Tecton Geologic

COMPANY	Calpine Corporation
WELL NAME	Sulphur Bank 32
FIELD	The Geysers
COUNTY	Sonoma
STATE	California
WELL HEAD COORDINATES	Section 11, T11N, R9W N 417202.9, E 1763747.9
ELEVATION	1809', GL
RIG - DAY RATE START DATE	6/22/2011
TD DATE	8/12/2011
TOTAL DEPTH	8247'
TRUE VERTICAL DEPTH	8055'
TD LOCATION	141.5' S and 1538.5' E of wellhead
DRILLING CONTRACTOR	NCPA Rig #1
COMPANY REPRESENTATIVES	Steve Gamble Russ Silva

LOG INTERVAL

DATE LOGGED	6/22/11	TO	8/12/11
DEPTH LOGGED	70'	TO	8247'
MUD DRILLING	70'	TO	3121'
AIR DRILLING	3121'	TO	8247'
LOG SCALE	1:600		
UNIT NO.	C32		

LOGGING GEOLOGISTS

Charley Wahl(cw), Justin Everts (je), Eric ter Weele(et), Dick Dunlap (dd), Patrick Broderick (pb), Daniel Phelps (dp), Jon Pollard (jp)

HOLE

26"	TO	603'
17.5"	TO	3121'
10.625"	TO	8247'

CASING

20"	FROM	0	TO	593'
13.375"	FROM	0	TO	3055'

LINER

7"	FROM	0	TO	2899'
8.625"	FROM	2858'	TO	8247'

ABBREVIATIONS

NB	New Bit	**BHT**	Bottom Hole Temp
RRB	Re-run Bit	**C**	Carbide Test
CB	Core Bit	**NR**	No Returns
WOB	Weight on Bit	**LAT**	Logged After Trip
SPM	Strokes per Minute	**CFM**	Cubic Feet per Min
PP	Pump Pressure	**BUT**	Bottoms Up Temp
RPM	Revolutions per Min		

SYMBOLS

ϟ	Wireline Log	◢	Casing Shoe
◀	Steam/Water Entry	⧓	Flow Test
◂	Deviation Survey	▯	Cored Interval No Recovery

REMARKS

All depths from kelly bushing KB=29'

LITHOLOGY

▤	Argillite	⁚	Siliceous Graywacke
⊞	Chert	⟋	Metamorphic Ultramafic
▤	Siltstone	–	Weak Foliation
###	Greenstone	=	Strong Foliation
∫∫	Serpentine	/	Marginal Alteration
∫	Blueschist	//	Pervasive Alteration
✳	Felsite	\	Weakly Hornfelsic
▤	Clay	\\	Strongly Hornfelsic
⋮	Lithic Graywacke		
^	Argillaceous Graywacke		

STEAM ENTRIES

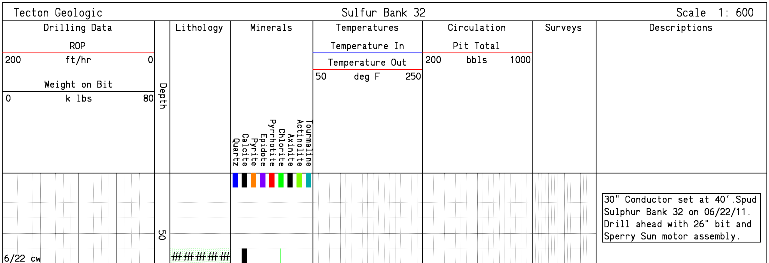
	Init	Sust
5383'	4#	2#
5446'	9#	8#
5450'	14#	8#
6262'	8#	6#
6360'	3#	6#
6694'	2#	2#
6805'	0	6#
7462'	2#	0

WATER ENTRIES

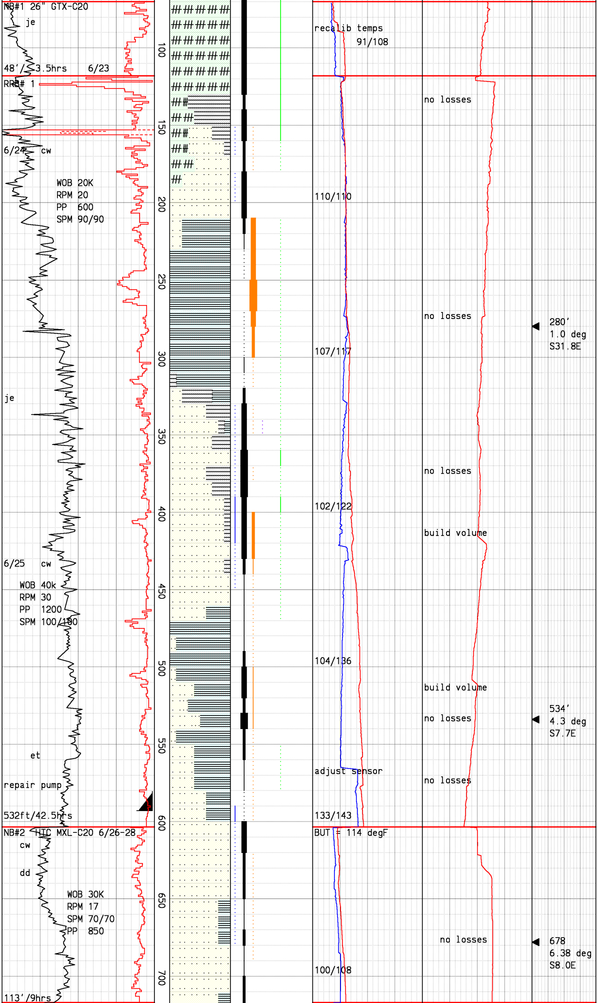
SECONDARY MINERALS

Q = Quartz
C = Calcite
P = Pyrite
E = Epidote
R = Pyrrhotite
Ch = Chlorite
X = Axinite
A = Actinolite
T = Tourmaline

Rare	<< 1%
Trace	< 1%
Minor	1% to 4%
Common	4% to 7%
Abundant	7% to 10%
	> 10%


Tecton Geologic Sulfur Bank 32 Scale 1: 600

Drilling Data	Depth	Lithology	Minerals	Temperatures	Circulation	Surveys	Descriptions
ROP 200 ft/hr 0 Weight on Bit 0 k lbs 80			Quartz Calcite Pyrite Epidote Pyrrhotite Chlorite Axinite Actinolite Tourmaline	Temperature In Temperature Out 50 deg F 250	Pit Total 200 bbls 1000		
6/22 cw	50	######					30" Conductor set at 40'.Spud Sulphur Bank 32 on 06/22/11. Drill ahead with 26" bit and Sperry Sun motor assembly.



Greenstone:lt-dk grn,red-oran oxidation,v hd,dom porph text, loc mott,aphan-crs gr,com clr-wht calc agg/vng,tr chlor altn.

Drill t/118',make 4 attempts to circ hole clean, pump 2 sweeps,continue to tag 10-20' of fill, POOH. Pump cement plug to fix fill problems,c/o cement and drill ahead.

Argillite:dk gry-blk,hd-v hd, com phyll shn,aphan-fn gr,tr calc vng;intrbdd w/Siliceous Graywacke:med gry,dk gry,gray grn,loc mott,hd-v hd,brit,fn-crs gr,prly srtd,r loc pyr,r loc grn wash app.

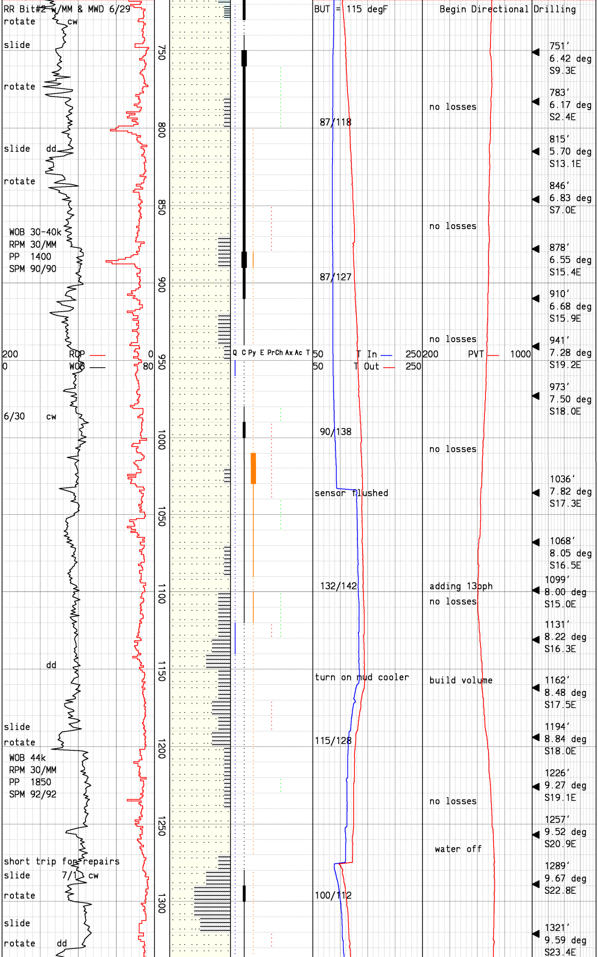
Clay:lt wht-med gry,r brn gry, sft-frm,wk-mod sticky,r-com relic tex of graywacke,water sol,slty app,mnr-abun bright agg pyr,r chlor,r loc indur >10% grywack but still v sft with clay altn,r wht calc vng.

Siliceous Graywacke:lt-med gry, wht,pale grn,mod hd-v hd,loc britt,prly srtd,prly def gr bndrs,loc mnr lithics,r-tr qtz, tr-abun calc vng/agg,r-mnr pyr agg,r-tr chlor altn;intrbdd w/ Argillite:dk gry-blk,dk brn,mod hd-hd,friable,tr phyll shn, aphan-fn gr,tr calc vng,r mica; Clay:lt wht-med gry,r brn gry, sft,wk-mod sticky,water sol,loc relic txt of lithic wacke.

Siliceous Graywacke:lt-med gry, wht,pale grn,sft-mod hd,loc britt,prly srtd,well def gr bndrs,loc mnr lithics,r-tr qtz, tr-abun calc vng/agg,r-mnr pyr agg,r-tr chlor altn;intrbdd w/ Clay:lt wht-med gry,r brn gry, sft,wk-mod sticky,water sol,com relic txt of lithic wacke.

Drill 26" hole to 603'. Run and cement 15 joints of 94# J-55 20" casing f/surface t/593'. P/U 17.5" directional tools @ 716' and drill ahead.

Siliceous Graywacke:lt gry, r pale gry,frm-hd,loc fri,brit, mod srtd,well def gr bndrs,r secndry qtz vng,tr-com vn and dissem calc,r-absnt agg and vn pyr,r syng chlor frag in mtx,



r pnkr mica,loc intrbdd w/Clay: pale gry,sft,expnsv,water sol, loc ashy app,str calcareous, app Silic Grywke parent.

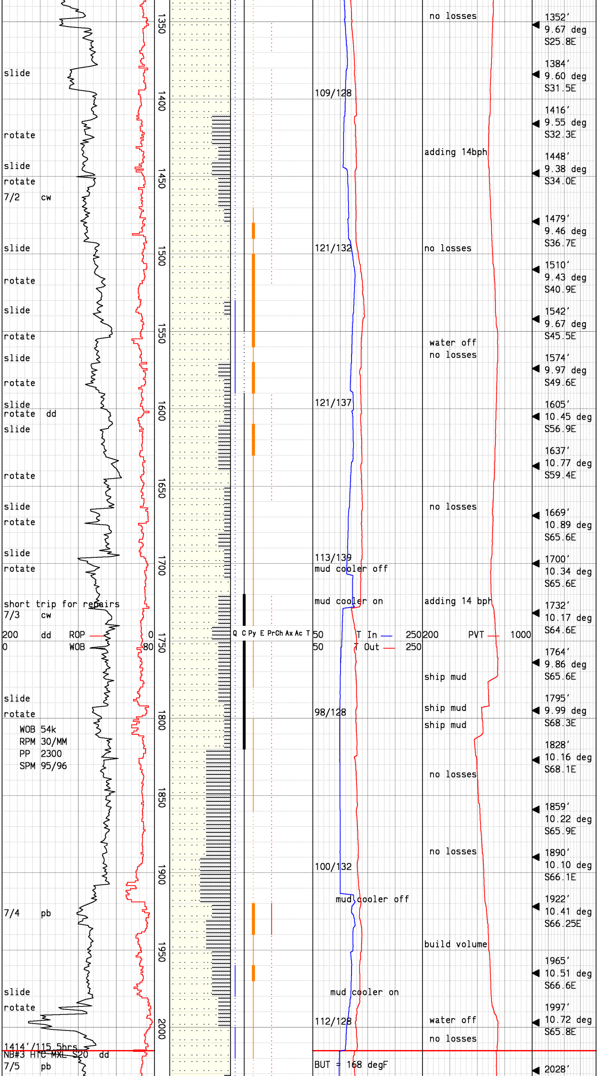
Siliceous Graywacke:med gry, r pale gry,hd,brit,mod srtd, well def gr bndrs,r secndry qtz vng,tr-com vn and dissem calc, r-absnt pyr aggs to 3mm,r syng chlor gr,r clr mica,r galena @ 820',loc intrbdd w/Argillite: blk,dk gry,sft-firm,fiss i.p., loc tecton polish,v fn dissem pyr,wkly calcareous.

Siliceous Graywacke:lt gry,med gry,loc dk gry,med gry in samp, hd,brit,mod-prly srtd,well def gr bndrs,fresh app,r qtz vng tr-com vn and dissem calc,r-tr agg pyr w/r vns t/3mm,r syng chlor gr,r clr mica,r agg & vn pyrrhotite,intrbdd w/Argillite: blk,dk gry,sft-firm,fiss i.p., loc tecton polish,v fn dissem pyr,r 2mm pyr vns,wkly calc.

Siliceous Graywacke:lt-med gry, dk gry,grn gry chlor wash,mod hd-hd,prly srtd,well def gr bndrs,fresh,r-tr wht qtz,r-mnr vng-dissem calc,r-tr brt yel vn-agg-dissem pyr,com pyr @1020',r pyrh,r loc grn chlor, intrbdd w/Argillite:brn-dk gry, sft-firm,v fn gr,r agg pyr, r wht calc vng.

Siliceous Graywacke:lt gry,loc dk gry,med gry in samp,hd,brit, mod-prly srtd,dstnct gr bndrs, dom fresh app,r qtz vng,r-tr vn and dissem calc,r-tr agg pyr,r clr mica,r agg & vn pyrrhotite, loc intrbdd w/Argillite:blk,dk gry,firm-hd,loc fiss loc phyll shn,v fn dissem pyr,wkly calc.

Argillite:blk,dk gry,dk brn,mod hd,loc brit,scratches brown, dom aphan,com fiss tex,blocky, loc phyl shn,com pyr smears on shear faces,wkly calc.



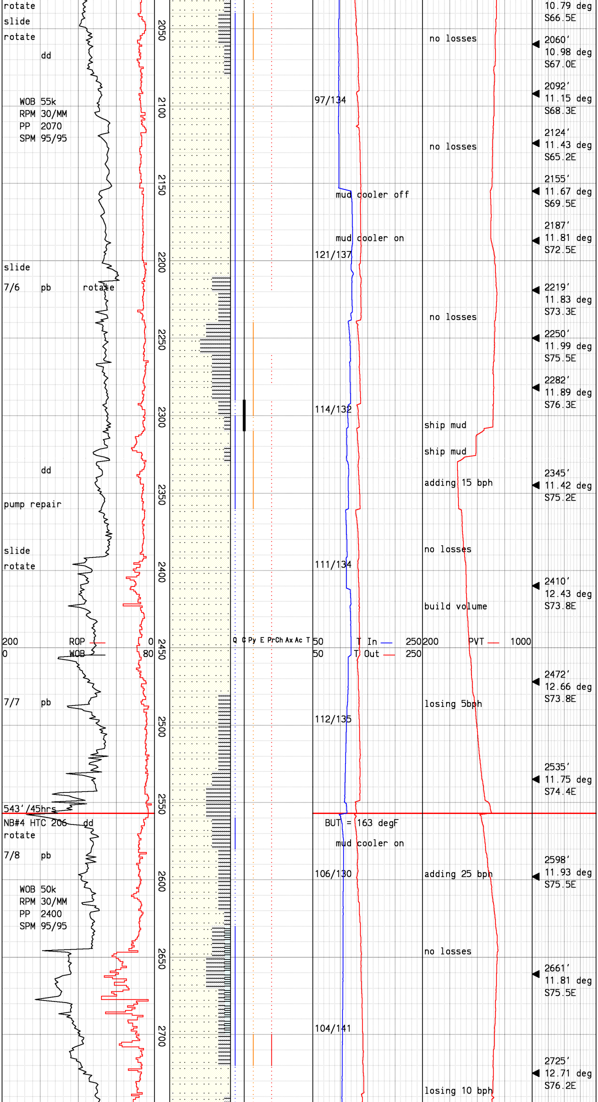
Siliceous Graywacke:lt-med gry, loc dk gry,med gry in samp,hd, brit,mod-prly srtd,well def gr bndrs,r relic tex,fresh app,r qtz vng, tr vn and dissem calc, r-tr agg pyr,r clr mica,r agg & vn pyrrhotite,r black and shiny metallic agg and vein magnetite, intrbdd w/Argillite:blk,dk gry, firm-mod hd,fiss i.p.,com phyl shn,v fn dissem pyr,wkly calc.

Siliceous Graywacke:lt-med gry, loc dk gry,mod hd-hd,occ brit, prly srtd,def gr bndrs,loc clay altr in felds,r-tr qtz vng,r-tr vn & dissem wht calc,tr-mnr vn agg yel pyr,loc com dissag pyr, r pyrr,intrbdd w/Argillite:dk gry,mod hd,fiss,r vng agg pyr.

Siliceous Graywacke:med-dk gry, med gry in samp,hd,brit,prly srtd,well def gr bndrs,r relic tex,fresh app,loc grd to lithic graywacke,r qtz vng, tr vn and dissem calc,r-tr agg pyr,loc com disagg pyr,r agg pyrrhotite,r black and metallic magnetite, intrbdd w/Argillite:blk,dk gry, firm-mod hd,fiss i.p.,loc blky, com phyl shn,r-tr vn pyr,r calc.

Siliceous Graywacke:med-dk gry, med gry in samp,mott,v hd,brit, prly srtd,well def gr bndrs,r relic bddg,fresh app,loc grdg to lithic tex,r qtz vng, tr-mnr vn and dissem calc,r-tr agg pyr,loc com disagg pyr,r agg pyrr,r blk metallic lstr magnetite,intrbdd w/Argillite:blk,dk gry,dk brn, mod hd,fiss i.p.,aphan-silty, com phyll shn,r vn pyr,r calc.

Tight "grabby" hole @ 1990'. Formation appears heavily fractured.Decrease weight on bit to prevent bit from stalling out.



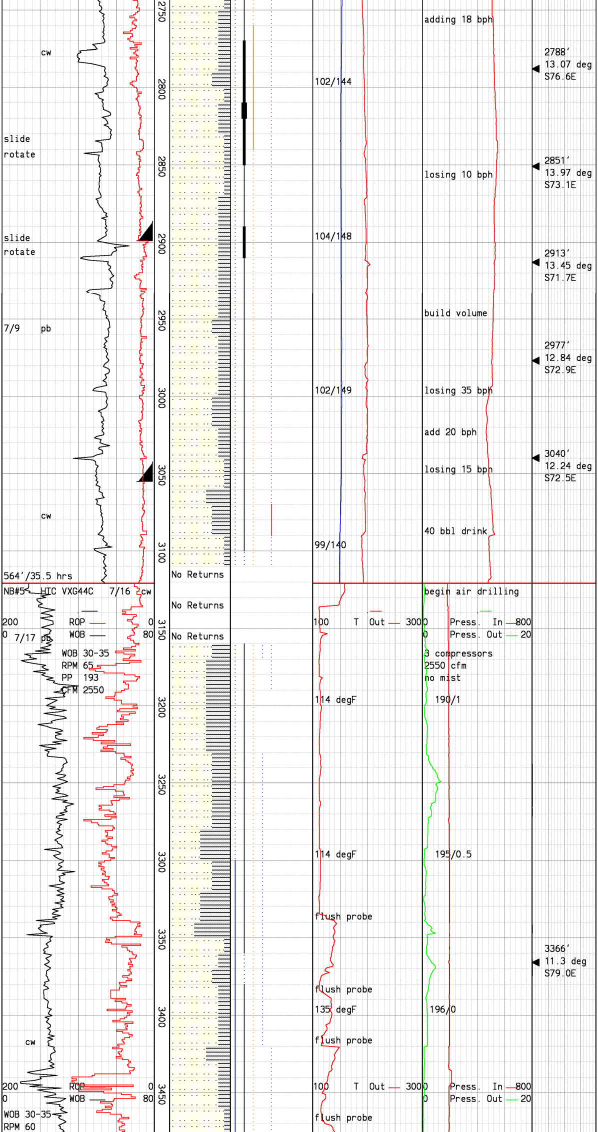
Siliceous Graywacke:med-dk gry, med gry in samp, mott,hd,brit, prly srtd,well def gr bndrs, fresh app,loc grdg to lithic tex,tr-r qtz vng & anhed xls, tr-mnr vn and dissem calc,r-tr agg pyr, loc com disagg pyr, r vn pyrr,r blk mag,loc intbdd w/Argillite:blk,dk gry,dk brn, mod hd,fiss i.p.,aphan-silty, com phyll shn,r vn pyr,r calc.

Siliceous Graywacke:med gry, med gry in samp,mott,v hd,brit, well srtd,well def gr bndrs,r relic tex,fresh app,salt and pepper tex,r qtz vng, tr-mnr vn calc, r-tr agg pyr, loc com disagg pyr,r agg and vn pyrr,r blk and metal magnetite,loc intrbdd w/Argillite:blk,dk gry, dk brn, mod hd, loc fiss, aphan-silty,com phyll shn,r vn pyr,r calc.

Siliceous Graywacke:lt-med gry, med gry in samp,mod hd-hd,loc fri, brit, mod srtd, dist gr bndrs,r relic tex,fresh app,r qtz vng,r-tr vn & dissem calc, r-tr agg and vn pyr, loc com disagg pyr, r agg pyrr,r blk magnetite tetras, r-absnt blk Argillite.

Bit#3 Bearing on cone bad.

Siliceous Graywacke:lt-med gry, med gry in samp,mod hd-hd,loc fri, brit, mod srtd, dist gr bndrs,loc mod altrd,r relic tex,r qtz vng,r-tr vn & dissem calc,r-tr agg and vn pyr, loc com disagg pyr,r agg pyrr,r blk magnetite tetras,intbdd w/ Argillite:blk,dk gry,dk brn, mod hd,loc fiss,aphan-silty, com phyll shn,r vn pyr,r calc, intbdd w/Clay f/2640' t/2680': lt gry, v sft,mod sticky,poss fault gouge.



Siliceous Graywacke:lt-med gry, dk gry,v hd,loc brit,well def gr bndrs,fresh app,silty,r qtz vng,tr-mnr vng calc,r-tr agg pyr,loc shot through pyr,r agg and vng pyrr,r blk magnetite, intrbdd w/Argillite:blk,dk gry, mod hd,loc fiss,loc phyll shn, r wht calc vng,r agg & vng pyr.

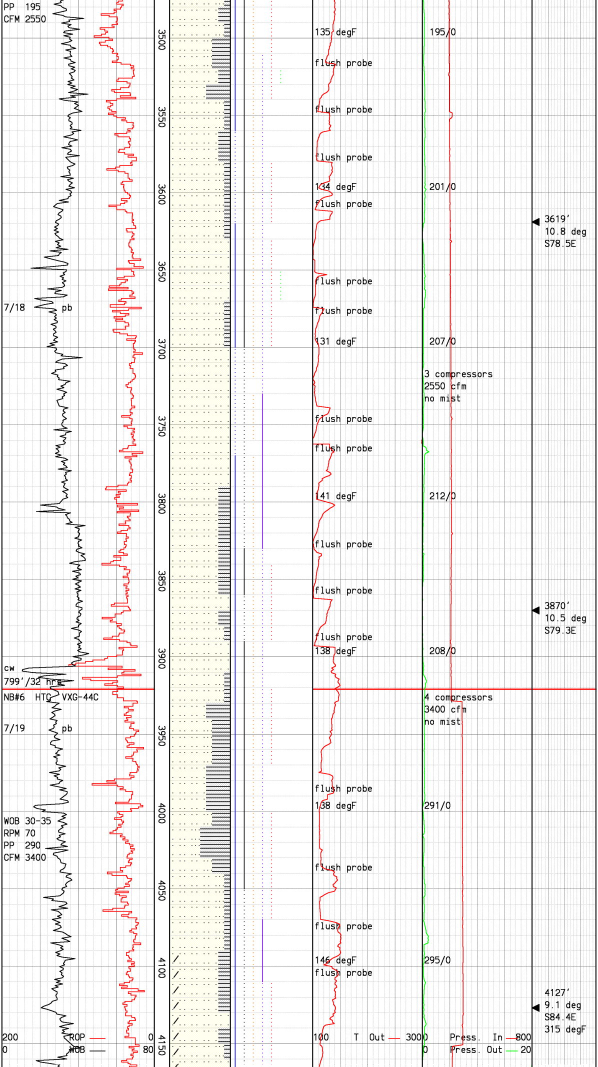
Siliceous Graywacke:lt-med gry, hd-v hd,loc brit,well srtd,well def gr bndrs,r agg qtz,r-tr qtz vng,r-tr wht agg and vng calc,r agg &vng pyr,r pyrr,r magnetite, intrbdd w/Argillite:med-dk gry, mod hd,loc fiss-mod indur,comly aphan-silty txt,loc phyll shn, loc tr relic lam w/tr mica and tr fn sand,r-tr agg & vng pyr, r agg and vng pyrr.

Lost circulation @ KD 3121' no returns. Pumped pill and POOH and set 100' cement plug @ 3121'.

Drill 17.5" hole to 3121'. Run 76 jts of K-55 13.375" casing f/surface to 3055'. Drill ahead on air w/10.625" bit.

Siliceous Graywacke:lt-med gry, hd-v hd,well srtd,mod well def gr bndrs,r-tr agg & vng qtz, r-tr wht agg & vng calc,r agg & vng pyr,abs-r pyrr,abs-r epidote,intrbdd w/Argillite: med-dk gry,mod hd,aphan-silty txt,loc phyll shn,loc tr relic lam and tr fn sand,r-tr agg & vng pyr.

Siliceous Graywacke:lt-med gry, hd-v hd,prly srtd, mod def gr bndrs,incr foliation,tr agg and vng qtz,tr clr anhedral qtz,r-tr wht agg and vng calc, r-tr clr agg calc,abs-r epid, abs-r pyrr,intrbdd w/Argillite: lt-dk gry,mod hd,loc frm,silty txt,tr relic lam,incr fol,incr phyll shn,r-tr agg and vng pyr, abs-r pyrr.



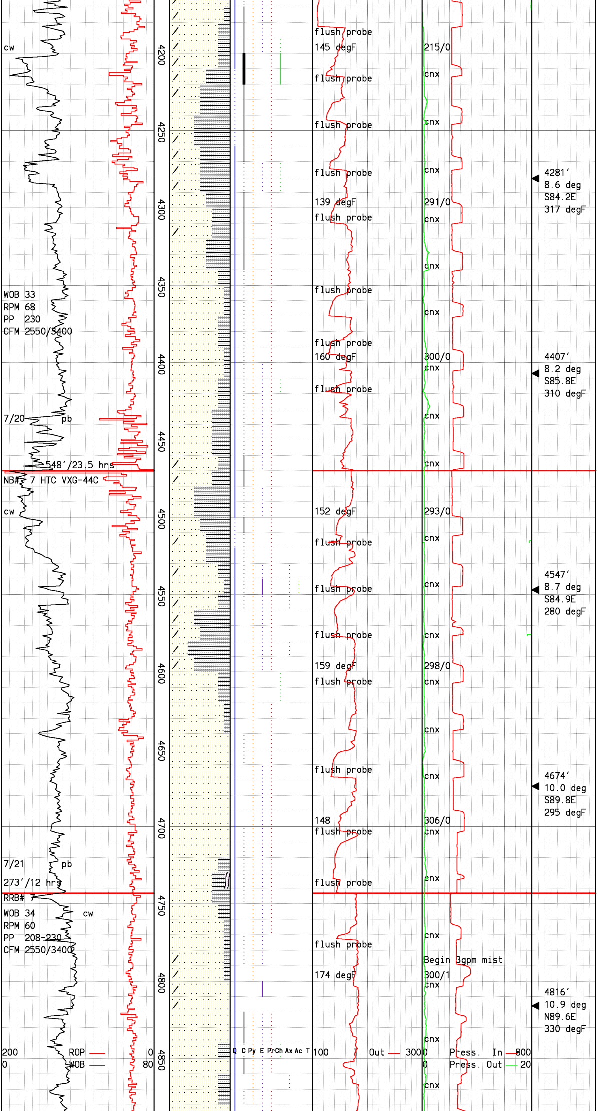
Temp out probe packs off frequently. Flush temp out probe at every kelly down.

Siliceous Graywacke:lt-med gry, hd-v hd,mod srtd,loc silty, loc lithics,occ lt grn chlor wash, r-tr wht-clr qtz vng,tr wht calc vng,r bright yl agg pyr, r pistachio grn epid,r bronze yl pyrr,abs-r grn-bronze chlor, intrbdd w/Argillite:med-dk gry, mod hd,v fn gr,r phyll shn, silty,r qtz vng,r calc,r pyr.

Siliceous Graywacke:lt-med gry, hd-v hd,loc brit,prly-mod srtd, loc fol,mod def gr bndrs,tr wht and clr qtz vng,r-tr wht calc vng,r yl pyr,abs-r brnze pyrr,r-tr yl grn epid,intrbdd w/Argillite:med-dk gry,loc lt gry,mod hd,aphan-silty txt,tr phyll shn,loc lam,r qtz vng,r calc vng,r agg & vng pyr.

Bit torqued up after drill break @ 3905'.Added 4th compressor @ 3920'to clean hole,bit still torqued.Pull out for new bit.

Siliceous Graywacke:lt-med gry, hd-v hd,prly-mod srtd,prly-mod def gr bndrs,incr loc fol,loc mod altrd,tr clr & wht qtz vng, r anhdrl qtz,tr clr & wht calc, r pyr,r pyrr,loc r yl epid,r grn chlr,r sphalerite? intrbdd w/Argillite:med-dk gry,loc lt gry,mod hd,aphan-silty txt,incr phyll shn,tr qtz vng,tr calc vn, r pyr,r pyrr.



Drilling on 3 compressors @ 2550 cfm, no mist. Add 4th compressor @ 3400 cfm in final 5-10 ft of each kelly to help with fill issues.

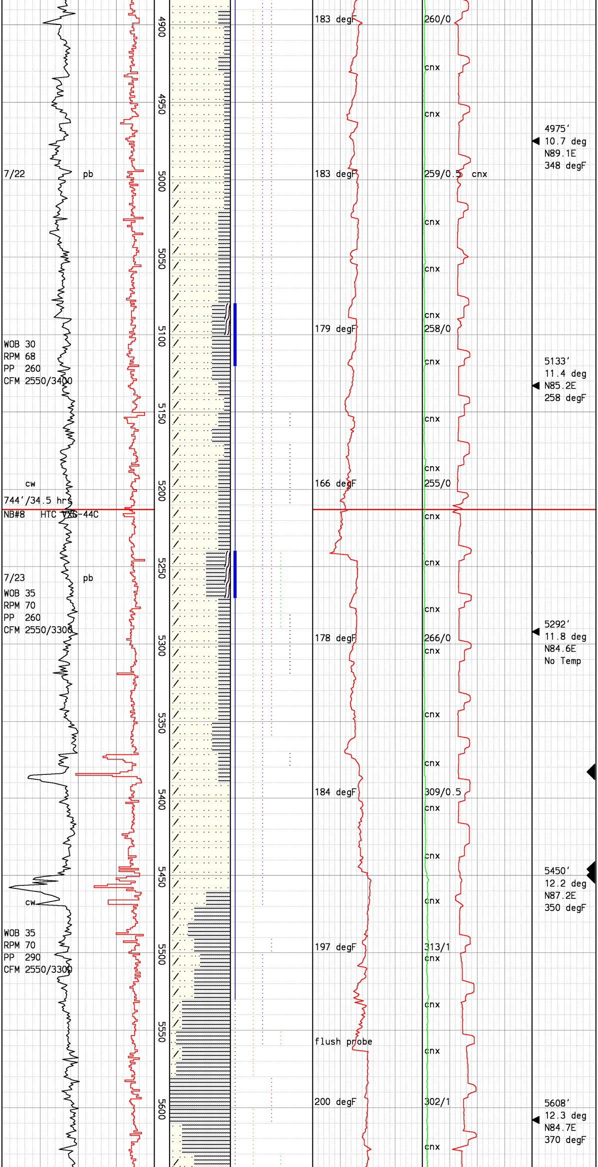
Siliceous Graywacke: lt-med gry, hd-v hd, prly srtd, mod-fn gr, prly def gr bndrs, silty, tr wht qtz vng, tr dissem calc, r bright yl pyr, r copper pyrr, abs-r yl epid, r grn chlr, loc chlor wash, intrbdd w/Argillite: med-dk gry, mod hd, v fn gr, tr qtz vng, r calc vng, r agg and vng pyr.

POOH to change bit and BHA to correct directional deviation.

Siliceous Graywacke: med gry, loc dk gry, hd-v hd, prly-mod srtd, prly-mod def gr bndrs, loc fol, tr wht qtz vng, tr agg and vng calc, r pyr, r yl epid, r pyrr, r pnk axin, loc r fibrous wht actin assoc w/epid, intrbdd w/Argillite: med-dk gry, mod hd, aphan-silty txt, loc phyll shn, tr qtz vng, abs-r calc, r pyr, r pyrr, loc abs-tr Serpentine frags in sample.

POOH fow new BHA, to correct directional deviation. Drill on 3 compressors @2550 cfm, 3gpm mist. Add 4th compressor @3400 cfm in final 5-10 ft of each kelly to help with fill issues. Temp out probe packs off, flush as necessary.

Siliceous Graywacke: lt-med gry, hd-v hd, prly srtd, prly-mod def gr bndrs, incr loc fol, tr wht & clr qtz, abs-r calc, r pyr, r-tr yl epid, r pyrr, loc r grn chlor,



loc r pink axin,intrbdd w/Argillite:med-dk gry,mod hd, aphan-silty txt,r phyll shn,tr qtz vng,abs-r calc,r pyr&pyrr. Serpentine:blue,grn & wht, frm-mod hd,waxy lstr,loc fibrs.

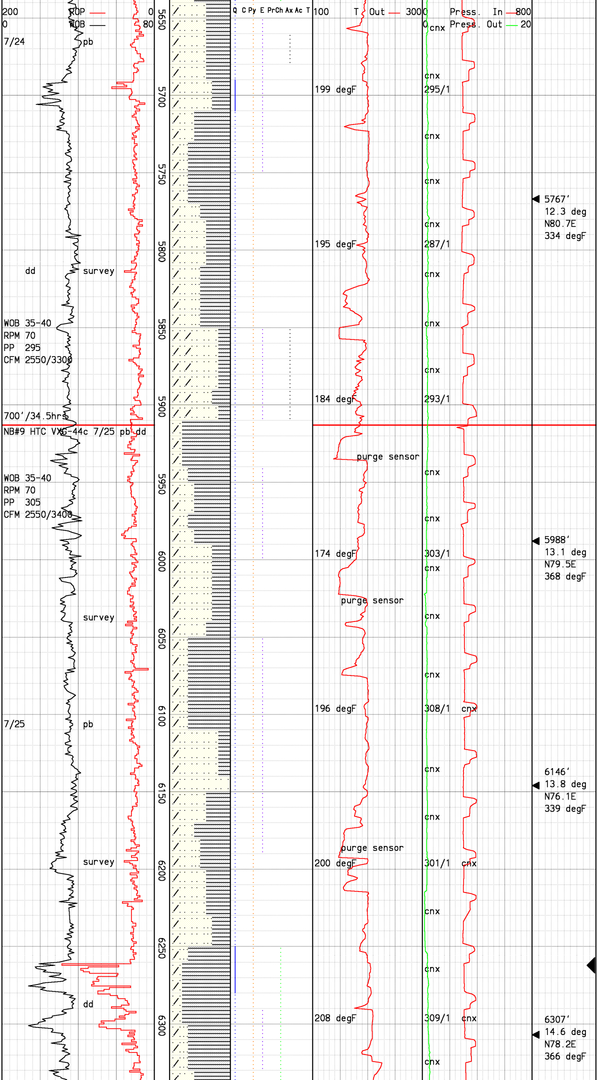
Siliceous Graywacke:med-dk gry, hd-v hd,prly def gr bndrs incr. w/depth,com argillaceous,incr loc fol,tr wht & clr qtz vng, abs-r calc,calc drops out,r pyr,r-tr yl epid,r pyrr,loc r grn chlor, loc r pink axin, intrbdd w/Argillite:med-dk gry, mod hd,aphan-silty txt,r phyll shn,tr qtz vng,abs-r calc,r pyr &pyrr,Serpentine:blue,brn,grn, wht,frm-mod hd,waxy lstr,loc fibrs.

Siliceous Graywacke:med-dk gry, tan,brn,hd-v hd,prly def gr bndrs,marginally altrd,wk fol, tr-mnr wht qtz vng,r pyr,r-tr yl epid,abs-r pyrr,loc r grn chlor,loc r transluc pink axin, intrbdd w/Argillite:med-dk gry, brn,mod hd,aphan-silty txt,com phyll shn,tr qtz vng,r pyr.

Possible steam Entry @5383'. 4 psi initial incr., 2 psi sust.,6 degF initial temp increase, 1 degF sustained.

Steam entry @ 5446':9 psi initial increse,8 psi sust., 9 degF sust. temp increase.
Steam entry @ 5450':14 psi initial incr.,8# sust., 6 degF sust. temp increase.

Argillite:med-dk gry, brn,mod hd, aphan-silty txt,com phyll shn, r-tr qtz vng, r pyr vng, intrbdd w/Siliceous Graywacke: med-dk gry, wht, tan, hd-v hd, prly def gr bndrs,marginally-pervasively altrd, r-tr qtz vng, r pyr vng, abs-r yl epid, loc r transluc pink agg axin.



Argillite:med-dk gry, brn,mod hd, aphan-silty txt,com phyll shn, r qtz vng, r pyr vng, intrbdd w/Siliceous Graywacke: med-dk gry, wht, tan, hd-v hd, prly def gr bndrs,marginally-pervasively altrd,r qtz vng, r pyr vng,abs-r yel epid,loc r transl pink agg axinite.

Note: adding 4th compressor and cut mist near connection.

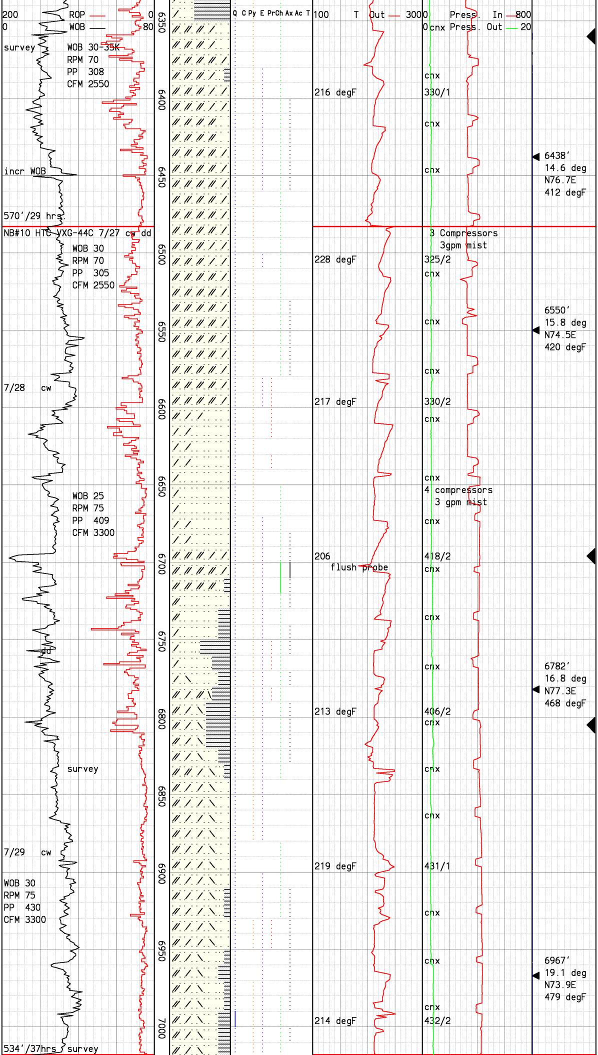
Siliceous Graywacke:med-dk gry, dk brn,hd,brit,indst gr bndrs, wk-loc marg altrd,r clay altn feld edges,loc wk fol,tr-mnr wht qtz vng,r pyr,r yel epid, r opaque pink axin xl clstrs, intrbdd w/Argillite:dk gry,blk, mod hd,aphan-sndy,dom blocky tex,com r shn,tr qtz vng,r pyr.

SFR = 33,400 lbs/hr (unrest)
H2S = 174 ppm (air off)
NH3 = 100 ppm (air off)

Argillite:black,dk gry,drk brn,hd,brit,aphan-fn gr,loc silty,dom blocky app,silic, r pyr blebs,r pyr vng,r qtz vng,com intrbdd w/Siliceous Graywacke:as described above w/r-absent yel agg epidote, loc grdg to lithic tex.

Siliceous Graywacke:med-dk gry, tan,gry-brn,hd-v hd,indst gr bndrs,marg altrd,loc wk fol,r qtz vng,r pyr vng,r-absent yel agg epid, intrbdd w/Argillite: blk,dk gry,drk brn,hd,brit, aphan-fn gr,loc silty,dom blocky app,silic,r pyr vng,r qtz vng.

Possible steam entry @ 6262': drill break w/8 psi initial increase,6 psi sustained. 2 degF initial temp increase, 2 degF sustained increase.



Possible steam entry @ 6360'. Drill break, formation change, very gradual incr in pressure and temperature.

Siliceous Graywacke:wht,lt gry, mott,loc pale grn wash,hd,prly def gr bndrs,prly srtd,dom str altn,com clay altn of feldspars, ovrall blchd app,r qtz vng, r chlor stained qtz vns,r pyr,r canary yel epid f/6490',r pink axinite f/6410',r magnetite, r-absent black silic Argillite.

SFR = 61,900 lbs/hr (unrest)
H2S = 314 ppm (air off)
NH3 = 60 ppm (air off)

Siliceous Graywacke:wht,lt gry, mott,loc pale grn wash,overall lt gry in sample,indstct grain bndrs,prly srtd,dom str altn, devit i.p.,com clay altn of felds,ovrall blchd app,r qtz vng,r chlor stained frags,r pyr,epid lrgly absnt,r clear-pink axinite f/6540',r magn, r-absent black silic Argillite.

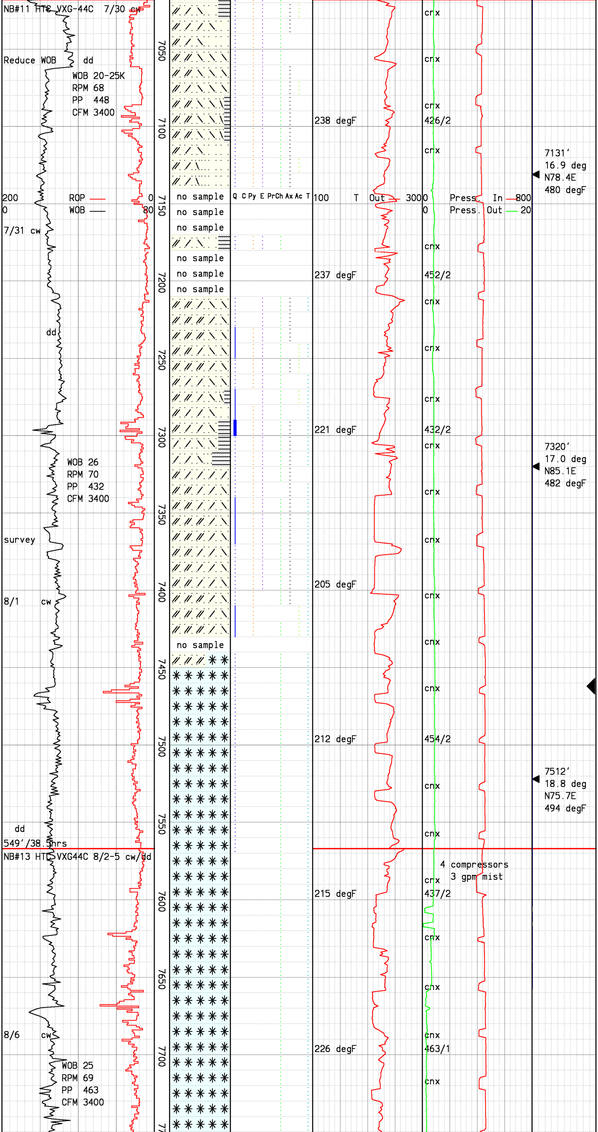
Drill with 4 comps @3300 CFM, mist off last 5ft of kelly.

Possible Steam Entry @ 6694'. Drill break up to 54 ROP w/ 2 psi increase, no temp incr.

Possible Steam Entry @ 6805'. Drill break w/6psi sust incr. No Temp increase.

Siliceous Graywacke:med gry, loc drk gry,mott,loc pale grn wash,overall med gry in samp, prly def grain bndrs,mod srtd, mod-perv altn,local weak hornfelsic txt f/6780',r clay altn of felds,r qtz vng,r chlor stnd frags,r pyr,r yel epid,r chlor stn,r clear-pink axinite,intrbdd w/Argillite: drk gry-blk,mod hd,silty tex, blky app,r qtz vng,r pyr vn.

SFR = 81,800 lbs/hr (unrest)
H2S = 199 ppm (air off)
NH3 = 130 ppm (air off)



Siliceous Graywacke:med-drk gry,drk brn, loc vari-clrd,mod distnct gr bndrs,well-mod srtd, mod-perv altn,altn inc w/depth, weak hornfelsic txt,r wht clay altn of felds,r qtz,loc chlor wash,r agg and vng pyr,r yel & green epid,r chlor,r pink axin, r green fibrous actin,mnr blk amphibole, intrbdd w/Argillite: drk gry,hd,slty tex,loc phyl shn,r qtz vng,r pyr vng.

Note: Extremely fine sample size going thru shaker screen. Returns spotty.

Siliceous Graywacke:lt-drk gry,med brn,prly-mod def grn bndrs,mod srtd,mod-perv altn, weak hornfelsic txt,loc wht altn of clay in felds,r qtz, r chlor wash,r agg and vng pyr, r yel & grn epid,r chlor,r pink axin,loc r green bladed actin,r blk trmln rods,r blk amphibole, intrbdd w/Argillite:drk gry,mod hd,slty tex,r qtz vng,r pyr vng.

Note: Due to extremely fine cutting size, sample collectd over 20-40 ft.

Siliceous Graywacke:lt gry,lt brn/tan,wht-clr,prly def gr bndrs,rexln txt,wk hornfelsic txt,loc wht altr of clay in felds,r-tr qtz,r pyr,r lt grn-yl epid,loc r grn bladed actin,r blk tourm rods,r chlor wash occ assoc w/blk tourm or amphibole.

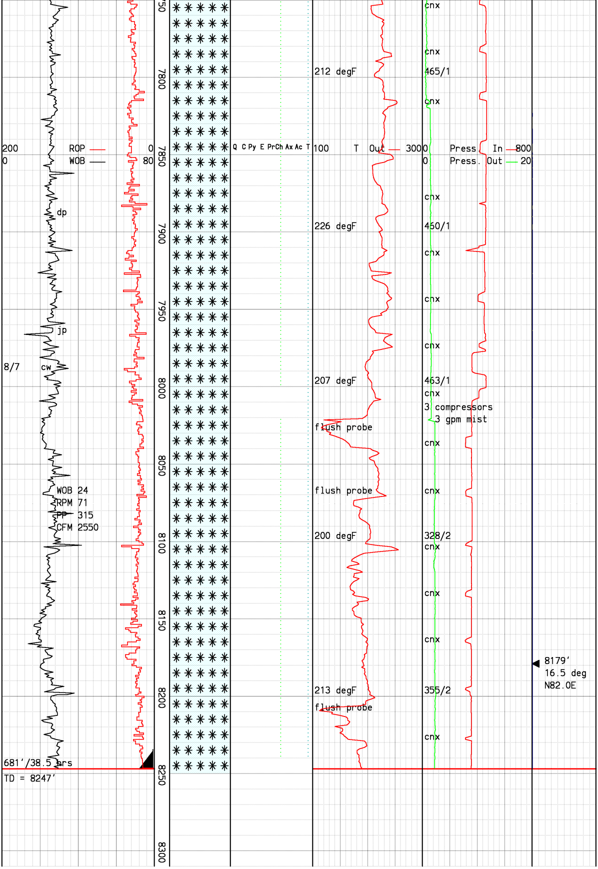
Steam Entry @ 7462': 30 ft/hr ROP incr, 2psi init incr bled to 0 sustained, no Temp incr, sm vis incr steam @ muffler.

Felsite:wht,lt gry,pale gry,loc tan wash,aphan-fn gr,overall unconsolidated well srtd beach sand app in hand sample,dom hyaline,dom clr anhedral and subhedral qtz grs,com clr Na-feldspar grs,r wht and salmon K-spar grs,tr blk biotite flks and books,r chlortzd biot flks and books, r-tr tourmaline rods and aggs,r blk shny amphibole.

SFR = 98,500 lbs/hr (unrest)
H2S = 301 ppm (air off)
NH3 = 130 ppm (air off)

Circulating pump beginning to fail. Replace pump at 7619'.

Felsite:wht,pale gry,loc tan wash,loc lt salmon,aphan-fn gr, overall unconsolidated well srtd beach sand app in hand smple,dom hyaline,dom clr anhedral and subhedral qtz grs, abs secondary qtz,com clr felds grs,loc striated w/iridesence, tr cola biotite flks,r chlortzd biot flks & books,r tourm rods &aggs,occ r hair-like tourm, r blk amphibole decr w/depth.



Felsite:wht,clr,tan,loc pink wsh,beach sand app in sample, clr anhedral and subhedral qtz grs,abs secondary qtz,r blk and brown biotite flakes, r green chloritized biotite flks,r blk tourm rods & fibers, r blk agg tourm, r blk amphibole.

Short trip to shoe. Repair washout in blooie line. RIH t/7965 and drill ahead.

One compressor down. Drill ahead on 3 comps at 2550 CFM

Felsite:wht,clr,lt yel, peach wash in samp,loc pale gry,fine beach sand app in hand samp, dom clr anhedral and subhedral qtz grs,abs secondary qtz,r blk pale brn biotite flks & books, r grn chloritized biotite flks, r blk tourm rods & fibers, r agg tourm, r blk amphibole.

Felsite:clr,lt yel,lt pnk,loc cloudy wht grs,overall tan in hand sample,dom clr anhedral and subhedral qtz grs, abs secondary qtz,com clr felds grs,r-tr blk and brn biotite flks,r wht and grn chloritized biotite flks,r blk tourm rods,r blk tourm fibers and hairs,r blk agg tourm,r glassy blk amphibole.

100,400 lbs/hr unrestricted
184 ppm H2S; 160 ppm Ammonia

TD SB-32 @8247', 8/7/11. Run 147 jts of 8 5/8" L-80 blank & slotted blank liner f/2858' t/8247'.Kill well with water & run 74 jts of 7" 29# L-80 liner f/surface to 2899'.