WR-35
Rev. 8/23/13

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47- 051 - 01710 County Marshall District Clay
Quad Glen Easton Pad Name Francis Field/Pool Name
Farm name Francis Well Number 2H
Operator (as registered with the OOG) Chevron Appalachia, LLC
Address 800 Mountain View Drive City Smithfield State PA Zip 15478

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4413745.212 Easting 526318.853
Landing Point of Curve Northing 4414260.3 Easting 526687.7
Bottom Hole Northing 4415202.8 Easting 525912.2

Elevation (ft) 1283 GL Type of Well ■New □ Existing Type of Report □Interim ■Final

Permit Type □ Deviated □ Horizontal ■ Horizontal 6A □ Vertical Depth Type □ Deep ■ Shallow

Type of Operation □ Convert □ Deepen ■ Drill □ Plug Back □ Redrilling □ Rework ■ Stimulate

Well Type □ Brine Disposal □ CBM ■ Gas □ Oil □ Secondary Recovery □ Solution Mining □ Storage □ Other

Type of Completion ■ Single □ Multiple Fluids Produced □ Brine ■Gas □ NGL □ Oil □ Other
Drilled with □ Cable ■ Rotary

Drilling Media Surface hole ■ Air □ Mud □Fresh Water Intermediate hole □ Air ■ Mud □ Fresh Water □ Brine
Production hole □ Air ■ Mud □ Fresh Water □ Brine

Mud Type(s) and Additive(s)
None Aqueous Fluid containing weighting agent, fluid loss additive, emulsifier, Viscosity and Rheological Control agent, Oil-Wetting Agent, fluid rheology conditioner

Date permit issued 3/20/2014 Date drilling commenced 4/17/2014 Date drilling ceased 10/13/2014
Date completion activities began 3/3/2015 Date completion activities ceased 7/6/2015
Verbal plugging (Y/N) N Date permission granted Granted by

Received
Office of Oil & Gas
JUL 27 2015

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 619 - 648 Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1890' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 105-145', 490-520', 760-840', 1080-1190', 1475-1585', 1640-1660' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No but not sealed

Reviewed by:

10/30/2015

WR-35
Rev. 8/23/13

API 47- 051 - 01710 Farm name Francis Well number 2H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	36	30	45	New	X-56; 118.6		
Surface	17-1/2	13-3/8	659	New	J-55; 54.50		
Coal							
Intermediate 1	12-1/4	9-5/8	2659	New	N-80; 40		
Intermediate 2							
Intermediate 3							
Production	8-1/2	5-1/2	10722	New	P-110; 20		
Tubing							
Packer type and depth set							

Comment Details

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ^{3}/sks)	Volume (ft ^{3})	Cement Top (MD)	WOC (hrs)
Conductor	Bulk Cement	Bulk Cement	Bulk Cement	Bulk Cement	Bulk Cement	Surface	8.0
Surface	Class A	635	15.6	1.21	768	Surface	8.0
Coal							
Intermediate 1	Class A	927	15.6	1.18	1094	Surface	8.0
Intermediate 2							
Intermediate 3							
Production	Class A	2318	15.2	1.25	2897	Surface	Well TD'd
Tubing							

Drillers TD (ft) 11873 Loggers TD (ft) 11873

Deepest formation penetrated Marcellus Shale Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 4868

Check all wireline logs run ☐ caliper ☐ density ☐ deviated/directional ☐ induction ☐ neutron ☐ resistivity ☐ gamma ray ☐ temperature ☐ sonic

Well cored ☐ Yes ■ No ☐ Conventional ☐ Sidewall Were cuttings collected ☐ Yes ☐ No

Received
Office of Oil & Gas
JUL 27 2015

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING

One bow spring centralizer every two jts on the Surface string and intermediate. Two centralizer every jt in the lateral and curve, then one every two jts from KOP to surface

WAS WELL COMPLETED AS SHOT HOLE ■ Yes ☐ No DETAILS SEE ATTACHED PERFORMATION/STIMULATION REPORT

WAS WELL COMPLETED OPEN HOLE? ☐ Yes ■ No DETAILS

WERE TRACERS USED ☐ Yes ■ No TYPE OF TRACER(S) USED

10/30/2015

API 47- 051 - 01710 Farm name Francis Well number 2H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
		SEE			
		ATTACHED			

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
			SEE					
			ATTACHED					

Please insert additional pages as applicable.

API: 47-051-01712	Well Name: Francis	Well Number: 2H

PERFORATION RECORD

Stage No.	Perforation Date	Perforated From TMD Ft.	Perforated To TMD Ft.	Number of Perforations	Formation(s)
1	4/3/2015	11788	11627	50	Marcellus
2	5/15/2015	11584	11422	50	Marcellus
3	5/15/2015	11379	11217	50	Marcellus
4	5/15/2015	11005	10838	50	Marcellus
5	5/15/2015	10800	10643	50	Marcellus
6	5/16/2015	10592	10438	50	Marcellus
7	5/16/2015	10387	10232	50	Marcellus
8	5/17/2015	10180	10023	50	Marcellus
9	5/17/2015	9982	9818	50	Marcellus
10	5/17/2015	9775	9613	50	Marcellus
11	5/18/2015	9570	8408	50	Marcellus
12	5/18/2015	9365	9203	50	Marcellus
13	5/19/2015	9160	8998	50	Marcellus
14	5/19/2015	8955	8793	50	Marcellus
15	5/19/2015	8750	8588	50	Marcellus
16	5/20/2015	8545	8383	50	Marcellus
17	5/20/2015	8340	8178	50	Marcellus
18					
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Please insert additional copies of this page if additional rows/stages are needed.

API: 47-051-01710	Well Name: Francis	Well Number: 2H

STIMULATION INFORMATION / STAGE

Complete a separate record for each stimulation stage. (Please insert additional lines for additional stages or additional pages as applicable).

Stg No.	Stimulation Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/ other (units)
1	4/3/2015	71.6	8608	4300	6089	200147	8436	
2	5/15/2015	97.4	8758	7056	4290	400440	10544	
3	5/15/2015	99.5	8852	5574	4746	401300	10701	
4	5/15/2015	99.5	7656	6057	4644	400740	10844	
5	5/15/2015	96.6	8634	6334	4539	211060	11413	
6	5/16/2015	99.6	8368	6092	4918	342220	9852	
7	5/16/2015	99.1	8318	6334	4816	403700	12829	
8	5/17/2015	59.9	9106	5990	4429	8500	4345	
9	5/17/2015	99.5	7766	n/a	4196	400420	10874	
10	5/17/2015	98.1	7864	6471	4644	406900	11012	
11	5/18/2015	98.1	7481	6229	5160	404900	10816	
12	5/18/2015	100.1	7991	6092	4953	402860	11879	
13	5/19/2015	98.8	8856	9471	4851	397900	10593	
14	5/19/2015	99.5	7552	6134	4574	404960	10766	
15	5/19/2015	99.2	8300	6334	5195	406700	10143	
16	5/20/2015	98.3	8287	5644	4851	400360	10604	
17	5/20/2015	99	7771	5446	5446	401800	11050	
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WR-35
Rev. 8/23/13

API 47- 051 - 01710 Farm name Francis Well number 2H

PRODUCING FORMATION(S) DEPTHS

_____ _____ TVD _____ MD

_____ _____ _____

_____ _____ _____

_____ _____ _____

Please insert additional pages as applicable.

GAS TEST □ Build up □ Drawdown □ Open Flow OIL TEST □ Flow □ Pump

SHUT-IN PRESSURE Surface _____ psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas _____ mcfpd Oil _____ bpd NGL _____ bpd Water _____ bpd GAS MEASURED BY □ Estimated □ Orifice □ Pilot

LITHOLOGY/ FORMATION NAME	TOP DEPTH IN FT TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H_2S, ETC)
	0		0		
Monongahela Group Sand	596	635	596	635	Fresh Water 619'-648'MD 2" stream
Pittsburgh Coal	816	820	816	820	Coal
Big Lime	1860	1940	1860	1940	Limestone: crm-wh, hd, crpxln (Brine @ 1890' 25bbls/hr)
Burgoon (Big Injun)	1940	2130	1938	2128	SS:offwh, wh, cons, clr, trans, lcemt, fg-mg
Weir Sand	2290	2310	2288	2308	SLTST: ltgy-mgy, occ mgy, hrd, vf-fg, tcmt, bio, arg, sl calc
Berea Sand	2525	2550	2522	2547	SS: wh, clr, trans, ltgy-gy, cns, lcmt, mg-fg, sbang-ang, arg, msoh, non calc, tr flor, exl fast cut, fnt odr, lse pyr
Burket Shale	6390	6408	7268	7307	SH:drkgy,v.drkgy,frm,slty,grty, sbblky-sbfiss,modcalc,embd calc,lse calct
Tully Limestone	6408	6439	7307	7390	LS: ltgy, gy, mgy, frm-hrd, dns, cln, mic-fxln, v. arg
Hamilton Shale	6439	6517	7390	7712	SH:drkgy,v.drkgy,frm,slty, grty,sbblky-sbfiss,carb,modv. calc,lse calct,w/LS
Marcellus Shale	6517		7712		SH:drkgy,v.drkgy,frm,slty, grty,sbblky-sbfiss, non calc, lse calct,lse pyr,w/LS:gy, ltgy,hrd,,mott,mic,fxln,v.arg

Please insert additional pages as applicable.

Drilling Contractor SEE ATTACHED
Address _____ City _____ State _____ Zip _____

Logging Company Stratagraph NE Inc.
Address 116 Ellsworth Avenue City Marietta State OH Zip 45750

Cementing Company Baker Hughes
Address 5373 West Alabama, Suite 300 City Houston State TX Zip 77056

Stimulating Company Schlumberger Technology Corp
Address Two Robinson Plaza, Suite 200 City Pittsburgh State PA Zip 15205

Please insert additional pages as applicable.

Completed by Jackie M. Scholar Telephone 724-564-3721
Signature _____ Title Regulatory Compliance Team Lead Date 7/22/2015

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

API: 47-051-01710	Well Name: Francis	Well Number: 2H

DRILLING CONTRACTORS			
Driller	**Driller**	**Driller**	**Driller**
Name Rocky Mountain Drilling	Name Jighlands Drilling LLC	Name Nabors Drilling USA	Name
Address 185 North Vernal Avenue, Suite 2	Address 900 Virginia Street East	Address 10100 NW 10th street	Address
City – State – Zip Vernal, UT 84078	City – State – Zip Charleston, WV 25301	City – State – Zip Oklahoma City, OK 73127	City – State – Zip

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	4/3/2015
Job End Date:	5/20/2015
State:	West Virginia
County:	Marshall
API Number:	47-051-01710-00-00
Operator Name:	Chevron USA Inc.
Well Name and Number:	Francis 2H
Longitude:	-80.69226429
Latitude:	39.87320890
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,477
Total Base Water Volume (gal):	7,421,438
Total Base Non Water Volume:	

FracFocus Chemical Disclosure Registry

GROUNDWATER PROTECTION COUNCIL

Interstate Oil & Gas Compact Commission

Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Base Fluid	Chevron	Carrier/Base Fluid					
			Water (Including Mix Water Supplied by Client)	7732-18-5	100.00000	90.76190	
Proppant	Schlumberger	Proppant					
			Crystalline Silica	14808-60-7	100.00000	8.94301	
J580	Schlumberger	Gelling Agent, Water					
			Carbohydrate Polymer	Proprietary	100.00000	0.05350	
7.5% Acid	Schlumberger	Perf Cleanup					
			Hydrocloric Acid	7647-01-0	8.00000	0.01746	
J609W	Schlumberger	Friction Reducer					
			Ammonium Sulfate	7783-20-2	30.00000	0.00359	
			Urea	57-13-6	5.00000	0.00060	
J134	Schlumberger	Gel Breaker					
			Hemicellulase enzyme	9012-54-8	100.00000	0.00328	
M300	BASF Corporation	Biocide					
			Water	7732-18-5	75.00000	0.00162	
			Glutaral	111-30-8	25.00000	0.00054	
U042	Schlumberger	Iron Chelating Agent					
			Tetrasodium ethylenediaminetetraacetate	64-02-8	60.00000	0.00167	

51.01710

Amended 6/24/15

			Trisodium nitrilotriacetate (impurity)	5064-31-3	10.00000	0.00028	
			Sodium hydroxide	1310-73-2	5.00000	0.00014	
L058	Schlumberger	Iron Stabilizer					
			Sodium erythorbate	6381-77-7	100.00000	0.00028	
B317	Schlumberger	Scale Inhibitor					
			Trisodium ortho phosphate	7601-54-9	5.00000	0.00011	
			Ethane-1,2-diol	107-21-1	5.00000	0.00011	
A264	Schlumberger	Corrosion Inhibitor					
			Methanol	67-56-1	40.00000	0.00006	
			Aliphatic alcohols, ethoxylayed #1	Proprietary	30.00000	0.00004	
			Aliphatic acids	Proprietary	30.00000	0.00004	
			Prop-2-yn-1-ol	107-19-7	10.00000	0.00001	
EC6116A	Nalco	Biocide					
			Polyethylene Glycol	25322-68-3	60.00000	0.00007	
			2,2-Dibromo-3-nitrilopropionamide	10222-01-2	30.00000	0.00003	
			Dibromoacetonitrile	3252-43-5	5.00000	0.00001	

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

* Total Water Volume sources may include fresh water, produced water, and/or recycled water
** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

Well is located on topo map 603 feet south of Latitude: 39°52'30"

AS DRILLED PLAT

AS DRILLED APPROX. LANDING POINT
UTM 17-NAD83
N:4414260.3
E:526687.7
NAD83, WV NORTH
N:504107.58
E:1635127.48

PERMITTED APPROX. LANDING POINT
UTM 17-NAD83
N:4414260.44
E:526683.50
NAD83, WV NORTH
N:504108.21
E:1635113.71

PERMITTED BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83
N:4415207.17
E:525924.13
NAD83, WV NORTH
N:507256.56
E:1632673.78

AS DRILLED BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83
N:4415202.8
E:525912.2
NAD83, WV NORTH
N:507242.77
E:1632634.47

LEGEND

- NAD MAP POINT
- WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED
- (A) – LEASE LETTER
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM CENTER LINE
- AS DRILLED

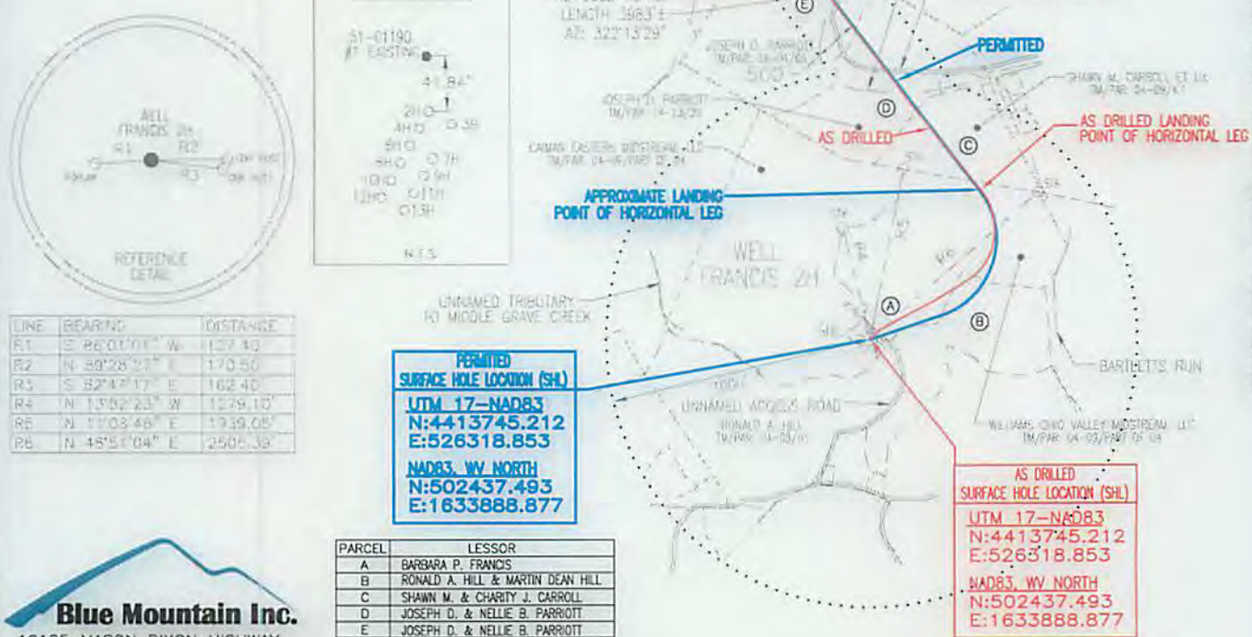
EXISTING WELLS

- EXISTING WELLS
- PLUGGED WELLS

NOTES:

1. There are no water wells or developed springs within 250' of proposed well.
2. There are no existing buildings within 625' of proposed well.
3. Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
4. There are no native trout streams within 300' of proposed well.
5. Proposed well is greater than 1000' from surface/groundwater intake or public water supply.
6. It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

Well is located on topo map 7,177 feet west of Longitude: 80°40'00"



LINE	BEARING	DISTANCE
R1	S 86°01'01" W	127.10'
R2	N 89°28'21" E	170.50'
R3	S 82°47'17" E	162.40'
R4	N 13°02'23" W	1279.10'
R5	N 11°03'46" E	1939.05'
R6	N 48°51'04" E	2505.39'

PERMITTED SURFACE HOLE LOCATION (SHL)
UTM 17-NAD83
N:4413745.212
E:526318.853
NAD83, WV NORTH
N:502437.493
E:1633888.877

AS DRILLED SURFACE HOLE LOCATION (SHL)
UTM 17-NAD83
N:4413745.212
E:526318.853
NAD83, WV NORTH
N:502437.493
E:1633888.877

PARCEL	LESSOR
A	BARBARA P. FRANCIS
B	RONALD A. HILL & MARTIN DEAN HILL
C	SHAWN M. & CHARITY J. CARROLL
D	JOSEPH D. & NELLIE B. PARRIOTT
E	JOSEPH D. & NELLIE B. PARRIOTT
F	ESTHER M. BOOTH & STEPHEN P. RICH
G	THOMAS L. & EVELYN R. JOHNSON

Blue Mountain Inc.
10125 MASON DIXON HIGHWAY
BURTON, WV 26562
PHONE: (304) 662-6486

FILE #: FRANCIS 2H-AS DRILLED
DRAWING #: FRANCIS 2H-AS DRILLED
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1/2500
PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: George D. Six

R.P.E.: L.L.S.: P.S. No. 2000

GEORGE D. SIX LICENSED No. 2000 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304

DATE: JUNE 23, 2015
OPERATOR'S WELL #: FRANCIS 2H-AS DRILLED
API WELL #: 47 (STATE) 51 (COUNTY) 01710 (PERMIT)

Well Type: ☐ Oil ☐ Waste Disposal ☒ Production ☐ Deep
☒ Gas ☐ Liquid Injection ☐ Storage ☒ Shallow

WATERSHED: MIDDLE GRAVE CREEK ELEVATION: 1259.00'
COUNTY/DISTRICT: MARSHALL / CLAY QUADRANGLE: GLEN EASTON, WV 7.5'
SURFACE OWNER: WILLIAMS OHIO VALLEY MIDSTREAM, LLC ACREAGE: 70.41±
OIL & GAS ROYALTY OWNER: BARBARA P. FRANCIS ACREAGE: 399.023±

10/30/2015

DRILL ☒ CONVERT ☐ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR STIMULATE ☒
PLUG OFF OLD FORMATION ☐ PERFORATE NEW FORMATION ☐ PLUG & ABANDON ☐
CLEAN OUT & REPLUG ☐ OTHER CHANGE ☐ (SPECIFY):

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,512'± TMD: 11,750'±
WELL OPERATOR CHEVRON APPALACHIA, LLC DESIGNATED AGENT KENNETH E. TAWNEY
Address 800 MOUNTAIN VIEW DRIVE Address 500 LEE STREET, EAST SUITE 1600
City SMITHFIELD State PA Zip Code 15478 City CHARLESTON State WV Zip Code 25301-3202