

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

API 47 - 085 - 10292 County Ritchie District Clay
Quad Pennsboro 7.5' Pad Name Noland Pad Field/Pool Name ----
Farm name Darrell A. Noland et al Well Number Piper Unit 2H

Operator (as registered with the OOG) Antero Resources Corporation
Address 1615 Wynkoop Street City Denver State CO Zip 80202

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey APR 25 2018
Top hole Northing 4349943m Easting 501905m
Landing Point of Curve Northing 4349943m Easting 502410m
Bottom Hole Northing 4347767m Easting 503307m

Elevation (ft) 1143' 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)

Air - Foam & 4% KCL

Mud - Polymer

Date permit issued 08/31/2016 Date drilling commenced 10/20/2016 Date drilling ceased 4/14/2017

Date completion activities began 08/14/2017 Date completion activities ceased 11/14/2017

Verbal plugging (Y/N) N/A 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 43', 124', 216' Open mine(s) (Y/N) depths No

Salt water depth(s) ft 1112' Void(s) encountered (Y/N) depths No

Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths No

Is coal being mined in area (Y/N) No

Reviewed by: _____

Reviewed

MAG 5-9-2018

WR-35
Rev. 8/23/13

API 47-085 - 10292 Farm name Darrell A. Noland et al Well number Piper Unit 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	24"	20"	65'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	365'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2532'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	15093'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6845'		4.7#, N-80		
Packer type and depth set		N/A					

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	Class A	102 sx	15.6	1.18	120	0'	8 Hrs.
Surface	Class A	430sx	15.6	1.19	512	0'	8 Hrs.
Coal							
Intermediate 1	Class A	1010sx	15.6	1.18	1192	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	838 sx (Lead) 1172 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.44 (Lead), 1.87 (Tail)	3398	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15093' MD, 6425' TVD (BHL), 12142' (Deepest Point Drilled) Loggers TD (ft) 15093' MD

Deepest formation penetrated Marcellus Plug back to (ft) _____

Plug back procedure N/A

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Kick off depth (ft) 6018'

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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 - 0

Surface - 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface

Intermediate - 1 above float joint, 1 above float collar, 1 every 4th joint to surface

Production - 1 above float joint, 1 below float collar, 1 every 3rd joint to top of cement

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 N/A

API 47- 085 - 10292 Farm name Darrell A. Noland et al Well number Piper Unit 2H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
*PLEASE SEE ATTACHED EXHIBIT 1					

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

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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)
*PLEASE SEE ATTACHED EXHIBIT 2								

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Please insert additional pages as applicable.

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API 47- 085 - 10292 Farm name Darrell A. Noland et al Well number Piper Unit 2H

PRODUCING FORMATION(S)	DEPTHS	
Marcellus	6373' (TOP) TVD	6856' (TOP) MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2800 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 6,933 mcfpd Oil 113 bpd NGL --- bpd Water 53 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	
	NAME	TVD	MD	MD	
*PLEASE SEE ATTACHED EXHIBIT 3					

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Please insert additional pages as applicable.

Drilling Contractor Patterson - UTI Drilling Company LLC
Address 207 Carlton Drive City Eighty Four State PA Zip 15330

Logging Company Allied Horizontal Wireline Services
Address 381 Colonial Manor Rd City North Huntingdon State PA Zip 15642

Cementing Company BJ Services
Address 1036 East Main Street City Bridgeport State WV Zip 26330

Stimulating Company Halliburton
Address 121 Champion Way, Suite 200 City Canonsburg State PA Zip 15317

Please insert additional pages as applicable.

Completed by Mallory Stanton Telephone 303-357-7182
Signature [Signature] Title Permitting Supervisor Date _____

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API 47- 085 - 10292 Farm name Darrell A. Noland et al Well number Piper Unit 2H

PRODUCING FORMATION(S)	DEPTHS	
<u>Marcellus</u>	<u>6373' (TOP)</u> TVD	<u>6856' (TOP)</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2800 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 6,933 mcfpd Oil 113 bpd NGL --- bpd Water 53 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME 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 ₂ S, ETC)
* PLEASE SEE ATTACHED EXHIBIT 3					

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Please insert additional pages as applicable.

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Address 121 Champion Way, Suite 200 City Canonsburg State PA Zip 15317

Please insert additional pages as applicable.

Completed by Mallory Stanton Telephone 303-357-7182
Signature _____ Title Permitting Supervisor Date 04/24/2018

API 47-085-10292 Farm Name <u>Darrell A. Noland et al</u> Well Number <u>Piper Unit 2H</u>					
EXHIBIT 1					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	8/14/2017	14834	14991	60	Marcellus
2	8/14/2017	14631	14795	60	Marcellus
3	8/15/2017	14427	14592	60	Marcellus
4	8/15/2017	14224	14389	60	Marcellus
5	8/15/2017	14020	14185	60	Marcellus
6	8/16/2017	13817	13982	60	Marcellus
7	8/16/2017	13614	13778	60	Marcellus
8	8/17/2017	13410	13575	60	Marcellus
9	8/17/2017	13207	13372	60	Marcellus
10	8/17/2017	13003	13168	60	Marcellus
11	8/18/2017	12800	12965	60	Marcellus
12	8/18/2017	12597	12761	60	Marcellus
13	8/19/2017	12393	12558	60	Marcellus
14	8/19/2017	12190	12355	60	Marcellus
15	8/20/2017	11986	12151	60	Marcellus
16	8/21/2017	11783	11948	60	Marcellus
17	8/21/2017	11580	11744	60	Marcellus
18	8/21/2017	11376	11541	60	Marcellus
19	8/21/2017	11173	11338	60	Marcellus
20	8/21/2017	10969	11134	60	Marcellus
21	8/22/2017	10766	10931	60	Marcellus
22	8/23/2017	10563	10727	60	Marcellus
23	8/24/2017	10359	10524	60	Marcellus
24	8/24/2017	10156	10321	60	Marcellus
25	8/25/2017	9952	10117	60	Marcellus
26	8/25/2017	9749	9914	60	Marcellus
27	8/26/2017	9546	9710	60	Marcellus
28	8/26/2017	9342	9507	60	Marcellus
29	8/27/2017	9139	9304	60	Marcellus
30	8/27/2017	8935	9100	60	Marcellus
31	8/28/2017	8732	8897	60	Marcellus
32	8/28/2017	8529	8693	60	Marcellus
33	8/29/2017	8325	8490	60	Marcellus
34	8/29/2017	8122	8287	60	Marcellus
35	8/30/2017	7918	8083	60	Marcellus
36	8/30/2017	7715	7880	60	Marcellus
37	8/31/2017	7512	7676	60	Marcellus
38	8/31/2017	7308	7473	60	Marcellus

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API 47-085-10292 Farm Name Darrell A Noland et al Well Number Piper Unit 2H								
EXHIBIT 2								
Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/ other (units)
1	8/14/2017	67.1	7619	6117	2719	422465	8977.31	N/A
2	8/14/2017	68.6	6781	6182	2827	421520	9028.143	N/A
3	8/15/2017	70.7	7291	6305	2843	420080	9161.524	N/A
4	8/15/2017	67.7	7572	6129	2942	424260	8821.81	N/A
5	8/15/2017	75.1	7731	6010	3250	426570	9640.524	N/A
6	8/16/2017	70	7895	6052	2914	421040	9039.071	N/A
7	8/16/2017	71.7	7616	5695	2784	422850	8436.143	N/A
8	8/17/2017	74	7810	5866	2746	423480	8306.476	N/A
9	8/17/2017	72	7836	6025	3154	419410	8163.19	N/A
10	8/17/2017	60.7	8019	5850	4837	417330	10597.1	N/A
11	8/18/2017	72.9	7736	5665	3105	419040	8035.238	N/A
12	8/18/2017	75	7976	5582	3217	410690	7882.905	N/A
13	8/19/2017	74.9	7351	5789	3296	420550	8036.952	N/A
14	8/19/2017	78.6	7593	5479	3069	424810	8176	N/A
15	8/20/2017	74.6	7527	5694	2898	413060	8293.595	N/A
16	8/21/2017	71.8	7371	6336	2913	417370	9033.071	N/A
17	8/21/2017	72.2	7004	6169	3007	422070	9561.738	N/A
18	8/21/2017	75.9	7041	6438	2961	413650	7805.714	N/A
19	8/21/2017	76.6	6850	6667	2918	419200	8018.405	N/A
20	8/21/2017	78.2	6854	6560	2890	419960	7872.048	N/A
21	8/22/2017	77.1	6860	6826	3235	417750	7994.619	N/A
22	8/23/2017	74.4	7170	6328	3044	422820	8129.167	N/A
23	8/24/2017	75.8	7429	6488	3263	419690	7986.762	N/A
24	8/24/2017	74.5	6928	5782	3091	421990	9453.548	N/A
25	8/25/2017	64.2	7593	5949	4830	357720	10105.21	N/A
26	8/25/2017	78.3	7027	5826	2804	420040	8102.333	N/A
27	8/26/2017	78.7	6935	5644	3023	418320	7902.048	N/A
28	8/26/2017	77.8	6607	5967	3271	420630	7932.548	N/A
29	8/27/2017	74.2	7220	6183	3370	420290	7855.595	N/A
30	8/27/2017	76.5	7297	6633	3420	416810	8034.667	N/A
31	8/28/2017	77.3	6862	6514	3244	421270	7776.071	N/A
32	8/28/2017	73.9	7050	6500	2844	418090	7937	N/A
33	8/29/2017	75.5	7104	6482	3176	415390	7682.048	N/A
34	8/29/2017	77.7	7405	6746	3165	411710	7898.524	N/A
35	8/30/2017	79.6	7859	6625	3097	419290	7849.81	N/A
36	8/30/2017	78.7	7314	6394	3161	411200	8113.595	N/A
37	8/31/2017	78.6	6560	6526	3111	421540	8275.762	N/A
38	8/31/2017	53	8588	6526	0	10900	2452.929	N/A
	AVG=	73.5	7,350	6,152	3,064	15,464,855	314,369	TOTAL

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API 47-085-10292 Farm Name Darrell A. Noland et al Well Number Piper Unit 2H				
EXHIBIT 3				
LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Fresh Water	43'	N/A	43'	N/A
Fresh Water	124'	N/A	124'	N/A
Fresh Water	216'	N/A	216'	N/A
Siltstone/Sandstone	0	137	0	137
Sandstone	est. 137	217	est. 137	217
Shale	est. 217	357	est. 217	357
Siltstone/ Shale	est. 357	397	est. 357	397
Trace Coal	est. 397	657	est. 397	657
Siltstone	est. 657	697	est. 657	697
Sandstone	est. 697	737	est. 697	737
Siltstone/ Shale	est. 737	757	est. 737	757
Sandstone	est. 757	777	est. 757	777
Shale/ Limestone	est. 777	817	est. 777	817
Siltstone	est. 817	877	est. 817	877
Shale	est. 877	957	est. 877	957
Shale	est. 957	997	est. 957	997
Shale/ limestone	est. 997	1,257	est. 997	1,257
Siltstone/ shale	est. 1257	1,357	est. 1257	1,357
Sandstone	est. 1357	1,577	est. 1357	1,577
Sandstone	est. 1577	1,999	est. 1577	2,005
Big Lime	1,999	2,583	2,005	2,600
Gantz	2,583	2,861	2,600	2,884
Fifty Foot Sandstone	2,861	2,956	2,884	2,983
Gordon	2,956	3,325	2,983	3,383
Fifth Sandstone	3,325	3,387	3,383	3,451
Bayard	3,387	3,932	3,451	4,041
Speechley	3,932	4,146	4,041	4,271
Baltown	4,146	4,562	4,271	4,724
Bradford	4,562	4,969	4,724	5,166
Benson	4,969	5,239	5,166	5,460
Alexander	5,239	5,522	5,460	5,765
Elk	5,522	5,796	5,765	6,059
Rhinestreet	5,796	6,133	6,059	6,441
Sycamore	6,133	6,229	6,441	6,575
Middlesex	6,229	6,331	6,575	6,757
Burkett	6,331	6,357	6,757	6,813
Tully	6,357	6,373	6,813	6,856
Marcellus	6,373	NA	6,856	NA

*Please note Antero determines formation tops based on mud logs that are only run on one well on a multi-well pad. The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	8/12/2017
Job End Date:	8/31/2017
State:	West Virginia
County:	Ritchie
API Number:	47-085-10292-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Piper 2H
Latitude:	39.29877500
Longitude:	-80.97808300
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,425
Total Base Water Volume (gal):	13,738,734
Total Base Non Water Volume:	0

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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
Fresh Water	Operator	Base Fluid					
			Water	7732-18-5	100.00000	87.89916	Density = 8.340
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.18431	

WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
MC B-8614	Halliburton	Biocide					
				Listed Below			
SP BREAKER	Halliburton	Breaker					
				Listed Below			
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
				Listed Below			
SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant					
				Listed Below			
HYDROCHLORIC ACID	Halliburton	Proppant					
				Listed Below			
MC S-2510T	Halliburton	Scale Inhibitor					
				Listed Below			
FR-76	Halliburton	Friction Reducer					
				Listed Below			

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SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant					
				Listed Below			
Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.							
			Crystalline silica, quartz	14808-60-7	100.00000	11.86368	
			Hydrochloric acid	7647-01-0	60.00000	0.07629	
			Acrylamide acrylate copolymer	Proprietary	30.00000	0.02063	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Inorganic salt	Proprietary	30.00000	0.02063	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02063	
			Guar gum	9000-30-0	100.00000	0.01745	
			Ethylene Glycol	107-21-1	60.00000	0.00853	
			Glutaraldehyde	111-30-8	30.00000	0.00266	
			Neutralized Polyacrylic Emulsion	Proprietary	10.00000	0.00142	
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1	5.00000	0.00044	
			Methanol	67-56-1	60.00000	0.00028	
			Sodium persulfate	7775-27-1	100.00000	0.00026	
			Fatty acids, tall oil	Proprietary	30.00000	0.00013	
			Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1	30.00000	0.00013	
			Ethoxylated alcohols	Proprietary	30.00000	0.00013	
			Ethanol	64-17-5	1.00000	0.00009	
			Olefins	Proprietary	5.00000	0.00005	
			Propargyl alcohol	107-19-7	10.00000	0.00004	

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			Phosphoric acid	7664-38-2	0.10000	0.00001	
			Sodium sulfate	7757-82-6	0.10000	0.00000	

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

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)

LATITUDE 39°20'00"

5,588'

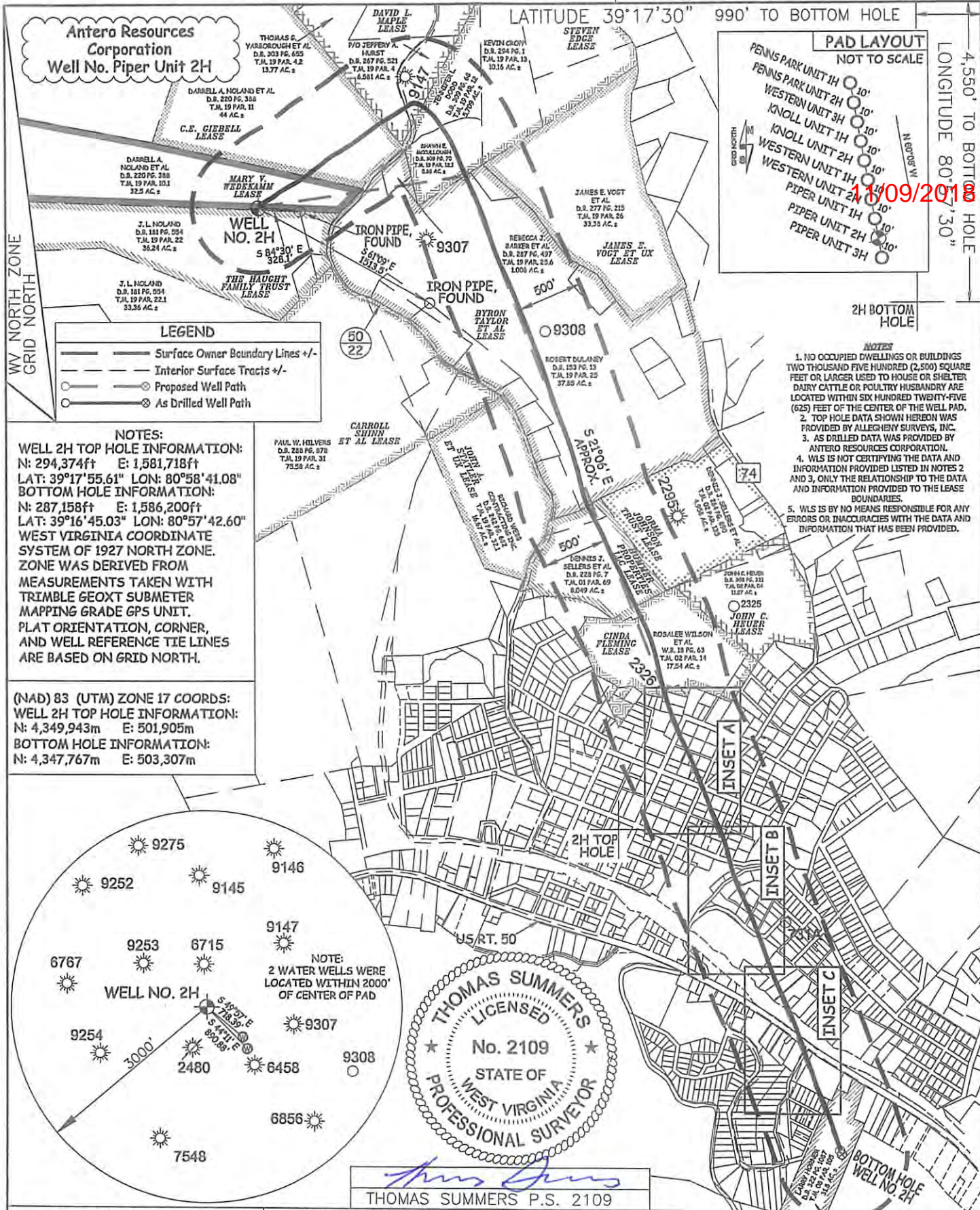
LATITUDE 39°17'30"

990' TO BOTTOM HOLE

LONGITUDE 80°57'30"

12,585'

LONGITUDE 80°57'30"

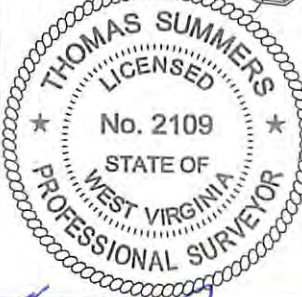


LEGEND

- Surface Owner Boundary Lines +/-
- Interior Surface Tracts +/-
- Proposed Well Path
- As Drilled Well Path

NOTES:
WELL 2H TOP HOLE INFORMATION:
 N: 294,374ft E: 1,581,718ft
 LAT: 39°17'55.61" LON: 80°58'41.08"
BOTTOM HOLE INFORMATION:
 N: 287,158ft E: 1,586,200ft
 LAT: 39°16'45.03" LON: 80°57'42.60"
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:
WELL 2H TOP HOLE INFORMATION:
 N: 4,349,943m E: 501,905m
BOTTOM HOLE INFORMATION:
 N: 4,347,767m E: 503,307m



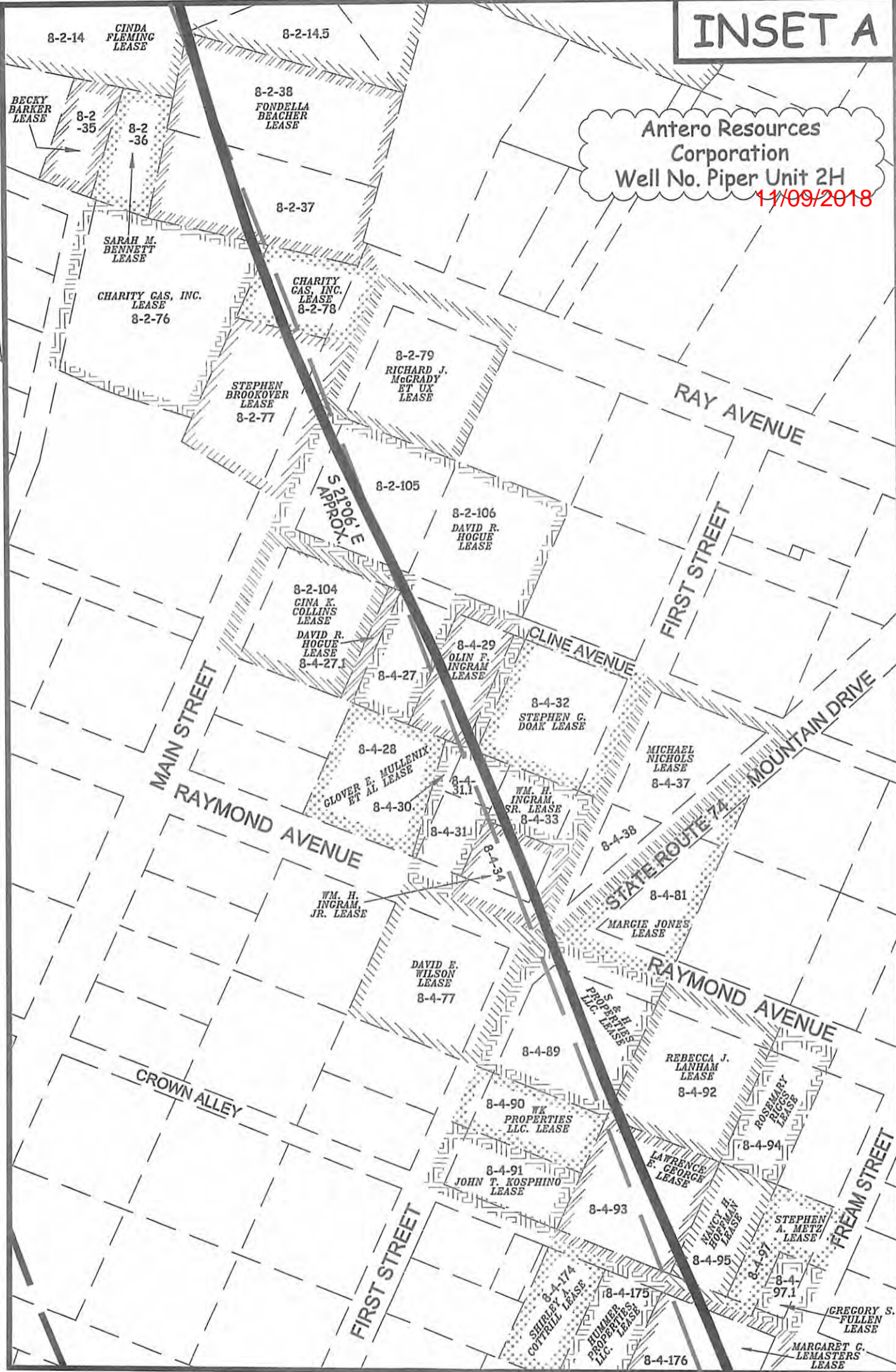
THOMAS SUMMERS P.S. 2109

JOB # <u>16-005WA</u>	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 RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.	
DRAWING # <u>PIPER2HAD</u>	STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS	DATE <u>02/01/18</u>
SCALE <u>1" = 1000'</u>		
MINIMUM DEGREE OF ACCURACY <u>SUBMETER</u>	WILLOW LAND SURVEYING PLLC 266 HUSHERS RUN RD PENNSBORO WEST VIRGINIA 26415	API WELL # <u>47 - 085 - 10292</u>
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS		STATE COUNTY PERMIT
STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS	WATERSHED <u>NORTH FORK HUGHES RIVER</u>	COUNTY NAME <u>CLAY</u>
WELL TYPE: OIL <input type="checkbox"/> GAS <input checked="" type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/>	QUADRANGLE <u>PENNSBORO 7.5'</u>	COUNTY <u>RITCHIE</u>
(IF "GAS") PRODUCTION <input checked="" type="checkbox"/> STORAGE <input type="checkbox"/> DEEP <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/>	SURFACE OWNER <u>DARRELL A. NOLAND ET AL</u>	PERMIT <u> </u>
LOCATION: ELEVATION <u>1,143' AS DRILLED</u>	OIL & GAS ROYALTY OWNER <u>SEE ATTACHED PAGES FOR LEASE INFORMATION</u>	ACREAGE <u>32.5 ACRES +/-</u>
TARGET FORMATION <u>MARCELLUS</u>	LEASE ACREAGE <u>SEE ATTACHED PAGES</u>	ESTIMATED DEPTH <u>6,425' TVD 15,093 MD</u>
PROPOSED WORK: DRILL <input type="checkbox"/> CONVERT <input type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input type="checkbox"/>	WELL OPERATOR <u>ANTERO RESOURCES CORP.</u>	DESIGNATED AGENT <u>DIANNA STAMPER</u>
PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input type="checkbox"/> OTHER PHYSICAL CHANGE IN WELL (SPECIFY) <u>AS DRILLED</u>	ADDRESS <u>1615 WYNKOOP STREET</u>	ADDRESS <u>5400 D BIG TYLER ROAD</u>
PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/>	DENVER, CO 80202	CHARLESTON, WV 25313

INSET A

Antero Resources Corporation
Well No. Piper Unit 2H
11/09/2018

WV NORTH ZONE
GRID NORTH



P.O. BOX 17
PENNSBORO, WV 26415
304-659-1717

SCALE: 1-INCH = 100-FEET



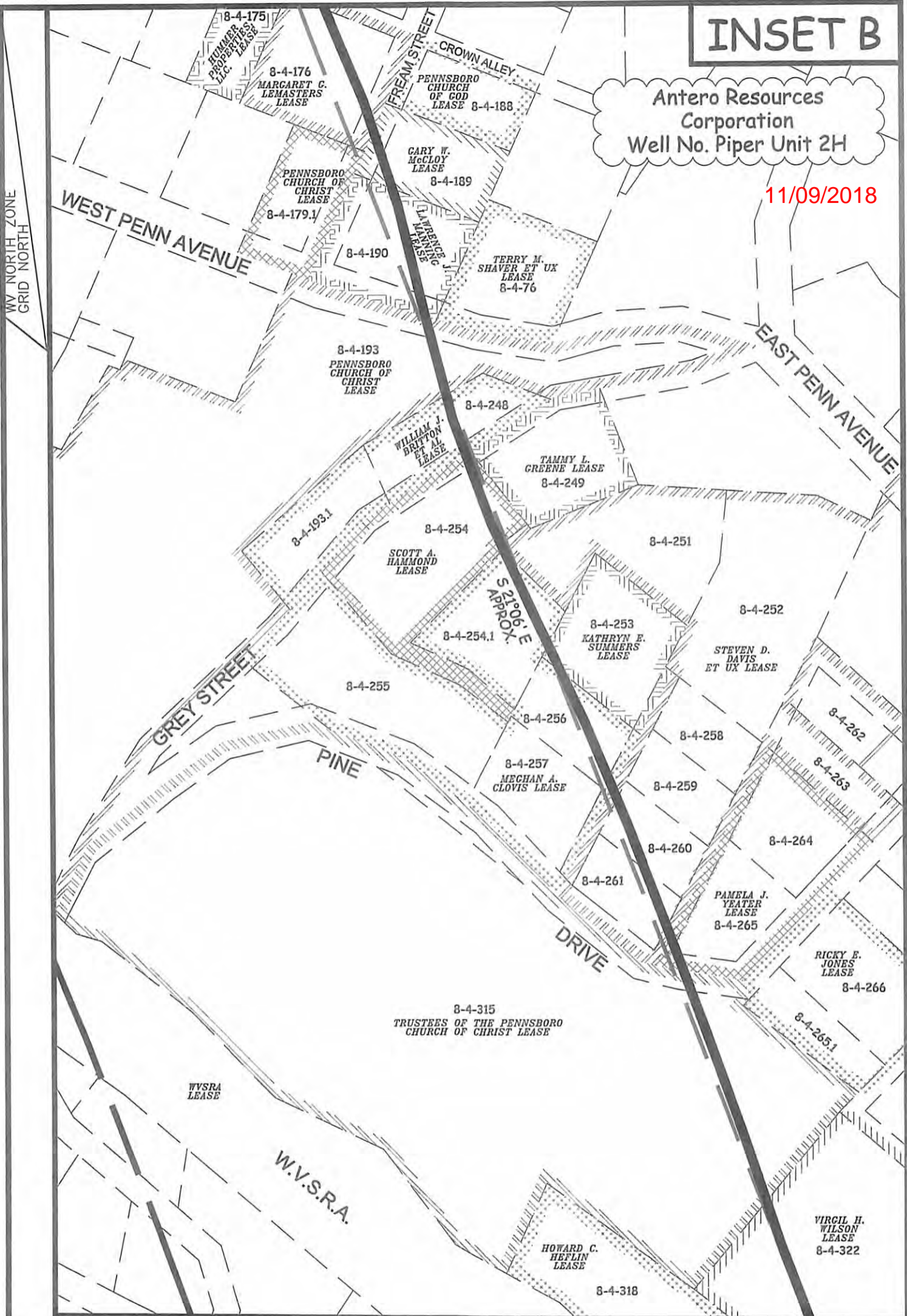
FILE: 16-005WA
JOB: PIPER2H INSETA AD
DRAFTED BY: T.B.S. 02/01/18

LEGEND	
	Piper 2H Lateral
	Interior Surface Tracts +/-

INSET B

Antero Resources Corporation
Well No. Piper Unit 2H

11/09/2018



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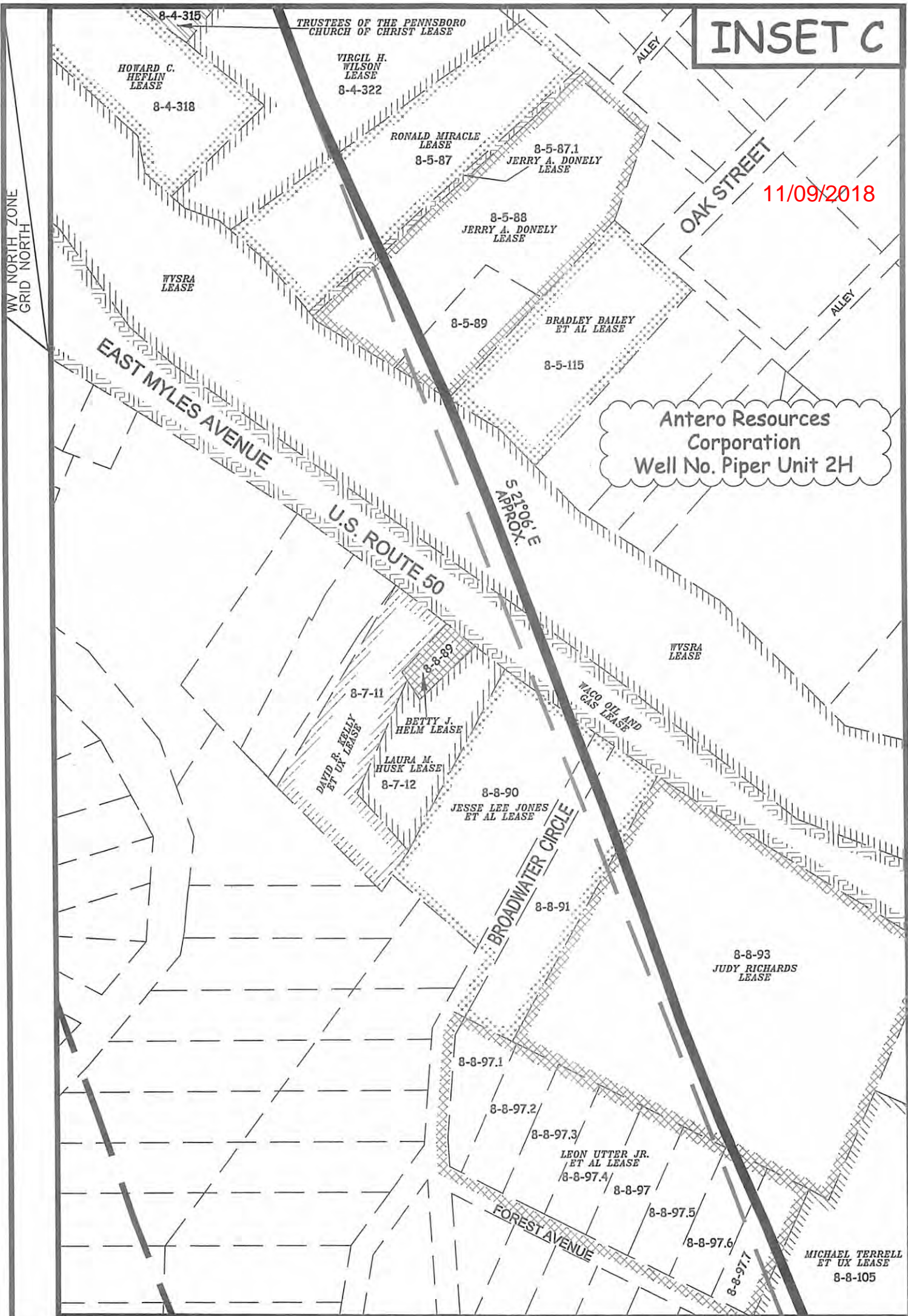
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JOB: PIPER2H INSETB AD
DRAFTED BY: T.B.S. 02/01/18

LEGEND	
	Piper 2H Lateral
	Interior Surface Tracts +/-

INSET C

11/09/2018

Antero Resources Corporation
Well No. Piper Unit 2H



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SCALE: 1-INCH = 100-FEET



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DRAFTED BY: T.B.S. 02/01/18

LEGEND

- Piper 2H Lateral
- Interior Surface Tracts +/-

LATITUDE 39°20'00" 5,588'

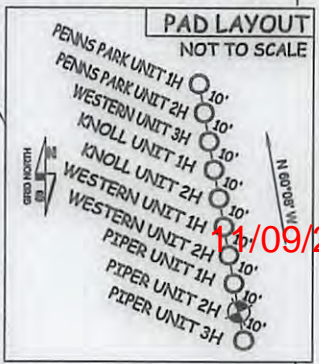
LATITUDE 39°17'30" 990' TO BOTTOM HOLE

LONGITUDE 80°57'30"

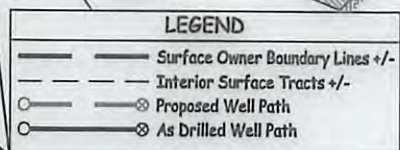
12,585'

LONGITUDE 80°57'30"

Antero Resources Corporation Well No. Piper Unit 2H

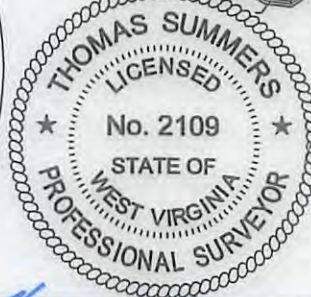


11/09/2018



NOTES: WELL 2H TOP HOLE INFORMATION: N: 294,374ft E: 1,581,718ft LAT: 39°17'55.61" LON: 80°58'41.08" BOTTOM HOLE INFORMATION: N: 287,158ft E: 1,586,200ft LAT: 39°16'45.03" LON: 80°57'42.60" WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS: WELL 2H TOP HOLE INFORMATION: N: 4,349,943m E: 501,905m BOTTOM HOLE INFORMATION: N: 4,347,767m E: 503,307m



THOMAS SUMMERS P.S. 2109

JOB # 16-005WA DRAWING # PIPER2HAD SCALE 1" = 1000' MINIMUM DEGREE OF ACCURACY SUBMETER PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

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 RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

WILLOW LAND SURVEYING PLLC 266 HUSHERS RUN RD PENNSBORO WEST VIRGINIA 26415

DATE 02/01/18 OPERATOR'S WELL# PIPER UNIT 2H

API WELL # 47 - 085 - 10292 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X LOCATION: ELEVATION 1,143' AS DRILLED QUADRANGLE PENNSBORO 7.5' SURFACE OWNER DARRELL A. NOLAND ET AL OIL & GAS ROYALTY OWNER SEE ATTACHED PAGES FOR LEASE INFORMATION

WATERSHED NORTH FORK HUGHES RIVER DISTRICT CLAY COUNTY RITCHIE ACREAGE 32.5 ACRES +/- LEASE ACREAGE SEE ATTACHED PAGES

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,425' TVD 15,093 MD

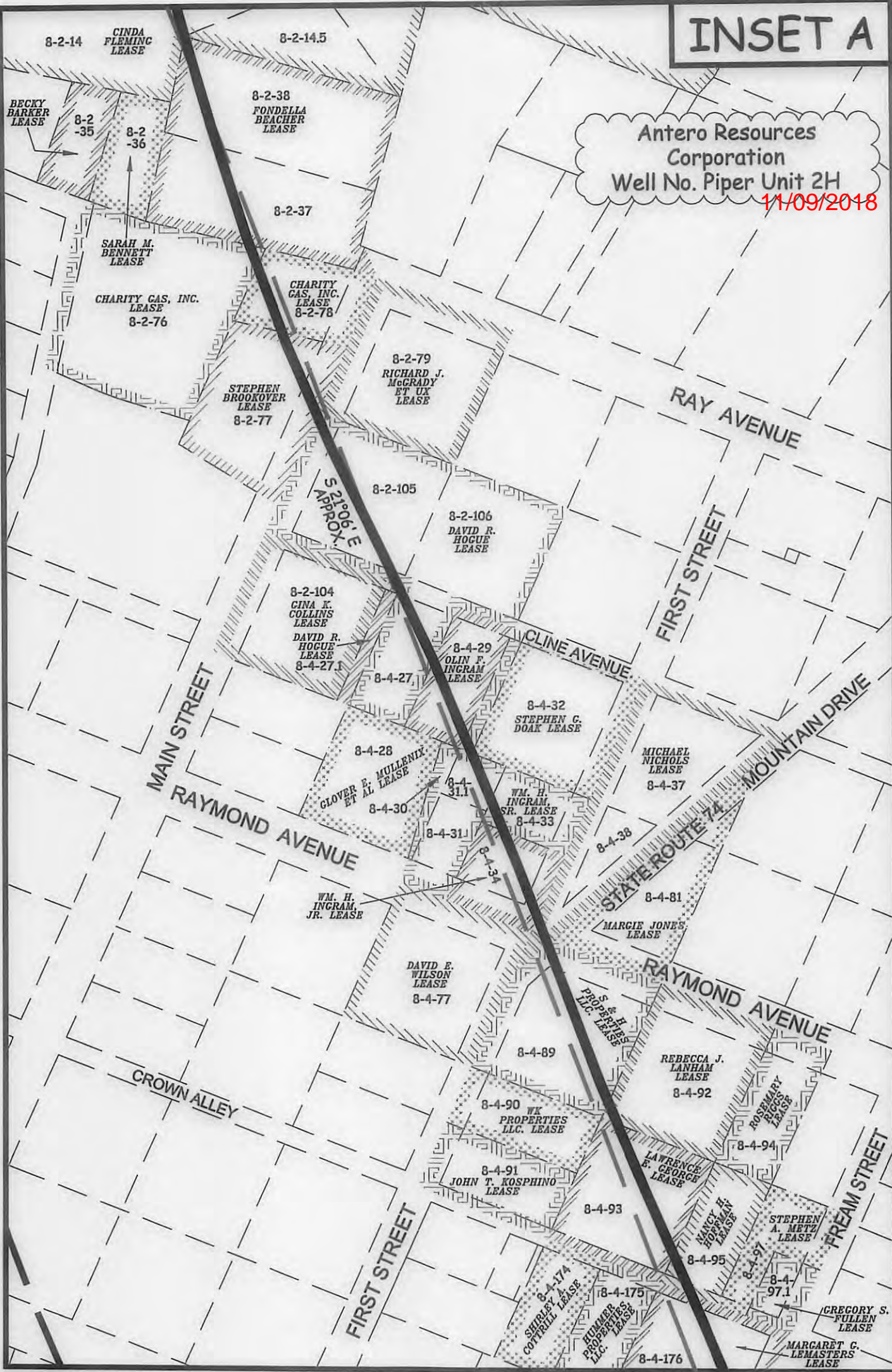
WELL OPERATOR ANTERO RESOURCES CORP. ADDRESS 1615 WYNKOOP STREET DENVER, CO 80202 DESIGNATED AGENT DIANNA STAMPER CT CORPORATION SYSTEM ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

COUNTY NAME PERMIT

INSET A

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Well No. Piper Unit 2H
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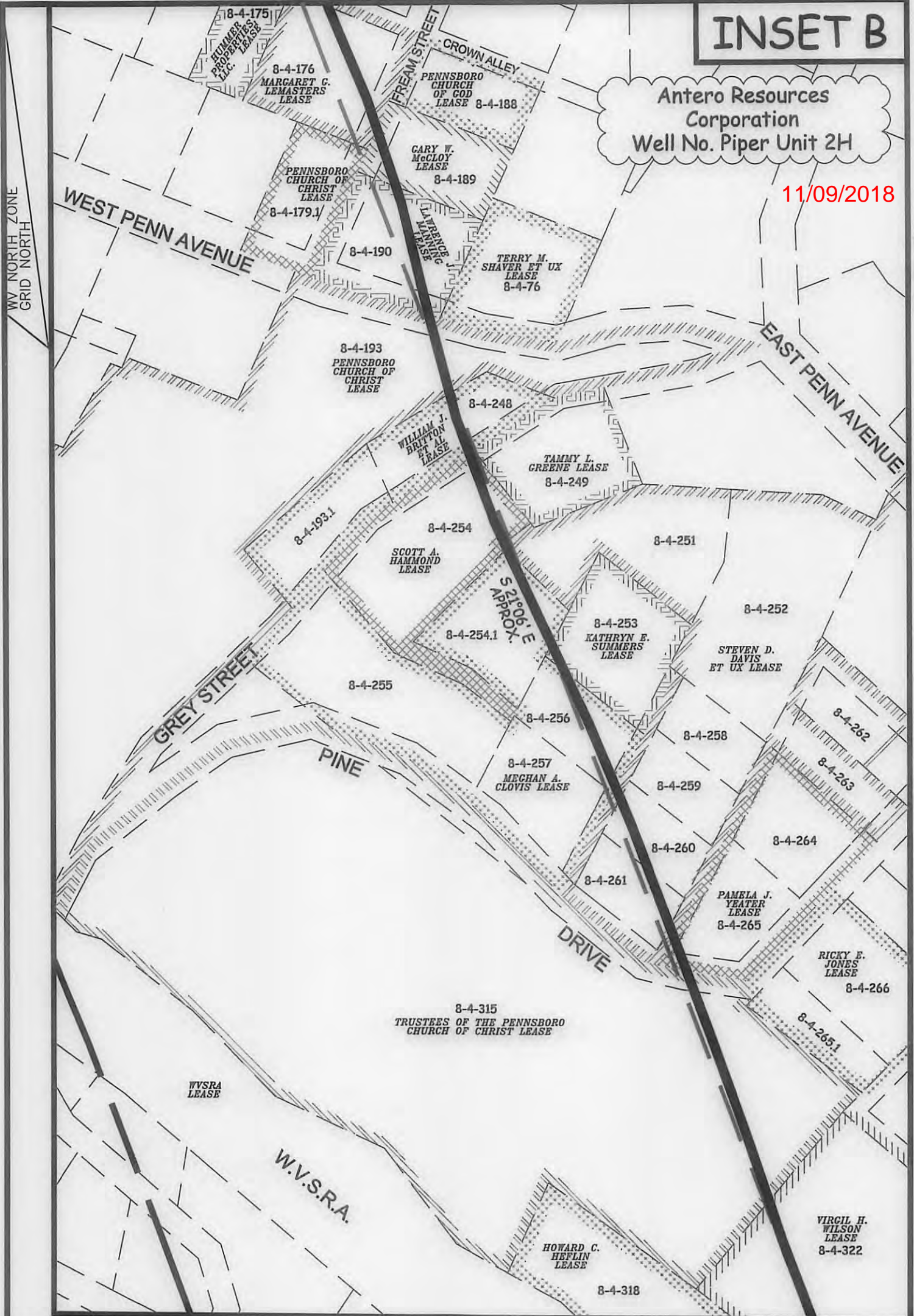
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JOB: PIPER2H INSETA AD
DRAFTED BY: T.B.S. 02/01/18

LEGEND	
	Piper 2H Lateral
	Interior Surface Tracts +/-

INSET B

Antero Resources Corporation
Well No. Piper Unit 2H

11/09/2018



WILLOW
• LAND SURVEYING PLLC •
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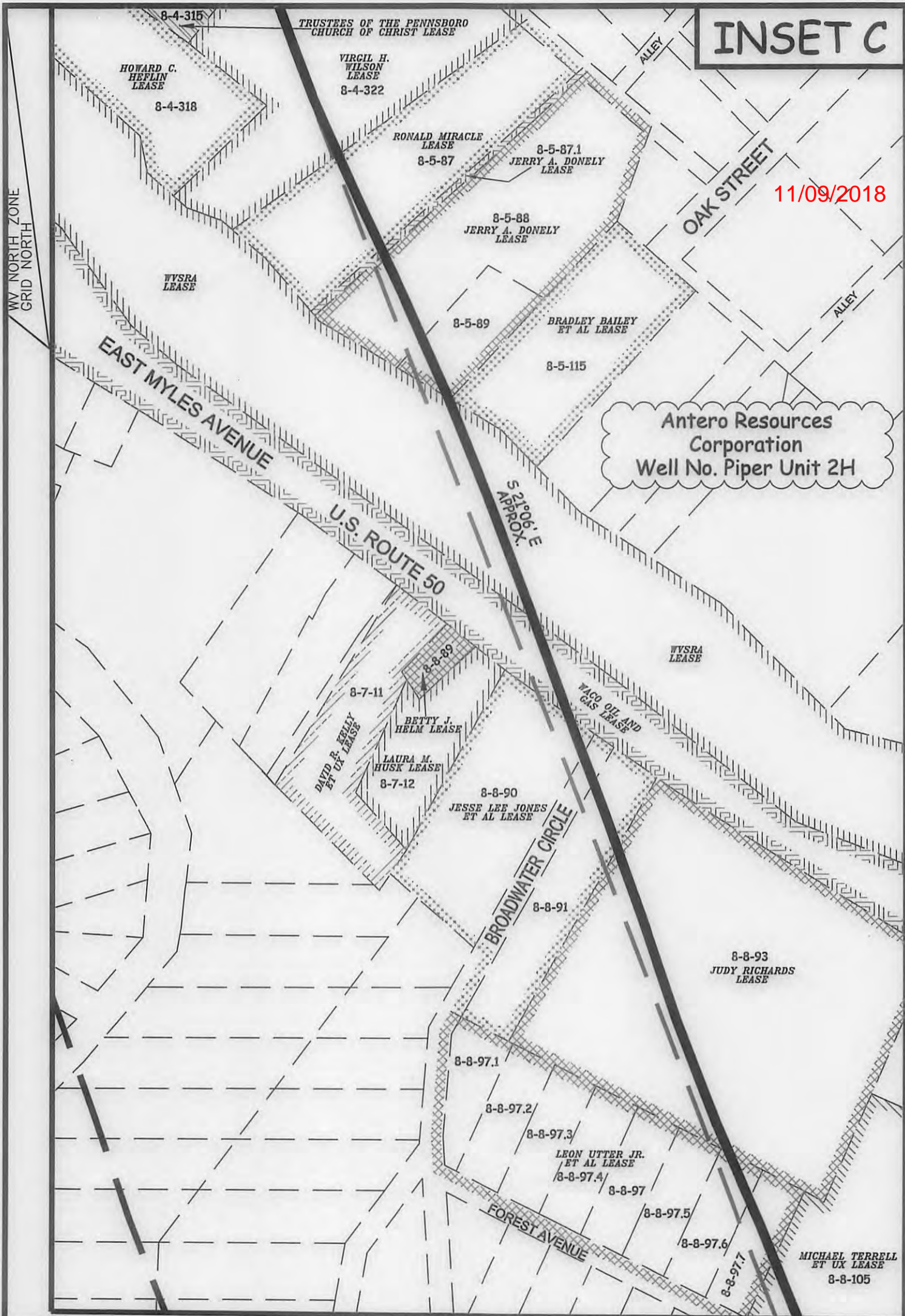
LEGEND

- Piper 2H Lateral
- - - Interior Surface Tracts +/-

INSET C

11/09/2018

Antero Resources Corporation
Well No. Piper Unit 2H



WILLOW
• LAND SURVEYING PLLC •

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LEGEND	
	Piper 2H Lateral
	Interior Surface Tracts +/-