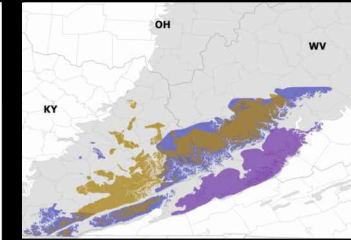


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Pre-Mining

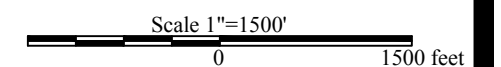
- 50 ft contours taken from USGS Seamless Server
- 14.5 acre ephemeral drainage requirement based on "Defining perennial, intermittent, and ephemeral channels in Eastern Kentucky: Application to forestry best management practices" by JR Svec, RK Kolka, and JW Stringer, 2005.
- Ephemeral/Intermittent points found using coal seam outcrop on down-dip side (North) and 19.8 acre drainage requirement on up-dip side (South), also from Svec, Kolka, and Stringer, 2005.



Legend

-  Original Topography (50 ft Ctrs)
-  Generated Streams (14.5 acre drainage)
-  100 ft stream offset
-  Mineral Removal Area
-  Ephemeral/Intermittent Point

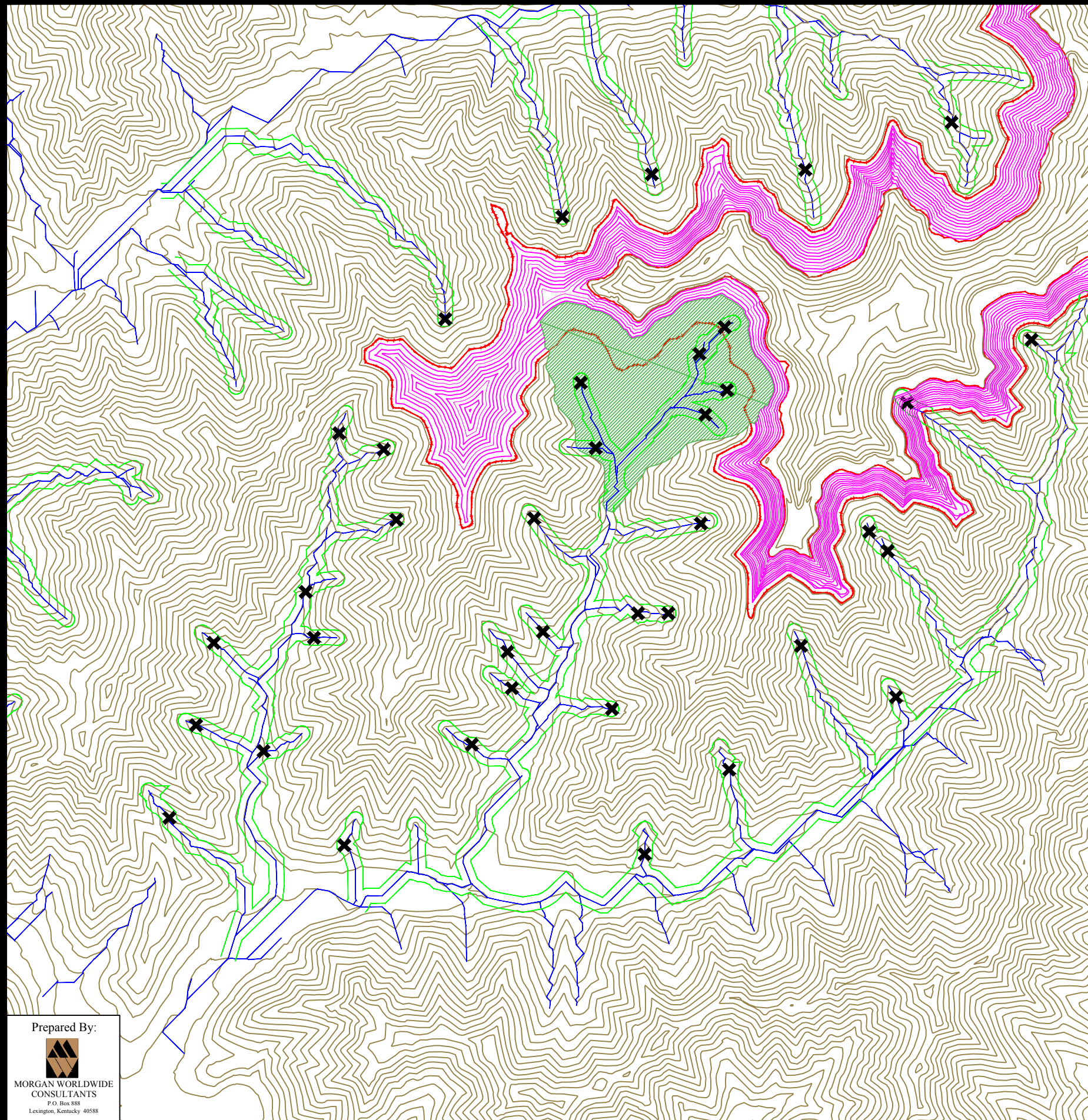
**Central Appalachia
Region**
Surface Contour Mine
Pre-Mining



Prepared By:

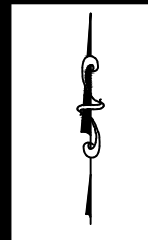
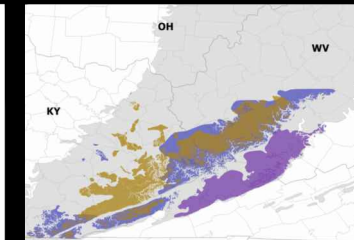


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Alternative 1

- 0.5 million tpy mined
- 5 million tons coal resource
- 13.2:1 mining ratio
- 55 million CY initial backfill
- 28 million LCY excess fill
 - 87% outside mineral removal area
 - 76% below lowest seam mined
- 458 disturbed acres
- Stream Impacts
 - 235 ft ephemeral stream mined through
 - 704 ft ephemeral stream filled
 - 302 ft intermittent stream mined through
 - 6,928 ft intermittent stream filled



Legend

-  Original Topography (50 ft Ctrs)
-  Generated Streams (14.5 acre drainage)
-  100 ft stream offset
-  Mineral Removal Area
-  Post-Mining Topography
-  Excess Spoil Topography
-  Ephemeral/Intermittent Point

Prepared By:

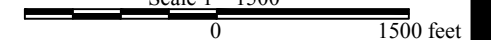


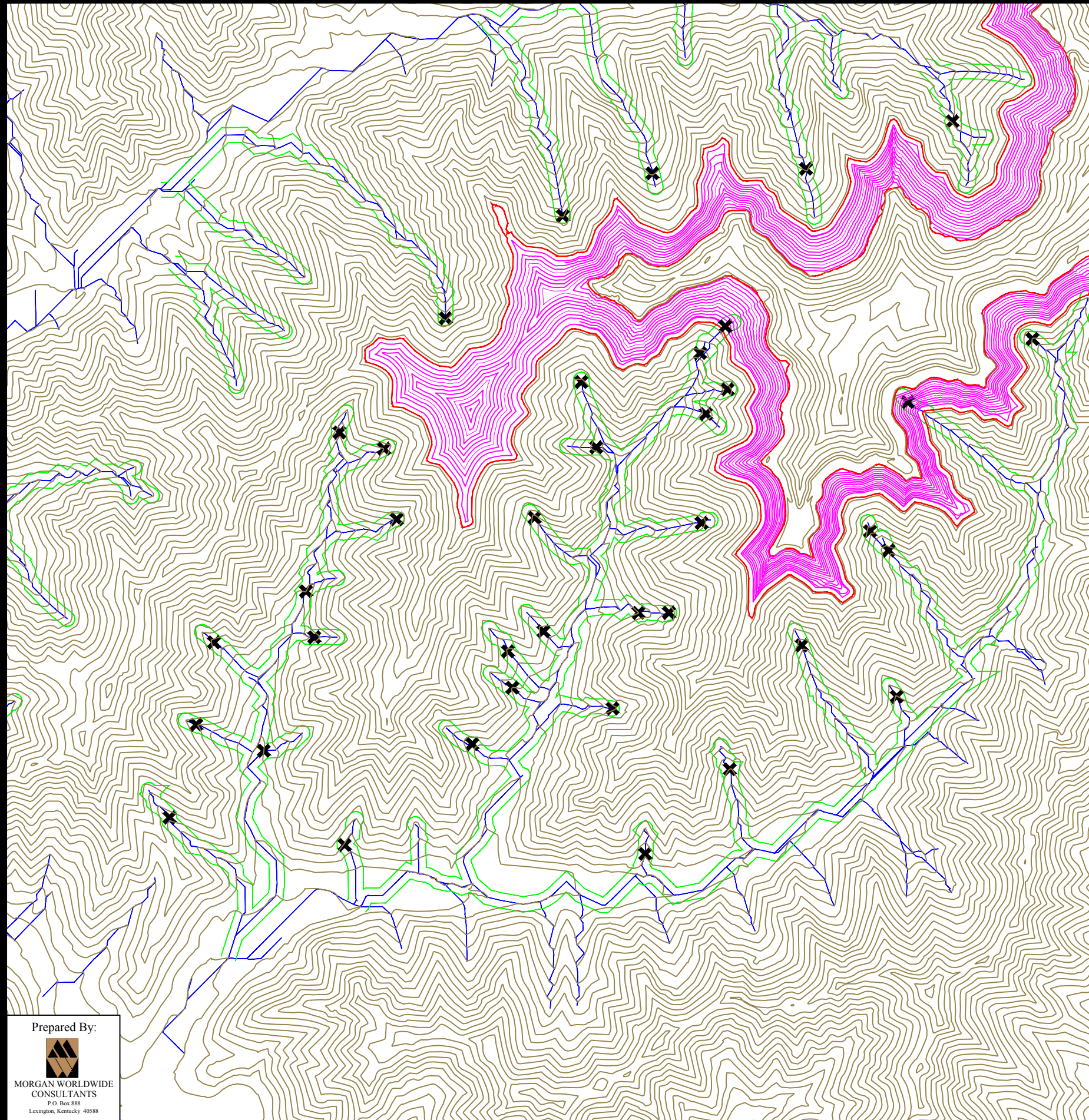
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**Central Appalachia
Region**

**Surface Contour Mine
Alternative 1**

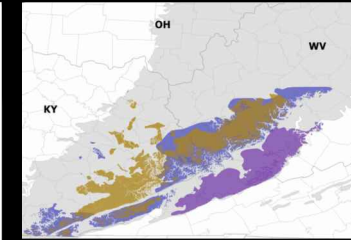
Scale 1"=1500'











Alternative 2

- 0.5 million tpy
- 5 million tons coal resource
- 13.2:1 mining ratio
- 55 million CY initial backfill
- 28 million LCY excess fill
 - All excess spoil must be located to an offsite storage area
- 371 disturbed acres
- Stream Impacts
 - 235 ft ephemeral stream mined through
 - 302 ft intermittent stream mined through



Legend

-  Original Topography (50 ft Ctrs)
-  Generated Streams (14.5 acre drainage)
-  100 ft stream offset
-  Mineral Removal Area
-  Post-Mining Topography
-  Ephemeral/Intermittent Point

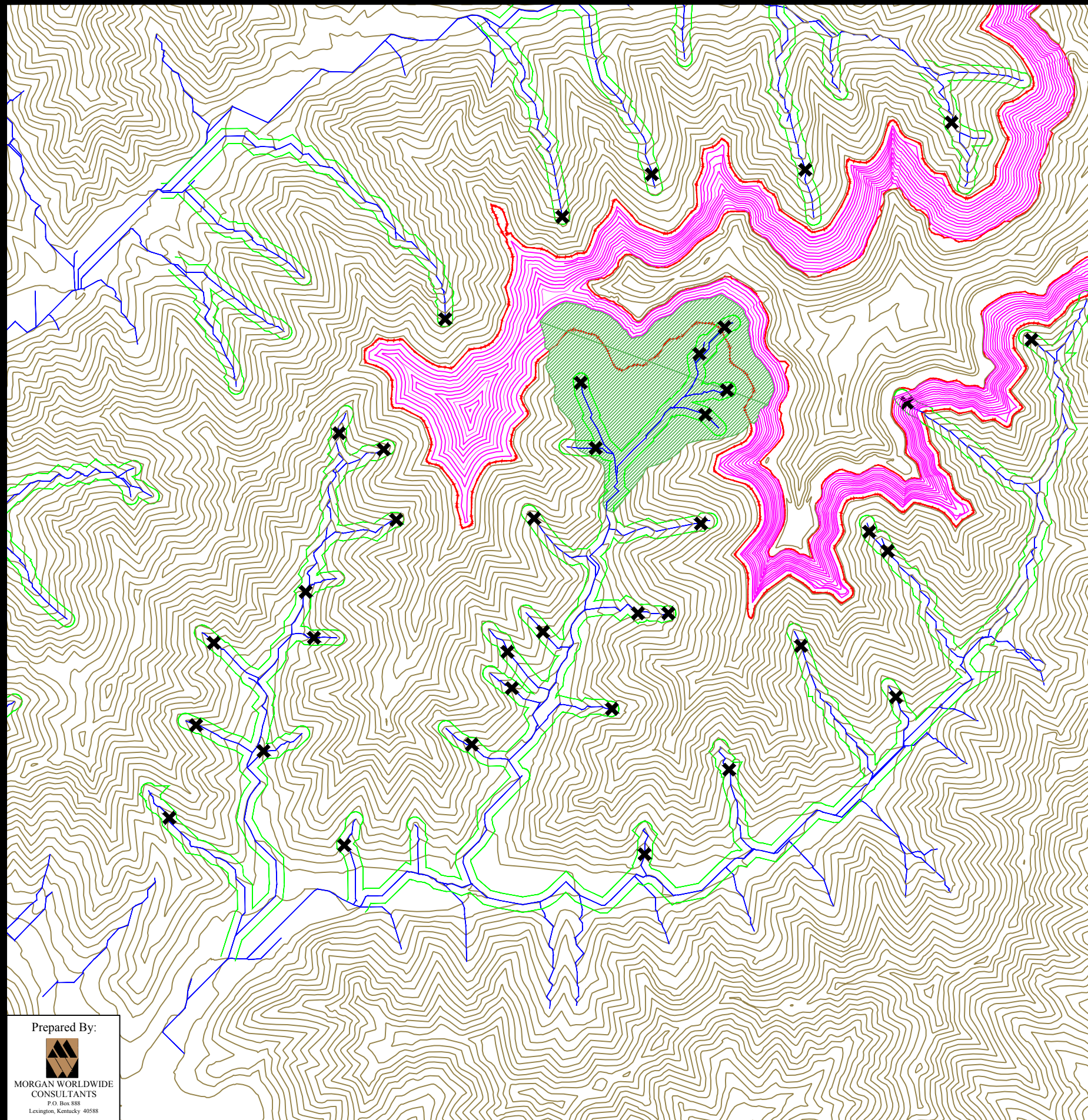
Prepared By:



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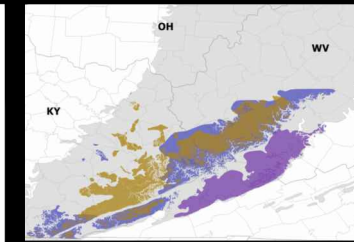
**Central Appalachia
Region**
Surface Contour Mine
Alternative 2

Scale 1"=1500'
0 1500 feet










Alternative 3

- 0.5 million tpy
- 5 million tons coal resource
- 13.2:1 mining ratio
- 55 million CY initial backfill
- 28 million LCY excess fill
 - 87% outside mineral removal area
 - 76% below lowest seam mined
- 458 impacted acres
- Stream Impacts
 - 235 ft ephemeral stream mined through
 - 704 ft ephemeral stream filled
 - 302 ft intermittent stream mined through
 - 6,928 ft intermittent stream filled



Legend

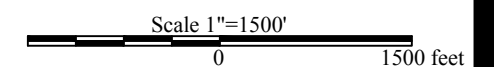
-  Original Topography (50 ft Ctrs)
-  Generated Streams (14.5 acre drainage)
-  100 ft stream offset
-  Mineral Removal Area
-  Post-Mining Topography
-  Excess Spoil Topography
-  Ephemeral/Intermittent Point

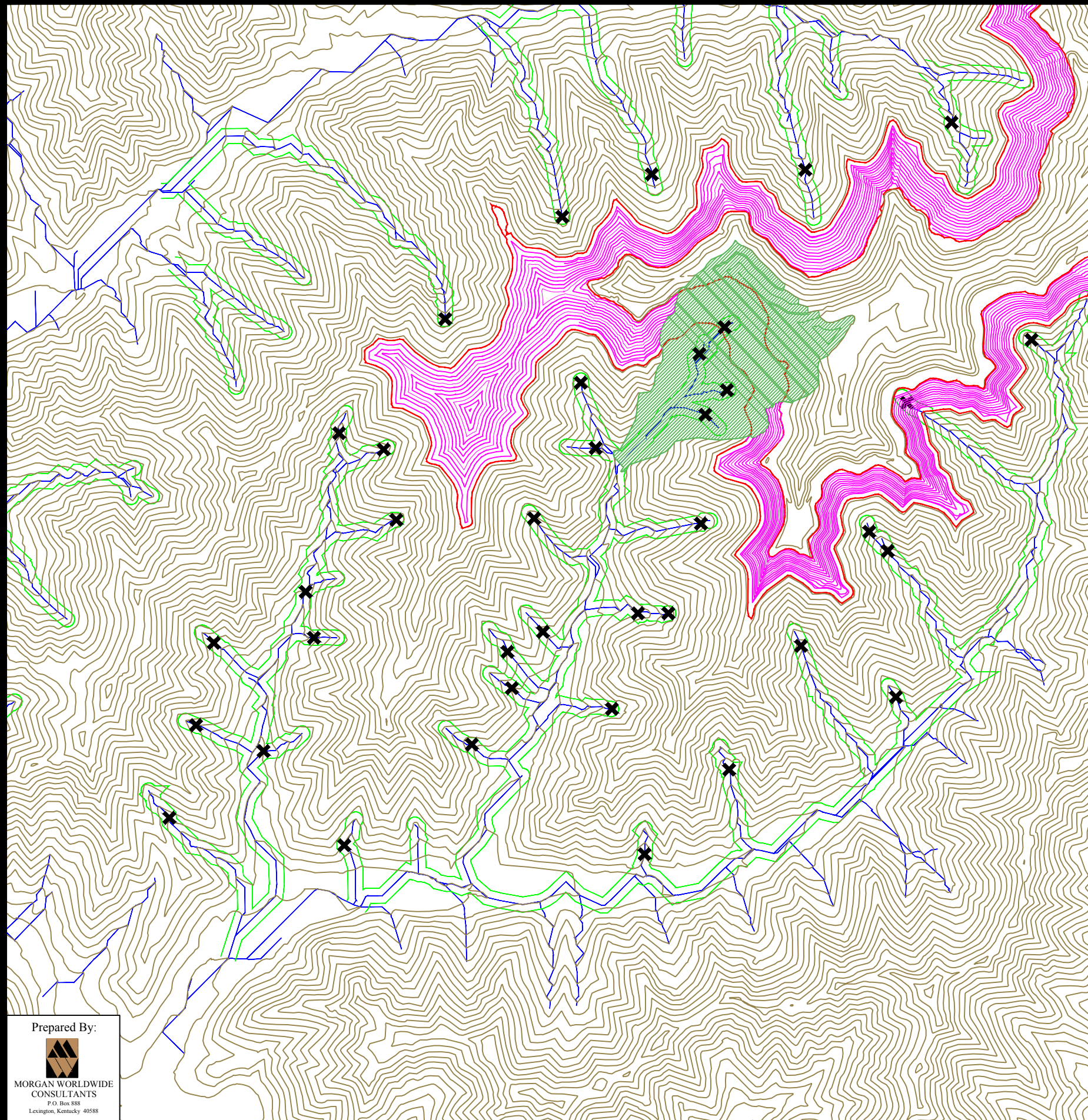
Prepared By:



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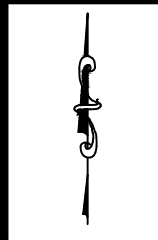
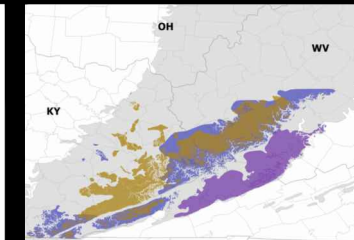
Central Appalachia
Region
Surface Contour Mine
Alternative 3












Alternative 4

- 0.5 million tpy
- 5 million tons coal resource
- 13.2:1 mining ratio
- 55 million CY initial backfill
- 28 million LCY excess fill
 - 46% outside mineral removal area
 - 34% below lowest seam mined
- 448 disturbed acres
- Stream Impacts:
 - 235 ft ephemeral stream mined through
 - 457 ft ephemeral stream filled
 - 302 ft intermittent stream mined through
 - 3,135 ft intermittent stream filled



Legend

-  Original Topography (50 ft Ctrs)
-  Generated Streams (14.5 acre drainage)
-  100 ft stream offset
-  Mineral Removal Area
-  Excess Spoil Topography
-  Post-Mining Topography
-  Ephemeral/Intermittent Point

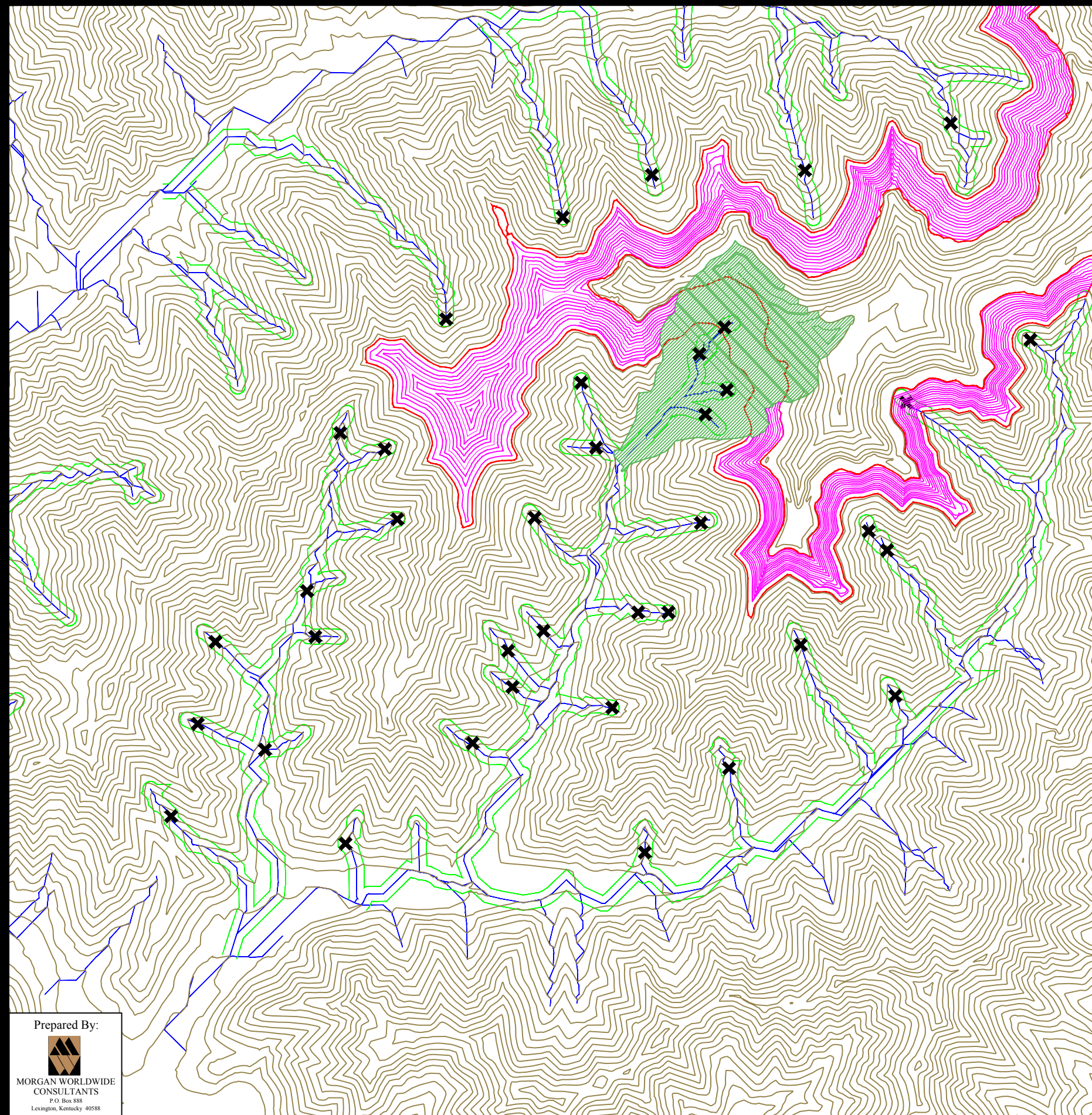
**Central Appalachia
Region
Surface Contour Mine
Alternative 4**

Scale 1"=1500'
0 1500 feet

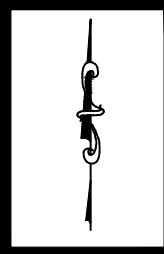
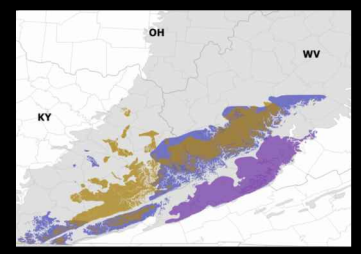
Prepared By:



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- Alternative 5
- 0.5 million tpy
 - 5 million tons coal resource
 - 13.2:1 mining ratio
 - 55 million CY initial backfill
 - 28 million LCY excess fill
 - 46% outside mineral removal area
 - 34% below lowest seam mined
 - 448 disturbed acres
 - Stream Impacts:
 - 235 ft ephemeral stream mined through
 - 457 ft ephemeral stream filled
 - 302 ft intermittent stream mined through
 - 3,135 ft intermittent stream filled



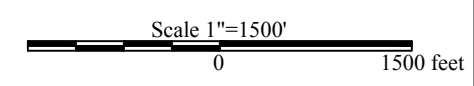
Legend

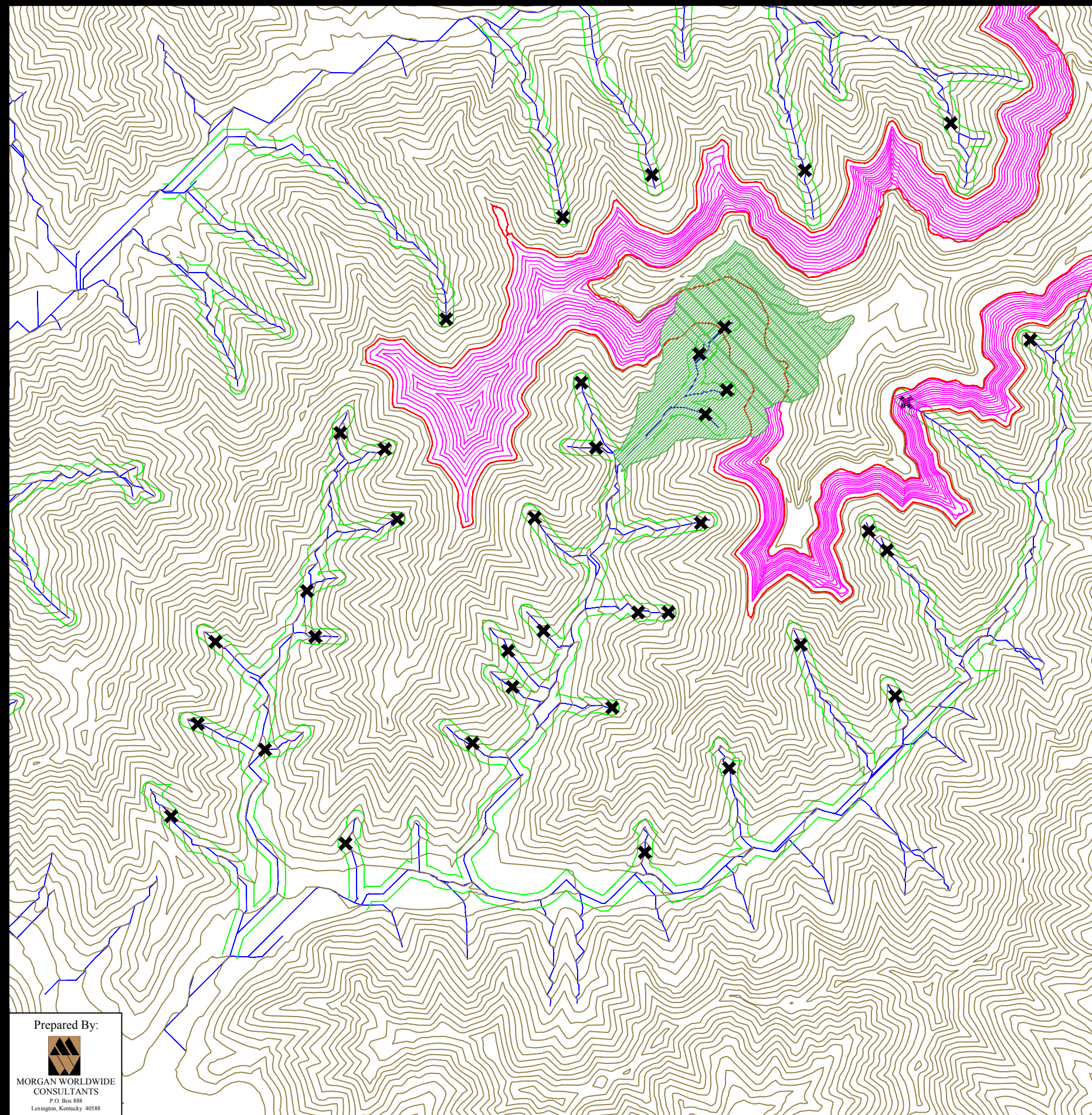
- Original Topography (50 ft Ctrs)
- Generated Streams (14.5 acre drainage)
- 100 ft stream offset
- Mineral Removal Area
- Excess Spoil Topography
- Post-Mining Topography
- Ephemeral/Intermittent Point

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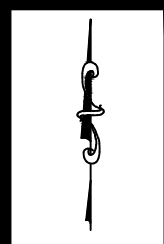
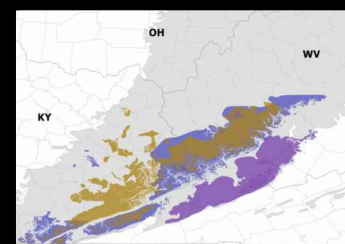
**Central Appalachia
 Region**
 Surface Contour Mine
 Alternative 5












Alternative 6

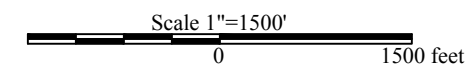
- 0.5 million tpy
- 5 million tons coal resource
- 13.2:1 mining ratio
- 55 million CY initial backfill
- 28 million LCY excess fill
 - 46% outside mineral removal area
 - 34% below lowest seam mined
- 448 disturbed acres
- Stream Impacts:
 - 235 ft ephemeral stream mined through
 - 457 ft ephemeral stream filled
 - 302 ft intermittent stream mined through
 - 3,135 ft intermittent stream filled



Legend

-  Original Topography (50 ft Ctrs)
-  Generated Streams (14.5 acre drainage)
-  100 ft stream offset
-  Mineral Removal Area
-  Excess Spoil Topography
-  Post-Mining Topography
-  Ephemeral/Intermittent Point

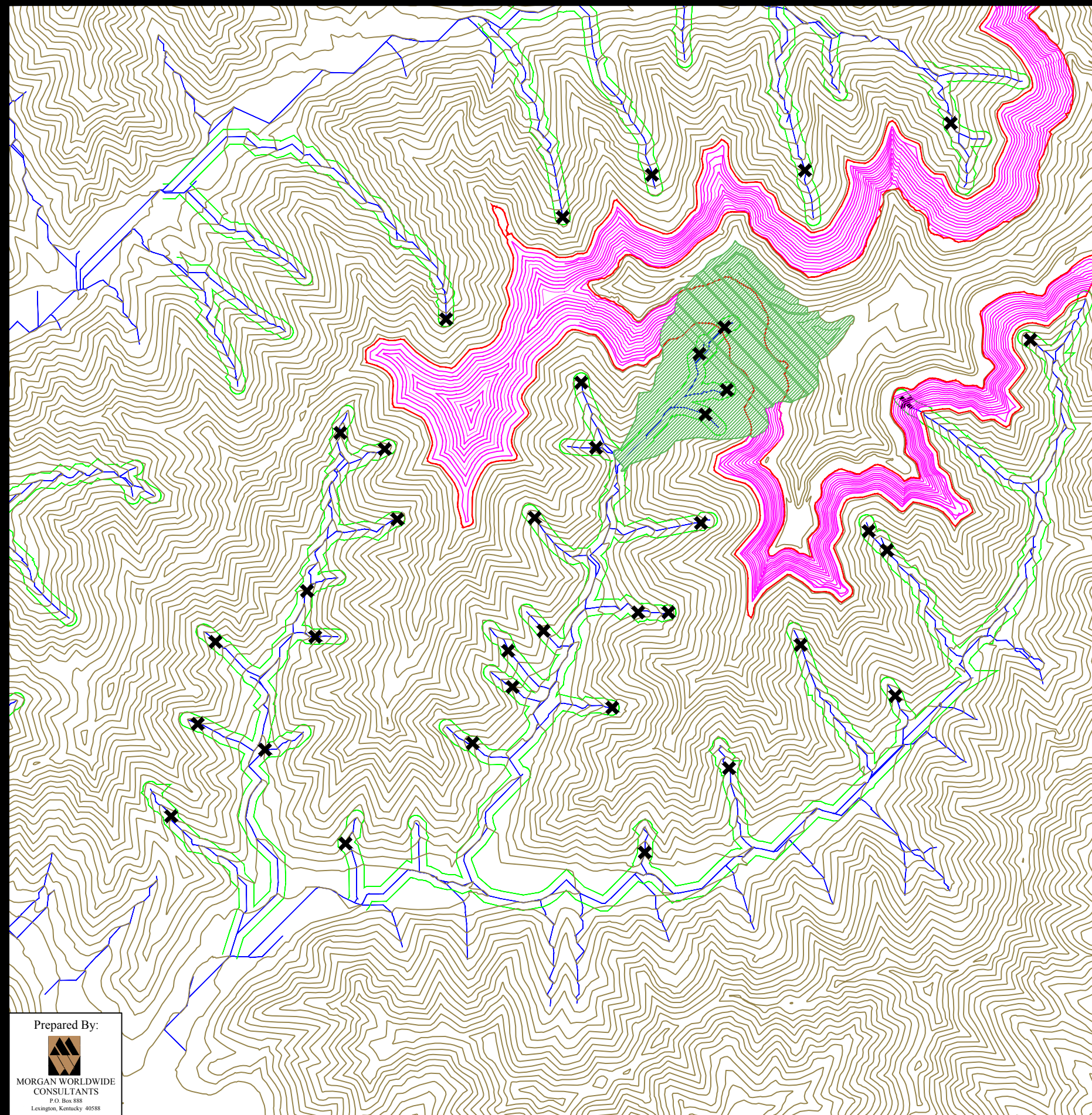
**Central Appalachia
Region
Surface Contour Mine
Alternative 6**



Prepared By:

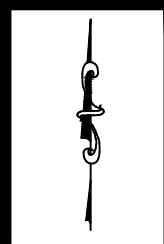
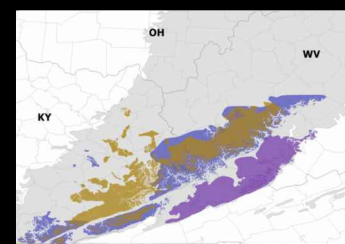


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Alternative 7

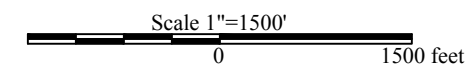
- 0.5 million tpy
- 5 million tons coal resource
- 13.2:1 mining ratio
- 55 million CY initial backfill
- 28 million LCY excess fill
 - 46% outside mineral removal area
 - 34% below lowest seam mined
- 448 disturbed acres
- Stream Impacts:
 - 235 ft ephemeral stream mined through
 - 457 ft ephemeral stream filled
 - 302 ft intermittent stream mined through
 - 3,135 ft intermittent stream filled



Legend

-  Original Topography (50 ft Ctrs)
-  Generated Streams (14.5 acre drainage)
-  100 ft stream offset
-  Mineral Removal Area
-  Excess Spoil Topography
-  Post-Mining Topography
-  Ephemeral/Intermittent Point

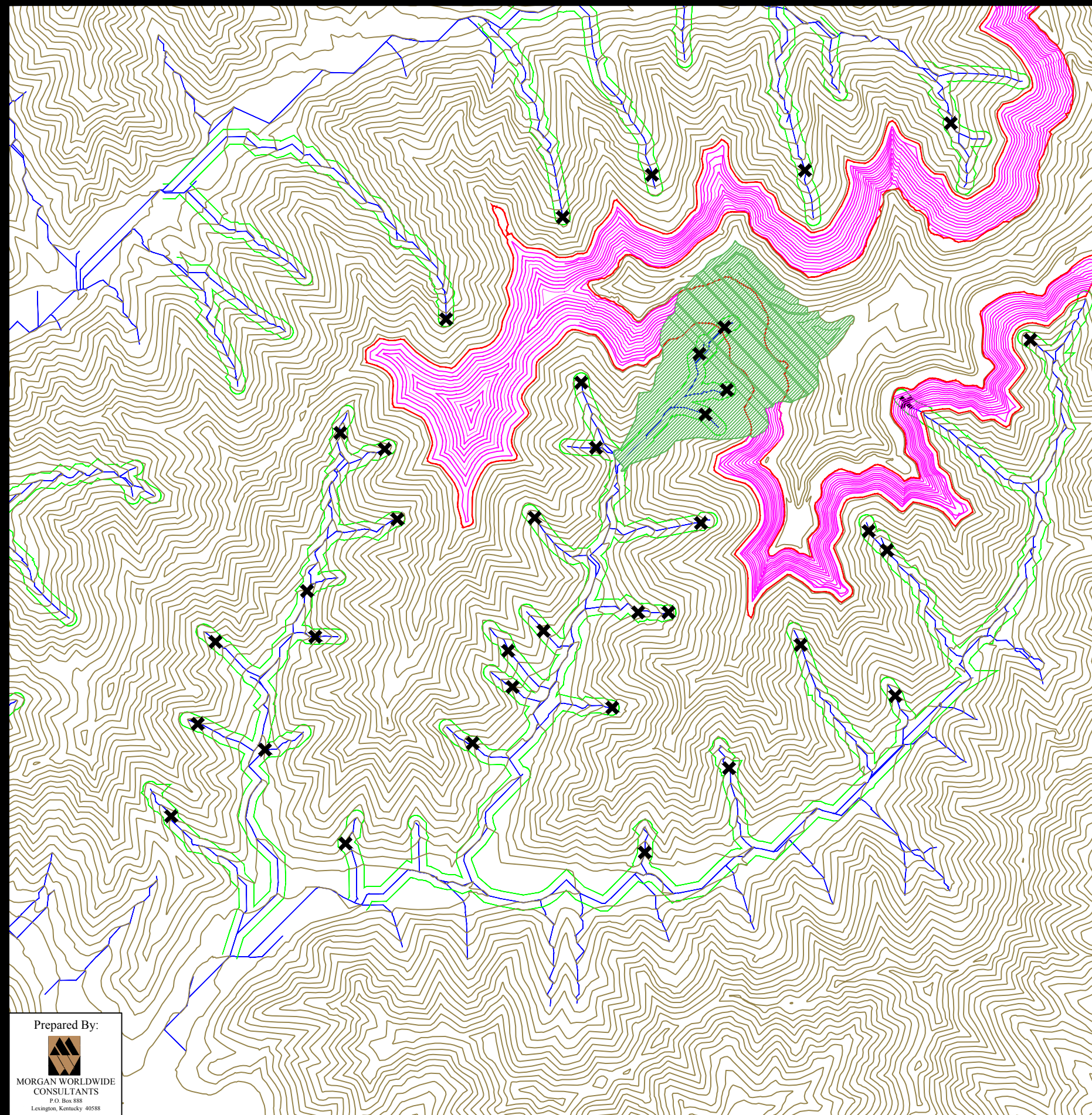
**Central Appalachia
Region
Surface Contour Mine
Alternative 7**



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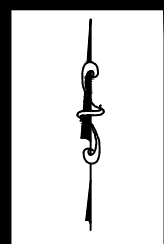
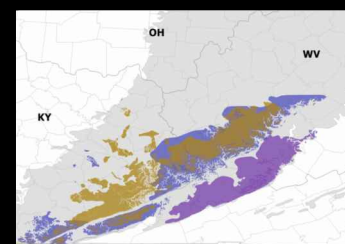


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Alternative 8

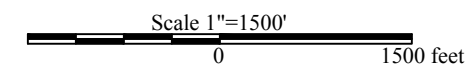
- 0.5 million tpy
- 5 million tons coal resource
- 13.2:1 mining ratio
- 55 million CY initial backfill
- 28 million LCY excess fill
 - 46% outside mineral removal area
 - 34% below lowest seam mined
- 448 disturbed acres
- Stream Impacts:
 - 235 ft ephemeral stream mined through
 - 457 ft ephemeral stream filled
 - 302 ft intermittent stream mined through
 - 3,135 ft intermittent stream filled



Legend

-  Original Topography (50 ft Ctrs)
-  Generated Streams (14.5 acre drainage)
-  100 ft stream offset
-  Mineral Removal Area
-  Excess Spoil Topography
-  Post-Mining Topography
-  Ephemeral/Intermittent Point

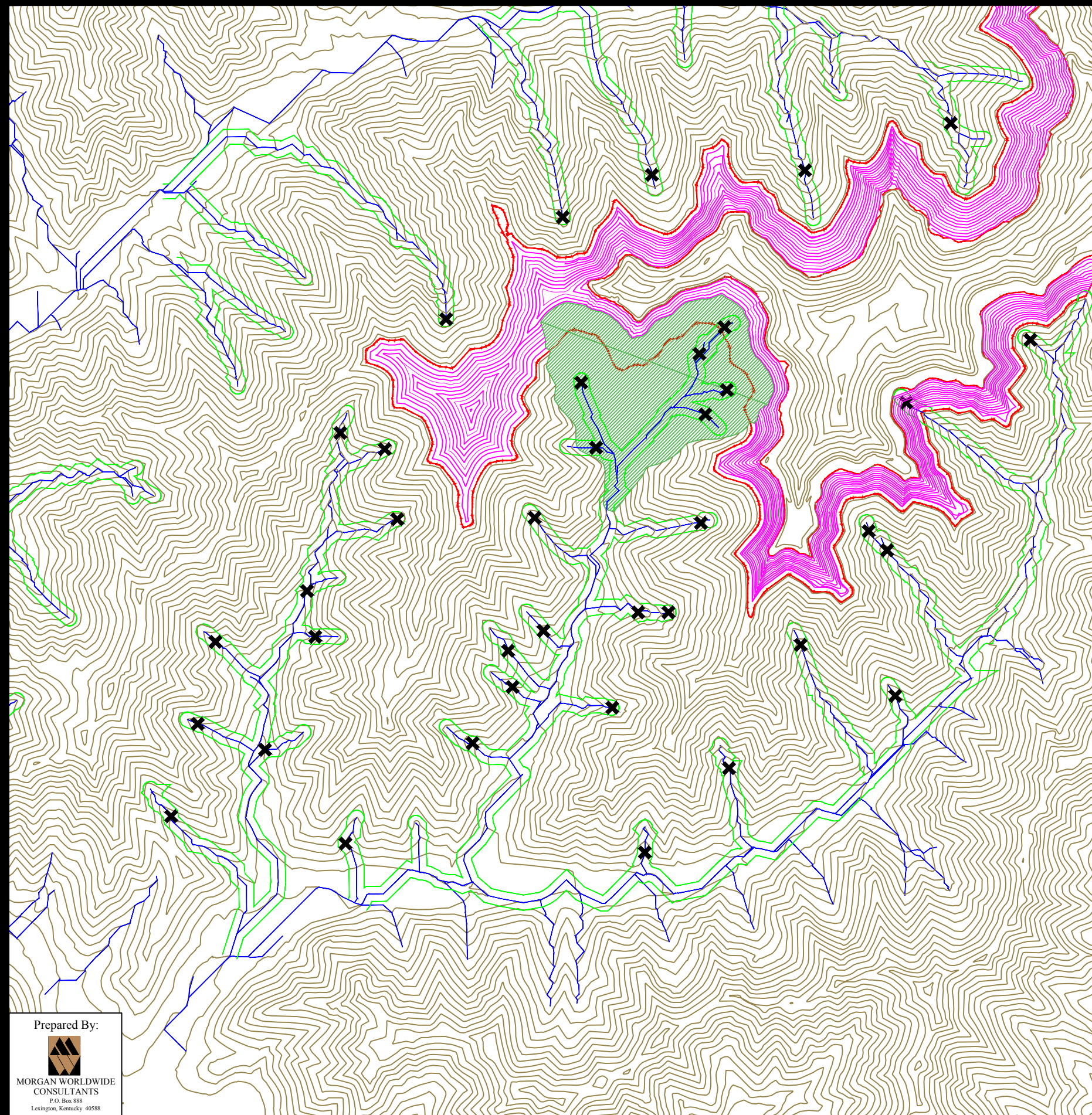
**Central Appalachia
Region
Surface Contour Mine
Alternative 8**



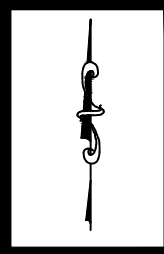
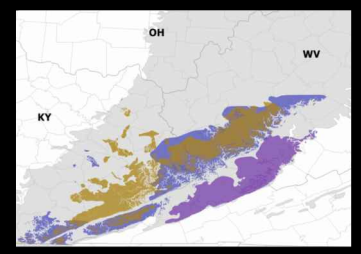
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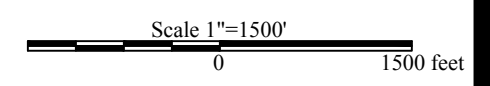
- Alternative 9
- 0.5 million tpy mined
 - 5 million tons coal resource
 - 13.2:1 mining ratio
 - 55 million CY initial backfill
 - 28 million LCY excess fill
 - 87% outside mineral removal area
 - 76% below lowest seam mined
 - 458 disturbed acres
 - Stream Impacts
 - 235 ft ephemeral stream mined through
 - 704 ft ephemeral stream filled
 - 302 ft intermittent stream mined through
 - 6,928 ft intermittent stream filled



Legend

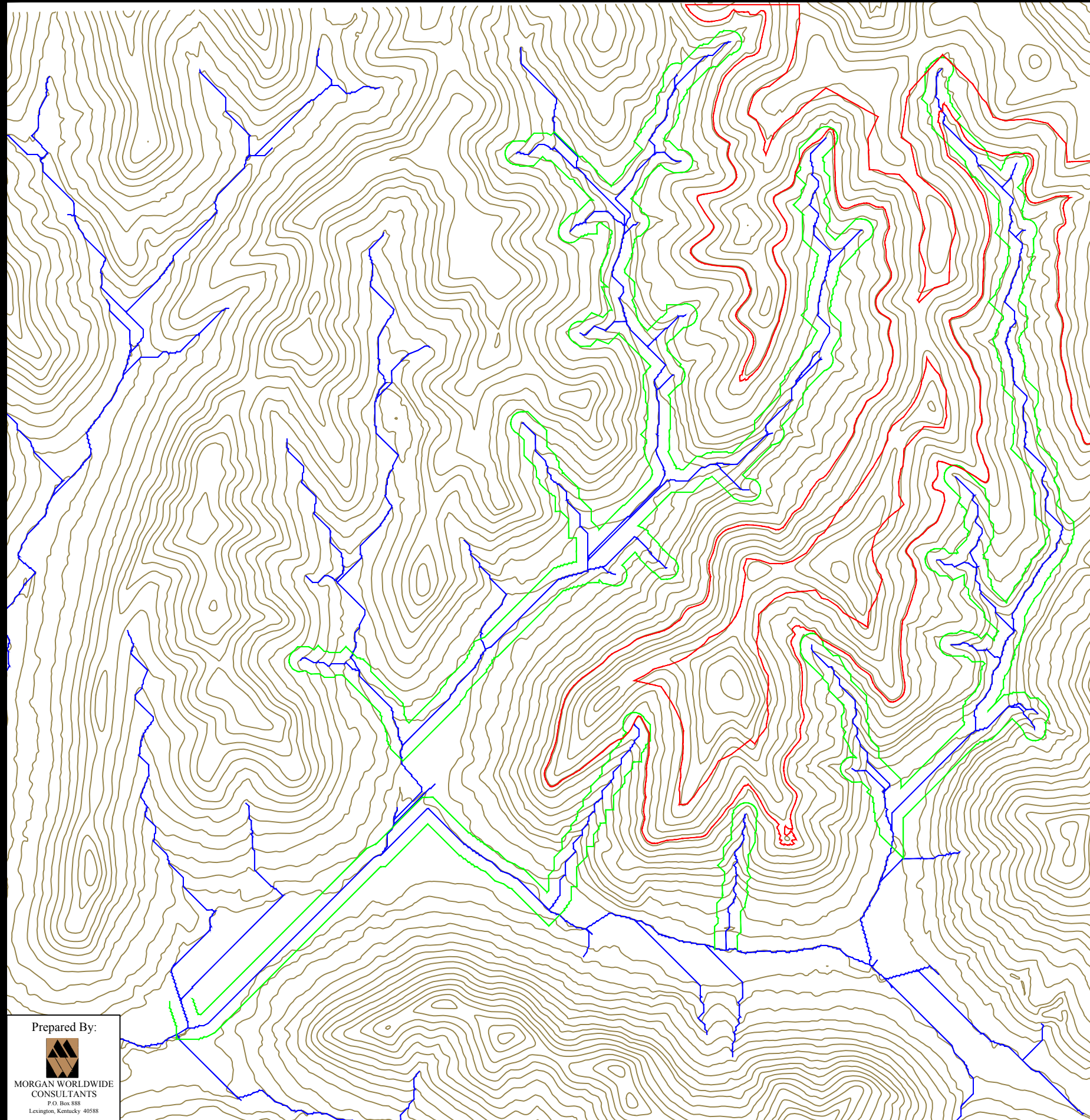
- Original Topography (50 ft Ctrs)
- Generated Streams (14.5 acre drainage)
- 100 ft stream offset
- Mineral Removal Area
- Post-Mining Topography
- Excess Spoil Topography
- Ephemeral/Intermittent Point

**Central Appalachia
Region**
Surface Contour Mine
Alternative 9



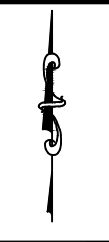
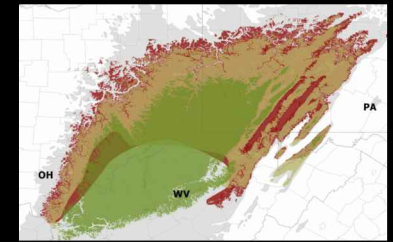
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Pre-Mining

- 20 ft contours taken from USGS Seamless Server
- 7.8 acre ephemeral drainage requirement based on original streams delineated within permit files. Streams were generated based on drainage requirement until stream length was within 1% of the streams sampled from the permit file. This drainage requirement was then applied to the sample mine topography to generate the final streams.

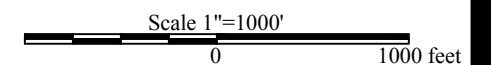


Legend

- Original Topography (20 ft Ctrs)
- Generated Streams (7.8 acre drainage)
- 100 ft stream offset
- ▭ Mineral Removal Area

**Northern Appalachia
Region**

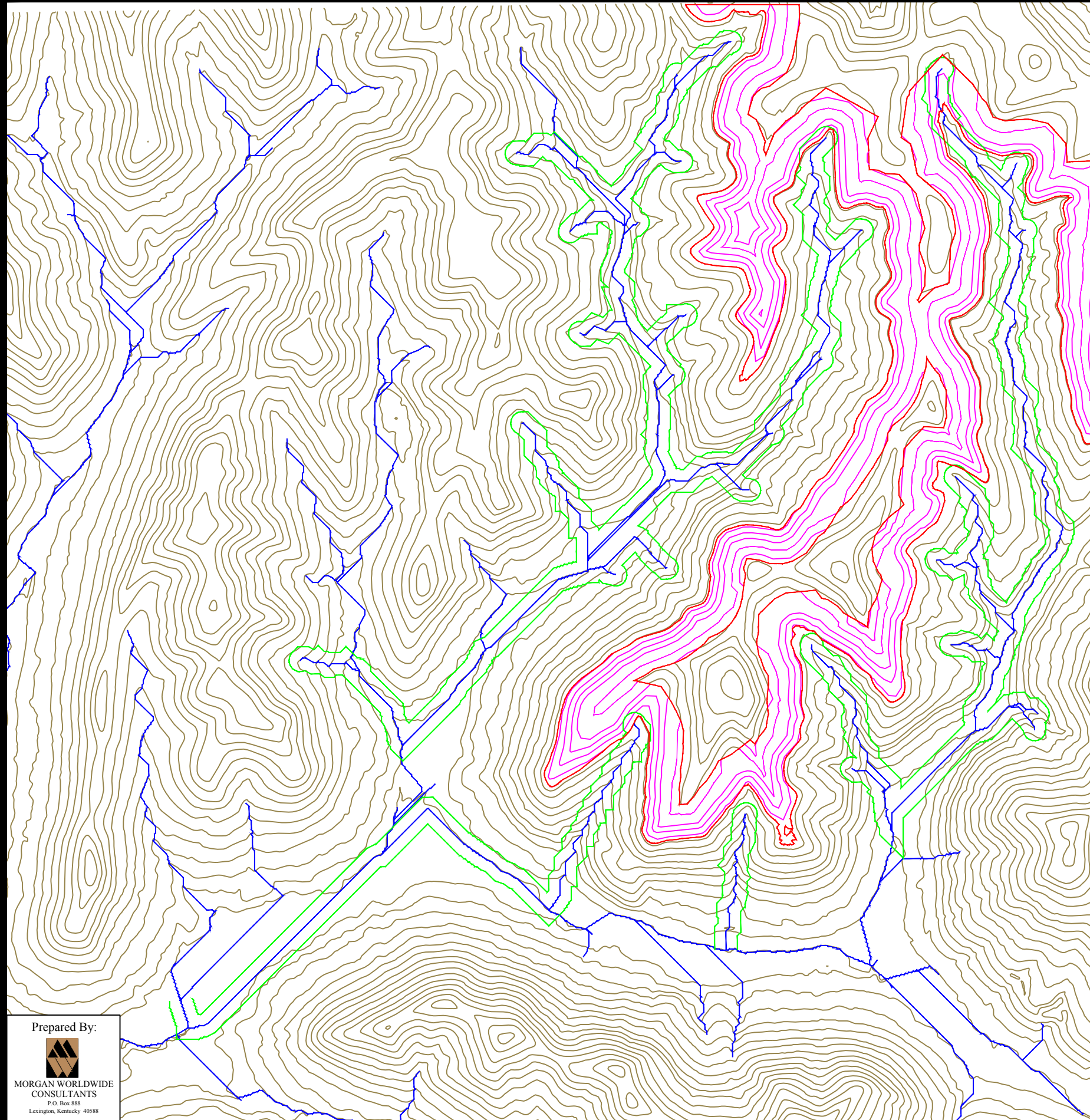
**Surface Contour Mine
Pre-Mining**



Prepared By:

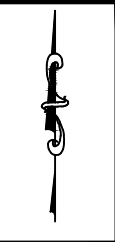
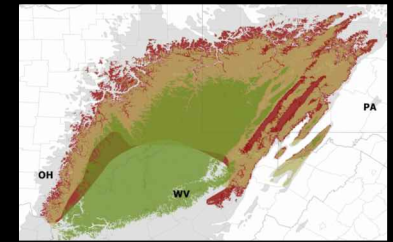


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Alternative 1

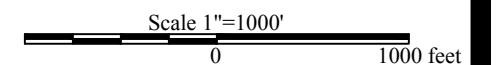
- 0.2 million tpy
- 1.6 million tons coal resource
- 7.5:1 mining ratio
- 205 disturbed acres
- Stream Impacts:
 - 423 ft ephemeral stream mined through



Legend

-  Original Topography (20 ft Ctrs)
-  Generated Streams (7.8 acre drainage)
-  100 ft stream offset
-  Mineral Removal Area
-  Post-Mining Topography

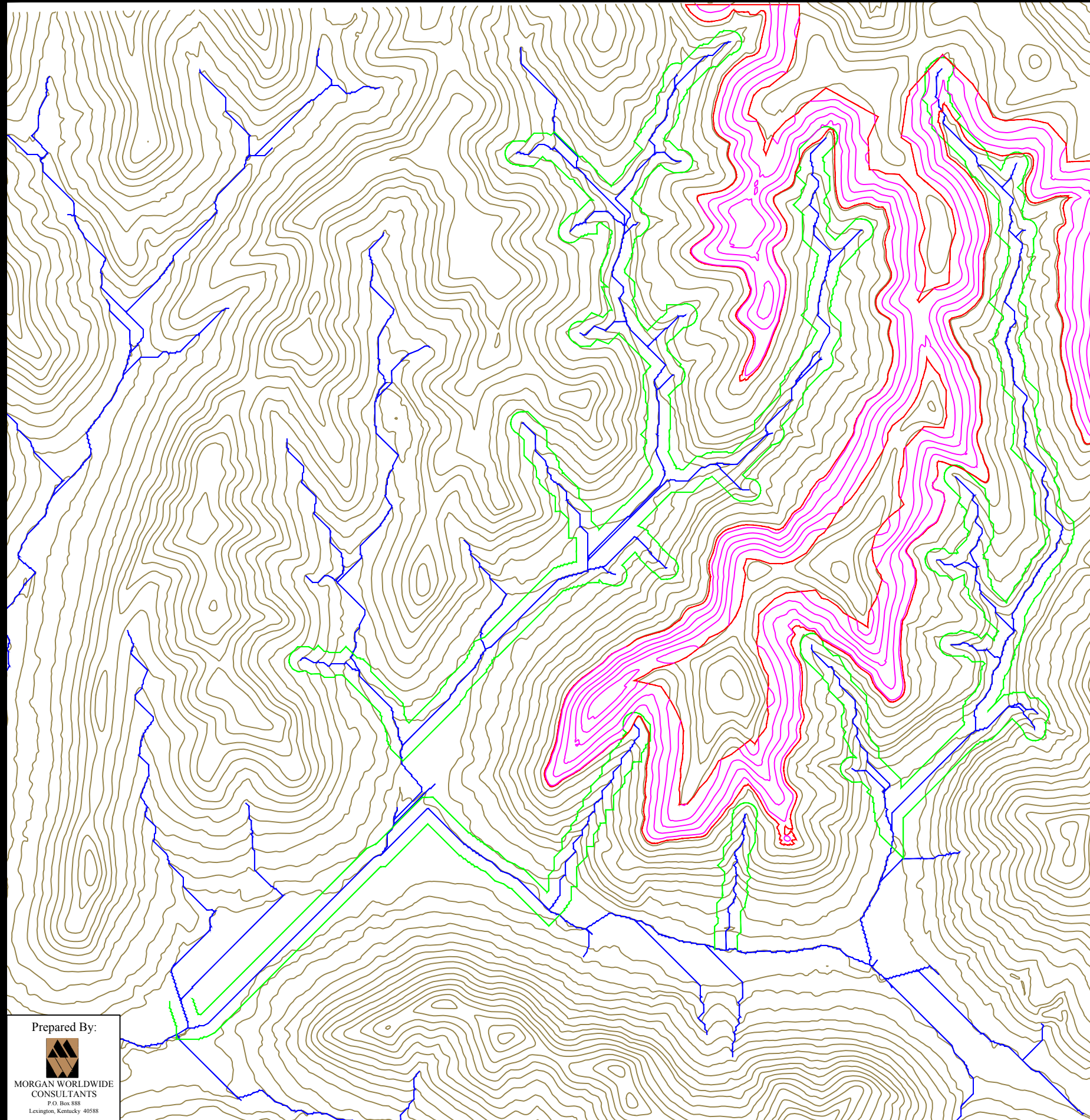
**Northern Appalachia
Region**
Surface Contour Mine
Alternative 1



Prepared By:

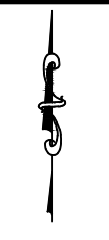
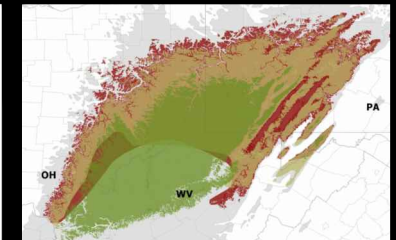


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Alternative 2

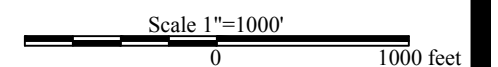
- 0.2 million tpy
- 1.6 million tons coal resource
- 7.5:1 mining ratio
- 205 disturbed acres
- Stream Impacts:
 - 423 ft ephemeral stream mined through



Legend

-  Original Topography (20 ft Ctrs)
-  Generated Streams (7.8 acre drainage)
-  100 ft stream offset
-  Mineral Removal Area
-  Post-Mining Topography

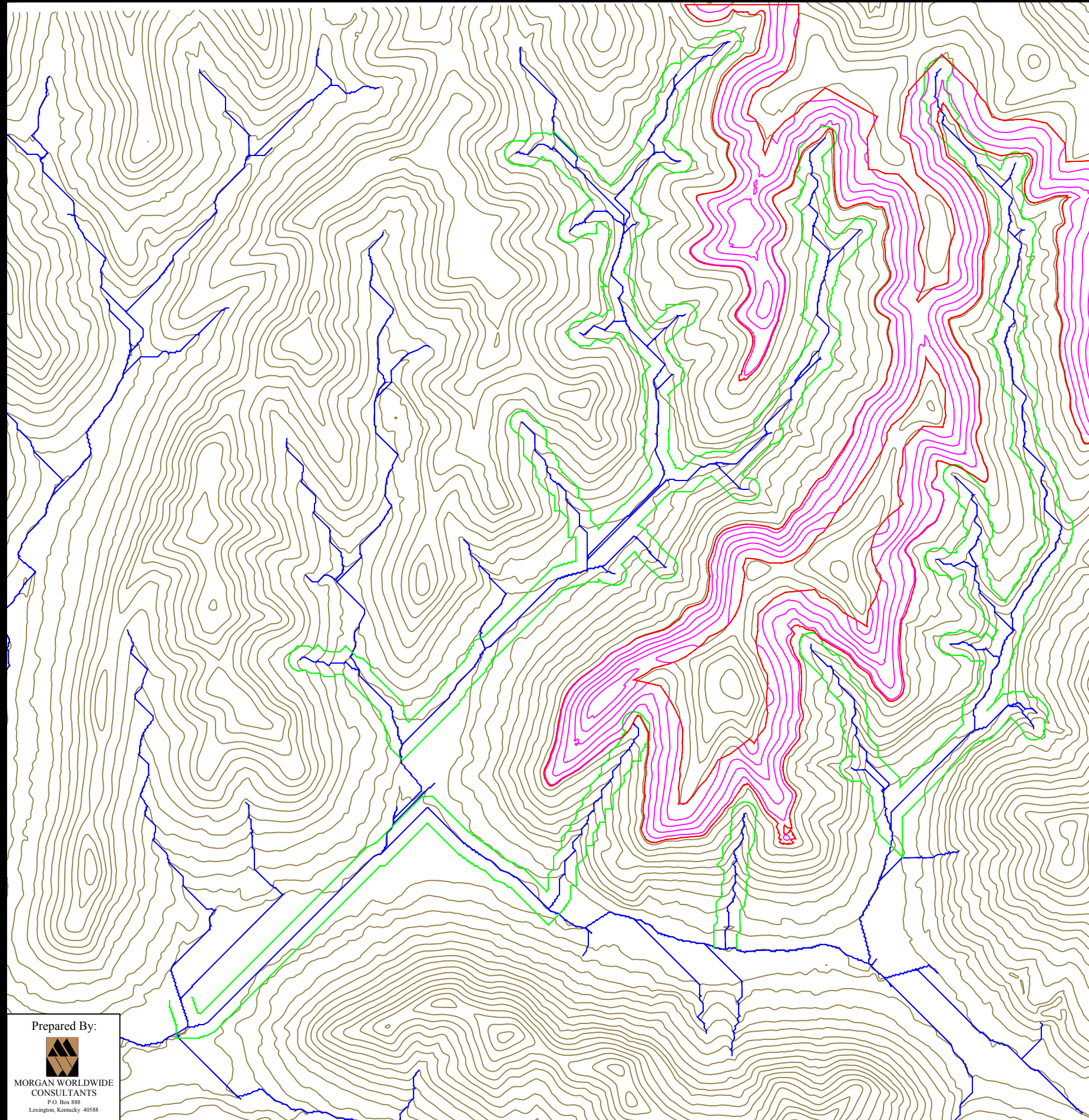
**Northern Appalachia
Region**
Surface Contour Mine
Alternative 2



Prepared By:

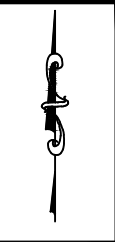
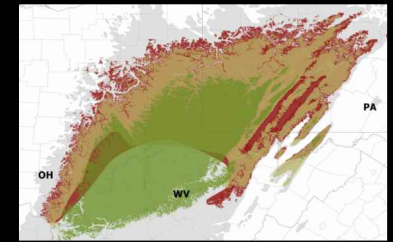


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Alternative 3

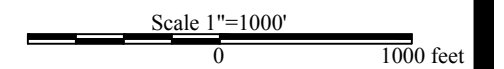
- 0.2 million tpy
- 1.6 million tons coal resource
- 7.5:1 mining ratio
- 205 disturbed acres
- Stream Impacts:
 - 423 ft ephemeral stream mined through



Legend

-  Original Topography (20 ft Ctrs)
-  Generated Streams (7.8 acre drainage)
-  100 ft stream offset
-  Mineral Removal Area
-  Post-Mining Topography

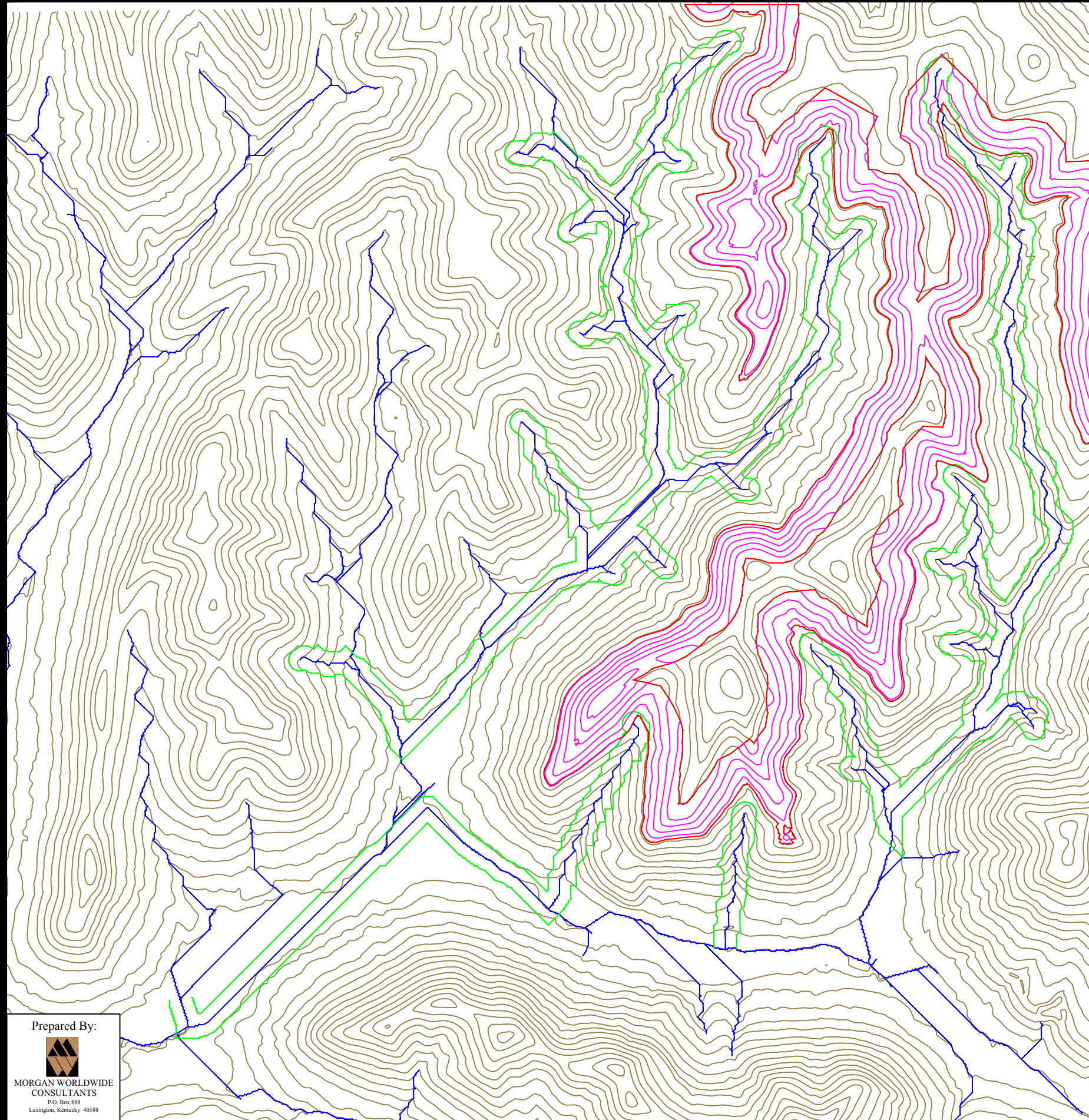
**Northern Appalachia
Region**
Surface Contour Mine
Alternative 3



Prepared By:

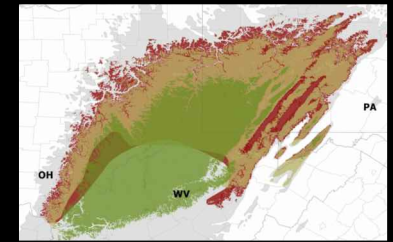


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Alternative 4

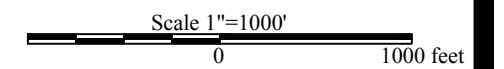
- 0.2 million tpy
- 1.6 million tons coal resource
- 7.5:1 mining ratio
- 205 disturbed acres
- Stream Impacts:
 - 423 ft ephemeral stream mined through



Legend

-  Original Topography (20 ft Ctrs)
-  Generated Streams (7.8 acre drainage)
-  100 ft stream offset
-  Mineral Removal Area
-  Post-Mining Topography

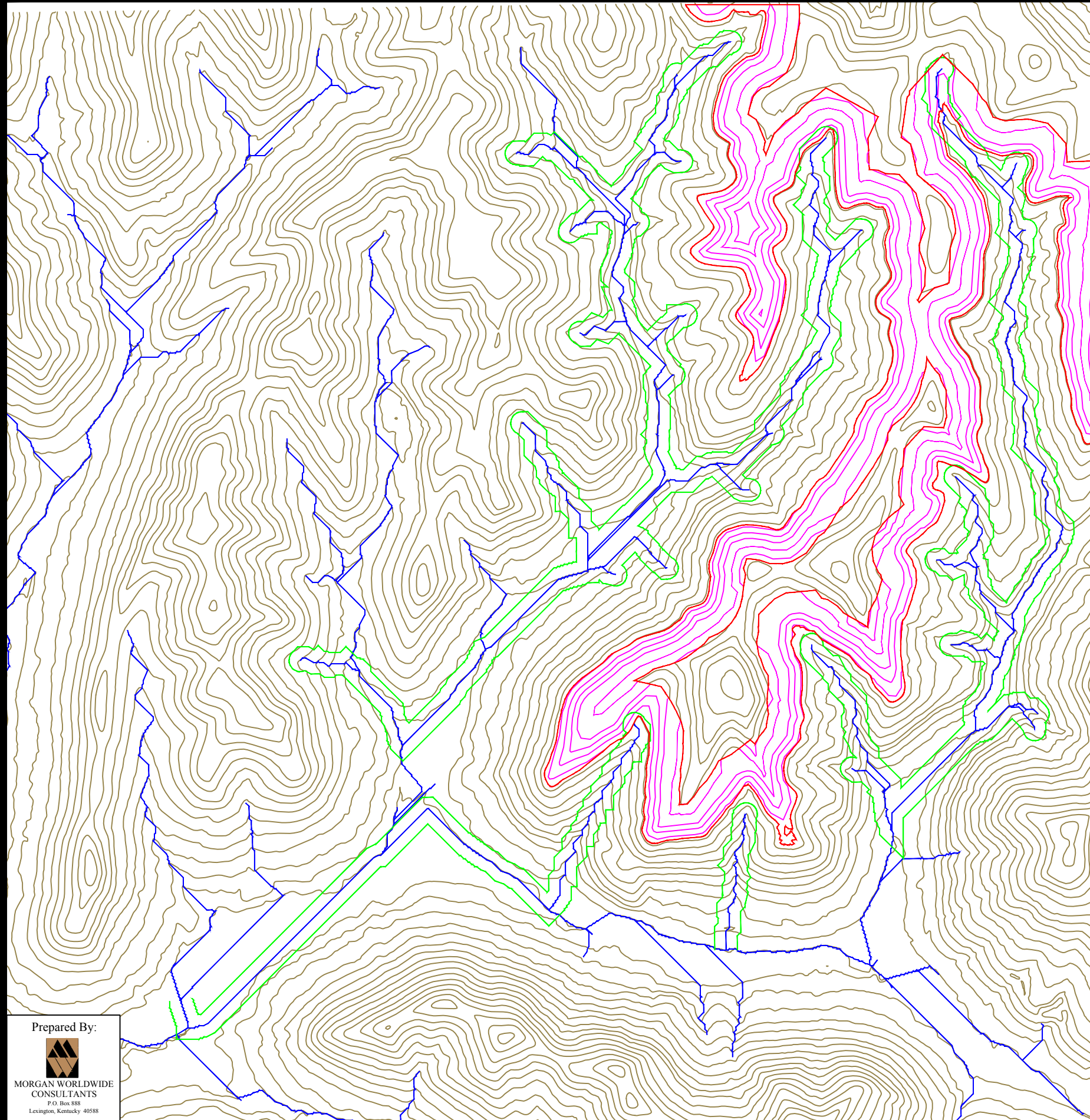
**Northern Appalachia
Region**
Surface Contour Mine
Alternative 4



Prepared By:

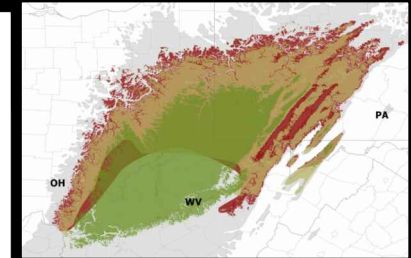


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Alternative 5

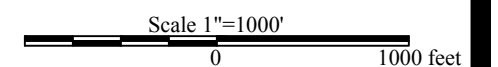
- 0.2 million tpy
- 1.6 million tons coal resource
- 7.5:1 mining ratio
- 205 disturbed acres
- Stream Impacts:
 - 423 ft ephemeral stream mined through



Legend

-  Original Topography (20 ft Ctrs)
-  Generated Streams (7.8 acre drainage)
-  100 ft stream offset
-  Mineral Removal Area
-  Post-Mining Topography

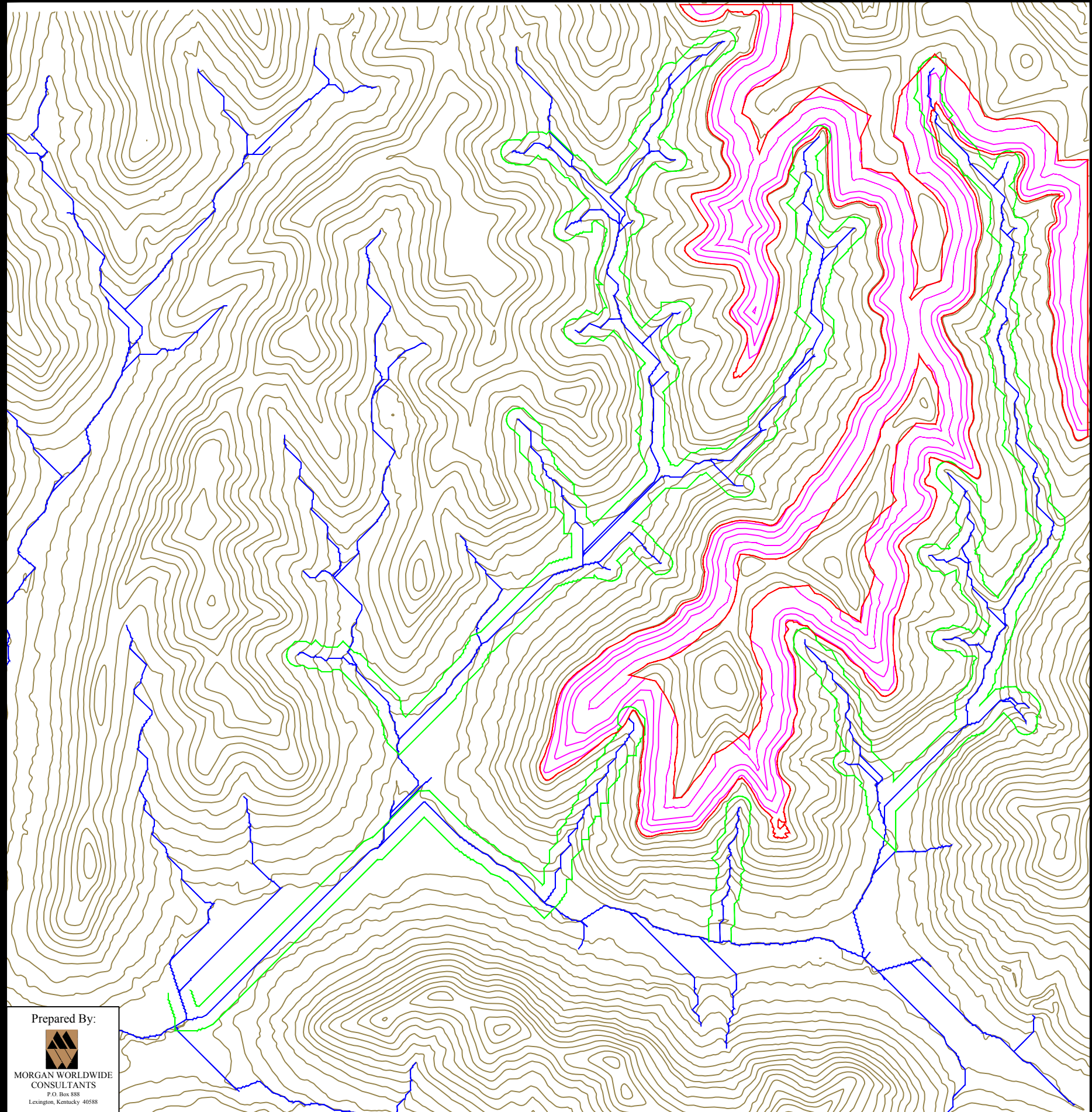
**Northern Appalachia
Region**
Surface Contour Mine
Alternative 5



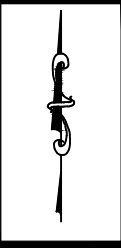
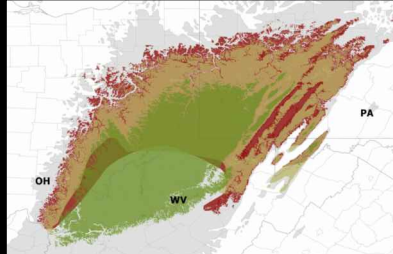
Prepared By:



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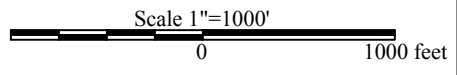
- Alternative 6
- 0.2 million tpy
 - 1.6 million tons coal resource
 - 7.5:1 mining ratio
 - 205 disturbed acres
 - Stream Impacts:
 - 423 ft ephemeral stream mined through



Legend

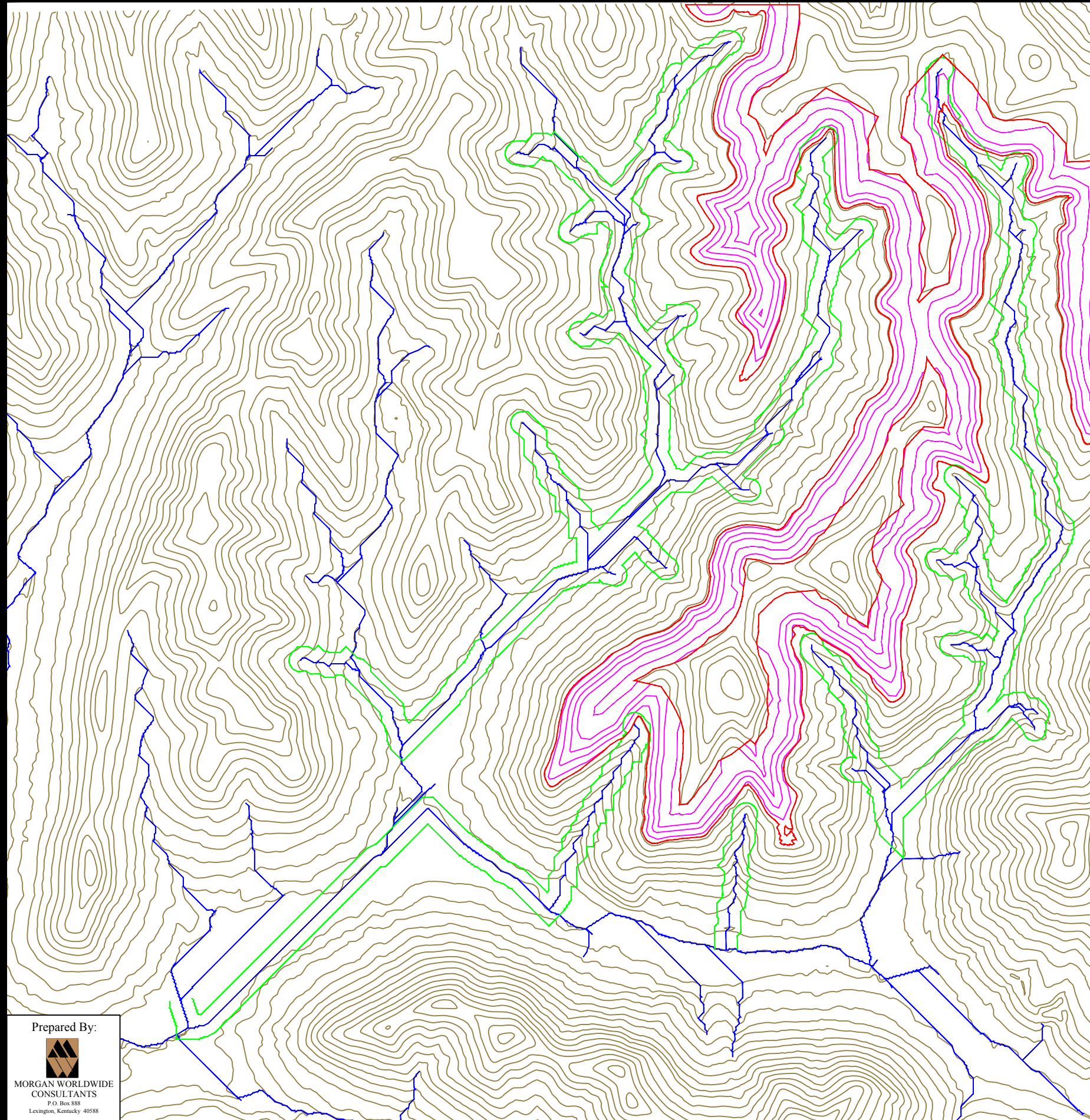
- Original Topography (20 ft Ctrs)
- Generated Streams (7.8 acre drainage)
- 100 ft stream offset
- ▭ Mineral Removal Area
- Post-Mining Topography

**Northern Appalachia
Region**
Surface Contour Mine
Alternative 6



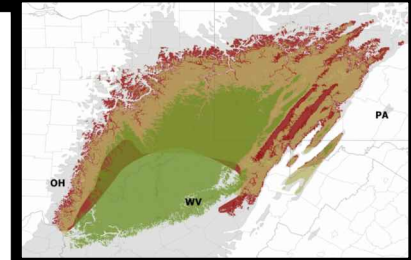
Prepared By:

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Alternative 7

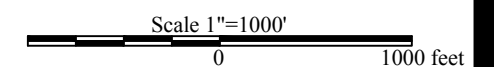
- 0.2 million tpy
- 1.6 million tons coal resource
- 7.5:1 mining ratio
- 205 disturbed acres
- Stream Impacts:
 - 423 ft ephemeral stream mined through



Legend

-  Original Topography (20 ft Ctrs)
-  Generated Streams (7.8 acre drainage)
-  100 ft stream offset
-  Mineral Removal Area
-  Post-Mining Topography

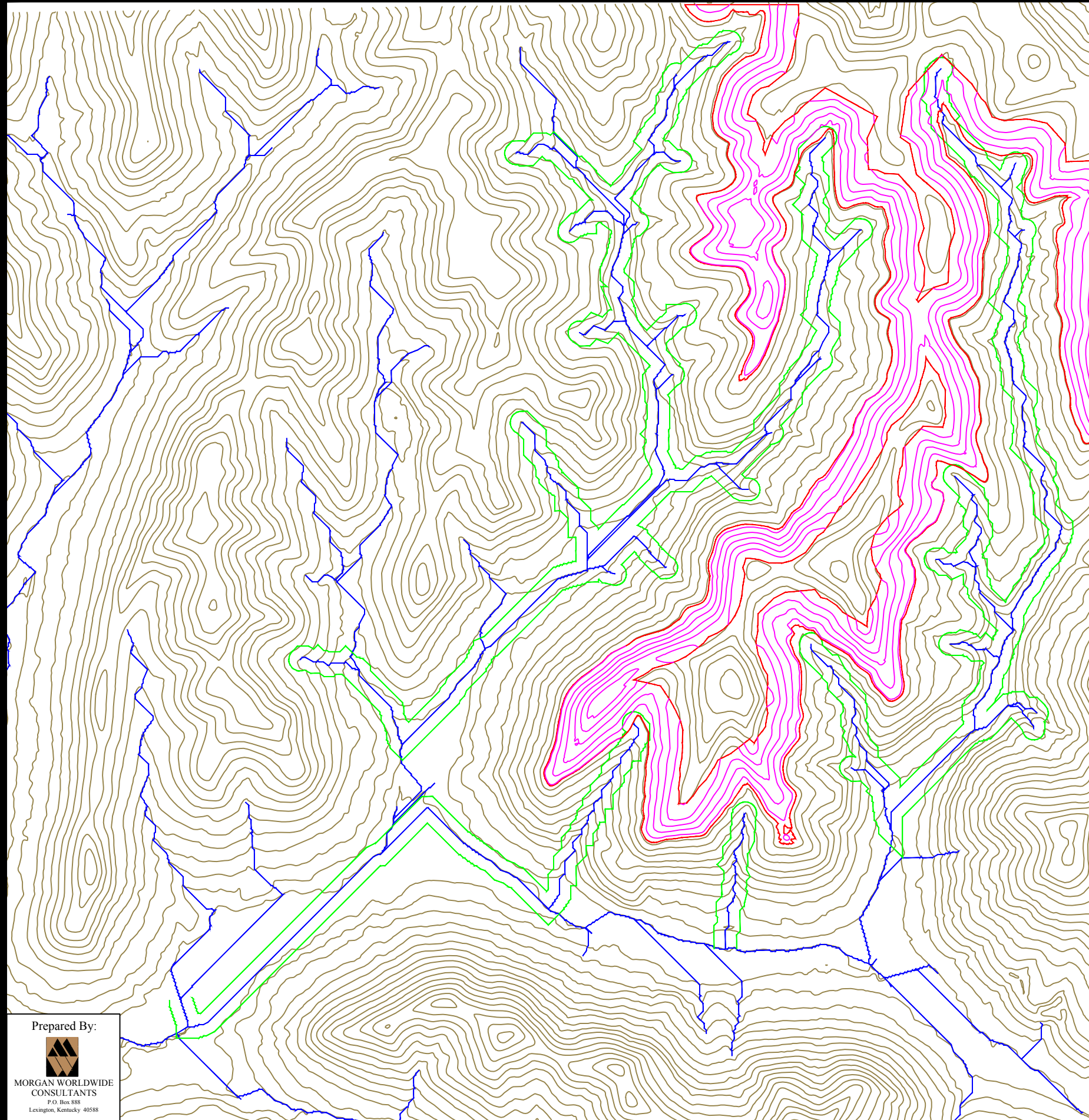
**Northern Appalachia
Region**
Surface Contour Mine
Alternative 7



Prepared By:

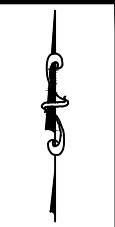
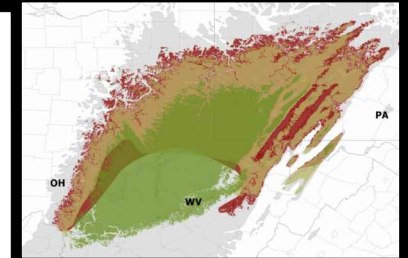


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Alternative 8

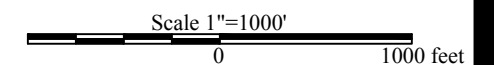
- 0.2 million tpy
- 1.6 million tons coal resource
- 7.5:1 mining ratio
- 205 disturbed acres
- Stream Impacts:
 - 423 ft ephemeral stream mined through



Legend

-  Original Topography (20 ft Ctrs)
-  Generated Streams (7.8 acre drainage)
-  100 ft stream offset
-  Mineral Removal Area
-  Post-Mining Topography

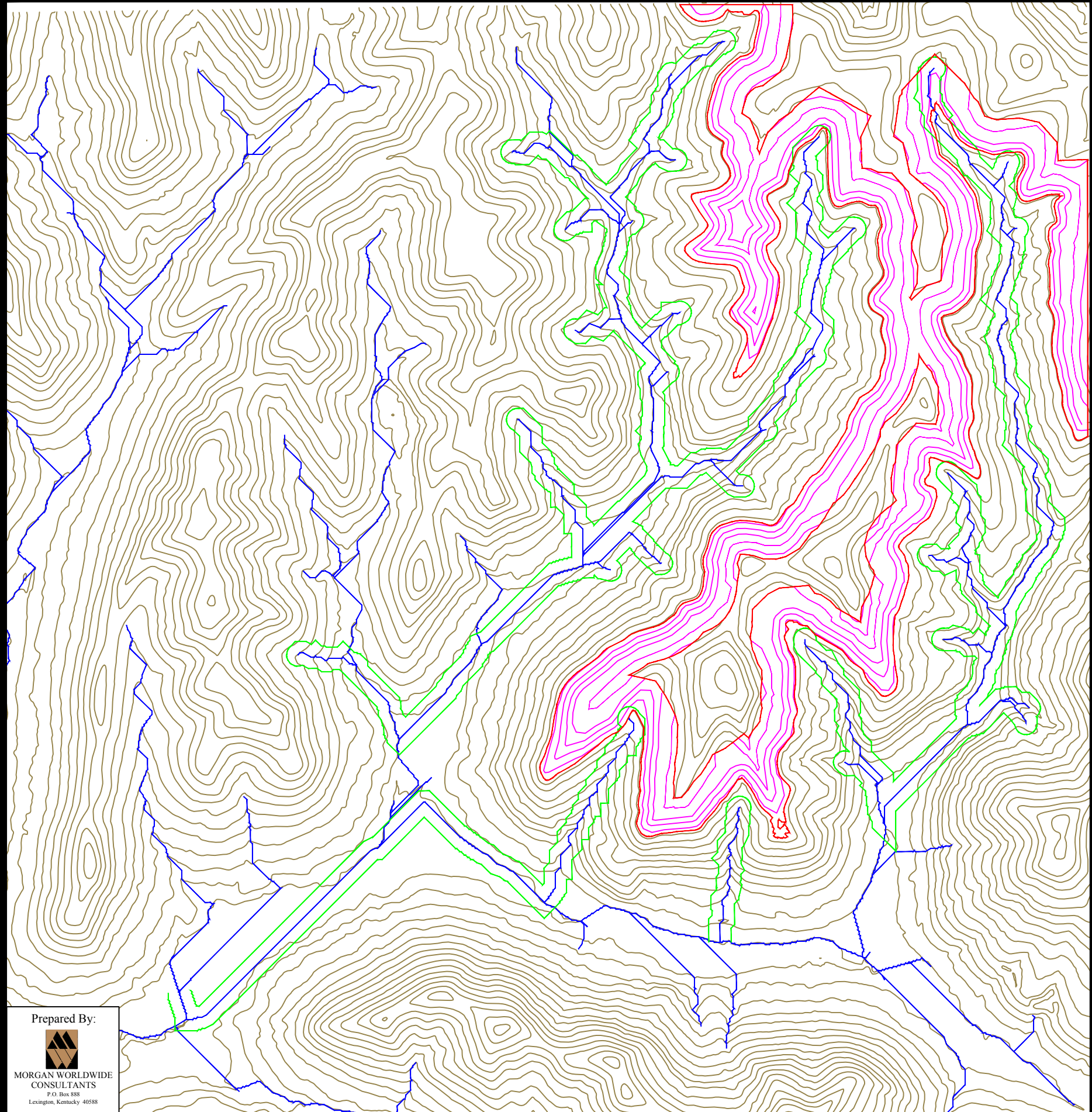
Northern Appalachia
Region
Surface Contour Mine
Alternative 8



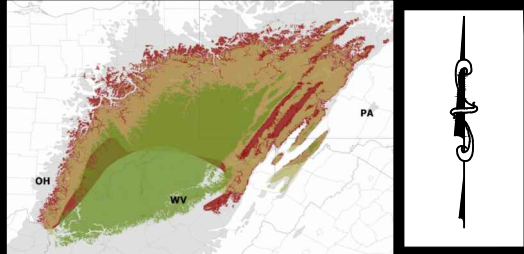
Prepared By:



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Lexington, Kentucky 40588



- Alternative 9
- 0.2 million tpy
 - 1.6 million tons coal resource
 - 7.5:1 mining ratio
 - 205 disturbed acres
 - Stream Impacts:
 - 423 ft ephemeral stream mined through

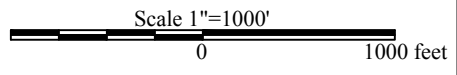


Legend

- Original Topography (20 ft Ctrs)
- Generated Streams (7.8 acre drainage)
- 100 ft stream offset
- Mineral Removal Area
- Post-Mining Topography

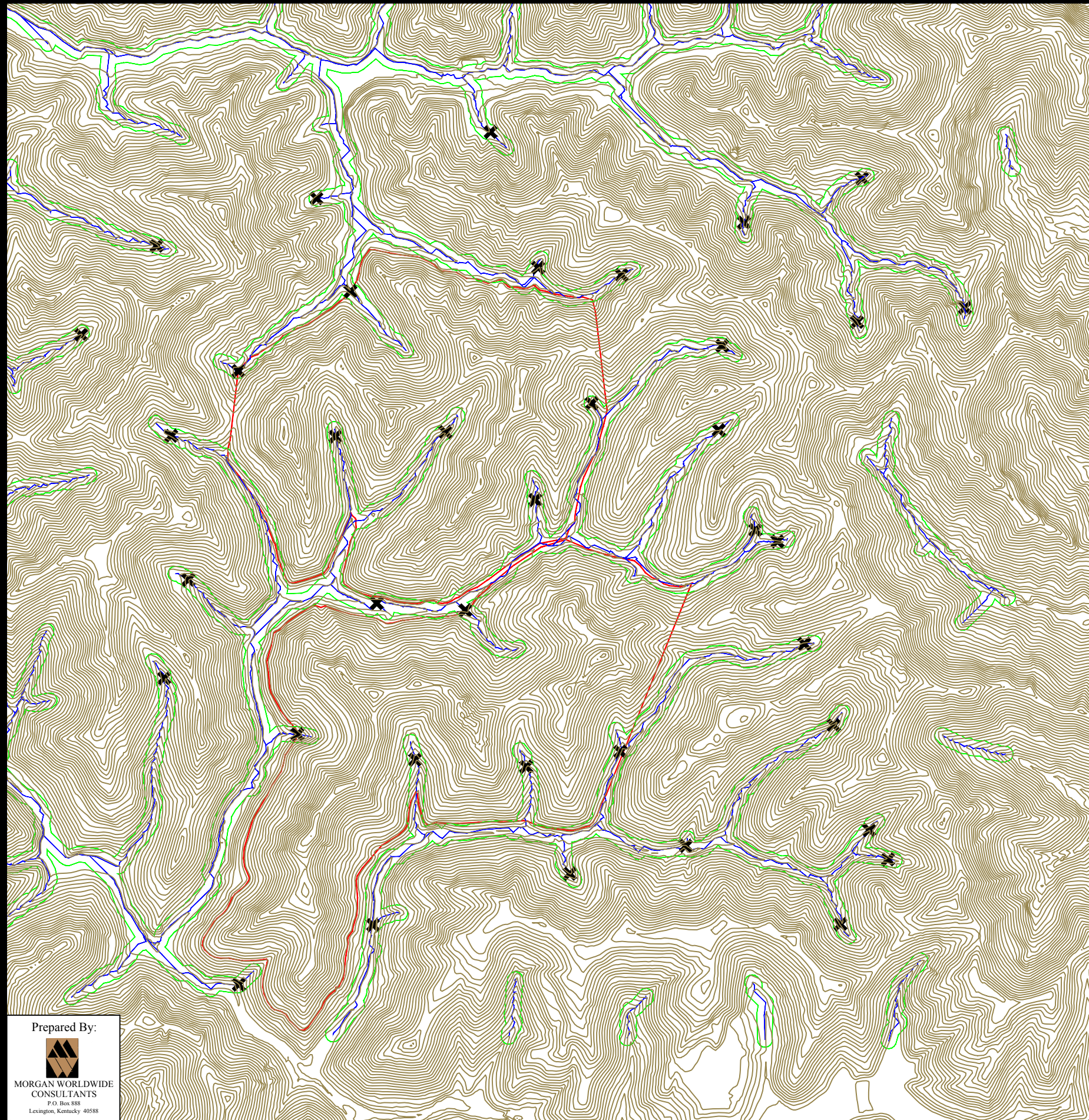
Northern Appalachia Region

Surface Contour Mine Alternative 9



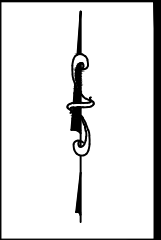
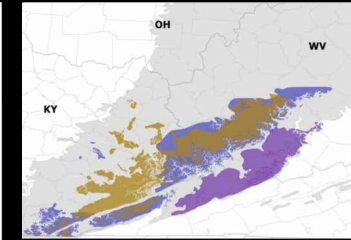
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Pre-Mining

- 20 ft contours taken from USGS Seamless Server
- 14.5 acre ephemeral drainage requirement based on "Defining perennial, intermittent, and ephemeral channels in Eastern Kentucky: Application to forestry best management practices" by JR Svec, RK Kolka, and JW Stringer, 2005.
- E/I points found using coal seam outcrop on down-dip side (North) and 19.8 acre drainage requirement on up-dip side (South), also from Svec, Kolka, and Stringer, 2005.



Legend

-  Original Topography (20 ft Ctrs)
-  Generated Streams (14.5 acre drainage)
-  100 ft stream offset
-  Mineral Removal Area
-  Ephemeral/Intermittent Point

Prepared By:

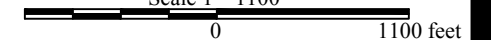


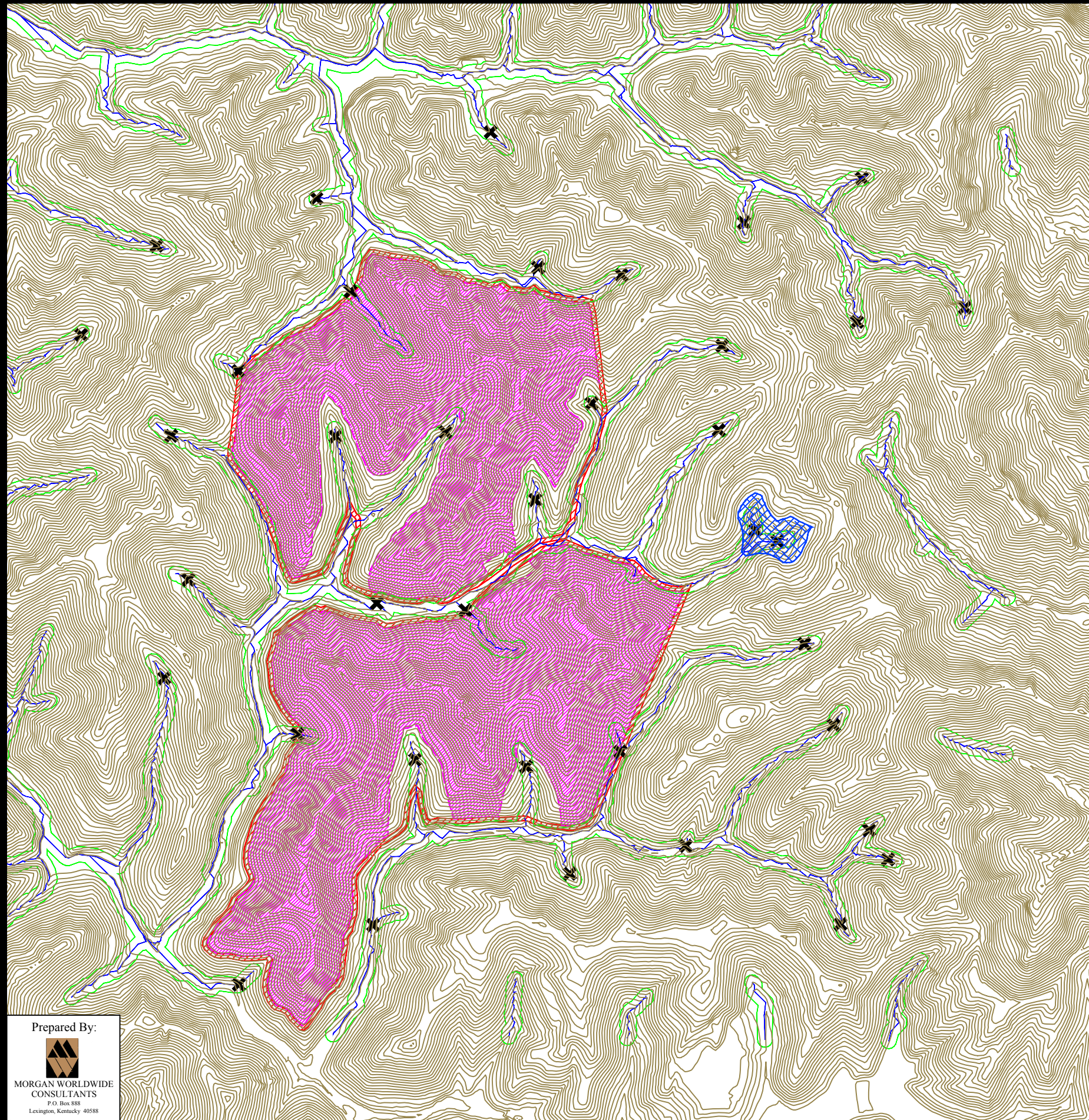
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**Central Appalachia
Region**

**Underground Room
and Pillar Mine
Pre-Mining**

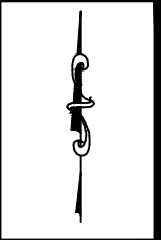
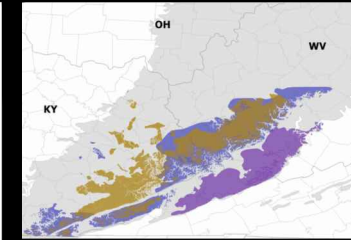
Scale 1"=1100'









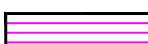




Alternative 1

- 0.25 million tpy
- 4.2 million tons coal resource
- 3.0 million tons recoverable coal
- 773 mine acres
- 12 disturbed acres
- Stream Impacts
 - 863 ft intermittent stream filled
 - 391 ft ephemeral stream filled



Legend

-  Original Topography (20 ft Ctrs)
-  Generated Streams (14.5 acre drainage)
-  100 ft stream offset
-  Accessible Coal Boundary
-  NO Mine Area
-  High Extraction R&P Area
-  Face-Up/Fill Boundary and Contours
-  Refuse Impoundment
-  Ephemeral/Intermittent Point

Prepared By:

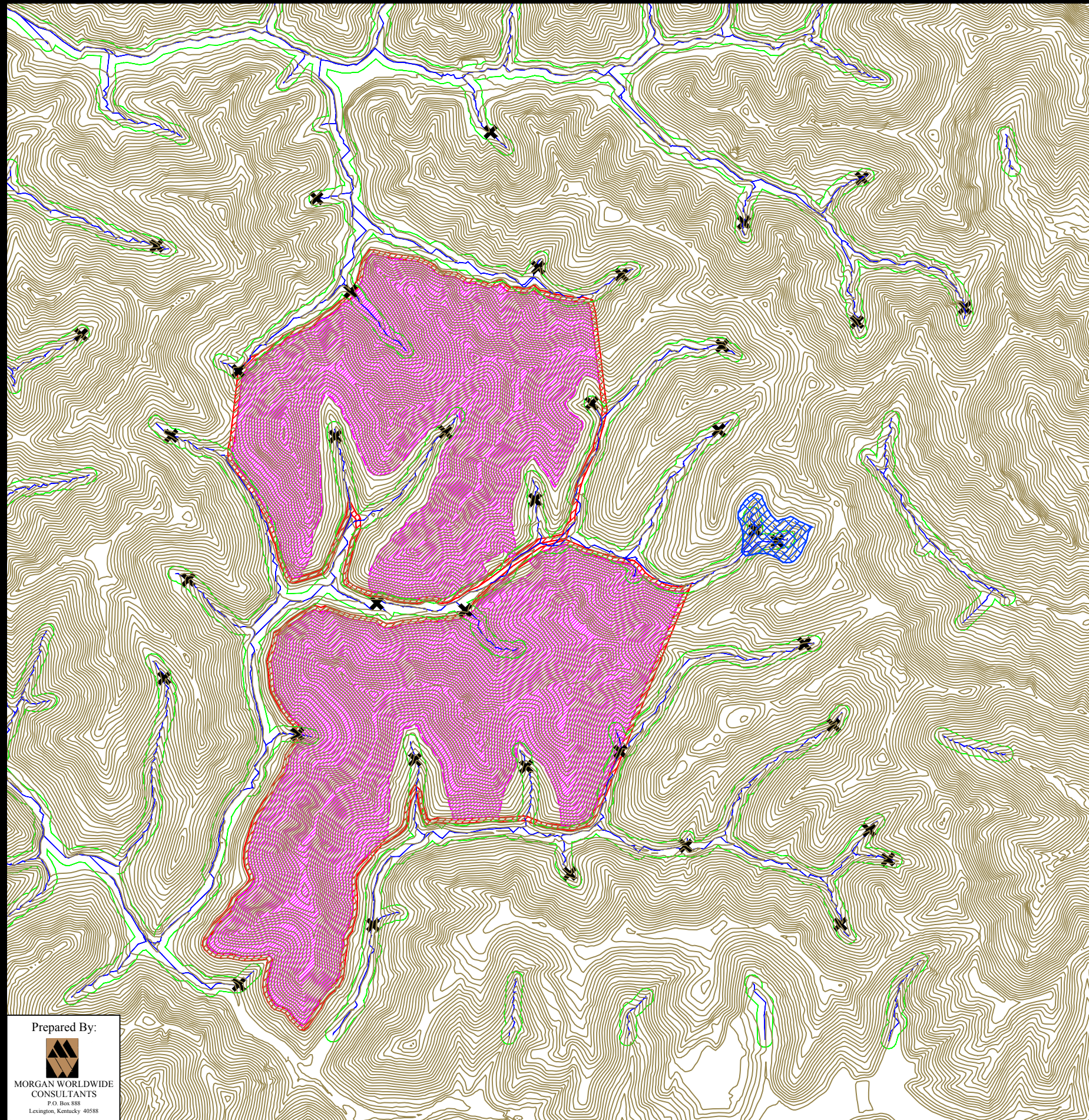


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**Central Appalachia
Region**

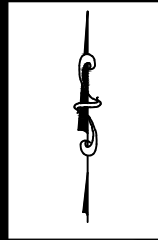
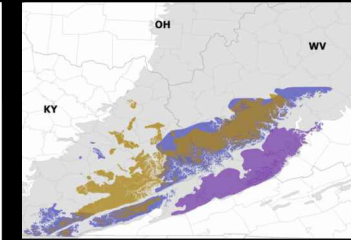
**Underground Room
and Pillar Mine
Alternative 1**

Scale 1"=1500'
0 1500 feet







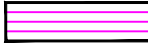




Alternative 2

- 0.25 million tpy
- 4.2 million tons coal resource
- 3.0 million tons recoverable coal
- 773 mine acres
- 12 disturbed acres
- Stream Impacts
 - 863 ft intermittent stream filled
 - 391 ft ephemeral stream filled



Legend

-  Original Topography (20 ft Ctrs)
-  Generated Streams (14.5 acre drainage)
-  100 ft stream offset
-  Accessible Coal Boundary
-  NO Mine Area
-  High Extraction R&P Area
-  Face-Up/Fill Boundary and Contours
-  Refuse Impoundment
-  Ephemeral/Intermittent Point

Central Appalachia Region

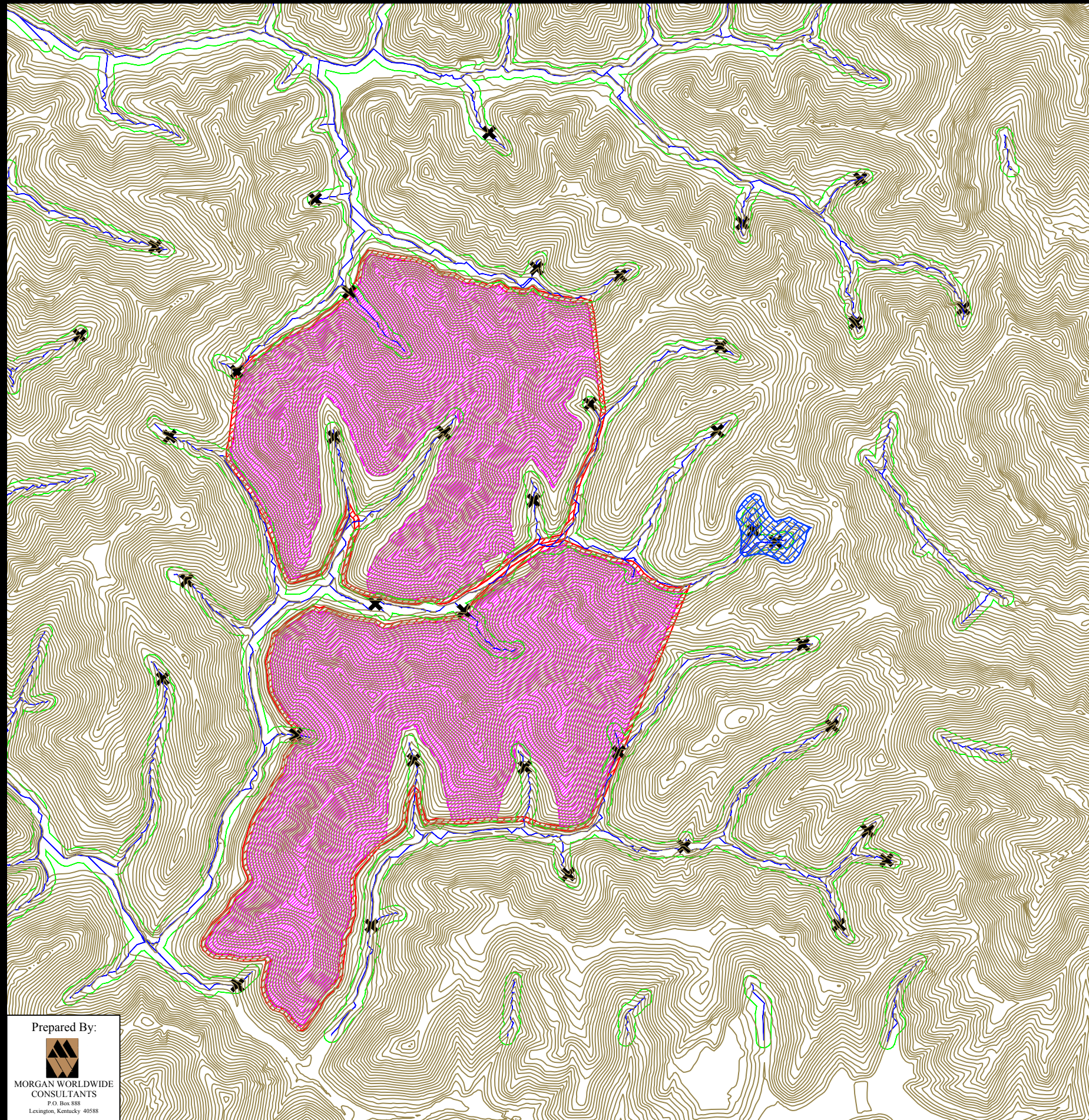
Underground Room and Pillar Mine Alternative 2

Scale 1"=1100'
0 1100 feet

Prepared By:

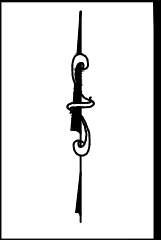
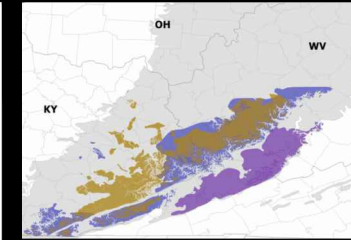


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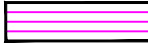




Alternative 3

- 0.25 million tpy
- 4.2 million tons coal resource
- 3.0 million tons recoverable coal
- 773 mine acres
- 12.1 disturbed acres
- Stream Impacts
 - 863 ft intermittent stream filled
 - 391 ft ephemeral stream filled



Legend

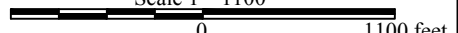
-  Original Topography (20 ft Ctrs)
-  Generated Streams (14.5 acre drainage)
-  100 ft stream offset
-  Accessible Coal Boundary
-  NO Mine Area
-  High Extraction R&P Area
-  Face-Up/Fill Boundary and Contours
-  Refuse Impoundment
-  Ephemeral/Intermittent Point

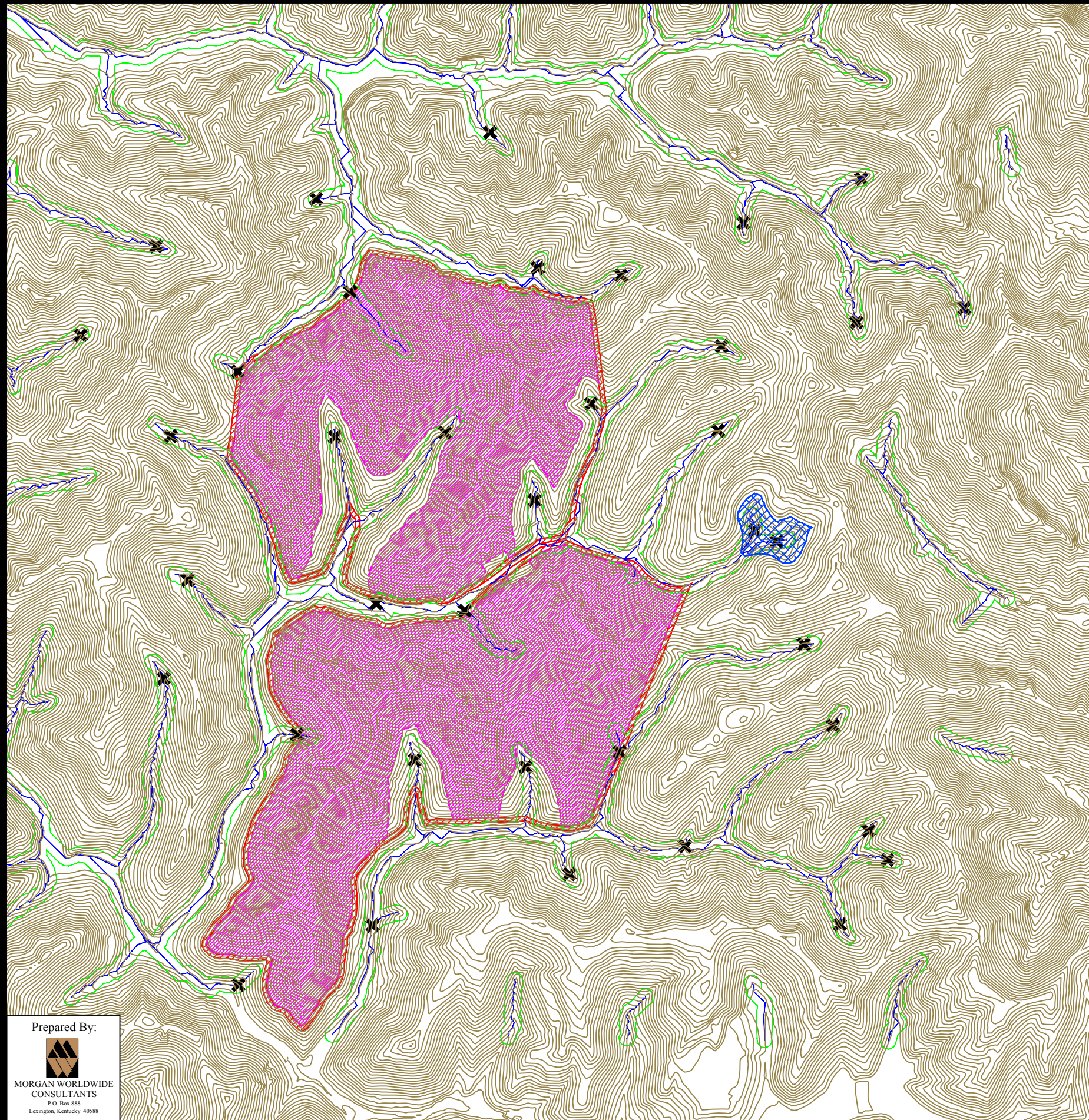
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**Central Appalachia
Region**

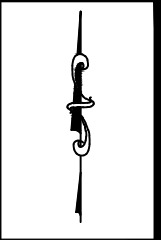
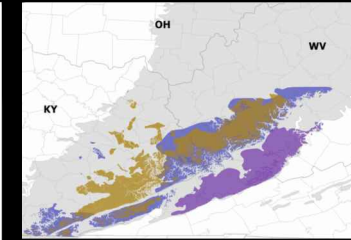
**Underground Room
and Pillar Mine
Alternative 3**

Scale 1"=1100'

 0 1100 feet



Alternative 4

- 0.25 million tpy
- 4.2 million tons coal resource
- 3.0 million tons recoverable coal
- 773 mine acres
- 12 disturbed acres
- Stream Impacts
 - 863 ft intermittent stream filled
 - 391 ft ephemeral stream filled



Legend

- Original Topography (20 ft Ctrs)
- Generated Streams (14.5 acre drainage)
- 100 ft stream offset
- Accessible Coal Boundary
- NO Mine Area
- High Extraction R&P Area
- Face-Up/Fill Boundary and Contours
- Refuse Impoundment
- Ephemeral/Intermittent Point

Central Appalachia Region

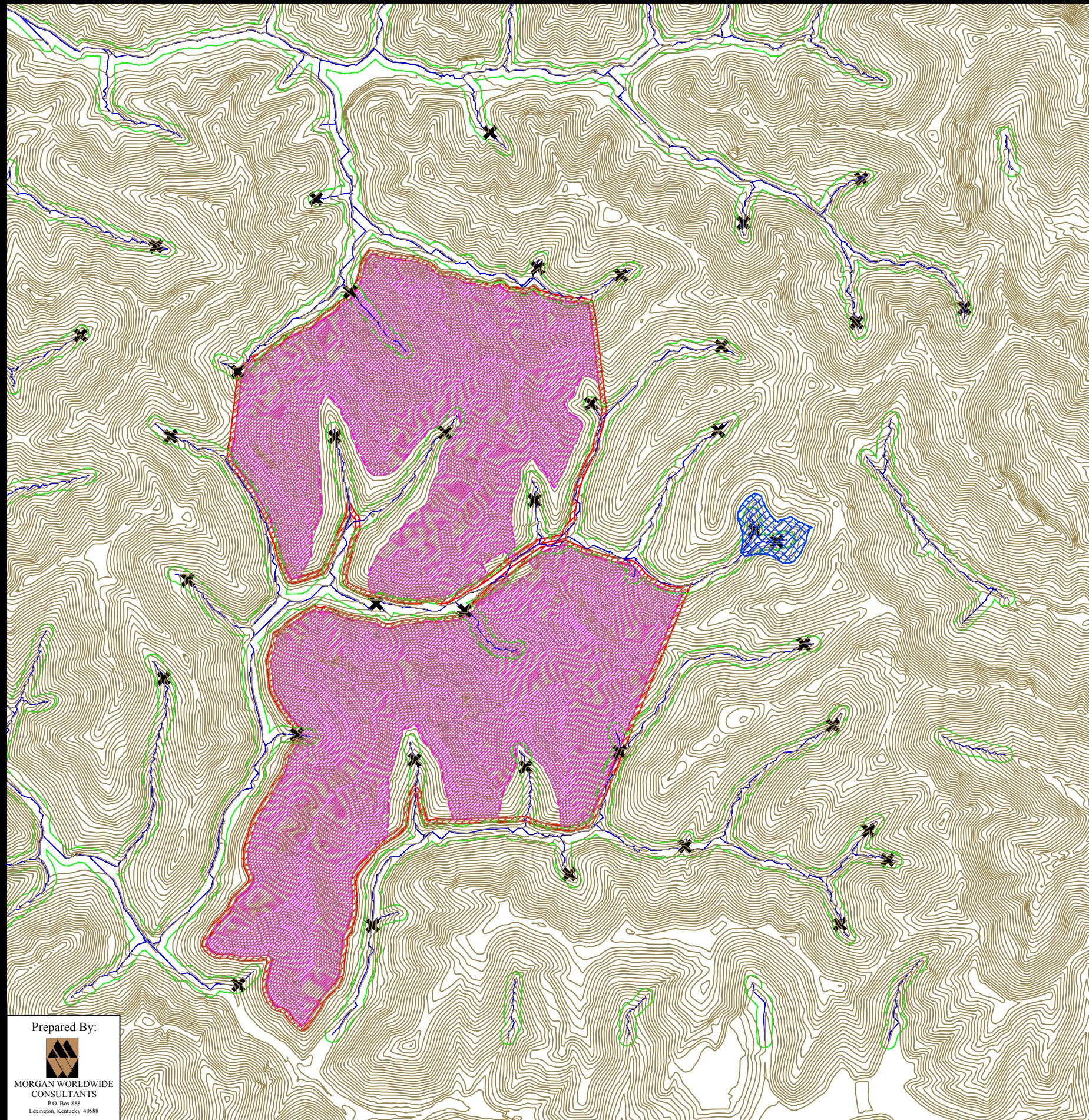
Underground Room and Pillar Mine Alternative 4

Scale 1"=1100'
0 1100 feet

Prepared By:

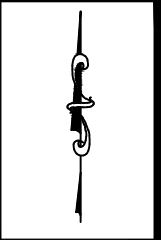
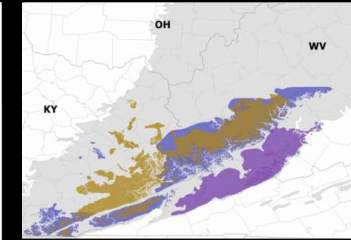


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Alternative 5

- 0.25 million tpy
- 4.2 million tons coal resource
- 3.0 million tons recoverable coal
- 773 mine acres
- 12 disturbed acres
- Stream Impacts
 - 863 ft intermittent stream filled
 - 391 ft ephemeral stream filled



Legend

- Original Topography (20 ft Ctrs)
- Generated Streams (14.5 acre drainage)
- 100 ft stream offset
- Accessible Coal Boundary
- NO Mine Area
- High Extraction R&P Area
- Face-Up/Fill Boundary and Contours
- Refuse Impoundment
- Ephemeral/Intermittent Point

Central Appalachia Region

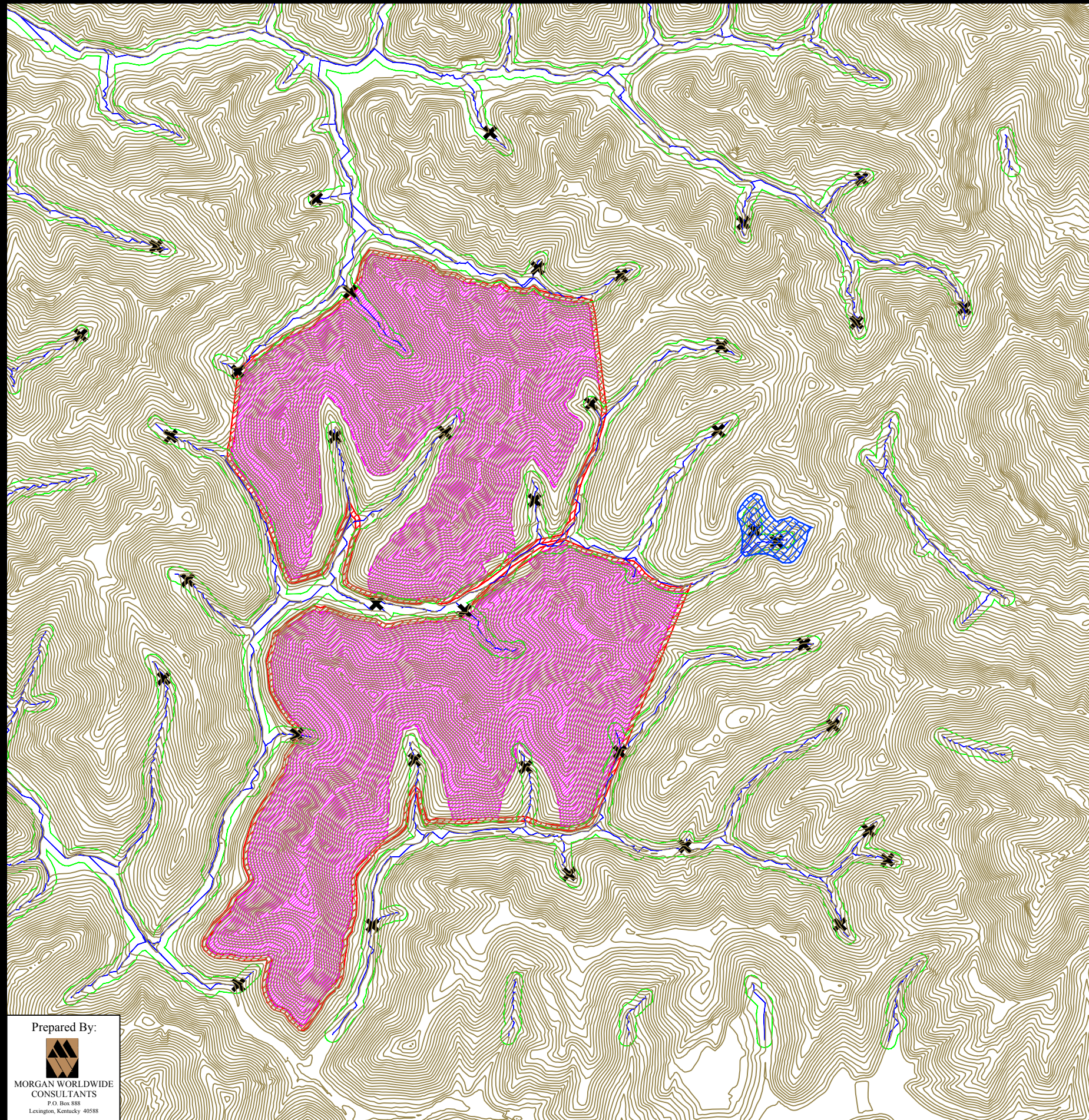
Underground Room and Pillar Mine Alternative 5

Scale 1"=1100'
0 1100 feet

Prepared By:

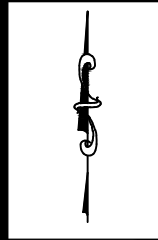
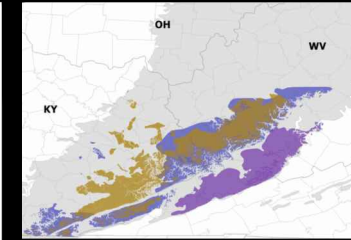


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Alternative 6

- 0.25 million tpy
- 4.2 million tons coal resource
- 3.0 million tons recoverable coal
- 773 mine acres
- 12 disturbed acres
- Stream Impacts
 - 863 ft intermittent stream filled
 - 391 ft ephemeral stream filled



Legend

- Original Topography (20 ft Ctrs)
- Generated Streams (14.5 acre drainage)
- 100 ft stream offset
- Accessible Coal Boundary
- NO Mine Area
- High Extraction R&P Area
- Face-Up/Fill Boundary and Contours
- Refuse Impoundment
- Ephemeral/Intermittent Point

Central Appalachia Region

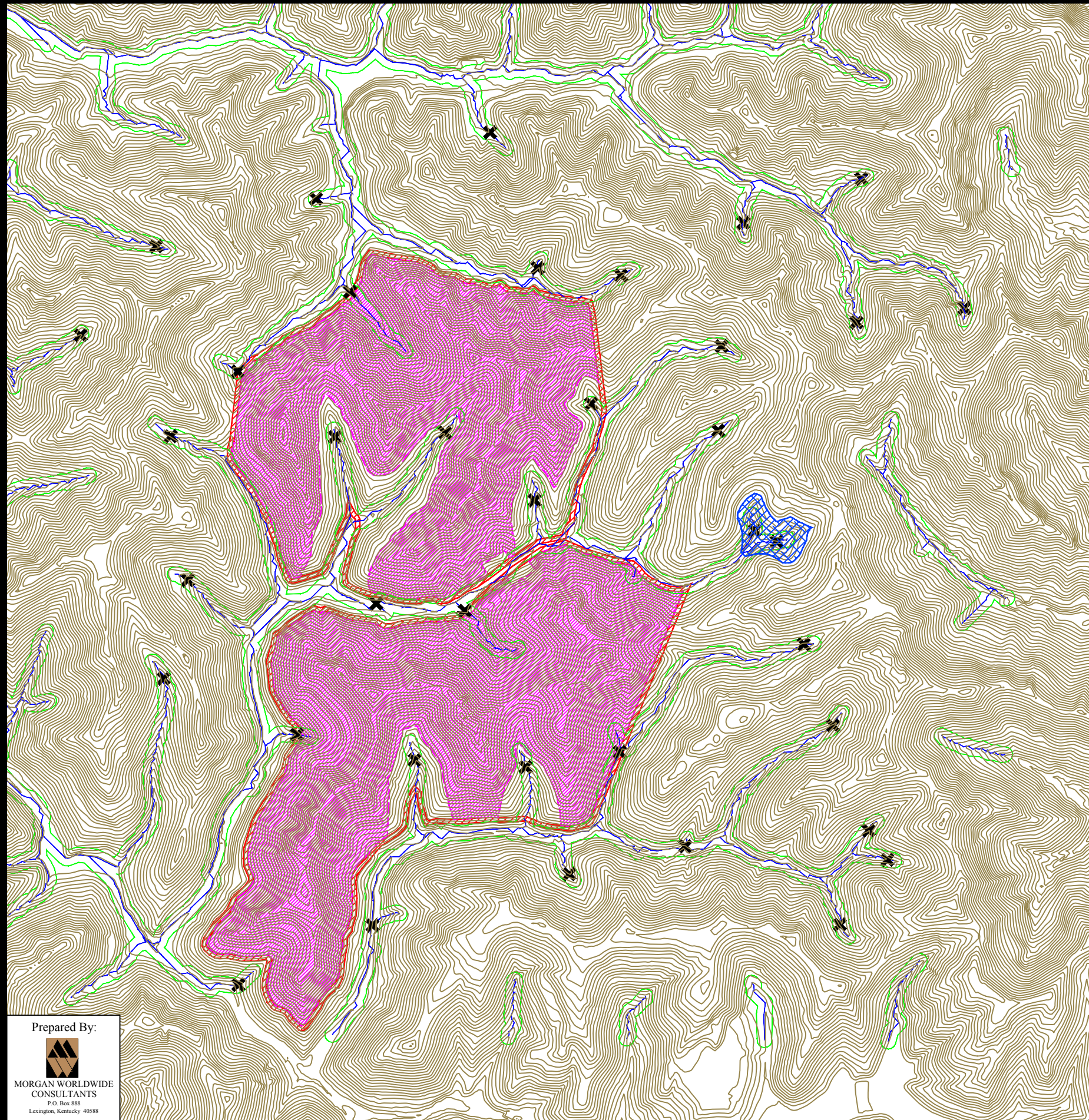
Underground Room and Pillar Mine Alternative 6

Scale 1"=1100'
0 1100 feet

Prepared By:

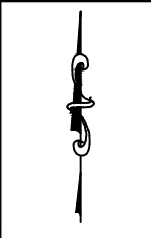
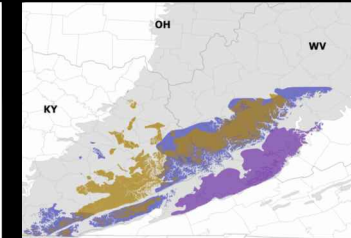


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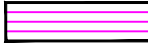




Alternative 7

- 0.25 million tpy
- 4.2 million tons coal resource
- 3.0 million tons recoverable coal
- 773 mine acres
- 12 disturbed acres
- Stream Impacts
 - 863 ft intermittent stream filled
 - 391 ft ephemeral stream filled



Legend

-  Original Topography (20 ft Ctrs)
-  Generated Streams (14.5 acre drainage)
-  100 ft stream offset
-  Accessible Coal Boundary
-  NO Mine Area
-  High Extraction R&P Area
-  Face-Up/Fill Boundary and Contours
-  Refuse Impoundment
-  Ephemeral/Intermittent Point

Central Appalachia Region

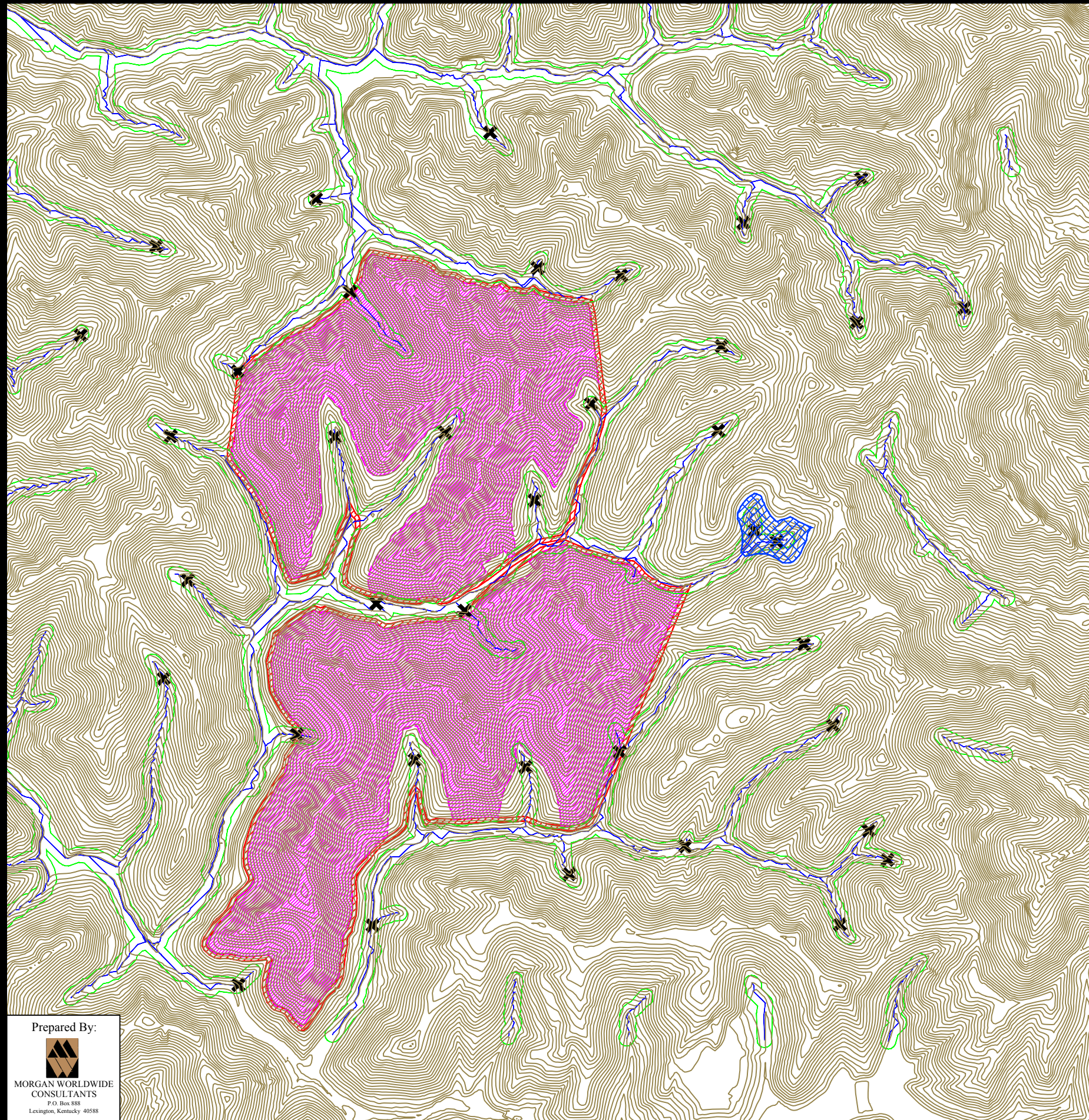
**Underground Room and Pillar Mine
Alternative 7**

Scale 1"=1100'
0 1100 feet

Prepared By:

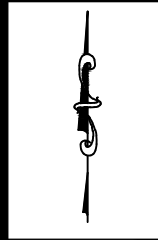
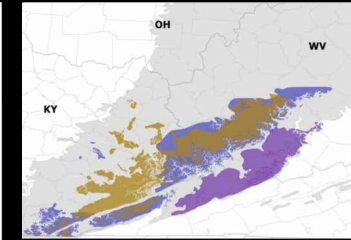


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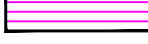




Alternative 8

- 0.25 million tpy
- 4.2 million tons coal resource
- 3.0 million tons recoverable coal
- 773 mine acres
- 12 disturbed acres
- Stream Impacts
 - 863 ft intermittent stream filled
 - 391 ft ephemeral stream filled



Legend

-  Original Topography (20 ft Ctrs)
-  Generated Streams (14.5 acre drainage)
-  100 ft stream offset
-  Accessible Coal Boundary
-  NO Mine Area
-  High Extraction R&P Area
-  Face-Up/Fill Boundary and Contours
-  Refuse Impoundment
-  Ephemeral/Intermittent Point

Central Appalachia Region

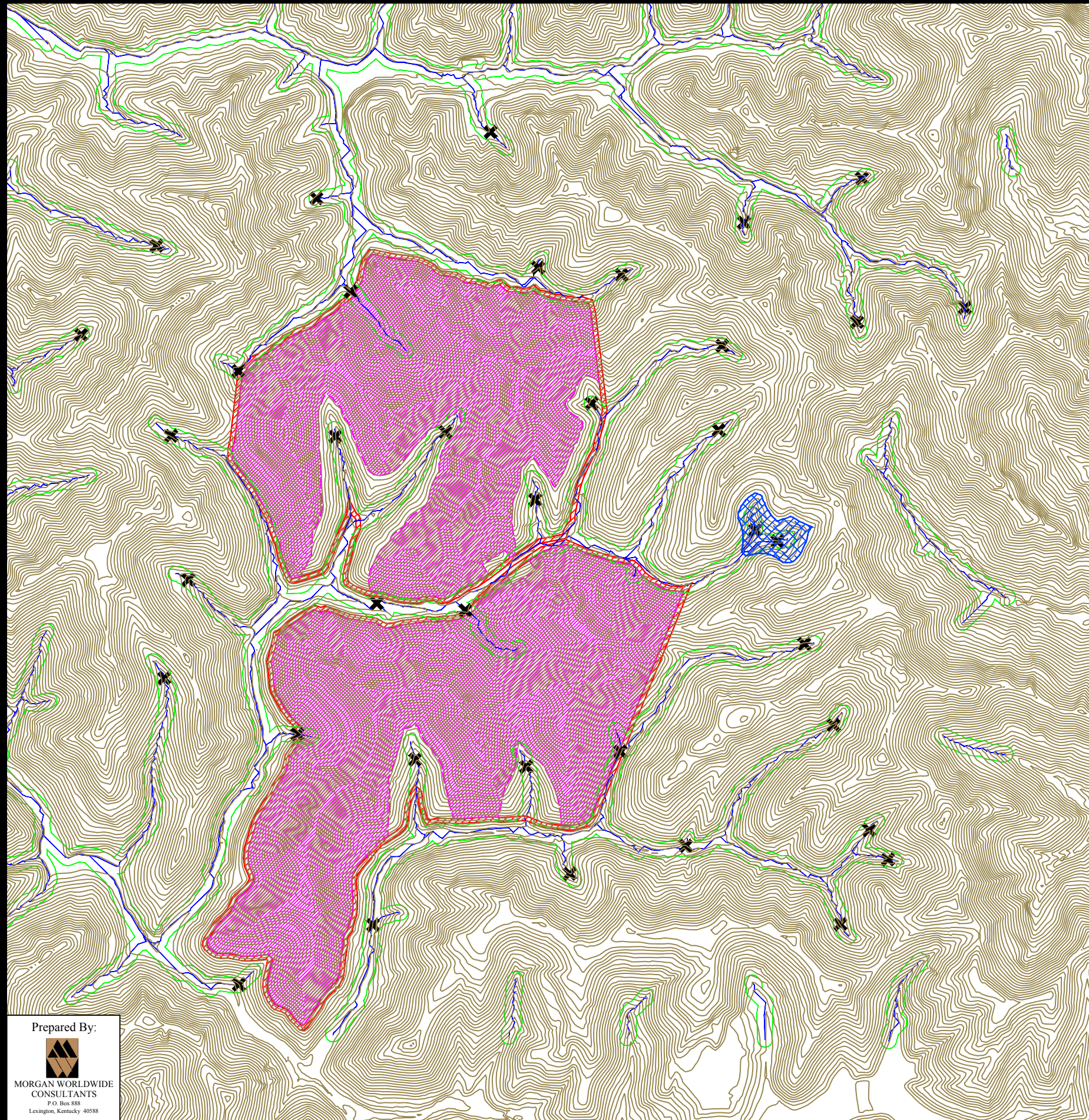
Underground Room and Pillar Mine Alternative 8

Scale 1"=1100'
0 1100 feet

Prepared By:

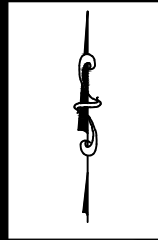
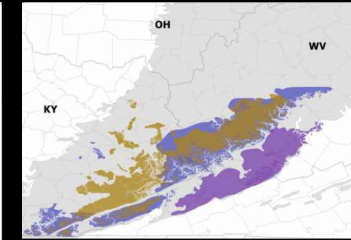


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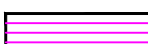




Alternative 9

- 0.25 million tpy
- 4.2 million tons coal resource
- 3.0 million tons recoverable coal
- 773 mine acres
- 12 disturbed acres
- Stream Impacts
 - 863 ft intermittent stream filled
 - 391 ft ephemeral stream filled



Legend

-  Original Topography (20 ft Ctrs)
-  Generated Streams (14.5 acre drainage)
-  100 ft stream offset
-  Accessible Coal Boundary
-  NO Mine Area
-  High Extraction R&P Area
-  Face-Up/Fill Boundary and Contours
-  Refuse Impoundment
-  Ephemeral/Intermittent Point

Central Appalachia Region

**Underground Room and Pillar Mine
Alternative 9**

Scale 1"=1500'
0 1500 feet

Prepared By:



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