

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

API 47-085-10296 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 3H
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
Top hole Northing 4349941m Easting 501907m
Landing Point of Curve Northing 4350069m Easting 502566m
Bottom Hole Northing 4347925m Easting 503464m

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
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
Air - Foam & 4% KCL
Mud - Polymer

Date permit issued 09/07/2016 Date drilling commenced 10/20/2016 Date drilling ceased 4/27/2017
Date completion activities began 7/25/2017 Date completion activities ceased 11/09/2017
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

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Reviewed by:
06/01/2018

Reviewed
MAG 5-9-2018

API 47-085 - 10296 Farm name Darrell A. Noland et al Well number Piper Unit 3H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade w/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"	366'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2615'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	14961'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6961'		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	480sx	15.6	1.19	571	0'	8 Hrs.
Coal							
Intermediate 1	Class A	989sx	15.6	1.18	1167	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	905 sx (Lead) 1248 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.44 (Lead), 1.87 (Tail)	3637	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 14961' MD, 6429' TVD (BHL), 11013' (Deepest Point Drilled) Loggers TD (ft) 14961' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

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Kick off depth (ft) 6396'

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 47-085-10296 Farm Name Darrell A. Noland et al Well Number Piper Unit 3H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	8/8/2017	14807	14859	60	Marcellus
2	10/6/2017	14604	14768	60	Marcellus
3	10/6/2017	14401	14565	60	Marcellus
4	10/6/2017	14198	14362	60	Marcellus
5	10/7/2017	13994	14159	60	Marcellus
6	10/7/2017	13791	13956	60	Marcellus
7	10/7/2017	13588	13753	60	Marcellus
8	10/8/2017	13385	13549	60	Marcellus
9	10/9/2017	13182	13346	60	Marcellus
10	10/9/2017	12979	13143	60	Marcellus
11	10/9/2017	12776	12940	60	Marcellus
12	10/9/2017	12572	12737	60	Marcellus
13	10/10/2017	12369	12534	60	Marcellus
14	10/10/2017	12166	12331	60	Marcellus
15	10/10/2017	11963	12127	60	Marcellus
16	10/10/2017	11760	11924	60	Marcellus
17	10/10/2017	11557	11721	60	Marcellus
18	10/11/2017	11353	11518	60	Marcellus
19	10/11/2017	11150	11315	60	Marcellus
20	10/11/2017	10947	11112	60	Marcellus
21	10/11/2017	10744	10909	60	Marcellus
22	10/11/2017	10541	10705	60	Marcellus
23	10/12/2017	10338	10502	60	Marcellus
24	10/12/2017	10135	10299	60	Marcellus
25	10/12/2017	9931	10096	60	Marcellus
26	10/12/2017	9728	9893	60	Marcellus
27	10/12/2017	9525	9690	60	Marcellus
28	10/13/2017	9322	9486	60	Marcellus
29	10/13/2017	9119	9283	60	Marcellus
30	10/13/2017	8916	9080	60	Marcellus
31	10/13/2017	8713	8877	60	Marcellus
32	10/13/2017	8509	8674	60	Marcellus
33	10/14/2017	8306	8471	60	Marcellus
34	10/14/2017	8103	8268	60	Marcellus
35	10/14/2017	7900	8064	60	Marcellus
36	10/14/2017	7697	7861	60	Marcellus
37	10/14/2017	7494	7658	60	Marcellus
38	10/15/2017	7290	7455	60	Marcellus
39	10/15/2017	7087	7252	60	Marcellus

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API 47-085-10296 Farm Name Darrell A Noland et al Well Number Piper Unit 3H

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 (bbbls)	Amount of Nitrogen/ other (units)
1	8/8/2017	59.4	8278	0	0	164260	6753.619	N/A
2	10/6/2017	67.2	7859	5989	3724	268740	6667.881	N/A
3	10/6/2017	65.7	6643	5599	3113	416240	8096.19	N/A
4	10/6/2017	70.7	6886	5771	3355	417050	8298.524	N/A
5	10/7/2017	70.6	7047	5395	3543	414370	8261.167	N/A
6	10/7/2017	76.5	7307	5560	3620	417870	8134.429	N/A
7	10/7/2017	76.6	7213	5627	3617	414860	8294.548	N/A
8	10/8/2017	74.6	7120	5404	3543	415970	9705.31	N/A
9	10/9/2017	71.1	6879	6047	3671	415730	8206.833	N/A
10	10/9/2017	70.4	6957	5381	4748	246330	7700.048	N/A
11	10/9/2017	76.9	6998	5327	3360	420570	8771.119	N/A
12	10/9/2017	72.7	6848	6252	3444	409380	9748.286	N/A
13	10/10/2017	72.7	6709	5813	3420	417550	8285.786	N/A
14	10/10/2017	75	7294	6126	4429	417570	8327.024	N/A
15	10/10/2017	78.5	7057	5468	3595	410280	8147.286	N/A
16	10/10/2017	74.5	6793	5741	3545	411880	8140	N/A
17	10/10/2017	73.9	6550	5539	3481	415780	8740.905	N/A
18	10/11/2017	66.8	6474	6150	3599	413560	8073.238	N/A
19	10/11/2017	71.2	6526	5814	3665	419940	8047.619	N/A
20	10/11/2017	73.1	6662	5586	3602	419240	8204.143	N/A
21	10/11/2017	75.9	6751	6099	3549	408320	8000.214	N/A
22	10/11/2017	75.5	6551	5582	3248	418160	8097.381	N/A
23	10/12/2017	72.9	6587	6284	3518	430900	8271.762	N/A
24	10/12/2017	69.6	6719	6382	3557	419760	9083.905	N/A
25	10/12/2017	68.6	6777	6313	3620	417060	9189.024	N/A
26	10/12/2017	74.2	6810	6793	4273	416280	7700.619	N/A
27	10/12/2017	75.9	6932	6856	3741	418200	8081.31	N/A
28	10/13/2017	71.1	6497	6895	3463	417440	7987.881	N/A
29	10/13/2017	74.5	6520	6940	3702	419700	8074.929	N/A
30	10/13/2017	73.3	6557	6617	3595	421500	7916.69	N/A
31	10/13/2017	74.2	7043	6350	3652	415960	9085.143	N/A
32	10/13/2017	68	7585	5774	4663	296640	9188	N/A
33	10/14/2017	71.3	6927	6105	3434	416820	9351.024	N/A
34	10/14/2017	71.7	6866	6438	5833	422060	10711.26	N/A
35	10/14/2017	72.7	6217	6111	3395	417020	7801.452	N/A
36	10/14/2017	70.9	7788	7788	3209	420520	8267.81	N/A
37	10/14/2017	76.1	6634	6872	3499	421900	7833.286	N/A
38	10/15/2017	71.5	6649	6510	3381	421620	7861.833	N/A
39	10/15/2017	73.3	6526	6499	3382	418500	7830.524	N/A
AVG=		72.3	6,898	5,944	3,584	15,585,530	324,938	TOTAL

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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	2,041
Big Lime	1,999	2,577	2,041	2,647
Gantz	2,577	2,853	2,647	2,939
Fifty Foot Sandstone	2,853	2,950	2,939	3,043
Gordon	2,950	3,316	3,043	3,446
Fifth Sandstone	3,316	3,373	3,446	3,510
Bayard	3,373	3,924	3,510	4,125
Speechley	3,924	4,136	4,125	4,367
Baltown	4,136	4,553	4,367	4,834
Bradford	4,553	4,960	4,834	5,289
Benson	4,960	5,230	5,289	5,592
Alexander	5,230	5,502	5,592	5,895
Elk	5,502	5,797	5,895	6,220
Rhinstreet	5,797	6,131	6,220	6,604
Sycamore	6,131	6,230	6,604	6,738
Middlesex	6,230	6,333	6,738	6,925
Burkett	6,333	6,360	6,925	6,991
Tully	6,360	6,376	6,991	7,042
Marcellus	6,376	NA	7,042	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.

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	8/11/2017
Job End Date:	10/15/2017
State:	West Virginia
County:	Ritchie
API Number:	47-085-10296-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Piper 3H
Latitude:	39.29876000
Longitude:	-80.97805278
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,434
Total Base Water Volume (gal):	13,987,943
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	88.04521	Density = 8.330
Ingredients	Listed Above	Listed Above	Water	7732-18-5	100.00000	0.12550	

SP BREAKER	Halliburton	Breaker		Listed Below			
				Listed Below			
FR-76	Halliburton	Friction Reducer		Listed Below			
				Listed Below			
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor		Listed Below			
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent		Listed Below			
				Listed Below			
SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant		Listed Below			
				Listed Below			
LP-70	Halliburton	Scale Inhibitor		Listed Below			
				Listed Below			
MC B-8614	Halliburton	Biocide		Listed Below			
				Listed Below			
SAND-PREMIUM WHITE-30/50, BULK	Halliburton	Proppant		Listed Below			
				Listed Below			

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HYDROCHLORIC ACID	Halliburton	Solvent								
SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant								
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	11.77685				
			Inorganic salt	Proprietary	30.00000	0.02164				
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02164				
			Acrylamide acrylate copolymer	Proprietary	30.00000	0.02164				Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Guar gum	9000-30-0	100.00000	0.01577				
			Ethylene Glycol	107-21-1	60.00000	0.00849				
			Hydrochloric acid	7647-01-0	7.50000	0.00498				
			Glutaraldehyde	111-30-8	30.00000	0.00266				
			Neutralized Polyacrylic Emulsion	Proprietary	10.00000	0.00141				
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1	5.00000	0.00044				
			Sodium persulfate	7775-27-1	100.00000	0.00040				
			Methanol	67-56-1	60.00000	0.00016				
			Ethanol	64-17-5	1.00000	0.00009				
			Fatty acids, tall oil	Proprietary	30.00000	0.00008				

			Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1	30.00000	0.00008	
			Ethoxylated alcohols	Proprietary	30.00000	0.00008	
			Olefins	Proprietary	5.00000	0.00003	
			Propargyl alcohol	107-19-7	10.00000	0.00003	
			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)

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LATITUDE 39°20'00"

5,579'

LATITUDE 39°17'30"

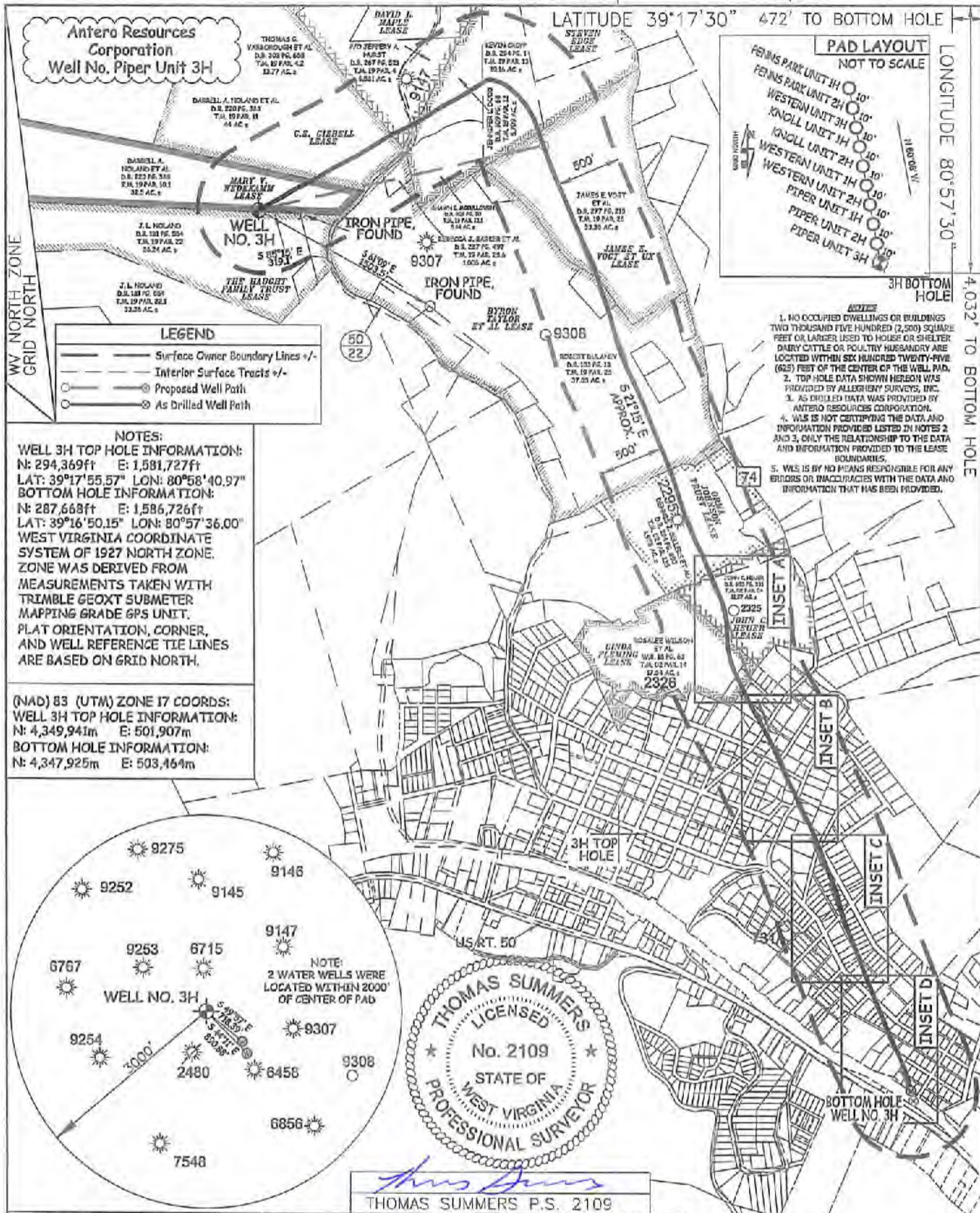
472' TO BOTTOM HOLE

LONGITUDE 80°57'30"

4,032' TO BOTTOM HOLE

12,590'

LONGITUDE 80°57'30"

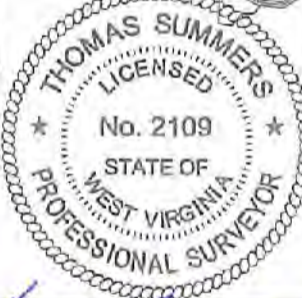


LEGEND

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

NOTES:
WELL 3H TOP HOLE INFORMATION:
 N: 294,369ft E: 1,581,727ft
 LAT: 39°17'55.57" LON: 80°58'40.97"
BOTTOM HOLE INFORMATION:
 N: 287,668ft E: 1,586,726ft
 LAT: 39°16'50.15" LON: 80°57'36.00"
 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 3H TOP HOLE INFORMATION:
 N: 4,349,941m E: 501,907m
BOTTOM HOLE INFORMATION:
 N: 4,347,925m E: 503,464m



Thomas Summers
 THOMAS SUMMERS P.S. 2109

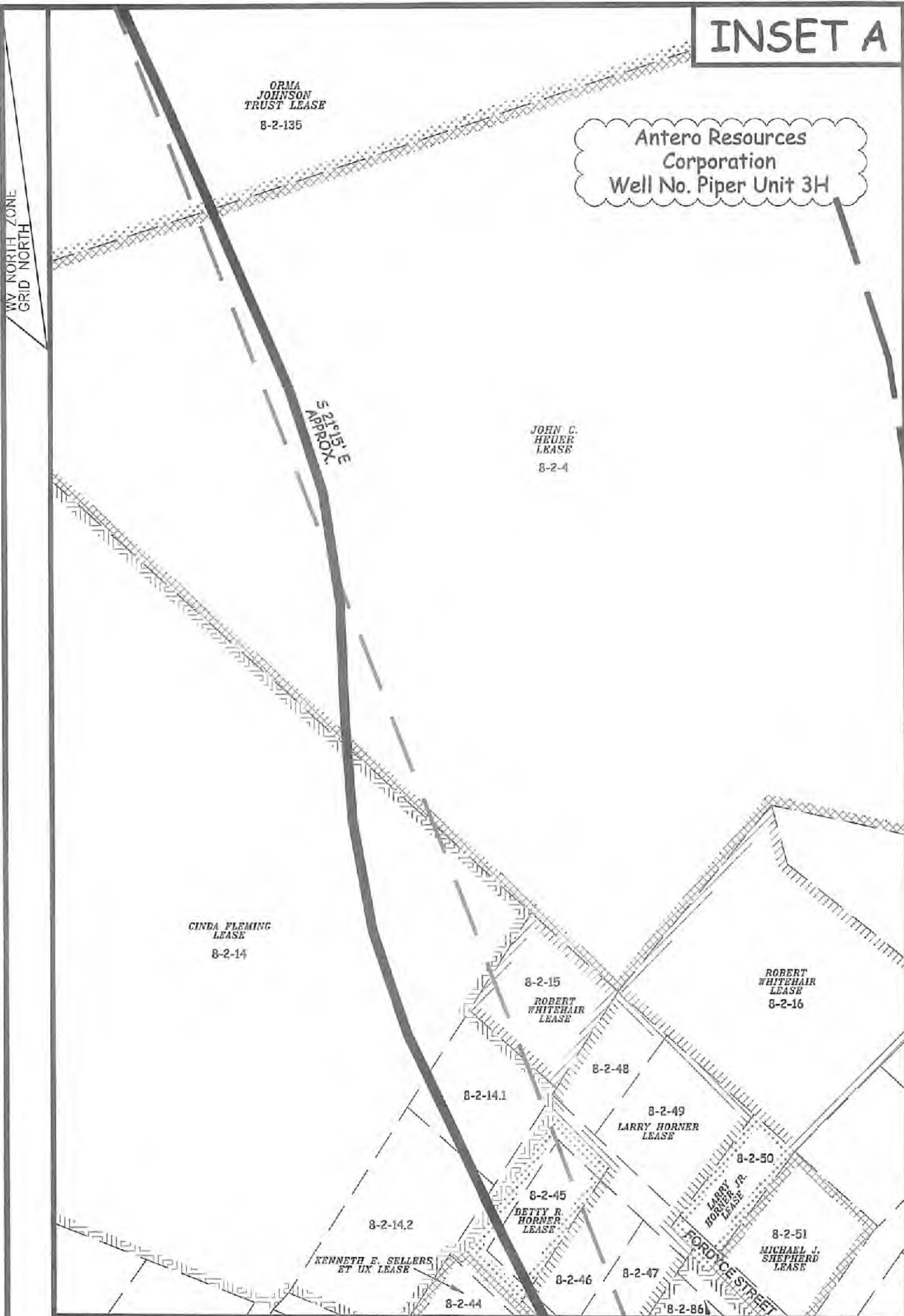
JOB # 16-005WA		I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.	
DRAWING # PIPER3HAD		STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS	
SCALE 1" = 1000'			
MINIMUM DEGREE OF ACCURACY SUBMETER		WILLOW LAND SURVEYING PLLC 266 HUSHERS RUN RD PENNSBORO WEST VIRGINIA 26415	
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS			
STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS		DATE 02/01/18	
WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___		OPERATOR'S WELL# PIPER UNIT 3H	
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X		API WELL # 47 - 085 - 10296	
LOCATION: ELEVATION 1,143' AS DRILLED		STATE COUNTY PERMIT	
QUADRANGLE PENNSBORO 7.5'		WATERSHED NORTH FORK HUGHES RIVER	
SURFACE OWNER DARRELL A. NOLAND ET AL		DISTRICT CLAY COUNTY RITCHIE	
OIL & GAS ROYALTY OWNER SEE ATTACHED PAGES FOR LEASE INFORMATION		ACREAGE 32.5 ACRES +/-	
PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___		ESTIMATED DEPTH 6,429' TVD 14,961' MD	
PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) AS DRILLED		PLUG & ABANDON CLEAN OUT & REPLUG	
TARGET FORMATION MARCELLUS		WELL OPERATOR ANTERO RESOURCES CORP.	
DESIGNATED AGENT DIANNA STAMPER		ADDRESS 1615 WYNKOOP STREET	
ADDRESS DENVER, CO 80202		ADDRESS 5400 D BIG TYLER ROAD	
FORM WW-6		CHARLESTON, WV 25313	

06/01/2018

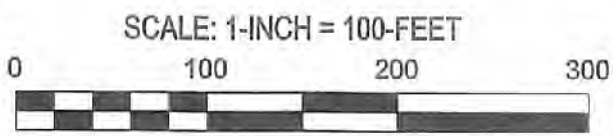
COUNTY NAME PERMIT

INSET A

Antero Resources Corporation
Well No. Piper Unit 3H



WILLOW
• LAND SURVEYING PLLC •
P.O. BOX 17
PENNSBORO, WV 26415
304-659-1717



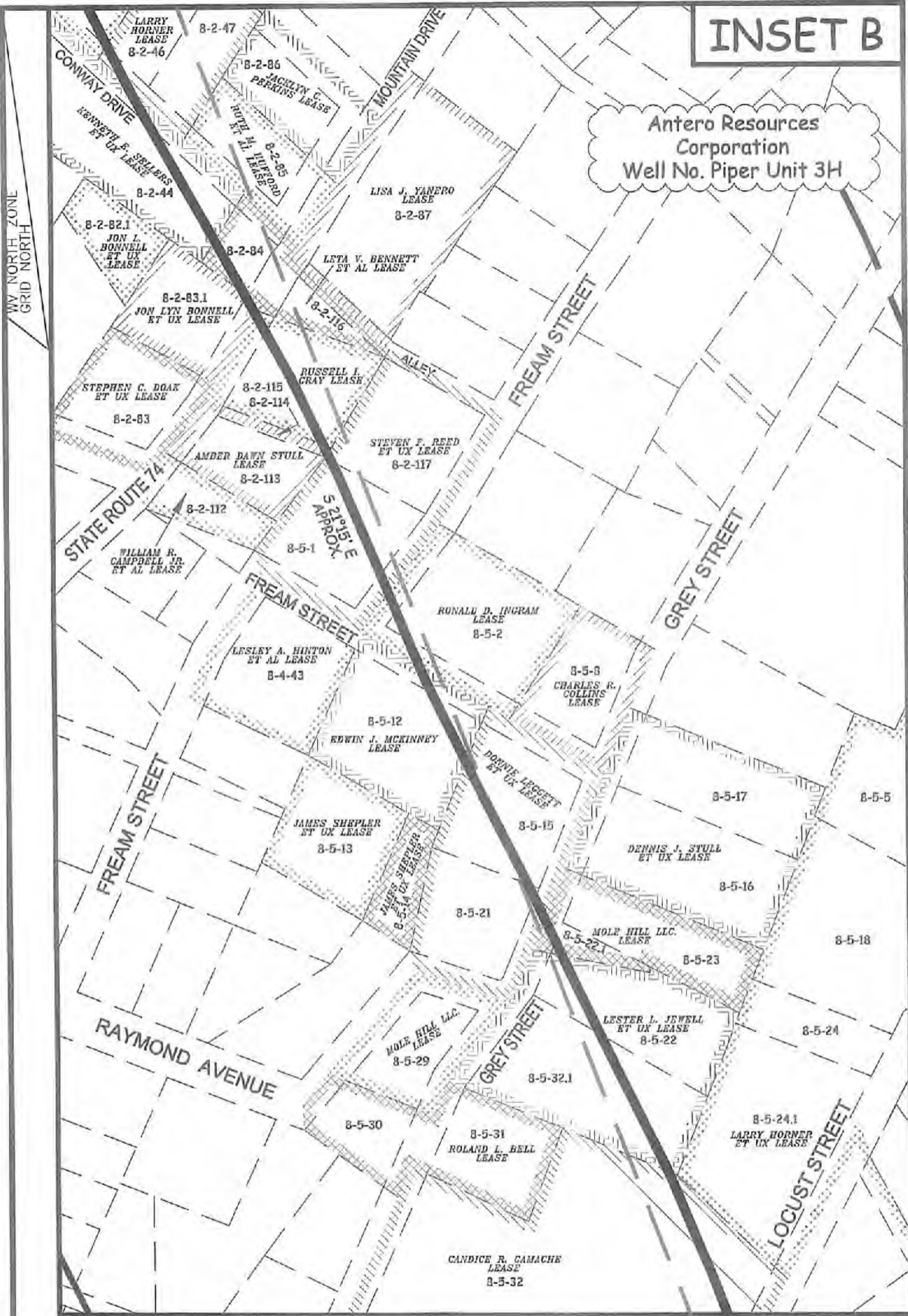
JACKLYN C. PERKINS LEASE 06/01/2018

FILE: 16-005WA
JOB: PIPER3H INSETA AD
DRAFTED BY: T.B.S. 02/01/18

LEGEND	
	Piper 3H Lateral
	Interior Surface Tracts +/-

INSET B

Antero Resources Corporation
Well No. Piper Unit 3H



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

06/01/2018

SCALE: 1-INCH = 100-FEET

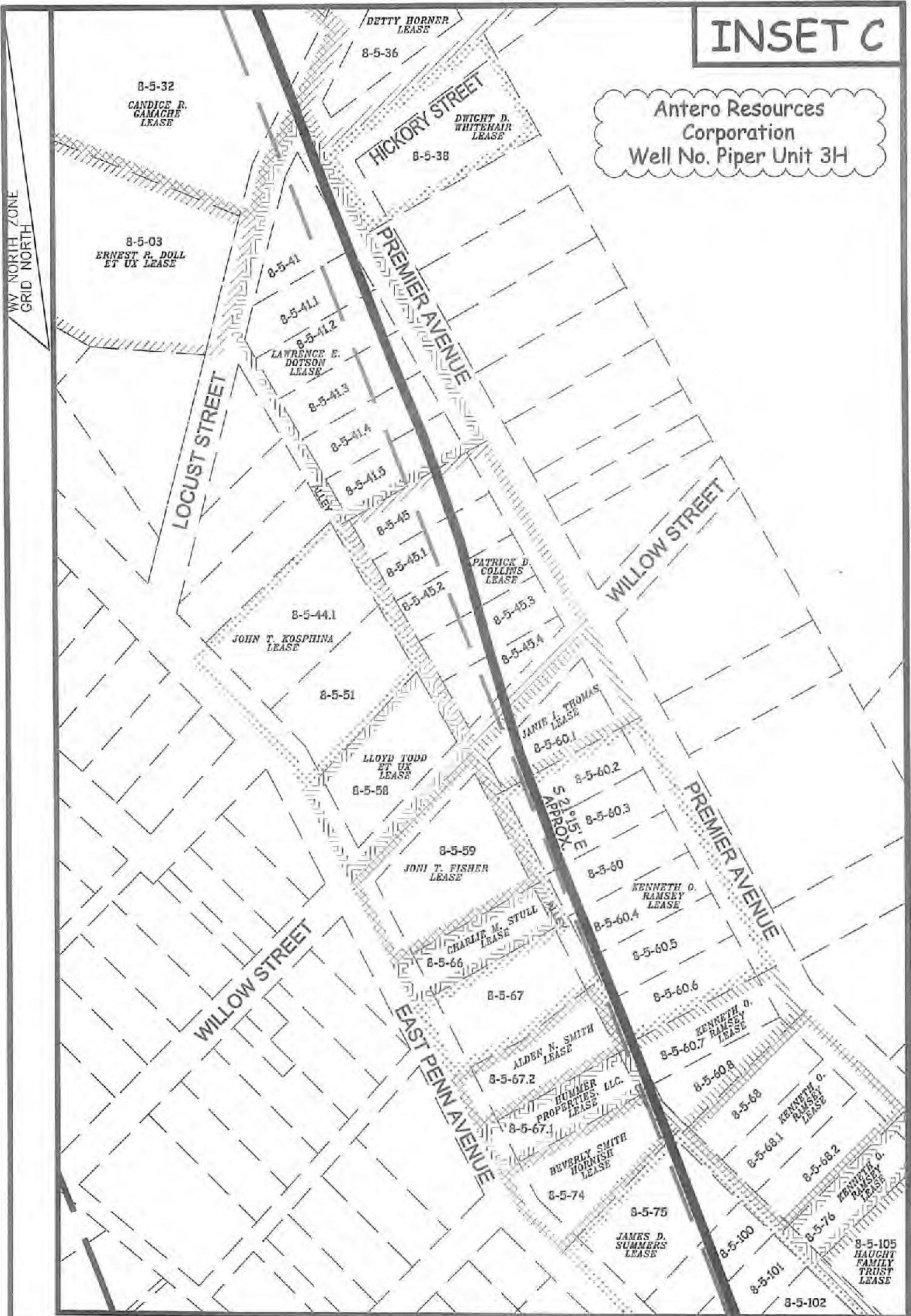


FILE: 16-005WA
JOB: PIPER3H INSETB AD
DRAFTED BY: T.B.S. 02/01/18

LEGEND	
	Piper 3H Lateral
	Interior Surface Tracts +/-

INSET C

Antero Resources Corporation
Well No. Piper Unit 3H



WV NORTH ZONE
GRID NORTH



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

SCALE: 1-INCH = 100-FEET



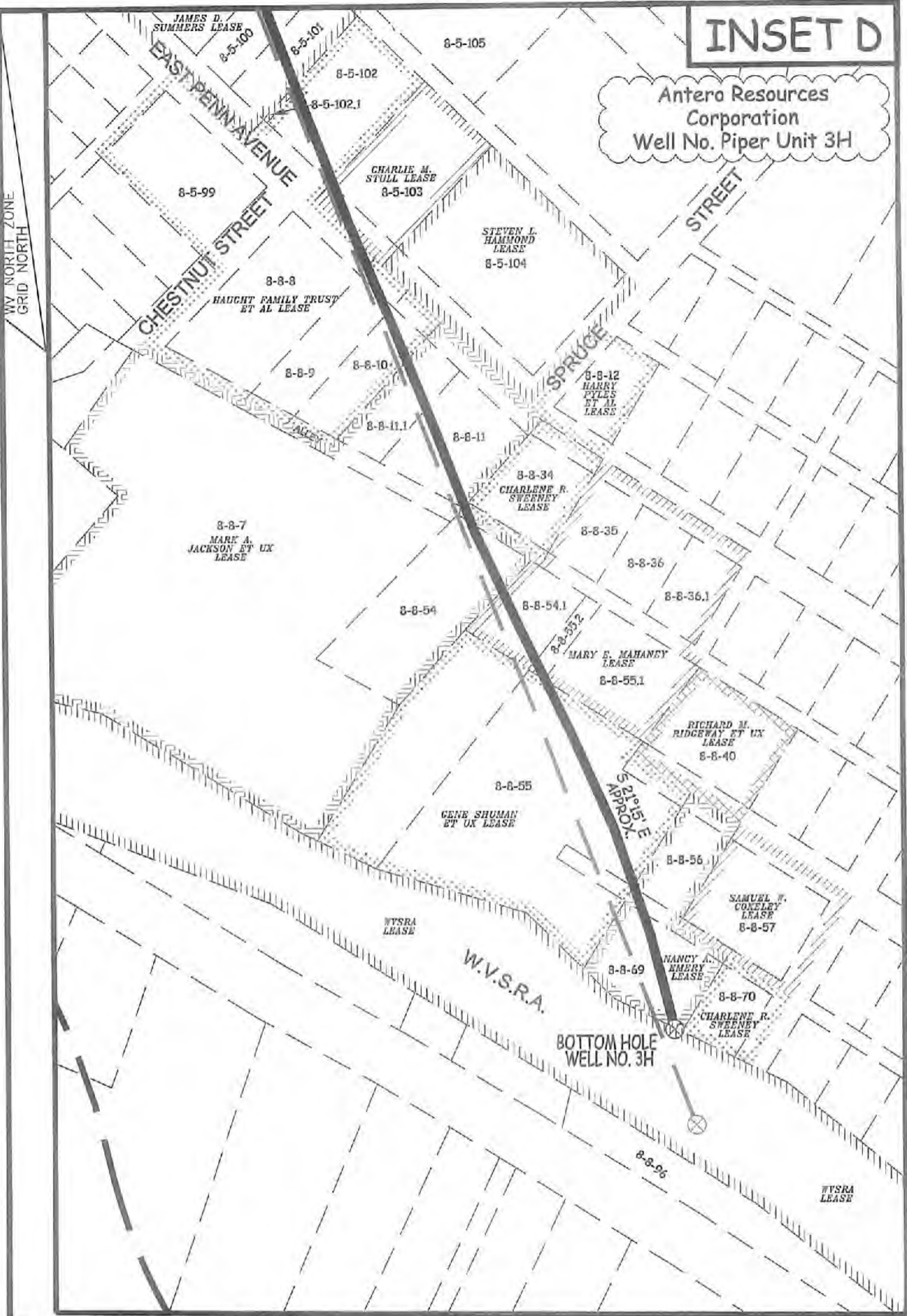
06/01/2018

FILE: 16-005WA
JOB: PIPER3H INSETC AD
DRAFTED BY: T.B.S. 02/01/18

LEGEND	
	Piper 3H Lateral
	Interior Surface Tracts +/-

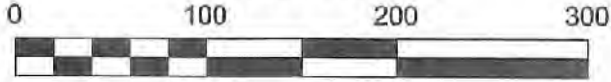
INSET D

Antero Resources Corporation
Well No. Piper Unit 3H



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

SCALE: 1-INCH = 100-FEET



06/01/2018

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

LEGEND	
	Piper 3H Lateral
	Interior Surface Tracts +/-

LATITUDE 39°20'00"

5,579'

LATITUDE 39°17'30"

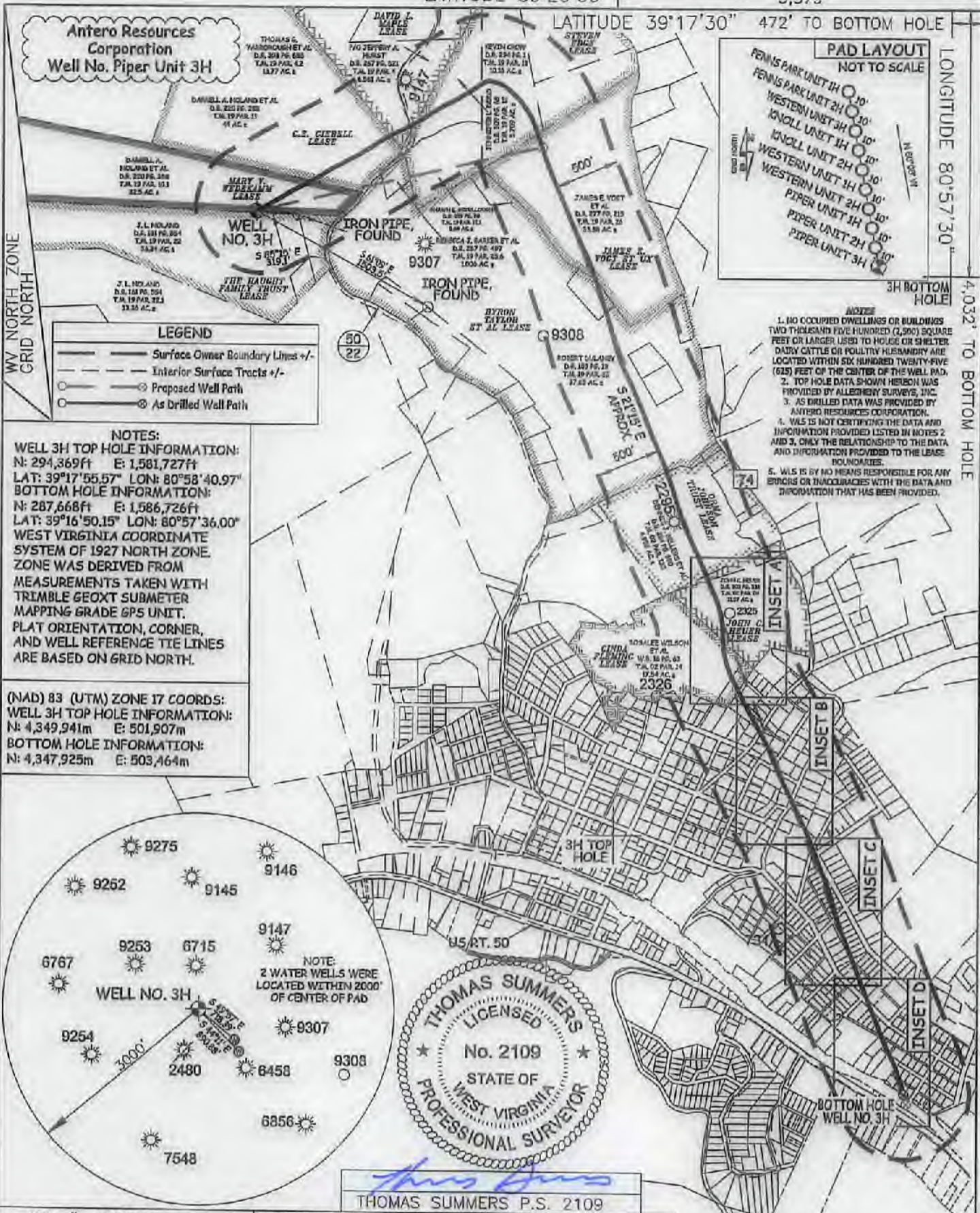
472' TO BOTTOM HOLE

LONGITUDE 80°57'30"

4,032' TO BOTTOM HOLE

12,590'

LONGITUDE 80°57'30"



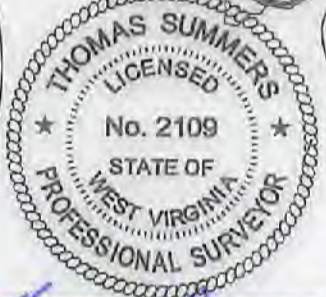
LEGEND

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

- NOTE**
- NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.
 - TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
 - AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
 - WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3, ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.
 - WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

NOTES:
WELL 3H TOP HOLE INFORMATION:
 N: 294,369ft E: 1,581,727ft
 LAT: 39°17'55.57" LON: 80°58'40.97"
BOTTOM HOLE INFORMATION:
 N: 287,668ft E: 1,586,726ft
 LAT: 39°16'50.15" LON: 80°57'36.00"
 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 3H TOP HOLE INFORMATION:
 N: 4,349,941m E: 501,907m
BOTTOM HOLE INFORMATION:
 N: 4,347,925m E: 503,464m



Thomas Summers
 THOMAS SUMMERS P.S. 2109

JOB # 16-005WA
 DRAWING # PIPERSHAD
 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 PERSCRIBED 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 3H
 API WELL # 47 - 085 - 10298

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

WATERSHED NORTH FORK HUGHES RIVER
 DISTRICT CLAY COUNTY RITCHIE

SURFACE OWNER DARRELL A. NOLAND ET AL
 OIL & GAS ROYALTY OWNER SEE ATTACHED PAGES FOR LEASE INFORMATION

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
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,429' TVD 14,981 MD

WELL OPERATOR ANTERO RESOURCES CORP.
 ADDRESS 1615 WYNKOOP STREET DENVER, CO 80202

DESIGNATED AGENT DIANNA STAMPER
 ADDRESS CT CORPORATION SYSTEM 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

COUNTY NAME PERMIT 06/01/2018

INSET A

ORMA
JOHNSON
TRUST LEASE
8-2-135

Antero Resources
Corporation
Well No. Piper Unit 3H

WV NORTH ZONE
GRID NORTH

S 21° 15' E
APPROX.

JOHN C.
HEUER
LEASE
8-2-4

CINDA FLEMING
LEASE
8-2-14

8-2-15
ROBERT
WHITEHAIR
LEASE

ROBERT
WHITEHAIR
LEASE
8-2-16

8-2-14.1

8-2-48

8-2-49
LARRY HORNER
LEASE

8-2-50

8-2-14.2

8-2-45
BETTY R.
HORNER
LEASE

LARRY
HORNER JR.
LEASE

8-2-51
MICHAEL J.
SHEPHERD
LEASE

KENNETH F. SELLERS
ET UX LEASE

8-2-46

8-2-47

8-2-86

JACKLYN C.
PERKINS
LEASE

06/01/2018

FILE: 16-005WA
JOB: PIPER3H INSETA AD
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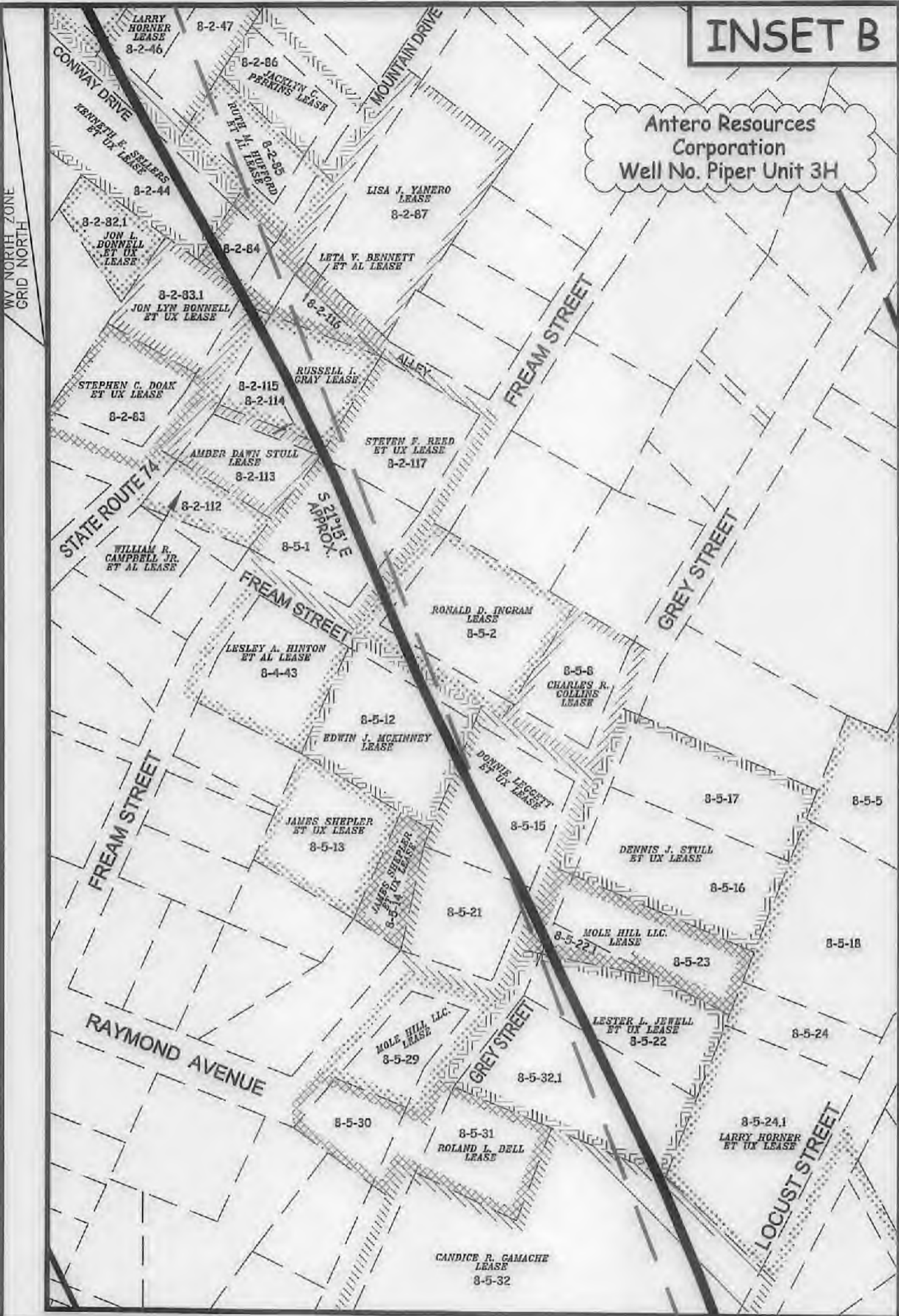
SCALE: 1-INCH = 100-FEET



LEGEND	
	Piper 3H Lateral
	Interior Surface Tracts +/-

INSET B

Antero Resources Corporation
Well No. Piper Unit 3H



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• LAND SURVEYING PLLC •

P.O. BOX 17
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304-659-1717

06/01/2018

SCALE: 1-INCH = 100-FEET

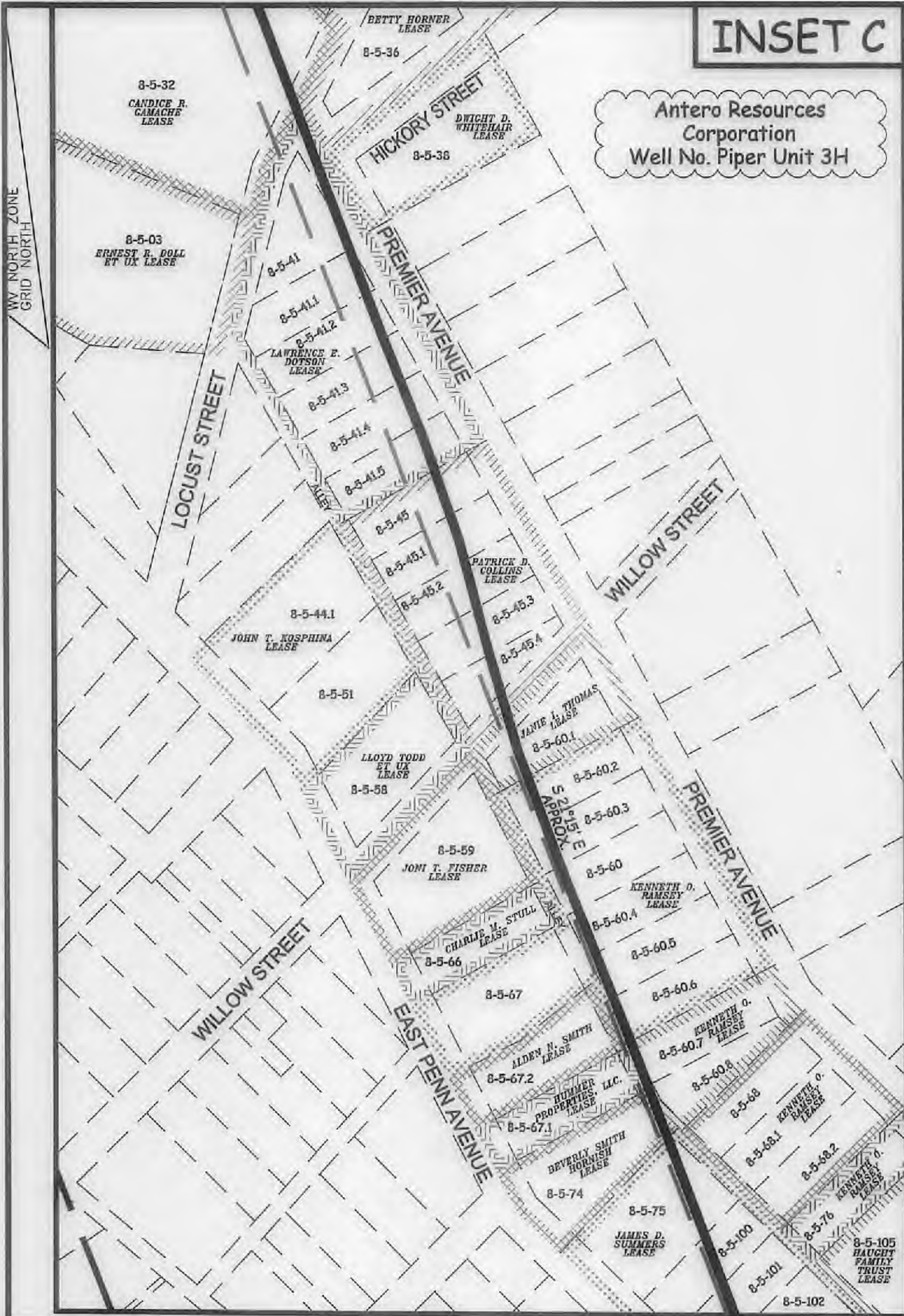


FILE: 16-005WA
JOB: PIPER3H INSETB AD
DRAFTED BY: T.B.S. 02/01/18

LEGEND	
	Piper 3H Lateral
	Interior Surface Tracts +/-

INSET C

Antero Resources
Corporation
Well No. Piper Unit 3H



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SCALE: 1-INCH = 100-FEET



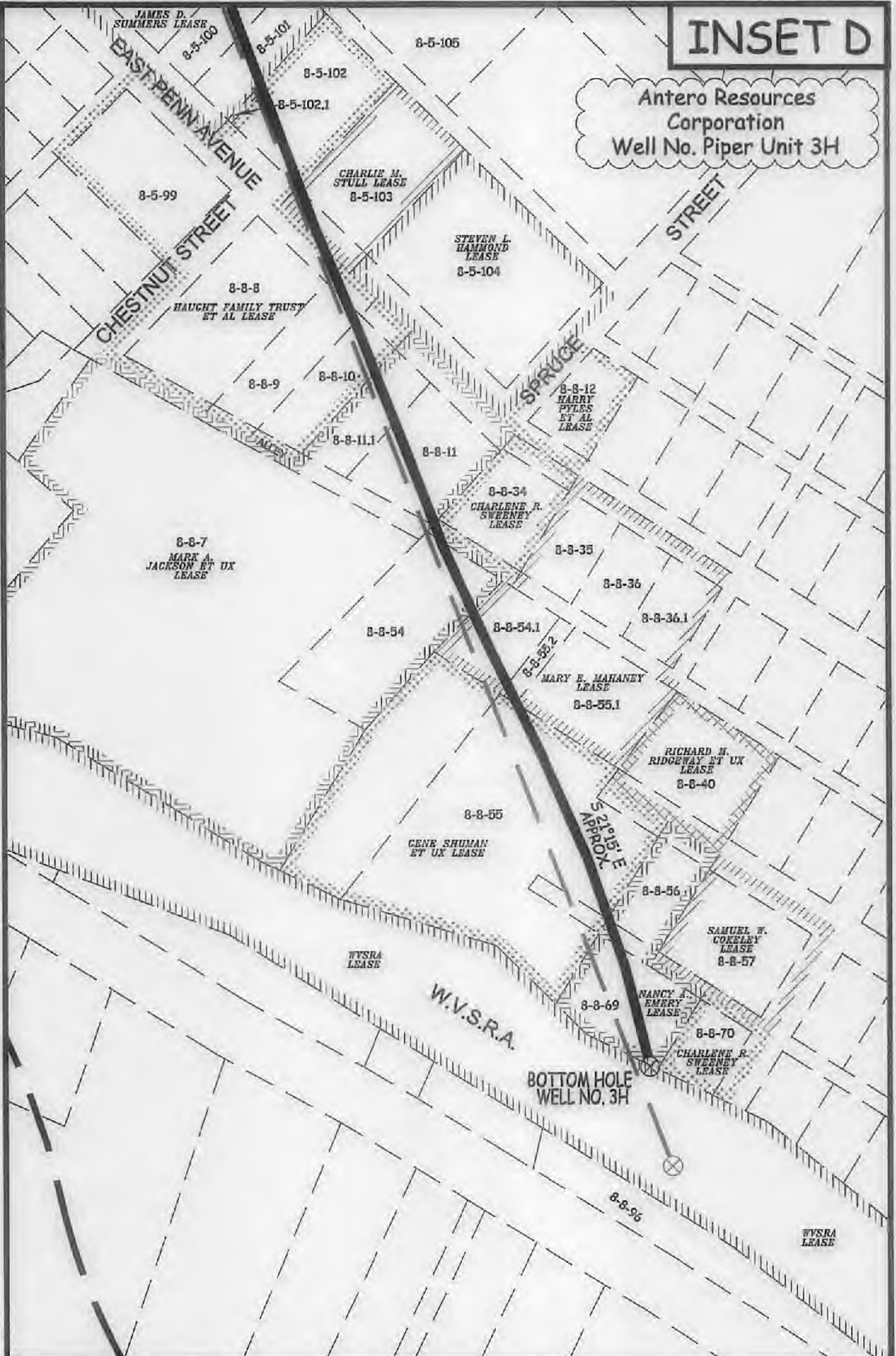
FILE: 16-005WA
JOB: PIPER3H INSETC AD
DRAFTED BY: T.B.S. 02/01/18

LEGEND	
	Piper 3H Lateral
	Interior Surface Tracts +/-

INSET D

Antero Resources Corporation
Well No. Piper Unit 3H

WV NORTH ZONE
GRID NORTH



WILLOW
- LAND SURVEYING PLLC -
P.O. BOX 17
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06/01/2018

SCALE: 1-INCH = 100-FEET



FILE: 16-005WA
JOB: PIPER3H INSET AD
DRAFTED BY: T.B.S. 02/01/18

LEGEND	
	Piper 3H Lateral
	Interior Surface Tracts +/-