Santos GALLOWAY 1

Geoservices

Field :	MSL - RT (m) :	Rig : ENSIGN 32	Open Hole:	Cased Hole:	Engineers :DAVID ADDERLEY
Permit: VIC P39V	Seabed - MSL (m) :	Spud date :			WEI YUAN
State : VICTORIA	Seabed - RT (m) :	TD date :			JAKE TRETHEWE
Country : AUSTRALIA	Lat. :	Total depth :			JOANNE SUTTON
Scale : 1/ 200	Long. :	Final status :			

LITHOLOGY

- Conglomerate
- Coarse Sandstone
- Med Sandstone
- Fine Sandstone
- VF Sandstone
- Siltstone
- Carb. Siltstone
- Calc. Siltstone
- Clay
- Limestone
- Dolomite
- Coal
- Anhydrite
- Gypsum
- Igneous
- Volcanic
- Metamorphic
- Cement

ACCESSORIES

- Pyrite
- Siderite
- Glauconite
- Feldspar
- Mica
- Ferrous
- Chert
- Calcareous
- Dolomitic
- Carbonaceous
- Lithoclast
- Breccia
- Foraminifera
- Corals
- Inoceramus
- Bryozoa
- Plant remains
- Fossils

DRILLING DATA

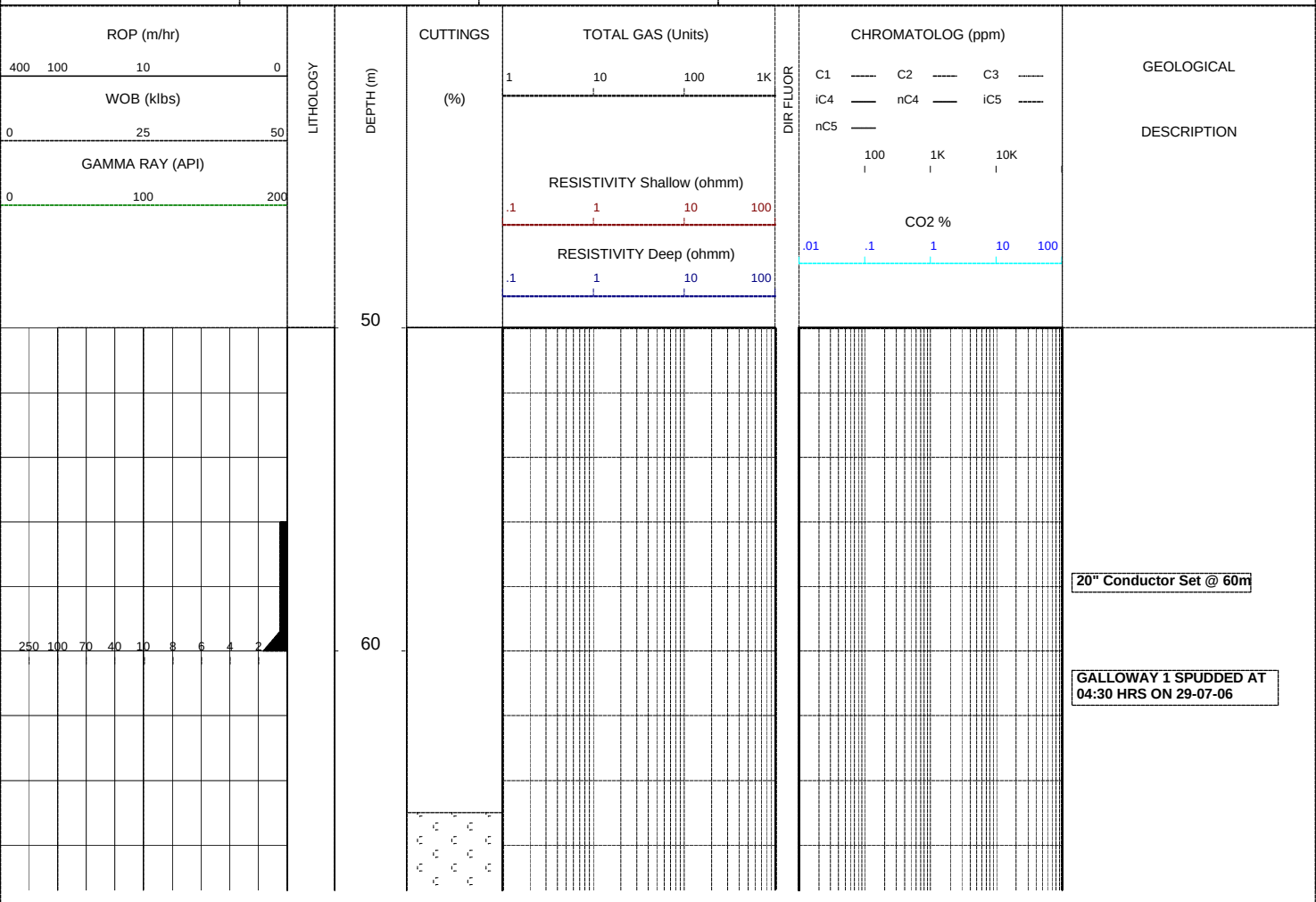
- Casing Shoe
- Bit Trip
- Wiper Trip
- Core
- DST
- Deviation Survey

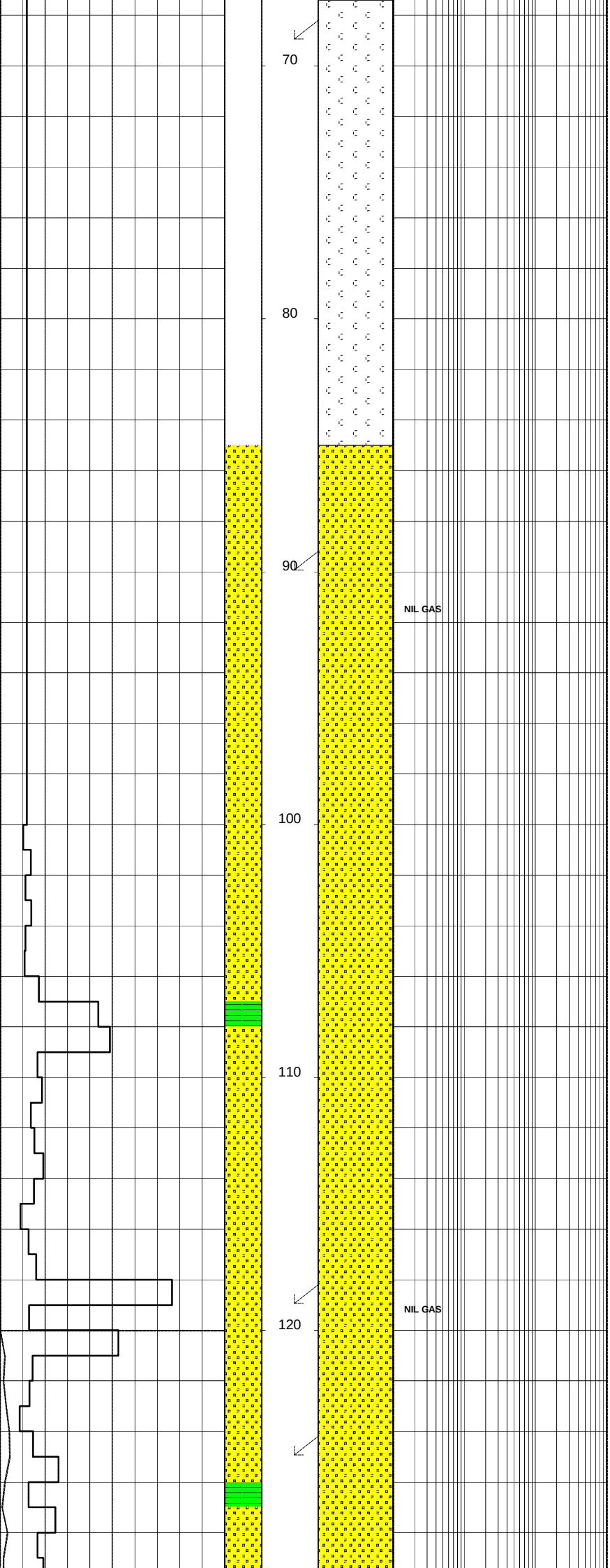
MUD DATA

MW	-	Mud Weight (lb/gal)
FV	-	Funnel Viscosity (s/qt)
PV	-	Plastic Viscosity (cps)
YP	-	Yield Point (lb/100ftsq)
Gel	-	Gel Strength (10sec)
WL	-	Water Loss (cc/30min)
pH	-	Acidity / Alkalinity
Ck	-	Cake (32nd/inch)
Sol	-	Solids (% vol)
Cl	-	Chlorides (mg/l)

ABBREVIATIONS

BOPD	-	Barrels of Oil Per Day	OG	-	Over Gauge
BWPD	-	Barrels of Water Per Day	OH	-	Open Hole
CG	-	Connection Gas	OTS	-	Oil To Surface
CO	-	Circulate Out	Q	-	Flow Rate
COND	-	Condensate	REC	-	Recovery
c/c	-	Crush Cut	Rmf	-	Resistivity mud filtrate
DST	-	Drill Stem Test	ROP	-	Rate Of Penetration
FLOW	-	Flow Rate (gal/min)	RPM	-	Revolutions Per Minute
GCM	-	Gas Cut Mud	RTSTM	-	Rate Too Small To Measure
GCW	-	Gas Cut Water	Rw	-	Resistivity water
GTS	-	Gas To Surface	r/r	-	ring residue
INJ	-	Injection of Mist (bbls/hr)	SCFM	-	Standard Cubic Ft/Min (air)
LCM	-	Lost Circulation Material	SGCM	-	Slightly Gas Cut Mud
MMCFD	-	Million Cubic Feet / Day	SPM	-	Strokes Per Minute
NGTS	-	No Gas To Surface	SPP	-	Stand Pipe Pressure
NOTS	-	No Oil To Surface	SWC	-	Side-Wall Core
NR	-	No Returns	TG	-	Trip Gas
OCM	-	Oil Cut Mud	WOB	-	Weight On Bit





SURVEY @ 68.7m: 0.22° 154.7°T

DRILL WITH SPUD MUD

SANDSTONE:clr-trnsl,off wh,mnr pl yel,rr red-orng,med-peb,dom crs-vcrs ls,qtz crns,sr-dom sa,mnr ang, tr disp clay mtx,gen uncons,fr inf por,no fluor.

SURVEY @ 89.7m: 0.64° 277.8°T

Lithology obtained from hole opening 85m to 100m

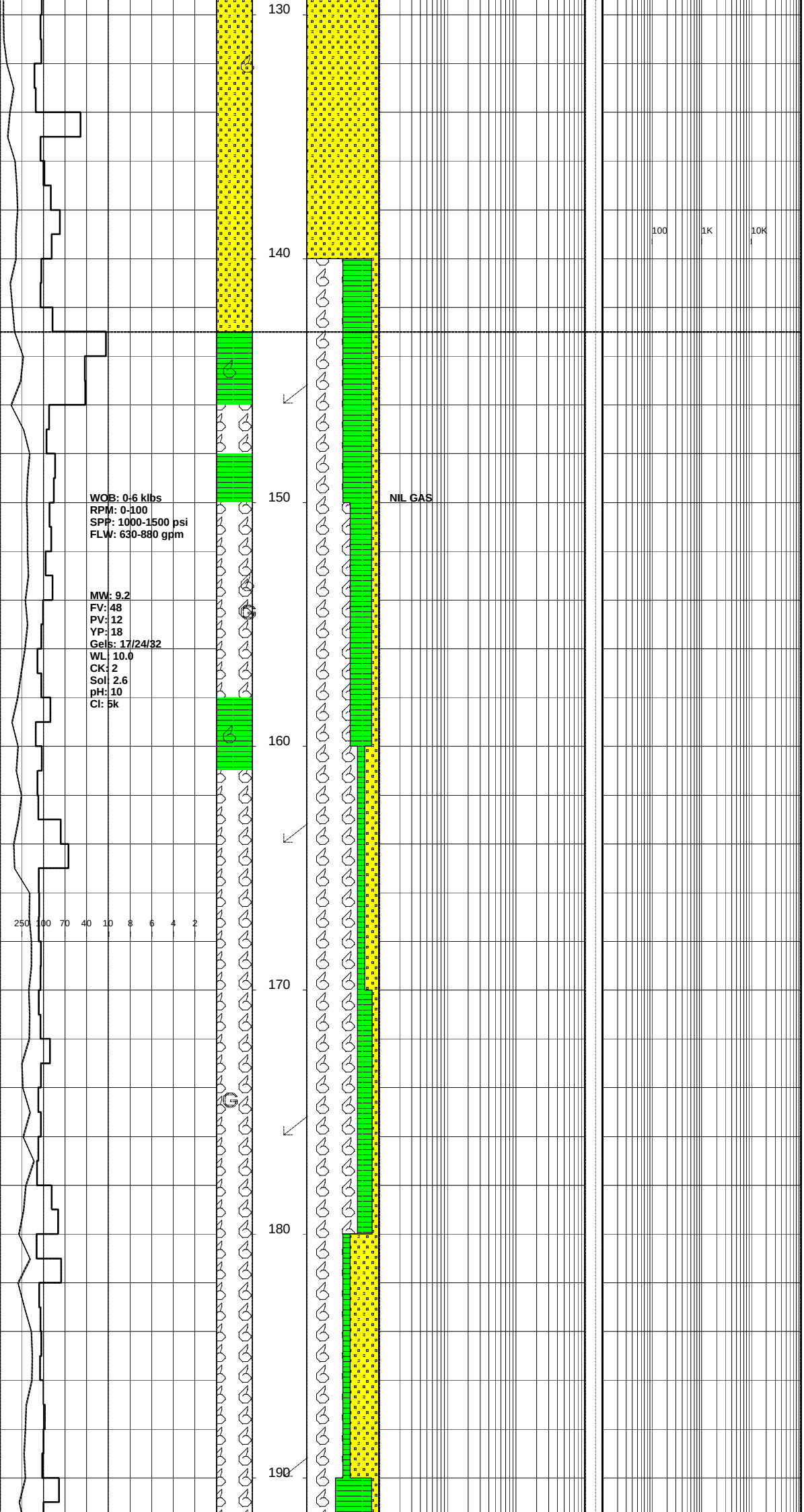
Bit 1: Reed TIIC
Size: 17.5" Jets: 3x20,1x16
In: 100m Out: 120m
Run: 20m Hrs: 0.45
Cond: 0-0-NO-A-O-1-RR-BHA

SANDSTONE:clr-trnsl,off wh,mnr pl yel,rr red-orng,med-peb,dom crs-vcrs ls,qtz crns,sr-dom sa,mnr ang, tr disp clay mtx,tr foss frags, gen unconsl,fr inf por,fluor.

SURVEY @ 118.3m: 0.63° 112.2°T

Bit 1rr: Reed TIIC
Size: 17.5" Jets: 3x20,1x16
In: 120m Out: 320m
Run: 200m Hrs: 2.9
Cond:1-1-NO-A-0-I-RR-TD

SURVEY @ 125.4m: 0.31° 210.5°T



SANDSTONE:pl gry,pl yel,clr-trnsl, f-crs,pred med,pr srt,sbang-ang, rr wk sil cmt,tr foss frags,fr-gd inf por,no fluor.

TAMBO RIVER FORMATION
143m (-134.4 mSS)

COQUINA:off wh-pl yel-brn,crm, abdt lse foss frags,occ casts of Marl/Calc Clyst,bi-valves,echnoid spines,bryozoa,sponge,turritella frags.

SURVEY @ 146.6m: 1.33° 135.4°T

WOB: 0-6 klbs
RPM: 0-100
SPP: 1000-1500 psi
FLW: 630-880 gpm

MW: 9.2
FV: 48
PV: 12
YP: 18
Gels: 17/24/32
WL: 10.0
CK: 2
Sol: 2.6
pH: 10
Cl: 5k

MARL/CALC CLAYSTONE:pl gry,slty abdt foss frags,occ dk glauc grns, disp,amorph-sbblky.

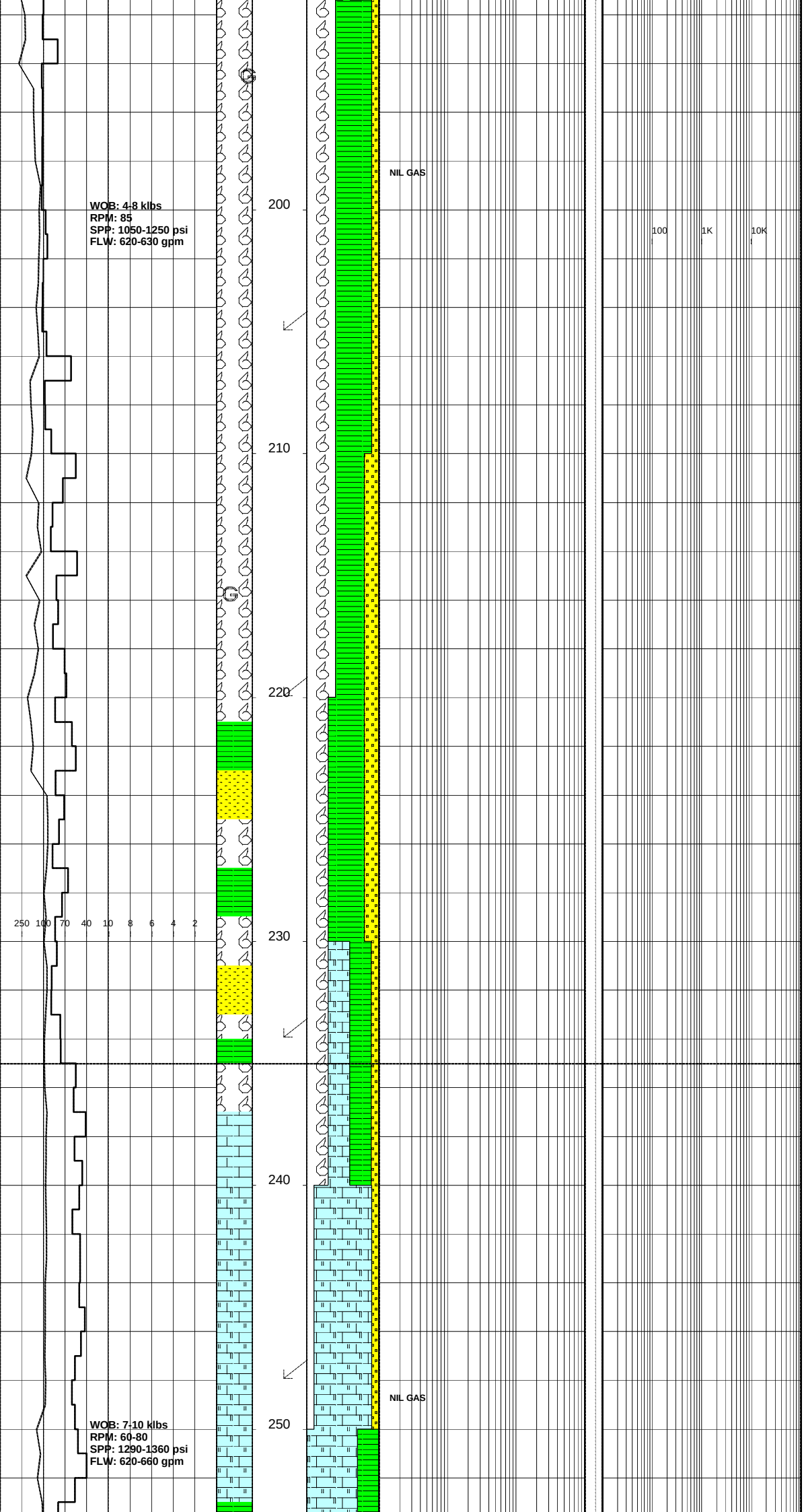
SURVEY @ 163.2m: 2.41° 112.5°T

COQUINA:off wh-pl yel-brn,crm, abdt lse foss frags,occ casts of Marl/Calc Clyst,bi-valves,echnoid spines,bryozoa,sponge,turritella frags.

SURVEY @ 175.9m: 2.70° 134.3°T

SANDSTONE:clr-trnsl,f-crs,dom med pr srt,dom sbang-occ sbrnd,tr arg mtx,gen lse,fr inf por,no fluor.

SURVEY @ 190.2m: 4.40° 115.2°T



SURVEY @ 204.7m: 5.78° 113.6°T

MARL/CALC CLYST:lt grn/gy,lt gry, v calc,aren i/p,arg i/p,tr glauc, tr lse f-med qtz snd grns,com foss frags,disp,sft,amorph.

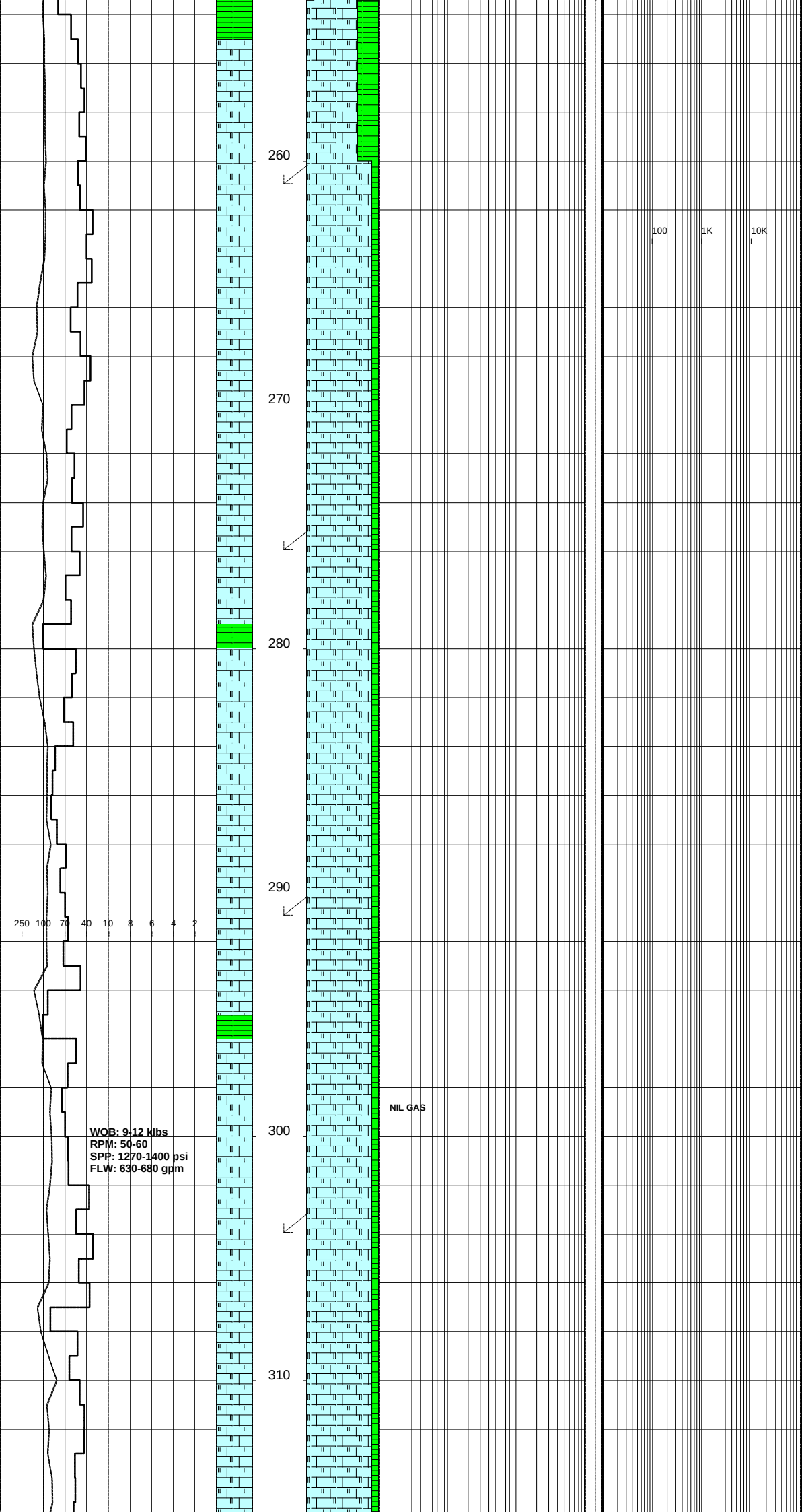
SURVEY @ 219.7m: 8.44° 111.19°T

SURVEY @ 233.6m: 0.99° 113.0°T

GIPPSLAND LIMESTONE
235m (-225.9m SS)

CALCARENITE:lt-med gy,m-crs,tr glauc,arg,com foss frags,mod hd-occ hd,sbblky.

SURVEY @ 247.7m: 13.99° 113.4°T



MARL/CALC CLYST:lt grn/gy,lt gry, aren i/p,arg i/p,tr glauc,tr lse f-med qtz snd grns,com foss frags,disp,sft,amorph.

SURVEY @ 261.6m: 16.60° 112.2°T

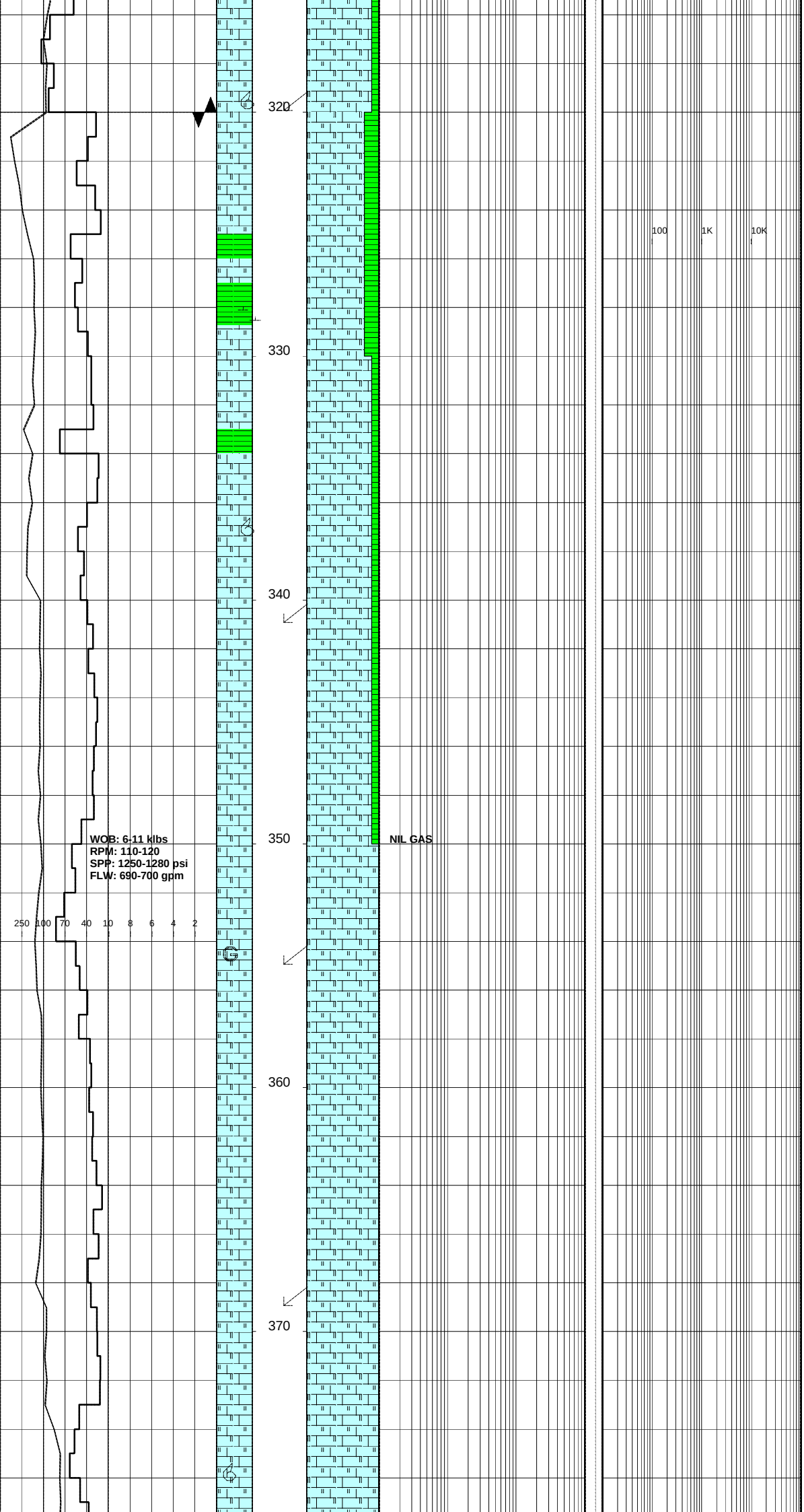
SURVEY @ 276.5m: 9.07° 117.1°T

CALCARENITE:lt-med gy,lt-med brn/gry,f-dom med,mnr crs,sli arg,loc com foss frags,tr dk gry liths,tr glauc grns,com lse clr f-med qtz grns,mod hd-hd,sbblky.

SURVEY @ 291.3m: 21.66° 120.0°T

SURVEY @ 303.7m: 23.23° 118.7°T

CALCARENITE:lt-med gy,lt-med brn, dom med,mnr crs,sli arg,com foss frags,tr dk gry liths,tr glauc, loc calcite cmt, occ lse clr qtz grns,mod hd-hd,



SURVEY @ 320.0m: 22.4° 120.78°T

LEAK-OFF TEST @ 317m
EMW = 20.0 PPG

Bit 3: Reed T11C
Size: 12.25" Jets: 3x20,1x16
In: 320m Out: XXXm
Run: XXXm Hrs: X.X
Cond:

CLAYSTONE:med gry/brn,lt brn i/p, aren,tr liths,sft-frm,disp i/p,sbfiss.

SURVEY @ 341.6m: 24.17° 120.94°T

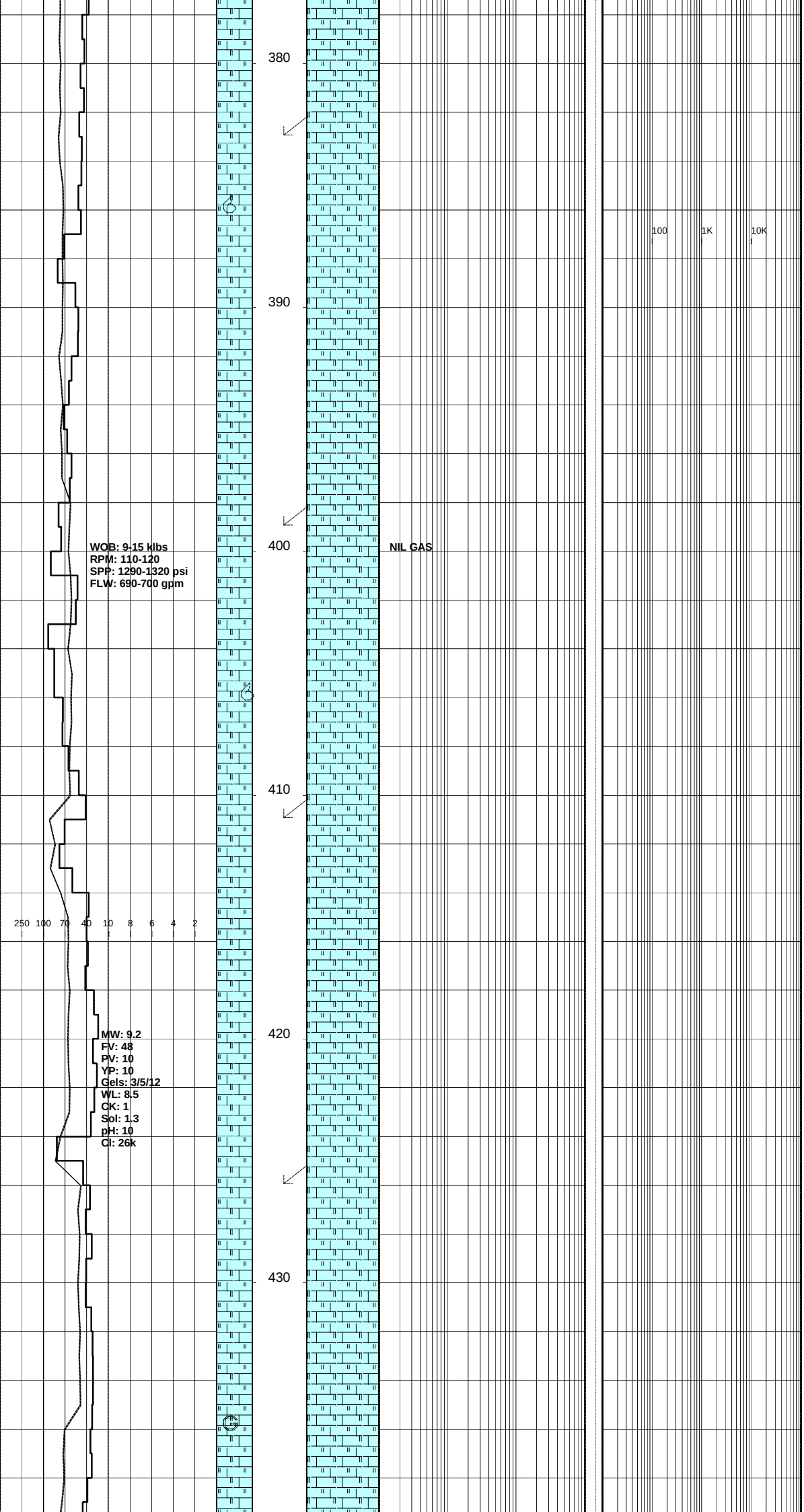
SILTSTONE:(Tr)lt brn/gry,mnr med b aren,occ off wh liths,mnr micmic,tr calc mat,mod hd-hd,sbfiss-sbblky.

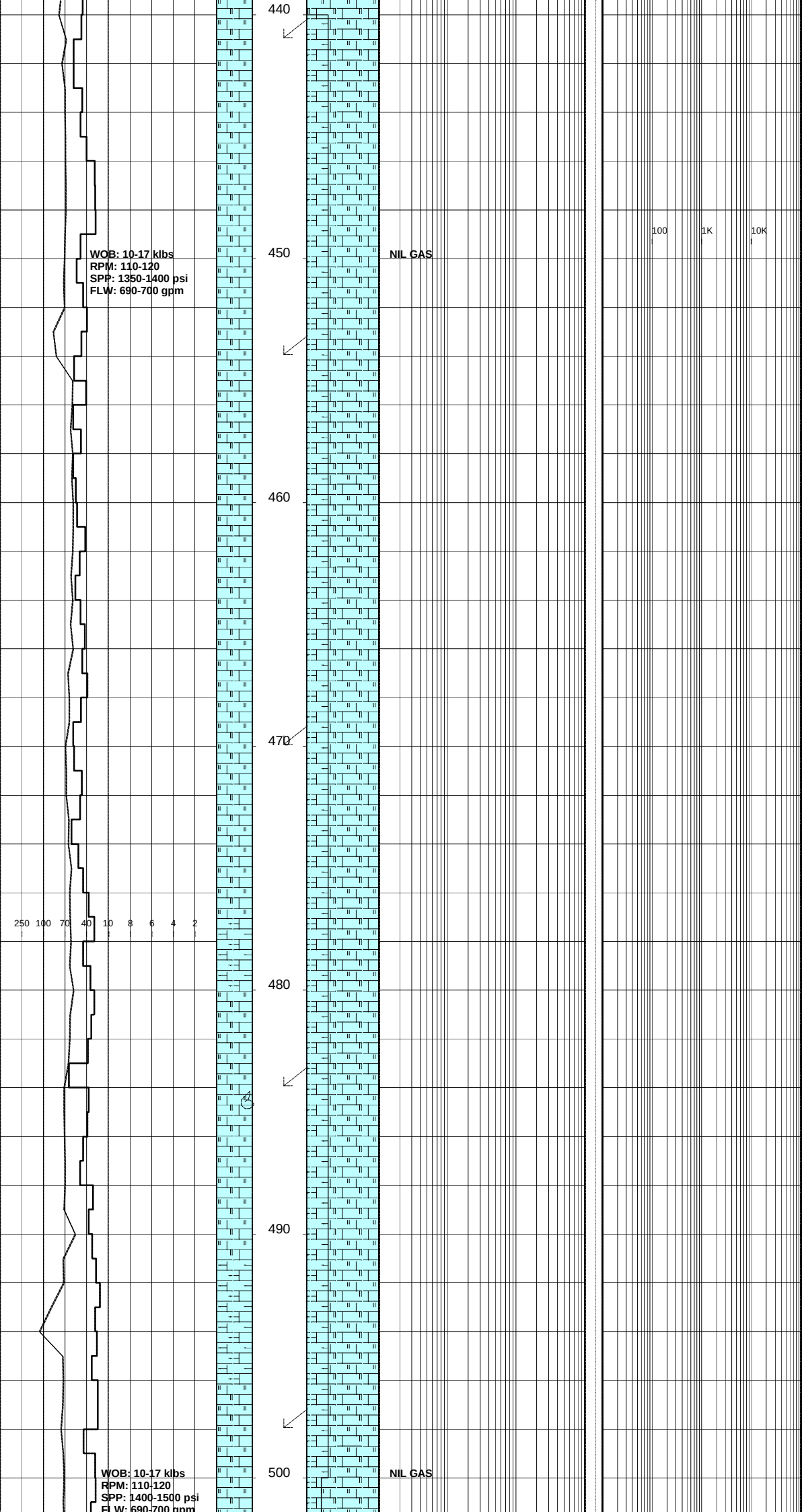
SURVEY @ 354.39m: 25.45° 121.32°

CALCARENITE:lt-med gry,lt brn/gry i/p,f-med,mnr crs,arg i/p,com foss, mnr lse qtz grs,mnr glauc,mod hd-h

CLAYSTONE:(Tr)med-pl gry,lt brn/gr arg-mnr aren,tr liths,pred sft,rr,frm, sbfiss-sbblky i/p.

SURVEY @ 368.84m: 26.91° 120.74°


380
390
400
410
420
430
100
1K
10K
250 100 70 40 10 8 6 4 2
WOB: 9-15 klbs
RPM: 110-120
SPP: 1290-1320 psi
FLW: 690-700 gpm
NIL GAS
MW: 9.2
FV: 48
PV: 10
YP: 10
Gels: 3/5/12
WL: 8.5
CK: 1
Sol: 1.3
pH: 10
Cl: 26k
CALCARENITE:off wh/pl gry,lt brn/gr i/p,f-med,com foss,bryozoa,echn spines,shell frags,tr liths,hd-v hd.
SURVEY @ 382.56m: 29.25° 120.44°
CALCARENITE:off wh,pl gry,lt brn/gry i/p,tr v pl yel i/p,spar,dom med,occ f grns,abdt foss frags,mod hd-occ hd.
SURVEY @ 398.5m: 32.8° 120.73°T
CALCARENITE:pl gry/off wh,lt brn/gry,spar,f-med,com-abdt foss frags, bryozoa,echn spine frags,shells, pred hd,occ v hd,sbblky.
SURVEY @ 411.79m: 34.8° 121.09°T
SURVEY @ 426.36m: 36.07° 120.21°
CALCARENITE:pl gry,lt brn/gry,off wh,f-med,occ crs grns,mnr foss frag tr liths,tr glauc,frm,occ mod hd.



SURVEY @ 441.5m: 39.04° 119.3°T

CALCILUTITE:pl-med gry,lt brn/gry, pred f,tr med grns,com dk brn liths, pred sft,frm i/p.

SURVEY @ 454.18m: 41.35° 119.26

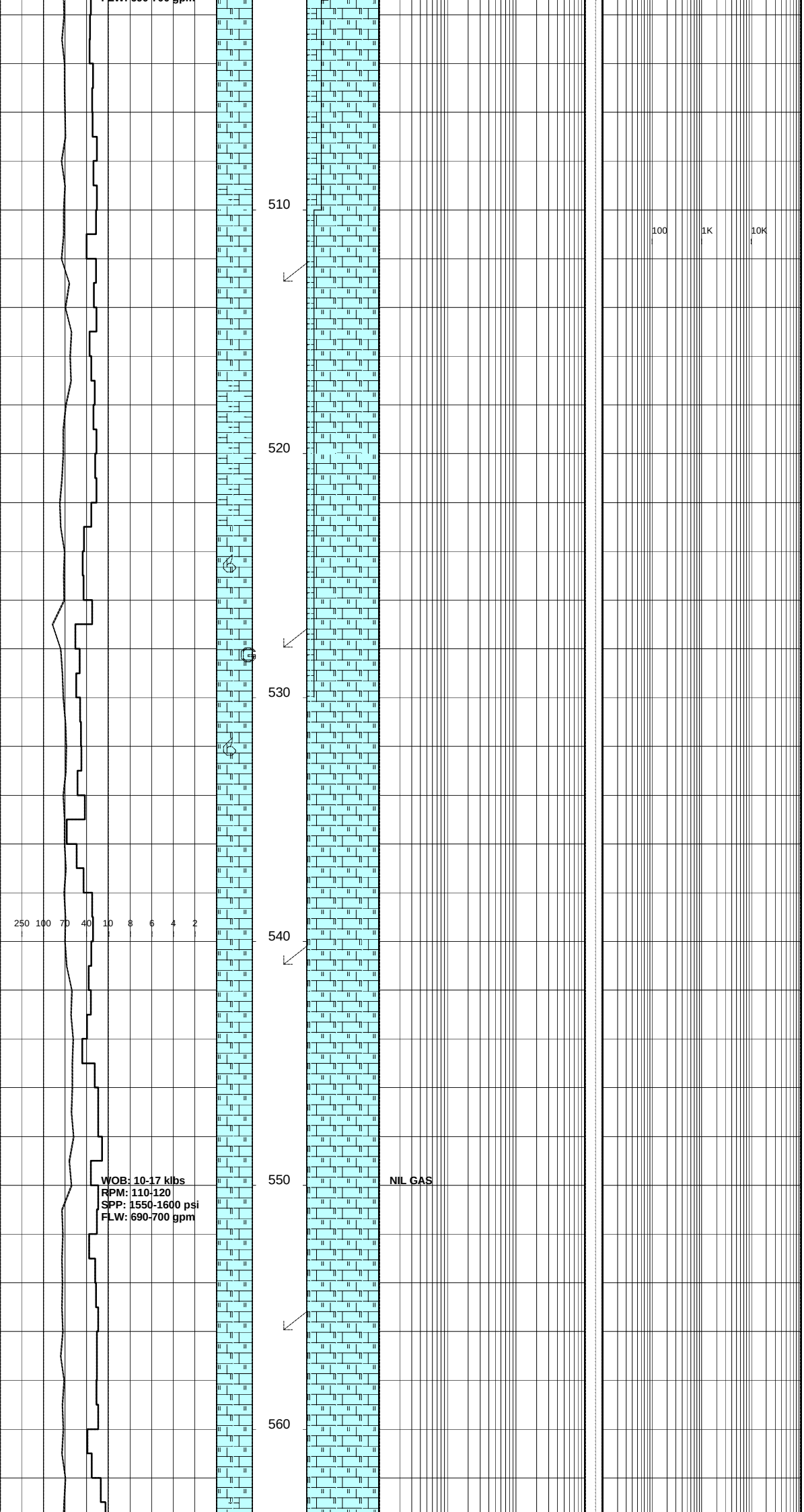
SURVEY @ 470.21m: 44.59° 118.69°

CALCARENITE:off wh,pl gry,pl yel i/p pred med,occ crs grns,mnr echn spi shell frags,tr glauc,mod hd-hd.

CALCILUTITIE:pl gry,lt brn/gry,occ f qtz grns,tr echin spikes & shell frags,frm-mod hd i/p.

SURVEY @ 483.69m: 47.79° 118.33°

SURVEY @ 498.44m: 50.43° 118.30°



CALCARENITE:(70%)off wh/gry,lt brn gry,pred f,occ med grns,tr echin spi & shell frags,frm-mod hd i/p.

SURVEY @ 512.24m: 53.16° 117.92°

CALCILUTITE:off wh,pl gry/brn,occ f qtz grns incl,tr dk brn liths,tr glauc tr shell frags,pred sft,occ frm.

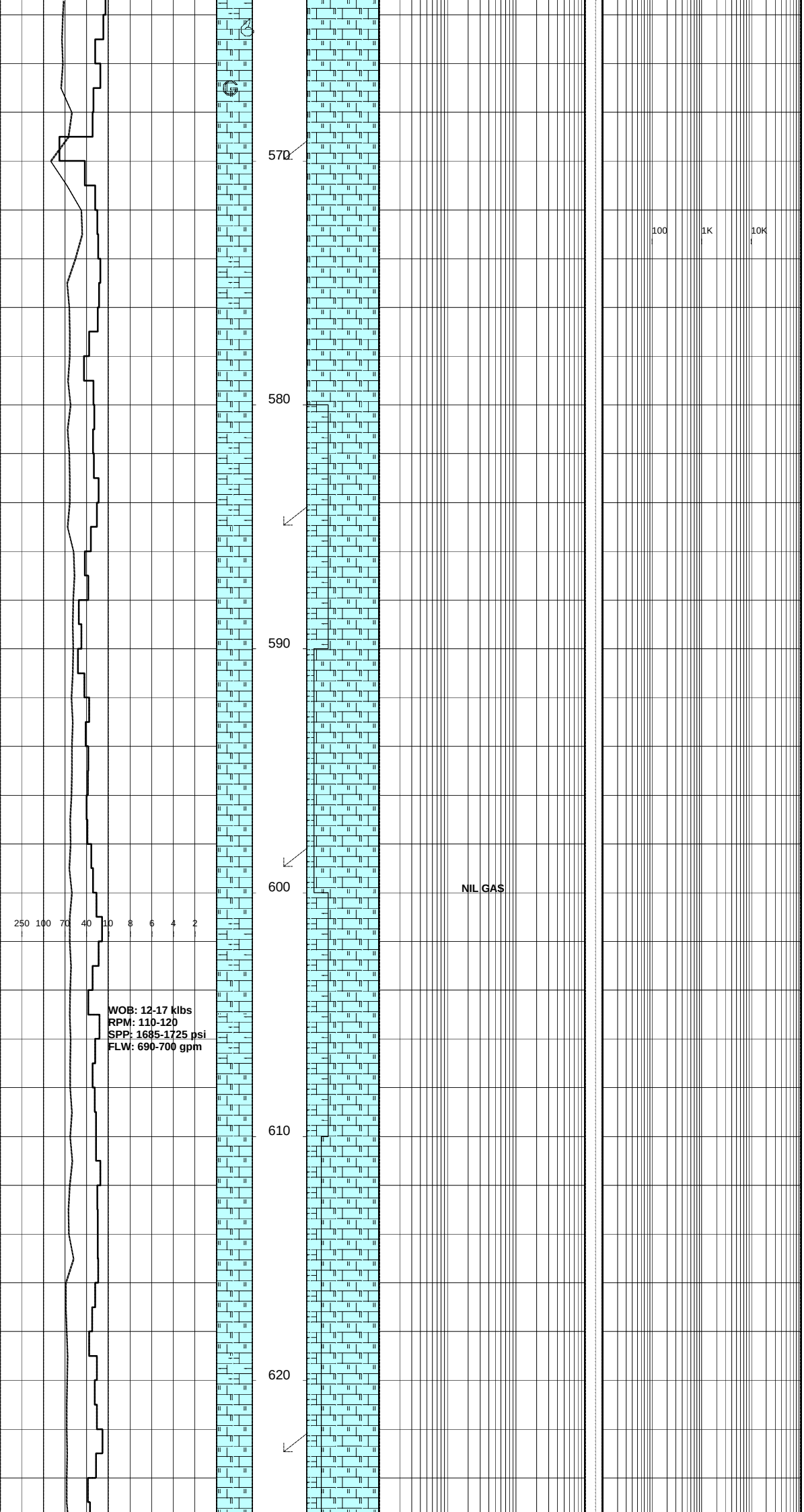
SURVEY @ 527.62m: 56.02° 117.93°

CALCARENITE:pl gry,off wh,pred f,occ med grns,occ-com shell & ech spike foss frags,mnr qtz frags,tr dk brn liths,tr glauc,sft-frm.

SURVEY @ 541.36m: 58.57° 119.10°

CALCARENITE:pl gry/lt brn,off wh i/p,pred f,occ med & crs grns,occ echine spike foss frags,mnr dk brn liths,pred sft,mod hd i/p.

SURVEY @ 556.00m: 60.63° 119.75°



SURVEY @ 570.64m: 62.05° 120.65°

CALCARENITE:off wh/pl gry,lt brn/gry,f-med,occ crs-v crs grns,occ echine spine & shell foss frags,occ-com brn liths,tr glauc,frm.

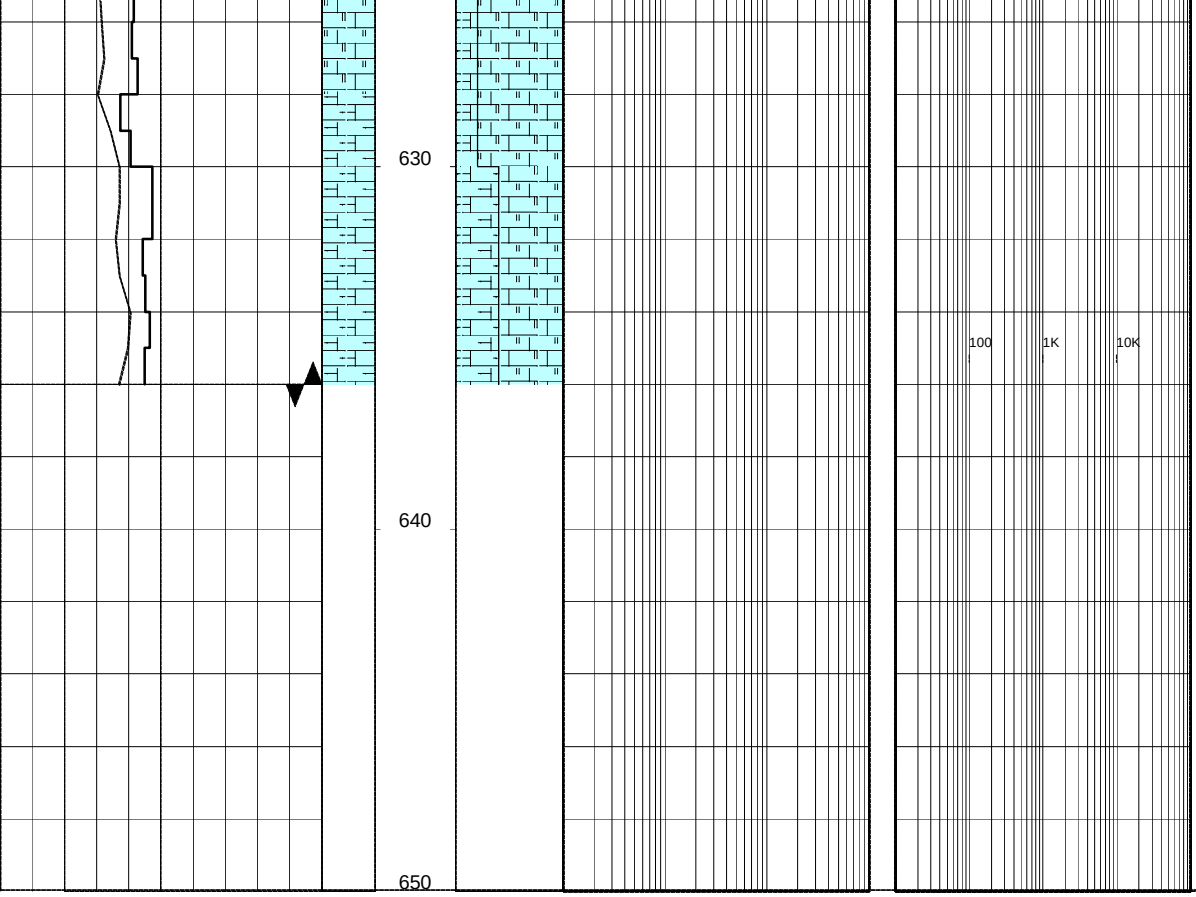
SURVEY @ 584.89m: 64.27° 121.30°

CALCARENITE:pl gry,lt brn/gry,off wh i/p,f-med,com shell & echine spi foss frags,mnr liths,tr qtz frags, pred sft,frm i/p.

SURVEY @ 598.88m: 66.35° 122.11°

CALCILUTITE:off wh,pl gry,mnr echine spikes & shell foss frags,tr liths sft-frm.

SURVEY @ 622.25m: 70.37° 121.24°



CALCARENITE:lt brn/gy,crm,off wh, dom f-occ med,tr foss frags,tr calcite cmt,tr liths,mod hd,fri i/p.

POOH TO PICK UP GEOPILOT