



Tug Hill Operating LLC
 Project: Krowl County, KS
 Site: See 8-172S-R20/W
 Well: Ensel 1-48H
 Wellbore: Original Wellbore
 Design: Plan #7 ST
 Lat: 37° 42' 20.006 N
 Long: 99° 32' 18.824 W
 Pad GL: 2295.0
 KB: WELL @ 2319.DUST (Original Well Elev)



WELL DETAILS: Ensel 1-48H

+N-S	+E-W	Heading	Ground Level	Elevation	Latitude	Longitude
0.0	0.0	1682299.25	1011888.20	4860.0	37° 42' 20.006 N	99° 32' 18.824 W

WELLBORE TARGET DETAILS (LIFT/LOG)

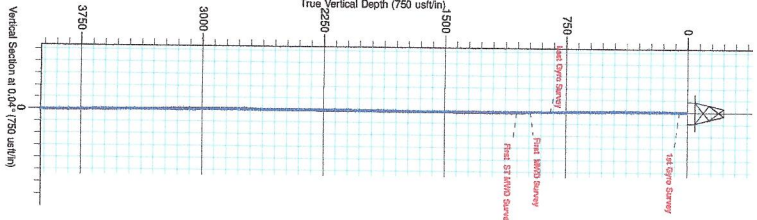
Name	TVD	+N-S	+E-W	Latitude	Longitude
CONT HLD 91' Inc	4860.0	4860.0	4860.0	37° 42' 20.006 N	99° 32' 18.824 W
Ensel H-48H PHHL	4860.0	4860.0	4860.0	37° 42' 20.006 N	99° 32' 18.824 W

SECTION DETAILS

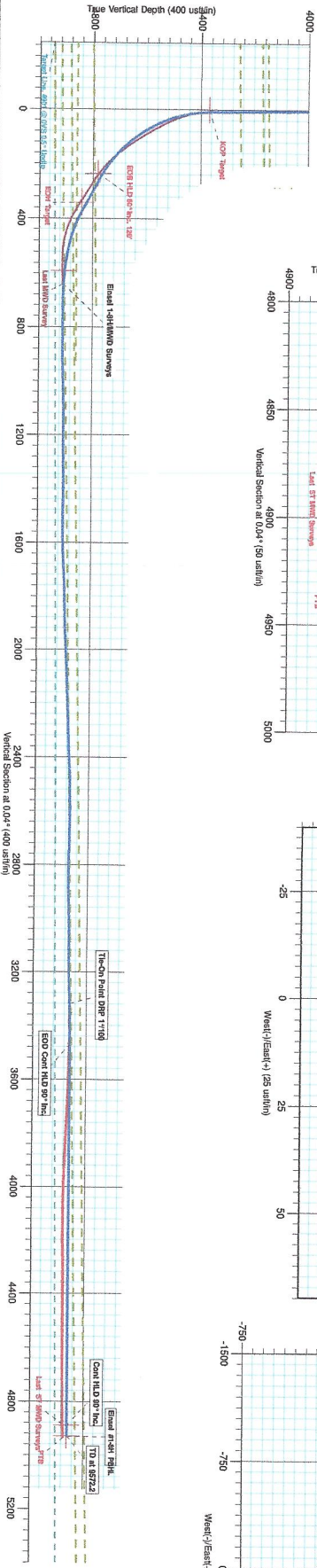
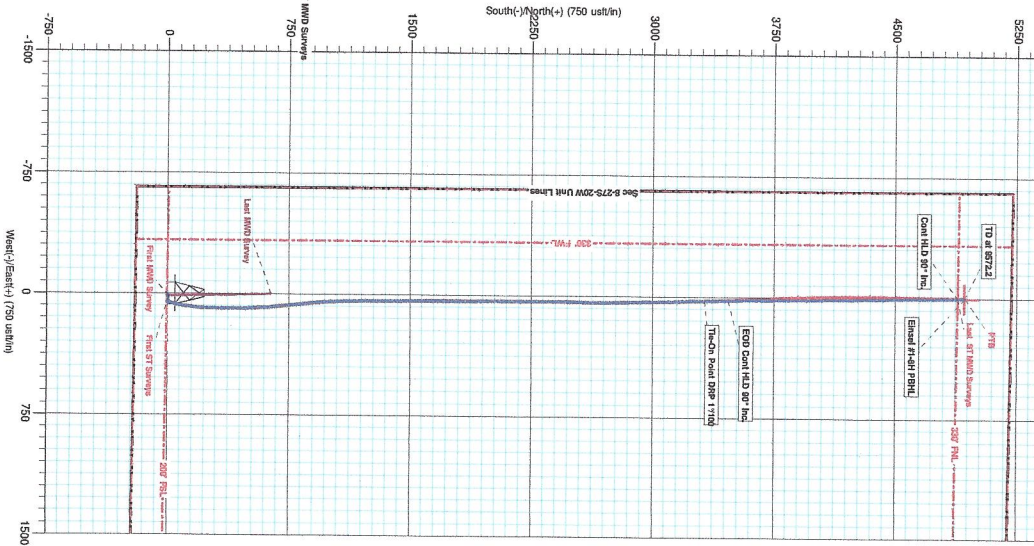
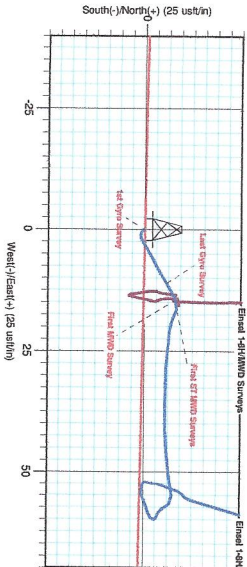
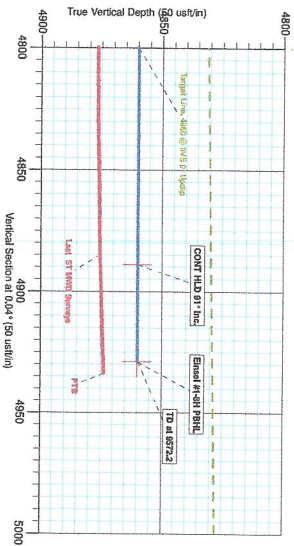
MID	Inc	Adj	TVD	+N-S	+E-W	Dip	True	Used
7863.0	91.40	359.80	4861.7	5319.9	27.0	0.00	3380.0	
8032.2	80.00	359.16	4859.9	4860.0	24.9	0.00	3480.0	
8972.2	90.00	359.16	4859.9	4823.0	3.0	0.00	4823.0	

FORMATION TOP DETAILS

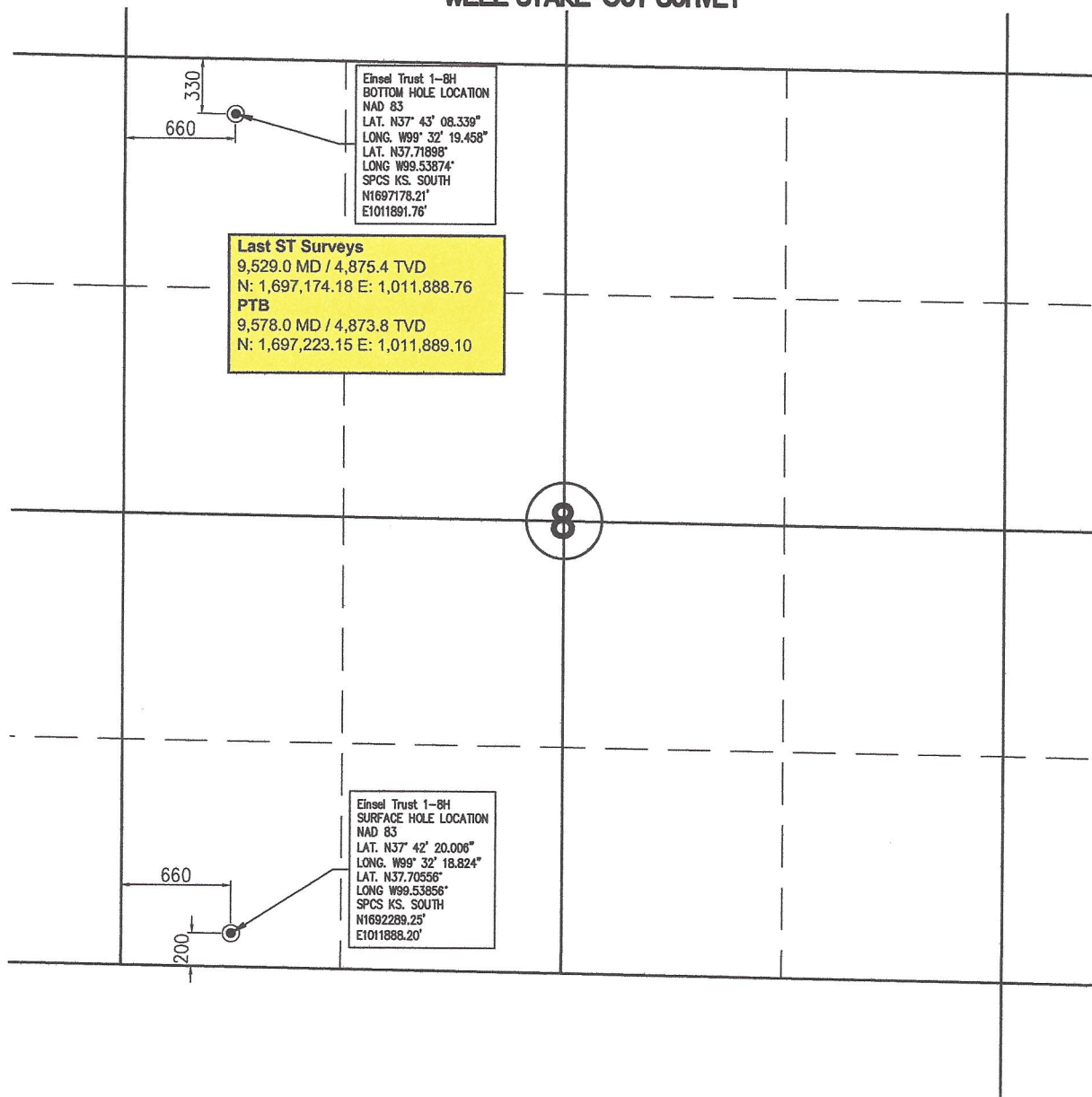
TD/PSH	MD/PSH	Formation	Dip/Inc	Dip/Dir
4187.9	4189.8	Permian	-1.00	0.04
4252.2	4254.2	Permian	-1.00	0.04
4696.0	4698.0	Permian	-1.00	0.04
4860.0	4862.0	Permian	-1.00	0.04
4864.3	4868.3	Permian	-1.00	0.04



Admits to Grid North
 True North: 5.6°
 Magnetic Field
 Strength: 68.76
 Dip Angle: 68.57°
 Date: 7/8/2010
 Model: DM72010



WELL STAKE-OUT SURVEY



Lease Name: Einsel Trust
 Well No. 1-8H
 Surface El. at stake: 2295 NAVD88
 Well location Co./State: Kiowa Co. Kansas
 Well location Section: 8-T27S-R20W

Alternate Datums

Horz. Datum NAD27
 Einsel Trust #1-8H Surface Hole Lat. N37.70554° Long. W99.538168°

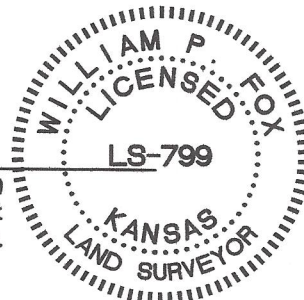
SURVEY DATUMS (shown on drawing)

Horz. Datum NAD83(CORS96)
 Vert. Datum NAVD88(GEIOD09)
 Ks. SPCS South Zone (US Feet)

State of Kansas)
)SS
 Sedgwick County)

This is to certify that this map or plat and the survey on which it is based was made by me or under my direct supervision and that to the best of knowledge and belief, this is a true and correct exhibit of said Survey. The wells shown hereon were staked April 4, 2012 at the coordinate location noted.

William P. Fox LS 799
 This survey is valid only if print bears Surveyor's seal signed in blue ink.



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