

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

API 47-033-05814H6A County Harrison District Harrison / Union
Quad West Milford 7.5' Pad Name KST5HS Field/Pool Name Kennedy Storage
Farm Name JAMES IVAN MCDONALD Well Number KST5AHS
Operator (as registered with the OOG) CNX Gas Company LLC
Address P.O. Box 1248 City Jane Lew State WV Zip 26378

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top Hole Northing 4,335,861.76 m Easting 545,525.52 m
Landing Point of Curve Northing 4,335,426.51 m Easting 545,016.15 m
Bottom Hole Northing 4,332,695.66 m Easting 545,981.13 m

Elevation (ft) 1152.59' 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

Drilled 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)

WELL HAS NOT BEEN COMPELTED.

Date Permit Issued 07/25/2014 Date drilling commenced 12/22/2014 Date drilling ceased 12/24/2014
Date completion activities began N/A (Completion has not begun.) Date completion activities ceased N/A
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 vcrbal permission to plug

Freshwater depth(s) ft N/A Open mine(s) (Y/N) depths N
Salt water depth(s) ft N/A Void(s) encountered (Y/N) depths N
Coal depth(s) ft 80' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by: _____

APPROVED

NAME: Sam Ward (via email 10/6/17)
DATE: 10/6/17

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MCDONALD

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CASING STRINGS Conductor	Hole Size 26"	Casing Size 20"	Depth 100'	New or Used New	Grade wt/ft	Basket Depth(s) N/A	Did cement Circulate (Y/N) * Provide details to the right *
Surface							Y
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production							
Tubing							
Packer Type and Depth Set		None					

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				150	0'	
Surface							
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production							
Tubing							

Drillers TD (ft) 100'

Loggers TD (ft) 7023'

Deepest formation penetrated: _____

Plug back to (ft) _____

Plug back procedure: _____

Kick Off Depth (ft) _____

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 - No centralizers used.

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE Yes No DETAILS _____

WERE TRACERS USE Yes No TYPES OF TRACER(S) USED _____

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PRODUCING FORMATION(S)	DEPTHS	
	TVD	MD
<u>N/A (Well has not been completed.)</u>		
<u>No Producing Formation(s)</u>		

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump
 SHUT-IN PRESSURE Surface N/A psi Bottom Hole N/A psi DURATION OF TEST N/A hrs
 OPEN FLOW Gas N/A mcfpd Oil N/A bpd NGL N/A bpd Water N/A bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY : FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY TYPE OF FLUID (FRESHWATER, BRINE, GAS, H2S, ETC)
	DEPTH IN FT TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
					SEE ATTACHED

Please insert additional pages as applicable.

Drilling Contractor Noah Horn
 Address 1070 Sandy Valley Lane City Oakwood State VA Zip 24631
 Logging Company Halliburton
 Address 121 Champion Way, Suite 200 City Canonsburg State PA Zip 15317
 Cementing Company CalFrac
 Address 2001 Summit View Rd City Smithfield State PA Zip 15478
 Stimulating Company _____
 Address _____ City _____ State _____ Zip _____

Please insert additional pages as applicable.

Completed by CNX Gas WV Operations Company, LLC - Drilling and Completions Telephone 304-884-2000
 Signature *Steve Spittler* Title Steve Spittler - Completions Manager-Gas WV Date 9/28/2017

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LITHOLOGY / FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY TYPE OF FLUID (FRESHWATER, BRINE, GAS, H ₂ S, ETC)
	DEPTH IN FT TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
FILL	0	80			
SHALE/COAL	80	180			
LIMESTONE/SHALE/SILTSTONE	180	220			
SHALE/REDROCK/SILTSTONE	220	360			
REDROCK/SILTSTONE	360	390			
REDROCK/SILTSTONE/COAL	390	430			
SHALE/REDROCK/SILTSTONE	430	540			
SHL/RR/SILTSTONE/SANDSTONE	540	600			
SHALE/REDROCK/SILTSTONE	600	660			
STONE: LIME, SILT, SAND	650	780			
SHL/RR/SILTSTONE/LIMESTONE	780	960			
REDROCK/SANDSTONE	960	1040			
SANDSTONE	1040	1060			
SHL/REDROCK/SILTSTONE/COAL	1060	1080			
SHALE/REDROCK/SILTSTONE	1080	1240			
SHALE/SILTSTONE/SANDSTONE	1240	1440			
SHALE/SILTSTONE/COAL	1440	1458			
LITTLE LIME	1458	1482			Light Gray
BIG LIME	1500	1552			Light Gray/Brown
BIG INJUN	1600	1671			Light Gray
GANTZ SAND / GANTZ A	1852	1913			Gray
50/30 FOOT SANDS	1972	2059			Varicolored
GORDON SAND	2096	2239			Med Gray
SHALE	2240	2359			Dark Gray
FIFTH SAND	2360	2391			Med Gray
BAYARD SAND	2447	2470			Med Gray
SILTSTONE/SHALE	2471	3000			Med/Dark Gray
SPEECHLEY SAND	3001	3086			Med Gray
BALLTOWN SAND	3204	3352			Med Gray
SILTSTONE/SANDSTONE/SHALE	3353	4375			Med/Dark Gray
BENSON SAND	4376	4489			Med/Dark Gray
ALEXANDER SAND	4699	4740			Med/Dark Gray
SILTSTONE/SHALE	4741	4951			Med/Dark Gray
RHINESTREET SHALE	4952	6481			Dark Gray
MIDDLESEX SHALE	6482	6611			Dark Gray
WEST RIVER SHALE	6612	6644			Med Gray
BURKET SHALE	6645	6687			Black
TULLY LIMESTONE	6688	6745			Light Gray

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	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	
	TVD	TVD	MD	MD	
HAMILTON SHALE	6746	6870			Light/Med Gray
MARCELLUS SHALE	6871	6945			Black
ONONDAGA LIMESTONE	6946	6956			Light Brown
HUNTERSVILLE CHERT	6957	7023			Light/Med Gray
TD PILOT	7023				