



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Oil and Gas Management Program
WELL LOCATION PLAT
Page 1 Surface Location

DEP USE ONLY	Auth ID #:	G: SGP 9/10/12
	Permit #: 123-47019	C:
	Project #:	

Top Hole Well is located on topo map 14763 feet south of latitude 41° 52' 30" parcel lines taken from
Bottom Hole Well is located on topo map 11009 feet south of latitude 41° 52' 30" tax map information

Surface Hole Coordinates

True Latitude: NORTH
41° 50' 04.15"

True Longitude: WEST
79° 02' 45.85"

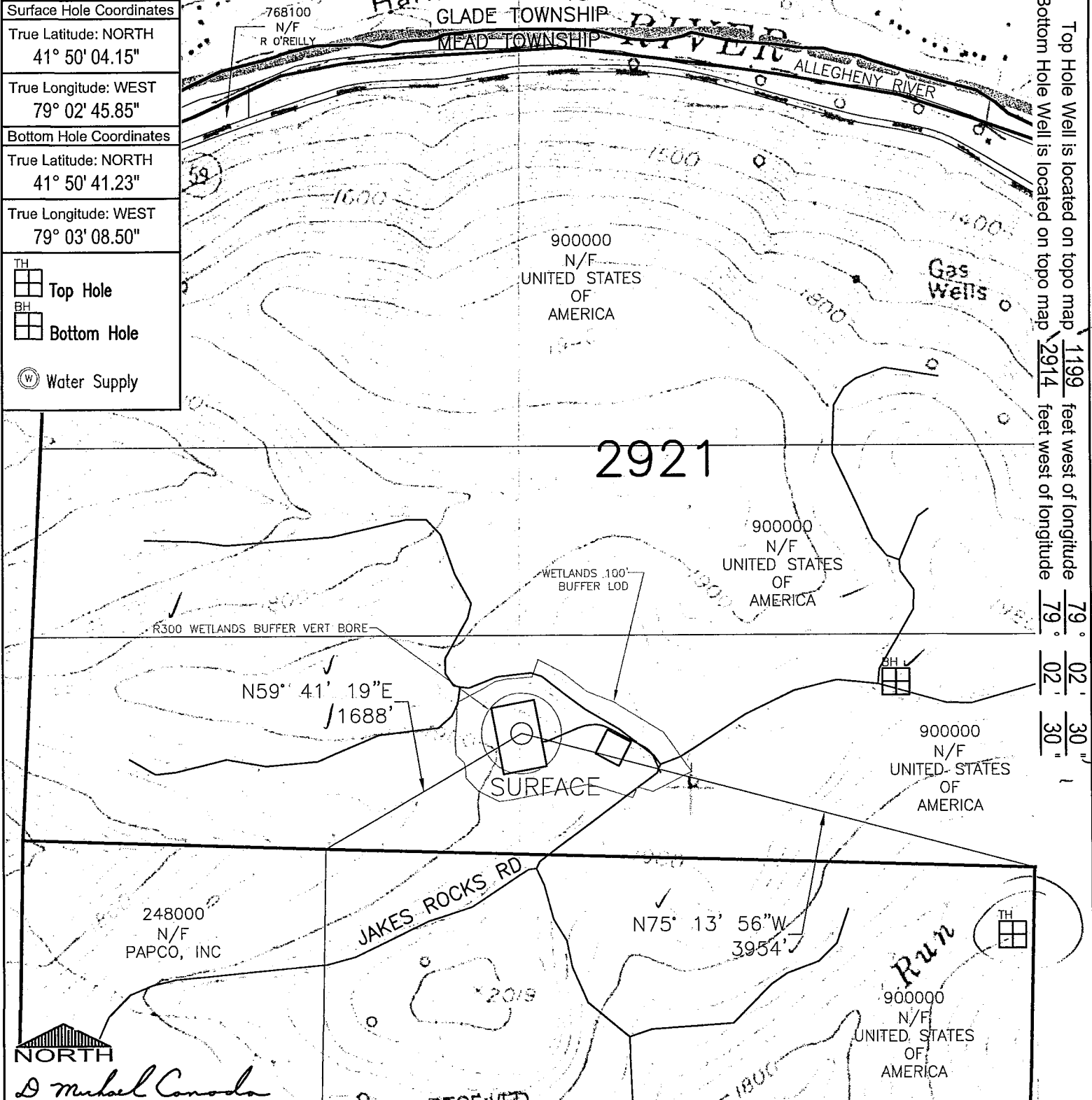
Bottom Hole Coordinates

True Latitude: NORTH
41° 50' 41.23"

True Longitude: WEST
79° 03' 08.50"

TH
Top Hole
BH
Bottom Hole

W Water Supply



Top Hole Well is located on topo map 1199 feet west of longitude 79° 02' 30"
Bottom Hole Well is located on topo map 2914 feet west of longitude 79° 02' 30"

Applicant / Well Operator Name: SWEPI LP		DEP ID#: 284309	Well (Farm) Name: HOOK RUN		Well #: 1417-5HD
Address: 190 Thorn Hill Road, Warrendale, PA 15086		AUG 17 2012	County: WARREN	Municipality: MEAD	Well Type: Gas
911 Address of well site: PENDING		ENVIRONMENTAL PROTECTION DEPARTMENT NORTHWEST REGIONAL OFFICE	USGS 7 1/2 Quadrangle Map Name: CLARENDON 0413		Map Section: 2 Surface Elevation: 1913 ft.
Surveyor: Pa. Lic. # SU029272 E D. Michael Canada	Phone #: 716-379-7918	Dwg #: 20120403 WT2921	Date: JULY 9, 2012	Scale: 1" = 1000'	Tract Acreage: 1394.94
Lat. & Long Metadata Method: RTK GPS	Accuracy: ± 5 ft.	Datum: NAD 83	Elevation Metadata Method: GPS	Accuracy: ± 5 ft.	Datum: NAD 83
Survey Date: APRIL 9, 2012					

WELL LOCATION PLAT

Page 2 Notifications

DEP Statewide toll-free phone number for reporting cases of water contamination which may be associated with development of oil and gas resources is 1-866-255-5158.

Applicant / Well Operator Name: SWEPI LP	DEP ID#: 284309	Well (Farm) Name: HOOK RUN	Well #: 1417-5HD
Surface Landowner: UNITED STATES OF AMERICA	Angle & Course of Deviation (Drilling): N23° 41' 49"W 4126'	Anticipated True Vertical Depth Feet (TVD): 8289.60	Anticipated Total Measured Depth Feet (TMD): 11960.97
Target Formation(s): Utica Shale	Deepest Formation to be penetrated: Trenton Shale	Number of Laterals: 1	Total footage to be drilled - all laterals: 12830' 11960.97
Surface Owner or Water Purveyor with a Water Supply within 3,000 ft.		Latitude/Longitude of Water Supply MP 9/11/12	

NO WATER PURVEYORS WITHIN 3000'

NA

SEE
ATTACHED

Municipality: where the well will be drilled,
adjacent to the well, or within 3000 feet

DRILLED IN - ✓ MEAD TWP-WARREN CO ✓

ADJACENT TO - ✓ CLARENDON BORO-WARREN CO ✓

ALLEGANY TWP-CATTARAUGUS CO

SOUTH VALLEY TWP-CATTARAUGUS CO

✓ CORYDON TWP-MCKEAN CO ✓

✓ HAMILTON TWP-MCKEAN CO ✓

✓ SHEFFIELD TWP-WARREN CO ✓

✓ CHERRY GROVE TWP-WARREN CO ✓

✓ PLEASANT TWP-WARREN CO ✓

✓ CITY OF WARREN-WARREN CO ✓

✓ GLADE TWP-WARREN CO ✓

✓ ELK TWP-WARREN CO ✓

Coal related parties

NONE

RECEIVED

AUG 17 2012

ENVIRONMENTAL PROTECTION
NORTHWEST REGIONAL OFFICE

UA_APPALACHIA



Project: NW PA

Site: HOOK RUN #1417

Well: HOOK RUN #1417-5HD

Wellbore: HOOK RUN #1417-5HD ST01

Design: Design #1

Rig: TBD

Surface Location:

EPW NAD83

NAD83 / Pennsylvania North [1188.2271]

Elevation: DFE @ 1939.60ft (TBD)

Easting

1615310.81

Latitude

41° 50' 4.151 N

Longitude

79° 2' 45.847 W

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7421.00	0.00	0.00	7421.00	0.00	0.00	0.00	0.00	0.00	Start Build
8558.12	90.97	342.00	8137.09	692.68	-225.06	8.00	342.00	722.89	Start Turn
8645.67	90.97	335.00	8135.61	774.07	-257.13	8.00	-89.96	810.21	End Turn
11960.97	90.97	335.00	8079.60	3778.20	-1658.28	0.00	0.00	4125.04	TD

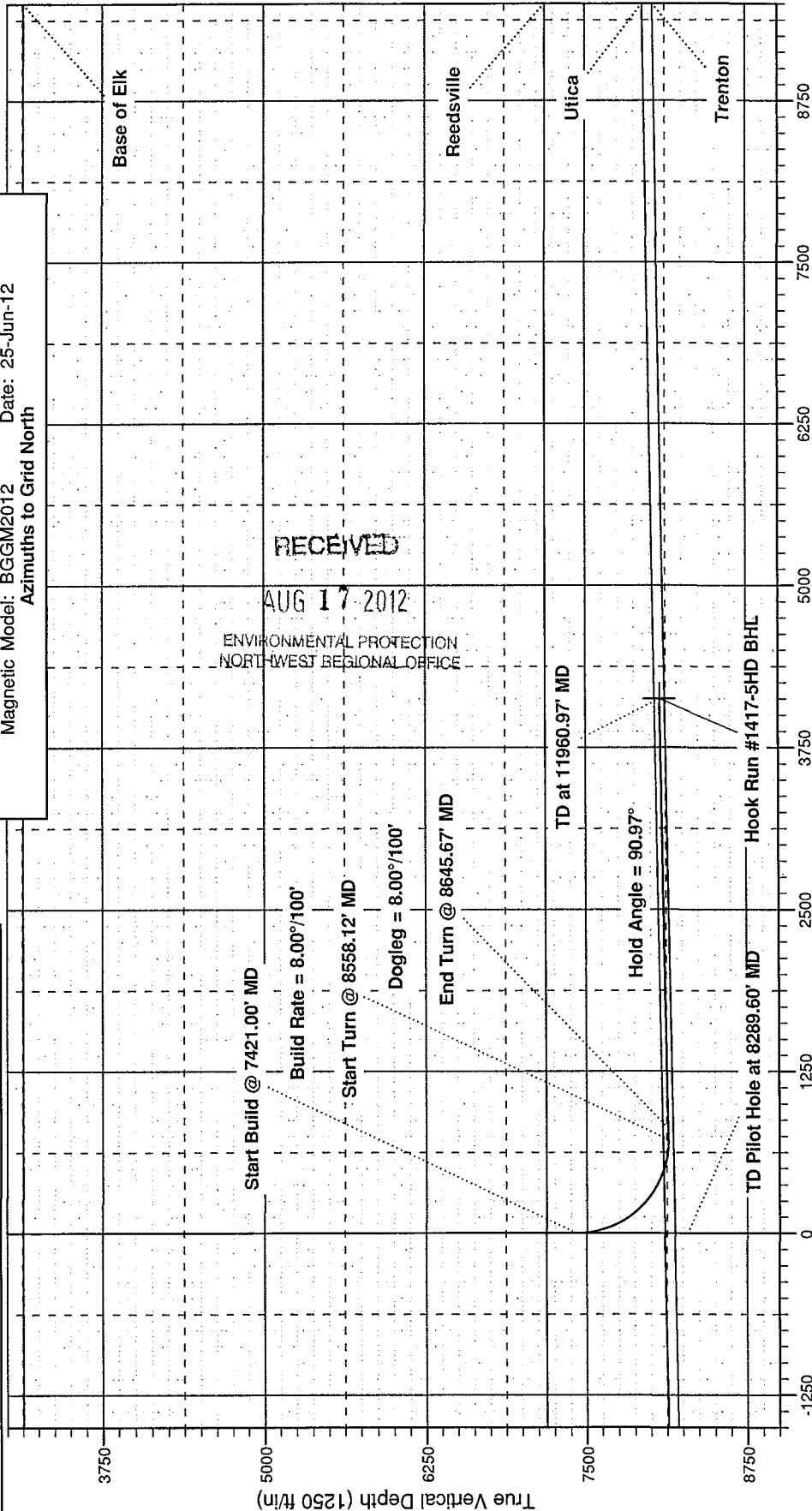
WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Hook Run #1417-5HD BHL	8079.60	3778.20	-1658.28	614101.03	1613652.53	Point

To convert a Magnetic Direction to a Grid Direction, Subtract 9.36°

Magnetic Model: BGGM2012 Date: 25-Jun-12

Azimuths to Grid North



Vertical Section at 335.00° (1250 ft/in)

UA_APPALACHIA



Project: NW PA
Site: HOOK RUN #1417
Well: HOOK RUN #1417-5HD
Wellbore: HOOK RUN #1417-5HD ST01
Design: Design #1
Rig: TBD

Surface Location:

EPW NAD83
 NAD83 / Pennsylvania North [1188, 2271]
 Elevation: DFE @ 1939.60ft (TBD)
 Northing 610322.83 Easting 1615310.81 Latitude 41° 50' 4.151 N Longitude 79° 2' 45.847 W

To convert a Magnetic Direction to a Grid Direction, Subtract 9.36°

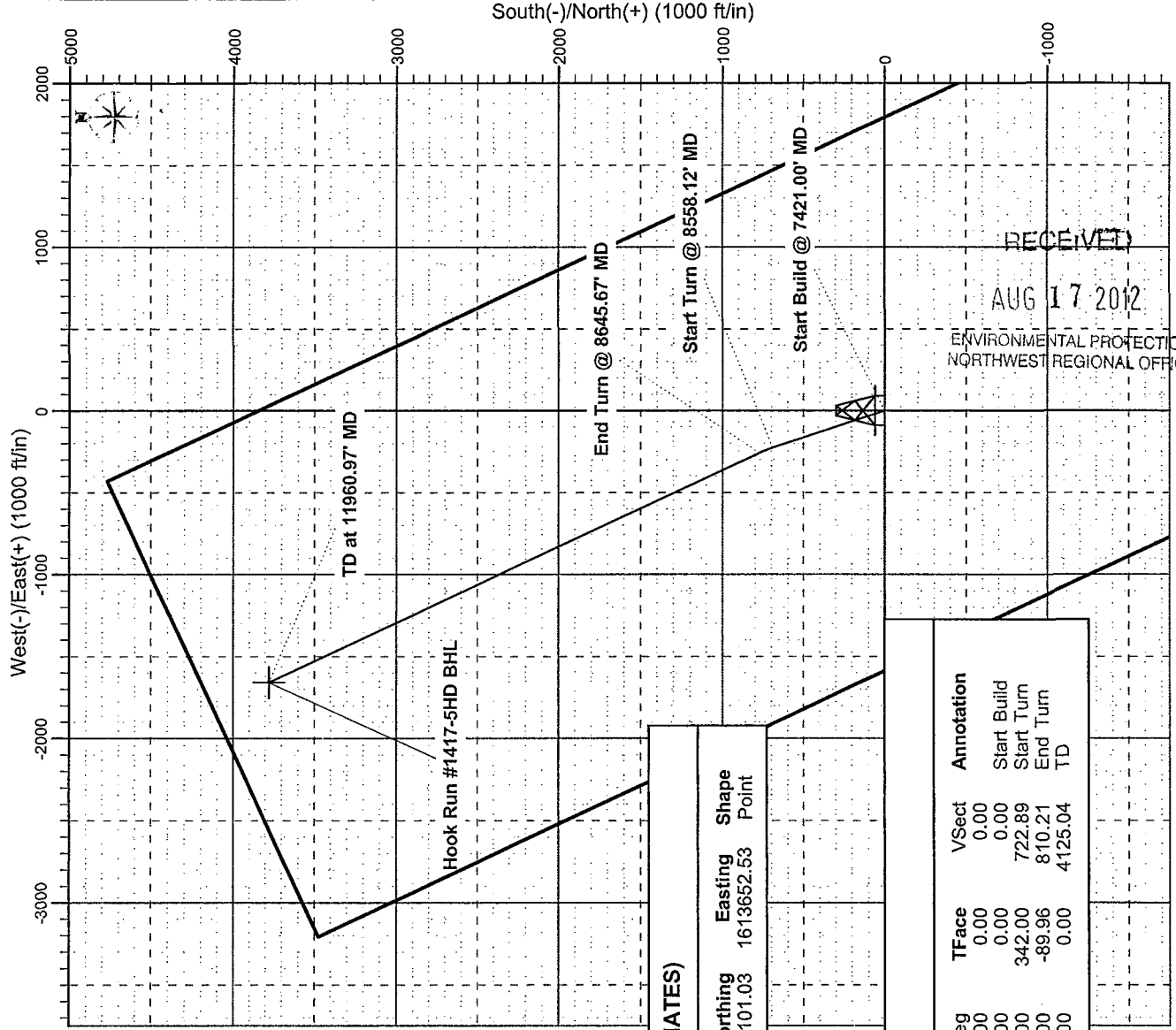
Magnetic Model: BGGM2012 Date: 25-Jun-12
 Azimuths to Grid North

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Hook Run #1417-5HD BHL	8079.60	3778.20	-1658.28	614101.03	1613652.53	Point

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7421.00	0.00	0.00	7421.00	0.00	0.00	0.00	0.00	0.00	Start Build
8558.12	90.97	342.00	8137.09	692.68	-225.06	8.00	342.00	722.89	Start Turn
8645.67	90.97	335.00	8135.61	774.07	-257.13	8.00	-89.96	810.21	End Turn
11960.97	90.97	335.00	8079.60	3778.20	-1658.28	0.00	0.00	4125.04	TD





pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Oil and Gas Management Program

WELL LOCATION PLAT

Page 1 Surface Location

DEP USE ONLY	Auth ID #:	G: <i>SGP</i>
	Permit #: <i>123-47020</i>	9/10/12
	Project #:	C:

Top Hole Well is located on topo map <i>14748</i> feet south of latitude <i>41° 52' 30"</i>		parcel lines taken from tax map information	
Bottom Hole Well is located on topo map <i>10713</i> feet south of latitude <i>41° 52' 30"</i>			
Surface Hole Coordinates True Latitude: NORTH <i>41° 50' 04.30"</i> True Longitude: WEST <i>79° 02' 45.89"</i> Bottom Hole Coordinates True Latitude: NORTH <i>41° 50' 44.16"</i> True Longitude: WEST <i>79° 03' 10.40"</i>			
TH ☐ Top Hole BH ☐ Bottom Hole Water Supply			
Applicant / Well Operator Name: <i>SWEPI LP</i>		Well (Farm) Name: <i>HOOK RUN</i>	
Address: <i>190 Thorn Hill Road, Warrendale, PA 15086</i>		County: <i>WARREN</i> Municipality: <i>MEAD</i>	
911 Address of well site: <i>PENDING</i>		Quadrangle Map Name: <i>CLARENDON 0413</i>	
Surveyor: Pa. Lic. # <i>SU029272 E</i> <i>D. Michael Canada</i>		Date: <i>JULY 9, 2012</i>	
Phone #: <i>716-379-7918</i>		Scale: <i>1" = 1000'</i>	
Dwg #: <i>20120403 WT2921</i>		Tract Acreage: <i>1394.94</i>	
Lat. & Long Metadata Method: <i>RTK GPS</i>		Survey Date: <i>APRIL 9, 2012</i>	
Accuracy: <i>± 5 ft.</i>		Datum: <i>NAD 83</i>	
Datum: <i>NAD 83</i>		Accuracy: <i>± 5 ft.</i>	
Elevation Metadata Method: <i>GPS</i>		Datum: <i>NAD 83</i>	
Accuracy: <i>± 5 ft.</i>		Datum: <i>NAD 83</i>	

Top Hole Well is located on topo map *1202* feet west of longitude *79° 02' 30"*

Bottom Hole Well is located on topo map *3057* feet west of longitude *79° 02' 30"*

WELL LOCATION PLAT

Page 2 Notifications

DEP Statewide toll-free phone number for reporting cases of water contamination which may be associated with development of oil and gas resources is 1-866-255-5158.

Applicant / Well Operator Name: SWEPI LP	DEP ID#: 284309	Well (Farm) Name: HOOK RUN	Well #: 1417-5HM
Surface Landowner: UNITED STATES OF AMERICA	Angle & Course of Deviation (Drilling): N23° 50' 14"W 4441'	Anticipated True Vertical Depth Feet (TVD): 8289.60	Anticipated Total Measured Depth Feet (TMD): 8576.66
Target Formation(s): Marcellus Shale	Deepest Formation to be penetrated: Trenton	Number of Laterals: 1	Total footage to be drilled - all laterals: 13145'
Surface Owner or Water Purveyor with a Water Supply within 3,000 ft.		Latitude/Longitude of Water Supply	

NO WATER PURVEYORS WITHIN 3000'

NA

Municipality: where the well will be drilled, adjacent to the well, or within 3000 feet

DRILLED IN -	MEAD TWP-WARREN CO	✓
ADJACENT TO -	CLARENDON BORO-WARREN CO	✓
	ALLEGANY TWP-CATTARAUGUS CO	
	SOUTH VALLEY TWP-CATTARAUGUS CO	
	CORYDON TWP-MCKEAN CO	✓
	HAMILTON TWP-MCKEAN CO	-
	SHEFFIELD TWP-WARREN CO	-
	CHERRY GROVE TWP-WARREN CO	✓
	PLEASANT TWP-WARREN CO	✓
	CITY OF WARREN-WARREN CO	✓
	GLADE TWP-WARREN CO	✓
	ELK TWP-WARREN CO	✓

Coal related parties

NONE

UA_APPALACHIA



Project: NW PA
Site: HOOK RUN #1417
Well: HOOK RUN #1417-5HM
Wellbore: HOOK RUN #1417-5HM ST01
Design: Design #1
Rig: TBD

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3722.00	0.00	0.00	3722.00	0.00	0.00	0.00	0.00	0.00	Start Build
4853.50	90.52	341.75	4438.17	686.34	-226.32	8.00	341.75	717.69	Start Turn
4937.83	90.52	335.00	4437.40	764.69	-257.38	8.00	-90.00	801.82	End Turn
8576.66	90.52	335.00	4404.60	4062.55	-1794.96	0.00	0.00	4440.50	TD

Surface Location:

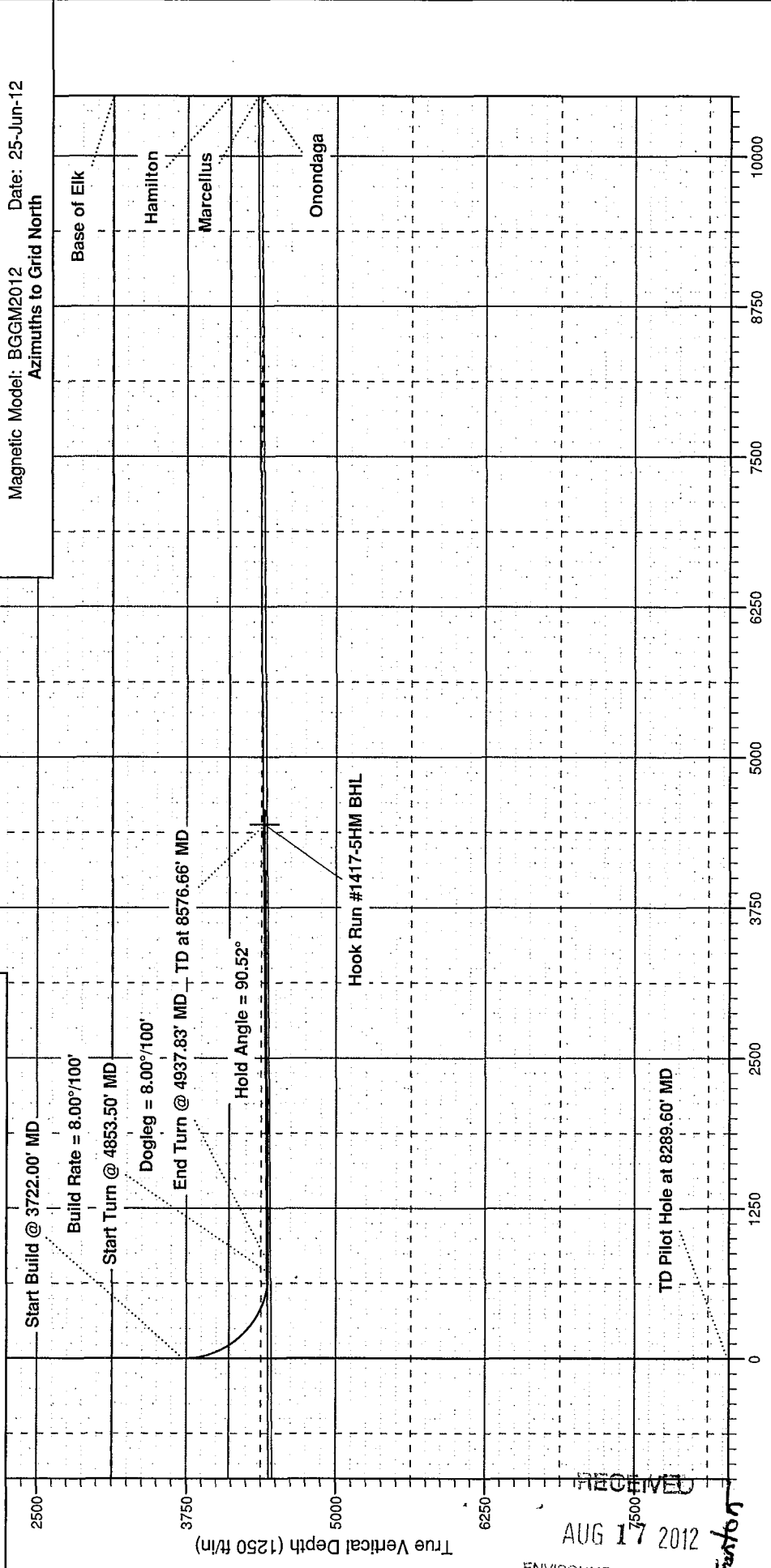
EPW NAD83
 NAD83 / Pennsylvania North [1188, 2271]
 Elevation: DFE @ 1939.60ft (TBD)
 Easting 1615308.02
 Latitude 41° 50' 4.296 N
 Longitude 79° 2' 45.887 W

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Hook Run #1417-5HM BHL	4404.60	4062.55	-1794.96	614400.11	1613513.06	Point

To convert a Magnetic Direction to a Grid Direction, Subtract 9.36°

Magnetic Model: BGGM2012
 Azimuths to Grid North
 Date: 25-Jun-12



RECEIVED
 AUG 17 2012
 ENVIRONMENTAL PROTECTION
 NORTHWEST REGIONAL OFFICE

Vertical Section at 335.00° (1250 ft/in)

UA_APPALACHIA



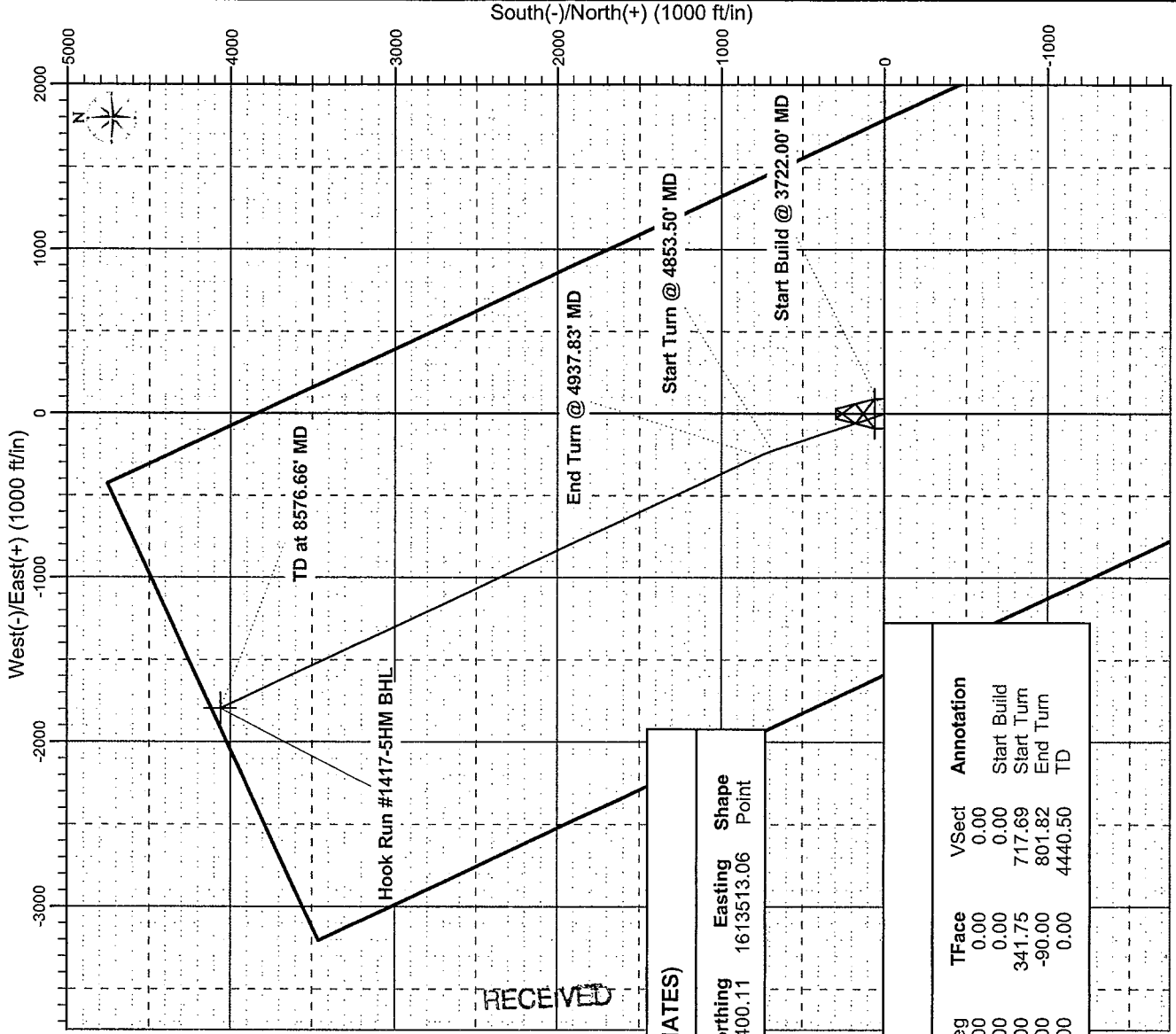
Project: NW PA
Site: HOOK RUN #1417
Well: HOOK RUN #1417-5HM
Wellbore: HOOK RUN #1417-5HM ST01
Design: Design #1
Rig: TBD

Surface Location:

EPW NAD83
 NAD83 / Pennsylvania North [1188, 2271]
 Elevation: DFE @ 1939.60ft (TBD)
 Northing 610337.57 Easting 1615308.02 Latitude 41° 50' 4.296 N Longitude 79° 2' 45.887 W

ENVIRONMENTAL PROTECTION
 NORTHWEST REGIONAL OFFICE

To convert a Magnetic Direction to a Grid Direction, Subtract 9.36°
 Magnetic Model: BGGM2012 Date: 25-Jun-12
 Azimuths to Grid North



RECEIVED
 AUG 17 2012

WELLBORE TARGET DETAILS (MAP COORDINATES)

Name	MD	Inc	Azi	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Hook Run #1417-5HM BHL	0.00	0.00	0.00	0.00	4062.55	-1794.96	614400.11	1613513.06	Point

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build
3722.00	0.00	0.00	3722.00	0.00	0.00	0.00	0.00	0.00	Start Turn
4853.50	90.52	341.75	4438.17	686.34	-226.32	8.00	341.75	717.69	End Turn
4937.83	90.52	335.00	4437.40	764.69	-257.38	8.00	-90.00	801.82	TD
8576.66	90.52	335.00	4404.60	4062.55	-1794.96	0.00	0.00	4440.50	



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Oil and Gas Management Program
WELL LOCATION PLAT
Page 1 Surface Location

DEP USE ONLY	Auth ID #:	B: <i>160</i>
	Permit #: <i>123-47030</i>	C: <i>4/25/13</i>
	Project #:	

Top Hole Well is located on topo map <u>14748</u> feet south of latitude <u>41° 52' 30"</u>		parcel lines taken from	
Bottom Hole Well is located on topo map <u>10099</u> feet south of latitude <u>41° 52' 30"</u>		tax map information	
Surface Hole Coordinates True Latitude: NORTH <u>41° 50' 04.30"</u> True Longitude: WEST <u>79° 02' 45.89"</u> Bottom Hole Coordinates True Latitude: NORTH <u>41° 50' 50.22"</u> True Longitude: WEST <u>79° 03' 14.33"</u>			
TH ☐ Top Hole BH ☐ Bottom Hole W ☐ Water Supply			
Applicant/Well Operator Name: <u>SWEPI LP</u>		DEP ID#: <u>284309</u>	Well (Farm) Name: <u>HOOK RUN</u>
Address: <u>190 Thom Hill Road, Warrendale, PA 15086</u>		County: <u>WARREN</u>	Municipality: <u>MEAD</u>
911 Address of well site: <u>PENDING</u>		USGS 712 Quadrangle Map Name: <u>CLARENDON</u>	Well #: <u>1417-5HM</u>
Surveyor: Pa. Lic. # <u>SU029272 E</u> <u>D. Michael Canada</u>	Phone #: <u>716-379-7918</u>	Dwg #: <u>20120403 WT2921</u>	Well Type: <u>Gas</u>
Lat. & Long Metadata Method: <u>RTK GPS</u>	Accuracy: <u>± 5 ft.</u>	Datum: <u>NAD 83</u>	Map Section: <u>2</u>
		Elevation Metadata Method: <u>GPS</u>	Surface Elevation: <u>1913 ft.</u>
		Accuracy: <u>± 5 ft.</u>	Datum: <u>NAD 83</u>
			Scale: <u>1" = 1000'</u>
			Tract Acreage: <u>1394.94</u>
			Survey Date: <u>APRIL 9, 2012</u>

Top Hole Well is located on topo map 1202 feet west of longitude 79° 02' 30"

Bottom Hole Well is located on topo map 3355 feet west of longitude 79° 02' 30"

WELL LOCATION PLAT
Page 2 Notifications

123-47020

DEP Statewide toll-free phone number for reporting cases of water contamination which may be associated with development of oil and gas resources is 1-866-255-5158.

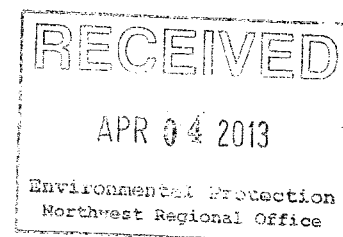
Applicant / Well Operator Name: SWEPI LP	DEP ID#: 284309	Well (Farm) Name: HOOK RUN	Well #: 1417-5HM
Surface Landowner: UNITED STATES OF AMERICA	Angle & Course of Deviation (Drilling): N23° 59' 31"W 5123'	Anticipated True Vertical Depth Feet (TVD): 8280	Anticipated Total Measure ^d Depth Feet (TMD): 9707
Target Formation(s): Marcellus Shale	Deepest Formation to be penetr ^{ated} : Trenton	Number of Laterals: 1	Total footage to be drilled - all laterals: 16067.63
Surface Owner or Water Purveyor with a Water Supply within 3,000 ft.		Latitude/Longitude of Water Supply	

NO WATER PURVEYORS WITHIN 3000'

NA

Municipality: where the well will be drilled, adjacent to the well, or within 3000 feet

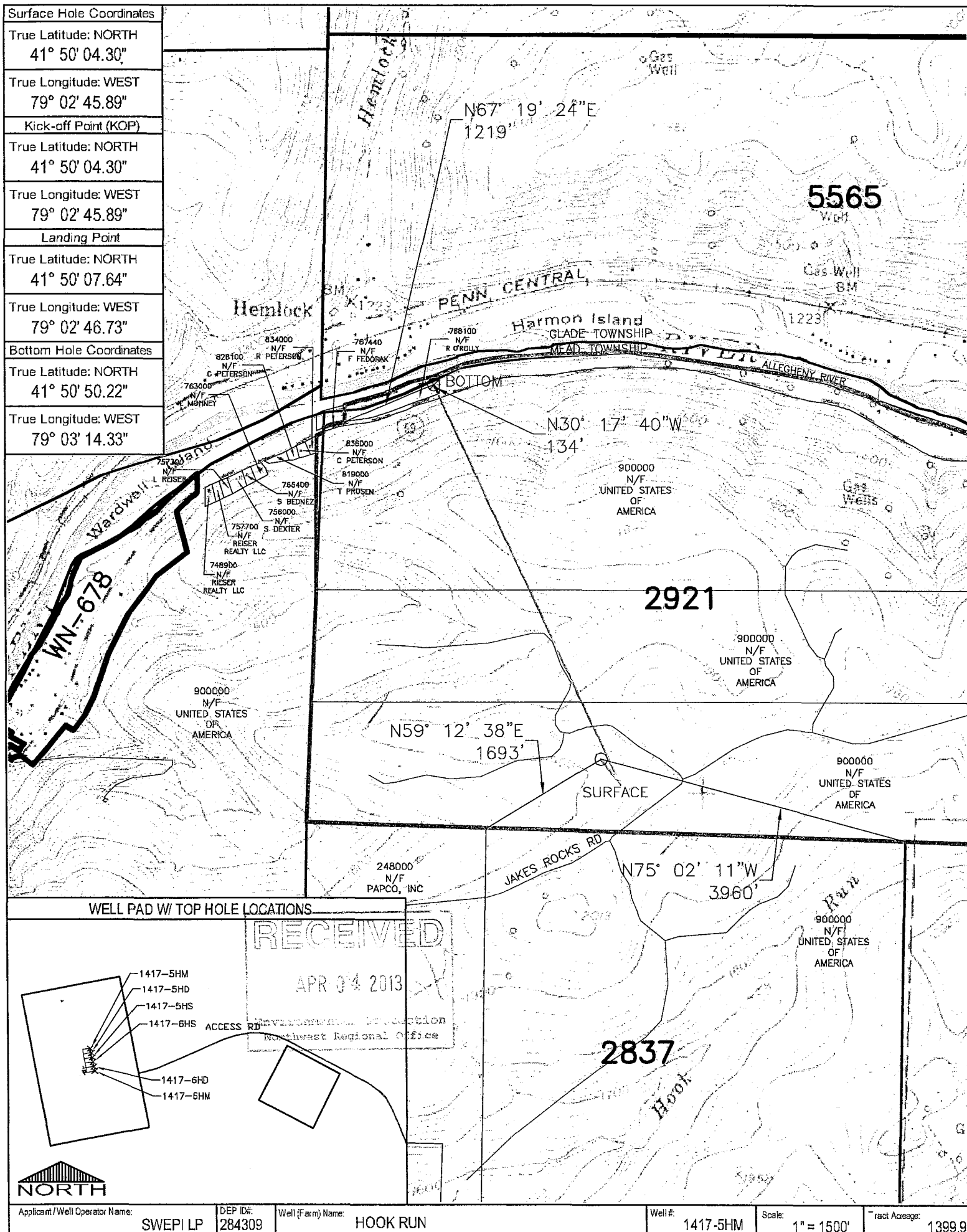
DRILLED IN -	MEAD TWP-WARREN CO	///
ADJACENT TO -	CLARENDON BORO-WARREN CO	///
	CORYDON TWP-MCKEAN CO	///
	HAMILTON TWP-MCKEAN CO	///
	SHEFFIELD TWP-WARREN CO	///
	CHERRY GROVE TWP-WARREN CO	///
	PLEASANT TWP-WARREN CO	///
	CITY OF WARREN-WARREN CO	///
	GLADE TWP-WARREN CO	///
	ELK TWP-WARREN CO	///



Coal related parties

NONE

Surface Hole Coordinates
True Latitude: NORTH 41° 50' 04.30"
True Longitude: WEST 79° 02' 45.89"
Kick-off Point (KOP)
True Latitude: NORTH 41° 50' 04.30"
True Longitude: WEST 79° 02' 45.89"
Landing Point
True Latitude: NORTH 41° 50' 07.64"
True Longitude: WEST 79° 02' 46.73"
Bottom Hole Coordinates
True Latitude: NORTH 41° 50' 50.22"
True Longitude: WEST 79° 03' 14.33"



WELL LOCATION PLAT
Page 4 Cross Section

123-47020

Applicant / Well Operator Name:

SWEPI LP

DEP ID#:

284309

Well (Farm) Name:

HOOK RUN

Well #:

1417-5HM

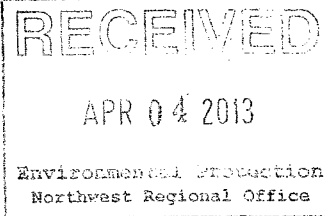
DEP
Use
Only

Permit #

WELL PLAN

Operator Name: SWEPI LPWell / Farm Name: HOOK RUN

KOP:	TVD: <u>1919</u>	TMD: <u>1919</u>	Latitude: <u>41° 50' 04.30"</u>	Longitude: <u>79° 02' 45.89"</u>
Landing Point:	TVD: <u>4440.08</u>	TMD: <u>4916.92</u>	<u>41° 50' 07.64"</u>	<u>79° 02' 46.73"</u>



*FOR CLARITY PURPOSES, SEE THE
FOLLOWING ATTACHED WELL PLAN AND
SECTION VIEWS



123-47020



APPALACHIA

Project: NW PA
Site: HOOK RUN #1417
Well: HOOK RUN #1417-5HM
Wellbore: HOOK RUN #1417-5HM ST01
Design: Design #2
Rig: TBD

Surface Location:

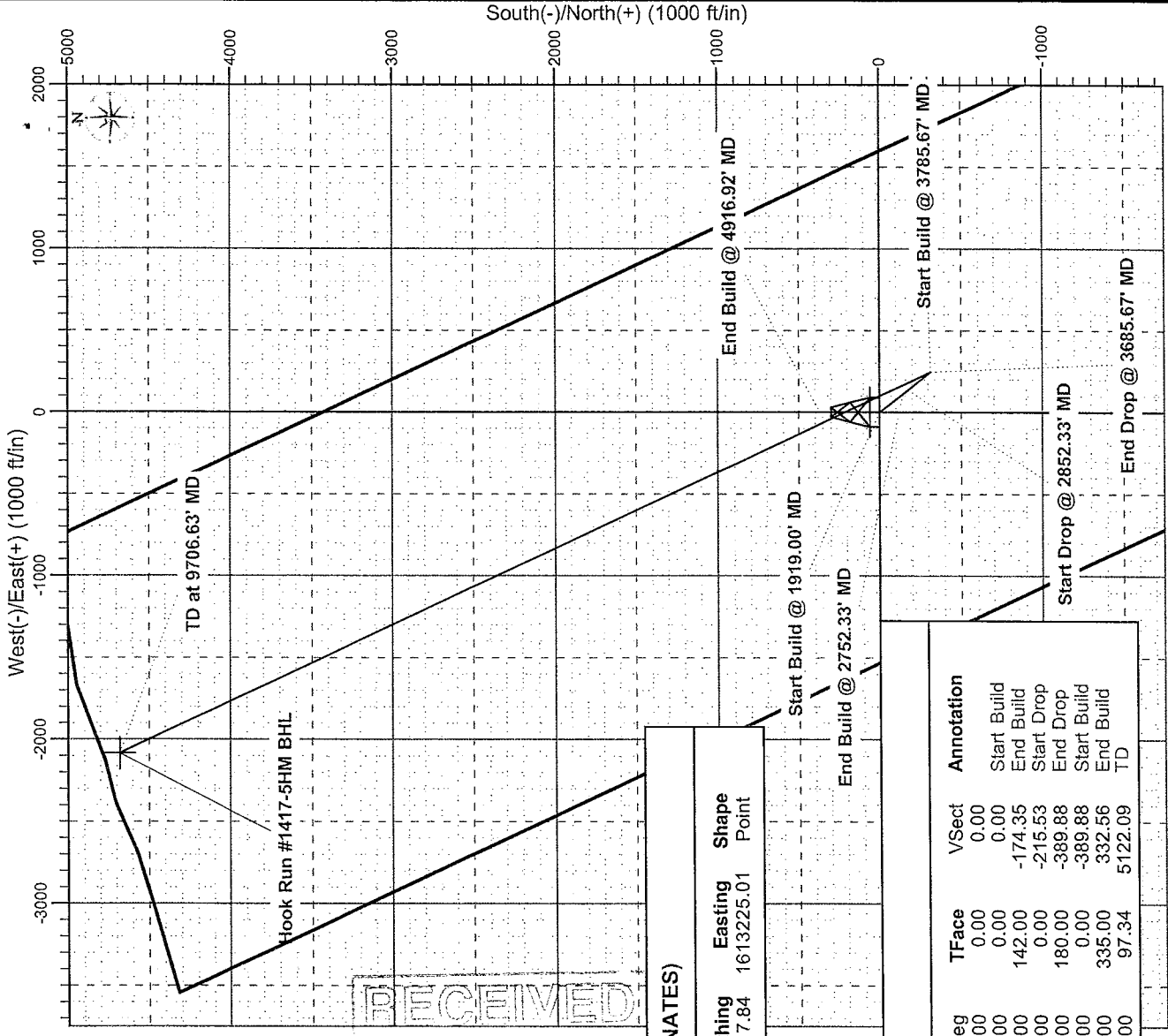
EPW NAD83
NAD83 / Pennsylvania North [1188 2271]
Elevation: DFE @ 1930.00ft (TBD)
Northing 610337.57 Easting 1615308.02 Latitude 41° 50' 4.296 N Longitude 79° 2' 45.887 W

To convert a Magnetic Direction to a Grid Direction, Subtract 9.36°

Magnetic Model: BGGM2012 Date: 25-Jun-12
Azimuths to Grid North

Environmental Protection
Northeast Regional Office

APR 04 2013



WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Hook Run #1417-5HM BHL	4398.30	4680.28	-2083.01	615017.84	1613225.01	Point

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build
1919.00	0.00	0.00	1919.00	0.00	0.00	0.00	0.00	0.00	End Build
2752.33	25.00	142.00	2726.14	-141.01	110.17	3.00	142.00	-174.35	Start Drop
2852.33	25.00	142.00	2816.77	-174.31	136.18	0.00	0.00	-215.53	End Drop
3685.67	0.00	0.00	3623.91	-315.31	246.35	0.00	180.00	-389.88	Start Build
3785.67	0.00	0.00	3723.91	-315.31	246.35	0.00	335.00	-389.88	End Build
4916.92	90.50	335.00	4440.08	339.45	-58.97	8.00	97.34	332.56	TD
9706.63	90.50	335.00	4398.30	4680.28	-2083.01	0.00	97.34	5122.09	

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Oil and Gas Management Program
WELL LOCATION PLAT
Page 1 Surface Location



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP USE ONLY	Auth ID #:	G: SGP
	Permit #: 123-47023	9/10/12
	Project #:	C:

Top Hole Well is located on topo map 14821 feet south of latitude 41° 52' 30" parcel lines taken from tax map information																																																																	
Bottom Hole Well is located on topo map 3628 feet south of latitude 41° 50' 00"																																																																	
Surface Hole Coordinates																																																																	
True Latitude: NORTH 41° 50' 03.57"																																																																	
True Longitude: WEST 79° 02' 45.69"																																																																	
Bottom Hole Coordinates																																																																	
True Latitude: NORTH 41° 49' 24.15"																																																																	
True Longitude: WEST 79° 02' 18.55"																																																																	
Top Hole Bottom Hole (Clarendon quad sect 6) Water Supply																																																																	
<table border="1" style="width: 100%;"> <tr> <td colspan="2">Applicant / Well Operator Name: SWEPI LP</td> <td colspan="2">DEP ID#: 284309</td> <td colspan="2">Well (Farm) Name: HOOK RUN</td> <td colspan="2">Well #: 1417-6HM</td> </tr> <tr> <td colspan="4">Address: 190 Thorn Hill Road, Warrendale, PA 15086</td> <td colspan="2">County: WARREN</td> <td colspan="2">Municipality: MEAD</td> </tr> <tr> <td colspan="4">911 Address of well site: PENDING</td> <td colspan="2">USGS 7 1/2 Quadrangle Map Name: CLARENDON 043</td> <td colspan="2">Map Section: 2 Surface Elevation: 1913 ft.</td> </tr> <tr> <td colspan="2">Surveyor: Pa. Lic. # SU029272 E D. Michael Canada</td> <td colspan="2">Phone #: 716-379-7918</td> <td colspan="2">Dwg #: 20120403 WT2921</td> <td colspan="2">Date: JULY 9, 2012</td> </tr> <tr> <td colspan="2">Lat. & Long Metadata Method: RTK GPS</td> <td colspan="2">Accuracy: ± 5 ft.</td> <td colspan="2">Datum: NAD 83</td> <td colspan="2">Elevation Metadata Method: GPS</td> </tr> <tr> <td colspan="2">Accuracy: ± 5 ft.</td> <td colspan="2">Datum: NAD 83</td> <td colspan="2">Accuracy: ± 5 ft.</td> <td colspan="2">Datum: NAD 83</td> </tr> <tr> <td colspan="4">Scale: 1" = 1000'</td> <td colspan="4">Tract Acreage: 1394.94</td> </tr> <tr> <td colspan="4">Survey Date: APRIL 9, 2012</td> <td colspan="4"></td> </tr> </table>		Applicant / Well Operator Name: SWEPI LP		DEP ID#: 284309		Well (Farm) Name: HOOK RUN		Well #: 1417-6HM		Address: 190 Thorn Hill Road, Warrendale, PA 15086				County: WARREN		Municipality: MEAD		911 Address of well site: PENDING				USGS 7 1/2 Quadrangle Map Name: CLARENDON 043		Map Section: 2 Surface Elevation: 1913 ft.		Surveyor: Pa. Lic. # SU029272 E D. Michael Canada		Phone #: 716-379-7918		Dwg #: 20120403 WT2921		Date: JULY 9, 2012		Lat. & Long Metadata Method: RTK GPS		Accuracy: ± 5 ft.		Datum: NAD 83		Elevation Metadata Method: GPS		Accuracy: ± 5 ft.		Datum: NAD 83		Accuracy: ± 5 ft.		Datum: NAD 83		Scale: 1" = 1000'				Tract Acreage: 1394.94				Survey Date: APRIL 9, 2012							
Applicant / Well Operator Name: SWEPI LP		DEP ID#: 284309		Well (Farm) Name: HOOK RUN		Well #: 1417-6HM																																																											
Address: 190 Thorn Hill Road, Warrendale, PA 15086				County: WARREN		Municipality: MEAD																																																											
911 Address of well site: PENDING				USGS 7 1/2 Quadrangle Map Name: CLARENDON 043		Map Section: 2 Surface Elevation: 1913 ft.																																																											
Surveyor: Pa. Lic. # SU029272 E D. Michael Canada		Phone #: 716-379-7918		Dwg #: 20120403 WT2921		Date: JULY 9, 2012																																																											
Lat. & Long Metadata Method: RTK GPS		Accuracy: ± 5 ft.		Datum: NAD 83		Elevation Metadata Method: GPS																																																											
Accuracy: ± 5 ft.		Datum: NAD 83		Accuracy: ± 5 ft.		Datum: NAD 83																																																											
Scale: 1" = 1000'				Tract Acreage: 1394.94																																																													
Survey Date: APRIL 9, 2012																																																																	

WELL LOCATION PLAT

Page 2 Notifications

DEP Statewide toll-free phone number for reporting cases of water contamination which may be associated with development of oil and gas resources is 1-866-255-5158.

Applicant / Well Operator Name: SWEPI LP	DEP ID#: 284309	Well (Farm) Name: HOOK RUN	Well #: 1417-6HM
Surface Landowner: UNITED STATES OF AMERICA ✓	Angle & Course of Deviation (Drilling): S26° 23' 13"E 4488' ✓	Anticipated True Vertical Depth Feet (TVD): 8289.60	Anticipated Total Measured Depth Feet (TMD): 8638.39
Target Formation(s): Marcellus Shale	Deepest Formation to be penetrated: Trenton	Number of Laterals: 1	Total footage to be drilled - all laterals: 63193
Surface Owner or Water Purveyor with a Water Supply within 3,000 ft.		Latitude/Longitude of Water Supply	

NO WATER PURVEYORS WITHIN 3000'

NA

Municipality: where the well will be drilled, adjacent to the well, or within 3000 feet

DRILLED IN -	✓ MEAD TWP-WARREN CO ✓
ADJACENT TO	✓ CLARENDON BORO-WARREN CO ✓
	ALLEGANY TWP-CATTARAUGUS CO
	SOUTH VALLEY TWP-CATTARAUGUS CO
	✓ CORYDON TWP-MCKEAN CO ✓
	✓ HAMILTON TWP-MCKEAN CO ✓
	✓ SHEFFIELD TWP-WARREN CO ✓
	✓ CHERRY GROVE TWP-WARREN CO ✓
	✓ PLEASANT TWP-WARREN CO ✓
	✓ CITY OF WARREN-WARREN CO ✓
	✓ GLADE TWP-WARREN CO ✓
	✓ ELK TWP-WARREN CO ✓

Coal related parties

NONE

RECEIVED
AUG 17 2012
ENVIRONMENTAL PROTECTION
NORTHWEST REGIONAL OFFICE

Surface Hole Coordinates

True Latitude: NORTH
41° 50' 03.57"
True Longitude: WEST
79° 02' 45.69"
Kick-off Point (KOP)
True Latitude: NORTH
41° 50' 03.57"
True Longitude: WEST
79° 02' 45.69"
Landing Point
True Latitude: NORTH
41° 49' 57.76"
True Longitude: WEST
79° 02' 40.44"
Bottom Hole Coordinates
True Latitude: NORTH
41° 49' 24.15"
True Longitude: WEST
79° 02' 18.55"

WELL PAD W/ TOP HOLE LOCATIONS

1417-5HM
1417-5HD
1417-5HS
1417-6HS
1417-6HD
1417-6HM

RECEIVED
AUG 17 2012
ACCESS ROAD
ENVIRONMENTAL PROTECTION
NORTHWEST REGIONAL OFFICE

APPLICANT / WELL OPERATOR NAME: SWEPI LP
DEP ID#: 284309
WELL (FARM) NAME: HOOK RUN
WELL #: 1417-6HM
SCALE: 1" = 1500'
TRACT ACREAGE: 1394.9



Applicant / Well Operator Name:

SWEP | LP

DEP ID#:

284309

Well (Farm) Name:

HOOK RUN

Well #:

1417-6HM

Scale:

 $1'' = 1500'$

Tract Acreage:

1394.94

WELL LOCATION PLAT
Page 4 Cross Section

Applicant / Well Operator Name: <u>SWEPI LP</u>	DEP ID#: <u>284309</u>	Well (Farm) Name: <u>HOOK RUN</u>	Well #: <u>1417-6HM</u>
---	------------------------	-----------------------------------	-------------------------

DEP Use Only	Permit #
--------------------	----------

WELL PLAN

Operator Name: SWEPI LPWell / Farm Name: HOOK RUN

			Latitude:	Longitude:
KOP:	TVD: <u>3735</u>	TMD: <u>3735</u>	<u>41° 50' 03.57"</u>	<u>79° 02' 45.69"</u>
Landing Point:	TVD: <u>4451.17</u>	TMD: <u>4853.62</u>	<u>41° 49' 57.76"</u>	<u>79° 02' 40.44"</u>

*FOR CLARITY PURPOSES, SEE THE
FOLLOWING ATTACHED WELL PLAN AND
SECTION VIEWS

RECEIVED
AUG 17 2012
ENVIRONMENTAL PROTECTION
NORTHWEST REGIONAL OFFICE

UA_APPALACHIA



SECTION DETAILS

Project: NW PA
 Site: HOOK RUN #1417
 Well: HOOK RUN #1417-6HM ST01
 Design: Design #1
 Rig: TBD

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3735.00	0.00	0.00	3735.00	0.00	0.00	0.00	0.00	0.00	Start Build
4853.62	89.49	146.80	4451.17	-593.95	388.67	8.00	146.80	702.57	Start Turn
4956.11	89.49	155.00	4452.08	-683.42	438.47	8.00	90.01	804.69	End Turn
8638.39	89.49	155.00	4484.60	-4020.54	1994.68	0.00	0.00	4486.84	TD

Surface Location:

EPW NAD83
 NAD83 / Pennsylvania North [1188, 2271]
 Elevation: DFE @ 1939.60ft (TBD)
 Easting 1615321.96
 Latitude 41° 50' 3.570 N
 Longitude 79° 2' 45.689 W

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name Hook Run #1417-6HM BHL
 TVD 4484.60
 +N/-S -4020.54
 +E/-W 1994.68
 Northing 606243.34
 Easting 1617316.63
 Shape Point

To convert a Magnetic Direction to a Grid Direction, Subtract 9.36°

Magnetic Model: BGGM2012
 Azimuths to Grid North
 Date: 25-Jun-12

Start Build @ 3735.00' MD

Build Rate = 8.00°/100'

Start Turn @ 4853.62' MD

Dogleg = 8.00°/100'

End Turn @ 4956.11' MD

Hold Angle = 89.49°

TD at 8638.39' MD

Hook Run #1417-6HM BHL

TD Pilot Hole at 8289.60' MD

RECEIVED
 AUG 17 2012
 ENVIRONMENTAL PROTECTION
 NORTHWEST REGIONAL OFFICE

7-2012

Vertical Section at 155.00° (1250 ft/in)

UA_APPALACHIA



Project: NW PA
Site: HOOK RUN #1417
Well: HOOK RUN #1417-6HM
Wellbore: HOOK RUN #1417-6HM ST01
Design: Design #1
Rig: TBD

Surface Location:

EPW NAD83
 NAD83 / Pennsylvania North [1188, 2271]
 Elevation: DFE @ 1939.60ft (TBD)

North	Easting	Latitude	Longitude
610263.88	1615321.96	41° 50' 3.570 N	79° 2' 45.689 W

To convert a Magnetic Direction to a Grid Direction, Subtract 9.36°

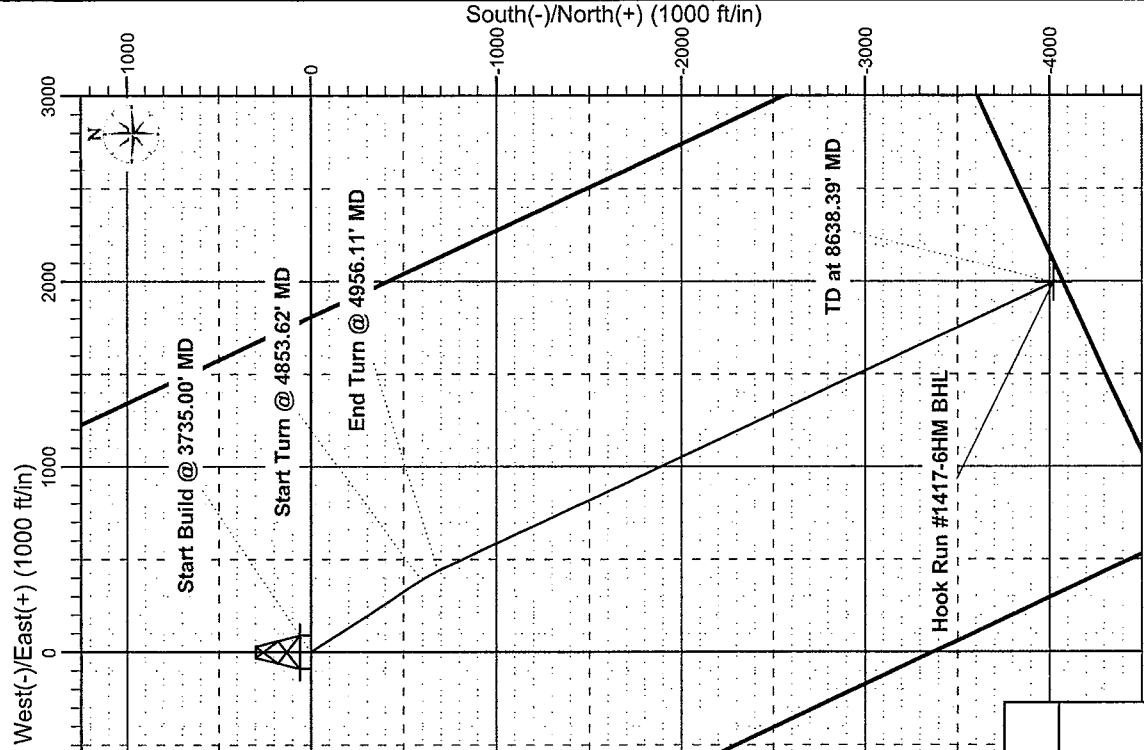
Magnetic Model: BGGM2012 Date: 25-Jun-12
 Azimuths to Grid North

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Hook Run #1417-6HM BHL	4484.60	-4020.54	1994.68	606243.34	1617316.63	Point

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build
3735.00	0.00	0.00	3735.00	0.00	0.00	0.00	0.00	0.00	Start Turn
4853.62	89.49	146.80	4451.17	-593.95	388.67	8.00	146.80	702.57	End Turn
4956.11	89.49	155.00	4452.08	-683.42	438.47	8.00	90.01	804.69	TD
8638.39	89.49	155.00	4484.60	-4020.54	1994.68	0.00	0.00	4486.84	





pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Oil and Gas Management Program

WELL LOCATION PLAT

Page 1 Surface Location

DEP USE ONLY	Auth ID #:	G: SGP 9/10/12
	Permit #: 123-47022	C:
	Project #:	

Top Hole Well is located on topo map <u>14806</u> feet south of latitude <u>41° 52' 30"</u> parcel lines taken from							
Bottom Hole Well is located on topo map <u>3332</u> feet south of latitude <u>41° 50' 00"</u> tax map information							
Surface Hole Coordinates							
True Latitude: NORTH 41° 50' 03.72"							
True Longitude: WEST 79° 02' 45.73"							
Bottom Hole Coordinates							
True Latitude: NORTH 41° 49' 27.08"		Top Hole Well is located on topo map <u>1190</u> feet west of longitude <u>79° 02' 30"</u> Bottom Hole Well is located on topo map <u>10634</u> feet west of longitude <u>79° 00' 00"</u>					
True Longitude: WEST 79° 02' 20.45"							
TH Top Hole BH Bottom Hole (Clarendon quad sect 6) Water Supply							
Applicant / Well Operator Name: SWEPI LP		DEP ID #: 284309		Well (Farm) Name: HOOK RUN		Well #: 1417-6HD	
Address: 190 Thorn Hill Road, Warrendale, PA 15086		Municipality: MEAD		Well Type: Gas			
911 Address of well site: PENDING		USGS 71/2 Quadrangle Map Name: CLARENDON 0413		Map Section: 2		Surface Elevation: 1913 ft.	
Surveyor: Pa. Lic. # SU029272 E D. Michael Canada		Phone #: 716-379-7918		Date: JULY 9, 2012		Tract Acreage: 1394.94	
Lat. & Long Metadata Method: RTK GPS		Accuracy: ± 5 ft.		Datum: NAD 83		Survey Date: APRIL 9, 2012	

WELL LOCATION PLAT

Page 2 Notifications

DEP Statewide toll-free phone number for reporting cases of water contamination which may be associated with development of oil and gas resources is 1-866-255-5158.

Applicant / Well Operator Name: SWEPI LP	DEP ID#: 284309	Well (Farm) Name: HOOK RUN	Well #: 1417-6HD
Surface Landowner: UNITED STATES OF AMERICA ✓	Angle & Course of Deviation (Drilling): S26° 26' 28"E 4173'	Anticipated True Vertical Depth Feet (TVD): 8289.60	Anticipated Total Measured Depth Feet (TMD): 12032.28
Target Formation(s): Utica Shale	Deepest Formation to be penetrated: Trenton Shale	Number of Laterals: 1	Total footage to be drilled - all laterals: 12578

Surface Owner or Water Purveyor
with a Water Supply within 3,000 ft.

Latitude/Longitude of Water Supply

NO WATER PURVEYORS WITHIN 3000'

NA

Municipality: where the well will be drilled,
adjacent to the well, or within 3000 feet

DRILLED IN -	MEAD TWP-WARREN CO	✓
ADJACENT TO -	CLARENDON BORO-WARREN CO	✓
	ALLEGANY TWP-CATTARAUGUS CO	
	SOUTH VALLEY TWP-CATTARAUGUS CO	
	CORYDON TWP-MCKEAN CO	✓
	HAMILTON TWP-MCKEAN CO	✓
	SHEFFIELD TWP-WARREN CO	✓
	CHERRY GROVE TWP-WARREN CO	✓
	PLEASANT TWP-WARREN CO	✓
	CITY OF WARREN-WARREN CO	✓
	GLADE TWP-WARREN CO	✓
	ELK TWP-WARREN CO	✓

Coal related parties

NONE

RECEIVED

AUG 17 2012

ENVIRONMENTAL PROTECTION
NORTHWEST REGIONAL OFFICE

Surface Hole Coordinates

True Latitude: NORTH
41° 50' 03.72"

True Longitude: WEST
79° 02' 45.73"

Kick-off Point (KOP)

True Latitude: NORTH
41° 50' 03.72"

True Longitude: WEST
79° 02' 45.73"

Landing Point

True Latitude: NORTH
41° 49' 57.93"

True Longitude: WEST
79° 02' 40.54"

Bottom Hole Coordinates

True Latitude: NORTH
41° 49' 27.08"

True Longitude: WEST
79° 02' 20.45"

WELL PAD W/ TOP HOLE LOCATIONS

1417-5HM
1417-5HD
1417-5HS
1417-6HS
1417-6HD
1417-6HM

RECEIVED
AUG 17 2012
ENVIRONMENTAL PROTECTION
NORTHWEST REGIONAL OFFICE

ACCESS RD

NOTE: ALL PARCELS WITHIN THE DRILL UNIT HAVE OIL AND GAS RIGHTS OWNED BY SWEPI LP AND THE PROPOSED WELLBORE IS GREATER THAN 330 FEET FROM ANY UNOWNED DRILLING RIGHTS.

NOTE: ALL PARCELS WITHIN THE DRILL UNIT HAVE OIL AND GAS RIGHTS OWNED BY SWEPI LP AND THE PROPOSED WELLBORE IS GREATER THAN 330 FEET FROM ANY UNOWNED DRILLING RIGHTS.

WELL LOCATION PLAT
Page 4 Cross Section

Applicant / Well Operator Name:	DEP ID#:	Well (Farm) Name:	Well #:
SWEPI LP	284309	HOOK RUN	1417-6HD

DEP Use Only	Permit #
--------------------	----------

WELL PLAN

Operator Name: SWEPI LPWell / Farm Name: HOOK RUN

			Latitude:	Longitude:
KOP:	TVD: <u>7444.5</u>	TMD: <u>7444.5</u>	<u>41° 50' 03.72"</u>	<u>79° 02' 45.73"</u>
Landing Point:	TVD: <u>8160.61</u>	TMD: <u>8558.37</u>	<u>41° 49' 57.93"</u>	<u>79° 02' 40.54"</u>

*FOR CLARITY PURPOSES, SEE THE
FOLLOWING ATTACHED WELL PLAN AND
SECTION VIEWS

RECEIVED

AUG 17 2012

ENVIRONMENTAL PROTECTION
NORTHWEST REGIONAL OFFICE

UA_APPALACHIA



SECTION DETAILS

Project: NW PA
 Site: HOOK RUN #1417
 Wellbore: HOOK RUN #1417-6HD ST01
 Design: Design #1
 Rig: TBD

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build
7444.50	0.00	0.00	7444.50	0.00	0.00	0.00	0.00	0.00	Start Turn
8558.37	89.11	147.00	8160.61	-591.32	384.01	8.00	147.00	698.21	End Turn
8658.40	89.11	155.00	8162.17	-678.72	432.45	8.00	90.07	797.90	TD
12032.28	89.11	155.00	8214.60	-3736.20	1858.00	0.00	0.00	4171.37	

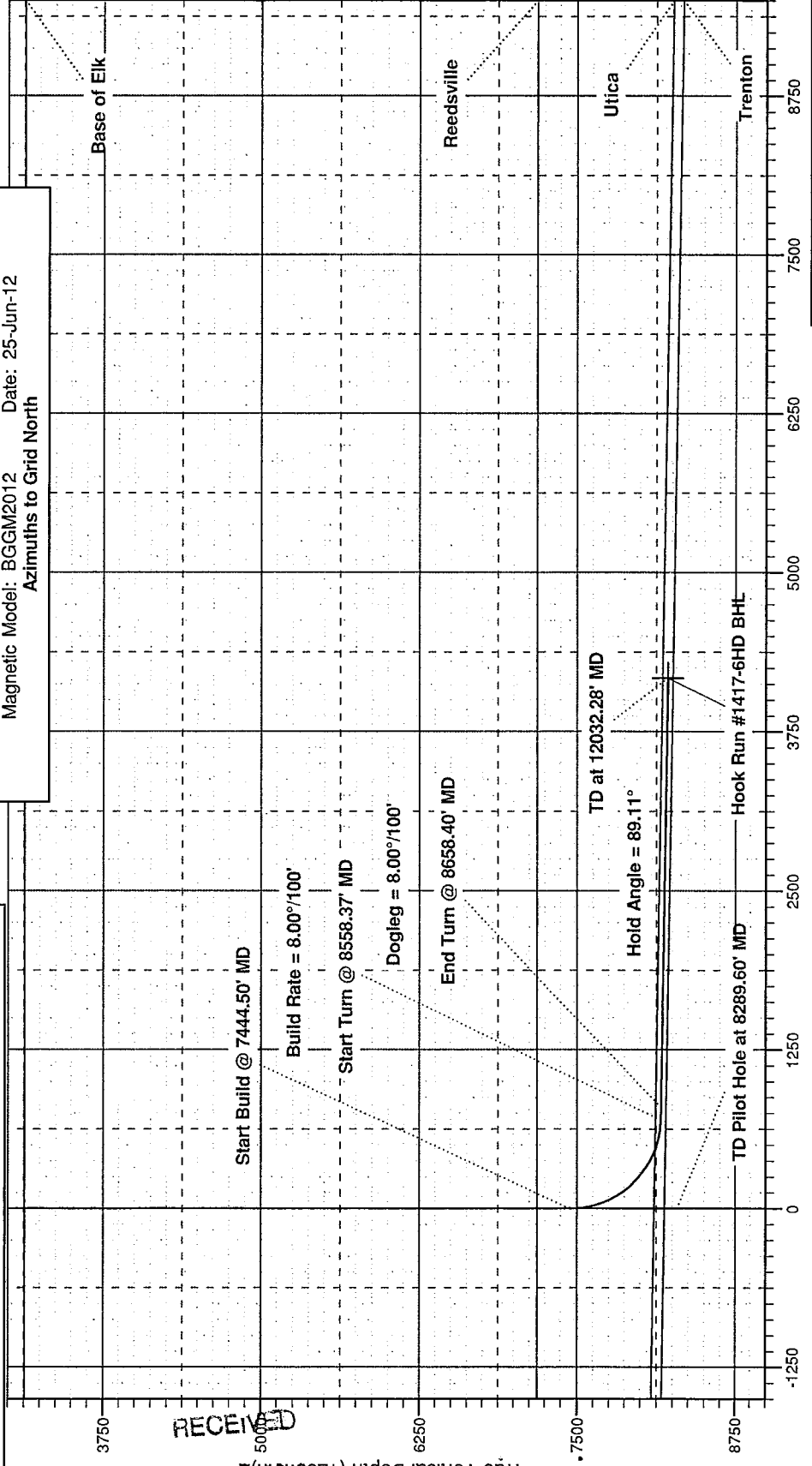
WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Surface Location:
 EPW NAD83
 NAD83 / Pennsylvania North [1188 2271]
 Elevation: DFE @ 1939.60ft (TBD)
 Northing 610278.61
 Easting 1615319.17
 Longitude 79° 2' 45.728 W
 Latitude 41° 50' 3.715 N

Name Hook Run #1417-6HD BHL
 TVD 8214.60
 +N/-S -3736.20
 +E/-W 1858.00
 Northing 606542.42
 Easting 1617177.16
 Shape Point

To convert a Magnetic Direction to a Grid Direction, Subtract 9.36°

Magnetic Model: BGGM2012
 Azimuths to Grid North
 Date: 25-Jun-12



ENVIRONMENTAL PROTECTION
 NORTHWEST REGIONAL OFFICE

RECEIVED
 AUG 17 2011

Vertical Section at 155.00° (1250 ft/in)

UA_APPALACHIA



Project: NW PA
Site: HOOK RUN #1417
Well: HOOK RUN #1417-6HD
Wellbore: HOOK RUN #1417-6HD ST01
Design: Design #1
Rig: TBD

Surface Location:

EPW NAD83
 NAD83 / Pennsylvania North [1188, 2271]
 Elevation: DFE @ 1939.60ft (TBD)
 Northing 610278.61 Easting 1615319.17
 Longitude 79° 2' 45.728 W
 Latitude 41° 50' 3.715 N

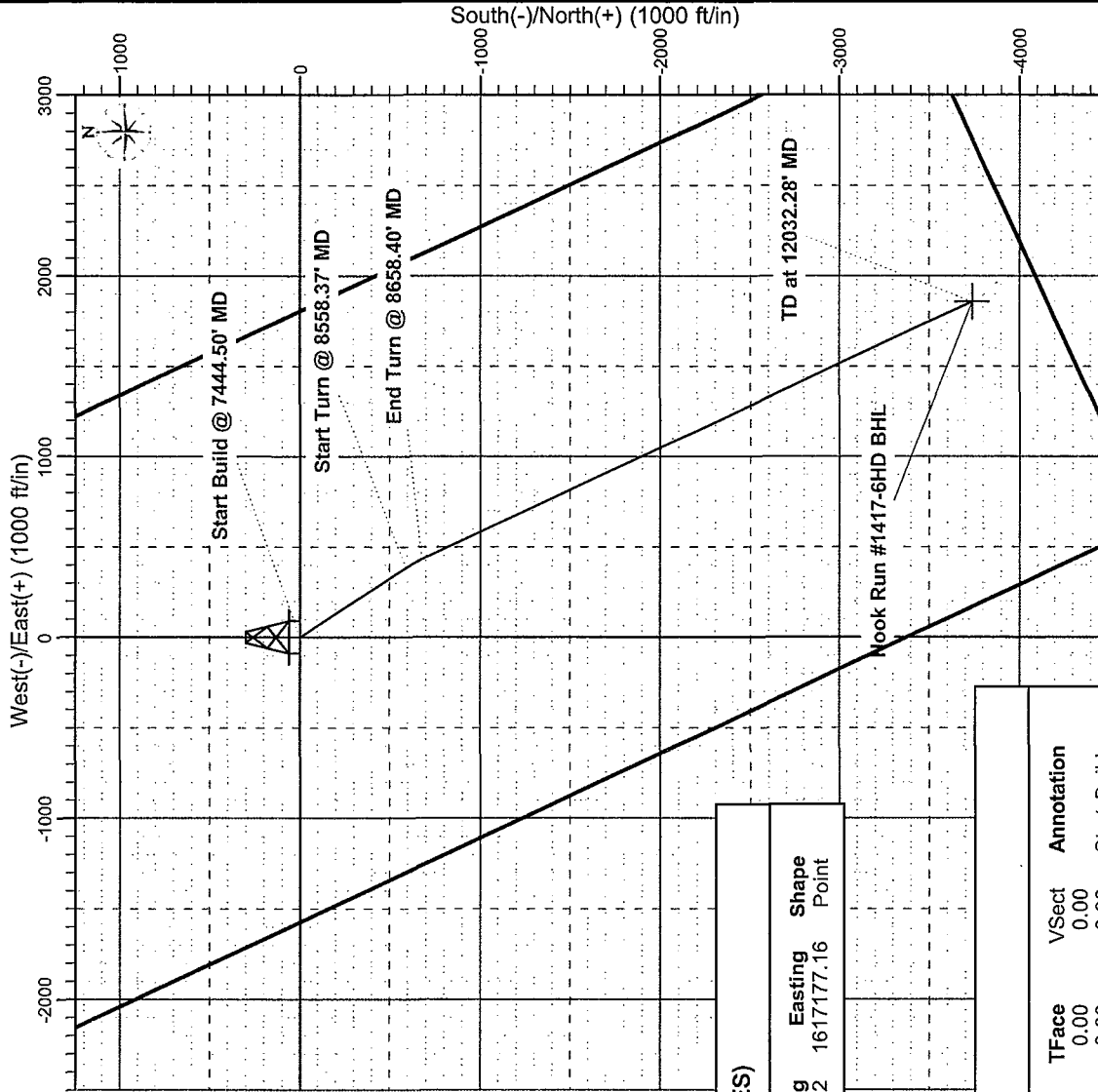
ENVIRONMENTAL PROTECTION
 NORTHWEST REGIONAL OFFICE

RECEIVED
 AUG 17 2012

To convert a Magnetic Direction to a Grid Direction, Subtract 9.33
 Magnetic Model: BGGM2012 Date: 25-Jun-12
 Azimuths to Grid North

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Hook Run #1417-6HD BHL	8214.60	-3736.20	1858.00	606542.42	1617177.16	Point



SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build
7444.50	0.00	0.00	7444.50	0.00	0.00	0.00	0.00	0.00	Start Turn
8558.37	89.11	147.00	8160.61	-591.32	384.01	8.00	147.00	698.21	End Turn
8658.40	89.11	155.00	8162.17	-678.72	432.45	8.00	90.07	797.90	TD
12032.28	89.11	155.00	8214.60	-3736.20	1858.00	0.00	0.00	4171.37	



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Oil and Gas Management Program
WELL LOCATION PLAT
Page 1 Surface Location

DEP USE ONLY	Auth ID #:	G: <i>SGP</i>
	Permit #: <i>123-47019</i>	9/12/12
	Project #: <i>123-47024</i>	C:

Top Hole Well is located on topo map *14792* feet south of latitude *41° 52' 30"* parcel lines taken from
Bottom Hole Well is located on topo map *3847* feet south of latitude *41° 50' 00"* tax map information

Surface Hole Coordinates

True Latitude: NORTH
41° 50' 03.86"

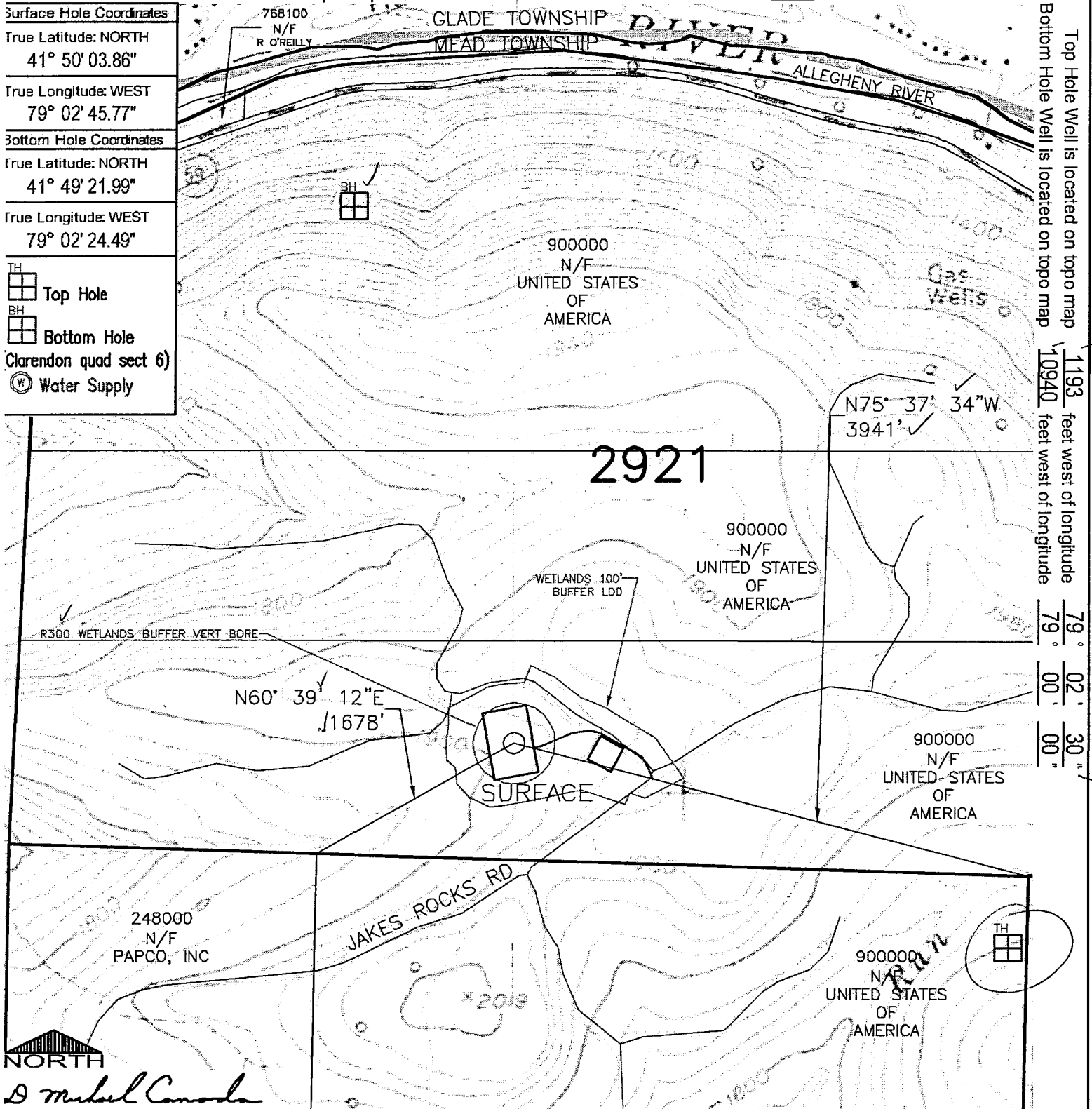
True Longitude: WEST
79° 02' 45.77"

Bottom Hole Coordinates

True Latitude: NORTH
41° 49' 21.99"

True Longitude: WEST
79° 02' 24.49"

- TH ☒ Top Hole
BH ☒ Bottom Hole
Clarendon quad sect 6)
⊙ Water Supply



Top Hole Well is located on topo map *1193* feet west of longitude
Bottom Hole Well is located on topo map *10940* feet west of longitude

79° 02' 30"

Applicant/Well Operator Name: SWEPI LP		DEP ID#: 284309	Well (Farm) Name: HOOK RUN		Well #: 1417-6HS
Address: 190 Thorn Hill Road, Warrendale, PA 15086			County: WARREN	Municipality: MEAD	Well Type: Gas
911 Address of well site: PENDING			USGS 712 Quadrangle Map Name: CLARENDON		Map Section: 2
Surveyor: Pa. Lic.# SU029272 E D. Michael Canada		Phone#: 716-379-7918	Dwg #: 20120403 WT2921	Date: JULY 9, 2012	Scale: 1" = 1000'
Lat. & Long Metadata Method: RTK GPS		Accuracy: ± 5 ft.	Datum: NAD 83	Elevation Metadata Method: GPS	Accuracy: ± 5 ft.
		Datum: NAD 83	Survey Date: APRIL 9, 2012		Tract Acreage: 1394.94

WELL LOCATION PLAT

Page 2 Notifications

DEP Statewide toll-free phone number for reporting cases of water contamination which may be associated with development of oil and gas resources is 1-866-255-5158.

Applicant / Well Operator Name: SWEPI LP	DEP ID#: 284309	Well (Farm) Name: HOOK RUN	Well #: 1417-6HS
Surface Landowner: UNITED STATES OF AMERICA	Angle & Course of Deviation (Drilling): S19° 57' 13"E 4533'	Anticipated True Vertical Depth Feet (TVD): 4144.6	Anticipated Total Measured Depth Feet (TMD): 8389.56
Target Formation(s): Burket Shale	Deepest Formation to be penetrated: Burket Shale	Number of Laterals: 1	Total footage to be drilled - all laterals: 8389.56
Surface Owner or Water Purveyor with a Water Supply within 3,000 ft.		Latitude/Longitude of Water Supply	

NO WATER PURVEYORS WITHIN 3000'

NA

Municipality: where the well will be drilled, adjacent to the well, or within 3000 feet

DRILLED IN -	MEAD TWP-WARREN CO ✓
ADJACENT TO -	CLARENDON BORO-WARREN CO ✓
	ALLEGANY TWP-CATTARAUGUS CO
	SOUTH VALLEY TWP-CATTARAUGUS CO
	CORYDON TWP-MCKEAN CO ✓
	HAMILTON TWP-MCKEAN CO ✓
	SHEFFIELD TWP-WARREN CO ✓
	CHERRY GROVE TWP-WARREN CO ✓
	PLEASANT TWP-WARREN CO ✓
	CITY OF WARREN-WARREN CO ✓
	GLADE TWP-WARREN CO ✓
	ELK TWP-WARREN CO ✓

Coal related parties

NONE

RECEIVED

AUG 17 2012

ENVIRONMENTAL PROTECTION
NORTHWEST REGIONAL OFFICE

Surface Hole Coordinates

True Latitude: NORTH 41° 50' 03.86"
True Longitude: WEST 79° 02' 45.77"
Kick-off Point (KOP)
True Latitude: NORTH 41° 50' 03.86"
True Longitude: WEST 79° 02' 45.77"
Landing Point
True Latitude: NORTH 41° 49' 55.68"
True Longitude: WEST 79° 02' 46.32"

Bottom Hole Coordinates

True Latitude: NORTH 41° 49' 21.99"
True Longitude: WEST 79° 02' 24.49"

WELL PAD W/ TOP HOLE LOCATIONS

RECEIVED
AUG 17 2012
ENVIRONMENTAL PROTECTION
ACCESS RD
WEST REGIONAL OFFICE

1417-5HM
1417-5HD
1417-5HS
1417-6HS
1417-6HD
1417-6HM

NORTH

The figure is a detailed topographic map used for geological or engineering purposes. It features several key elements:

- Coordinate Tables:** Two tables at the top left provide precise coordinates for surface and bottom hole locations, including latitude and longitude values.
- Map Area:** The main map shows a rugged terrain with contour lines indicating elevation. Key geographical features include "Hemlock Island", "Harmon Island", "Glade Township", "Mead Township", and the "Allegheny River". A road labeled "Jakes Rocks Rd" is also visible.
- Well Locations:** Numerous points are marked across the map, each associated with a unique identifier and owner information. Examples include:
 - 834000 N/F R PETERSON
 - 767440 F FEDORAK
 - 768100 N/F R O'BRIEN
 - 836000 N/F C PETERSON
 - 819000 N/F T FROSEN
 - 755400 N/F S BEDNEZ
 - 756000 N/F S DEXTER
 - 757700 N/F REISER REALTY LLC
 - 748900 N/F REISER REALTY LLC
 - 900000 N/F UNITED STATES OF AMERICA
 - 248000 N/F PAPCO, INC
 - 900000 N/F UNITED STATES OF AMERICA
 - 900000 N/F UNITED STATES OF AMERICA
 - 900000 N/F UNITED STATES OF AMERICA
 - 900000 N/F UNITED STATES OF AMERICA
- Survey Data:** Several bearing and distance measurements are provided for specific points, such as:
 - N60° 39' 12"E 1678'
 - S41° 11' 48"E 4570'
 - S34° 40' 05"W 3992'
 - N75° 37' 34"W 3941'
- Well Pad Detail:** An inset diagram at the bottom left shows a plan view of a well pad with six numbered locations (1417-5HM through 1417-6HM) and their relative positions.
- Other Labels:** The map includes various other labels like "Gas Well", "BM", "WN=678", "2921", "2837", and "SURFACE/BOTTOM" points connected by lines.

WELL LOCATION PLAT
Page 4 Cross Section

Applicant / Well Operator Name: SWEPI LP	DEP ID#: 284309	Well (Farm) Name: HOOK RUN	Well #: 1417-6HS
--	---------------------------	--------------------------------------	----------------------------

DEP Use Only	Permit #
--------------------	----------

WELL PLAN

Operator Name: SWEPI LPWell / Farm Name: HOOK RUN

			Latitude:	Longitude:
KOP:	TVD: <u>3192.9</u>	TMD: <u>3192.9</u>	<u>41° 50' 03.86"</u>	<u>79° 02' 45.77"</u>
Landing Point:	TVD: <u>4102.94</u>	TMD: <u>4600.56</u>	<u>41° 49' 55.68"</u>	<u>79° 02' 46.32"</u>

*FOR CLARITY PURPOSES, SEE THE
FOLLOWING ATTACHED WELL PLAN AND
SECTION VIEWS

RECEIVED
AUG 17 2012
ENVIRONMENTAL PROTECTION
NORTHWEST REGIONAL OFFICE

UA_APPALACHIA



Project: NW PA
Site: HOOK RUN #1417
Well: HOOK RUN #1417-6HS
Wellbore: HOOK RUN #1417-6HS
Design: Design #1
Rig: TBD

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3192.90	0.00	0.00	3192.90	0.00	0.00	0.00	0.00	0.00	Start Build
3567.92	30.00	231.20	3551.02	-60.13	-74.78	8.00	231.20	22.89	Start Build/Turn
4600.56	89.37	155.00	4102.94	-827.54	-54.11	8.00	-78.30	727.14	End Build/Turn
8389.56	89.37	155.00	4144.60	-4261.33	1547.10	0.00	0.00	4515.91	TD

Surface Location:

EPW NAD83
 NAD83 / Pennsylvania North [1188, 2271]
 Elevation: DFE @ 1939.60ft (TBD)
 Northing 610293.35 Easting 1615316.38 Latitude 41° 50' 3.860 N Longitude 79° 2' 45.768 W

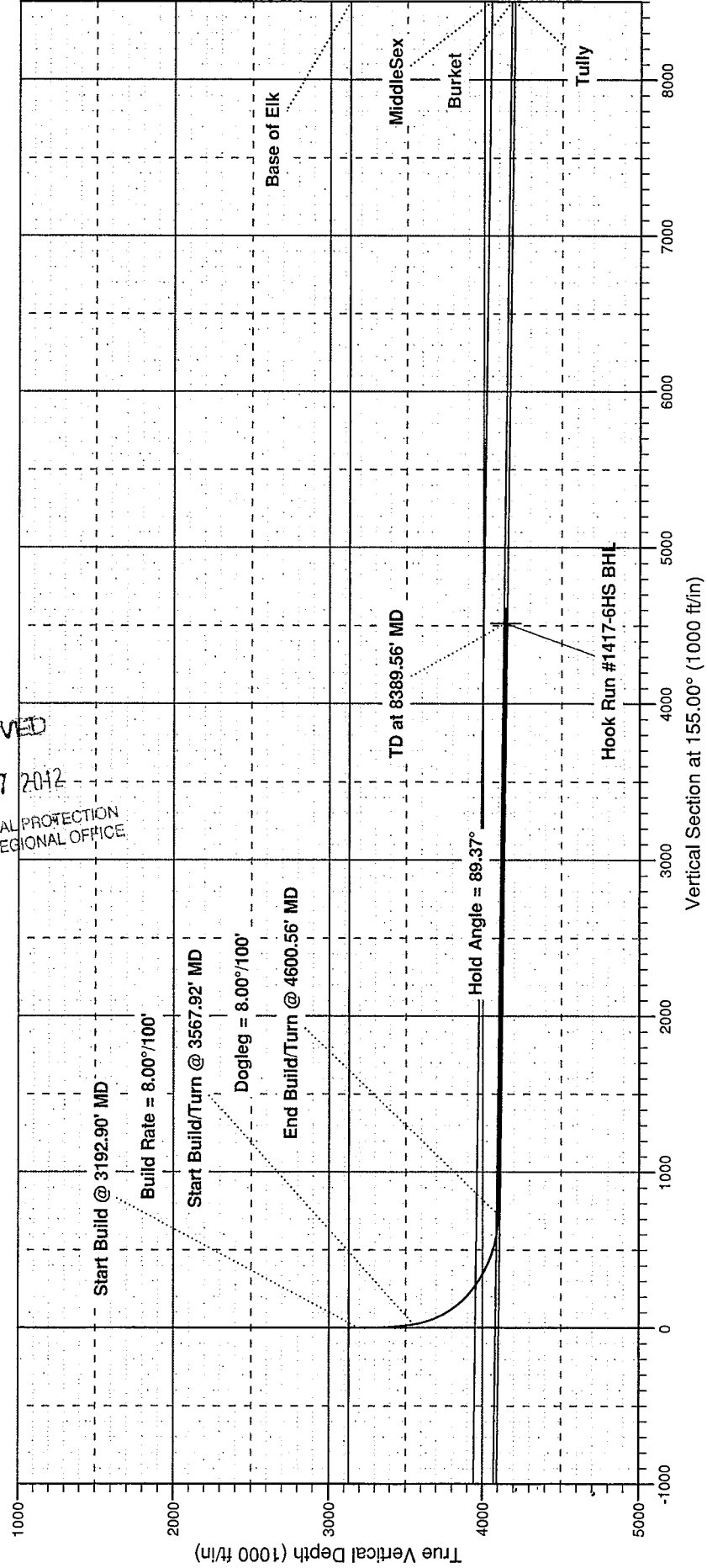
WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Hook Run #1417-6HS BHL	4144.60	-4261.33	1547.10	606032.03	1616863.47	Point

RECEIVED
 AUG 17 2012
 ENVIRONMENTAL PROTECTION
 NORTHWEST REGIONAL OFFICE

To convert a Magnetic Direction to a Grid Direction, Subtract 9.36°

Magnetic Model: BGGM2012 Date: 25-Jun-12
 Azimuths to Grid North



UA_APPALACHIA



Project: NW PA
Site: HOOK RUN #1417
Well: HOOK RUN #1417-6HS
Wellbore: HOOK RUN #1417-6HS
Design: Design #1
Rig: TBD

Surface Location:

EPW NAD83
 NAD83 / Pennsylvania North [1188, 2271]
 Elevation: DFE @ 1939.60ft (TBD)

North	East	Latitude	Longitude
610293.35	1615316.38	41° 50' 3.860 N	79° 2' 45.768 W

To convert a Magnetic Direction to a Grid Direction, Subtract 9.36°

Magnetic Model: BGGM2012 Date: 25-Jun-12
 Azimuths to Grid North

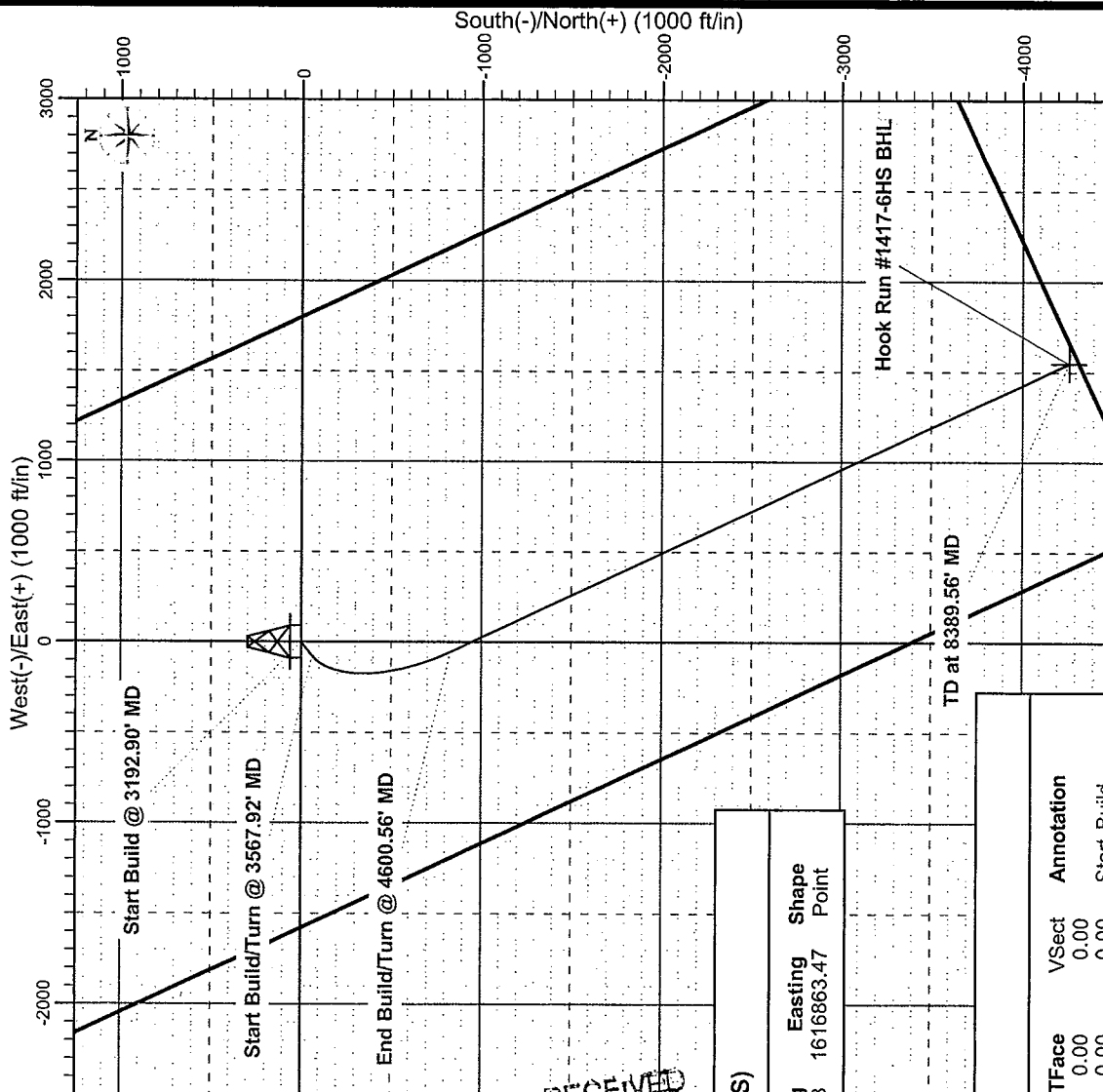
RECEIVED
 AUG 17 2012
 ENVIRONMENTAL PROTECTION
 NORTHWEST REGIONAL OFFICE

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Hook Run #1417-6HS BHL	4144.60	-4261.33	1547.10	606032.03	1616863.47	Point

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3192.90	0.00	0.00	3192.90	0.00	0.00	0.00	0.00	0.00	Start Build
3567.92	30.00	231.20	3551.02	-60.13	-74.78	8.00	231.20	22.89	Start Build/Turn
4600.56	89.37	155.00	4102.94	-827.54	-54.11	8.00	-78.30	727.14	End Build/Turn
8389.56	89.37	155.00	4144.60	-4261.33	1547.10	0.00	0.00	4515.91	TD





pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Oil and Gas Management Program

WELL LOCATION PLAT

Page 1 Surface Location

DEP USE ONLY	Auth ID #:	G: <i>SGP</i>
	Permit #: <i>123-47021</i>	9/10/12
	Project #:	C:

Top Hole Well is located on topo map *14777* feet south of latitude *41° 52' 30"* parcel lines taken from
Bottom Hole Well is located on topo map *10930* feet south of latitude *41° 52' 30"* tax map information

Surface Hole Coordinates

True Latitude: NORTH
41° 50' 04.01"

True Longitude: WEST
79° 02' 45.81"

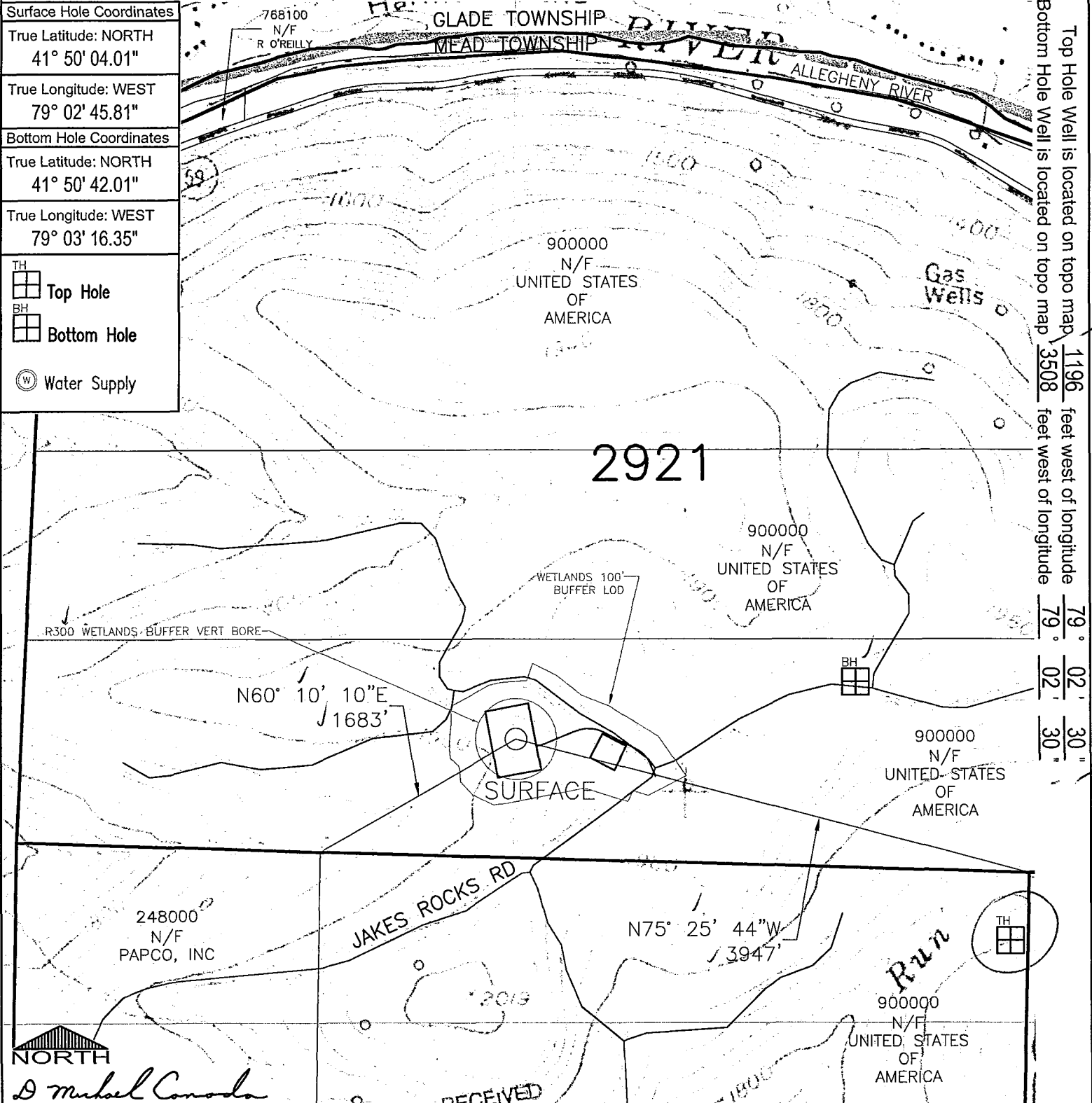
Bottom Hole Coordinates

True Latitude: NORTH
41° 50' 42.01"

True Longitude: WEST
79° 03' 16.35"

TH
☐ Top Hole
BH
☐ Bottom Hole

Water Supply



Top Hole Well is located on topo map *1196* feet west of longitude *79° 02' 30"*
Bottom Hole Well is located on topo map *3508* feet west of longitude *79° 02' 30"*

Applicant / Well Operator Name: SWEPI LP		DEP ID#: 284309	Well (Farm) Name: HOOK RUN		Well #: 1417-5HS
Address: 190 Thorn Hill Road, Warrendale, PA 15086		County: WARREN	Municipality: MEAD		Well Type: Gas
911 Address of well site: PENDING		Quadrangle Map Name: CLARENDON 0413		Map Section: 2	Surface Elevation: 1913 ft.
Surveyor: Pa. Lic. # SU029272 E D. Michael Canada	Phone #: 716-379-7918	Dwg #: 20120403 WT2921	Date: JULY 9, 2012	Scale: 1" = 1000'	Tract Acreage: 1394.94
Lat. & Long Metadata Method: RTK GPS	Accuracy: ± 5 ft.	Datum: NAD 83	Elevation Metadata Method: GPS	Accuracy: ± 5 ft.	Datum: NAD 83
Survey Date: APRIL 9, 2012					

WELL LOCATION PLAT

Page 2 Notifications

DEP Statewide toll-free phone number for reporting cases of water contamination which may be associated with development of oil and gas resources is 1-866-255-5158.

Applicant / Well Operator Name: SWEPI LP	DEP ID#: 284309	Well (Farm) Name: HOOK RUN	Well #: 1417-5HS
Surface Landowner: UNITED STATES OF AMERICA	Angle & Course of Deviation (Drilling): N30° 08' 44"W 4488'	Anticipated True Vertical Depth Feet (TVD): 4087.07	Anticipated Total Measured Depth Feet (TMD): 8320.98
Target Formation(s): Burket Shale	Deepest Formation to be penetrated: Burket Shale	Number of Laterals: 1	Total footage to be drilled - all laterals: 8320.98

Surface Owner or Water Purveyor
with a Water Supply within 3,000 ft.

Latitude/Longitude of Water Supply

NO WATER PURVEYORS WITHIN 3000'

NA

Municipality: where the well will be drilled,
adjacent to the well, or within 3000 feet

DRILLED IN - ☒ MEAD TWP-WARREN CO ☒

ADJACENT TO - ☒ CLARENDON BORO-WARREN CO ☒

☐ ALLEGANY TWP-CATTARAUGUS CO

☐ SOUTH VALLEY TWP-CATTARAUGUS CO

☒ CORYDON TWP-MCKEAN CO ☒

☒ HAMILTON TWP-MCKEAN CO ☒

☒ SHEFFIELD TWP-WARREN CO ☒

☒ CHERRY GROVE TWP-WARREN CO ☒

☒ PLEASANT TWP-WARREN CO ☒

☒ CITY OF WARREN-WARREN CO ☒

☒ GLADE TWP-WARREN CO ☒

☒ ELK TWP-WARREN CO ☒

Coal related parties

NONE

RECEIVED

AUG 17 2012

ENVIRONMENTAL PROTECTION
NORTHWEST REGIONAL OFFICE

Topographic map showing land parcels, townships, and survey data. Key features include:

- Townships:** GLADE TOWNSHIP, MEAD TOWNSHIP.
- Rivers:** ALLEGHENY RIVER.
- Islands:** Harmon Island.
- Survey Data:**
 - S69° 28' 00" E 1024'
 - S18° 03' 36" W 750'
 - N60° 10' 10" E 1683'
 - N75° 25' 44" W 3947'
- Land Parcels:**
 - 834000 N/F
 - 828100 R PETERSON
 - 763000 N/F
 - 767440 F FEDORAK
 - 788100 N/F R O'DELL
 - 838000 N/F C PETERSON
 - 819000 N/F T PROSDN
 - 765400 N/F S BEDNEZ
 - 758000 N/F
 - 757700 N/F S DEXTER
 - 748900 N/F REISER REALTY LLC
 - 248000 N/F PAPCO, INC
 - 900000 N/F UNITED STATES OF AMERICA
- Other Labels:** Hemlock, PENN CENTRAL, Gas Wells, SURFACE, JAKES ROCKS RD, Run, Hoot.
- Survey Points:** 5565, 2921, 2837.
- RECEIVED AUG 17 2012**
- TOP HOLE LOCATIONS**
- LEGEND:**
 - 5-HM
 - 5-HD
 - 7-5HS
 - 7-6HS
 - 17-6HD
 - 1417-6HM



WELL LOCATION PLAT
Page 4 Cross Section

Applicant / Well Operator Name:	SWEPI LP	DEP ID#:	284309	Well (Farm) Name:	HOOK RUN	Well #:	1417-5HS
---------------------------------	----------	----------	--------	-------------------	----------	---------	----------

DEP Use Only	Permit #
--------------------	----------

WELL PLAN

Operator Name: SWEPI LPWell / Farm Name: HOOK RUN

			Latitude:	Longitude:
KOP:	TVD: <u>3252.35</u>	TMD: <u>3252.35</u>	<u>41° 50' 04.01"</u>	<u>79° 02' 45.81"</u>
Landing Point:	TVD: <u>4087.07</u>	TMD: <u>4618.98</u>	<u>41° 50' 09.10"</u>	<u>79° 02' 55.02"</u>

*FOR CLARITY PURPOSES, SEE THE
FOLLOWING ATTACHED WELL PLAN AND
SECTION VIEWS

RECEIVED

AUG 17 2012

ENVIRONMENTAL PROTECTION
NORTHWEST REGIONAL OFFICE

UA_APPALACHIA



SECTION DETAILS

Project: NW PA
 Site: HOOK RUN #1417
 Well: HOOK RUN #1417-5HS
 Wellbore: HOOK RUN #1417-5HS
 Design: Design #1
 Rig: TBD

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build
3252.35	0.00	0.00	3252.35	0.00	0.00	0.00	0.00	0.00	Start Build/Turn
3752.26	40.00	279.09	3712.62	26.47	-165.44	8.00	279.09	93.91	End Build/Turn
4618.98	90.58	335.00	4087.07	525.74	-689.24	8.00	62.24	767.76	TD
8320.98	90.58	335.00	4049.60	3880.72	-2253.69	0.00	0.00	4469.57	TD

Surface Location:

EPW NAD83
 NAD83 / Pennsylvania North [1188_2271]
 Elevation: DFE @ 1939.60ft (TBD)
 Easting 1615313.59
 Latitude 41° 50' 4.005 N
 Longitude 79° 2' 45.808 W

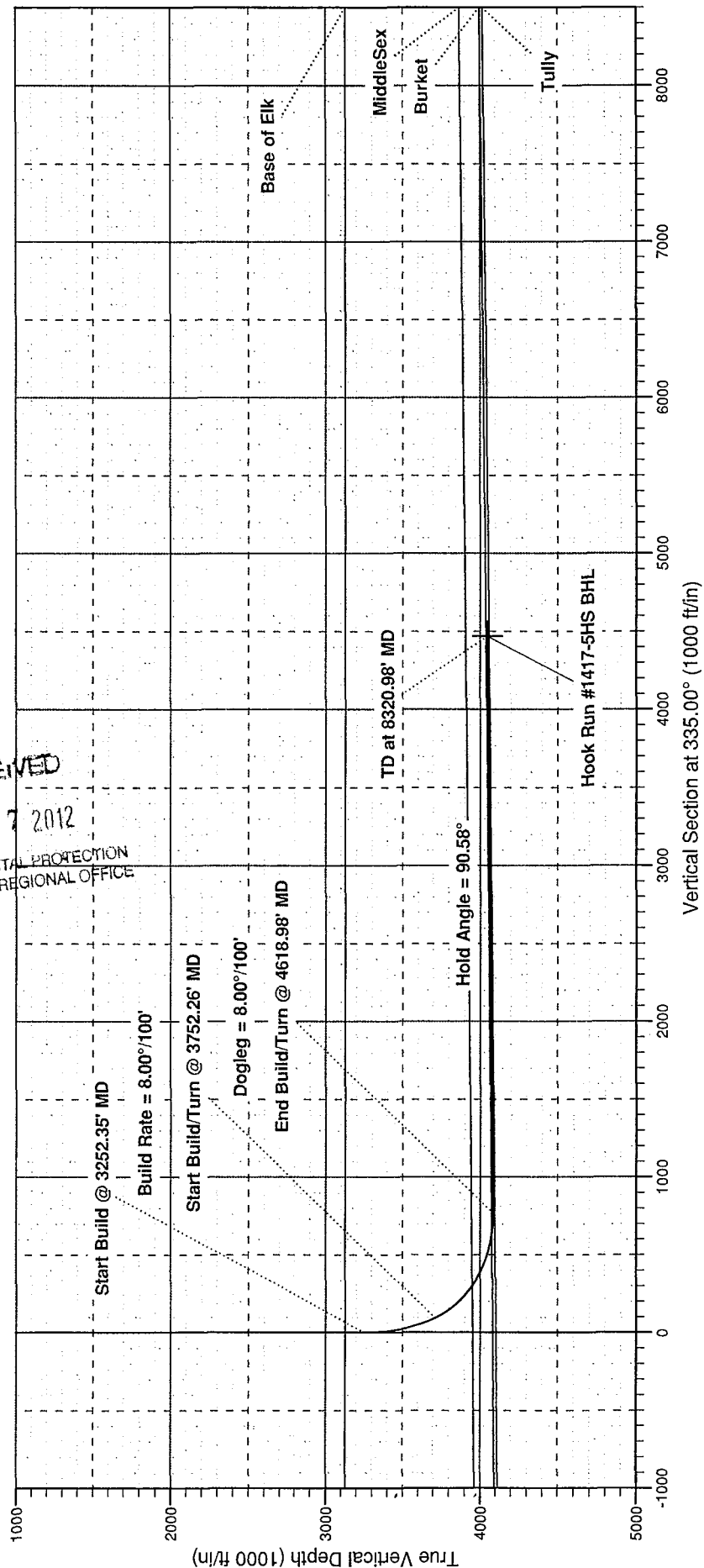
WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name Hook Run #1417-5HS BHL
 TVD 4049.60
 +N/-S 3880.72
 +E/-W -2253.69
 Northing 614188.80
 Easting 1613059.91
 Shape Point

To convert a Magnetic Direction to a Grid Direction, Subtract 9.36°

Magnetic Model: BGGM2012
 Azimuths to Grid North
 Date: 25-Jun-12

RECEIVED
 AUG 17 2012
 ENVIRONMENTAL PROTECTION
 NORTHWEST REGIONAL OFFICE



UA_APPALACHIA



Project: NW PA
 Site: HOOK RUN #1417
 Well: HOOK RUN #1417-5HS
 Wellbore: HOOK RUN #1417-5HS
 Design: Design #1
 Rig: TBD

Surface Location:

EPW NAD83
 NAD83 / Pennsylvania North [1188 2271]
 Elevation: DFE @ 1939.60ft (TBD)
 Northing 610308.09 Easting 1615313.59 Latitude 41° 50' 4.005 N Longitude 79° 2' 45.808 W

ENVIRONMENTAL PROTECTION
 NORTHWEST REGIONAL OFFICE

AUG 17 2012

To convert a Magnetic Direction to a Grid Direction, Subtract 9.36°
 Magnetic Model: BGGM2012 Date: 25-Jun-12
 Azimuths to Grid North

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Hook Run #1417-5HS BHL	4049.60	3880.72	-2253.69	614188.80	1613059.91	Point

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3252.35	0.00	0.00	3252.35	0.00	0.00	0.00	0.00	0.00	Start Build
3752.26	40.00	279.09	3712.62	26.47	-165.44	8.00	279.09	93.91	Start Build/Turn
4618.98	90.58	335.00	4087.07	525.74	-689.24	8.00	62.24	767.76	End Build/Turn
8320.98	90.58	335.00	4049.60	3880.72	-2253.69	0.00	0.00	4469.57	TD

West(-)/East(+) (1000 ft/in)

