

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

API 47-095-02257 County TYLER District McElroy  
Quad SHIRLEY Pad Name SHR60 Field/Pool Name N/A  
Farm name WELLS, VIVIAN J. et al Well Number 514460  
Operator (as registered with the OOG) EQT Production Company  
Address 625 Liberty Ave. EQT Plaza, Suite 1700 City Pittsburgh State PA Zip 15222

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing N 4,360,607.42 Easting 516,268.70  
Landing Point of Curve Northing N 4,360,500.46 Easting 516,270.91  
Bottom Hole Northing N 4,356,602.53 Easting 518,009.11

Elevation (ft) 1011 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 **RECEIVED**  
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Well Type  Brine Disposal  CBM  Gas  Oil  Secondary Recovery  Solution Mining  Storage  Other **NOV 30 2018**

Type of Completion  Single  Multiple Fluids Produced  Brine  Gas  NGL  Oil  Other **WV Department of Environmental Protection**  
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)

Synthetic Oil Based Mud 12.9 ppg barium sulfata, sodium chlorido, xanthan gum, polyanionic cellulose, modified starch, sodium hydroxide, phosphonates and alkyl phcpates, glutaraldehyde solution, calcium hydroxide, partially hydrolyzed polyacrylamide/polyacrylate, potassium chloride, sodium carbonate, ground walnut shells, alcohol and modified fatty acid, ferrochrome lignosulfonate, calcium carbonata, fibrous cellulose

Date permit issued 07/23/2015 Date drilling commenced 07/24/2015 Date drilling ceased 09/15/2017

Date completion activities began \_\_\_\_\_ Date completion activities ceased \_\_\_\_\_

Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 906 Open mine(s) (Y/N) depths N

Salt water depth(s) ft 1865 Void(s) encountered (Y/N) depths N

Coal depth(s) ft 19, 420, 686, 875, 1315 Cavern(s) encountered (Y/N) depths N

Is coal being mined in area (Y/N) N

Reviewed by:  
\_\_\_\_\_

API 47-095 - 02257 Farm name WELLS, VIVIAN J. et al Well number 514460

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	24"	20"	60'	NEW	A-500 94LB/FT	NONE	Y
Surface	17.5"	13.375"	997'	NEW	J-55 54.5LB/FT	413'	Y
Coal							
Intermediate 1	12.375"	9.625"	2779'	NEW	A-500 40LB/FT	1889'	N
Intermediate 2							
Intermediate 3							
Production	8.5"	5.5"	20984'	NEW	P-110 20LB/FT	NONE	N
Tubing							
Packer type and depth set							

Comment Details Intermediate Cement - Hydraulics on cement company's equipment went down. Ran CBL. TOC determined at 740'. Per State, grout cement to surface with 223 sacks.

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	CLASS A	90	15.6	1.18	69.62	0	8
Surface	CLASS A	873	15.6	1.2	1047.6	0	8
Coal							
Intermediate 1	CLASS A	900/115/223	15.2/15.6/15.6	1.25/1.18/1.18	1125/135/263	740	8/6
Intermediate 2							
Intermediate 3							
Production	CLASS H / CLASS H	357/1746	15.2/ 15.6	1.25 / 2.06	446/3597	5850'	8
Tubing							

Drillers TD (ft) 21,001' MD Loggers TD (ft) N/A  
 Deepest formation penetrated MARCELLUS Plug back to (ft) 5135'  
 Plug back procedure AIR DROP CEMENT PLUG WITH 537 SACKS

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Kick off depth (ft) 5017' MD

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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

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING \_\_\_\_\_  
 CONDUCTOR- NONE  
 SURFACE- JOINTS: 1,11, 21  
 INTERMEDIATE- 7 CENTRALIZERS RAN AT LEAST EVERY 500 FEET  
 PRODUCTION- Every Joint from TD to 4985' MD

WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS \_\_\_\_\_

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS \_\_\_\_\_

WERE TRACERS USED  Yes  No TYPE OF TRACER(S) USED \_\_\_\_\_

API 47- 950 - 2257 Farm name WELLS, VIVIAN J. et al Well number 514460

**PERFORATION RECORD**

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

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)

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Please insert additional pages as applicable.



API 47- 950 - 2257 Farm name WELLS, VIVIAN J. et al Well number 514460

Drilling Contractor Savanna Drilling (Rig 655)  
Address 125 Industry Road City Waynesburg State PA Zip 15370

Logging Company GYRODATA  
Address 601 MAYER ST City BRIDGEVILLE State PA Zip 15017

Logging Company Hoss Co. Services LLC  
Address 614 Trotters Lane City Charleston State WV Zip 25312

Cementing Company \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

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## Well # 514460 Final Formations API # 47-950-2257

Formation Name	Drill Top MD	Drill Top TVD	Drill Bottom MD	Drill Bottom TVD	Gas At
SAND/SHALE	1	1	26	26	
COAL	22	22	26	26	
SAND/SHALE	26	26	423	423	
COAL	423	423	427	427	
SAND/SHALE	427	427	689	689	
COAL	689	689	693	693	
SAND/SHALE	693	693	878	878	
COAL	878	878	882	882	
SAND/SHALE	882	882	1318	1318	
COAL	1318	1318	1322	1322	
SAND/SHALE	1322	1322	1537	1537	
MAXTON	1537	1537	1590	1590	
SAND/SHALE	1590	1590	1832	1832	
BIG LIME	1832	1832	2114	2113.9	
SAND/SHALE	2114	2113.9	2254	2253.9	
WEIR	2254	2253.9	2320	2319.9	
SAND/SHALE	2320	2319.9	2371	2370.9	
GANTZ	2371	2370.9	2418	2417.9	
SAND/SHALE	2418	2417.9	2464	2463.9	
50F	2464	2463.9	2496	2495.9	
SAND/SHALE	2496	2495.9	2598	2597.9	
30F	2598	2597.9	2639	2638.9	
SAND/SHALE	2639	2638.9	2689	2688.9	
GORDON	2689	2688.9	2703	2702.9	
SAND/SHALE	2703	2702.9	2894	2893.9	
5TH SAND	2894	2893.9	2923	2922.9	
SAND/SHALE	2923	2922.9	3010	3009.9	
BAYARD	3010	3009.9	3070	3069.9	
SAND/SHALE	3070	3069.9	3342	3341.8	
WARREN	3342	3341.8	3416	3415.8	
SAND/SHALE	3416	3415.8	3436	3435.8	
SPEECHLEY	3436	3435.8	3554	3553.8	
SAND/SHALE	3554	3553.8	3858	3857.8	
BALLTOWN A	3858	3857.8	3928	3927.8	
SAND/SHALE	3928	3927.8	4551	4550.8	
RILEY	4551	4550.8	4558	4557.8	
SAND/SHALE	4558	4557.8	4968	4967.7	
BENSON	4968	4967.7	5005	5004.7	
SAND/SHALE	5005	5004.7	5225	5222.6	
ALEXANDER	5225	5222.6	6318	6274.5	5376, 5392, 5498, 5514, 6233, 6249
SONYEA	6318	6274.5	6446	6386.5	
MIDDLESEX	6446	6386.5	6508	6433.2	
GENESSEE	6508	6433.2	6641	6511	
GENESE0	6641	6511	6707	6537.8	
TULLY	6707	6537.8	6774	6561.6	
HAMILTON	6774	6561.6	6829	6578.5	
MARCELLUS	6829	6578.5	21001	6632.5	6563

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## 514460 SHR 60 – Plug Back – Revised Plan 1

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Well No: 514460 SHR 60  
State: West Virginia  
County: Tyler

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### Well Status:

Well Currently shut In. No frac stages completed. Toe popper opening has not been attempted. Made two attempts to back off 5-1/2 casing at 6200 ft and screw back into with DV tool above back off point for re-cementing of the casing. Unable to get connection at screw-in point to pressure test.

Float collar at – 20,959 ftKB  
Team toe sub at – 20,925 ftKB  
KB – 16 ft

Max TVD – 6,633 ftKB  
KOP – 5,087 ftKB

Top of Marcellus Formation – 6578 Ft TVD --- 6830 Ft MD

Halliburton DV Tool set at 6153 ftKB  
Screw in and suspected leak point at 6244 ftKB

Two Halliburton Obsidian Bridge Plugs Set at 6450 ftKB and 6500 ftKB

Fluid in hole:

- 8.3# water below Bridge Plug at 6500 ftKB
- 13.3# Synthetic Oil Base Mud above the Bridge Plug at 6450 ftKB

### Objective:

Plug well back

- Planned sidetrack depth is 6750 ft

### Steps:

- Move in Workover Rig and WL unit
- NU BOP and test
- Drill out DV tool at 6153 ftKB and the two composite bridge plugs at 6,500' and 6,450'.
- Set one new bridge plug at 6820 ftKB (Revised Plan)
- Cut 5-1/2 casing at 6700 ft
- Pull 5-1/2 casing from well
- Make clean out run with 8-1/2 Bit to top of the cut off 5-1/2 casing
- RIH with open ended with 2-7/8 tubing to 10 ft above the cut off 5-1/2 casing
- Set three 400 ft cement plugs
  - Plug one from 6700 – 6300 ftKB
  - Plug two from 6300 – 5900 ftKB
  - Plug three from 5900 – 5500 ftKB
- Trip 2-7/8 tubing from well
- RDMO work over rig

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**Wellbore Information –**

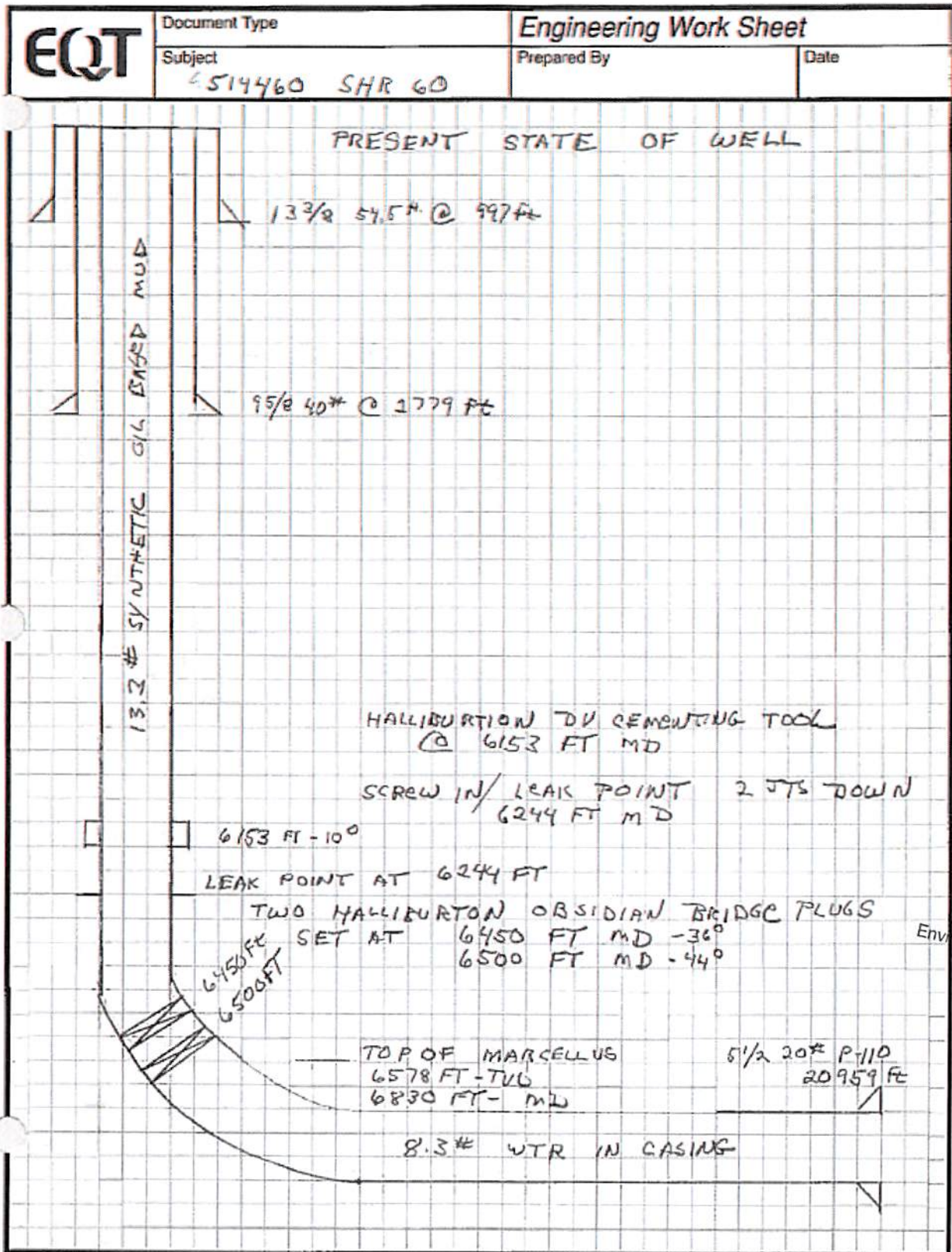
<b>NOTABLE PRESSURE/DEPTH</b>	<b>MASP (psig):</b>	9,500	<b>CASING BURST (psi)</b>	12,640	<b>MAX TVD (ft KB)</b>	6,633	<b>PBTD Depth (ft)</b>	20,959
	<b>KOP (ft)</b>	5,087	<b>Treated Interval (BP - TP + CS) (ft.)</b>	9,960	<b>KB (ft.)</b>	16	<b>TOC (ft)</b>	10,500

<b>CURRENT WELL STATUS</b>			
13 3/8", 54.5 lb/ft. J-55 Casing	Set at 997'	Feet from Kelly Bushing	Drilling pumped surface cement job on 8/02/15.
9 5/8", 40 lb/ft. A-500 Casing	Set at 2,779'	Feet from Kelly Bushing	Drilling pumped intermediate cement job on 8/04/15.
5 1/2", 20 lb/ft. P-110 Casing	Set at 20,984'	Feet from Kelly Bushing	Pump cement as follows: Test lines to 6,000 psi. Pump 50 bbls of Ultrabond @ 13.5 ppg. Pump 102bbls Multibond @ 13.5ppg. Pump lead cement, 79 bbls (357 sacks) of Class H @ 15.2 ppg 1.25 yield 5.71 gal/sk. followed by tail cement, 726 bbls (1746 sacks) of Class H @ 15.6 ppg 2.06 yield 8.39 gal/sk Shut down. Wash lines to rig floor. Spot dyed sugar water to half round & drop double plug. Displace with 474 bbls fresh water Final pressure 1890psi bump plug held 2512psi for 30 minutes. Released pressure. 4.5bbl flowback Plug down @ 0900 hrs. No cement or spacer returned to surface

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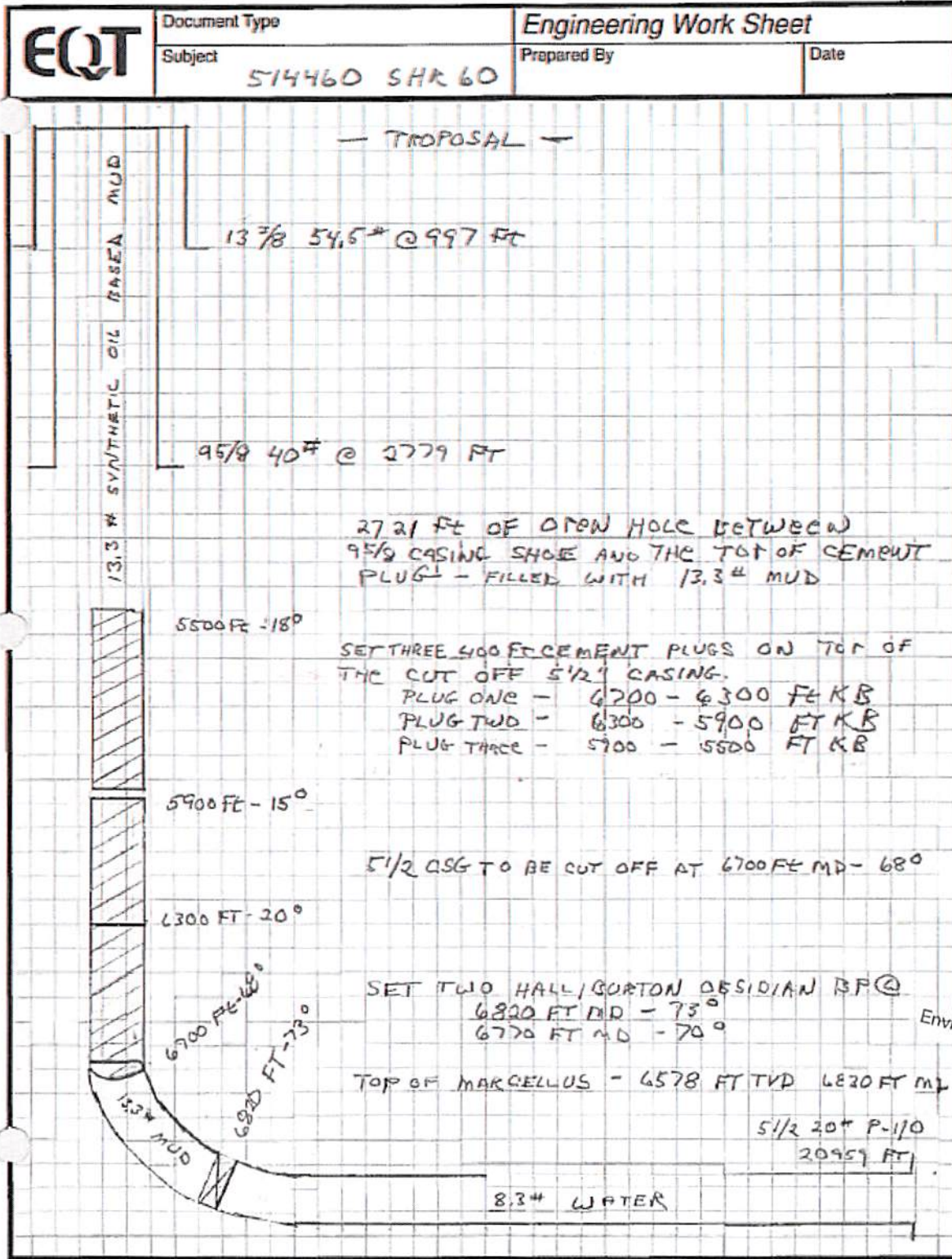


Present Condition of Well



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Proposed Plan



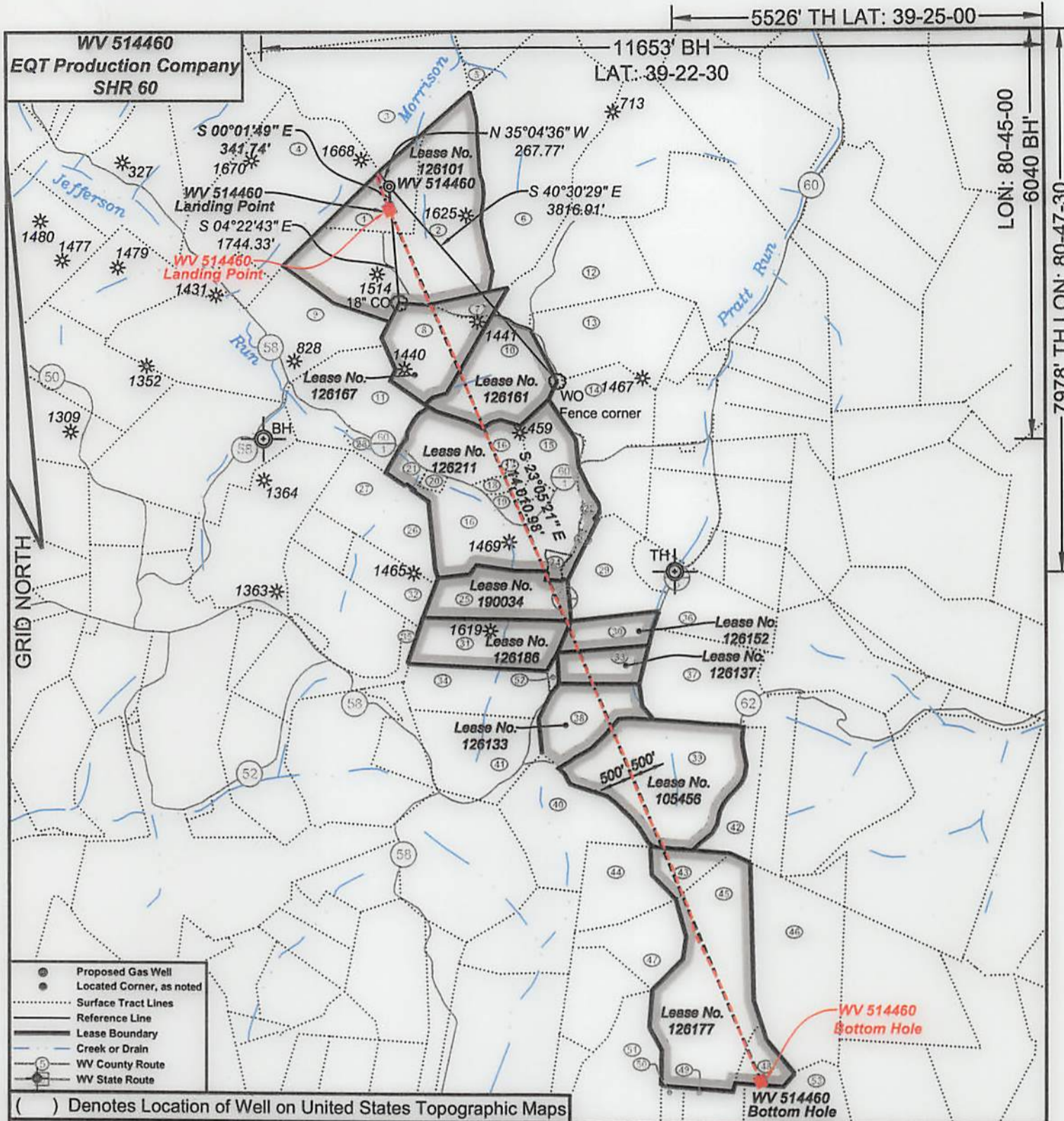
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MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)
4,403	0.94	208.58	4,403	6.4	(25.3)	(15.6)	0.3
4,503	0.99	207.76	4,503	4.9	(26.1)	(14.5)	0.1
4,603	0.98	206.32	4,603	3.4	(26.8)	(13.4)	0.0
4,703	0.99	206.79	4,703	1.9	(27.6)	(12.3)	0.0
4,803	0.93	201.99	4,803	0.3	(28.3)	(11.2)	0.1
4,903	0.94	202.64	4,903	(1.2)	(28.9)	(10.0)	0.0
4,993	0.89	197.45	4,993	(2.5)	(29.4)	(9.0)	0.1
5,024	1.02	238.49	5,024	(2.9)	(29.7)	(8.7)	2.2
5,055	2.78	288.52	5,055	(2.8)	(30.7)	(9.2)	7.3
5,087	5.16	303.71	5,087	(1.8)	(32.6)	(10.9)	8.1
5,118	7.15	305.35	5,117	0.1	(35.3)	(13.7)	6.4
5,150	8.95	306.71	5,149	2.8	(39.0)	(17.5)	5.7
5,181	11.07	310.39	5,180	6.2	(43.2)	(22.2)	7.1
5,213	13.20	316.89	5,211	10.8	(48.0)	(28.4)	7.9
5,245	15.55	323.55	5,242	16.9	(53.0)	(36.0)	9.0
5,276	17.84	328.11	5,272	24.3	(58.0)	(44.7)	8.5
5,307	18.03	328.82	5,301	32.4	(63.0)	(54.1)	0.9
5,339	17.95	327.18	5,332	40.8	(68.3)	(63.9)	1.6
5,370	18.31	325.15	5,361	48.8	(73.6)	(73.3)	2.4
5,401	18.21	323.33	5,390	56.7	(79.3)	(82.8)	1.9
5,433	18.34	322.81	5,421	64.7	(85.3)	(92.5)	0.7
5,465	18.37	322.67	5,451	72.8	(91.4)	(102.2)	0.2
5,496	18.34	323.84	5,481	80.6	(97.3)	(111.7)	1.2
5,528	18.36	325.54	5,511	88.8	(103.1)	(121.5)	1.7
5,559	18.38	328.10	5,540	97.0	(108.4)	(131.1)	2.6
5,591	18.38	328.47	5,571	105.6	(113.7)	(141.1)	0.4
5,623	18.26	328.04	5,601	114.1	(119.0)	(151.0)	0.6
5,654	18.30	327.14	5,631	122.3	(124.2)	(160.6)	0.9
5,686	18.25	326.16	5,661	130.7	(129.8)	(170.4)	1.0
5,718	18.38	324.97	5,691	139.0	(135.4)	(180.3)	1.2
5,749	18.19	323.43	5,721	146.9	(141.1)	(189.8)	1.7
5,781	17.92	322.00	5,751	154.8	(147.1)	(199.3)	1.6
5,810	17.73	320.82	5,779	161.7	(152.7)	(207.9)	1.4
5,843	18.45	320.15	5,810	169.6	(159.2)	(217.7)	2.3
5,875	18.11	319.23	5,841	177.3	(165.7)	(227.2)	1.4
5,907	14.99	315.74	5,871	184.0	(171.8)	(235.8)	10.2
5,938	11.41	308.27	5,901	188.8	(177.0)	(242.2)	12.8
5,970	8.64	296.49	5,933	191.8	(181.7)	(246.8)	10.7
6,001	6.66	280.40	5,964	193.2	(185.5)	(249.5)	9.4
6,033	5.21	260.19	5,996	193.3	(188.8)	(250.8)	7.9
6,064	5.09	230.64	6,026	192.1	(191.2)	(250.8)	8.5
6,096	6.76	214.38	6,058	189.7	(193.4)	(249.3)	7.4
6,127	9.02	205.82	6,089	186.0	(195.5)	(246.7)	8.2
6,159	10.39	200.18	6,120	181.0	(197.6)	(242.9)	5.2
6,190	10.92	188.07	6,151	175.5	(199.0)	(238.3)	7.4

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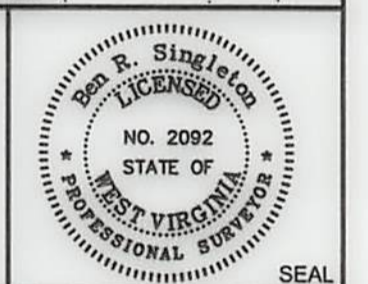
MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)
6,222	12.03	175.53	6,182	169.2	(199.1)	(232.6)	8.5
6,251	14.24	169.09	6,211	162.7	(198.2)	(226.2)	9.1
6,283	16.74	166.86	6,241	154.3	(196.4)	(217.8)	8.0
6,314	20.30	165.41	6,271	144.7	(194.0)	(208.1)	11.6
6,346	24.15	163.88	6,300	133.1	(190.8)	(196.0)	12.2
6,378	28.11	162.72	6,329	119.6	(186.8)	(182.0)	12.5
6,409	31.89	161.03	6,356	104.9	(181.9)	(166.6)	12.5
6,441	36.05	159.86	6,382	88.0	(175.9)	(148.7)	13.2
6,472	40.40	159.15	6,407	70.1	(169.2)	(129.6)	14.1
6,503	44.78	158.33	6,430	50.5	(161.6)	(108.6)	14.2
6,535	49.05	157.35	6,452	28.9	(152.8)	(85.2)	13.5
6,567	53.04	157.08	6,472	5.9	(143.2)	(60.3)	12.5
6,599	57.13	156.97	6,490	(18.2)	(132.9)	(34.1)	12.8
6,630	61.24	156.94	6,506	(42.7)	(122.5)	(7.5)	13.3
6,662	64.99	157.17	6,520	(69.0)	(111.4)	21.0	11.7
6,694	68.25	157.21	6,533	(96.1)	(100.0)	50.4	10.2
6,725	69.11	157.44	6,544	(122.7)	(88.9)	79.3	2.9
6,757	69.08	157.65	6,556	(150.3)	(77.4)	109.2	0.6
6,789	71.03	157.89	6,567	(178.2)	(66.1)	139.3	6.1
6,821	73.72	158.21	6,576	(206.5)	(54.7)	169.8	8.5
6,852	77.18	158.48	6,584	(234.3)	(43.6)	199.8	11.2
6,884	81.29	159.07	6,590	(263.6)	(32.2)	231.2	13.0
6,915	85.16	159.09	6,594	(292.4)	(21.2)	261.9	12.5
6,947	89.32	159.10	6,595	(322.2)	(9.8)	293.9	13.0
6,978	90.15	158.54	6,595	(351.2)	1.4	324.9	3.2
7,041	89.82	157.12	6,595	(409.5)	25.2	387.9	2.3
7,104	89.75	155.99	6,596	(467.3)	50.2	450.9	1.8
7,167	89.63	155.38	6,596	(524.7)	76.2	513.8	1.0
7,230	89.66	154.90	6,596	(581.9)	102.7	576.8	0.8
7,294	89.63	154.89	6,597	(639.8)	129.8	640.7	0.1
7,348	89.66	155.82	6,597	(688.9)	152.3	694.7	1.7
7,411	89.66	157.23	6,597	(746.7)	177.4	757.7	2.2
7,474	89.66	157.77	6,598	(804.9)	201.5	820.7	0.9
7,538	89.66	157.65	6,598	(864.1)	225.8	884.7	0.2
7,601	89.60	158.00	6,599	(922.4)	249.6	947.7	0.6
7,665	89.85	158.29	6,599	(981.8)	273.4	1,011.7	0.6
7,728	90.22	158.45	6,599	(1,040.4)	296.6	1,074.6	0.6
7,790	90.03	159.36	6,599	(1,098.2)	318.9	1,136.6	1.5
7,853	90.28	161.10	6,599	(1,157.5)	340.3	1,199.5	2.8
7,916	90.18	160.74	6,598	(1,217.1)	360.8	1,262.4	0.6
7,979	90.25	159.29	6,598	(1,276.3)	382.4	1,325.4	2.3
8,042	90.46	158.19	6,598	(1,335.0)	405.2	1,388.4	1.8
8,106	90.31	156.42	6,597	(1,394.0)	429.9	1,452.3	2.8
8,168	90.18	155.33	6,597	(1,450.6)	455.3	1,514.3	1.8
8,231	90.09	155.36	6,597	(1,507.9)	481.5	1,577.3	0.2

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 Environmental Protection



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.

*Ben R. Singleton*  
 P.S. 2092



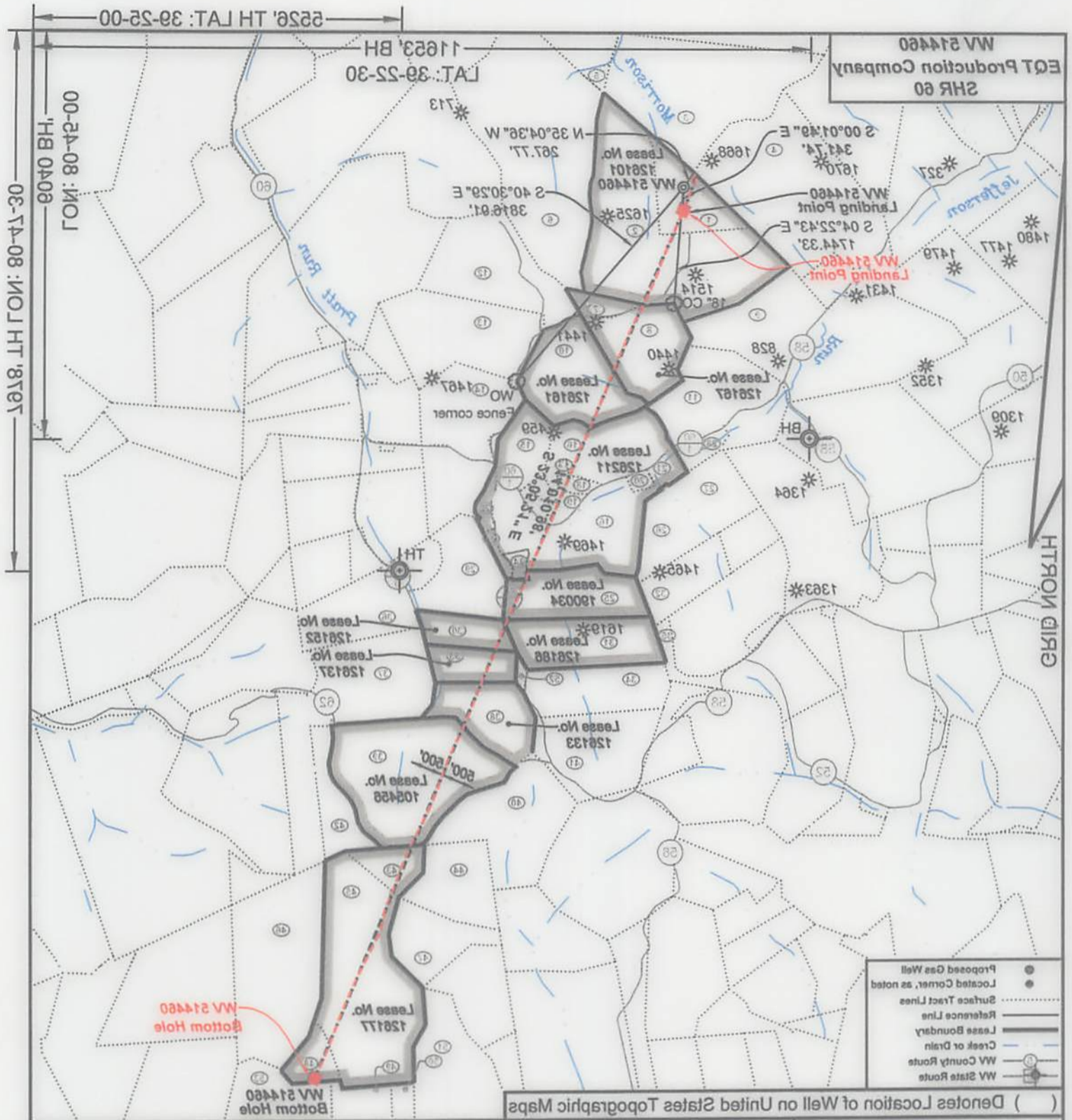
FILE NO: 208-13  
 DRAWING NO: 208-13 SHR 60 H1  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1:2500  
 PROVEN SOURCE OF ELEVATION: NGS CORS Station

STATE OF WEST VIRGINIA  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
 OIL AND GAS DIVISION

DATE: September 29 20 17  
 OPERATOR'S WELL NO.: WV 514460  
 API WELL NO  
 47 - 95 - 02257  
 STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
 LOCATION: ELEVATION: As-Built 1,011' WATERSHED Morrison Run of McElroy Creek QUADRANGLE: Shirley  
 DISTRICT: McElroy COUNTY: Tyler  
 SURFACE OWNER: Vivian J. Wells, et al. ACREAGE: 35.38  
 ROYALTY OWNER: George Bircklein, et al. LEASE NO: 126101 ACREAGE: 240  
 PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY)  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus ESTIMATED DEPTH: 6596

WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Rex C. Ray  
 ADDRESS: 115 Professional Place PO Box 280 ADDRESS: 115 Professional Place PO Box 280  
 Bridgeport, WV 26330 Bridgeport, WV 26330



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*[Signature]*

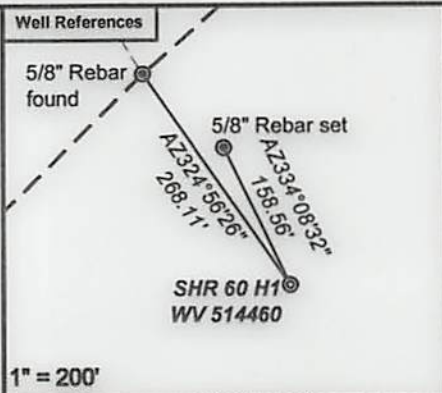
P. S. 2092



WELL OPERATOR: EQT Production Company ADDRESS: 115 Professional Place PO Box 280 Bridgeport, WV 26330		FILE NO.: 208-13 DRAWING NO.: 208-13 SHR 60 H1 SCALE: 1" = 2000' MINIMUM DEGREE OF ACCURACY: 1:2500 PROVEN SOURCE OF ELEVATION: NGS CORS Station	
DESIGNATED AGENT: Rex C. Ray ADDRESS: 115 Professional Place PO Box 280 Bridgeport, WV 26330		SURFACE OWNER: Vivian J. Wells, et al. ROYALTY OWNER: George Birklein, et al. PROPOSED WORK: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> CONVERT <input type="checkbox"/> DRILL DEEPER <input type="checkbox"/> FRACTURE OR STIMULATE <input type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input type="checkbox"/> OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____ <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> CLEAN OUT AND REPLUG <input type="checkbox"/> TARGET FORMATION: Marcellus ESTIMATED DEPTH: 6596'	
COUNTY: Tyler DISTRICT: McElroy LOCATION: ELEVATION: As-Built 1,011' WATERSHED Morrison Run of McElroy Creek QUADRANGLE: Shirley (IF GAS) PRODUCTION: <input type="checkbox"/> STORAGE <input type="checkbox"/> DEEP <input checked="" type="checkbox"/> SHALLOW WELL TYPE: <input type="checkbox"/> OIL <input checked="" type="checkbox"/> GAS <input type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> WASTE DISPOSAL		STATE: 47 COUNTY: 95 PERMIT: 02257 API WELL NO: OPERATOR'S WELL NO.: WV 514460 DATE: September 29 20 17	

**WV 514460**  
**EQT Production Company**  
**SHR 60**

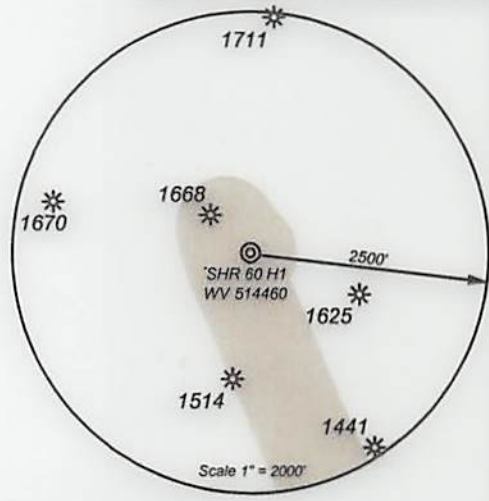
Tract ID	Tax Map No.	Parcel No.	County	District	Surface Tract Owner	Acres
1	18	12	Tyler	McElroy	Hanna A. Underwood Estate	35.00
2	18	13	Tyler	McElroy	Blaine Underwood Estate, et al.	104.73
3	18	9	Tyler	McElroy	Lawrence Rayburn, et al.	100.00
4	18	7.1	Tyler	McElroy	Patricia A. Keys, et al.	102.31
5	18	10	Tyler	McElroy	Susan Spencer	2.92
6	18	11	Tyler	McElroy	Susan Spencer	132.00
7	18	15	Tyler	McElroy	Susan Spencer	8.00
8	18	16	Tyler	McElroy	Donald E. Bible Sr.	35.50
9	18	23	Tyler	McElroy	Clyde Seckman Estate	111.75
10	18	17	Tyler	McElroy	Allen Dale Fornash, et al.	43.00
11	18	22	Tyler	McElroy	Donald E. Bible Sr.	39.26
12	18	14	Tyler	McElroy	Terry J. Cumberledge, et al.	54.81
13	18	18	Tyler	McElroy	Terry J. Cumberledge, et al.	49.87
14	18	19	Tyler	McElroy	John Paul Davis	35.00
15	18	20.2	Tyler	McElroy	Richard E. Hansen	19.96
16	18	20	Tyler	McElroy	Clarence G. Dillon, et al.	113.42
17	18	20.6	Tyler	McElroy	Clarence G. Dillon Jr.	0.71
18	18	20.5	Tyler	McElroy	Clarence G. Dillon Jr.	2.94
19	18	20	Tyler	McElroy	Clarence G. Dillon, et al.	113.42
20	18	20.4	Tyler	McElroy	John A. Dillon	2.04
21	18	20.3	Tyler	McElroy	Peter H. Mueller	4.69
22	18	20.1	Tyler	McElroy	William R. Doll Jr, et al.	3.06
23	21	44	Tyler	McElroy	William R. Doll Jr, et al.	2.43
24	21	45	Tyler	McElroy	Clarence G. Dillon, et al.	2.43
25	21	15	Tyler	McElroy	Paul Weekley	36.00
26	21	14	Tyler	McElroy	Donnie N. & Kim M. Wilmoth	73.39
27	21	14	Tyler	McElroy	Donnie N. & Kim M. Wilmoth	73.39
28	18	21	Tyler	McElroy	Barbara Willier	5.90
29	22	20	Tyler	McElroy	James B. Scott	30.00
30	21	18	Tyler	McElroy	Richard E. & Barbara A. Mullins	20.00
31	21	16	Tyler	McElroy	Paul Weekley	36.00
32	21	14	Tyler	McElroy	Donnie N. & Kim M. Wilmoth	73.39
33	21	19	Tyler	McElroy	Richard E. & Barbara A. Mullins	20.00
34	21	17	Tyler	McElroy	Paul Weekley	32.95
35	21	27	Tyler	McElroy	Donnie N. & Kim M. Wilmoth	7.50
36	21	21	Tyler	McElroy	James B. Scott	30.00
37	22	19	Tyler	McElroy	Berdina Rose, et al.	55.00
38	21	21	Tyler	McElroy	James B. Scott	30.00
39	22	18	Tyler	McElroy	Bruce W. Boland	86.75
40	21	33	Tyler	McElroy	Bruce W. Boland	52.46
41	21	23	Tyler	McElroy	Peggy A. White	45.88
42	22	18.1	Tyler	McElroy	Bruce W. Boland	18.91
43	22	17	Tyler	McElroy	David R. & Elizabeth A. Beveridge	12.00
44	22	16	Tyler	McElroy	Leah Weekley	29.00
45	2	18	Doddridge	West Union	David R. & Elizabeth A. Beveridge	125.00
46	2	1	Doddridge	West Union	James M. Petrovich, et al.	70.00
47	22	15	Tyler	McElroy	Isalah Weekley	25.00
48	2	5.4	Doddridge	West Union	David R. & Elizabeth A. Beveridge	11.90
49	2	5.1	Doddridge	West Union	David R. & Elizabeth A. Beveridge	20.88
50	2	4.1	Doddridge	West Union	Robert B. & Marry E. Simpson	20.00
51	2	4	Doddridge	West Union	Robert B. & Marry E. Simpson	38.50
52	21	20	Tyler	McElroy	Richard & Barbara Mullins	1.00
53	2	9	Doddridge	West Union	Charles C. Hittel III	115.75



- SHR 60**
- H1, 514460
  - H2, 514461
  - H3, 514462
  - H4, 514463
  - H5, 514464
  - H6, 514465
  - H7, 514466
  - H8, 515434
  - H9, 515435
  - H10, 515436
  - H11, 515437
  - H12, 515438

**As-Drilled Well Info:**  
**WV 514460 coordinates are**  
 NAD 27 N: 328,582.21 E: 1,629,438.62  
 NAD 83 UTM N: 4,360,607.42 E: 516,268.70  
**WV 514460 Landing Point coordinates are**  
 NAD 27 N: 328,231.08 E: 1,629,440.01  
 NAD 83 UTM N: 4,360,500.46 E: 516,270.91  
**WV 514460 Bottom Hole coordinates are**  
 NAD 27 N: 315,344.67 E: 1,634,930.53  
 NAD 83 UTM N: 4,356,602.53 E: 518,009.11

West Virginia Coordinate system of 1927 (North Zone) based upon Differential GPS Measurements.  
 Plat orientation, corner and well ties are based upon the grid north meridian.  
 Well location references are based upon the grid north meridian.  
 UTM coordinates are NAD83, Zone 17, Meters.



Lease No.	Acres	Owner
126167	43	Berdina Rose, et al.
126161	43	John A. Dillon, et al.
126211	145	John A. Dillon, et al.
190034	36	Paul Weekley
126186	36	Bruce L. Stoneking, et al.
126137	20	S.A. Smith & C. Burke Morris Trust, et al.
126152	20	Linda Sue Lamb, et al.
126133	40	Dorothy H. Bode
105456	96	Kimberly Wilcox
126177	138	Regina M. Buck, et al.

- Proposed Gas Well
- Located Corner, as noted
- ..... Surface Tract Lines
- Reference Line
- Lease Boundary
- Creek or Drain
- WV County Route
- WV State Route

**Sub Surface Easements**

Parcel No.	Acres	Owner
05-18-9	100	Billy Joe Rayburn, et ux.
05-18-9	100	Lawrence Rayburn, et ux.
05-18-7.1	102.31	Brenda J. Ashley, et vir.
05-18-7.1	102.31	Patricia A. Keys



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 P.S. 2092



FILE NO: 208-13  
 DRAWING NO: 208-13 SHR 60 H1  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1:2500  
 PROVEN SOURCE OF ELEVATION: NGS CORS Station

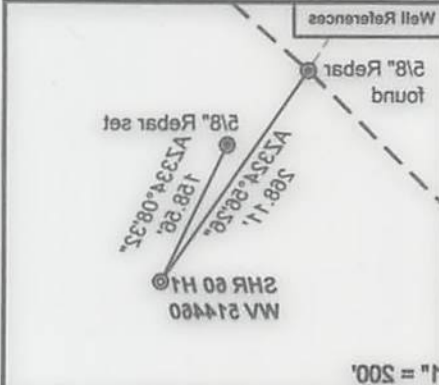


DATE: September 29 20 17  
 OPERATOR'S WELL NO.: WV 514460  
 API WELL NO  
 47 - 95 - 02257  
 STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
 LOCATION: ELEVATION: As-Built 1,011' WATERSHED Morrison Run of McElroy Creek QUADRANGLE: Shirley  
 DISTRICT: McElroy COUNTY: Tyler  
 SURFACE OWNER: Vivian J. Wells, et al. ACREAGE: 35.38  
 ROYALTY OWNER: George Birklein, et al. LEASE NO: 126101 ACREAGE: 240  
 PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus ESTIMATED DEPTH: 6596

WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Rex C. Ray  
 ADDRESS: 115 Professional Place PO Box 280 ADDRESS: 115 Professional Place PO Box 280  
Bridgeport, WV 26330 Bridgeport, WV 26330

Tract ID	Tract Map No.	Parcel No.	County	District	Surface Tract Owner	Acres
1	18	12	Tyler	McElroy	Hanna A. Underwood Estate	32.00
2	18	13	Tyler	McElroy	Blaine Underwood Estate, et al.	104.73
3	18	9	Tyler	McElroy	Lawrence Rayburn, et al.	100.00
4	18	17	Tyler	McElroy	Patricia A. Keys, et al.	102.31
5	18	20	Tyler	McElroy	Suzan Spencer	2.32
6	18	11	Tyler	McElroy	Suzan Spencer	121.00
7	18	12	Tyler	McElroy	Suzan Spencer	8.00
8	18	18	Tyler	McElroy	Donald E. Bible Sr.	32.50
9	18	23	Tyler	McElroy	Clyde Seckman Estate	111.73
10	18	17	Tyler	McElroy	Allen Dale Forness, et al.	43.00
11	18	22	Tyler	McElroy	Donald E. Bible Sr.	32.25
12	18	14	Tyler	McElroy	Terry L. Cumberhedge, et al.	24.81
13	18	18	Tyler	McElroy	Terry L. Cumberhedge, et al.	49.83
14	18	19	Tyler	McElroy	John Paul Davis	32.00
15	18	20	Tyler	McElroy	Richard E. Hansen	22.98
16	18	20	Tyler	McElroy	Clarence G. Dillon, et al.	122.42
17	18	20	Tyler	McElroy	Clarence G. Dillon Sr.	0.17
18	18	20	Tyler	McElroy	Clarence G. Dillon Sr.	1.94
19	18	20	Tyler	McElroy	Clarence G. Dillon, et al.	122.42
20	18	20	Tyler	McElroy	John A. Dillon	1.04
21	18	20	Tyler	McElroy	Patricia H. Hatcher	4.89
22	18	20	Tyler	McElroy	William R. Doll Jr., et al.	3.88
23	18	44	Tyler	McElroy	William R. Doll Jr., et al.	2.43
24	18	42	Tyler	McElroy	Clarence G. Dillon, et al.	2.43
25	18	22	Tyler	McElroy	Paul Wesley	32.00
26	18	14	Tyler	McElroy	Donnie N. & Kim M. Wilmoth	23.39
27	18	14	Tyler	McElroy	Donnie N. & Kim M. Wilmoth	23.39
28	18	21	Tyler	McElroy	Barbara Wilmer	2.90
29	18	20	Tyler	McElroy	James B. Scott	30.00
30	18	18	Tyler	McElroy	Richard E. & Barbara A. Mullins	20.00
31	18	18	Tyler	McElroy	Paul Wesley	32.00
32	18	14	Tyler	McElroy	Donnie N. & Kim M. Wilmoth	23.39
33	18	19	Tyler	McElroy	Richard E. & Barbara A. Mullins	20.00
34	18	17	Tyler	McElroy	Paul Wesley	32.92
35	18	22	Tyler	McElroy	Donnie N. & Kim M. Wilmoth	7.50
36	18	21	Tyler	McElroy	James B. Scott	30.00
37	18	22	Tyler	McElroy	Berlin Root, et al.	22.00
38	18	21	Tyler	McElroy	James B. Scott	30.00
39	18	18	Tyler	McElroy	Bruce W. Boland	82.75
40	18	33	Tyler	McElroy	Bruce W. Boland	23.48
41	18	23	Tyler	McElroy	Fred A. White	42.88
42	18	28	Tyler	McElroy	Bruce W. Boland	18.91
43	18	17	Tyler	McElroy	David R. & Elizabeth A. Beveridge	12.00
44	18	28	Tyler	McElroy	Paul Wesley	29.00
45	18	28	Doddridge	West Union	David R. & Elizabeth A. Beveridge	122.00
46	18	1	Doddridge	West Union	James M. Petrovich, et al.	70.00
47	18	22	Tyler	McElroy	Paul Wesley	25.00
48	18	2	Doddridge	West Union	David R. & Elizabeth A. Beveridge	11.90
49	18	2	Doddridge	West Union	David R. & Elizabeth A. Beveridge	20.88
50	18	4	Doddridge	West Union	Robert B. & Mary E. Simpson	20.00
51	18	4	Doddridge	West Union	Robert B. & Mary E. Simpson	38.50
52	18	20	Tyler	McElroy	Richard A. Barkin, et al.	1.00
53	18	2	Doddridge	West Union	Charles D. Hebl III	118.78

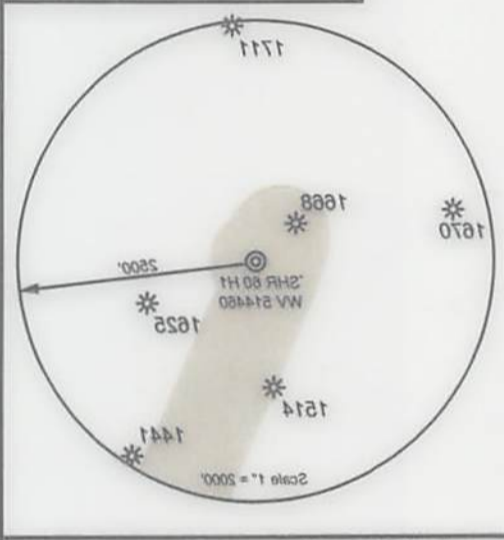


Well location references are based upon the grid north meridian.  
UTM coordinates are NAD83, Zone 17, Meters.  
Well location references are based upon the grid north meridian.  
UTM coordinates are NAD83, Zone 17, Meters.

West Virginia Coordinate system of 1823 (North Zone) based upon Differential GPS Measurements.  
Flat orientation, corner and well are based upon the grid north meridian.

AV-Drilled Well Info:  
WV 514460 coordinates are  
NAD 83 UTM N: 4380,807.42 E: 518,288.70  
NAD 83 UTM N: 4380,807.42 E: 518,288.70  
WV 514460 Bottom Hole coordinates are  
NAD 83 UTM N: 4380,807.42 E: 518,288.70  
WV 514460 Bottom Hole coordinates are  
NAD 83 UTM N: 4380,807.42 E: 518,288.70

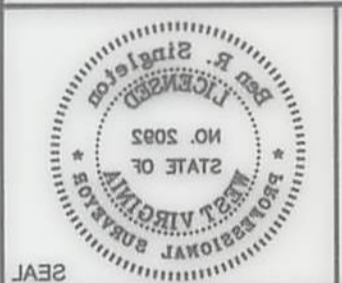
- SHR 60
- H12, 512438
  - H11, 512437
  - H10, 512436
  - H9, 512435
  - H8, 512434
  - H7, 514460
  - H6, 514460
  - H5, 514460
  - H4, 514460
  - H3, 514460
  - H2, 514460
  - H1, 514460



Owner	Parcel No.	Acres
Regina M. Buck, et al.	128177	138
Kimberly Wilcox	102456	98
Dorothy H. Bode	128173	40
Linda Sue Lamb, et al.	128152	20
S. A. Smith & C. Burke Morris Trust, et al.	128137	20
Bruce L. Stonckind, et al.	128188	38
Paul Wesley	190034	38
John A. Dillon, et al.	128211	145
John A. Dillon, et al.	128181	43
Berlin Rose, et al.	128187	43

Owner	Parcel No.	Acres
Patricia A. Keys	10231	102.71
Brenda J. Ashby, et al.	10231	102.71
Lawrence Rayburn, et al.	05-18-9	100
Billy Joe Rayburn, et al.	05-18-9	100

- Proposed Gas Well
- Located Corner, as noted
- Surface Tract Lines
- Reference Lines
- Lease Boundary
- Creek or Drain
- WV County Route
- WV State Route



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*[Signature]*  
P.S. 2082



DATE: September 29 20 17  
OPERATOR'S WELL NO.: WV 514460  
API WELL NO  
47 STATE COUNTY PERMIT 0257

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OIL AND GAS DIVISION

FILE NO.: 208-13  
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DISTRICT: McElroy COUNTY: Tyler

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ROYALTY OWNER: George Birkin, et al. LEASE NO: 128101 ACREAGE: 240

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 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus ESTIMATED DEPTH: 6500

WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Rex C. Ray  
ADDRESS: 115 Professional Place PO Box 280 ADDRESS: 115 Professional Place PO Box 280  
Bidgport, WV 26330 Bidgport, WV 26330