



Pennsylvania Department of Environmental Protection  
Southwest Regional Office  
Bureau of Oil & Gas Management  
400 Waterfront Drive  
Pittsburgh, PA 15222

**RE: Sasso Leonard Unit – Non Coal Justification**

To Whom It May Concern:

Maps using data posted on PASDA (mineable coal seams >28" digitized from PA Geological Survey Publication – Mineral Resource Report #68 & #93) have been reviewed for the presence or absence of workable coal seams.

The well location has been plotted on a section of each Plate with results listed below. Upon examination of these plotted maps, the well was determined to fall outside the workable coal seam area.

MAP	COAL SEAM	SEAM STATUS
Plate 1	Upper Mercer	Inferred
Plate 2	Brookville	Inferred
Plate 3	Clarion	Inferred
Plate 4	Lower Kittanning	Inferred
Plate 5	Middle Kittanning	Inferred
Plate 6	Upper Kittanning	Inferred
Plate 7	Lower Freeport	Inferred
Plate 8	Upper Freeport	Inferred
Plate 9	Pittsburgh	Mined Out (Strip)
Plate 10	Redstone	Absent
Plate 11	Sewickley	Absent
Plate 12	Waynesburg	Absent
Plate 13	Washington	Absent

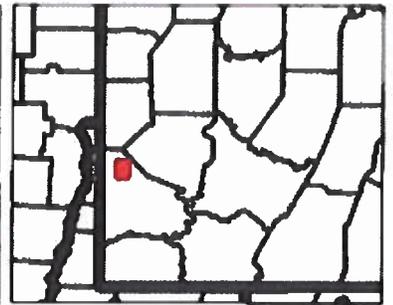
If you have any questions, please contact me at 724-873-3226.

Sincerely,  
**Range Resources-Appalachia, LLC**

*Yvonne Plute*

Regulatory Compliance Technician II  
Enclosure

# Plate 1 - Upper Mercer Coal

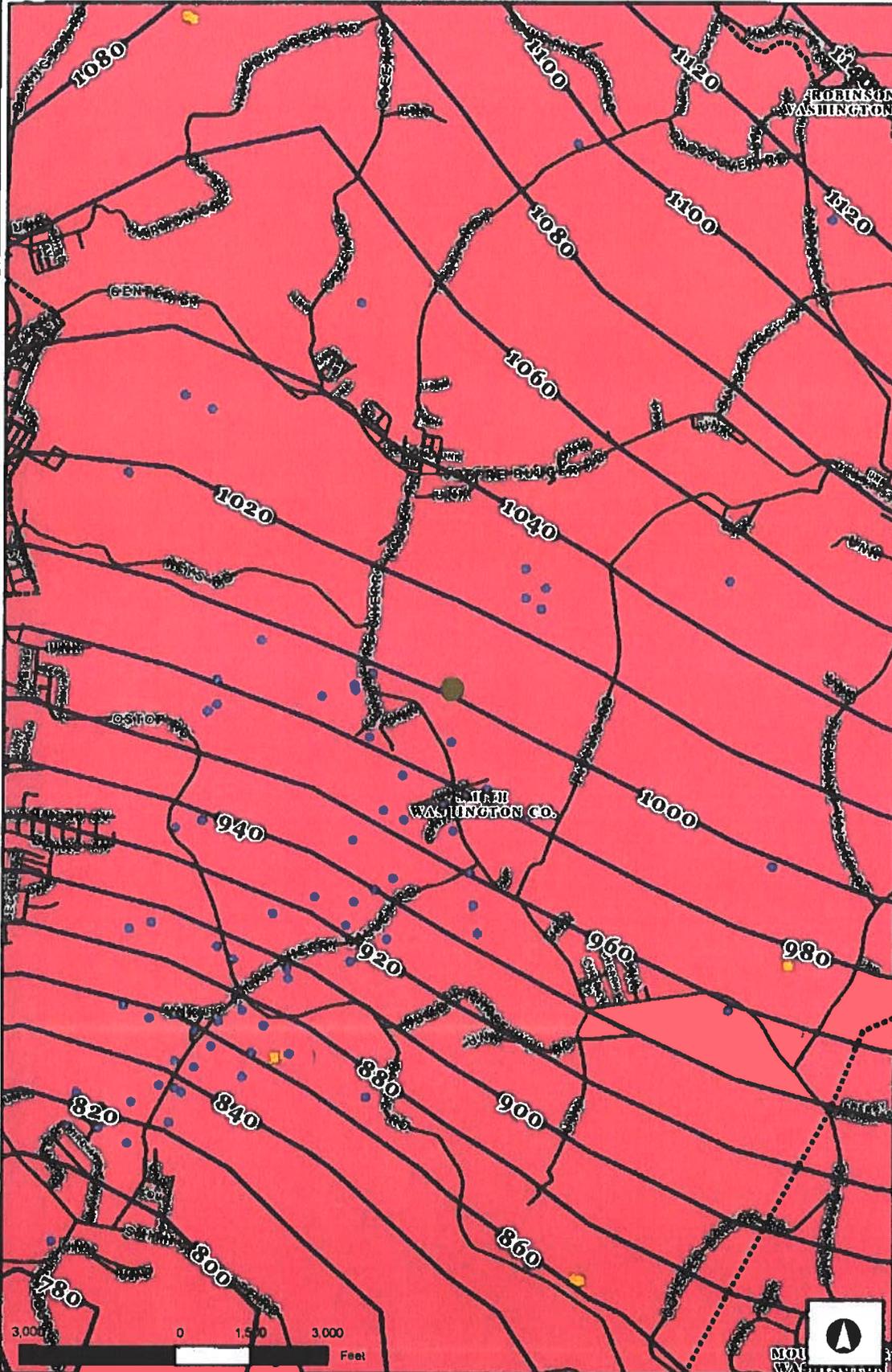


Pad Name

**SASSO  
LEONARD UNIT**

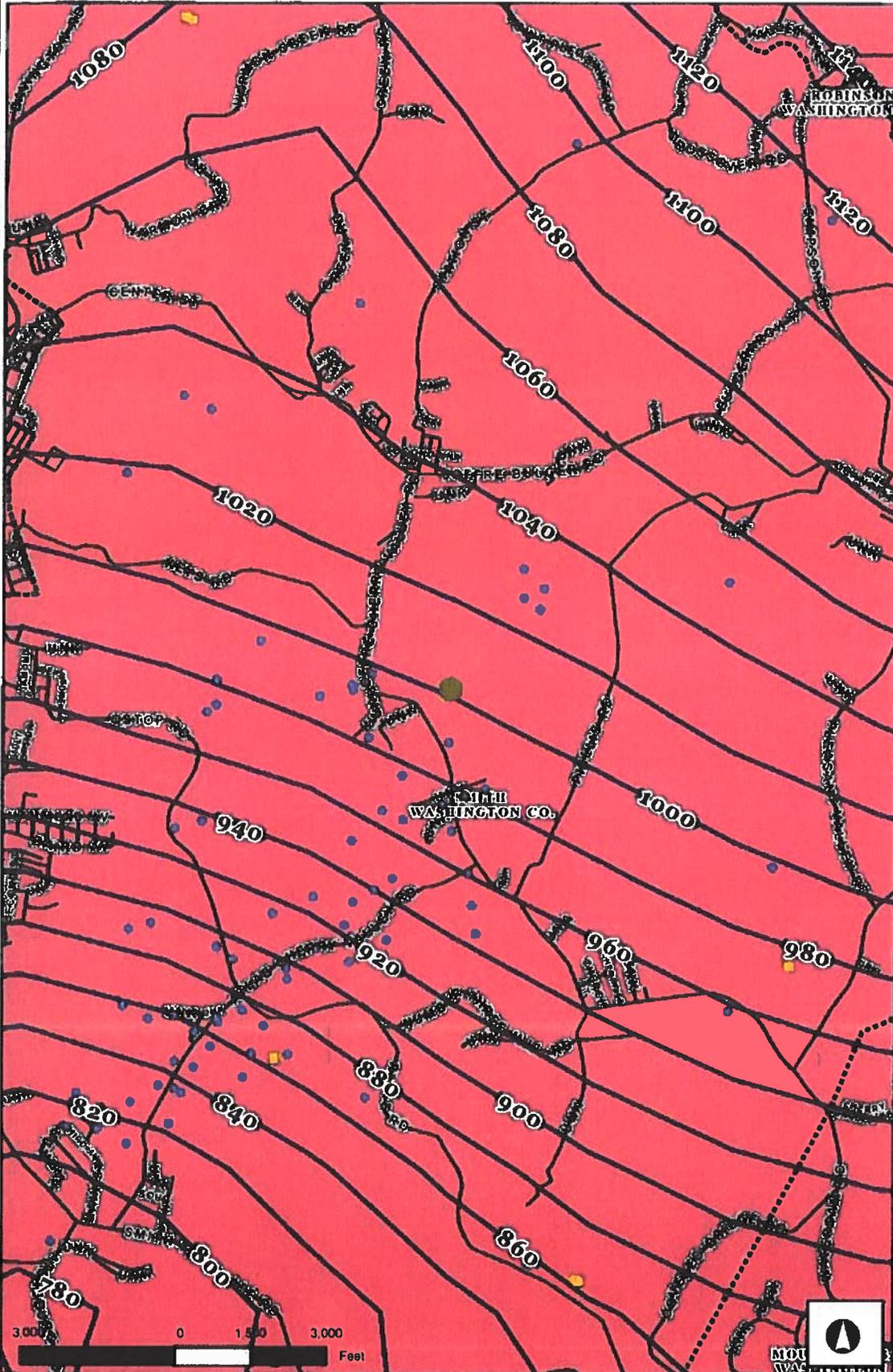
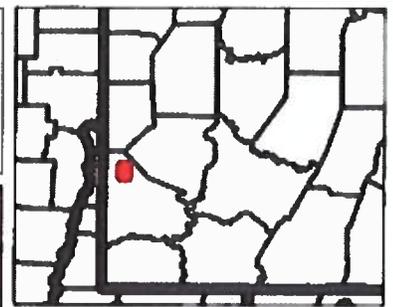
### Legend

-  Well Location
-  Horizontal Surface
-  Vertical Wells
-  States
-  Counties
-  Townships
-  PGH Coal Contours
-  Roads
-  Active Coal Permit Boundary
-  DEP Mined Out Areas
-  Pink - Inferred
-  Light Red - Less than 28"
-  Dark Red - Greater than 28"
-  Black - Coal Seam Mined Out



NOTE: This map compares the location of the proposed well or wells versus existing and active oil & gas wells and mined out areas per the Pennsylvania DEP (data as posted on PASDA). Mineable coal seams > 28' thick were digitized from Pennsylvania Geological Survey Publication - Mineral Resource Report #68.

# Plate 2 - Brookville Coal

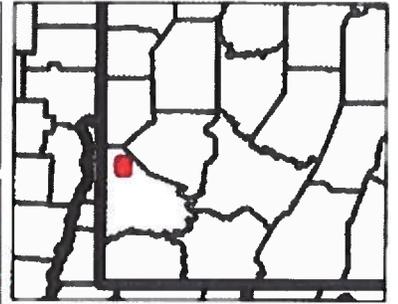


Pad Name  
**SASSO**  
**LEONARD UNIT**

- Legend**
-  Well Location
  -  Horizontal Surface
  -  Vertical Wells
  -  States
  -  Counties
  -  Townships
  -  PGH Coal Contours
  -  Roads
  -  Active Coal Permit Boundary
  -  DEP Mined Out Areas
  -  Pink - Inferred
  -  Light Red - Less than 28"
  -  Dark Red - Greater than 28'
  -  Black - Coal Seam Mined Out

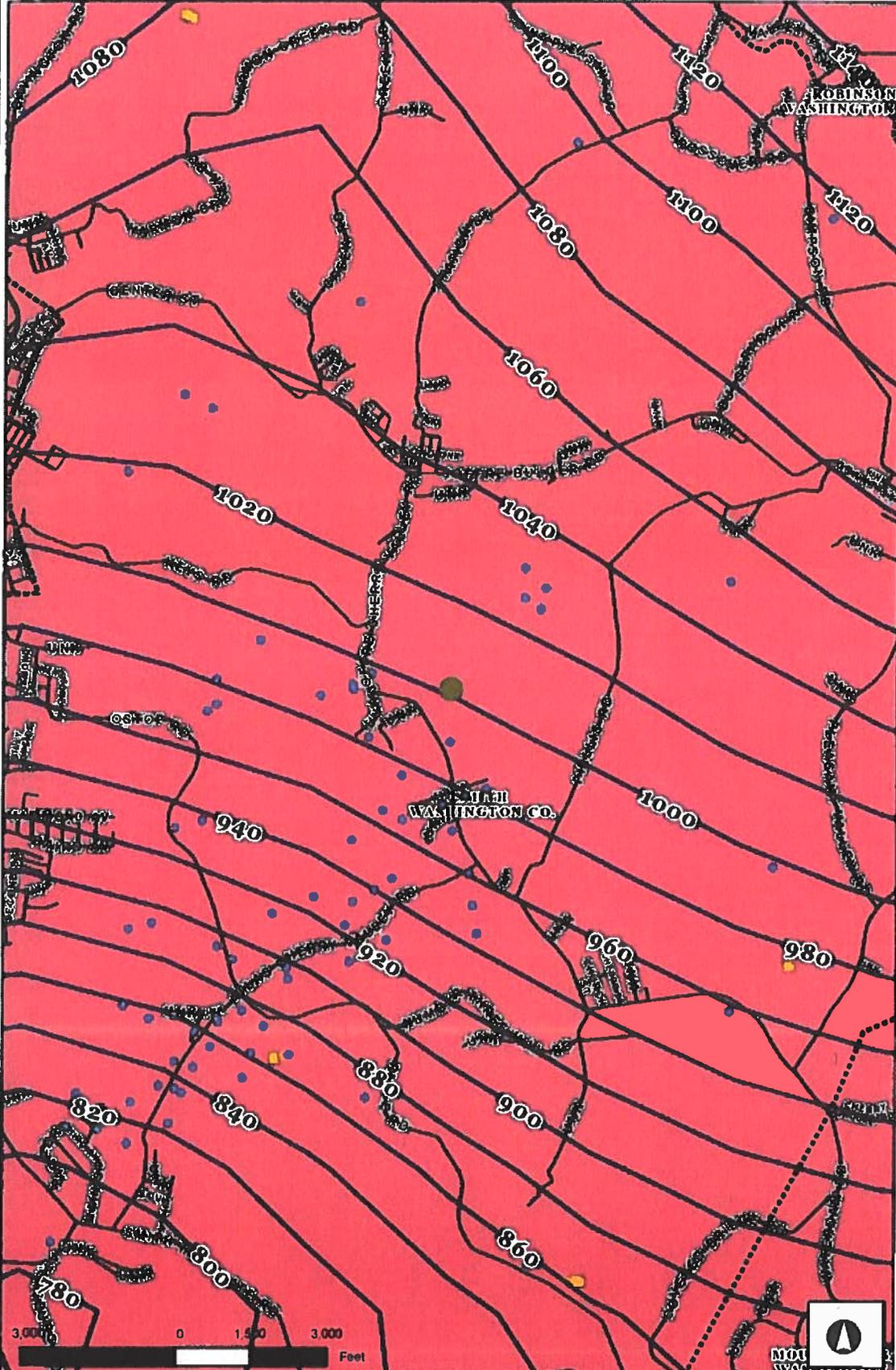
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# Plate 3 - Clarion Coal



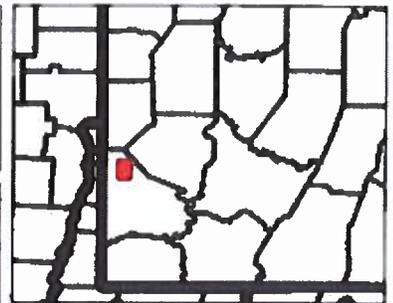
**Pad Name**  
**SASSO**  
**LEONARD UNIT**

- Legend**
-  Well Location
  -  Horizontal Surface
  -  Vertical Wells
  -  States
  -  Counties
  -  Townships
  -  PGH Coal Contours
  -  Roads
  -  Active Coal Permit Boundary
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# Plate 4 - Lower Kittanning Coal

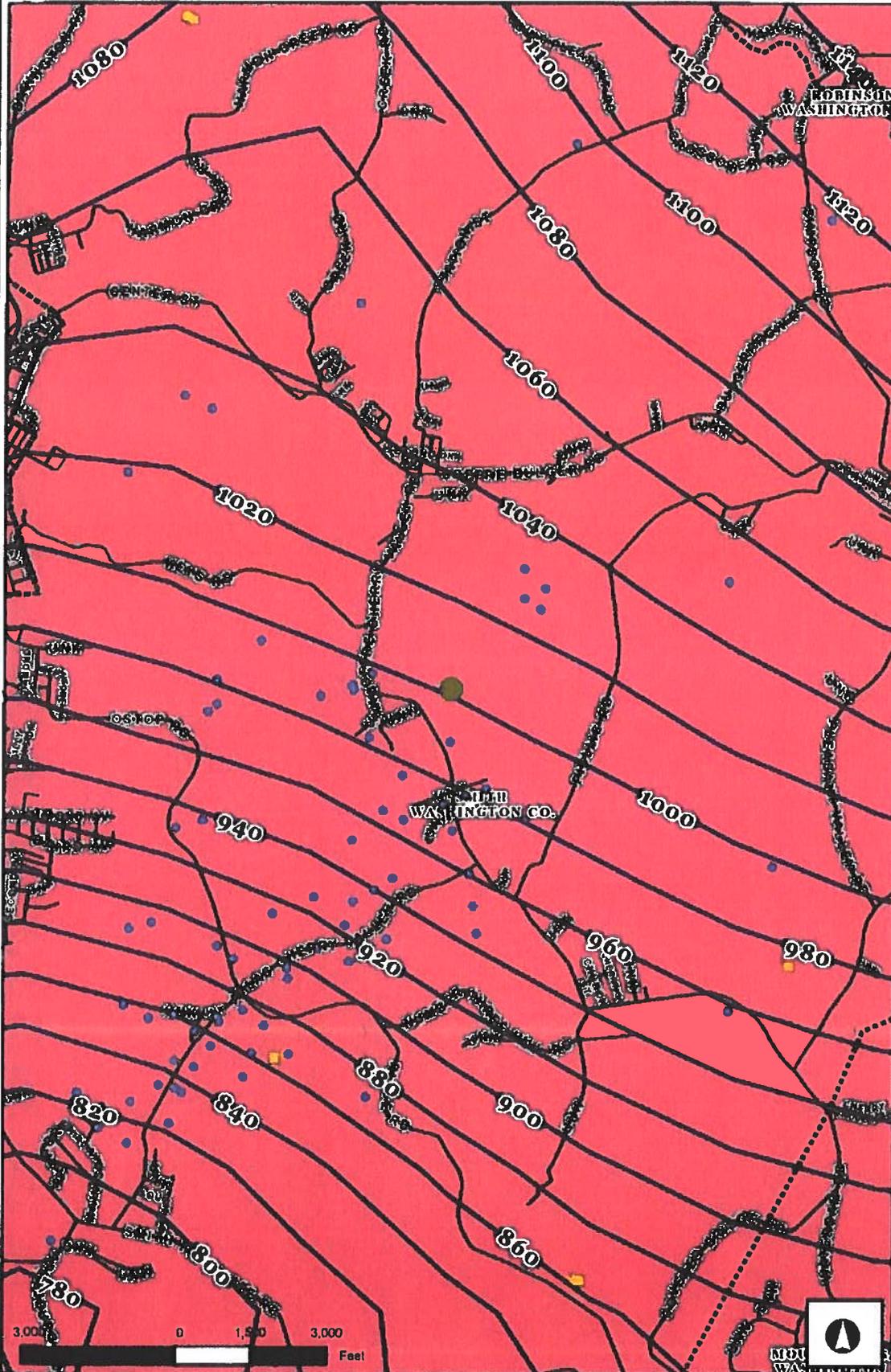


Pad Name

**SASSO**  
**LEONARD UNIT**

### Legend

-  Well Location
-  Horizontal Surface
-  Vertical Wells
-  States
-  Counties
-  Townships
-  PGH Coal Contours
-  Roads
-  Active Coal Permit Boundary
-  DEP Mined Out Areas
-  Pink - Inferred
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-  Dark Red - Greater than 28"
-  Black - Coal Seam Mined Out



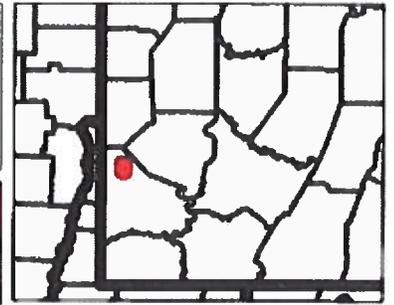
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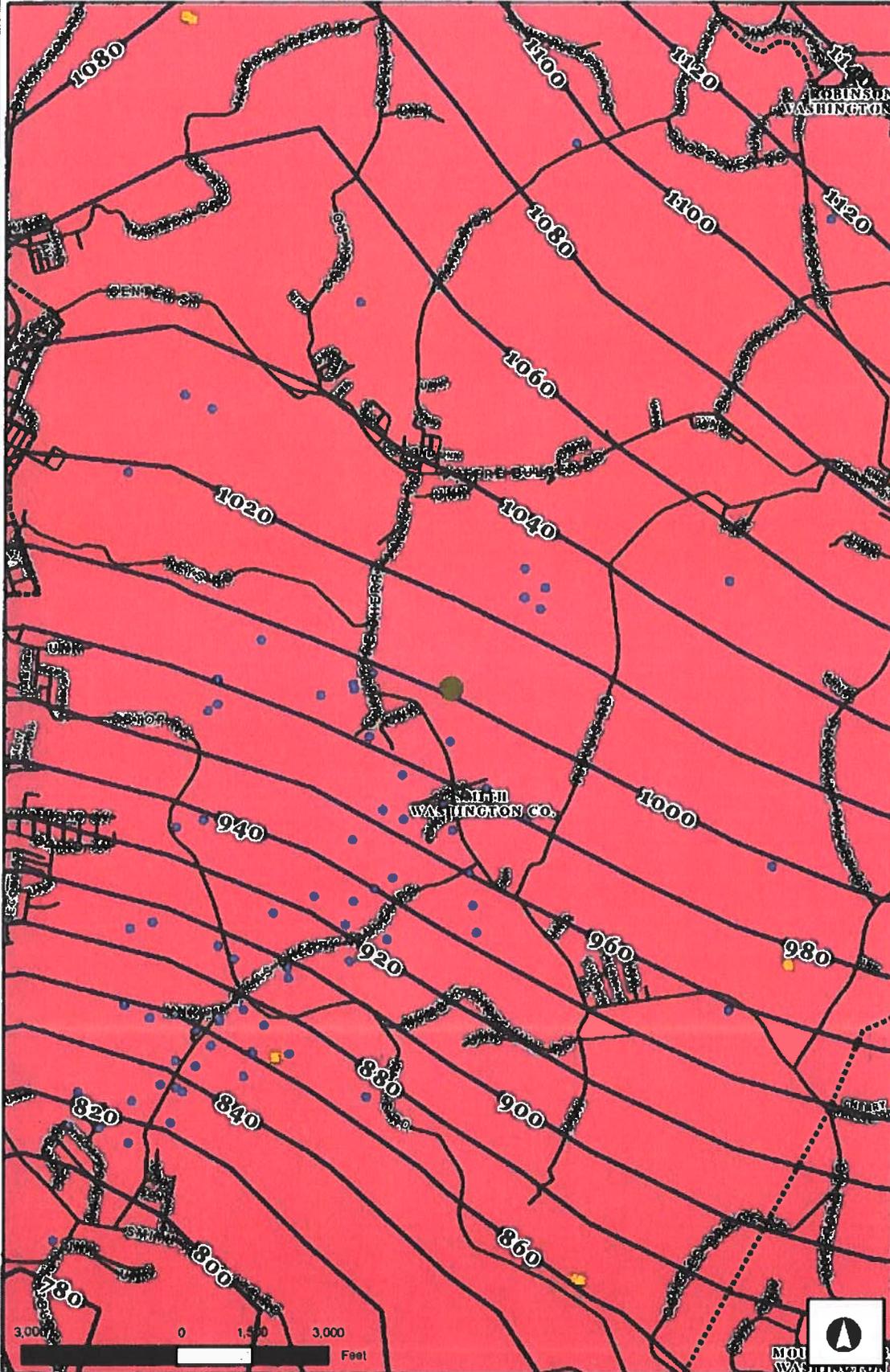
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# Plate 5 - Middle Kittanning Coal



Pad Name

**SASSO  
LEONARD UNIT**



### Legend

- Well Location
- Horizontal Surface
- Vertical Wells
- States
- Counties
- Townships
- PGH Coal Contours
- Roads
- Active Coal Permit Boundary
- DEP Mined Out Areas
- Pink - Inferred
- Light Red - Less than 28"
- Dark Red - Greater than 28"
- Black - Coal Seam Mined Out

3,000 0 1,500 3,000 Feet



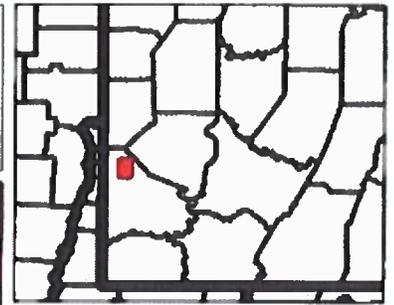
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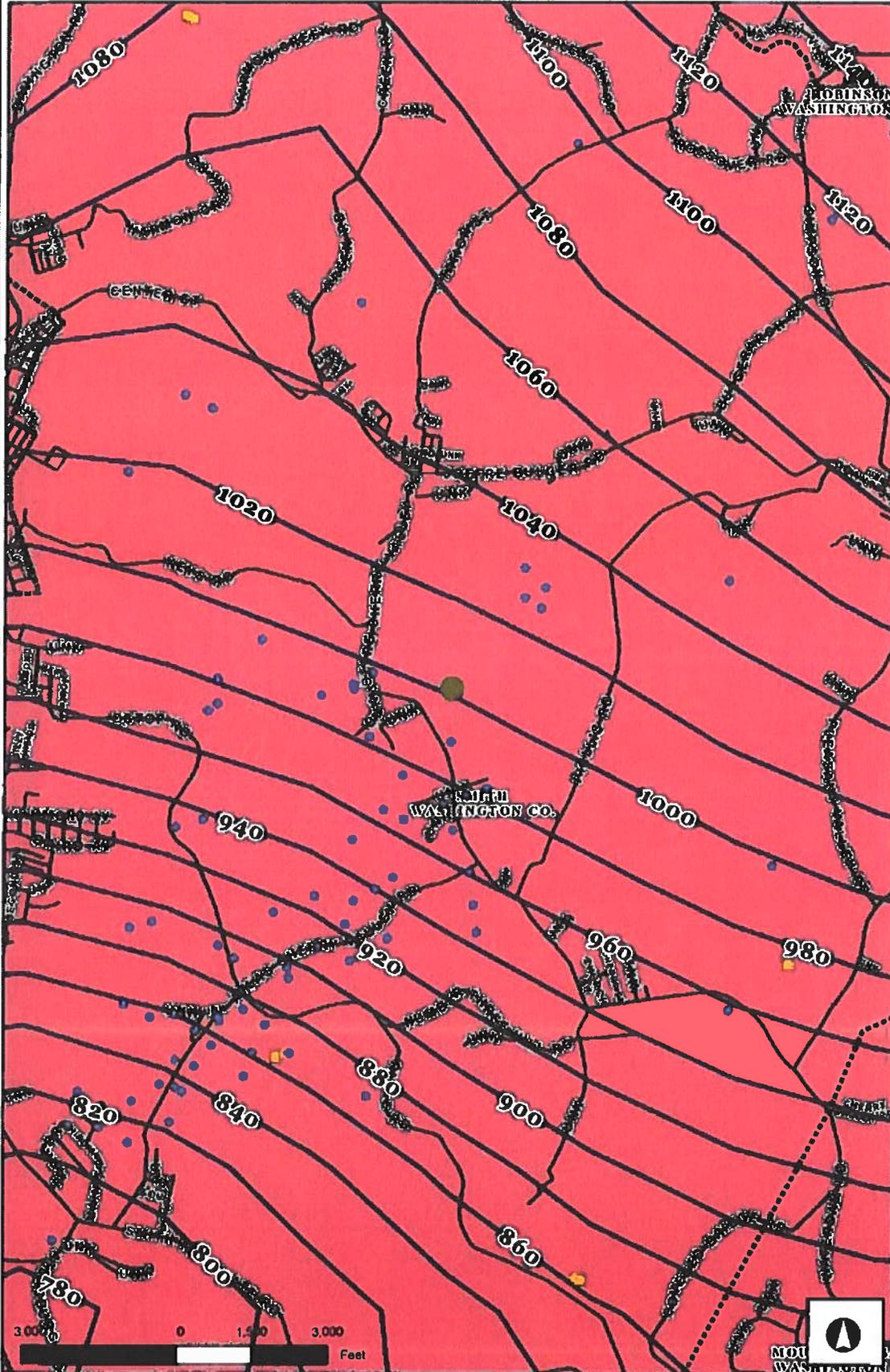
5/9/2019

# Plate 6 - Upper Kittanning Coal



Pad Name

**SASSO  
LEONARD UNIT**



### Legend

- Well Location
- Horizontal Surface
- Vertical Wells
- States
- Counties
- Townships
- PGH Coal Contours
- Roads
- Active Coal Permit Boundary
- DEP Mined Out Areas
- Pink - Inferred
- Light Red - Less than 28"
- Dark Red - Greater than 28"
- Black - Coal Seam Mined Out

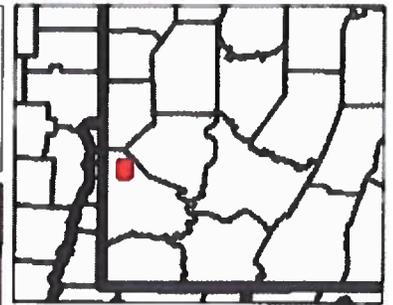
NOTE: This map compares the location of the proposed well or wells versus existing and active oil & gas wells and mined out areas per the Pennsylvania DEP (data as posted on PASDA). Mineable coal seams > 28" thick were digitized from Pennsylvania Geological Survey Publication - Mineral Resource Report #68.



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# Plate 7 - Lower Freeport Coal

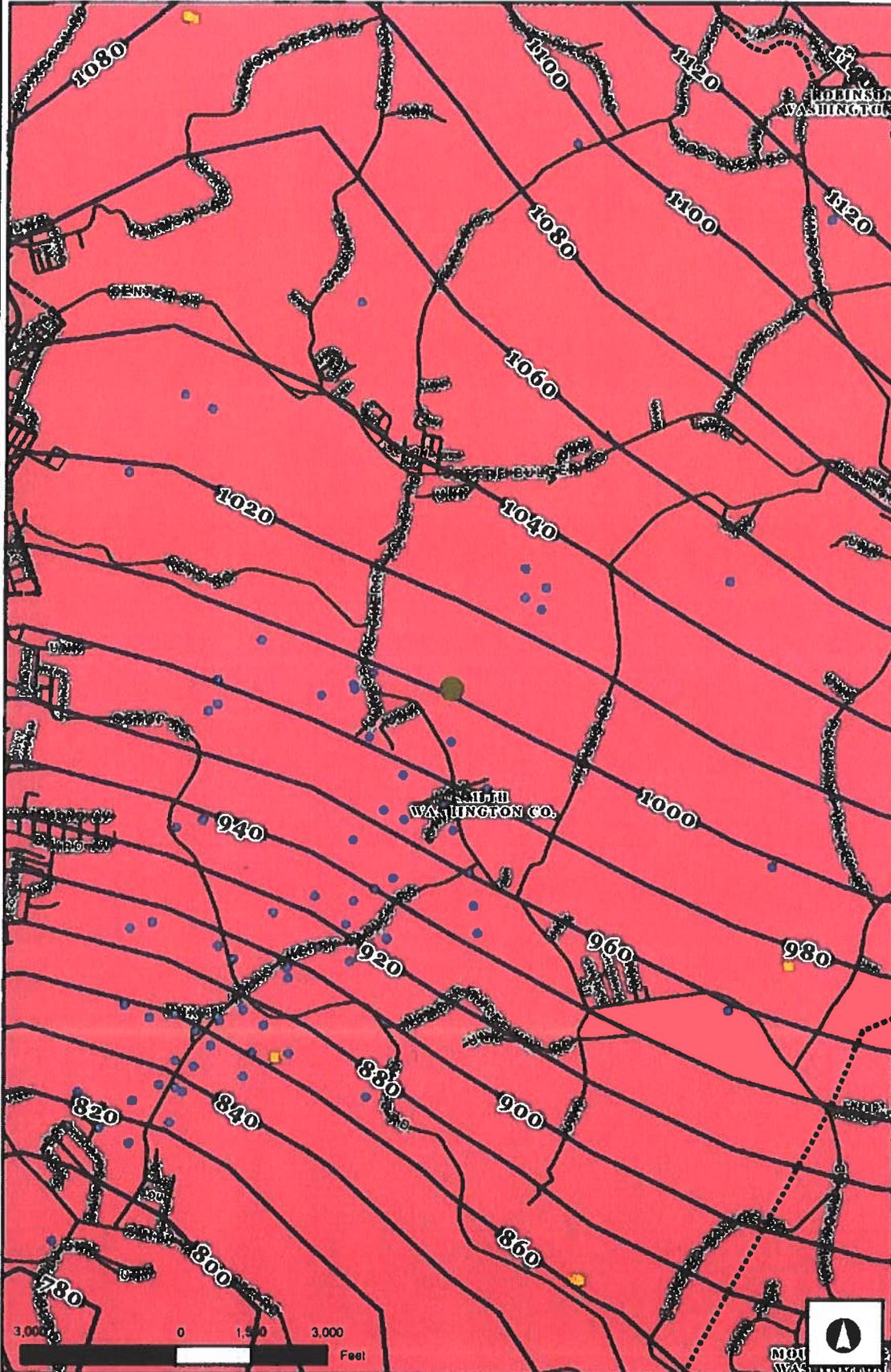


Pad Name

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LEONARD UNIT**

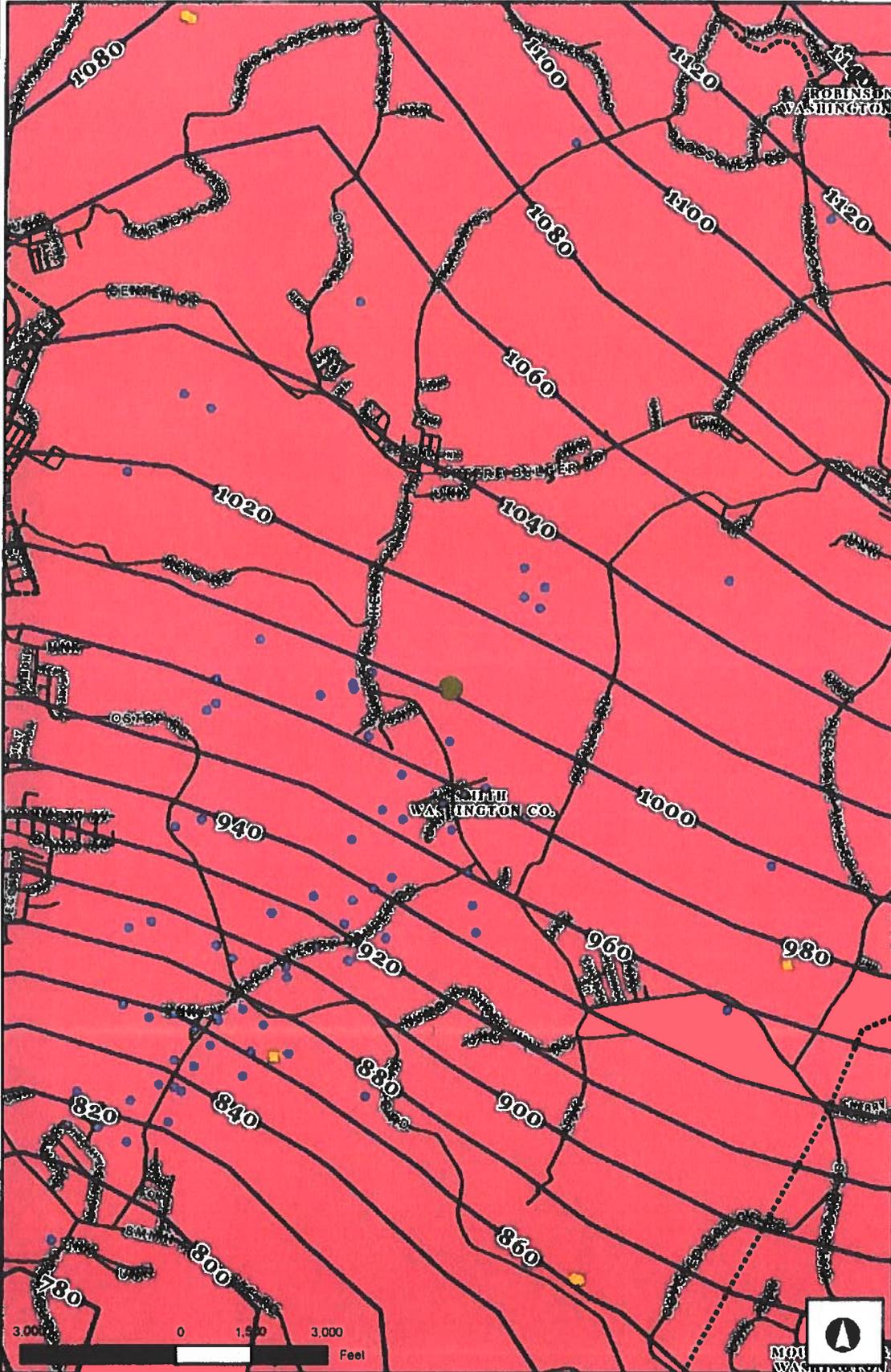
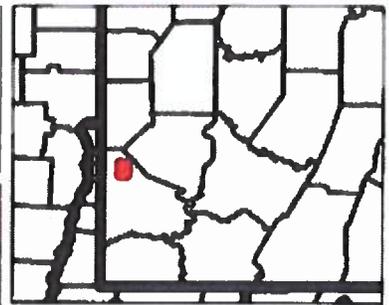
### Legend

- Well Location
- Horizontal Surface
- Vertical Wells
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# Plate 8 - Upper Freeport Coal



Pad Name  
**SASSO**  
**LEONARD UNIT**

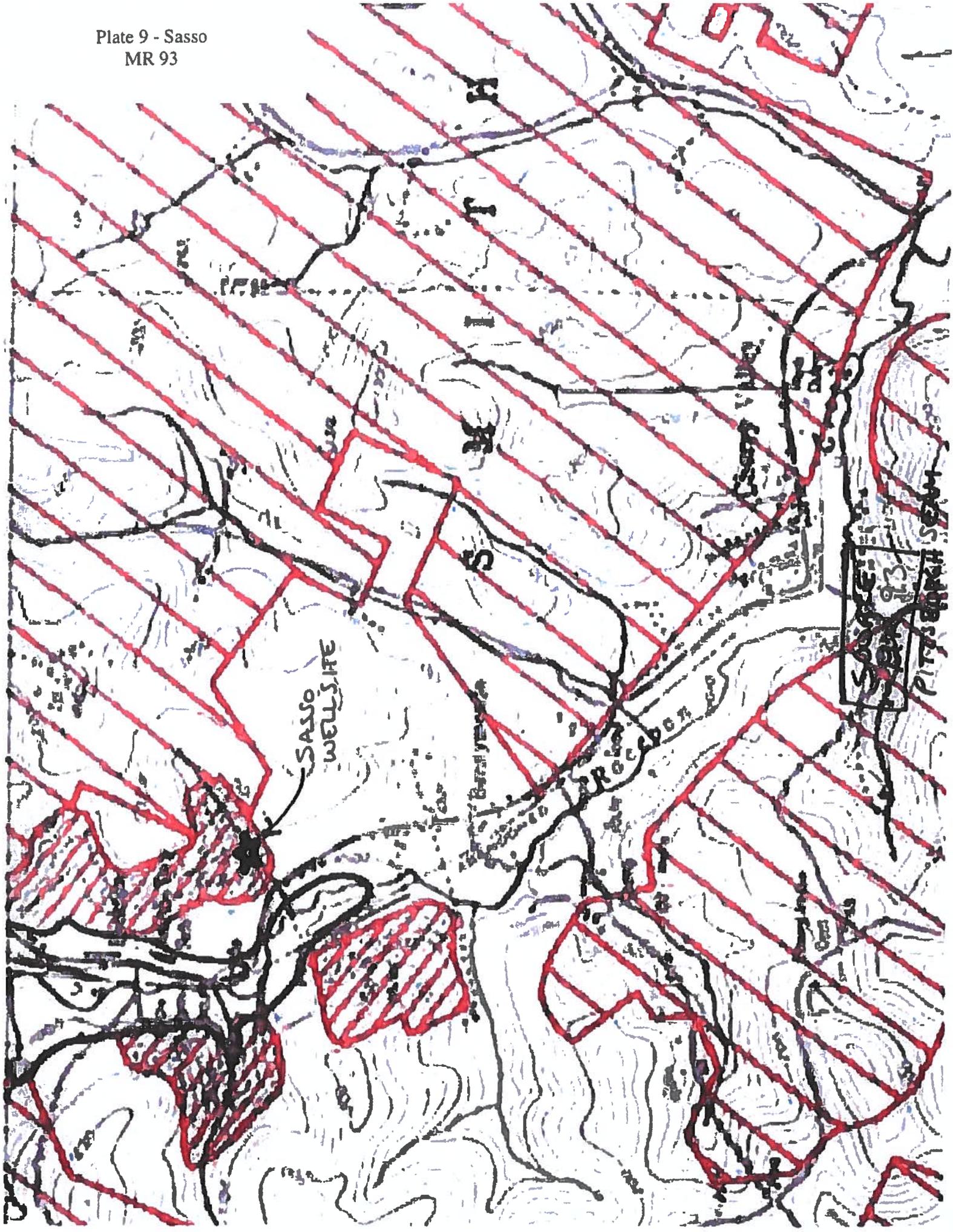
- Legend**
- Well Location
  - Horizontal Surface
  - Vertical Wells
  - States
  - Counties
  - Townships
  - PGH Coal Contours
  - Roads
  - Active Coal Permit Boundary
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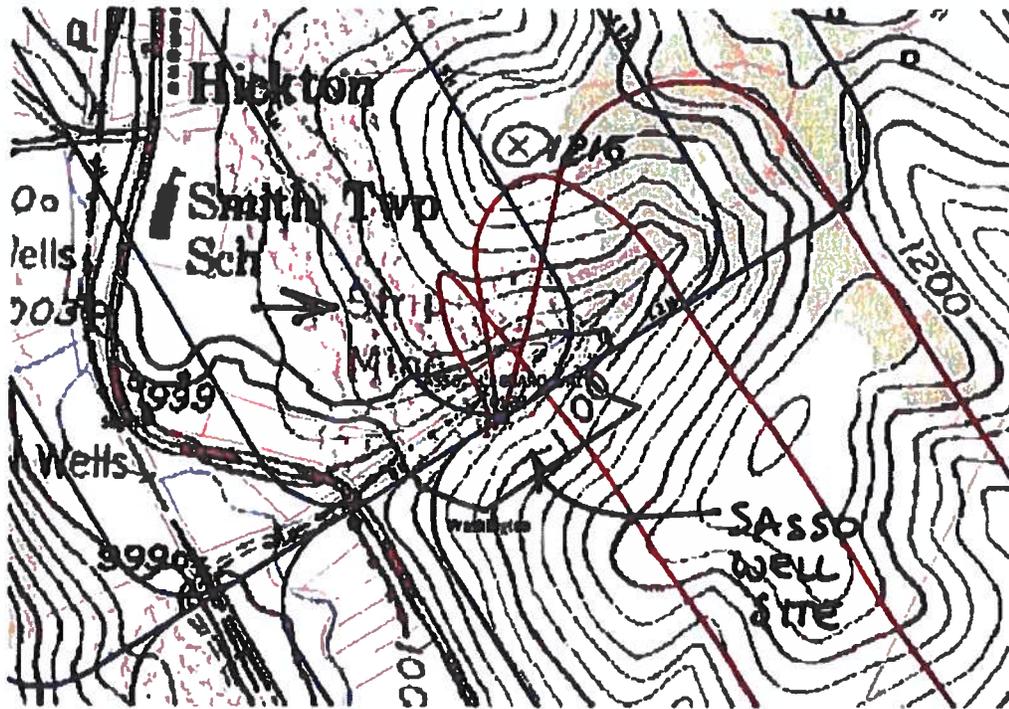


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Plate 9 - Sasso  
MR 93





USGS MIDWAY QUAD

NOT TO SCALE

PITTSBURGH SEAM MINED OUT  
STRIP MINE

### COAL/NON-COAL DETERMINATION

ID No. 489 112 Permit Number 125-27089  
 Location 2613 'S of 40 32 30  
12850 'W of 80 20 00  
 7.5 Topo Midway County Washington  
 Surface Elevation 1066

Approved as:  
 Coal  Non-Coal

Geologist \_\_\_\_\_  
 Date \_\_\_\_\_

COAL SEAM

Washington	Absent
Waynesburg	
Sewickley	
Redstone	
Pittsburgh	60B
Upper Freeport	Intermed
Lower Freeport	
Upper Kittanning	
Middle Kittanning	
Lower Kittanning	
Clarion	
Brookville	
Mercer	
Other	

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

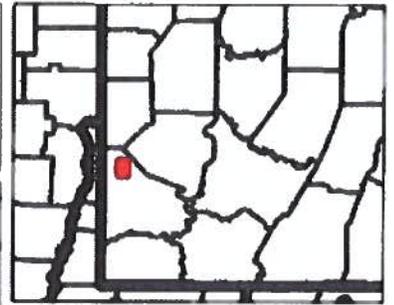
References: MR 108  
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# Plate 10 - Redstone Coal

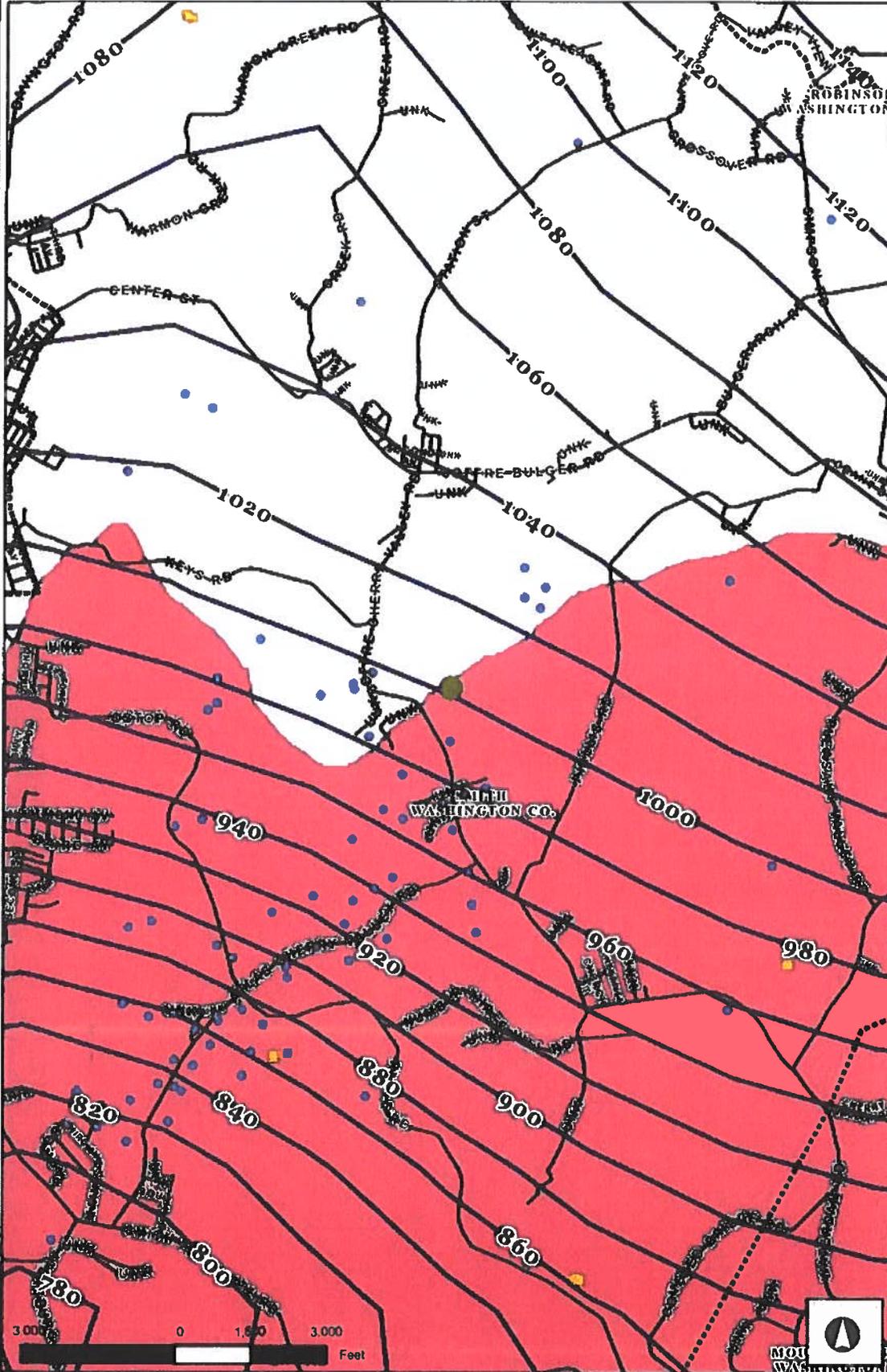


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LEONARD UNIT**

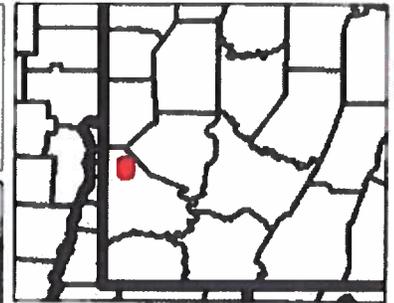
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# Plate 11 - Sewickley Coal

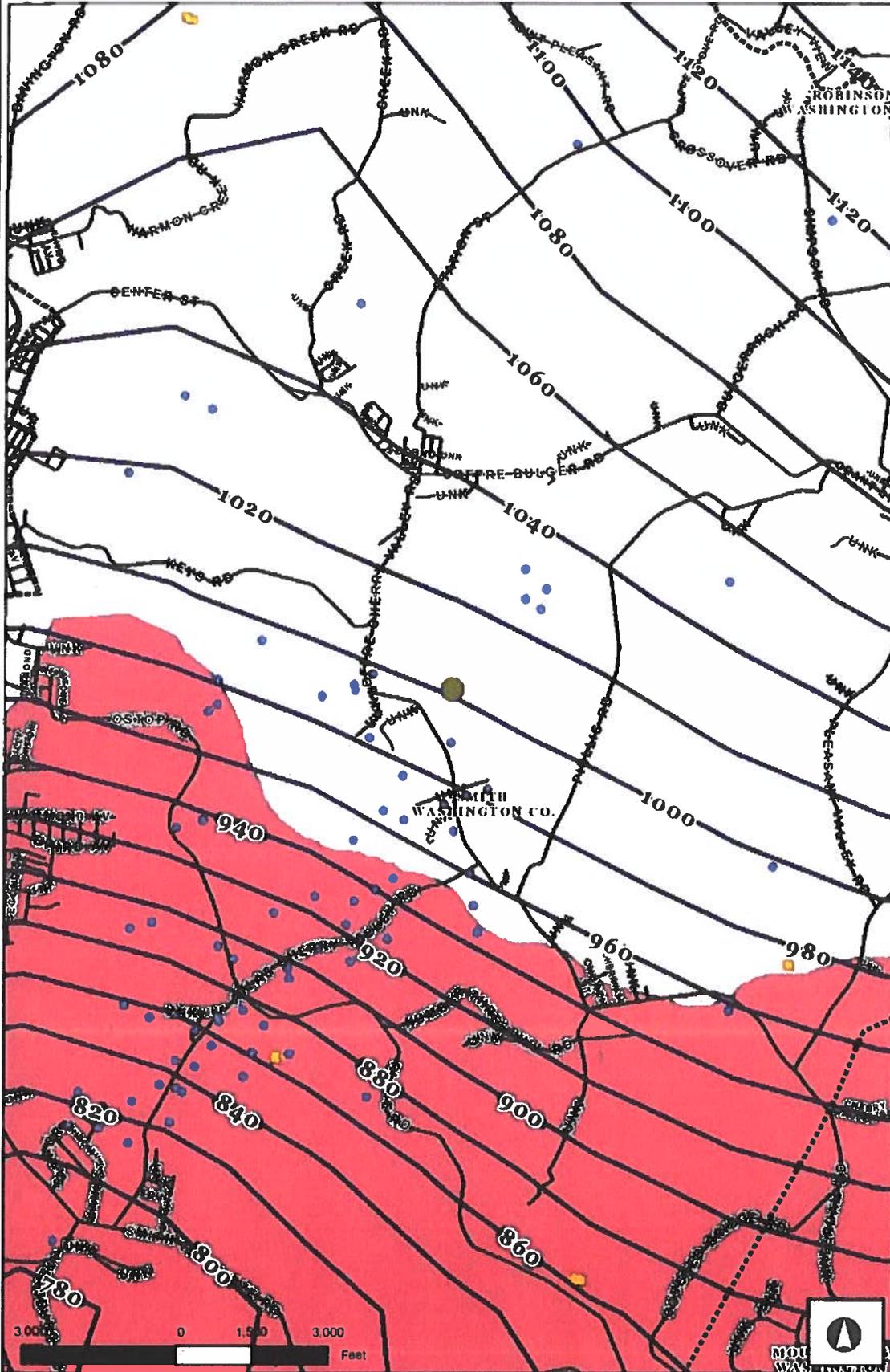


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**SASSO  
LEONARD UNIT**

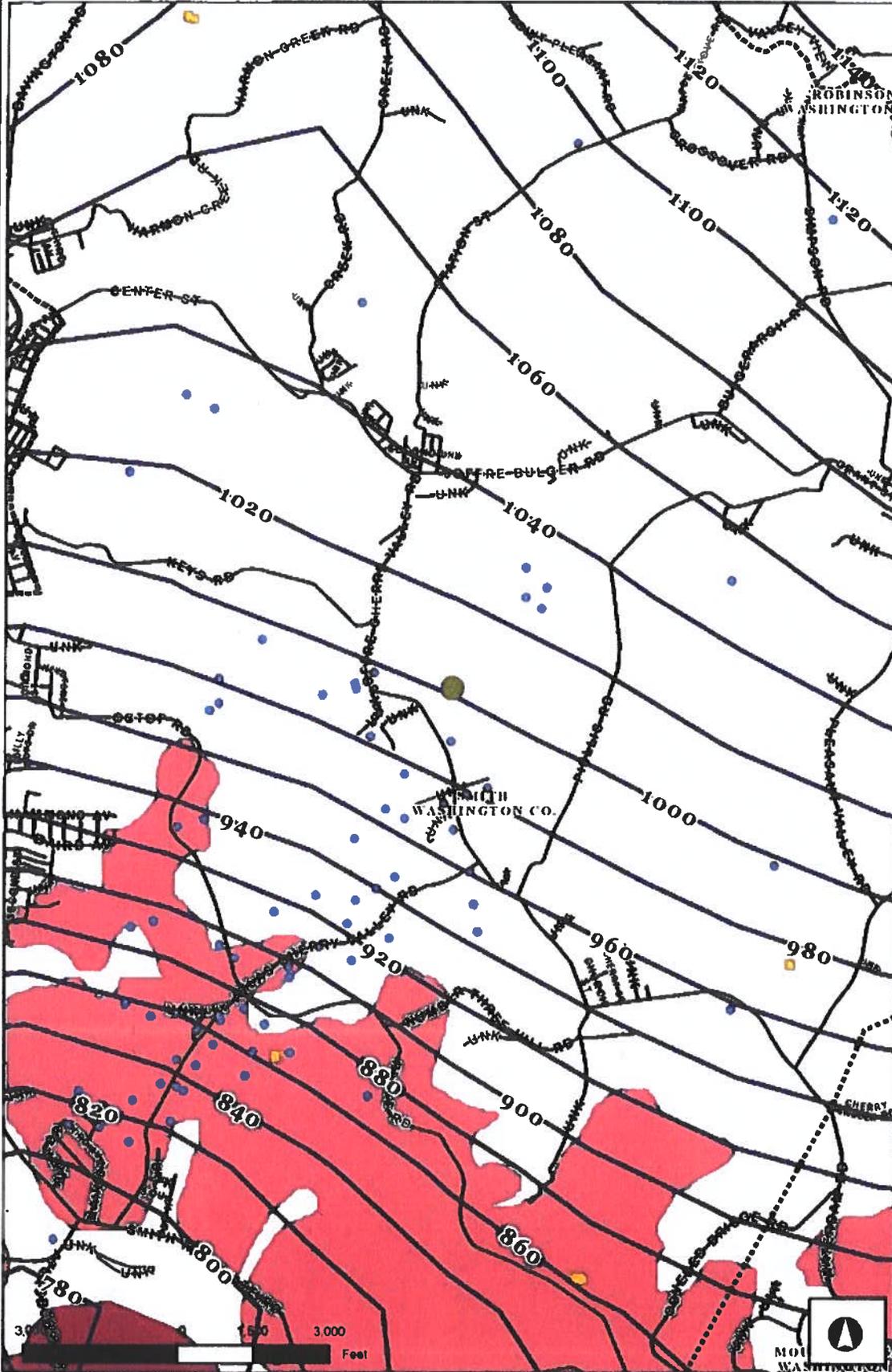
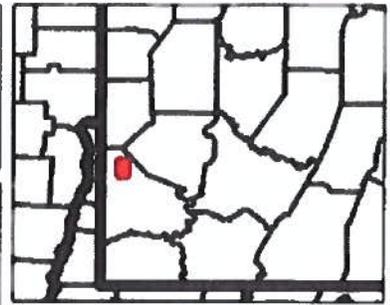
### Legend

-  Well Location
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-  Vertical Wells
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# Plate 12 - Waynesburg Coal

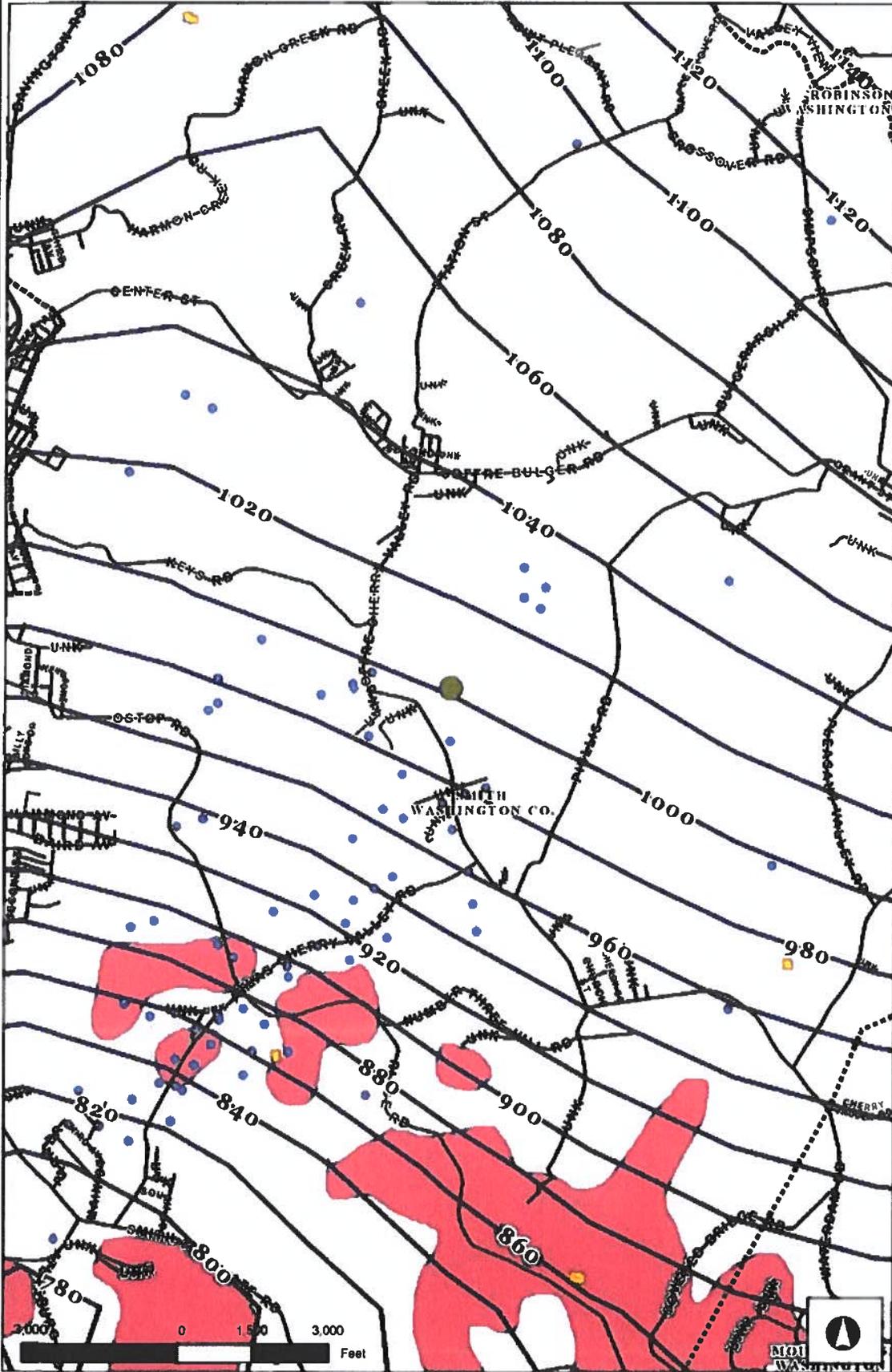
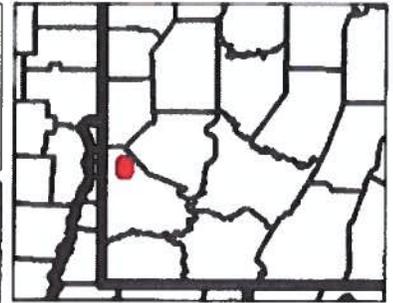


**Pad Name**  
**SASSO**  
**LEONARD UNIT**

- Legend**
- Well Location
  - Horizontal Surface
  - Vertical Wells
  - States
  - Counties
  - Townships
  - PGH Coal Contours
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# Plate 13 - Washington Coal



**Pad Name**  
**SASSO**  
**LEONARD UNIT**

- Legend**
- Well Location
  - Horizontal Surface
  - Vertical Wells
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  - Townships
  - PGH Coal Contours
  - Roads
  - Active Coal Permit Boundary
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