

WELL LOCATION CERTIFICATE: SWARTZ 28N-12HZ

SECTION 13, TOWNSHIP 2 NORTH, RANGE 65 WEST, 6TH P.M.

BH-199' FNL
2314' FEL

(BASIS OF BEARINGS) SEE NOTE 2
S 89°36'50" E 2594.45'

NW COR. SEC. 13
2" ALUM. CAP
PLS 25937, 1996

S 89°36'41" E 2594.89'

N ¼ COR. SEC. 13
2" ALUM. CAP
PLS 25937, 1996

NE COR. SEC. 13
3 ½" ALUM. CAP
PLS 23520, 2002

SURFACE LOCATION
GROUND ELEVATION= 4877'
NAD83 STATE PLANE CO N
LATITUDE= 40.132087°
LONGITUDE= 104.610687°

LATITUDE= 40°07'55.512"
LONGITUDE= 104°36'38.473"

HEEL LOCATION
NAD83 STATE PLANE CO N
LATITUDE= 40.133619°
LONGITUDE= 104.611537°

LATITUDE= 40°08'01.027"
LONGITUDE= 104°36'41.534"

BOTTOM HOLE LOCATION
NAD83 STATE PLANE CO N
LATITUDE= 40.159562°
LONGITUDE= 104.611192°

LATITUDE= 40°09'34.423"
LONGITUDE= 104°36'40.291"

NOTES:
BH AND HEEL
LOCATIONS PROVIDED BY CLIENT.
SEE ATTACHED MAP FOR ADDITIONAL
IMPROVEMENTS WITHIN 500'.

PDOP= 1.5
GPS OPERATOR: BEN HARDENBERGH

C ¼ COR. SEC. 13
3 ¼" ALUM. CAP
PLS 24307, 2006

S 89°49'20" E 2602.73'

E ¼ COR. SEC. 13
3 ¼" ALUM. CAP
PLS 27269, 2004

W ¼ COR. SEC. 13
3 ¼" ALUM. CAP
PLS 10855, 1998

S 89°55'24" E 2605.94'

S 00°23'01" E 2634.34'
N 00°00'38" E 9451'
(TRUE N 00°35'05" E)

S 00°34'00" E 2625.00'

N 00°08'29" W 2648.40'

N 00°17'38" W 2640.01'

S 00°22'42" E 2634.36'

S 00°32'03" E 2624.15'

SW COR. SEC. 13
2 ½" ALUM. CAP
PLS 34980, 2007

S 89°57'07" W 2609.78'

S ¼ COR. SEC. 13
2 ½" ALUM. CAP
PLS 38345, 2013

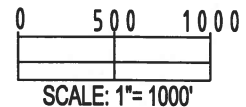
S 89°57'07" W 2609.78'

SE COR. SEC. 13
CALC'D FROM W.C. 30° E
3 ¼" ALUM. CAP
PLS 27269, 1998

LEGEND

- = EXISTING MONUMENT ♦ = BOTTOM HOLE
● = PROPOSED WELL ▲ = HEEL LOCATION
BH = BOTTOM HOLE ○ = CALCULATED POSITION

WELL SWARTZ 28N-12HZ TO BE LOCATED
334' FSL AND 2165' FEL



NOTES:

- THIS FIELD SURVEY CONFORMS TO THE MINIMUM STANDARDS SET BY THE C.O.G.C.C., RULE NO. 215
- BEARINGS ARE BASED ON THE ASSUMPTION THAT THE NORTH LINE OF THE NORTHEAST QUARTER OF SECTION 13, BEARS S89°36'50"E BETWEEN THE MONUMENTS DESCRIBED HEREON.
- GRID DISTANCES ARE SHOWN, AS MEASURED IN THE FIELD, WITH TIES TO WELLS MEASURED PERPENDICULAR TO SECTION LINES. TO GET GROUND DISTANCES MULTIPLY THE SHOWN DISTANCE BY 1.000272228.
- ALL LINES SHOWN THAT ARE WITHOUT DIMENSION SHOULD BE CONSIDERED SCALED AND ONLY REPRESENT A GRAPHICAL DEPICTION OF THE APPROXIMATE LOCATION OF SAID LINE.
- ORIGINAL WELL STAKING COMPLETED ON JANUARY 5, 2015. SECTION MONUMENTS VERIFIED 5/2013.

I, JACOB S. FRISCH, A LICENSED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO DO HEREBY CERTIFY TO **KERR-MCGEE OIL & GAS ONSHORE LP**, THAT THE SURVEY AND WELL LOCATION CERTIFICATE SHOWN HEREON WERE DONE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT THE DRAWING SHOWN HEREON ACCURATELY DEPICTS THE PROPOSED LOCATION OF THE WELL. THIS CERTIFICATE DOES NOT REPRESENT A LAND SURVEY PLAT OR IMPROVEMENT SURVEY PLAT AS DEFINED BY C.R.S. 38-51-102 AND CANNOT BE RELIED UPON TO DETERMINE OWNERSHIP.

JACOB S. FRISCH, PLS 38149
DATE: 08-04-15
JOB NO: B14.APC.0566
FOR AND ON BEHALF OF KERR-MCGEE OIL & GAS ONSHORE LP, LLC



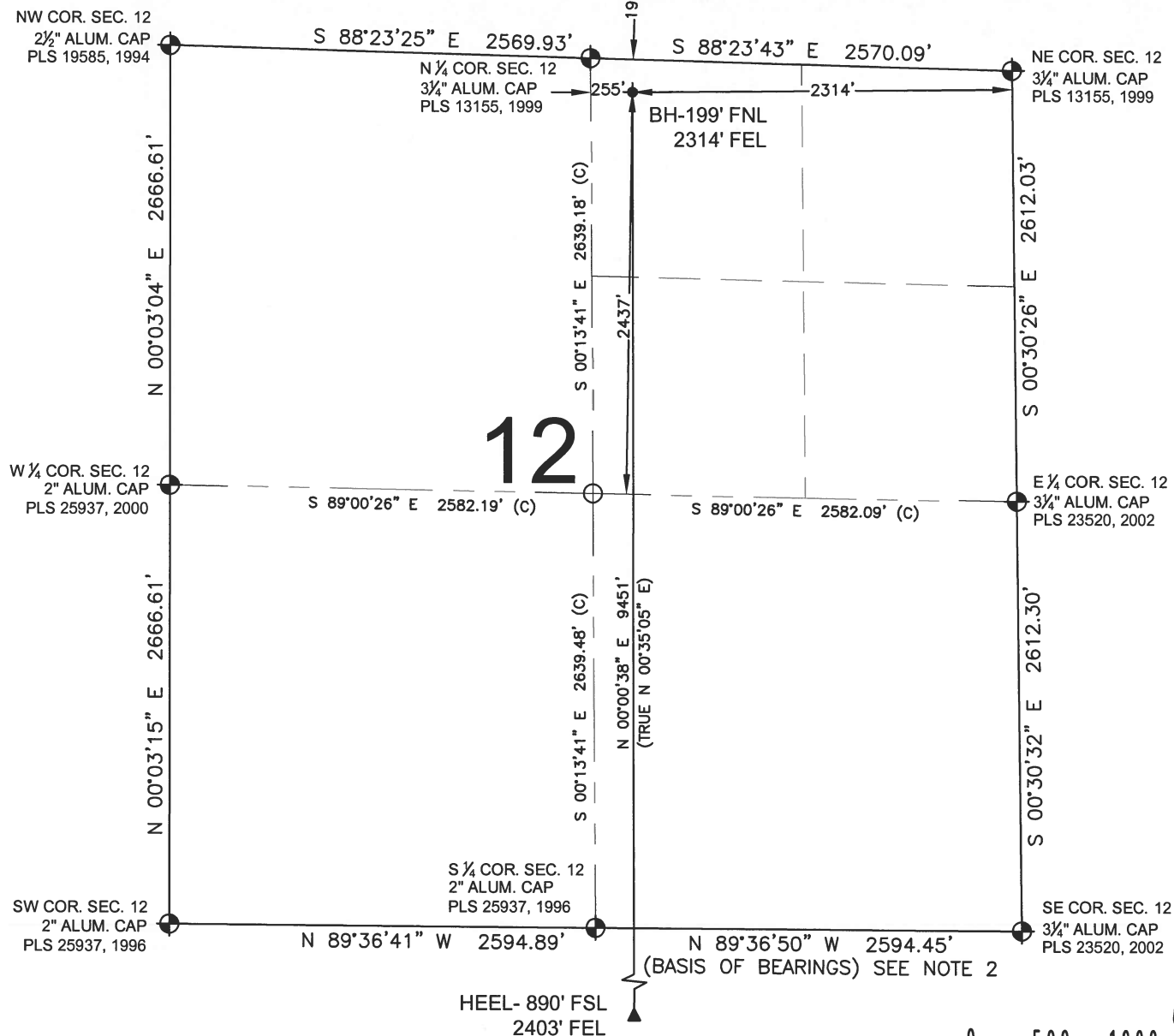
SHEET 1 OF 2

PREPARED BY:	FIELD DATE: 01-05-15	SURFACE LOCATION:
PFS Petroleum Field Services, LLC 7535 Hilltop Circle Denver, CO 80221	DRAWING DATE: 08-03-15	SW 1/4 SE 1/4, SEC. 13, T2N, R65W, 6TH P.M. WELD COUNTY, COLORADO
BY: TJN	CHECKED: KAD	

NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THIS SAID DATE OF THIS CERTIFICATION SHOWN HEREON.

WELL LOCATION CERTIFICATE: SWARTZ 28N-12HZ

SECTION 12, TOWNSHIP 2 NORTH, RANGE 65 WEST, 6TH P.M.



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JACOB S. FRISCH, PLS 38149
 DATE: 08-04-15
 JOB NO: B14.APC.0568
 FOR AND ON BEHALF OF PFS, LLC

SHEET 2 OF 2

PREPARED BY:	FIELD DATE:	SURFACE LOCATION:
PFS	01-05-15	SW 1/4 SE 1/4,
Petroleum Field Services, LLC	DRAWING DATE:	SEC. 13, T2N, R65W, 6TH P.M.
7536 Hilltop Circle	08-03-15	
Denver, CO 80221	BY:	CHECKED:
	TJN	KAD
		WELD COUNTY, COLORADO

NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THIS SAID DATE OF THIS CERTIFICATION SHOWN HEREON.