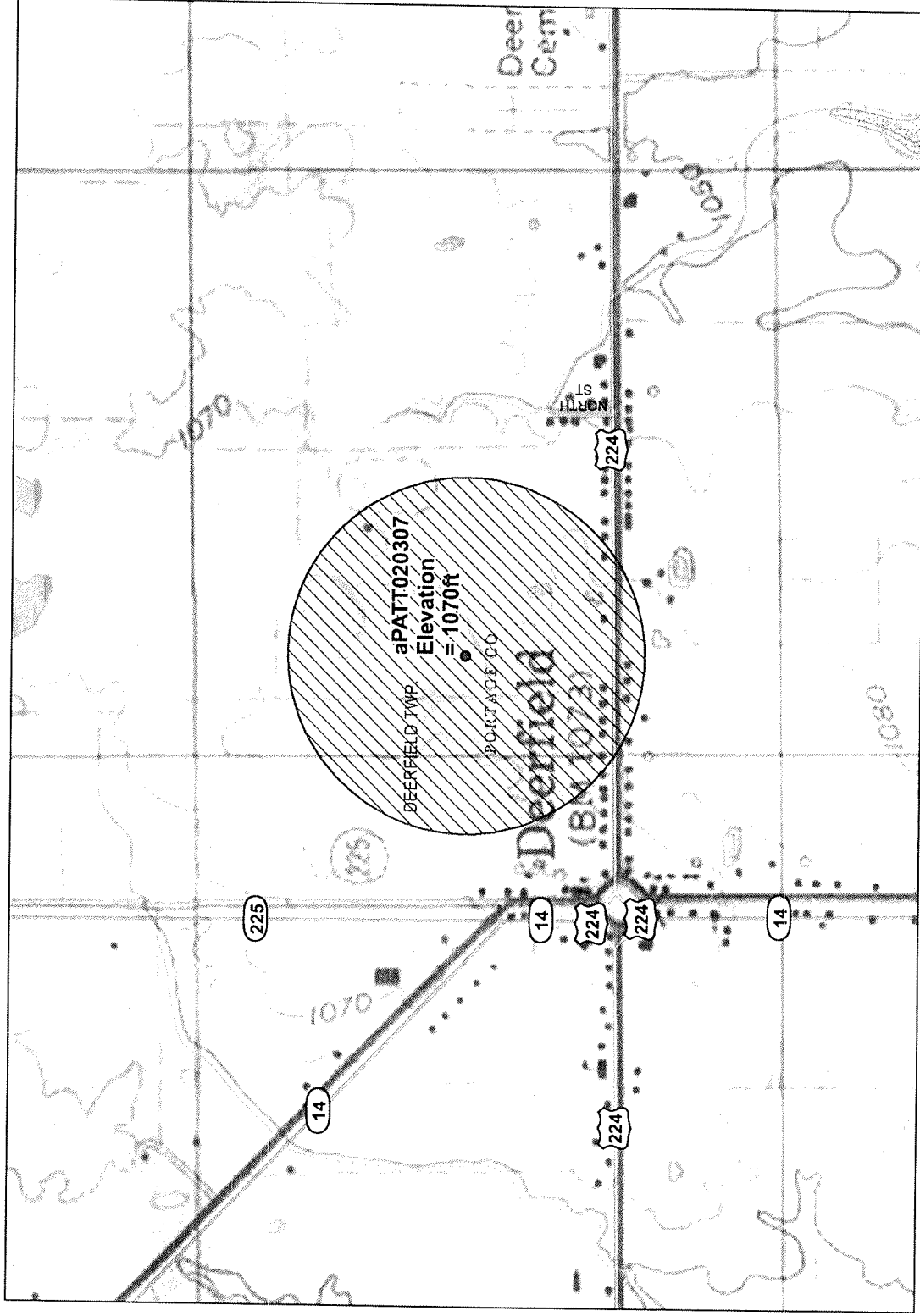


Surface Topography Layers

Well APPNO - aPATT020307

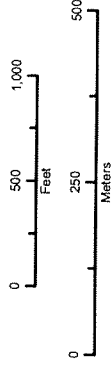


Basemaps

- Railroad
- Local Road
- State Route
- U.S. Highway
- Interstate
- Hydrography Line
- Hydrography Polygon
- Hydrography Polygon
- Hydrography Polygon
- City
- Township
- County



Overview

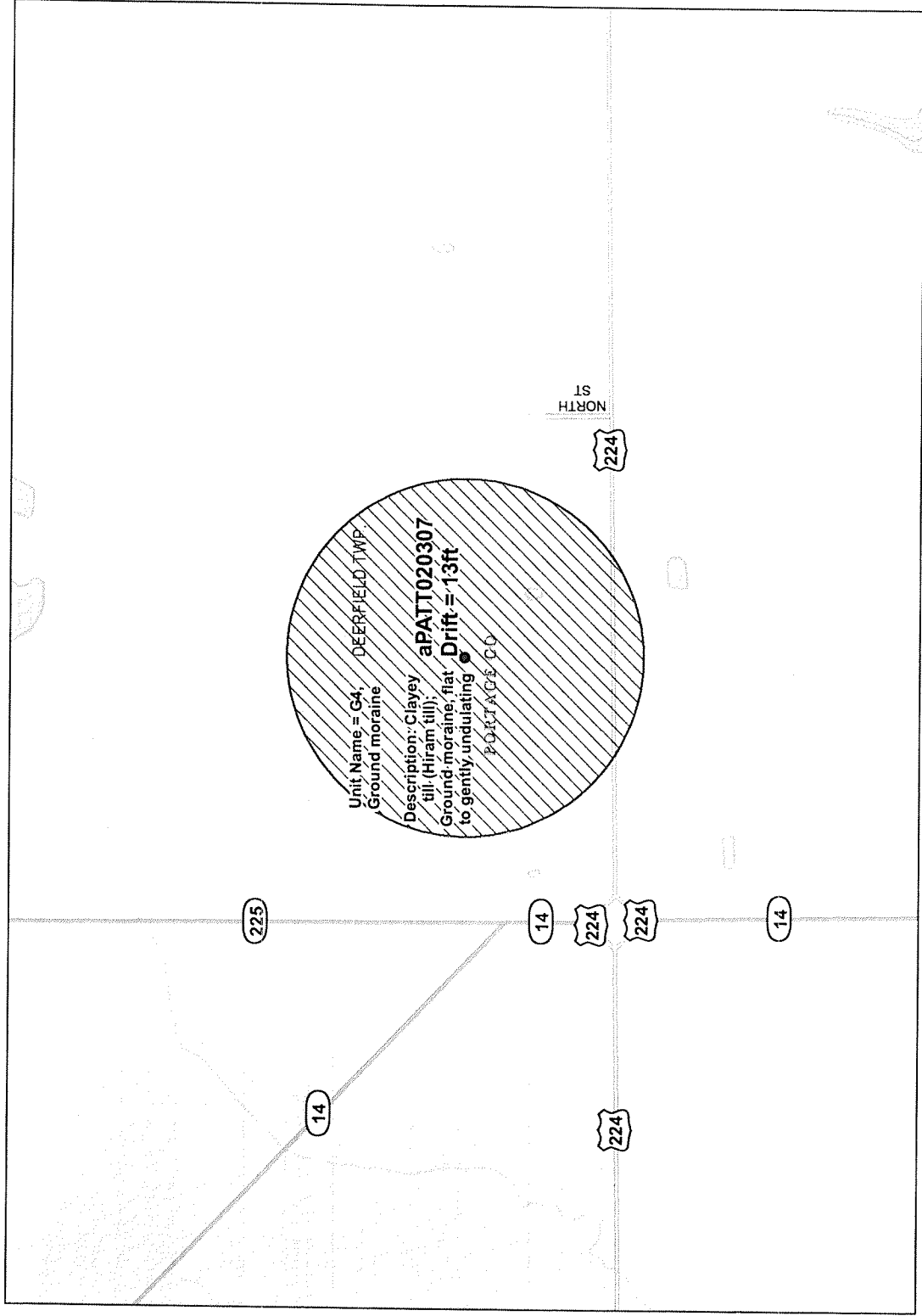


- Gas Permit Well
- Directional Well
- Well Radius Type
- DW
- Direct Above Ground
- Direct Below Ground
- Non Direct Above Ground

Date Created: 12/28/2011
 Data Source: Surface Topography Layers, Division of Geological Survey (DGS) and Environmental Science Research Institute (ERSI)

Quaternary Geology Layers

Well APPNO - aPATT020307



Unit Name = G4, DEERFIELD TWP
Ground moraine

Description: Clayey
silt (Hiram till);
Ground moraine, flat
to gently undulating

aPATT020307
Drift = 13ft

PORTAGE CO

Basemaps

- Railroad
- Local Road
- State Route
- U.S. Highway
- Interstate
- Hydrography Line
- Hydrography Polygon
- Hydrography Polygon
- Intermittent
- City
- Township
- County

Well Symbols

- Well Point/Well
- Directional Line
- Well Radius Type
- Dir
- Open Above Ground
- Open Below Ground
- Open Above Ground

Scale

0 500 1,000 Feet
0 250 500 Meters

Overview

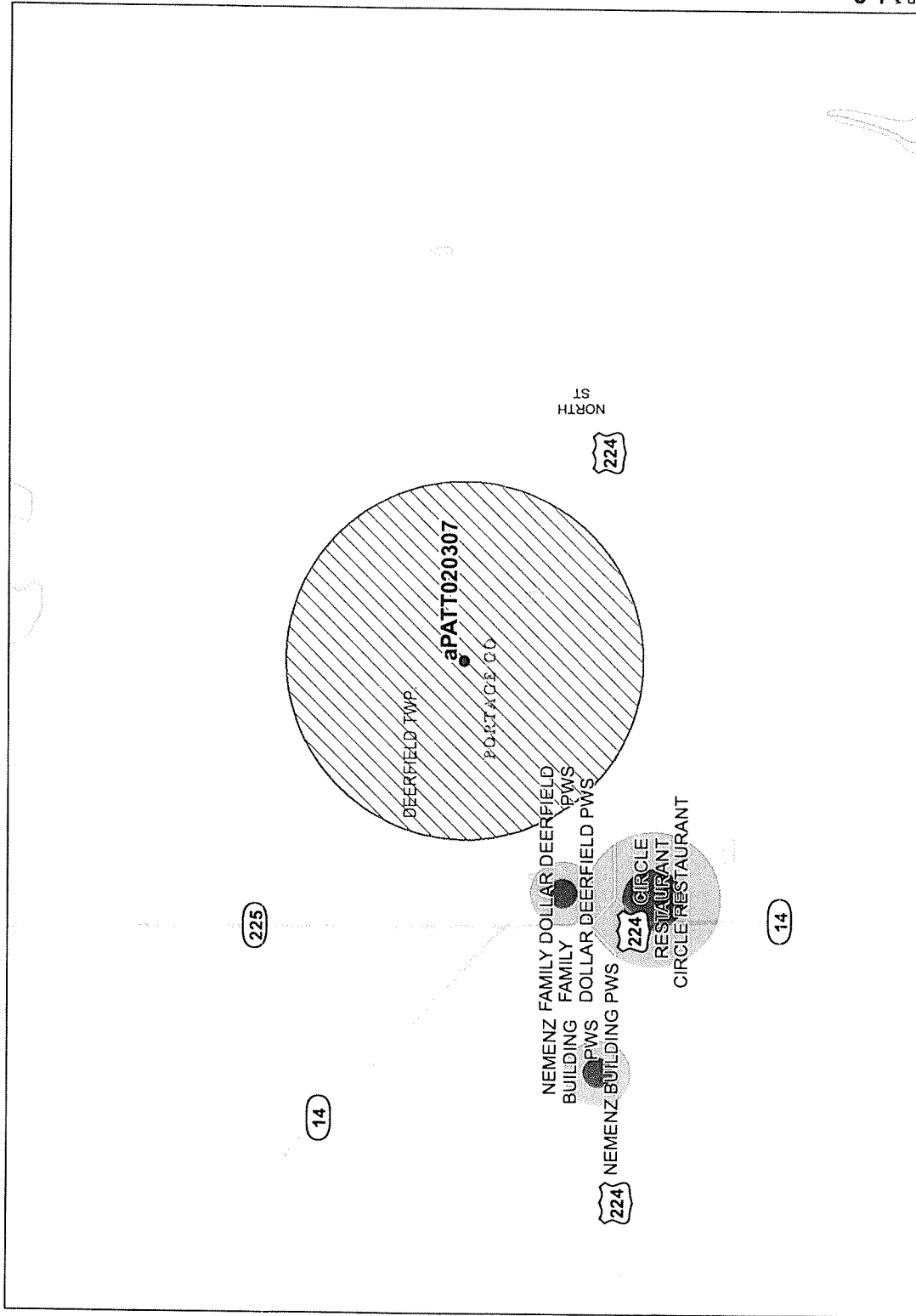
Logos

North Arrow

Date Created: 12/28/2011
Data Source: Quaternary Geology Layers, Division of Geological Survey (DGS)

Groundwater - Source Water Protection Area Layers

Well APPNO - aPATT020307



Basemaps

- Railroad
- Local Road
- State Route
- U.S. Highway
- Interstate
- Hydrography Line
- Hydrography Polygon
- Hydrography Polygon Intermittent
- City
- Township
- County

SWPA TYPE

- Direct Above Ground
- Direct Below Ground
- Non Direct Above Ground
- Uncollected Yield Aquifer
- High Yield Below Aquifer
- Low Yield Below Aquifer
- Groundwater Zone (1 year time of travel)
- Groundwater Zone (5 year TD)

Legend

- Well Permit/Well
- Directional Line
- Well Radius Type
- DW

Scale

0 500 1,000 Feet

0 250 500 Meters

Overview

Logos

Metadata

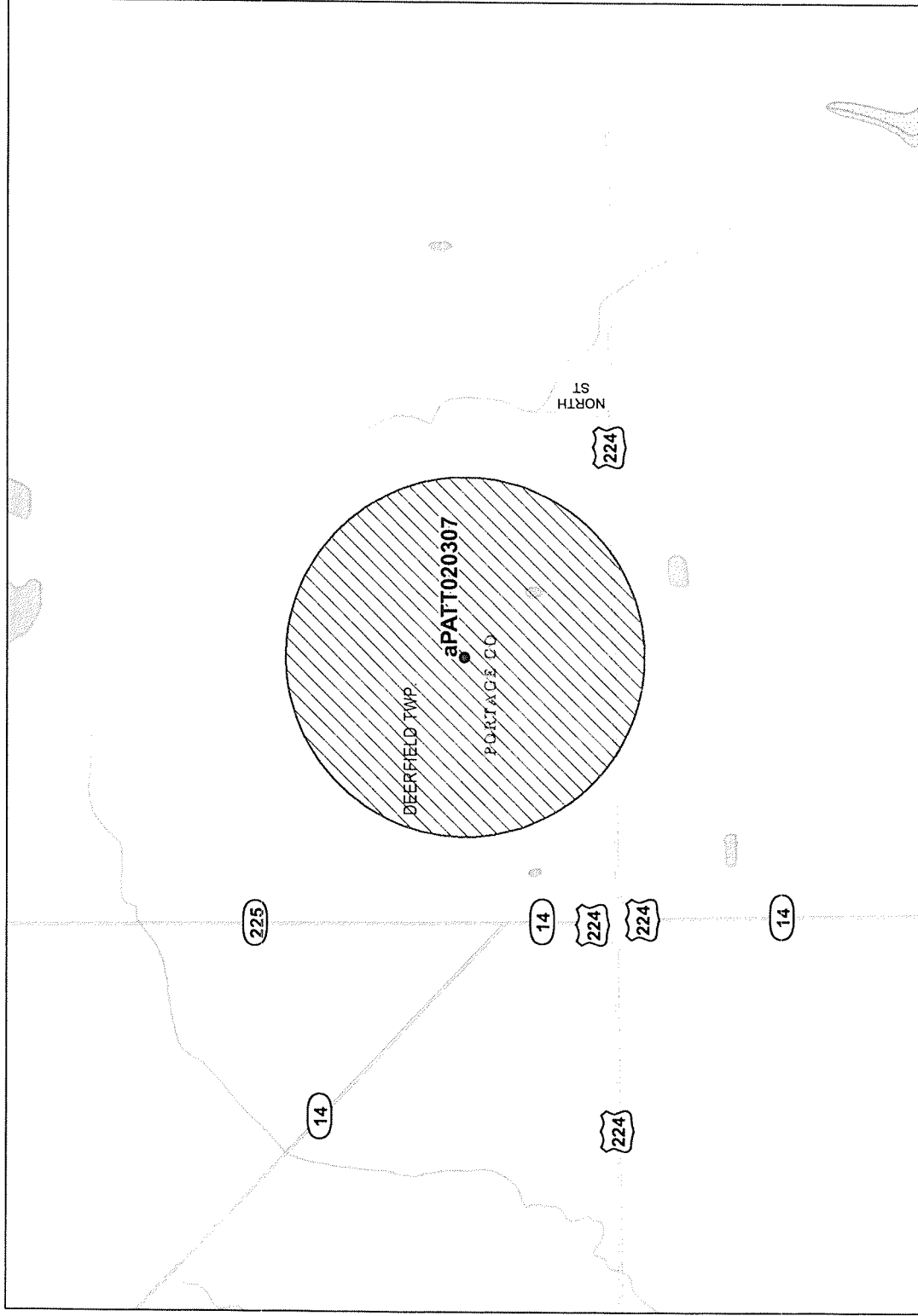
Date Created: 12/28/2011

Data Source: Groundwater - Source Water Protection Areas Layers, Ohio Environmental Protection Agency (OEPA)

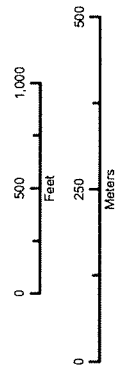
Revision: 14_Mkt_Bulk

Groundwater - Pollution Potential Layers

Well APPNO - aPATT020307

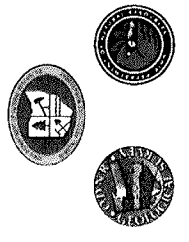


- Basemaps**
- Railroad
 - Local Road
 - State Route
 - U.S. Highway
 - Interstate
 - Hydrography Line
 - Hydrography Polygon
 - Hydrography Polygon Intermittent
 - City
 - Township
 - County



Date Created: 12/28/2011
Data Source: Groundwater - Pollution Potential Layers, Division of Geological Survey (DGS)

- Well Name
 - Well ID
 - Well Status
 - Well Depth
 - Well Type
 - Well Construction
 - Well Completion
 - Well Drilled Above Ground
 - Well Drilled Below Ground
 - Well Drilled Above and Below Ground
- DRASTIC - AUM and Strip Mines**
- DRASTIC AUM and Strip Mines
 - Assigned Underground Mines
 - Strip Mines
 - DRASTIC Inactive Mine
 - DRASTIC Rating
 - Line
 - Intersect
 - HP



OHIO DIVISION OF GEOLOGICAL SURVEY

22211

Permit No. 2211
 Permit Issued 2-20-80
 Quadrangle Deerfield
 Twp. Quarter _____

County PORTAGE Township DEERFIELD
 Section 30 Lot 30 Tract _____
 Measured 815' SL & 1880' WL of Lot 30
126.14 Acres

Land Owner M.A. & P.L. Meluch Well No. 3 Date Commenced 3-18-80
 Operator Viking Resources Corp. Well No. _____ Date Completed 3-23-80
 Elevation Bar 1068'T 1078'DF 1079'KB Total Depth 5027' Plugged Back _____
 Formation Dtd. To Clinton Prod. Form. Clinton Prod. Nat. _____
F/W water and sand; Pf. (9) 4844-4886 I.P. A.F. 33MCEG & 5B0
 Init. Rock Press. _____ 1BW
 Casing Record 8 5/8" 562' 4 1/2" 5008' 140sks Abandoned _____
225SKS

Formation	Top	Bottom	Remarks	Formation	Top	Bottom	Remarks
COMPLETION 12-16-80							
1st Berea	356	406		X=2,401,800 Y= 498,900			
2nd Berea	411	498					
Big Lime	2838	4658					
Oriskany	3039	3046					
Packer shell	4736	4775					
Clinton stray	4795	4820					
Clinton red	4842	4857					
Clinton white	4866	4914					
Queenston shale	4999	5018	LTD				
		5027	DTD				

Disclaimer

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Bedrock Topography (C.I. = 50 feet)



Legend

aPATT020307

MAPINJWE Events

WELL_TYP

EOR

IEOR

IER

ISWD

SM

SWD

GEOLOGY.LOADER.eq_epicenters

MAG

2.000000 - 2.500000

2.500001 - 3.000000

3.000001 - 3.400000

3.400001 - 4.200000

4.200001 - 5.400000

geology.LOADER.btcontours

ELEVATION

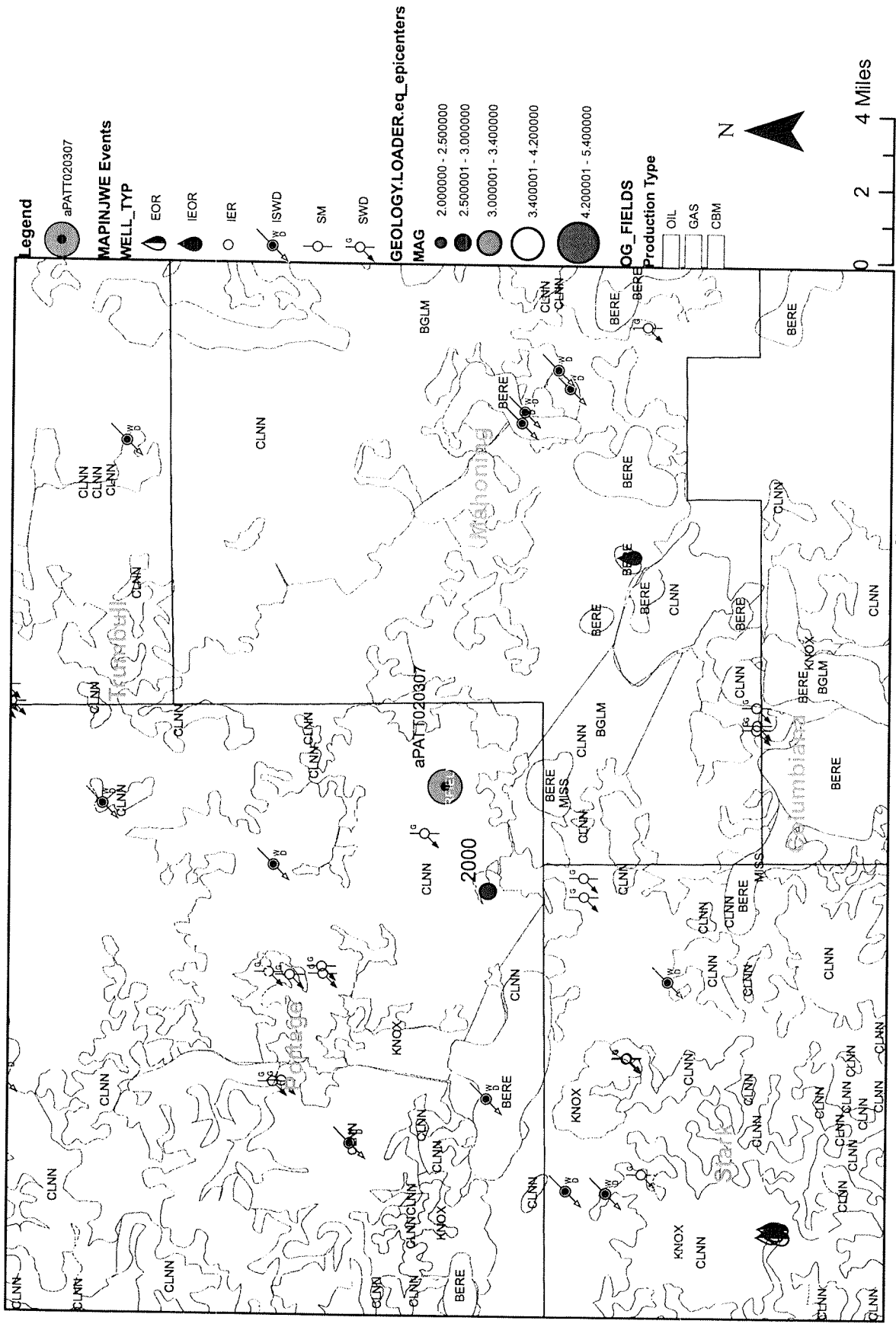
100's

50's

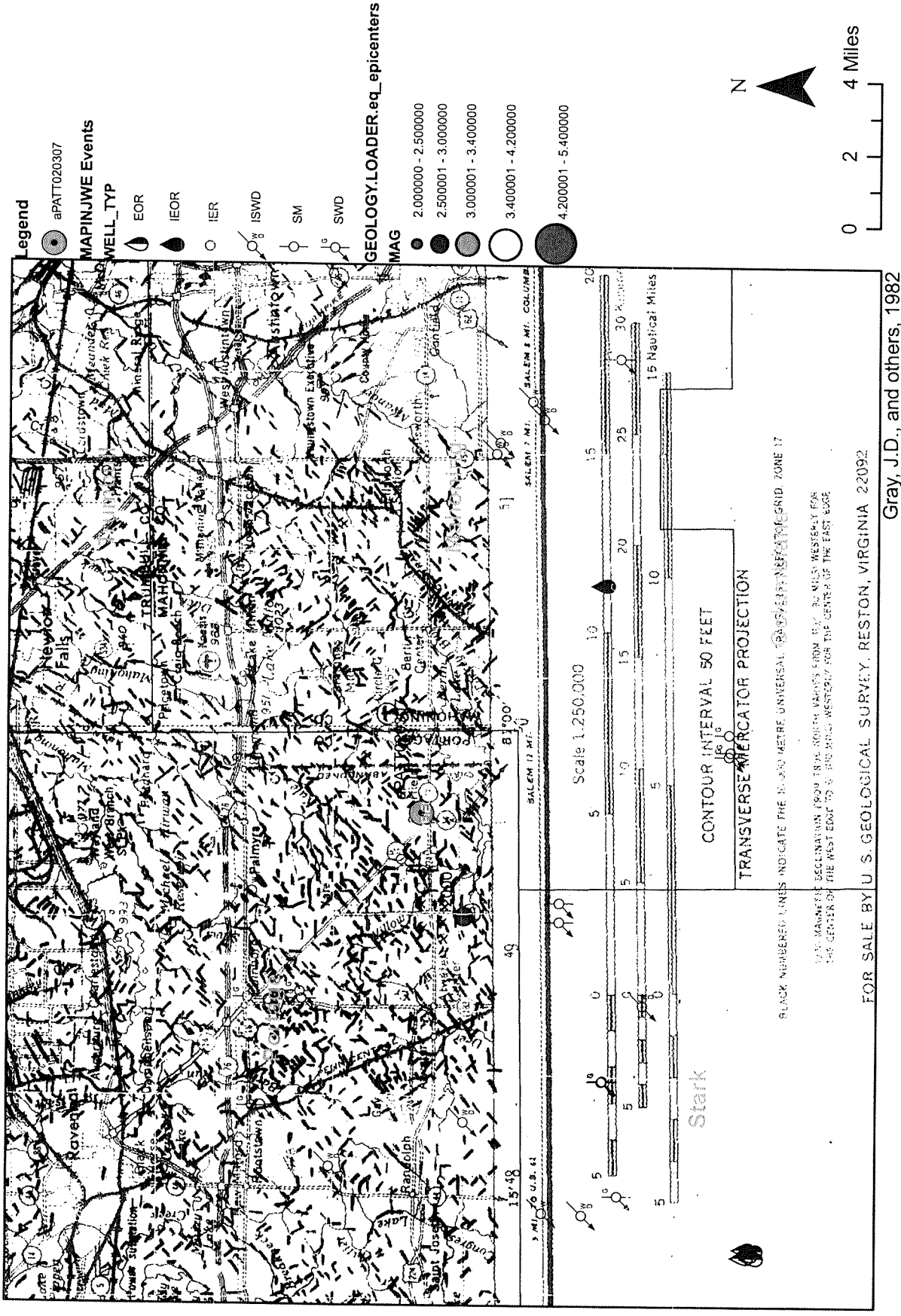


0 2 4 Miles

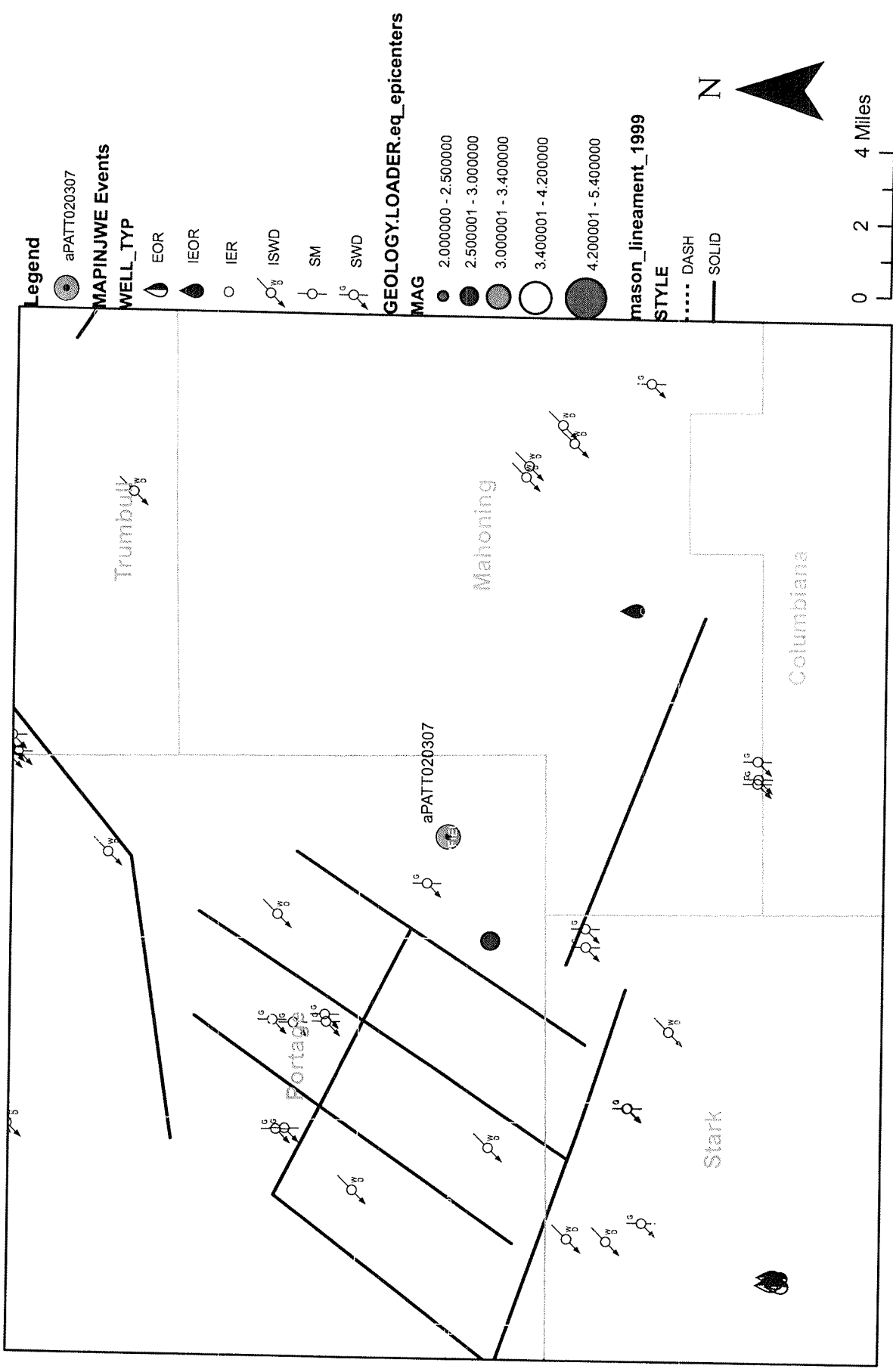
Oil and Gas Fields



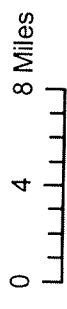
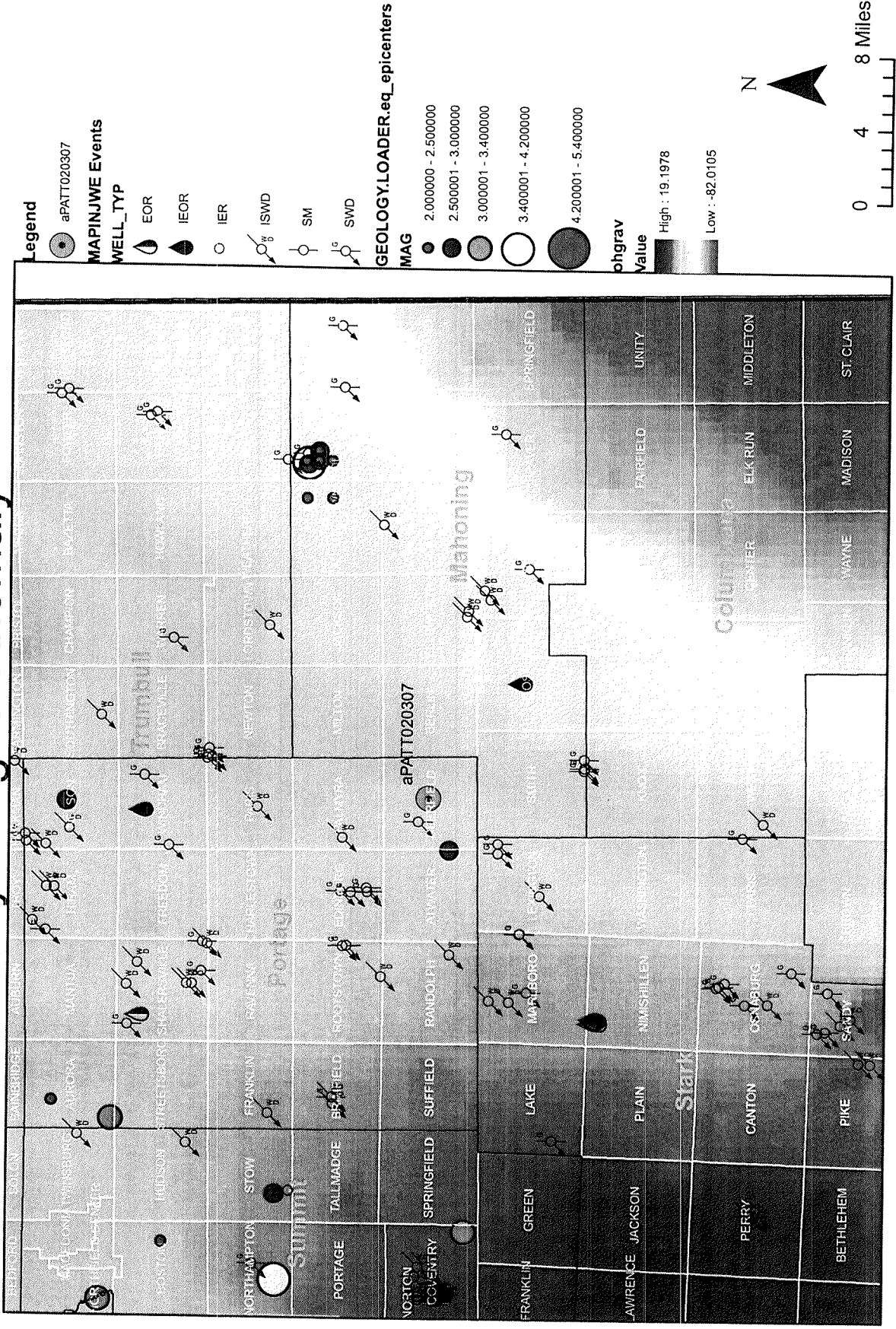
EGSP Aerial Photo Lineament



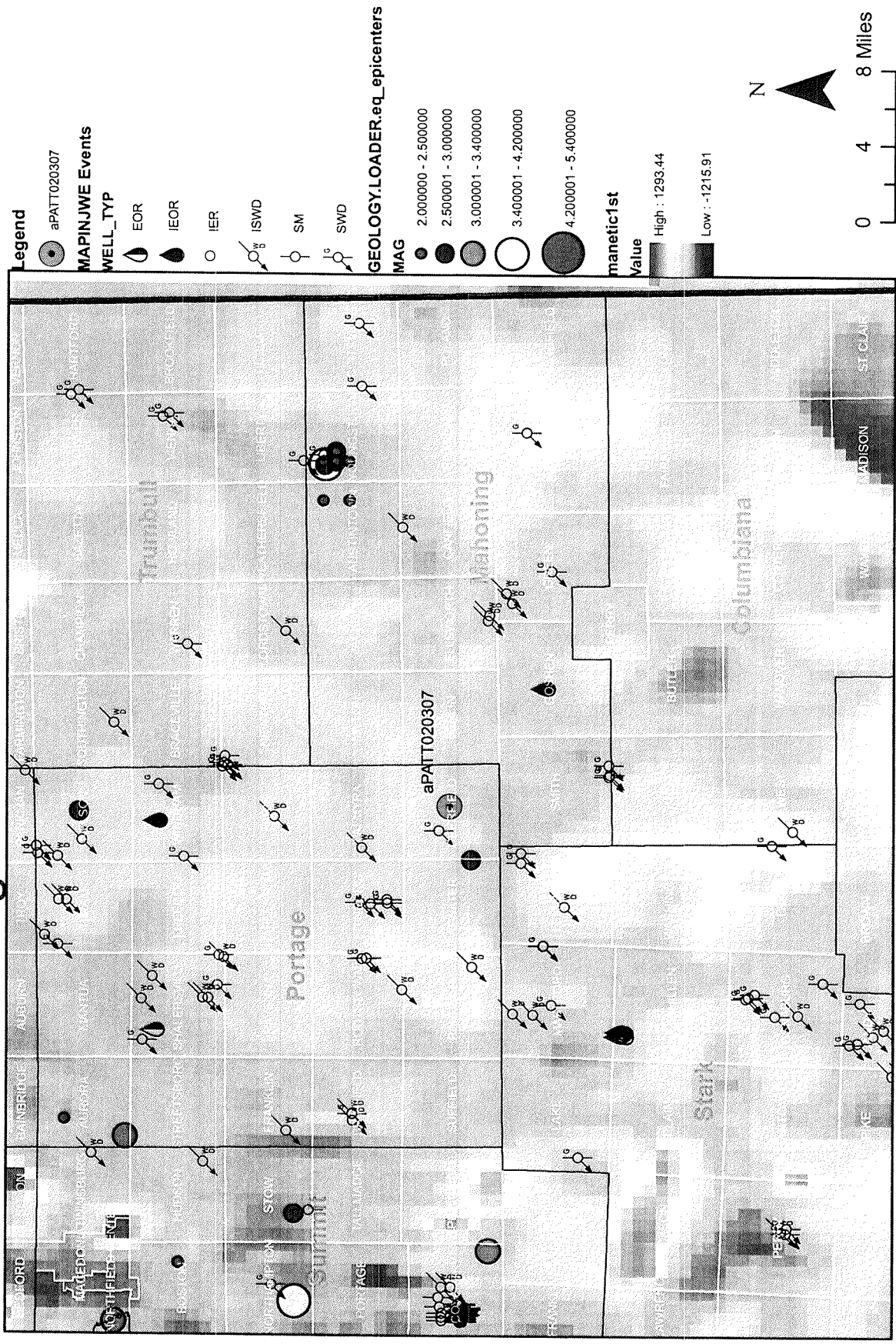
Mason Lineament Map



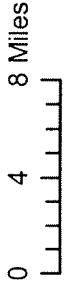
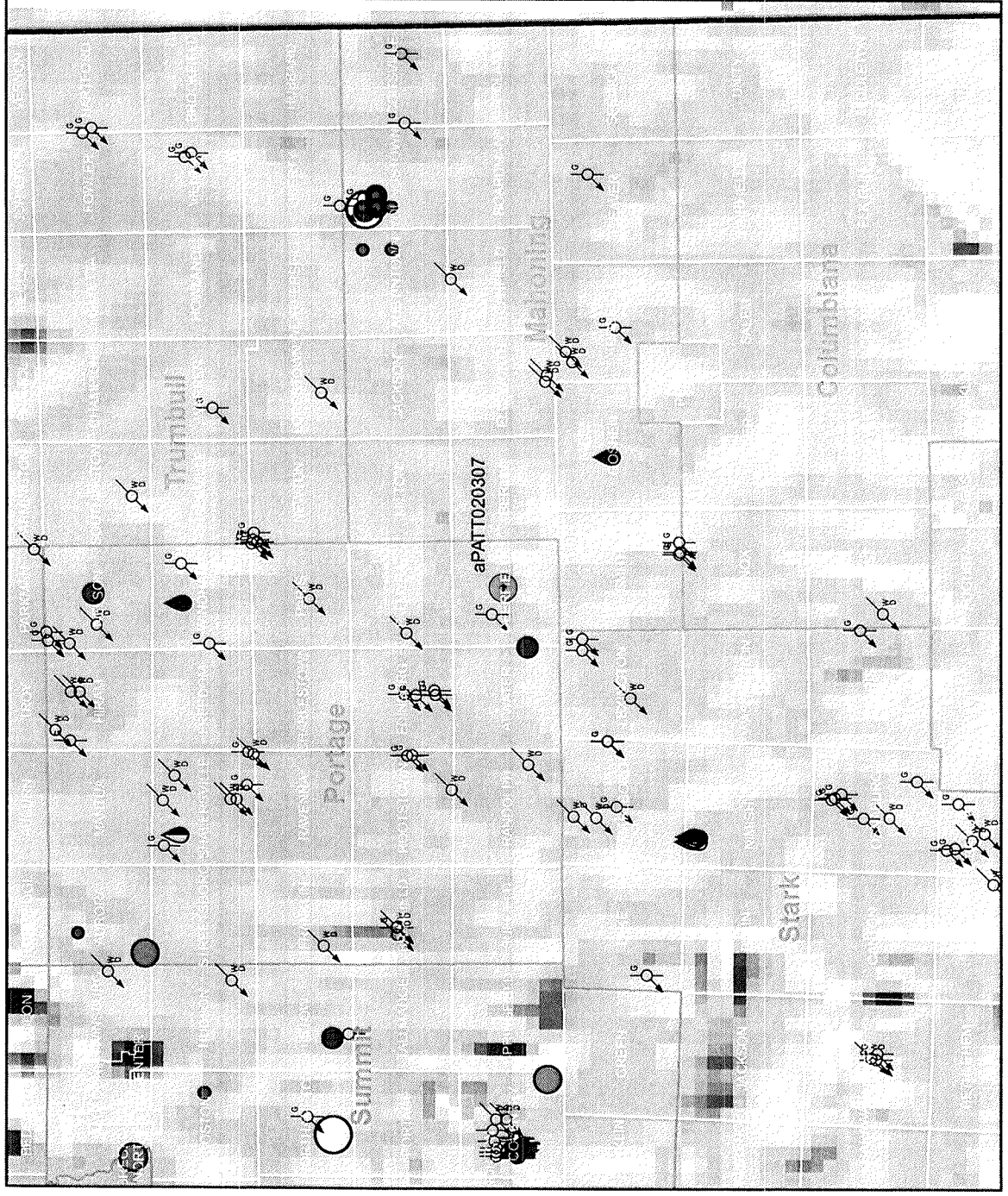
Gravity Bouguer Anomaly



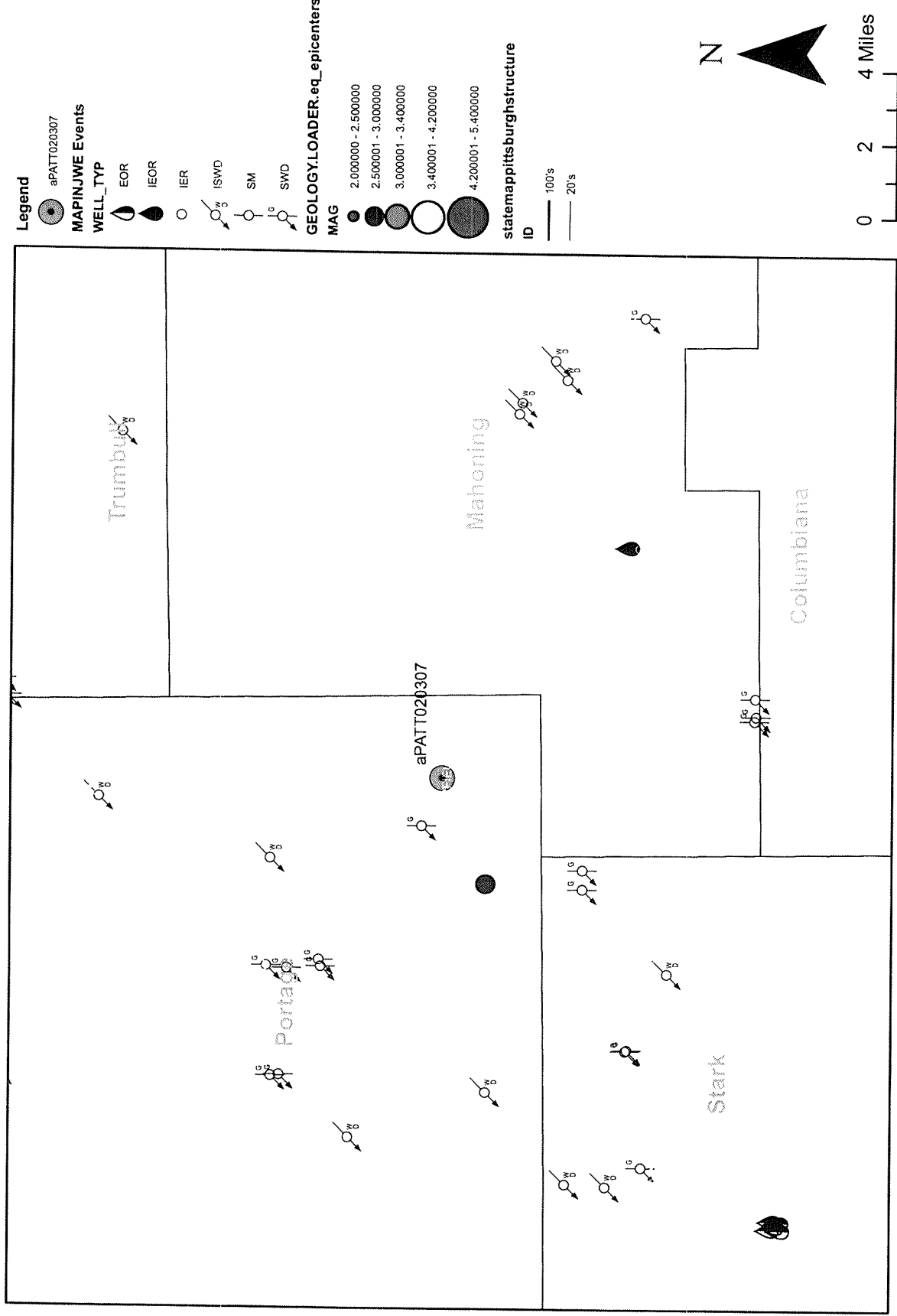
Mag First Derivative



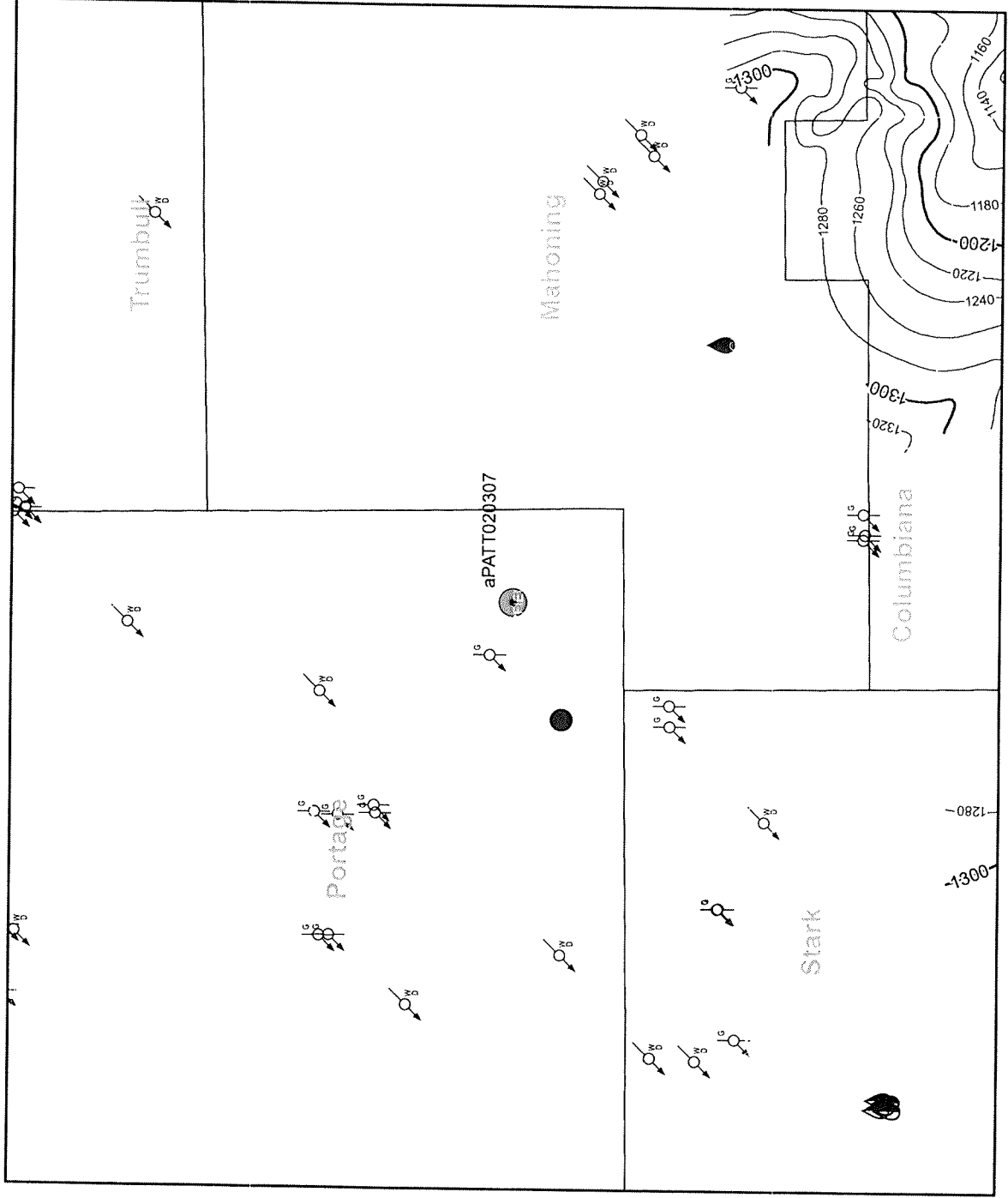
Magnetic Second Derivative



Pittsburgh Coal Structure Contours (C.I. = 20 feet)



Upper Freeport Coal Structure (C.I. = 20 feet)



Legend

aPATT020307

MAPINJWE Events

WELL_TYP

EOR

IEOR

IER

ISWD

SM

SWD

GEOLOGY_LOADER.eq_epicenters

MAG

2.000000 - 2.500000

2.500001 - 3.000000

3.000001 - 3.400000

3.400001 - 4.200000

4.200001 - 5.400000

ustructure

<all other values>

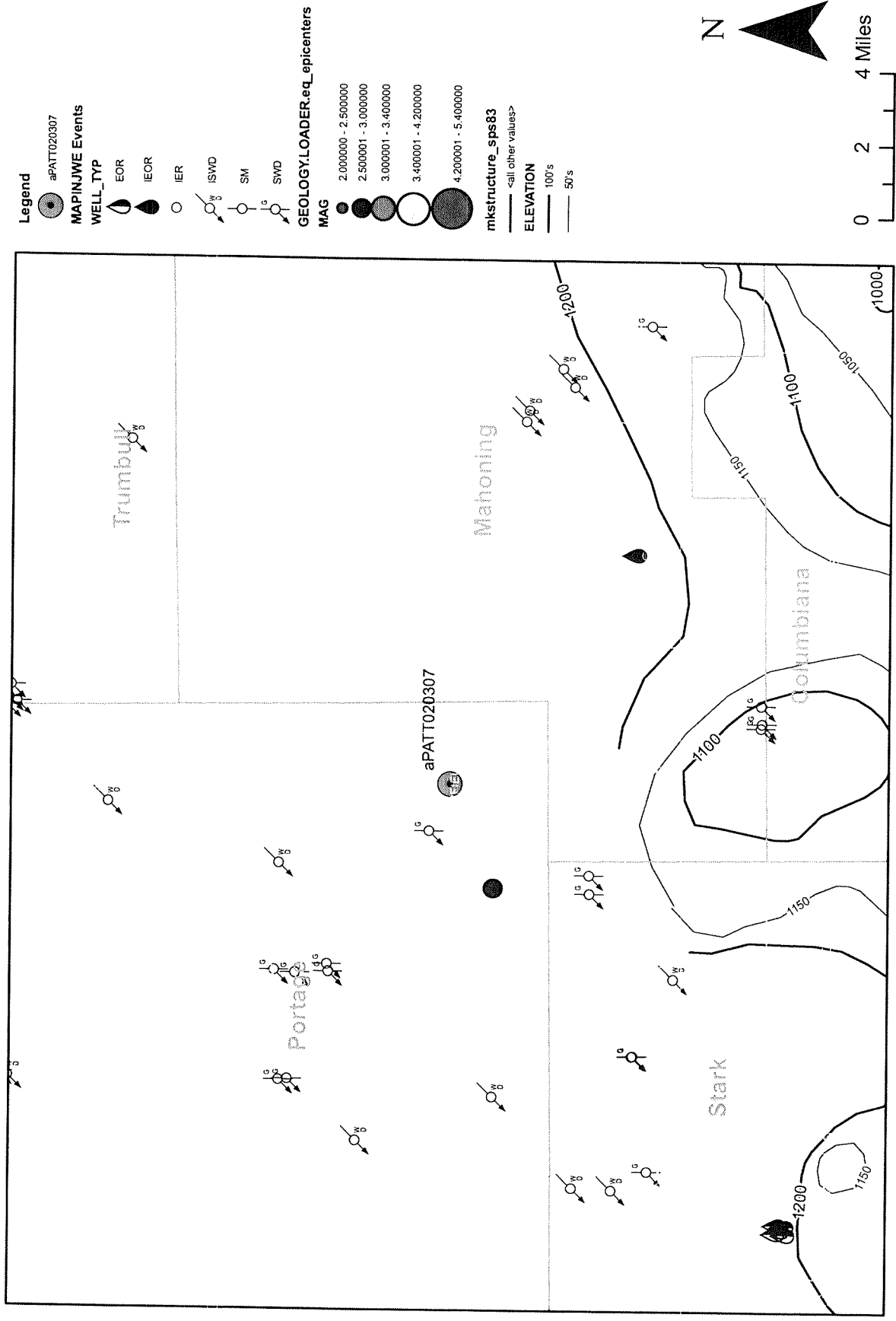
ELEVATION

100's

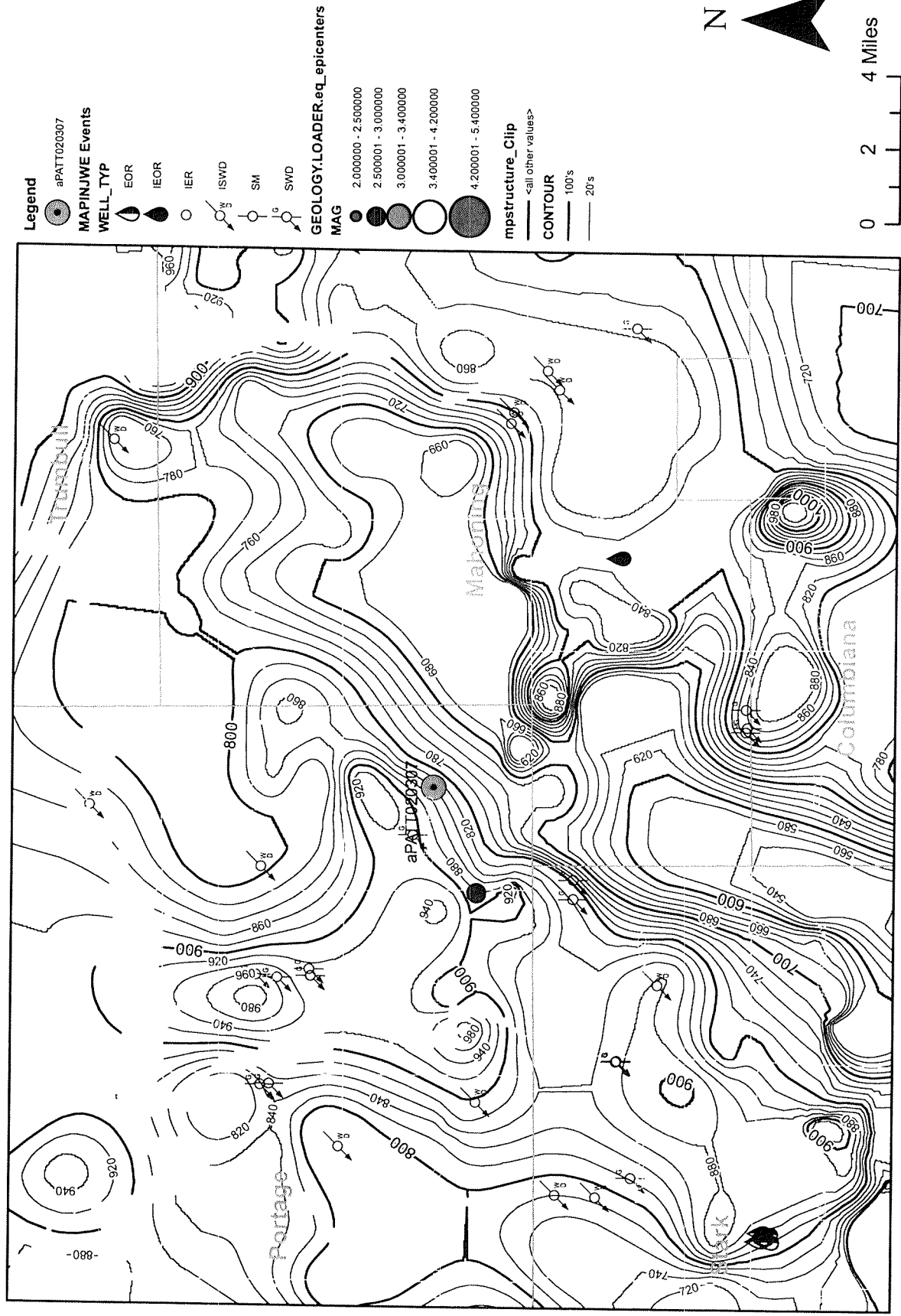
20's



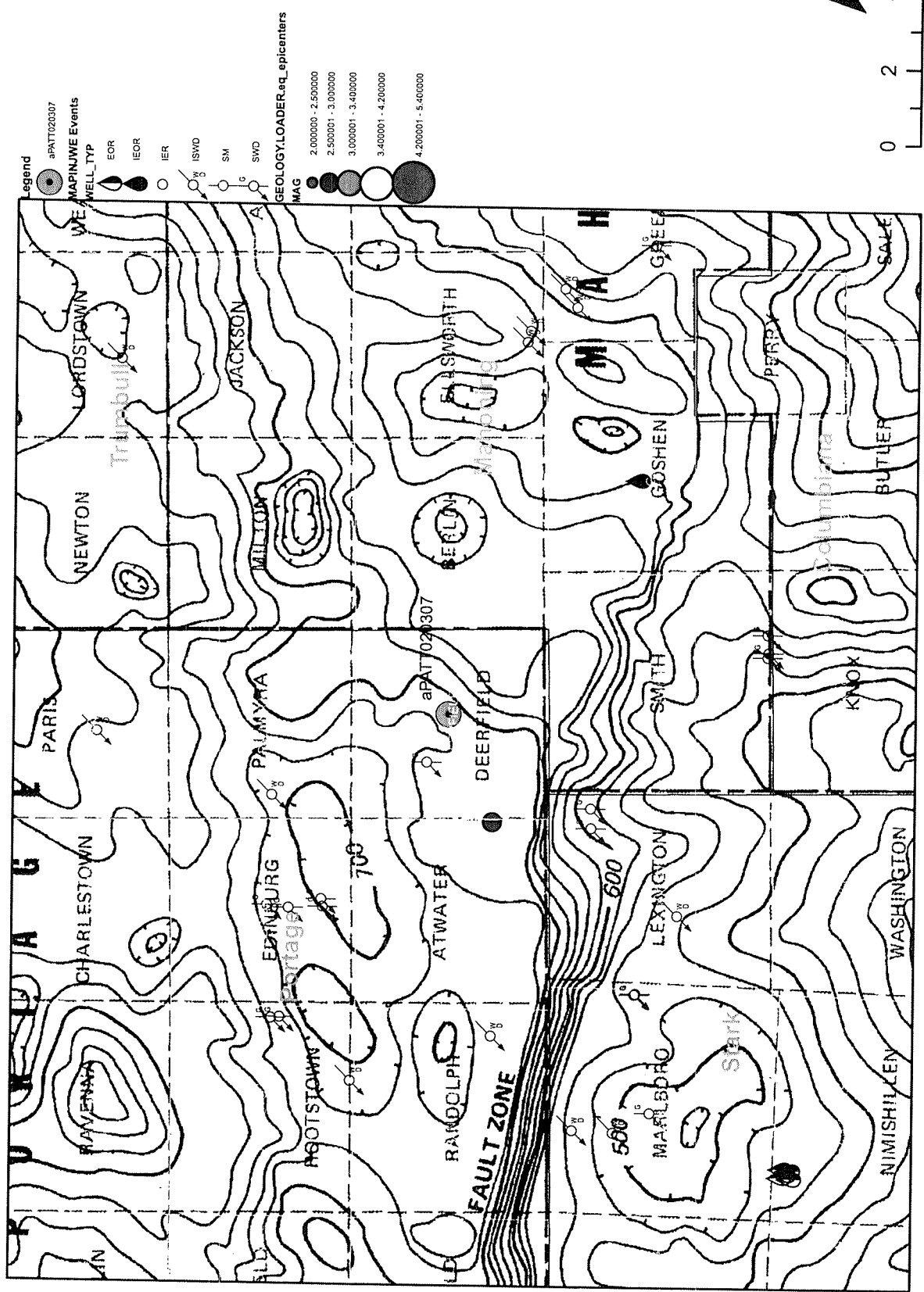
Middle Kittanning Coal Structure (C.I. = 50 feet)



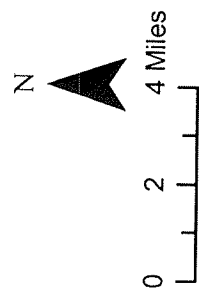
Mississippian/Pennsylvanian Unconformity Surface Countours (C.I. = 20 feet)



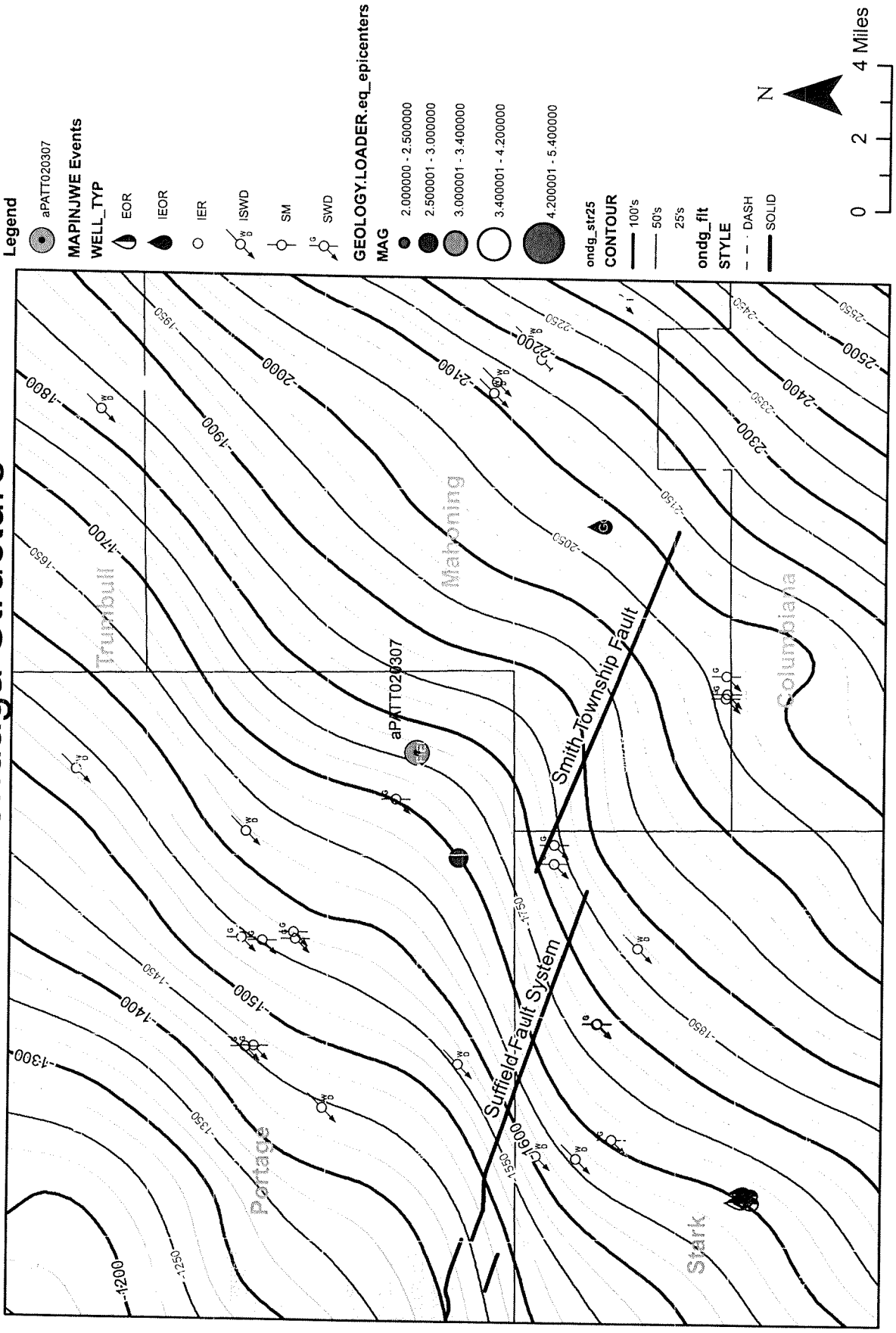
EGSP Berea Structure



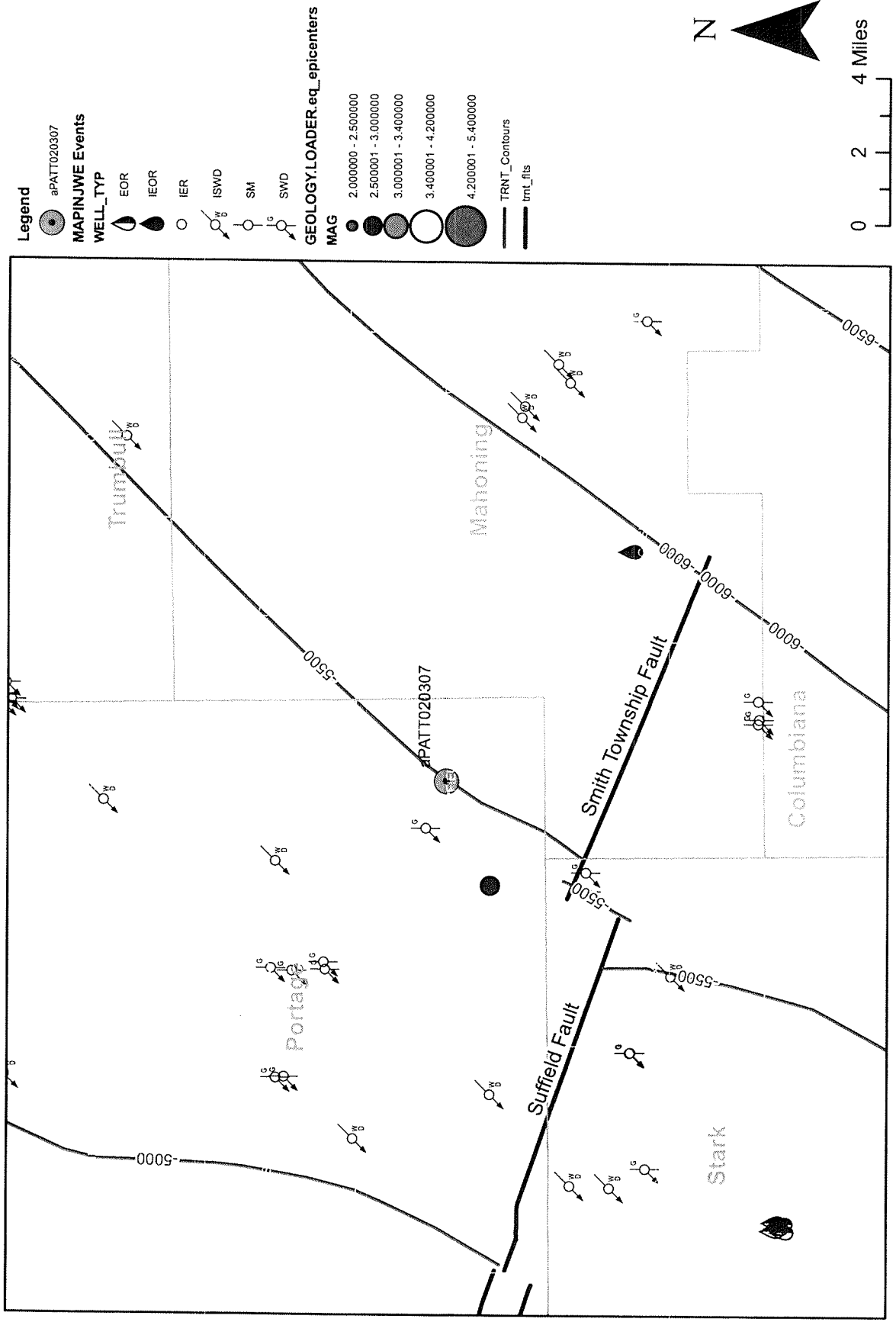
- Legend**
- APAT1029307
 - MARINE Events
 - WELL_TYP
 - EOR
 - IEOR
 - IER
 - ISWD
 - SM
 - SWD
 - GEOLOGY.LOADEReq_epicenters
 - MAG
 - 2.000000 - 2.500000
 - 2.500001 - 3.000000
 - 3.000001 - 3.400000
 - 3.400001 - 4.200000
 - 4.200001 - 5.400000



Fine Onondaga Structure



Trenton Structure Contours (C.I. = 500 feet)



Knox Structure (C.I. = 500 feet)

