



For your records

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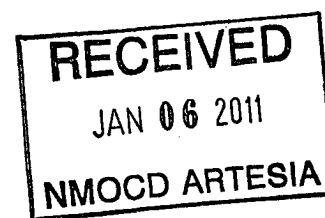
30-015-37367

DIRECTIONAL SURVEY REPORT

YATES PETROLEUM

PETROGULF "BJT" FEDERAL #2H- HORIZ.

EDDY COUNTY, NEW MEXICO



PREPARED BY: FRANCISCO SINISTERRA

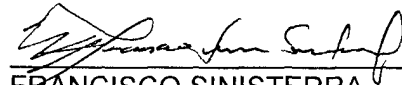
DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) NICK POND
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 07-27-10 TO 08-11-10
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: EDDY COUNTY, NM
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

YATES PETROLEUM
PETROGULF "BJT" FEDERAL #2- HORIZONTAL
EDDY COUNTY, NM
RIG: LATSHAW #3

9. SURVEY CERTIFIED FROM: 7746 TO 12722 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 4544.14 FEET ON A BEARING OF 268.72 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 12817 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.


FRANCISCO SINISTERRA
MWD COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 07/28/2010
Date Completed: 08/11/2010

YATES PETROLEUM
PETROGULF BJT FED #2H
EDDY COUNTY, NEW MEXICO
Rig: LATSHAW 3
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers: N. POND
S. HARVICK

Survey Horiz. Reference: WELLHEAD
Ref Coordinates: LAT: 32.12.56.0193 N LON: 103.44.28.0697 W
GRID Reference: NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 724483.9460 Y: 442659.6370
North Aligned To: GRID NORTH
Total Magnetic Correction: 7.45° EAST TO GRID
Vertical Section Plane: 269.65
Survey Vert. Reference: 22.00' Kelly Bushing To Ground
Altitude: 3599.00' Ground To MSL

Measured Depth	12817.00	(feet)
Inclination	87.85	(deg)
Azimuth	261.77	(deg)
True Vertical Depth	8333.99	(feet)
Vertical Section	4543.54	(feet)
Survey X cord	719940.94	(feet)
Survey Y cord	442558.25	(feet)
Survey Lat	32.21535020 N	(deg)
Survey Lon	103.75582139 W	(deg)
Rectangular Corr. N/S	101.39 S	(feet)
Rectangular Corr. E/W	4543.01 W	(feet)
Closure Distance	4544.14	(feet)
Direction of Closure	268.72	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc. Survey Report

YATES PETROLEUM
PETROGULF BJT FED #2H
EDDY COUNTY, NEW MEXICO
Rig: LATSHAW 3
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers: N. POND
S. HARVICK

Survey Horiz. Reference: WELLHEAD
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GRID Reference: NAD83 new mexico east Transverse Mercator
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Total Magnetic Correction: 7.45° EAST TO GRID
Vertical Section Plane: 269.65
Survey Vert. Reference: 22.00' Kelly Bushing To Ground
Altitude: 3599.00' Ground To MSL

Survey Calculations by RX5 V6.03A using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	Rectangular Offsets (ft)	TOTAL (ft)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)
TIE INTO MS ENERGY GYRO SURVEYS @ 7700' MD									
7700.00	2.00	215.08	7698.92	0.00	-36.20	23.57 S	36.34 E	43.31@ 122.97	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.									
7746.00	1.76	223.54	7744.90	46.00	-35.24	24.74 S	35.39 E	43.18@ 124.95	0.80
7839.00	2.11	224.14	7837.84	93.00	-33.05	27.00 S	33.22 E	42.81@ 129.11	0.38
7871.00	1.76	243.34	7869.82	32.00	-32.20	27.65 S	32.37 E	42.57@ 130.50	2.29
7903.00	3.25	288.70	7901.80	32.00	-30.90	27.58 S	31.07 E	41.54@ 131.59	7.41
7935.00	6.42	303.54	7933.68	32.00	-28.56	26.30 S	28.72 E	38.94@ 132.48	10.57
7966.00	10.29	303.42	7964.34	31.00	-24.81	23.81 S	24.96 E	34.50@ 133.65	12.48
7998.00	13.81	301.55	7995.63	32.00	-19.19	20.24 S	19.32 E	27.98@ 136.33	11.07
8030.00	17.50	300.24	8026.44	32.00	-11.81	15.82 S	11.90 E	19.80@ 143.03	11.58
8061.00	21.46	298.85	8055.66	31.00	-2.84	10.73 S	2.91 E	11.12@ 164.84	12.86
8092.00	24.71	296.66	8084.18	31.00	7.88	5.09 S	7.85 W	9.36@ 237.08	10.84
8124.00	28.75	294.85	8112.75	32.00	20.81	1.15 N	20.82 W	20.85@ 273.17	12.88
8155.00	32.98	294.64	8139.35	31.00	35.21	7.81 N	35.26 W	36.11@ 282.48	13.65
8187.00	37.02	294.52	8165.56	32.00	51.85	15.44 N	51.95 W	54.19@ 286.55	12.63
8219.00	41.50	294.43	8190.33	32.00	70.23	23.83 N	70.38 W	74.30@ 288.70	14.00
8250.00	46.08	294.41	8212.71	31.00	89.70	32.69 N	89.90 W	95.66@ 289.98	14.77
8282.00	50.30	294.14	8234.03	32.00	111.38	42.49 N	111.64 W	119.46@ 290.84	13.20
8313.00	54.61	293.92	8252.92	31.00	133.76	52.50 N	134.09 W	144.00@ 291.38	13.92
8350.00	59.79	293.65	8272.96	37.00	162.14	65.04 N	162.54 W	175.07@ 291.81	14.01
8382.00	63.93	292.76	8288.05	32.00	188.00	76.15 N	188.47 W	203.27@ 292.00	13.17
8414.00	67.27	295.29	8301.27	32.00	214.53	88.02 N	215.07 W	232.39@ 292.26	12.68
8444.00	66.65	291.50	8313.01	30.00	239.80	98.98 N	240.40 W	259.98@ 292.38	11.81
8477.00	67.36	290.41	8325.90	33.00	268.10	109.84 N	268.77 W	290.35@ 292.23	3.73
8508.00	68.59	290.90	8337.53	31.00	294.92	119.98 N	295.66 W	319.08@ 292.09	4.23

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
PETROGULF BJT FED #2H
EDDY COUNTY, NEW MEXICO
RIG: LATSHAW 3

Page 02/03

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)
8551.00	69.56	291.76	8352.88	43.00	332.25	134.59 N 333.07 W	359.24@ 292.00	2.93
8583.00	70.00	291.47	8363.94	32.00	360.09	145.65 N 360.99 W	389.27@ 291.97	1.62
8615.00	71.05	291.78	8374.61	32.00	388.07	156.77 N 389.04 W	419.43@ 291.95	3.41
8647.00	74.04	291.11	8384.21	32.00	416.41	167.93 N 417.45 W	449.96@ 291.91	9.55
8678.00	78.08	290.14	8391.68	31.00	444.50	178.52 N 445.60 W	480.03@ 291.83	13.38
8709.00	82.39	289.38	8396.93	31.00	473.18	188.85 N 474.34 W	510.55@ 291.71	14.11
8804.00	91.80	285.44	8401.74	95.00	563.42	217.18 N 564.76 W	605.08@ 291.03	10.73
8898.00	92.51	283.03	8398.21	94.00	654.32	240.28 N 655.80 W	698.43@ 290.12	2.67
8993.00	91.36	280.35	8395.00	95.00	747.17	259.51 N 748.77 W	792.47@ 289.12	3.07
9086.00	91.28	277.16	8392.86	93.00	838.96	273.66 N 840.65 W	884.07@ 288.03	3.43
9180.00	90.31	274.10	8391.55	94.00	932.43	282.88 N 934.17 W	976.07@ 286.85	3.41
9274.00	90.31	272.04	8391.04	94.00	1026.25	287.92 N 1028.03 W	1067.59@ 285.65	2.19
9368.00	88.64	269.42	8391.91	94.00	1120.22	289.12 N 1122.01 W	1158.66@ 284.45	3.31
9493.00	88.99	268.81	8394.49	125.00	1245.19	287.19 N 1246.97 W	1279.61@ 282.97	0.56
9555.00	89.43	268.93	8395.35	62.00	1307.18	285.96 N 1308.95 W	1339.82@ 282.32	0.74
9648.00	90.66	267.58	8395.27	93.00	1400.15	283.13 N 1401.90 W	1430.21@ 281.42	1.96
9741.00	91.45	266.61	8393.56	93.00	1493.04	278.42 N 1494.77 W	1520.47@ 280.55	1.34
9835.00	91.36	267.27	8391.26	94.00	1586.90	273.40 N 1588.60 W	1611.96@ 279.77	0.71
9927.00	91.28	268.18	8389.14	92.00	1678.83	269.75 N 1680.50 W	1702.02@ 279.12	0.99
10020.00	90.48	267.41	8387.71	93.00	1771.76	266.17 N 1773.42 W	1793.29@ 278.54	1.19
10113.00	91.10	267.36	8386.43	93.00	1864.68	261.93 N 1866.32 W	1884.61@ 277.99	0.67
10205.00	92.59	264.53	8383.46	92.00	1956.43	255.43 N 1958.03 W	1974.62@ 277.43	3.48
10297.00	93.30	263.35	8378.74	92.00	2047.85	245.73 N 2048.39 W	2064.07@ 276.84	1.49
10391.00	93.12	262.76	8373.47	94.00	2141.08	234.38 N 2142.55 W	2155.34@ 276.24	0.65
10483.00	93.65	262.65	8368.04	92.00	2232.25	222.72 N 2233.65 W	2244.73@ 275.69	0.59
10577.00	92.68	261.74	8362.85	94.00	2325.31	209.98 N 2326.63 W	2336.09@ 275.16	1.41

PathFinder Energy Services, Inc. Survey Report

YATES PETROLEUM
PETROGULF BJT FED #2H
EDDY COUNTY, NEW MEXICO
RIG: LATSHAW 3

Page 03/03

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)
10670.00	91.89	261.10	8359.14	93.00	2417.28	196.11 N 2418.52 W	2426.46@ 274.64	1.09
10764.00	92.95	261.99	8355.17	94.00	2510.25	182.30 N 2511.41 W	2518.02@ 274.15	1.47
10857.00	93.21	263.46	8350.18	93.00	2602.44	170.54 N 2603.53 W	2609.11@ 273.75	1.60
10950.00	88.99	263.03	8348.39	93.00	2694.82	159.61 N 2695.84 W	2700.57@ 273.39	4.56
11043.00	90.57	263.55	8348.75	93.00	2787.24	148.74 N 2788.20 W	2792.17@ 273.05	1.79
11135.00	87.32	263.08	8350.44	92.00	2878.65	138.04 N 2879.55 W	2882.86@ 272.74	3.57
11229.00	89.52	263.95	8353.03	94.00	2972.07	127.42 N 2972.91 W	2975.64@ 272.45	2.52
11323.00	91.71	263.57	8352.03	94.00	3065.57	117.21 N 3066.34 W	3068.58@ 272.19	2.36
11416.00	90.13	262.93	8350.53	93.00	3157.97	106.28 N 3158.68 W	3160.47@ 271.93	1.83
11509.00	91.71	262.65	8349.04	93.00	3250.29	94.61 N 3250.93 W	3252.30@ 271.67	1.73
11601.00	93.56	263.37	8344.81	92.00	3341.57	83.43 N 3342.14 W	3343.18@ 271.43	2.16
11695.00	92.68	262.49	8339.69	94.00	3434.79	71.87 N 3435.29 W	3436.04@ 271.20	1.32
11788.00	92.77	262.34	8335.27	93.00	3526.94	59.61 N 3527.37 W	3527.87@ 270.97	0.19
11882.00	92.33	262.36	8331.09	94.00	3620.09	47.11 N 3620.44 W	3620.75@ 270.75	0.47
11977.00	88.55	260.58	8330.36	95.00	3714.10	33.02 N 3714.37 W	3714.51@ 270.51	4.40
12068.00	89.60	260.82	8331.83	91.00	3803.97	18.32 N 3804.16 W	3804.20@ 270.28	1.18
12161.00	91.80	259.27	8330.69	93.00	3895.66	2.24 N 3895.74 W	3895.74@ 270.03	2.89
12254.00	92.33	259.77	8327.34	93.00	3987.15	14.66 S 3987.13 W	3987.16@ 269.79	0.78
12348.00	92.51	260.32	8323.37	94.00	4079.74	30.90 S 4079.63 W	4079.75@ 269.57	0.61
12442.00	90.22	260.81	8321.13	94.00	4172.53	46.30 S 4172.33 W	4172.58@ 269.36	2.49
12536.00	87.58	261.60	8322.94	94.00	4265.49	60.67 S 4265.20 W	4265.63@ 269.19	2.93
12630.00	87.67	261.53	8326.83	94.00	4358.47	74.45 S 4358.10 W	4358.74@ 269.02	0.12
12722.00	87.85	261.77	8330.43	92.00	4449.51	87.80 S 4449.05 W	4449.92@ 268.87	0.33
12817.00	87.85	261.77	8333.99	95.00	4543.54	101.39 S 4543.01 W	4544.14@ 268.72	0.00

STRAIGHT-LINE PROJECTION TO BIT @ 12817' MD



ENERGY SERVICES

TIE-IN SURVEY INFORMATION SHEET

CLIENT INFORMATION

CLIENT:	YATES PETROLEUM		
LEASE / WELL No.:	PETRGULF BJT	FED #2	
WELL LOCATION:	EDDY COUNTY, NM		
COUNTY / STATE / COUNTRY:	EDDY	NM	USA
RIG:	LATSHAW 3		
API WELL No:	30-015-37367		
JOB No:	101010904 WT-WT		
P.O. / AFE No.			
DIRECTIONAL COMPANY:	PATHFINDER ENERGY		

WELL SITE INFORMATION

MAGNETIC DECLINATION:			
On Wall Plat:	7.47	LWD Calculated:	7.46
Agreed Upon:		7.46	
X =	724483.949600	Feet	Y =
442659.637000		Feet	
SITE LATITUDE:	32.215561	SITE LONGITUDE:	103.74113
GRID SYSTEM:	TRUE ☐ UTM ☐ LAMBERT ☒	ZONE:	NEW MEXICO EAST
PROPOSED DRIFT DIRECTION:	269.65		
KELLY BUSHING ELEVATION:	22		
ALTITUDE:	3599	Feet	WATER DEPTH:
N/A		Feet	

TIE-IN SURVEY

MEASURED DEPTH:	7700		
DRIFT ANGLE:	2		
DRIFT DIRECTION:	215.09		
TRUE VERTICAL DEPTH:	7698.92		
VERTICAL SECTION:	-36.2		
RECTANGULAR COORDINATE (N / S) :	-23.57		
RECTANGULAR COORDINATE (E / W) :	36.34		
CLOSURE DISTANCE / DIRECTION:	43.32	122.96	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	MS ENERGY SERVICES		
COPY OF TIE-IN SURVEY REPORT	☒ YES		☐ NO

WELL PLAN

KICKOFF DEPTH:	7912	TOTAL DEPTH:	12864
KICKOFF ANGLE:	0	MAX ANGLE:	90

PES Engineers: _____

**Signature of both field engineers required if applicable

Directional Driller: _____

DATE: _____

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***** DEPTH MEASURED IN FEET *****
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COMMENTS: LATSHAW 3
BRAD TATE
RKB 22'
MIKEL@YATESPETROLEUM.COM

*** THIS DIRECTIONAL SURVEY REPORT IS ***
** CORRECT TO THE BEST OF MY KNOWLEDGE **
* AND IS SUPPORTED BY ACTUAL FIELD DATA! *

COMPANY REPRESENTATIVE

MS ENERGY SERVICES
ODESSA, TEXAS

JOB NUMBER: SVCO-100633

WELL NAME: PETROGULF BJT FEDERAL #2H

INRUN SURVEY
BY MINIMUM CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	L/R PROP.	INCL	BEARING AZIMUTH	COORDINATES LATITUDE	DEPARTURE	D-LEG /100	D-LEG /CL	STATION DISP.	DISPLACEMENT DIRECTION
0.0	0.00	0.00	0.000	00.00	000.00	0.00 N	0.00 E	0.00		0.00	AT 000.00
200.0	200.00	0.36	-0.248	00.25	234.99	0.25 S	0.36 W	0.13	0.25	0.44	AT 234.99
400.0	400.00	0.77	-0.930	00.25	185.99	0.93 S	0.76 W	0.10	0.21	1.20	AT 219.13
600.0	600.00	1.06	-1.001	00.25	325.99	1.01 S	1.05 W	0.23	0.47	1.45	AT 226.20
800.0	800.00	0.87	-0.542	00.25	077.00	0.55 S	0.87 W	0.21	0.41	1.03	AT 237.80
1000.0	999.99	0.17	-0.787	00.25	141.00	0.79 S	0.17 W	0.13	0.26	0.81	AT 192.11
1200.0	1199.99	0.21	-1.434	00.25	225.00	1.44 S	0.20 W	0.17	0.33	1.45	AT 188.05
1400.0	1399.99	-0.70	-2.218	00.75	111.01	2.21 S	0.71 E	0.44	0.88	2.32	AT 162.21
1600.0	1599.97	-3.15	-3.128	00.75	109.01	3.11 S	3.17 E	0.01	0.03	4.44	AT 134.44
1800.0	1799.95	-6.11	-3.299	01.00	081.01	3.26 S	6.13 E	0.24	0.49	6.95	AT 118.02
2000.0	1999.88	-11.24	-2.272	02.00	077.01	2.21 S	11.26 E	0.50	1.00	11.47	AT 101.09
2200.0	2199.74	-18.32	-0.123	02.25	069.01	0.01 S	18.32 E	0.19	0.39	18.32	AT 090.05
2400.0	2399.63	-24.39	2.311	01.50	066.02	2.46 N	24.38 E	0.38	0.76	24.50	AT 084.25
2600.0	2599.60	-26.12	4.971	01.00	337.03	5.13 N	26.09 E	0.89	1.79	26.59	AT 078.88
2800.0	2799.59	-25.88	6.595	00.25	088.03	6.75 N	25.85 E	0.56	1.11	26.71	AT 075.37
3000.0	2999.58	-27.46	5.965	00.75	119.04	6.13 N	27.43 E	0.28	0.55	28.10	AT 077.40
3200.0	3199.57	-28.97	4.530	00.50	155.04	4.70 N	28.94 E	0.23	0.45	29.32	AT 080.77
3400.0	3399.56	-30.20	3.837	00.50	083.04	4.02 N	30.17 E	0.29	0.59	30.44	AT 082.42
3600.0	3599.56	-31.42	4.732	00.50	024.06	4.92 N	31.39 E	0.25	0.49	31.78	AT 081.10
3800.0	3799.55	-32.75	6.413	00.75	047.06	6.61 N	32.71 E	0.17	0.35	33.37	AT 078.58
4000.0	3999.50	-36.70	6.694	01.75	101.08	6.91 N	36.66 E	0.72	1.44	37.31	AT 079.32
4200.0	4199.44	-40.17	3.960	01.25	167.07	4.20 N	40.15 E	0.84	1.69	40.37	AT 084.03
4400.0	4399.40	-42.33	0.446	01.25	129.08	0.70 N	42.33 E	0.41	0.81	42.34	AT 089.06
4600.0	4599.35	-46.63	-1.096	01.50	093.09	0.82 S	46.64 E	0.44	0.88	46.65	AT 091.01
4800.0	4799.29	-51.36	-1.796	01.25	104.09	1.49 S	51.37 E	0.18	0.36	51.39	AT 091.66
5000.0	4999.25	-54.65	-4.178	01.25	147.09	3.85 S	54.67 E	0.46	0.92	54.81	AT 094.03
5200.0	5199.22	-56.01	-6.868	00.50	167.04	6.54 S	56.05 E	0.40	0.80	56.43	AT 096.65
5400.0	5399.20	-56.22	-9.465	01.00	179.00	9.13 S	56.28 E	0.26	0.52	57.01	AT 099.22
5600.0	5599.19	-56.34	-11.634	00.25	165.95	11.30 S	56.41 E	0.38	0.76	57.53	AT 101.33
5800.0	5799.19	-56.45	-12.058	00.00	000.00	11.72 S	56.52 E	0.13	0.25	57.72	AT 101.72
6000.0	5999.19	-56.02	-12.125	00.25	260.86	11.79 S	56.09 E	0.13	0.25	57.31	AT 101.87
6200.0	6199.19	-55.20	-12.402	00.25	240.81	12.07 S	55.28 E	0.04	0.09	56.58	AT 102.32
6400.0	6399.19	-54.39	-12.657	00.25	263.76	12.33 S	54.46 E	0.05	0.10	55.84	AT 102.76
6600.0	6599.18	-53.18	-13.098	00.50	242.72	12.78 S	53.25 E	0.14	0.28	54.76	AT 103.50
6800.0	6799.18	-51.96	-13.493	00.25	269.67	13.18 S	52.04 E	0.15	0.30	53.68	AT 104.22
7000.0	6999.17	-51.09	-13.539	00.25	263.62	13.24 S	51.17 E	0.01	0.03	52.85	AT 104.50
7200.0	7199.14	-48.05	-15.173	01.75	238.33	14.89 S	48.14 E	0.76	1.53	50.39	AT 107.18
7400.0	7399.05	-42.75	-18.212	01.75	241.29	17.96 S	42.86 E	0.05	0.09	46.47	AT 112.73
7600.0	7598.97	-38.17	-21.464	01.50	226.19	21.24 S	38.29 E	0.25	0.49	43.79	AT 119.01
7700.0	7698.92	-36.20	-23.786	02.00	215.09	23.57 S	36.34 E	0.60	0.60	43.32	AT 122.96

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* THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF *
* ***** *
* 7700.00 FEET EQUALS 43.32 FEET AT 122.96 *
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