

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

API 47 - 069 - 00351 County OHIO District RICHLAND
Quad TILTONSVILLE, OH-WV Pad Name FRANZ THOMAN-OHI-PAD1 Field/Pool Name PANHANDLE FIELD WET
Farm name SWN PRODUCTION COMPANY, LLC Well Number FRANZ THOMAN OHI 401H
Operator (as registered with the OOG) SWN PRODUCTION COMPANY, LLC
Address PO BOX 12359 City SPRING State TX Zip 77391-2359

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,442,990.33 Easting 528,966.89
Landing Point of Curve Northing 4,443,437.68 Easting 528,064.87
Bottom Hole Northing 4,447,824.64 Easting 526,713.70

Elevation (ft) 1,137.4' 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)
SOBM

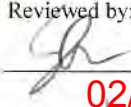
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Office of Oil and Gas
OCT 06 2023
WV Department of
Environmental Protection

Date permit issued 9/13/2023 Date drilling commenced 5/9/2023 Date drilling ceased 5/25/2023
Date completion activities began 7/2/2023 Date completion activities ceased 9/18/2023
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 326' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 473' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 344' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

APPROVED

Reviewed by:

02/09/2024
1/2/2024

API 47-069 - 00351 Farm name FRANZ THOMAN Well number FRANZ THOMAN OHI 401H

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	136	NEW	J-55/94#		Y
Surface	17.5	13.375	435	NEW	J-55/54.5#		Y / 41 BBLS
Coal	SEE INTERMEDIATE						
Intermediate 1	12.25	9.625	1744	NEW	J-55/36#		Y / 36 BBLS
Intermediate 2							
Intermediate 3							
Production	8.50	5.5	22,186	NEW	P-110 HP/20#		Y / 71 BBLS
Tubing		2.875	6,570	NEW	P-110/6.5#		N
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	CLASS A	GROUT TO SURFACE				SURFACE	24
Surface	CLASS A	544	15.60	1.19	647.36	SURFACE	8
Coal	SEE INTERMEDIATE						
Intermediate 1	CLASS A	721	15.60	1.12	807.52	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	3970	15.00	1.29	5,121.30	SURFACE	24
Tubing							

Drillers TD (ft) 22,186' Loggers TD (ft) 22,186'
 Deepest formation penetrated MARCELLUS Plug back to (ft) 22,096'
 Plug back procedure N/A

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Kick off depth (ft) 6,250' MD

WV Department of Environmental Protection

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 _____

SURFACE: 6 CENTRALIZERS - EVERY THIRD JOINT OF CASING
 INTERMEDIATE: 2 CENTRALIZERS - EVERY THIRD JOINT OF CASING
 PRODUCTION: 524 CENTRALIZERS - EVERY THIRD JOINT FROM SURFACE TO TOP OF CURVE, THEN EVERY JOINT UNTIL TD

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- 069 - 00351 Farm name FRANZ THOMAN Well number FRANZ THOMAN OHI 401H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	SEE	ATTACHMENT	1		

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Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

WV Department of Environmental Protection

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	ATTACHMENT	2				

Please insert additional pages as applicable.

API 47- 069 - 00351 Farm name FRANZ THOMAN Well number FRANZ THOMAN OHI 401H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>MARCELLUS</u>	<u>5,808'</u> TVD	<u>6,792'</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump
 SHUT-IN PRESSURE Surface 2,437 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs
 OPEN FLOW Gas 5,764 mcfpd Oil 873 bpd NGL _____ bpd Water 1,438 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 NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		
	SEE	ATTACHMENT	3		

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Please insert additional pages as applicable.

Drilling Contractor SWN DRILLING COMPANY
Address PO BOX 12359 City SPRING State TX Zip 77391-2359

Logging Company BAKER HUGHES
Address 9110 GORGANS MILL RD City THE WOODLANDS State TX Zip 77380

Cementing Company SCHLUMBERGER WELL SERVICES
Address 110 SCHLUMBERGER DRIVE City SUGAR LAND State TX Zip 77478

Stimulating Company SWN WELL SERVICES
Address PO BOX 12359 City SPRING State TX Zip 77391-2359

Please insert additional pages as applicable.

Completed by DENISE GRANTHAM Telephone 832.796.6139
Signature Denise Grantham Title REGULATORY SPECIALIST Date 10.4.2023

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

02/09/2024

LATITUDE: 40°10'00" SURFACE HOLE (2000' SCALE)

9,773'

LATITUDE: 40°12'30" BOTTOM HOLE (2000' SCALE)

5,511'



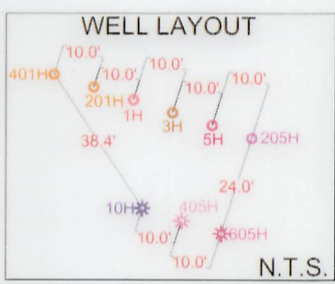
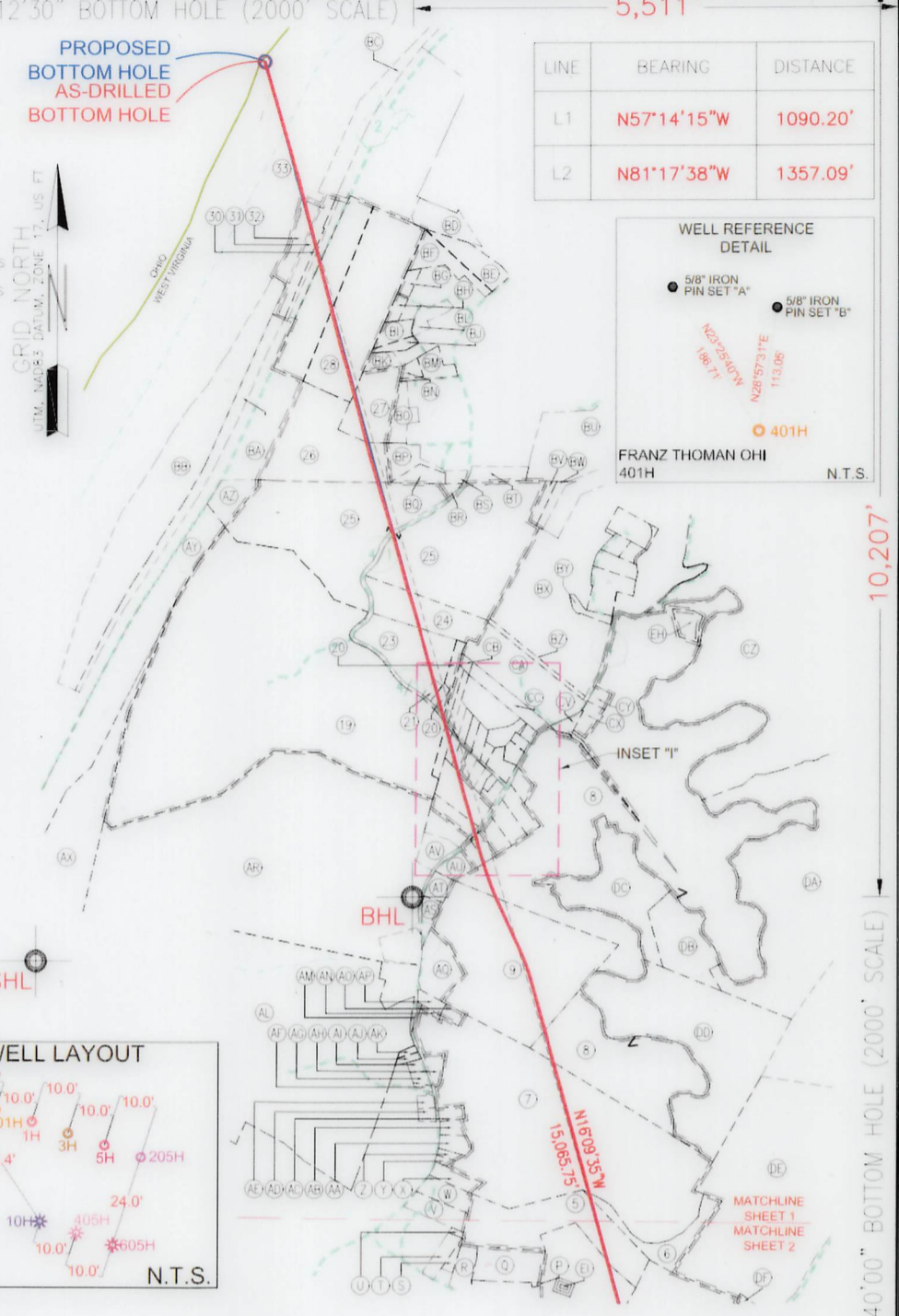
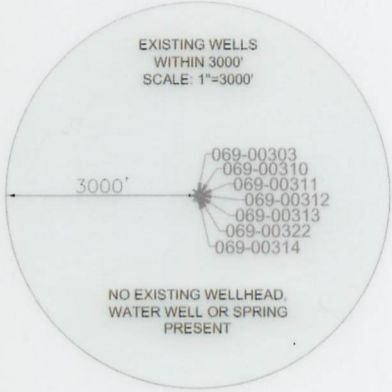
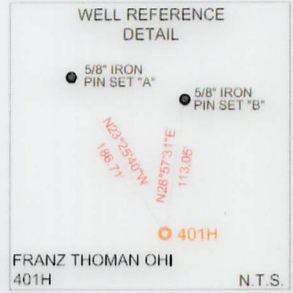
68011 Vineyard Road
St. Clairsville, Ohio 43950
740-695-6100

NOTES ON SURVEY

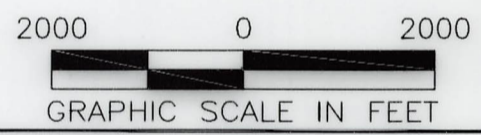
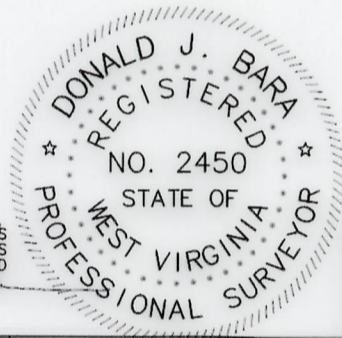
- COORDINATE SYSTEM IS UTM NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
- SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- NO DWELLINGS OR BUILDINGS WITHIN 625 FEET OF PROPOSED CENTER OF PAD.
- NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
- NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF THE LIMITS OF DISTURBANCE.
- NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.

GRID NORTH
UTM, NAD83 DATUM, ZONE 17, US FT

LINE	BEARING	DISTANCE
L1	N57°14'15"W	1090.20'
L2	N81°17'38"W	1357.09'



SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4442990.33 EASTING: 528966.89
LANDING POINT LOCATION (LPL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4443437.68 EASTING: 528064.87
BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4447824.64 EASTING: 526713.70
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BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4447825.07 EASTING: 526714.73



COMPANY: **SWN** Production Company, LLC

FRANZ THOMAN OHI
OPERATOR'S WELL #: 401H
API WELL #: 47 STATE 069 COUNTY 00351 PERMIT

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 REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 2450

WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP GAS LIQUID INJECTION STORAGE SHALLOW

WATERSHED: UPPER OHIO SOUTH
DISTRICT: RICHLAND COUNTY: OHIO
SURFACE OWNER: FRANZ THOMAN
OIL & GAS ROYALTY OWNER: FRANZ THOMAN

ELEVATION: 1,137.4'
QUADRANGLE: TILTONSVILLE, OH-WV
ACREAGE: ±69.418

DRILL DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION

CONVERT PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY) **AS-DRILLED** **02/09/2024**

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 5,856' TVD 22,186' TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC
ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201
CITY: MORGANTOWN STATE: WV ZIP CODE: 26508

DESIGNATED AGENT: BRITTANY WOODY
ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201
CITY: MORGANTOWN STATE: WV ZIP CODE: 26508

LEGEND:	REVISIONS:	DATE: 06-26-2023
● EXISTING BOTTOM HOLE	— ACCESS ROAD	API NO: 47-069-00351
⊙ EXISTING / PRODUCING WELLHEAD	— PUBLIC ROAD	DRAWN BY: Z.WOOD
LPL ● EXISTING LANDING POINT LOCATION	— FLOOD PLAIN	SCALE: 1" = 2000'
● PROPOSED SURFACE HOLE / BOTTOM HOLE	— LEASE BOUNDARY	DRAWING NO: 2018-781
LPL* PROPOSED LANDING POINT LOCATION	— AS DRILLED PATH	WELL LOCATION PLAT
	— PROPOSED PATH	

LATITUDE: 40°10'00" SURFACE HOLE (2000' SCALE)

9,773'

LATITUDE: 40°12'30" BOTTOM HOLE (2000' SCALE)

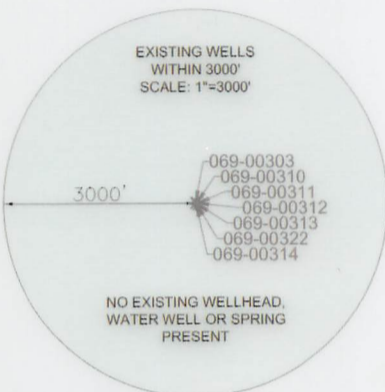
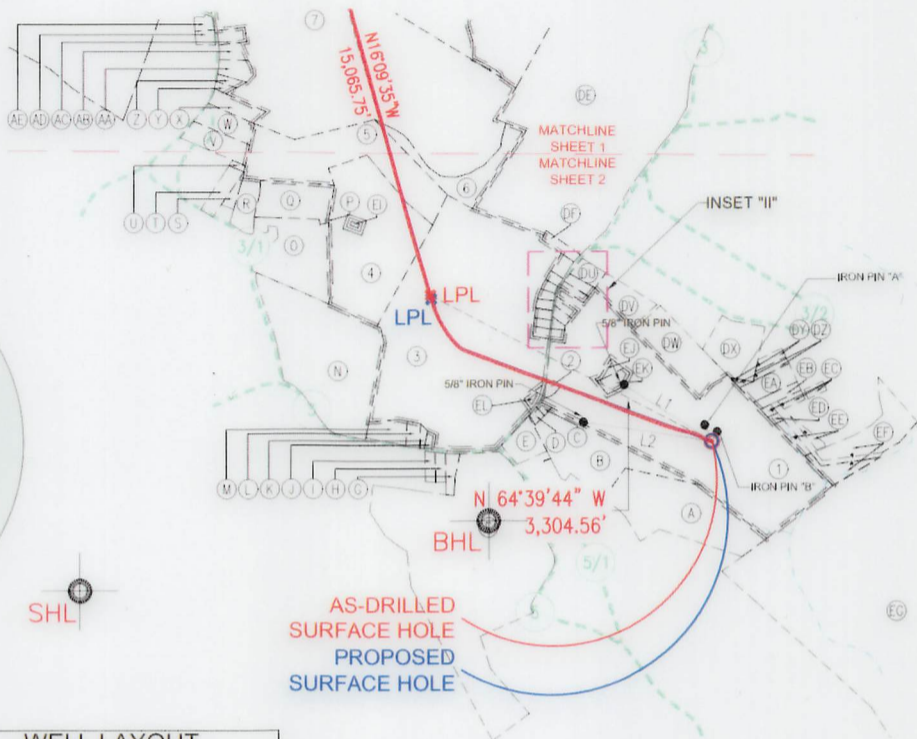
5,511'



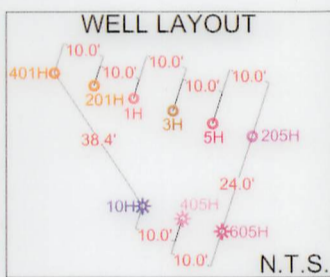
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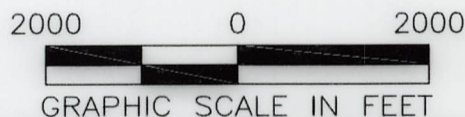
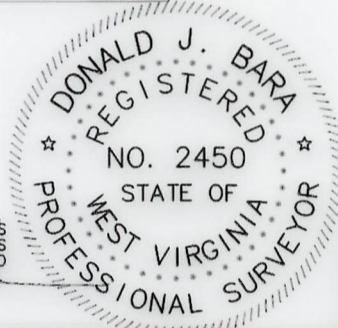
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P.S. 2450

COMPANY: **SWN** Production Company, LLC **SWN** Production Company™

	(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS	MINIMUM DEGREE OF ACCURACY: 1/200	FRANZ THOMAN OHI
	WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034	PROVEN SURVEY SOURCE OF ELEVATION: GRADE GPS (NAVD 88, US FT)	OPERATOR'S WELL #: 401H API WELL #: 47 069 00351 STATE COUNTY PERMIT

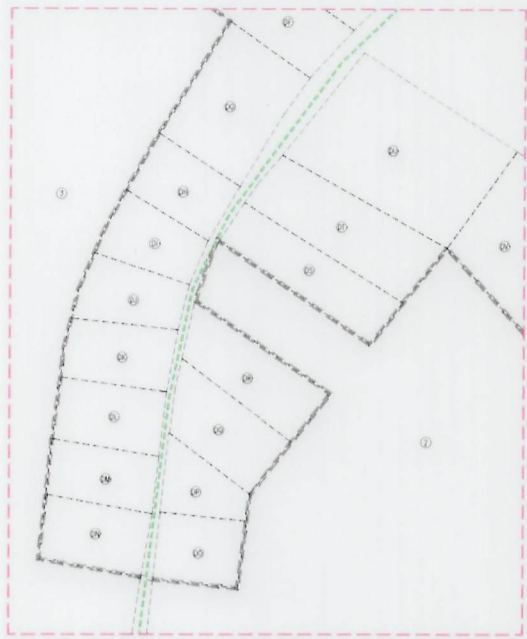
WELL TYPE: OIL	WASTE DISPOSAL	PRODUCTION <input checked="" type="checkbox"/>	DEEP	GAS <input checked="" type="checkbox"/>	LIQUID INJECTION	STORAGE	SHALLOW <input checked="" type="checkbox"/>
WATERSHED: UPPER OHIO SOUTH	DISTRICT: RICHLAND	COUNTY: OHIO	ELEVATION: 1,137.4'				
SURFACE OWNER: FRANZ THOMAN	QUADRANGLE: TILTONSVILLE, OH-WV				ACREAGE: ±69.418		
OIL & GAS ROYALTY OWNER: FRANZ THOMAN	ACREAGE: ±69.418				ESTIMATED DEPTH: 5,856' TVD 22,186' TMD		
DRILL	DRILL DEEPER	REDRILL	FRACTURE OR STIMULATE	PLUG OFF OLD FORMATION	PERFORATE NEW FORMATION		
CONVERT	PLUG & ABANDON	CLEAN OUT & REPLUG	OTHER CHANGE <input checked="" type="checkbox"/> (SPECIFY) AS-DRILLED			02/09/2024	
TARGET FORMATION: MARCELLUS							

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC	DESIGNATED AGENT: BRITTANY WOODY
ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201	ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201
CITY: MORGANTOWN STATE: WV ZIP CODE: 26508	CITY: MORGANTOWN STATE: WV ZIP CODE: 26508

LEGEND:	REVISIONS:	DATE: 06-26-2023
EXISTING BOTTOM HOLE	ACCESS ROAD	API NO: 47-069-00351
EXISTING / PRODUCING WELLHEAD	PUBLIC ROAD	DRAWN BY: Z.WOOD
EXISTING LANDING POINT LOCATION	FLOOD PLAIN	SCALE: 1" = 2000'
EXISTING LANDING POINT LOCATION	LEASE BOUNDARY	DRAWING NO: 2018-781
EXISTING LANDING POINT LOCATION	AS-DRILLED PATH	WELL LOCATION PLAT
EXISTING LANDING POINT LOCATION	PROPOSED PATH	



INSET "I"
N.T.S.



INSET "II"
N.T.S.

WELL BORE TABLE FOR SURFACE/ROYALTY OWNERS

TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL
1	THOMAN FRANZ (S) / (R)	4-R8-62
TRACT	SURFACE OWNER	TAX PARCEL
2	TUNNEL RIDGE LLC	4-R8P-16
3	CRAFT JOSEPH W III FOUNDATION	4-R8-51
4	TUNNEL RIDGE LLC	4-R8-79
5	CRAFT JOSEPH W III FOUNDATION	4-R8-63.2
6	CRAFT JOSEPH W III FOUNDATION	4-R8-4.13
7	TUNNEL RIDGE LLC	4-R8-4.18
8	TUNNEL RIDGE LLC	4-R5-40.7
9	TUNNEL RIDGE LLC	4-R8-3.2
10	KLEMM RICHARD A & J E	4-R5-36.1
11	ANTLEY MARK R & ELLIE	4-R5-36.2
12	BARTLETT RICHARD C	4-R5-36
13	OLEJASZ JOSEPH R JR	4-R5-35
14	OLEJASZ JOSEPH R JR	4-R5-34
15	RICHARDSON RUTH - LE	4-R5-32.1
16	STATE OF WEST VIRGINIA, DIVISION OF HIGHWAYS	COUNTY ROAD 4/1
17	RICHARDSON BRIAN D	4-R5-32.3
18	BOYD ROBERT JEFFREY & CHERYL L	4-R5-24
19	HEART 2 HEART VOLUNTEERS INC	4-R4-5
20	HASELEU ELAINE M	4-R5-25
21	HASELEU ELAINE	4-R5-23.1
22	BEEVER MICHAEL E & P A	4-R5-23.3
23	BUCK THOMAS E & TERRI D	4-R5-23
24	ESTEP JOHN L	4-R5-22.4
25	PLUMBY SARA, JULIE KLEIN & JUDITH PATTI	4-R5-22
26	DUNAWAY DONALD R & DONALD W	4-R4-2.5
27	RIEDEL MICHAEL J & BRENDA J	4-R5-2.18
28	CRAFT JOSEPH W III FOUNDATION	4-R4-4
29	CRAFT JOSEPH W III FOUNDATION	04-00R4-9999-9999B
30	CRAFT JOSEPH W III FOUNDATION	4-R1-2
31	CRAFT JOSEPH W III FOUNDATION	4-R1-1.1
32	CRAFT JOSEPH W III FOUNDATION	4-R4-3
33	STATE OF WEST VIRGINIA	OHIO RIVER

ADJOINING OWNERS TABLE

TRACT	SURFACE OWNER	TAX PARCEL
A	TUNNEL RIDGE LLC	4-R8-62.5
B	TUNNEL RIDGE LLC	4-R8-62.4
C	TUNNEL RIDGE LLC	4-R8P-14
D	TUNNEL RIDGE LLC	4-R8P-15
E	TUNNEL RIDGE LLC	4-R8P-1
F	MARY ANN HESS REALTY LLC	4-R8-53
G	MARY ANN HESS REALTY LLC	4-R8N-10
H	LITTEN PATRICIA J	4-R8N-8
I	MURRAY JOSEPH B & SYLVIA J	4-R8N-7
J	ORKOSKEY JANET K	4-R8N-11
K	SHELL HOLLY L	4-R8N-12
L	SHELL HOLLY L	4-R8N-13
M	SMITH W EVERETT & JOLINDA STEINER	4-R8N-14
N	TUNNEL RIDGE LLC	4-R8-67
O	TUNNEL RIDGE LLC	2-CV4-15
P	TUNNEL RIDGE LLC	4-R8-63.3
Q	TUNNEL RIDGE LLC	4-R8-63
R	TUNNEL RIDGE LLC	2-CV4-15.2
S	STANLEY GEORGE DAVID AND SUSAN	2-CV4-14.2
T	STANLEY GEORGE D & SUSAN M	2-CV4-14.1
U	STANLEY GEORGE DAVID STANLEY SUSAN M	2-CV4-8.1
V	TRACY JOHN A & M A	2-CV4-21.3
W	TRACY JOHN A & MARY ANN E	2-CV4-21
X	BAKER VINCENT L	2-CV1-6
Y	BAKER VINCENT L	2-CV1-9
Z	KINNEER VERNON A JR & CARLA C	2-CV1-8
AA	KINNEER VERNON A JR & CARLA C	2-CV1-7
AB	BROWN CHAD & YEKATERINA	4-R8-4.19
AC	BROWN CHAD & YEKATERINA	4-R8-4.17
AD	FEDORKE M PATRICIA	4-R8-4.2
AE	FACEMIRE JAMES G	4-R8-4.3
AF	MACKAY JOHN E & DIANNA L	4-R8-4.4
AG	SMILA FRANK W JR & KELLY L	4-R8-4.12
AH	BAKER STEVEN P (LE); STEVEN P BAKER ET AL	4-R8-4
AI	GRASKI DONNA M; GRASKI MICHAEL & GRASKI TIFFANY L	4-R8-4.6
AJ	HELDEFFER GEORGE W	4-R8-4.7
AK	KUCERA LISA A	4-R8-4.8
AL	ROTH FARM LLC	4-R7-24
AM	MCKEE JAMES F JR & EILEEN B	4-R8-77
AN	MCKEE JAMES & EILEEN	4-R8-4.15
AO	MCKEE JAMES & EILEEN	4-R8-4.16
AP	MCKEE JAMES F JR & EILEEN B	4-R8-4.14

02/09/2024

REVISIONS:

COMPANY:

SWN
Production Company, LLC

SWN ^{RL} ^A ^{V+} [®]
Production Company™

OPERATOR'S: FRANZ THOMAN OHI

WELL #: 401H

DISTRICT:
RICHLAND

COUNTY:
OHIO



STATE:
WV

DATE: 06-26-2023
API NO: 47-069-00351
DRAWN BY: Z.WOOD
SCALE: N/A
DRAWING NO: 2018-781
WELL LOCATION PLAT

COMPLETION ID 2501170588
DAD ID 3001170565

ADJOINING OWNERS TABLE			ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL	TRACT	SURFACE OWNER	TAX PARCEL
AQ	SCHUETZ EBBIE JOSEPH & JOY	4-R8-3	DL	OCHAP EUGENE F & DENISE R	4-R8K-108
AR	MCCLURE WM H & MARG A	4-R4-7	DM	OCHAP EUGENE F & D R	4-R8K-109
AS	HABERFIELD WAYNE K & D A	4-R8-1	DN	MCGEE JOHN M	4-R8P-17
AT	SCHELL RICHARD A & N	4-R8-1.1	DO	GAYDA DONALD P	4-R8P-18
AU	WEIGAND PAUL & REBECCA FAMILY TRUST	4-R5-40.1	DP	BOND CHARLES R	4-R8K-110
AV	PAVELICH-SWIGER SHERRI J PAVELICH JEFFREY M	4-R5-35.1	DQ	SCHWERTFEGER TYLER S	4-R8K-111
AW	KUCERA CARL J & SHARON L	4-R5-35.2	DR	SCHWERTFEGER TYLER S	4-R8K-112
AX	DONOHEW WILLIAM SCOTT & LAURA	4-R4-2.4	DS	WILSON RAY B & ANN M	4-R8-62.7
AY	DONOHEW WILLIAM S & LAURA	04-00R4-9999-9999E	DT	MILLARD BRITTANY LYNN	4-R8-62.6
AZ	KLIEN JULIE B; PATTI JUDITH A; PLUMBY SARA L	04-00R4-9999-9999D	DU	MULDREW DAVID R & KAREN	4-R8K-101
BA	TUNNEL RIDGE LLC	4-R4-2.3	DV	TAYLOR DELORA L - TOD	4-R8K-100
BB	TUNNEL RIDGE LLC	4-R4-2	DW	SOBOTA SUSAN J	4-R8-62.3
BC	TUNNEL RIDGE LLC	4-R2-21	DX	WRIGHT JOHN T & MELINDA L	4-R8P-11
BD	TUNNEL RIDGE LLC	4-R5-69	DY	SUTTON JACQUELINE M	4-R8Q-10
BE	WILSON RYAN T & MIDCAP SAMANTHA R	4-R5-2.3	DZ	DAGUE AMY D	4-R8Q-11
BF	RUSSELL CINDY L & JAMES F	4-R5-2.13	EA	KURNER DALE E & B J	4-R8Q-12
BG	LANOS JOHN & GOLDIE	4-R5-2.33	EB	WHEELER JOLLY W JR & K M	4-R8Q-14
BH	LARESE MARK C & JEAN ANN	4-R5-2.39	EC	TAROVISKY FRANK J & S R - TOD	4-R8Q-28
BI	GAUS BRYAN R & DANIELLE L	4-R5-2.47	ED	TOMASIK PAULA J & EDWARD C	4-R8Q-3
BJ	CUPP KELLEY J	4-R5-2.51	EE	TERAMANA RUSSELL & ROSEANN	4-R8Q-2
BK	RIEDEL MICHAEL J & BRENDA J	4-R5-2.64	EF	HUFFMAN KENDRA L & RALPH J	4-R8Q-60
BL	WILKINSON KATHRYN E - TOD	4-R5-2.17	EG	SANDCREST FOUNDATION INC	4-R11-15
BM	FLUHARTY DOUGLAS W	4-R5-2.21	EH	KRASEVEC RALPH J	4-R5-42
BN	VOGRIN STEPHEN L & ERIN L	4-R5-2.57	EI	WHEELING POWER CO WHEELING ELECTRIC CO	4-R8-63.1
BO	RIEDEL MICHAEL J & BRENDA J	4-R5-2.19	EJ	MAJEWSKI KASMIR MAJEWSKI EDWARD A	4-R8-62.2
BP	DUNAWAY DONALD W	4-R5E-6	EK	MAJEWSKI KASMIR MAJEWSKI EDWARD A	4-R8-62.8
BQ	KREISER DWIGHT & KATHY	4-R5E-6.1	EL	WEAVER SHIRLEY M	4-R8P-2
BR	RASNAK JEFF	4-R5-22.5			
BS	STAUVER HAROLD L II	4-R5-2.4			
BT	KLEEH JESSE J & ANDREA S	4-R5-63.1			
BU	CRAFT JOSEPH W III FOUNDATION	4-R5-2.2			
BV	CRAFT JOSEPH W III FOUNDATION	4-R5-22.2			
BW	CRAFT JOSEPH W III FOUNDATION	4-R5-22.1			
BX	KRASEVEC RALPH J AND BEVERLY	4-R5-21.10			
BY	KRASEVEC RALPH JAY	4-R5-21.11			
BZ	KRASEVEC RALPH J & BEVERLY A	4-R5-21.5			
CA	KRASEVEC RALPH J & B A	4-R5-21.3			
CB	HASELEU ELAINE M	4-R5-26			
CC	RICHARDSON DANIEL	4-R5-26.2			
CD	RICHARDSON BRIAN D AND FLANEGAN CASEY K	4-R5-26.1			
CE	GRAY CINDY JO	4-R5-30.1			
CF	WEAR SETH A & BLAKELY REBECCA S	4-R5-30.2			
CG	THOMAS MARK S & C K	4-R5-30.4			
CH	EBERT FREDERICK ALAN	4-R5-32.2			
CI	ZIEGLER FRANCES A	4-R5-32			
CJ	ZIEGLER FRANCES A	4-R5-31			
CK	TYRAS AMBER DAWN	4-R5-33			
CL	MOUSER GREGORY	4-R5-37			
CM	BRANCH ANTHONY J JR BRANCH TEXANNA	4-R5-38			
CN	BAKER TIMOTHY R	4-R5-39			
CO	HOWELL CLARENCE F AND DIANA M	4-R5-40.3			
CP	MEANS CHRISTOPHER & JENNIFER	4-R5-30.7			
CQ	KUCERA CARL J	4-R5-30.3			
CR	BOWMAN BETTY JO	4-R5-29			
CS	TEMPLE STEPHANIE IRENE	4-R5-27			
CT	TEMPLE STEPHANIE IRENE	4-R5-27			
CU	TUNNEL RIDGE LLC	4-R5-40.5			
CV	RICHIE RONALD L & S L	4-R5-40.2			
CW	RICHIE RONALD L & SANDRA L	4-R5-40.6			
CX	RICHIE RONALD L & SANDRA L	4-R5-42.2			
CY	RAPER JAMES	4-R5-41			
CZ	CRAFT JOSEPH W III FOUNDATION	4-R5-42.1			
DA	CRAFT JOSEPH W III FOUNDATION	4-R5-43			
DB	CRAFT JOSEPH III FOUNDATION	4-R8-71			
DC	CRAFT JOSEPH W III FOUNDATION	4-R5-40			
DD	CRAFT JOSEPH W III FOUNDATION	4-R8-3.1			
DE	CRAFT JOSEPH W III FOUNDATION	4-R8-5			
DF	HERCULES ROBERT D & PATSY G	4-R8K-113			
DG	HERCULES ROBERT D & P G	4-R8K-103			
DH	BOZENSKA B H AND OKELLEY K J	4-R8K-104			
DI	REED ELMER & JOY	4-R8K-105			
DJ	REED ELMER K & J D	4-R8K-106			
DK	FRAGALE ELAINE & SPEAKER KURT	4-R8K-107			

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REVISIONS:	 	
	COMPANY: FRANZ THOMAN OHI	
	OPERATOR'S FRANZ THOMAN OHI	DATE: 06-26-2023 API NO: 47-069-00351 DRAWN BY: Z.WOOD
	WELL #: 401H	SCALE: N/A DRAWING NO: 2018-781 WELL LOCATION PLAT
	DISTRICT: RICHLAND	COUNTY: OHIO
	STATE: WV	

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	7/3/2023
Job End Date:	7/17/2023
State:	West Virginia
County:	Ohio
API Number:	47-069-00351-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	FRANZ THOMAN OHI 401
Latitude:	40.13674652
Longitude:	-80.65997021
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	5,856
Total Base Water Volume (gal):	24,558,696
Total Base Non Water Volume:	0



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 Water	Operator	Base Fluid					
			Water	7732-18-5	100.00000	88.63744	Density = 8.345
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.34369	

			Water	7732-18-5	85.00000	0.34369	
FSTI-CI-02	SWN Well Services	Corrosion Inhibitor					
				Listed Below			
StimSTREAM FR 9725	SWN Well Services	Friction Reducer					
				Listed Below			
StimSTREAM SC 398 CW	SWN Well Services	Scale Inhibitor					
				Listed Below			
Sand	SWN Well Services	Proppant					
				Listed Below			
HCL	SWN Well Services	Solvent					
				Listed Below			
Ferriplex 80	SWN Well Services	Iron Control					
				Listed Below			
Clearal 270	SWN Well Services	Biocide					
				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	10.93476	
			Hydrochloric Acid	7647-01-0	15.00000	0.04822	
			Glutaraldehyde	111-30-8	25.00000	0.00309	

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			Sodium Erythorbate	6381-77-7	100.00000	0.00172	
			Ethylene glycol	107-21-1	40.00000	0.00118	
			Quaternary Ammonium compounds, Benzyl-C12-C16-alkyldimethyl, Chlorides	68424-85-1	7.50000	0.00093	
			Didecyldimethylammonium Chloride	7173-51-5	7.50000	0.00093	
			Ethanol	64-17-5	4.00000	0.00050	
			Poly(oxy-1,2-ethanediyl), .alpha.-(nonylphenyl)-.omega.-hydroxy-	9016-45-9	10.00000	0.00005	
			N,N-Dimethylformamide	68-12-2	10.00000	0.00005	
			Cinnamaldehyde	104-55-2	10.00000	0.00005	
			1-Octanol	111-87-5	5.00000	0.00002	
			Triethyl phosphate	78-40-0	5.00000	0.00002	
			Isopropyl alcohol	67-63-0	5.00000	0.00002	
			1-Decanol	112-30-1	5.00000	0.00002	
			2-Butoxyethanol	111-76-2	5.00000	0.00002	
			benzyl chloridequaternized	72480-70-7	5.00000	0.00002	

* 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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**FRANZTHOMAN OHI 401H
ATTACHMENT 1
PERF REPORT**

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STAGE NUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STG
1	6/17/2023	22,096	22,006	36
2	7/3/2023	21,975	21,798	36
3	7/3/2023	21,765	21,589	36
4	7/3/2023	21,556	21,379	36
5	7/4/2023	21,346	21,169	72
6	7/5/2023	21,136	20,959	36
7	7/5/2023	20,926	20,750	36
8	7/5/2023	20,717	20,540	36
9	7/5/2023	20,507	20,330	36
10	7/5/2023	20,297	20,121	36
11	7/5/2023	20,088	19,911	36
12	7/6/2023	19,878	19,701	36
13	7/6/2023	19,668	19,491	36
14	7/6/2023	19,458	19,282	36
15	7/6/2023	19,249	19,072	36
16	7/7/2023	19,039	18,862	36
17	7/7/2023	18,829	18,653	36
18	7/7/2023	18,620	18,443	36
19	7/7/2023	18,410	18,233	36
20	7/7/2023	18,200	18,023	36
21	7/7/2023	17,990	17,814	36
22	7/8/2023	17,781	17,604	36
23	7/8/2023	17,571	17,389	72
24	7/8/2023	17,361	17,185	36
25	7/9/2023	17,152	16,975	36
26	7/9/2023	16,942	16,765	36
27	7/9/2023	16,732	16,555	36
28	7/9/2023	16,522	16,346	36
29	7/10/2023	16,313	16,136	36
30	7/10/2023	16,103	15,926	36
31	7/10/2023	15,893	15,717	36
32	7/10/2023	15,684	15,507	36
33	7/10/2023	15,474	15,297	36
34	7/10/2023	15,264	15,087	36
35	7/11/2023	15,054	14,878	36
36	7/11/2023	14,845	14,668	36
37	7/11/2023	14,635	14,458	36
38	7/11/2023	14,425	14,249	36
39	7/11/2023	14,216	14,039	36
40	7/11/2023	14,006	13,829	36
41	7/11/2023	13,796	13,619	36
42	7/12/2023	13,587	13,410	36

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**FRANZTHOMAN OHI 401H
ATTACHMENT 1
PERF REPORT**

STAGE NUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STG
43	7/12/2023	13,377	13,200	36
44	7/12/2023	13,167	12,990	36
45	7/12/2023	12,957	12,781	36
46	7/12/2023	12,748	12,571	36
47	7/13/2023	12,538	12,361	36
48	7/13/2023	12,328	12,151	36
49	7/13/2023	12,119	11,942	36
50	7/13/2023	11,909	11,732	36
51	7/13/2023	11,699	11,522	36
52	7/13/2023	11,489	11,313	36
53	7/13/2023	11,280	11,103	36
54	7/14/2023	11,070	10,893	36
55	7/14/2023	10,860	10,683	36
56	7/14/2023	10,651	10,474	36
57	7/14/2023	10,441	10,264	36
58	7/14/2023	10,231	10,054	36
59	7/15/2023	10,021	9,845	36
60	7/15/2023	9,812	9,635	36
61	7/15/2023	9,602	9,404	72
62	7/15/2023	9,362	9,216	36
63	7/15/2023	9,183	9,006	36
64	7/15/2023	8,430	8,260	36
65	7/16/2023	8,229	8,059	36
66	7/16/2023	8,028	7,858	36
67	7/16/2023	7,827	7,657	36
68	7/16/2023	7,625	7,456	36
69	7/16/2023	7,424	7,255	36
70	7/17/2023	7,223	7,054	36
71	7/17/2023	7,022	6,852	36

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FRANZ THOMAN OHI 401H
ATTACHMENT 2
STIM REPORT

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/othe
1	7/3/2023	87.9	8,428	6,473	3,180	220,640	6,499	0
2	7/3/2023	95.6	8,933	4,394	4,000	368,070	9,589	0
3	7/3/2023	98.3	8,945	5,185	4,560	366,620	9,341	0
4	7/3/2023	82.7	10,285	5,445	3,872	214,490	10,795	0
5	7/4/2023	69.3	6,943	5,097	4,465	381,087	13,923	0
6	7/5/2023	90.5	8,710	5,525	4,300	366,670	8,707	0
7	7/5/2023	93.3	8,871	5,450	4,292	372,970	8,895	0
8	7/5/2023	91.9	8,483	5,709	4,325	374,852	8,626	0
9	7/5/2023	83.9	9,189	5,633	3,686	371,728	8,420	0
10	7/5/2023	90.2	8,121	5,442	4,255	373,873	8,480	0
11	7/5/2023	84.4	7,611	5,503	4,508	372,710	8,353	0
12	7/6/2023	94.5	8,499	5,146	4,088	365,450	8,287	0
13	7/6/2023	96.2	8,624	5,386	4,293	366,470	8,452	0
14	7/6/2023	84.2	7,450	5,238	4,549	369,420	8,472	0
15	7/7/2023	84.6	7,377	5,188	4,445	371,880	8,258	0
16	7/7/2023	87.2	7,377	5,079	4,174	369,900	8,074	0
17	7/7/2023	95.6	8,241	5,215	4,220	362,590	8,188	0
18	7/7/2023	90	8,767	5,605	4,379	370,140	8,268	0
19	7/7/2023	88.7	7,881	5,052	4,335	372,920	8,407	0
20	7/7/2023	89.4	7,657	4,411	4,269	372,780	8,154	0
21	7/8/2023	88.8	7,751	5,445	3,943	368,500	8,114	0
22	7/8/2023	89.8	7,670	5,447	4,028	370,010	8,240	0
23	7/8/2023	68.5	9,158	5,779	5,393	117,740	10,981	0
24	7/8/2023	89.6	7,665	5,544	5,336	373,540	8,934	0
25	7/9/2023	89.6	7,770	5,279	4,653	375,628	8,323	0
26	7/9/2023	86.3	7,823	5,691	4,357	243,180	8,546	0
27	7/9/2023	89.6	7,609	5,927	4,912	374,150	8,777	0
28	7/9/2023	88.8	7,730	5,812	4,222	373,310	8,307	0
29	7/10/2023	89.2	7,383	5,334	4,407	372,510	8,088	0
30	7/10/2023	89.2	7,453	5,480	4,325	372,290	8,128	0
31	7/10/2023	88.8	7,414	5,704	4,558	367,520	8,308	0
32	7/10/2023	88.4	7,278	5,810	4,232	373,400	8,181	0
33	7/10/2023	84.6	6,966	6,035	4,119	370,254	8,172	0
34	7/10/2023	86.6	7,067	5,413	4,610	371,720	8,128	0
35	7/11/2023	82.6	6,851	5,611	4,372	371,960	7,877	0
36	7/11/2023	92.2	7,290	5,993	4,611	374,733	8,133	0
37	7/11/2023	90.1	7,111	5,679	4,425	372,790	8,045	0
38	7/11/2023	96.5	7,438	5,996	4,593	372,060	8,003	0
39	7/11/2023	89.6	7,058	5,753	4,786	371,280	8,233	0
40	7/11/2023	91	7,128	5,313	4,828	370,790	8,051	0
41	7/11/2023	81.3	6,685	5,160	4,677	372,120	8,038	0
42	7/12/2023	90.6	7,223	5,424	4,398	373,300	8,066	0
43	7/12/2023	90	6,932	5,857	4,548	370,260	8,030	0
44	7/12/2023	89.9	7,195	4,343	4,452	371,160	7,604	0
45	7/12/2023	94.9	7,464	5,817	4,485	368,740	7,894	0
46	7/12/2023	99.2	7,666	5,724	4,819	376,430	7,747	0
47	7/13/2023	97.1	7,254	5,547	3,863	369,020	7,712	0
48	7/13/2023	90	6,865	5,353	4,565	376,790	7,819	0
49	7/13/2023	90	6,877	5,590	4,475	376,300	7,883	0
50	7/13/2023	90	6,870	5,578	4,563	376,710	8,063	0
51	7/13/2023	89.9	7,377	5,801	4,537	371,770	7,757	0
52	7/13/2023	74.5	5,741	5,854	4,735	371,540	8,515	0
53	7/13/2023	82.5	6,399	5,577	4,484	372,610	7,989	0

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FRANZ THOMAN OHI 401H
ATTACHMENT 2
STIM REPORT

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/othe
54	7/14/2023	82	6,406	5,516	4,884	378,530	7,782	0
55	7/14/2023	88.7	6,930	5,904	4,328	329,790	7,119	0
56	7/14/2023	45	9,116	5,676	4,177	3,826	3,961	0
57	7/14/2023	91.1	6,553	4,578	4,330	435,740	10,667	0
58	7/14/2023	91	6,505	5,160	4,945	378,010	7,747	0
59	7/15/2023	88.4	6,572	5,361	4,270	373,180	7,695	0
60	7/15/2023	89.9	6,477	6,262	4,617	376,788	7,655	0
61	7/15/2023	89.1	7,425	5,555	5,573	307,440	9,947	0
62	7/15/2023	93.4	6,842	5,477	4,675	369,350	7,587	0
63	7/15/2023	84.8	6,190	5,161	4,352	365,360	7,492	0
64	7/16/2023	72.1	6,289	4,935	4,688	370,740	7,380	0
65	7/16/2023	84.9	6,145	5,582	4,303	329,550	7,956	0
66	7/16/2023	99.8	6,696	5,008	4,468	369,300	7,738	0
67	7/16/2023	92.5	6,504	5,075	4,652	375,010	8,758	0
68	7/16/2023	93.9	6,210	5,316	4,700	367,890	7,225	0
69	7/16/2023	93.7	6,375	6,542	4,776	374,820	7,524	0
70	7/17/2023	98	6,512	5,250	4,527	371,560	7,543	0
71	7/17/2023	98	6,394	5,180	4,462	396,450	8,063	0

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Well Name: Franz Thoman OHI 401H

47069003510000

LITHOLOGY/FORMATION	TOP DEPTH, MD (FT)	TOP DEPTH, TVD (FT)	BOTTOM DEPTH, MD (FT)	BOTTOM DEPTH, TVD (FT)	QUANTITY AND TYPE OF FLUID
Base of Fresh Water	0.00	0.00	326.00	326.00	
Top of Salt Water	473.00	473.00	NA	NA	
Pittsburgh Coal	344.00	344.00	349.00	349.00	
Pottsville (ss)	478.00	478.00	548.00	548.00	
Ravenclyff (ss)	842.00	841.00	1110.00	1107.00	
Maxton (ss)	1110.00	1107.00	1480.00	1462.00	
Big Injun (ss)	1480.00	1462.00	1653.00	1625.00	
Rhinestreet (shale)	6181.00	5416.00	6352.00	5553.00	
Burket (shale)	6528.00	5679.00	6537.00	5685.00	
Tully (ls)	6537.00	5685.00	6626.00	5736.00	
Mahantango (shale)	6626.00	5736.00	6792.00	5808.00	
Marcellus (shale)	6792.00	5808.00	NA	NA	GAS

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