

Mobile Drill

LOG # 21

Forestry Suppliers, Inc.

1-800-647-5368

49354 Level Book

9-08/1-11

18890/19251

18890/100'
Queen Spacing 46' NW

18891/41'
Grady 29.4' NW

18720/128.7'
Liepold

Chevrolet Medium truck
dealer

Champion Chev. BSD 576-4000

GMC truck of Ocala
5337 SW First Lane
Ocala 34474
352-854-6366

Manatee Springs St. Park
352-493-6072

CO

Ma

LF

LF

LV

LV

LV

LV

LV

LV

LV

LV

JK

18870/100'
Queen Springs 46' NW

18871/47'
Grandy 29.4' NW

18720/128.7'
Liebold

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Troy Springs

Amy

800-868-9914

~~Amy Canyon~~

~~386-497-1148~~

NAD83
6 Aug 219 mndg

W # 18890

OWEN Spring

Lafayette Co.

T 65 R 13E S20Caa ACCL

LAT 30° 02' 33B 15.7'

Lon 83° 02' 742 219'

Elev

well constr permit #99135

KC, BC met eric ^{Taylor} w/ point 2B

at site. Key won't work

call Amy at Troy Springs -

came out to unlock -

combo ~~test~~ 1001 on

red lock

0 - 2.5' push med gray + y.l. br
sd

2.5 - 5.0' push lt y.l. or sand

5 - 7.5' push lt y.l. or + br
sd

7.5 - 10' push - white sand +
interbedded clayey sand -

10 - 11.25' push spe - sd + clay sd
or above

SET 12' NW CSg & recirc.
system

18890/100'
Owen Spring 46' mnd

18891/47'
Grady 29.4' mnd

18720/128.7'
Liepold

11.5-16.5' lt yel. bn ss clay sd

~ 1' recovered

16.5- sand loosed - pull out +
NW, change to Christmas sgr
w ext. slbe

run 17' NW esg

16.25-17.75' lt yel. bn ss clay sd

17.75-19.0' gray + yel. bn clay sd
fossil

19.0-21.5' lt yel. bn clay sd

21.5-24' 6" mottled gray clay
recovered - v soft below - no
recovery

24-26.5' or stained clay + ls
grad to v lt. or moldic ls w
soft zones

26.5'-29' lt bn ls w unreplaced
fossils

29-34' same w some dolomite
w unreplaced fossils

34-39' med bn, soft to hard
variably moldic dolomite

39-44" - med bn moldic dolomite
soft zone v 1' fr btm.

last 6" v hard

44-46.5' med bn dolomite then
softer

Open Road 11/10/19

18891/47
Grady 29.4' NW

18720/128.7
Lipold

46.5 - ~48.5' soft muddy dolo
end day - out of water 5:45 pm

5-28-09 KL, BL, Erie, Lake ^{Twin} ^{MAST}
BAN START

SWL 22.8' bts

- 48.5 - 54' hard + soft bn dolo -
var muddy var moldie

54 - ~60' bn hard var moldie
dolomite - some soft rock lost
at btm

60-65 bn var moldie dolomite

65-70 same

70-75' same

75-80' crm to vlt. or var party -
moldie ls

80-85' same chg to lt gray ls
~ 83.5'

85-90 gray var moldie fossil ls.

90-95' vlt. bn var moldie ls.

chg to bn/gy dolomite ~ 3'
measured - soft zone lost

95-100' TD gray bn dolomite
some moldie

locate Twin Ruin m.w.
end day 7:00 pm

18840/1009
Green Point 46' m.w.

18891/47
Grady 29.4' m.w.

18720/1287
Liepold

SWL 23' clay 21.5 - 24 1/2'

rock 24 1/2' - plugs

2) PC 12Vc
soda can
hand shield

18V tools
alcanox

airline
trussing drive head
hardware cloth
hand saw
2" gunk clamp
Hack saw

SET SWL 25 26 - 46'

24
2009

5-29-09 KC, BC, Eric, Jake 4
8AM start

run 3" cas to 27 1/2'

airlift to pull drilling mud out of hole.

wash in bentonite chips to 48' bgs

6-1-09 BC, ET, JM

Left th @ 12 pm. Headed to site, got fuel and H₂O.

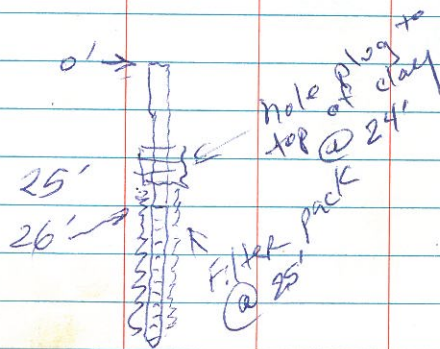
6-2-09 8am Start
BC, JM, ET

Head to site

H₂O level: 25'

Grout level: 47.2'

Augered down to: 24.9'



6-2-09 Con't

used ~~6~~⁶ bags of portland
③ bags of quickcrete

Set screen @ 26.4 - 47.2'
grouted up hole + developed
rig hours 2689

6-3-09 BC, JM, ET 8am
to site to set protective
casing, finish grouting
and move.

@ 12 noon headed to Grady
site. NO key.

Had to wait on Jim and
Jon until 2:40 pm.

Grady site LAT $29^{\circ}55'02.64''$
~~LAT $29^{\circ}55'02.6$ LONG $82^{\circ}56'07.8''$~~
~~LONG $82^{\circ}56'07.8$ EPE 14.5'~~

AVG of 480 READINGS

Set up in rain. Thunderstorm
moving in. Stopped.

Set up for push sampling.

0-2.5 tan brn silty sand

2.5'-5' Same soil type

5' - 7.5' Same soil type

7.5' - 8.2' tan gray brn silty sand 8' - 8.2'

lt gray tan brn silty sand (moist)

W# 18891

well construction point #
99134



8.2'-

RH-2692

Remember this
Number
Bridget

8.2-10.0' - Clayey Sand
caught w/ extended shoe
10.0-15.5 - Sand w/ some
Clay. poor recovery
ended day 12:00 pm
RH: 2692

6-4-09 BC, UM, ET
Set 3" casing to 15'
Started coring

15.5-20.5 coarse Sand

20.5-25.5' Limestone, white
25.5-30.5 Leps (Ocala Fm)
poorly indurated.

pulled HQ and ran 3" to 30'
Switched to Longyear system.

30.5-35.5 Creamy tan Ls, fossiliferous
cavity from 31-32'
Storming off and on all day.

18120/1287
Liebold

Next week Ken
Rags in about on the log
forgot the mileage. Need a new
in book hornet. Need a new
New well casing out @ site
in plastic.

7

35.5 - 38.5

possible cavity @ top. Sand!!

38.5 - 43.5 moldic white
limestone.

43.5 - 44 plugged off

~~af~~ tripped out inner
barrel. Cleaned hole. Couldn't
keep it open.

Called KC. Hole from hell.
rig hours 2698

Gave up @ 7:45 pm and
headed back to camp.

Ended day @ 8:30 pm

6-5-09 BC, UM, ET

H₂O level: 7.5'

bottom @ 35'

20' screen
28' well
assembly

Thunderstorm

packed up and headed back
to TLH.

NQ still in hole

3" = 35'

returned @ 1:30 pm.

6-10-09 KC. Eric Thomas, Mike Mart ⁸
~ 8:45 AM start. Fuel truck +
gas can then to site ~ 11:15 -
top off hydraulic fluid in rig

pull NQ
run 4 1/4" tri spin HSA's over
3" CSG to ~ 29.5'
pull 3" HSA
run in 30' 3" wellbore - 10' CSG
20' SCH. 3" pipe
wash in filter sand to 7.5' b/s
start air lift pump to
settle filter pack
air lift ~ 1.5 hr - v muddy -
filter pack topped off to 7' b/s
long hole pump washed in for
seal 6' b/s

pump 3" bags portland to land surface
build pad + set prot. CSG
in place w/ kerik clamp

End day 600 pm

Replace remote ign SW
LAT 29°55.044' (2.64")
CON 82°56.130' (7.8")
EPE 14.5
AVG 480 readings

9
6-11-09 KL, J.M. + E.T. 8 AM START
SWL 8.1' SL5

wellbore deep ~1 hr chg over
to pump + surge

initial yield in pump min 125 gpm
top of pad
cont. surge + pump
sustained yield 159 gpm
Temporary top of casing 27"

still pump is H₂O cloudy water
+ fine sand when surged

install new cap on well +
cap 4" protective cap w HWD drivehead

To Owen Spring site - cont.
development: started out making
gl. or muddy water

water clears to cloudy 1/6 gpm.
still making fine sand

10

Rig compressor overheating. need to
stop air lift.

Need final depth measurement,
stickup height, depth to water
~~the~~ screened interval etc
for both

6-25-09

Owen Spring + Grady sites

OWEN spring

SWL 26.95' BTDC

well depth 47.4' BTDC 45.8'

Top of casing 1.6' above top of pad

GRADY

SWL 11.4' BTDC

well depth 32.5' BTDC

2.6' stickup

SCN 9.4-29.4'

well 29.8' TD

PN 40 GPS
EARTH MATE
Average loc
29° 13' 05.12"
82° 27' 03.80"

0-17.5' UDSE SAND
17.5-38.5' clay + sand
38.5-85.5' clay
85.5' TD AUPK

7-22-09 W 18920 / 127.8" TD

KC, ET, JM

LEIPOLD CORE
Romed Quad

LEVY CO

SEC 31 NE 1/4 T 14S R 19E

LAT 29° 13.086' (5.16")

LONG 82° 27.051' (3.42")

Elev ~ 79' Topo

Access across Dorothy Leipold property. ENFORCE track discipline. Restore her yard when hole is complete - rats to be raked out, sod to be replaced if needed

CONTACT Bill MEAD

352-895-2505 CL

352-861-5880 H

7 AM start

cut trail into site, winch dually + water truck in
set up rig

push sp. soil zone + guy bar sd

0-2.5 y.l. br sd - some slag at top

2.5-5.0 same y.l. br sd - some slag

5.0-7.5 at top

SAME

7.5-10.0 SAME

10.0-12.5' SAME

12.5-15' SAND lt y. br expected

END day spring at 5:00 pm -
thunderstorm

rig hours 2713 miles 14273
ready to leave - downpour/dually
won't start.

Brie + drew came get us
ok into motel 7:45 pm

7-23-09 KC, ET, JM / BC + D.B.

6:30 AM start.

to site - dually starts

off load supplies brie needed to
Infl. we loaded quick get for
this site. set up tubs etc
mix mud - Brie + Drew head
to their site.

set 13 1/2' 3" csg

start coring w TSD bit + new
winneb head w ext shoe -
new head stiff - won't release -
chg to other head

15-17.5 ^{crn +} or ~~shy~~ sd

17.5-20 or sh ch sd

20-22.5' sdg clay - cr + gy mottled

22.5-25' crn + at or sdg clay.

only 5" recovered - plugged 80
at top - softer below

25-27.5' crn clay w or mottling

27.5-30' crn / lt gy clay w

clay sand at btm ~ 1.5' rec

30-35' crn, lt y. or + gy clay.

poor recovery - 2 runs - very soft

35-37.5' crn / lt gy clay, clay to
lt. or at btm

37.5-40 org clay - there is rubble &
clay

40-41.75' - soft refusal w ext. shre

41.75'-43' cream granular ls. some
iron staining ~ 1' recovered

43-45' wht. granular ls. var reddish
mod ind

45-47.5' ~ 1 1/4" recovered hard granular ls

47.5-50' no recovery

50-52.5' cream pasty, granular ls.
some iron stained

52.5-53' crn lt br granular ls

53-55. crn + lt br granular
ls. mod ind.

55-57.5 SAME. some iron st. 14

57.5-60' crm + 1/4 bn granular ls
~ 1' recovered, some iron stain.

60-62.5' 1/4 bn + iron stained ls.

rubby ~ 8" recovered

62.5-65' 1/4 qtz granular, foss. ls.

same iron stain ~ 1.25' recovered

65-67.5' iron stained sand

w 6" ls at base

67.5-70 orange clay

70-72 orange clay - clay to ls lent
4"

72-75 crm clay ls fossiliferous
VAR mudcr.

75-77 SAME

77-80' NORM - soft

80-81.5' or clay than ls
~ 1' recovered

81.5-85' porous friable ls

85-~86' v hard - several runs -
keeps plugging off.

END coring for day

Rig hour 2721

END day 5:30 PM

7-24-09. 7:30 start.

to site w intl. - run 3" CSG
to ~72' - out of water.

pull NQ

pick up site lock up

Rig hour 2725

8-12-09 KL, JH leave Anser

@ 9:30 / fuel stop then to
Leipold site. start rig
setup - fluid return delay.

SWL 39.0' BLS

mix mud - run 3" CSG to
~88'

run NQ + core bbl w inpreg bit.
back in (core bbl + 50' NQ)

Rig hours 2728

End day 7:20 pm

==

Transfer to
CME post

Load good ash
cleaner + hours

End day
6:45

8-13-09 KC, JH. 7:15 AM ¹⁶

Start - to Citra F.S. -
Load WATER then to
O.C.K.R.A. site

198.5 - 203.5' ~ 1.5' yellow
soft ls, mod ls + carbonate mud
203.5 - ~ 204 - sticky calcareous
plugged off.

204 - 206.5' grey bn granular ls.
mod ind - poor

206.5 - 208.5' SAME

208.5 - 213.5' grey + bn mottled
granular / burrowed ls

213.5 - 218.5' grey ls, v muddy.
induration poor to good

218.5 - 223.5' grey ls

223.5 - ~~228.5~~ 228.5' bn granular ls / dss
foss, poss some organics

228.5 - 233.5' bn + gg ls. poss
org., foss

End coring for day -
Out of WATER

Rig hours 435.2
picked rods up 20'
inner bbl is in rods
first 1/2 of rod drilled down

Transferred to
CNE book

Draw Broken

245 - 3133

Order hold
N & Phos

8-14-09 KC, NH 7:15 AM start
to Citra load water

233.5 - 238.5 grayish br var gran
to mddy ls. thin harder zone
toward base

238.5 - 243.5' gray + br foss ls/dls.
large echinoid frags., br
moldic dolomite med wavy (~8")
ls burrowed, var moldic

243.5 - ~~248.5~~ 248.5 hard gray-br
sl moldic ls. granular, foss.
mottled. lots of individual
grains are gray

248.5 - 253.5' gray + br ls/dls. well
ind - some paver ind zones.

Some moldic

253.5 - 258.5' busted run -
recovered ~ 1 1/4' dk br dolomite -
evidently plugged off + ground up
into bed below (?)

258.5 - 263.5' gray + br mod ind
ls, foss, var moldic. last 8" hard
dk br dolo.

End coring for day - out of
water

Transferred
to
CME Bank

~86' ~ 88.2' lost -
setting up

Go

18
picked up NQ 20'. First 1/2 of
rail drilled down

Wiser bbl in international

Rig hours 438.7

miles 44368

RETN TO TLH 5:45 pm

8-18-09 KC, DB - 9:15 leave

where - arr site ~ 12:45

eat quick lunch -

mix mud, run NQ to btm

88.2 - 90.8 hard red dolomite
at top then softer br
dolomite

90.8 - 95.8' lt or br dolomite top 8"
then dk br laminated + biohermal
dolomite in thin org. lam.

95.8 - 100.8' same

100.8 - 105.8 dk br dolomite med-por
ind granular, moldic organics

Thunderstorms close in - 4:15

Rig hours 2731

End day 5:30 pm

RLE FD

CONTACT NAME:

Phone #:

Address:

352-299-4578

GARY LACKY

352-465-0558

8-19-09 KL, DB 7:30 start
stop off at M.R. Co fire stn 12 - fill up
w/water

105.8-110.8 bn dolo, mod. ind
rare moldic, shaly divided
organics or blebs + thin lam.

110.8-115.8' top two feet or above
than better indurated, laminated dolo
w org ~ 1.5' then bn granular
dolo w organics. last 6" hard
dk bn dolo, moldic.

115.8-120.8 hard dk bn dolo,
moldic, organics ~ 1' or btm
softer than 8" greenish gray
ls (?) w dark speckling.

120.8-125.8' 2' ls or more above
than 8" dense blue clay speckled
w organics than 4" black clay
or organics, ls interbedded w
organics than lt gray, con ls
w organics

125.8-127.8' ls, lt con gray var ind
✓ moldic w dk gy/blk staining
out of water

127.8 TD

new hacksaw
stripper + box stuff

2' of 5' rod drilled down
inner bbl is in International
picked up ~ 1'

Rig hour 2733

Christopher Williams
David Pines

9/8/09 CPW+DTP

trip out NQ; assemble tremy pipe

end day 6:45pm

rig hrs 2734

9/9/09 CPW+DTP

start day 7:30pm

- run in 127' trim pipe
- mix + pump 1 bag grout, pull 20'
3" csg. to grout @ ~ 72'
csg is 3.5' stickup $\therefore$ ~~64.5'~~ 66.5'
- mix + pump 1 bag grout, top of grout ~
68'
- pour ~ 1/4 bag hole plug, top of hole
plug ~ 64'
- trim in pump 1 bag grout, pull
10' csg. 3" csg to 40' less stickup
to grout @ 41' less stickup (3.5')
csg 56.5'
hole 57.5'
- trim in pump 1 bag grout, measure top
grout - same.

Wait ~ 30 min, pull 10' 3" csg

50' - 3.5' 46.5' csg

56' - 3.5' 52.5' hole

add hole plug, bring hole up to right @ bottom of 3" csg; trim in + hoist 3" csg shows that trim stays on bottom of hole, does not rise w/ 3".

• mix & pump 1 bag grout
hole is 52 - 3.5 = 48.5'

→ trim in 45 + 18" = 46.5' stickup
hole is 43'

mix & pump 1 bag grout, pull 10'
stick of 3" csg.

csg = 40' - 3' stickup 36'

hole = 52' - 3' = 49' (wet, no dry time)

→ add ~ 1/3 bag hole plug, bring hole up to ~ 40.

• mix & pump 1 bag grout
hole ~ 39' ~~need~~ to leave more time for hydration.

→ add 4 cups (~1') hole plug
45' hole depth. WAIT 45 min.

- after waiting we have 45 - 3.5

⇒ 42.5'

• mix & pump 1 bag; top hole @ 47'

• add hole plug + "plunge" until hole ~ 28'

158' 30" - slickup = 27'

hole 31' - slickup = 28'

Rig hrs 2736

8 bags grout

1 hole plug

9/10 CPW + DTP

• on site 3:40 after logging Orange Creek
core hole

• measure bottom hole / top grout 31.5'

• pump 1 bag, pull all CSG

• pump 2 bags, add hole plug to get depth -
10'

• secure site end 6:45pm

Rig hrs 2735

3 bags grout

1 bag hole plug

1/11 CPW + DTP

• hole is 10'

• mix 3 bags grout, fills to ~ 1'

• top w/ hole plug, manual cuttings
over hole

• pack up + abandon site.

• depart 2pm

1-25-10

W# 19067

LEVY BLUE PARK

T 12S R 16E

510 EAD

LAT 29° 27.101 (6.06")

CON 82° 41.901 (54.06")

AVG 540 readings
NAD83

Elev ~ 48' Topo

CO LEVY

23

0-2.5' push spl bw + y. sd - Fill
to ~ 2.4' - black/dk gray sd in
top of NATURAL ground surface

2.5-5.0' blk sand grading to lt gray
btm .15' black organic rich sand

5.0-6.0 blk org rich sd. WATER
Table just above this

6.0-8.5 push spl black to dark brown
organic sand

8.5-10 switch over to WL NR
firm clayey gray sand

10-15' lt bn sd - worked - only ~
.75' recovered

and coring for day

reg miles 14618 / hrs 2750

leave site after dark

end day 7:00 pm

10' 3" CSg
5' 4" CSg

>

2" King nipples
2" CAM bolts
2" ball valve - bolt
shockomatic bushings? *none*
feed cyl. bushings? *none*
~~Levers~~

~~tools~~

4 or 6' mud tub

to weld

socket set - from 1/2" to dualy

Spring for wire retriever

CMS wireline clamp nuts

weights for main hoist

cable lube

grease stuff

~~detangler + repair~~

blind spot mirror - MOYND

3 clearance lights MBL DR

25 amp fuses for run ign.

3/4" airline

2nd spot airline

adapter f/ dedicated air line to
3/8"

bladder pump hook

1-26-10 3 AM START

24

15'-17.5' med br sand, much of it washed away,
then sand w/ LS rubble / minute last
3" or so.

17.5'-20' moderately indurated packstone / grainstone
abundant rd fossils inc. mollusks &
echinoids

20'- Advance 3" casing to 20' (22' w/
stickup)

time out to remove spider frame &
torque down feed cylinder nut

20'-25' small <1' cavity ~ 8" from top
of run. cream - v. lt. orange pack-
grainstone

25'-30' light cream rd hard LS, massive
mollusks & gastropods

30'-35' AS ABOVE

35'-40' lt orange rd hard LS, losing
induration down core, grainstone
gastropods, mollusks, molds

40'-45' lt orange grainstone, fossils as
above, inc. sand dollars.

45' - 48.8' cream to pale orange granitic
with fossils + echinoids / sand dollars
core picks up iron skinning towards
bottom of run.

- roof of cavern @ ~48.8', floor
measured at 54' w/ tape

cavity 48' ± - 54' pull NQ
run addl 3" CSG - CSG to
35' ~~low~~ stickup
out of water

Rig hours 2757 outday 6:30pm

1/27/2010 Same start

advance casing to cavity floor, drill
into floor to ensure good seat.

→ 3" casing 55' in hole

trip in NQ to continue casing.
54' - 55' only rec cuttings.

3' NW csg on
top

55'-60' hard rock @ top followed by
cavity space; then hard
drilling w/ pressure ~ 30 psi;
suspect hard rock recovered in
shoe pushed softer material to
60'

60'-X Unable to seat inner barrel, plugged
sand has flown up barrel trip NA,
advance 3" casing to 603' has stuck up
~~Trip in NA in preparation for airlifting~~

58' NA + core bbl hanging
inner bbl is in international
End day 7:00 pm

RIG HRS 2761

1-28-10 DP-KC 8:20 start

*Wash NA w/o inner bbl back to bottom of hole
(60')

60'-65' 3' recovered, numerous 3-6" cavities
exposure / cavity surfaces evident as
orange surface; moldic porosity, hard

Tap



27

- 65'-70' tan-brown moldic indurated dolosilt
70'-75' tan-brown moldic dolosilt to olive
brown dolomitized wackestone, lams
75'-80' laminated moldic brown dolosilt
80'-85' as above, into white/cream wacke-
packstone w/ milliolids
85'-90' as above
90'-95' as above with brown zones apparen-
tly dolomitized; fossil moldic
95'-100' cream-tan fossil moldic dolostone
100'-105' cream-tan wacke-packstone
105'-110' as above, into brown fossil moldic
dolostone
110'-115' brown to tan dolostone into tan wacke/
115'-116' cream wacke/packstone

TD

Pump 3 bags grout

Rig HRS 2766

End day 7:15pm

1-29-10 9:15 start

28

fd. gravel at 61' bgs - pulled csq back,
set pecker at 47.5' (above cavity, more)
wash in bentonite chips 47.5 - 42.1' bgs
pull casing leaving 25 less stickup in
hole mix & pump 1 bag gravel

2 bags + remainder hole plug; 4 bags
gravel to fill last remaining 6', final
3' filled w/ cuttings / sand

abandon site ~ 4pm

drop 4719 of Manatee Springs St PK
maintenance yard

return to Tallahassee
end day 7:45pm

NOTE
Research leaking air
valve on pipe drill broken

top OCAP
~ 9.25'

2-16-10 KL, JH leave town 10:00 AM
to Lery CO

W 19069

Rosewood fire tower

LAT 29° 14.272' (16.32") Aug 124 readings

LONG 82° 56.174' (10.41") EST ERROR 10.7'

529 cm T145 RMENAD B3

Elev ~ 16' TOPO

Wpt 32

Co: Lery

OWNER: FL D.O.F.

0-2.5' gray sand grade to lt
bd

2.5-5.0 y/b or + white sand

5.0-7.5 lt gr to white sand

gl. or clayey sand at 5 fm.

7.5-10' ~ 6" at top prob. stuff
then gl. or clay sd grad to weathered
ls. only ~ 1' recovered - soft at
btm - prob plugged off
chg over to NG

Run 4" csq to ~ 9'

rig miles 14671 hrs 2772

End day 6:40 pm

propane
 foam mat
 dist. det.
 bowls
 trail mix
 fastitas
 chd. chum
 propane torch

30

2-17 KC, JK 8 AM start -
 walmart for propane torch -
 to sink/ls pit - lat lon - then to
 site.

Magno pump frozen up - KC forgot
 to pump dry - unfreeze magno
 w propane torch

table plug at top of 4" csq
 mix mud, 3" csq to 11.25'

10-15' iron stained rubble ls at
 top grad to lt gy + lt yl. foss.
 limestone, poor-med ind

15-20' lt gy foss ls, some moldic
 porosity, med-poor ind

20-25' lt crn + gray foss ls, more
 moldic than above

25-30 AS ABOVE

30-35 crn + lt yl. foss. ls. moldic
 med ind.

35-40 same

40-45 lt yl. gy foss ls, granular,
 somewhat micritic, poor-med ind

45-50 - top 1/2 as above -

botm interbedded hard + soft zones

50-55' ls as above top 8" then
 chg to med gy - some fossil

tentative
top APTK

Adv. 3" clay to
± 15'

orig matl. more microtic(?) 31

55-60' SAME - same v dark gy
area at base of run

60-65' lt bn + dk gy ls. some
dk gy clay - v poor recovery
(~ 8") - poss cavity(?) or
weathered zone

65-66.5' bn dolomite - mod-well
ind, var moldic

66.5-68' bn dolomite mod-well
ind organic lam. (?) v moldic

68-70' as above uppermost foot
either bn dolomite below

END CORIS for day

rig hours 2779

INNER BARREL is in the

INTERNATIONAL

End day 640 pm

2-18-10 KC, Jesse H 8:30 start
fuel cist. - quick stop at willow sate
then to site

70-75' dk bn dolomite, poor to
mod ind var moldic to lots
of organic frag. flakes + lam.

75-80' med bn dolomite, var moldie
variably muddy, org flecks, blebs + lam
poor to mod ind.

80-85' top 8" or down thru gray bn dolo
w abd organic chunks, lam etc. low gray
w depth, not as moldie as above

85-87.1' med bn dolomite - vuggy
abd. organics btm 2 1/2" very
tarned

87.1-90' top 6" v hard - med bn
dolomite, bioturbated, organic
lam. mostly med-well ind ind.

90-95 med bn dolomite, mod-
well ind. var moldie, burrows,
org lam.

95-100' Med gray bn v hd dolo -
vuggy upper 1', bioturbated
org lam.

100' TD

Pull NQ from 3 bags Quick
Grout

Rig hours 2784

WPT 33

NAD 83

citrus well drilling - down to well
top of rock ~ 10'

LAT 29° 16.405 ^{24.3"} Lon 82° 56.174' ^{10.4"}

END day 6:00 pm

2-19-10 KC, JH 830 am start
Continuation w citizen in geology/
karst etc
to site

dd grant at 59' bws (subshore AP.
wash in 1 bag bentonite clays -
comes up hole to 52.25' bws
pump 2 addl bags quick grants
to 7' bws, wash in 1 bag
hole plug w extra hyd. water
to -1.5'. sand to surface
cleaning / load up

695 86 hr
retu full 5:40pm
END day 6:00pm

RESEARCH leaking
 Air brake valve -
 MB2 DRL
 FLEET Supply
 99 chn 6500
 294-1526

3-16-10 KC, YH to LEVY CO. pm rig
 @ MSSP - to Goethe H/Q for
 gate key then to Watermelon
 Pond tract

Goethe Watermelon Pond

W# 19071

CO LEVY

Wpts

LAT 29° 26.718'

CON 82° 32.656'

43.00"
 39.0"
 Avg 375 rd.

EST ACC 12'

STR T125, R18E, Sec 18 Qd B

Elev 90'

NAD 83

0-1.5' push sp. thin soil thin denary clay
 1.5-2.5' SAME

2.5-4' med or br sand

4-6.5' or sd

6.5-9' same - ~ 4" slough at top

9-11.5' same some banding

11.5-14' or sd. - gradig. lighter color

14-16.5' lt or sd. End push core

End coring for day

Rig hours 2790

End day 7:30 pm

3-17-10 KC, NH 8 AM start - meet
Rick G. + Ch. Wms. at Otter ct -
borrow hand lathe from
push ~ 8' 4" csg, drill in 3" csg
to ~ 16.25'

mix mud set up to core

2.7' sticking on NQ

take open to ~ 16'

NQ run

15.3 - 17.8 EXT SHOE - some of
top matl washed or slt cly sd
17.8 - 20.3' SAME

20.3 - 22.8' lt or cly sd - plastic
22.8 - 25.3 lt or + gray mottled cly sd
25.3 - 30.3' or + gy mottled cly ~
1 foot recovered - ev. dirty plugged -
btm 4' NOT recovered

30.3 - 32.8' dense or/gy mottled clay to
top - plugged - softer? below
only ~ .3' recovered

32.8 - 34.1' refusal w EXT. shoe
clay on above - last 4" LS
top of rock @ 33.8'

34.1 - 35.3' white granular ls, poor-
mod ind

35.3 - 40.3' white foss. granular
ls. minor iron staining

$$\begin{array}{r} 32.8 \\ 1.3 \\ \hline 34.1 \end{array}$$

$$\begin{array}{r} 18.0 \\ 2.7 \\ \hline 15.3 \\ 2.5 \\ \hline 17.8 \\ 2.5 \\ \hline 20.3 \\ 2.5 \\ \hline 22.8 \end{array}$$

$$\begin{array}{r} 22.8 \\ 2.5 \\ \hline 25.3 \end{array}$$

TOPOCAL
33.8'

32.8
1.3
34.1
1.2
35.3

40.3
-2.3
38.0

AAP bottom in
24" hook frame
2" canvas gaskets
business cards
60psi w/ 90psi
NQ2 longman pump out
head

pull NQ to run add'l csg.
advance 3" csg to 38.5'
run NQ back in - inner bbl in !!
IN INTERNATIONAL !!
clean up / lock up

Rig hours 2797
End day 700pm 1/2 hr lunch

3-18-10 KL, JH 8 AM start
re long longman overhauled
(cut off 60' wireline)
static WL 31.0' bws

40.3-46.3' crm. fass ls. var. porosity
trace iron staining poor to med ind
45.3-50.3' crm. ^{ult. tan} granular ls. more
caliche than above, less porous
& permeable. poor ind.
50.3-55.3' crm + ult tan granular
ls. poor ind
55.3-57.8' granular ls. crm, ult
tan, poor ind - crumbly
57.8-60.3' granular ls. color same
trace iron staining around moldic
porosity, med ind

60.3 - 65.3' crm + lt tan ls
variably moldic mod-well ind; trace
trace iron staining

65.3 - 70.3' lt. tan ls, fossilif. moldic
well ind.

70.3 - 75.3' 2 runs lt tan foss moldic
ls. well ind, minor iron staining
primarily in molds, burrowed

75.3 - 80.3' lt tan burrowed fossil
moldic ls. poor to mod ind

80.3 - 85.3' lt. tan foss wash.
moldic, trace iron stain in
some molds. btm 1 ft much
harder - repl.

85.3 - 90.3' hard crm-tan, lt. or red
ls. foss, macro moldic - last part
mod ind + not repl.

90.3 - 95.3' lt. tan foss moldic ls, mod-
well ind. btm 3.5' coarsely moldic
+ more iron stained - mod. well ind.

END coring for day corw/oot

Rig hours 2863

END day 7pm 1/2 hr lunch

3-19-10 Ke, Jene Hurd 8:30 start
 duct in bl- com data card denied
 to site. Fuel vj, mix mud
 etc

~~100.3-105.3'~~

95.3-100.3' crm, tan granular
 var fossil moldic ls., some iron staining
 more granular below ~ 98' thin
 muddy bed, 1/2 cm w organic blocks
 at ~ 98.25' ~ 99.5-100 heavily
 iron stained - test mod ind

100.3-105.3' crm lt or + grey gran
 var moldic ls. mod ind - general
 color chgs to grey at ~ 103.8'

105.3-110.3' grey + bn pk-gr granular
 fossiliferous mod w some well ind.

110.3-115.3' med bn granular / more
 moldic dolomite.

115.3-120.3' grey to med bn dolomite -
 mod well ind. var moldic

120.3-125.3' med-dk bn dolo poor to
 well ind. minor moldic organic.

125.3-130.3' TD 8' top 9" dolomite
 or pure. run. grad to vhd red
 dolomite.

on rig - top box
1/2 soda ash
1 quik grout
1 hole plug
5(?) quik gel

1 partial bucket EZY set
Quik grout

pull NQ, head rig, move
rig. leave site w 3" + 4"
csg - 3" capped, 4" w 12'
striking
drop rig @ MN SP ST PK
return trip

RETN D4 7:30pm
4-6-10 KC, Eric Thomas
return to WATERMELON Pond site

sd. btm hole @ 125'
tremmie 2 bags quikgrout btm to
33' pour and hydrate 1 bag
hole plug to 22'
fill top of hole w sand
end day 7:00pm

1.25
 2.5
 10.3

 14
 - 2.75 strikeup

 11.25

40
 4-7-10 KL, ET 8 AM Start
 fuel rig then to GOETHE SF
 HQ

- pick drill site

W# 19205

GOETHE STATE FOREST HQ

S 106 a T 155 R 17E, Averaged 6th

LAT $29^{\circ} 11.917' (55.02'')$ 850 readings

LONG $82^{\circ} 34.800' (48'') \pm 13'$

Elev 60' top

NAD83

OWNER FL Div. Forestry

0-1.25' push spec - soil young
 gy + br sd. minor organic

1.25-3.75' gy + br sd - minor iron
 staining along rootlets

3.75-6.25' lt br sd grad to lt gl. tan
 clay or chyd

6.25-8.75' crum gy + or mottled clay or
 chyd.

8.75-~9.0' refusal w push spec -

NOTE retrieved ~ more spec - clay
 above squeezing in

set 11' 4" csy - 2' strikeup

set 12' 3" csy w ~ 1.5' strikeup

9.0-10' lt bn & brick red mottled
clayey sand

10-12.5' cream & chgsd. ~ 8' recor.

12.5-14' cream, lt gy chgsd.

Rig stalling - chgsd filter

14-17.5' lt. tan sand, SL clay

17.5-19- lt tan sand as above

19-20 lb. tan chgsd

~~20-23.5~~

Rig stalling under load - cuts out
when hyd. system cools cuts in
short? bad ntr in cooler fan
bad remote ign sw?

* does not stall out if both
cab and remote igns are on
- plan to chg remote starter
switches tomorrow

20-23.5- lt gy clayey sand

End coring for day

Rig miles 14908

hours 2318

End day 7:00 pm

penote starter now
works - rig stalled
out only once since
since - Eker?
fuel?

Eric's hours
Mon 8
Tues 10
Wed 10.5
Thurs

4-8-10 KC, Eric Thomas 8:15 start
desand mud. repl. remote starter
switch

23.5 - 25' grey clay sd

25-30' 2 runs grey clayey sd
minor orange mottling

30-35 - 2 runs grey clayey sd, some
brick red streaks

35-40' gy + br clay sd - some orange
mottling

40-45' lt tan + w mottled clay sd

45-50' lt tan + grey clay sd, sl finer
than above - thin siltstone bed 6"

50-55' v lt tan, sl clay sd, faint
orange mottling - softer than above

55-60' grey + lt tan sand, sl clay

60-65' lt grey sd, vsl clay uncon

poor recovery both runs

65-70' lt grey sd uncon. poor recovery

70-72 1/2 SAME

pull NQ

run 3" csq to 45' - end day

Need csq to 70'

Rig home 2:23

End day 7:15 pm

Fuel filter + water sep.
2 waterpump gages 600 psi
(ss csq) - holkey
.4" pvc L

43

4-9-10 KC, ET 8:30 start

SW L 8.1' bLS

run 3" csq to 68.5'

pull valve from rig in tank
1st TTH 5:45 pm

4-26-10 KC, DP leave TTH ~ 9:30

to drill site - load water

offered mudlite, grout etc
desand existing mud. Reinstall
pressure protection valve (t.c.
range shifter)

install sensor mudlite + repair
shaker motor (stuck float valve,
water in fuel tank, fuel in cylinder)

End day ~ 6:00 pm

4-27-10 KC, DP 8 AM start.

desand mud / trouble shaker mud-
lite sys. mud mixer plugged off
and shaker motor carb (leaking
(needle + seat) - water + mud in
fuel

Run addl. 3" csq (3') 71.5'

Run rig back in

We are having to wash out inside of NQ to seat inner barrel after sample retrieval

72 1/2 - 75 - NS

75-80 fine clean sand.

80-82.5 AS ABOVE

42.5-25 AS ABOVE

TV casing to 85' $\frac{3}{4}$ attempt bailer to retrieve spl. while bailing 3" casing advanced itself to ~ 88' Pulled 5' stick, added 10' for 90' 3" casing.. further bailing advanced casing down to normal stickup.

rights 2830
end day ~ 6pm

4/28/10 KML : DTP Sam start

trip in NQ: wash to 85'

85+90 clean fine white sand

90-95 AS ABOVE, poor recovery.

95-100, AS ABOVE, ~ 1" material recovered.

100-102.5 AS ABOVE, ~6" recovered

102.5' - 105' AS ABOVE

105 - 107.5 AS ABOVE, ~ 18" recovered

107.5' - 110', AS ABOVE, sloped together but

110' - 112.5' ~~is above~~, hold core shape, minor clay.

112.5'-115' softer; fine white sand
 115'-117.5' poor recovery; fine white sand
 117.5'-120' ~ 1" recovered.

→ ADVANCE 3" csg to 120' less ~ 2' stickup

120'-121' lost during adv. casing.
 121'-122.5' slightly clayey fine white sand, holds core
 122.5'-125' AS ABOVE to loose fine sand
 125'-127.5' firmer core, white to orange clayey
 fine sand
 127.5'-130' AS ABOVE
 130'-132.5' AS ABOVE
 132.5'-135' AS ABOVE

RIG HOURS 2837

END DAY 6:30pm

4/29/2010 YMC & DTIP 8:10am

135'-140' SL to VSL clayey sand, fine white
 140'-145' same

145'-150' same

150'-155' white f. sd, VSL to SL clayey
 btm 1/2 finer & contains H. or
 lignifying sandy

Will need more wireline -

- \ soda ash
- \ wire brushes
- \ rags
- \ core box materials
- \ 624 mud
- order parts for ARO

Rig hour 2842 / 14908 mi

have wireline for 165' max
wireline

Tri Co. 493
352-1818

155-160 white, f. sd. sl. clayey
160-165' white f. sd. v. sl. clayey.
only 2' remain
165' TD

Pull NQ, locking clamp, ret. to
tch. AM tch 6:45 pm - offload
core, BPR etc
End day 7:00-7:15 pm

CARS + TOWING
352-493 1464

JOHN TOWING & RIGWORK
352-493-0345

NATURE COURT
352-490-4227

29° 25.039 82° 59.264'

Am spent getting Int.
was stuck, loc
new side +
mud like offloading

47

5-17-10 KC, JH 10:30 start
leg CO - Atpt get to Usher
side - get Int'l stuck - spend
rest of PM trying to arrange recovery
Rick Green + Andy Flor - come
pick us up
Usher timber will atpt recovery
in Am w tractor or loader
loader. KC + JH to CR w
truck + Andy. End day 6:45 pm

5-18-10 KC, JH, RG, AF 7am start
to chaffed then to Goethe HQ
fd btm in CSQ @ 113'
CSQ plugged - spend 2 hrs
getting CSQ to move -
pull 42' CSQ (78 in hole -
hole filling in behind us
mix + pump 2 bags quick grout
113-29' ±
pull 3" CSQ
Rig hours 2845
End day 7:15 pm 1/2 hr lunch

5-19-10 KC, JH 8:15 start.
 reinstalled RH mirror on INTL. to
 walnut - water + gutter
 to side.

add gravel to 20' b/w
 pump 1 1/2 bags quicksand to surface
 dig down 1' - pour backfill
 chips to surface

W19206

USHER CORE

USHER LAND + Timber

Levy Co

LAT 29° 23.567'

LONG 82° 58.582'

S35E T 12S R 13E

Elev ~ 12' TDD

34.02"

Aug 1150

Need 1/2"

wpt. 36

0 - 1.85' push spl gy br sdy soil
 then org ~~br~~ clay limy gy
 then br + or clay sd/sdy clay
 refusal w push spl
 1.85 - 5.5' rubble ls then soft - ~ 2'
 ls removed - brn bsd
 5.5 - 8' wht-con ls. poor - mod ind
 some br staining at top fm clay

End coring for day
 Rig hour 2849 miles 14948

End day 7:30 pm

5-20 8 AM

Set ~ 9' 4" CSG (6LS)

sets in 10 1/2' 3" CSG as spacer
 start coring after setting runs.
 sps

8 - ~ 9' lost setting coring

9 - 9.75 bn ls/dolo, vuggy -

clayey? then lt gy tan granular
 ls, poor to mod ind - granular

9.75 - 14.75' lt gy tan poor to mod
 ind - granular ls (2 runs)

14.75' - 19.75' same - poss coarser at
 base, foss

19.75 - 24.75' same

24.75 - 29.75' same

29.75 - 34.57 lt tan ls, ~~too~~ mod-well
 ind foss, some moldic porosity

34.75 - 39.75 2 runs - lt tan ls, well ind
 granular, some moldic porosity, some iron
 staining in coarser burrow fill
 & molds

39.75 - 44.75' lt tan moldic ls. mod ind

44.75 - 49.75' same

3
2
m

49.75 - 54.75 SAME

54.75 - 59.75 SAME

59.75 - 60' SAME

60 - 64.75' Cavity - pushed w/o resistance
to btm of rod 64.75'

1 ft. sed in btm of rods - represented
in ceph shale - coarse fossil hash
w clay, organics etc - dk y/b. br.
+ gray, fluid dk y/b. br - conduit
btm sediments?

picked up 2 1/2' - tape goes to
~ 65' bts

64.75 - ~ 65.75 - pushed - had btm (?)
at 65.75 - recovered ~ 1-1.25' of fossil
hash as above - approx 8" in gravel
- due to settling out of drill pipe -
btm 1/2' inside.

Pull NQ - prep to run csq to 66' ±
Rig hours 2856
END day 7:00 pm

trap / ngr for shade
new diesel fuel can
NQ2 rock inner bbl shoe
3000 psi gauge rotation

7 1/2 12
5 2"
67 10

51
5-21 KL, JH 8:15 start
drill 3" csq to btm of cavity -
into hard rock - softer bed below

clean up, packing
Rig hours 2859
End day 5:45 pm

6-8-10 KL, GR 9:30 AM leave
camp. to cheffand - quick lunch,
fuel for rig + incl. to site.

Rig shade, mix mud, pump water
fd 67' of hole in 3" $\therefore$ ~1' up in 3"
run NQ

~~65.75~~ 65.75 - 67.75' - poor recovery -
some soft, some rubble - lost plug &
lost circulation - mostly soft fill, btm
67.75' 4" recovered in hard rubble
ls/dolo.

67.75 - 70.75' - 3 runs - plugged off.
dropped core, lots of chatter,
~1.25' recovered even calculated
ls + hbl bn dolo.

End coring for day
Rig hours 2861
End day 7:00 pm

G.5 H.P. Briggs + Str

Family YBXS 2051HF
275080

85.25
85.9

52

6-9-19 KC, GR 7:45 Start

70.25 - 72.75 lt gy + tan moldic, granular
ls. mod to well ind, foss. - picked up ~ 1.5"
of prod run (~ 1.5' tot)

72.75 - 75.25' - same but better ind.

75.25 - 77.75' top 6" or above then
poor to mod ind bn + dk gray dolo.

77.75 - 80.25' dk bn + gy well ind. dolo.
foss. moldic

80.25 - 81' v hard dk bn, gy dolomite
some moldic - soft zone in middle
core bbl appears to be plugging.

2 runs - bit press damaged -
appears to be cutting oversize

- pull NQ - bit OK -

chg to impreg - run NQ back in

- plugging off slow - adj inner bbl
wash out

~ 81 - 82.75' hard bn dolomite some
moldic porosity - broke into cavity
at ~ 82.5'

cavity 82.5 ~ 85.9'

85.9 ~ 87.5 lt bn dolo, well ind,
slightly moldic

~ 87.5 - 88.75 dk gy, well ind dolomite
moldic por.

88.75 - 90.25' br mod-well ind dolo
granular mottled por
90.25 - 92.25' br dolo poor to mod ind, laminated
muddy

92.25 - 100.25 SAME, but w more
dark (organic?) streaks

100.25 - 102.75' dk br + gy well ind
dolo. REFL, V SL mottled

102.75' ~ 104.25' SAME

~ 104.25 - 106.25' softer, mottled dolomite
only ~ 5" REFL

106.25' ~ 108.25' med. br mottled dolo.

~ 108.25 - 110.25' mod-well ind, granular
dolo. organic blobs, foss. btm
6" mottled.

110.25' TD

Rig hours 2868

END day 6:15 pm

6-10-10 KC, GR 8 AM start
pull NQ calls for FR RG/CW
re next site

pump 1 bag gunk grout - 110 -
85' (btm of cavity)

- chg oil in grout
- chg hyd fluid + fltr on grout
- mud filter for mud like prep

Rig home 2872 →
 miles ~~1498~~
 1498

page 2nd bus quick grout - did not
 fill cavity - with bridge
 set FM packer @ ^{58'} 58' bcs -

- pushed 10' pvc w
 cap on btm w 2

fm packer -

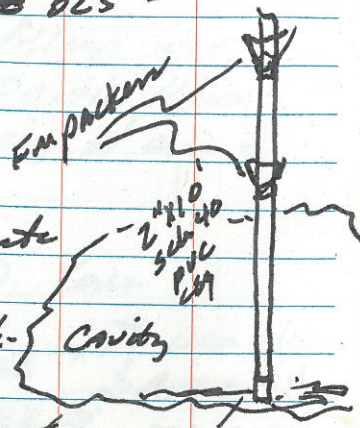
top packer @ 58'

wash in 1 bag bentonite

chgs - 58-48'

- pump 1 addl bag quick-
 grout 48-10' bcs

pour bentonite chgs to
 surface (1.25 bags)



load up/cleanup site
 end day 6:45 pm

6-11-10 KC, GR 8:15 start
 to USHER - load remaining camp
 to Goethe HQ - store rig
 RECON goethe parcels

Goethe sand pit - pass cave
 29° 16.310 82° 34.531
 check

SW of sand pit in cluster of
 live oaks

1st N to TUL 3:30 pm

6-21-10 KC, DP - 945 leave
TUL to Goethe - fill up water,
pu rig. to Devils Hammock
area - set up rig at end of
Fisher Bridge Rd.
W 19215 / 121' TD

Fisher Bridge Rd. Lane

LEVY CO

LAT $29^{\circ}23.766'$ $45.96''$ 1100 Ridge

CON $82^{\circ}43.982'$ $58.92''$ Averaged

S 23 CODA T 125 R 16 E 18' pos. acc

clw. ~34'

set up rig, spool new wire on
wireline hoist

Rig hours 2875

mi 15027

End day 8:00 pm



6-22-10 KC, DP 7:45 start
Fuel Inth. fill up water

0-79' WOSC
79-TD AVPK

0-1.25' push sp. prob all fill
 1.25-3.75' push - br+gy clay sd w
 black organic streaks
 3.75-6.25' dk br+gy clay sd/sdy clay
 top 1.5' then or + or bn mottled
 clay sd w org clunker
 6.25-8.75' top 6" brk or mottled clay.
 grad to blue gr clay
 8.75-11.25' below wt + lots of slough -
 botm foot only sp in place -
 blue+grey clay ~.75' then grey + or
 mottled - prob pushed down
 botm sds.

set 4" csq @ 4", set 10' of 3" inside
 or placeholder
 10.75-15.75' NQ₂ w ext. shuc - soft +
 harder zones - poor recovery -
 UNCON SAND, w org - one root -
 shuc has dk br/bk cohesive org
 rich sd.
 15.75-18.25' st ch sd. med fl. gw
 then lt gy.
 18.25-20.75' lt. gy clay sd
 cohesive
 sand looked 3" csq to core/bbl

pull & separate

run 3" CS9 to ~21' 4" to ~18.5'

20.75' - 21.25' - lost - stg casing

21.25' - 23.5' gy + br sd. sl. clay,
scattered granular / grain of black
iridized mat. - phos?

23.5' - 26' SAME

26' - 28.5' SAME

28.5' - 31' SAME

31' - 36' ~ 2' recovered sand on shore
at top thin gray br stiff clay sd.
- prob loss at the bottom

~~36'~~ 41' End casing for day T.S. man in
in Right hours 2882
End day 7:20 p



6-23-10 KC, DP 8AM start

41' - 43.5' gray sand w/ organics @
beginning of run

43.5' - 46' tan to gray sand

46' - 48.5' AS ABOVE

48.5' - 51' AS ABOVE

51' - 53.5' AS ABOVE

36' - 41'
AS ABOVE

53.5-56' AS ABOVE

3" CSG IS FOLLOWING NR; PAUSE
CORING TO ADVANCE 3" CSG TO
54' (55' PIPE, LESS STICKUP)
WASH NR BACK INTO CSG.

56-58.5' lost a lot of sample due to
washing above; tan/gray sand

58.5-61' clayey gray sand, some organics

61-63.5' clayey sand into sand

63.5-66' poor recovery; gray sand

66-68.5' AS ABOVE

68.5-71' gray clayey sand, some minor
organic blebs

71-73.5' gray clayey sand

73.5-76' gray sand into sticky br-gray
clayey sand

76-78' gray clayey sand with organics

78-80.5' gray clayey sand with organic
clay blebs on dolostone

80.5-81' tan br dolostone

RIG WRS 2889 End day 7:30 pm

6-24-10 KMC/DTP 8am

59

TRIP OUT NR, ADVANCE 3" CSG TO 79.5'
SET "IN STONE" @ TOP OF DOLOSTONE

- 81-83.5' brown / gray moldic dolostone
- 83.5-86' brown to gray brown moldic dolostone
- 86-~90' brown moldic dolostone
- 90-91' DRILL HEAD FELL FREELY
- 91-96' poor rec. rubbly dolostone
- 96-98.5' poor rec. lt tan packstone
- 98.5-101' lt. tan packstone to br dolostone
- 101-103.5' br moldic dolostone
- 103.5-106' AS ABOVE
- 106-111' AS ABOVE
- 111-113.5' AS ABOVE; last couple inches, head
fell freely.
- 113.5-116' lt br moldic dolostone
- 116-121' AS ABOVE

ID

~~load~~ pull + load NR + core 116'
start loading stuff
Rig hours 2895
END DAY 7pm

soda ash
flat black shovel
NON locking fuel caps

6-25-10

KMC/DTP

8am

60

~~pull~~ pump 2 bags quick grant
121 - ~ 30' b/w

diagnose starting problem with the
rig (the operator) load up cleanup
locking - return to tank

HRS 2896

END DAY 7:30 pm

6-29-10

KC, DP

6:30 start

pull 3" CSG

pull 4" CSG

pump 1 bag quick grant ~ 36-6' b/w

pour 1 bag hole plug to -0.5

(Natural grade) fill in top w/
gravel

- load out & drop rig @ Mankie Springs
St. Park

end day 5:50 pm

2897 hr / 15056

W 19226

61
7-21-10 KC, JH 10:15 start for
Whse - fuel into MSSP
pu rig to Goethe HQ - water
+ chuck in.

to site: got rig stuck morning
W-19226

GOETHE SAND PIT LOC
LEVY CO

stake to T 14S R 17E

LAT $29^{\circ} 16.304'$ (1824) ESTAD 11.3'

Lon $82^{\circ} 34.539'$ (32.34")

NAD83

Avulog GPS - 356 readings
Elev ~ 77' topo

0-1.5' push spl lb n uncon^{93d}
1.5-4' " " lb n-yl uncon qtz sd
4-6.5' push spl

chg over to MBL DRL & SA sampler
rig home 2900 miles 15102
ck in motel - end day 8:00 pm

7-22-10 KC, JH, 7:15 A. start
Home depot for shovel, then to site

6.5' - 8.75'

8.75' - 11.14' ~~busted run - core catcher in~~
~~upside down~~ v l by l. sd to lt or
 sand - uncon.

11.25' - 13.5' busted run - core catcher
 in upside down - ~ 6" recovered fr.

top of run - IE NORM ~ 11.75' - 13.5'
 ~ 13.5' - 13.75' - recovery at btm of run

13.75' - 16.25' - lt or sd at top -
 possibly slough - then or sl chg (?)
 gty sd

16.25' - 18.75' top soft or sl. chg sd
 btm lt grey clayey gty sand w some
 faint orange mottling

18.75' - 21.25' grey clayey sand - some
 faint or mottling

21.25' - 23.75' as above

23.75' - 26.25' as above

26.25' - 28.75' as above

28.75' - 31.25' as above - gradually
 getting stickier

31.25' - 33.75' top 6" as above then
 grade to y.l. br mottled chg sd/sdy chg

33.75' - cemented ss cobble ~ 4" or btm

33.75' - 36.14' - grey chg sd

36.25' - 38.75' easier penetration
 + rotation than above

below
107s
in the
WT &
sand
water
suspended
↓

63
36.25 - 38.75 cont: lt gray + tan
clayey sand plastic

38.75 - 41.25' cm chysd w orange
mottling darker with depth

41.25 - 43.75' soft lt tan + gray chysd

43.75 - 2' sludge in btm of HSA's
chg over to NQ - wash sludge
out of btm of hole - no return
end caving today

big flows 2906

END day 6:45 PM

7-23-10 KC, JH 7:15 start
fuel inbl to site

10' rod went go - go w 5' +
wash to btm

43.75 - 45.5 lt gray + tan sl chysd

45.5 - 48' orange clay yd to gray +
greenish gray ~ 50% recovery -
ext. shoe plugged

48 - 50.5' lt gray + gray clay - grad to
white at btm. - btm 1.25' cont -
plugged shoe

50.5 - 53' white + bn or mottled clay
- recovery or above

fishing tool
tape measure weight
36" hook jaw
24" hook jaw
pencil

64
53-55.5' greenish tan or-bn clay
w ls. fragments
55.5-58' rubble + weathered ls. vlt. or. foss
58-66.5' v soft - cavity(?) - only
measured ~ 3" of ls. clasts
60.5-63 - soft - poss cavity -
v poor recovery
63-65.5 - lt. yl. or rubble ls - poor cav.
~ 1.5' recovered - lost 6" end of
core
65.5-68' - NO recovery - lower part
in cavity
68-70.1' cavity
70.1-73' rubble ls. thin vlt or
foss ls. ~ 1.5' recovered
- lost tape measure weight
down hole.
NOTE tape weight still down
hole - inside NQ
Attp latch inner bbl thru core
~ 2' no go - no recovery
pu 15' NQ shub down
lead on return trip
Rig hours 29.11

$$\begin{array}{r}
 73.15 \\
 2.6 \\
 \hline
 76.25
 \end{array}$$

8-9-10 KC, Andy Smith - leave
 when 11AM to Long CO. Fuel
 in 91. Fill up water tank at
 Goethe HQ. to site

Pull NQ rods

ADVANCE HSA's to 76.25'
 button up rig for day
 T.S.

Rig hours 2913 miles 15102
 End day 6:30 pm

8-10-10 KC, A.S. 7AM start
 run NQ back in - tight -
 Augers are crooked - worked
 back down. - had circulation
 until btm of HSA's. - pulled
 inner bbl - clean out - sdg clay
 + rock frag. - trash

inner bbl won't go all the way
back down

have 77.5' of hole $\therefore$
 75-77.5' NORM

will attp p.m. NQ string w inner
 bbl to run till slide to btm.

66
get inner bbl to top of core
bbl - plugged off before get
back to top of hole
- can't get inner bbl all the
way down.

pull NA - will try to work
HSA's so they hang straighter

spin HSA till free - set on
auger fork so they are hanging

have 76' hole but inside HSA's
no sign of tape weight
Christensen inner bbl will
not sink on own

dig back to long core eye

77.5-78' fragments of fractured
hard tan, to br ls
78-80.5' hard lt y.l. ls. foss.
at top last them softer crumbly
granular cm ls, foss.
80.5-85' ~ 3' recovered - mostly soft
crumbly granular ls - ran out of
water - btm .5' still to drill

End day 6:45 PM

8-11-10 KC, A.S. 7 AM start
mix mud, wash out borehole.
get inner bbl in

85"-87' plugged off after ~ 2'
only recovered ~ 6" variable sample
in place - evidently plugged off
almost immediately

~87-90.5' cream + lt. orange iron
stained ls., micro moldic - ~ 1'
recovered - mostly rubble

90.5-93' same - ~ 6" recovered

93-94.25' ~ 8" recovered - mostly rounded
rubble. Iron stained granular ls.

94.25-95.5' cream lt. or granular ls. micro
moldic porosity. diagonal fracture
at btm w dark iron staining/
laminar blebs.

95.5-98' ~ 1' recovered - as above
but increasing iron content

98-100.5' ls. med-well ind - cream
lt. or. iron stained micro moldic

100.5- WATER RUN

100.5-103.0 CRM + orange Iron stained
ls., ~~fractures~~ rubble in btm half

Formation water
bright orange

103-105.5' cream & gray iron
stained ls, limonite ? on fract.

surface

105.5 - 108 cream & gray ls, w
limonite in fractures etc grad to
or + bl. gy clay

108-110.5 orange tan & gray silty clay
- only 6" recovered

110.5-113' gray pasty clay (?)
w black rock frag

113-115.5' ~ 1 ft recovered -
gray pasty clay w dolomite
gravel - some w phos (?) si (?)
surface

End core today
picked up NQ 10'
inner barrel is in Intl.

Rig hours 2925

no lunch

ARR WUSE 7:10 AM

8/18/10 GR: DTP

DEPART TCH 9am

ARR site 12:30pm

lay down hung 10' : clean hole.

pull 15' NG Ss, trip in 30' in 10's, begin
coring

115.5' - 120.5' clayey sand with LS rubble

120.5' - 123.5' AS ABOVE to fractured ruggy LS

123.5' - 125.5' orange clay into ruggy wackestone

125.5' - 130.5' sandy; LS @ beginning, ~2' cavity
to 127.5', then chalky friable
white LS

130.5' - 133' hard x-lol white LS w/ orange clay

133' - 135.5' as above, mbbly LS

rig hrs 2929

end day 6:30pm

8/19/10 GR: DTP 7:24am

- to Goethe Hse for H₂O

- hole open to 135.9'

135.5' - 140.5' poor recovery in Rbbly LS as above,
into white wacke/packstone

140.5' - 145.5' - white packstone 100% rec.
 145.5' - 150.5' AS ABOVE

- Trip out 5' sticks NG, run in 10's
- plugged ore bbl on way in, had to drive
- out plug w/ inner bbl; drill back in/
 clean hole.

150.5' - 155.5' white to pink orange vuggy packstone
 155.5' - 160.5' AS ABOVE

160.5' - 165.5' AS ABOVE

165.5' - 170.5' AS ABOVE; includes orange/brown stained
 fractures

170.5' - 175.5' AS ABOVE, inc. orange fractures

175.5' - 180.5' very hard red shattered LS
 into vuggy pale orange packstone
 ➡ echinoid @ 170'

- to better AQ to fetch H₂O + rig fuel

ry hrs 2335 - 2935

end day 5:14 pm

50 lb ash

8/20 GR & DTP ~~7:30am~~ 7:30am

71

wash + clean hole to TD

180.5' - 188' massive, mottled hard rxld LS

void spaces @ end of run

183' - 185.5' white - pink orange fossil mddic / vuggy;
laminated necker - packstone

185.5' - 190.5' white to pink orange vuggy rockstone
to fossil mddic packstone

190.5' - 193.5' v. hard, shattered rxld LS, pink orange
- H₂O int, fresh H₂O.

193.5' - 195.5' v. hard shattered rxld LS, pink orange

195.5' - 200.5' AS ABOVE into dolomitic?

200.5' - 205.5' orange brown dolomite / LS shattered

ID

pull 120' NA, secure hole & depart
Site ~ 2:30pm

ty hrs 2938

end day 6pm

8/25 GR & DTP depart whse 9:30am
arr site 12:48pm

trip out NA + begin grouting.

~~pull NA~~

OVER →

- unable to get tremmie past augers @ ~75'
- trip in NA to 112' BLS to place grant opposite clayey cone between Ocular LS & Avon Park LF
- pump 1 bag through NA
- pull NA, grant up to 67' BLS in augers.
- pull 7' HSA, grant @ 75'
- secure site, go to hotel

rig hrs. 2941

end day 6:50pm

8/26 GR & DTP Farm

• pouring rain, black sky.

• to Goethe St F. Hq to return

Key to work area, request operator
move bulldozer to allow access
to our trailer.

• hole open to 75'

• tremmie in; mix, pump 2 bags, tag
top of grant @ 59'

• pulled HSA's as filled with grant
TOTAL 8 more bags & 1/2 bag hole plug
@ land surface

• clean augers & grantor, sternal rig, load
out & depart site ~3pm

arr TLH 7:15pm 15271 mi / 2947 hrs.

11 bags grant
1/2 bag hole plug

W# 19251

DP, KL

GREENWOOD IFAS MW-7

JACKSON CO

S 26 ddd T 6N R 10W

LAT $30^{\circ}52'13.7''$ Avg 400CON $85^{\circ}10'42.7''$ readings

Elev N/22' TOPO

well construction permit W201101353

0-2' PUSH SS SAMPLER brown to orange clayey sand

2-4.5' PUSH SS SAMPLER orange to red-orange clayey sand

4.5-7' AS ABOVE

7-9' continue w/ augers, red-orange clayey sand

9-11.5' red-orange to orange clayey sand;
limonite material @ ~9.5'
Very firm core

11.5-14' orange clayey sand

14-16.5' AS ABOVE into a zone w/ interbedded
unconsolidated white/orange sand with
clayey sand, into orange clayey sand16.5-19' orange clayey sand into mottled red,
orange, gray clayey sand

19-21.5' firm mottled clayey sand

21.5-24' cum. tan + pink clay/cl. sd.
firm

load
airlift app. w. Airline
5' steel Airline weight
barrel

hms. 2961 1/19/11

74

24-26.5' arm + red clay, clay sd.
mottled, firm
26.5-29 or above
29-~31 or above
~31-~33 lt bn + or clay sd mottled
~33-34.5' lt gy + orangeish bn clay sd.
~34.5-36.5 lt bn, red + black + orange
mottled clay sd
36.5-39' or above more brick red
39-41.5' bn + blk mottled sticky
plastic clay sd. w organic
41.5-~~43.5~~^{43.5} or + bn sticky clay w
organic. limestone @ ~43.5' 6

start chaperone to NQ
end day 6:30 pm

1-20-11 DP, KC BANJAR

trip in 48' NA (one bbl + 40' NA)
begin conty w/ clear H₂O

~43.75-45' white fossilif ls. w some
iron staining
45-50 as above
50-55' ~~clay~~, con, foss. ls. some
iron staining mod-poor ind

55-60 AS ABOVE

60-61.5' TD on above

static water level 46.4' bws

SET SCREEN 44-54'

WASH in filter sd to 39.5'

SECONDARY filter pack to 37.5'

washed bentonite chips to 35.5' bws

rig hrs 2965

End day 700 pm

1-21-11 DP, KC

ote till 920 - to site

sd sediment collapsed in to 31' bws
~ 5' of water standing on top of that

pumped 8 94lb bags portland
built 36x36 pad, SET manhole
cover

load up extra product etc
back rig over well to protect

Rig hours 2965

End day 6:31 pm

1.8
0-1.8 14 in sand

1.8-24 vcd orange + br clay sd
24-31 clay, pink, red mottled
clay sd

31-39 br or sd clay/clay sd.
mottled some of which

39-43.6 gl. br, or + blk sd clay
43.6 61.5^{to} white - con, ll. gl. ls.
mod ind, granular fossilif, fr
iron stained

1/27/11 KL¹/₂ DTP

→ to IFAS MW-7 to develop.
~~air lifting does not work~~

SWL 46.65' Below top of casing.
Well TD 54.6'

- tried air lifting; does not work
- surged w/ plug
- used bailer successfully

pumped + surged 2 hr w/ whale
pumps

screen 44-54'

SWL 46.2' BTDC

well depth, 54.45 TD + top of
casing to btm of well point

top of casing 0.3' below
top flange of manhole cover
top flange ~ 0.2' above original
ground surface

end day 7:22pm

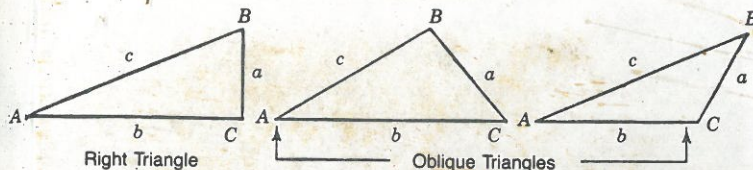
Heather Gilman
880 450-0421

Chick
386 2400

Brian Film school
512 744-3988

Jack
904 786-5166
Green oaks
(904) 307-1601
re website

TRIGONOMETRIC FORMULÆ



Solution of Right Triangles

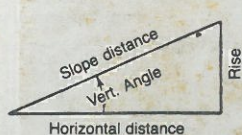
For Angle A. $\sin = \frac{a}{c}$, $\cos = \frac{b}{c}$, $\tan = \frac{a}{b}$, $\cot = \frac{b}{a}$, $\sec = \frac{c}{b}$, $\operatorname{cosec} = \frac{c}{a}$

Given a, b	Required A, B, c	$\tan A = \frac{a}{b} = \cot B$, $c = \sqrt{a^2 + b^2} = a \sqrt{1 + \frac{b^2}{a^2}}$
a, c	A, B, b	$\sin A = \frac{a}{c} = \cos B$, $b = \sqrt{(c+a)(c-a)} = c \sqrt{1 - \frac{a^2}{c^2}}$
A, a	B, b, c	$B = 90^\circ - A$, $b = a \cot A$, $c = \frac{a}{\sin A}$
A, b	B, a, c	$B = 90^\circ - A$, $a = b \tan A$, $c = \frac{b}{\cos A}$
A, c	B, a, b	$B = 90^\circ - A$, $a = c \sin A$, $b = c \cos A$

Solution of Oblique Triangles

Given A, B, a	Required b, c, C	$b = \frac{a \sin B}{\sin A}$, $C = 180^\circ - (A + B)$, $c = \frac{a \sin C}{\sin A}$
A, a, b	B, c, C	$\sin B = \frac{b \sin A}{a}$, $C = 180^\circ - (A + B)$, $c = \frac{a \sin C}{\sin A}$
a, b, C	A, B, c	$A + B = 180^\circ - C$, $\tan \frac{1}{2}(A - B) = \frac{(a - b) \tan \frac{1}{2}(A + B)}{a + b}$ $c = \frac{a \sin C}{\sin A}$
a, b, c	A, B, C	$s = \frac{a + b + c}{2}$, $\sin \frac{1}{2}A = \sqrt{\frac{(s - b)(s - c)}{bc}}$ $\sin \frac{1}{2}B = \sqrt{\frac{(s - a)(s - c)}{ac}}$, $C = 180^\circ - (A + B)$
a, b, c	Area	$s = \frac{a + b + c}{2}$, $\text{area} = \sqrt{s(s - a)(s - b)(s - c)}$
A, b, c	Area	$\text{area} = \frac{bc \sin A}{2}$
A, B, C, a	Area	$\text{area} = \frac{a^2 \sin B \sin C}{2 \sin A}$

REDUCTION TO HORIZONTAL



Horizontal distance = Slope distance multiplied by the cosine of the vertical angle. Thus: slope distance = 319.4 ft. Vert. angle = $5^\circ 10'$. From Table, Page IX. $\cos 5^\circ 10' = .9959$. Horizontal distance = $319.4 \times .9959 = 318.09$ ft.
Horizontal distance also = Slope distance minus slope distance times $(1 - \cos \text{ of vertical angle})$. With the same figures as in the preceding example, the following result is obtained. $\cos 5^\circ 10' = .9959$. $1 - .9959 = .0041$. $319.4 \times .0041 = 1.31$. $319.4 - 1.31 = 318.09$ ft.

When the rise is known, the horizontal distance is approximately: - the slope distance less the square of the rise divided by twice the slope distance. Thus: rise = 14 ft., slope distance = 302.6 ft. Horizontal distance = $302.6 - \frac{14 \times 14}{2 \times 302.6} = 302.6 - 0.32 = 302.28$ ft.

