



JOHN C. LAMB AND COMPANY
PETROLEUM CONSULTANTS



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UNION PACIFIC RESOURCES COMPANY
BLANCA PROSPECT
#1 Blanca State 32-12
Section 12, T-16S, R-48W
1980' FNL, 1980' FEL
Cheyenne County, Colorado
KB 4220'

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RESUME

Operator: Union Pacific Resources Company

Well Name and Number: #1 Blanca State 32-12

Prospect: Blanca

Location: C SW NE Section 12, (1980' FNL, 1980' FEL), T-16S, R-48W

County and State: Cheyenne County, Colorado

Elevation: GL: 4210', KB: 4220'

Spud Date: April 9, 1993

Completion Date: April 18, 1993

Hole Sizes: 12 1/4": 0-518'; 7 7/8" 518'-TD

Casing Data: 8 5/8 set at 515'

Logging Data: DIL/GR, CNL/LDT/GR/CAL, BHC/GR/CAL, Schlumberger, Ft. Morgan

Exploration Geologist: Mark P. Germinario

Drilling Foreman: Ed Martin

Wellsite Geologist: John C. Lamb

Contractor: Murfin, Rig 14

Tool Pusher: Jim Renner, Matt Finnesy

Mud Type: Chem-Gel

Mud Company: Service Mud, Tony Maestas

Drilling Days: 10

Rotating Hours: 150 3/4

Bottom Formation: Spergen

Status: Dry & Abandoned

FORMATION TOPS AND CORRELATION

	UPRC #1 BLANCA STATE 32-12 C SW NE 12-16S-48W KB 4220'	Termo Co. of Texas #1 Cheyenne State C SE NW 12-16S-48W KB 4225'
DAKOTA	1253(2967)	1262(2963)
CHEYENNE	1520(2700)	1543(2682)
BLAINE SALT	2355(1865)	2356(1869)
STONE CORRAL	2613(1607)	2622(1603)
NEVA	3278(942)	3285(940)
FORAKER	3351(869)	3360(865)
SHAWNEE	3728(492)	3737(488)
HEEBNER	3919(301)	3929(296)
TORONTO	3946(274)	3954(271)
LANSING	3972(248)	3981(244)
MARMATON	4353(-133)	4370(-145)
Pawnee Member	4420(-200)	4426(-201)
Fort Scott Member	4458(-238)	4468(-243)
CHEROKEE	4500(-280)	4508(-285)
ATOKA	4682(-462)	4692(-467)
MORROW	4866(-646)	4875(-650)
Possible V7 Interval	4964(-744)	4977(-752)
V9 Interval	5002(-782)	4998(-773)
V9 Sandstone	5016(-796)	5030(-806)
V11?13 Interval	5061(-841)	5071(-846)
MISSISSIPPIAN	5123(-903)	5121(-896)
SPERGEN	5151(-931)	5150(-925)
TOTAL DEPTH	5229(-1009)	5268(-1043)

BIT RECORD

BIT #	SIZE	TYPE	IN	OUT	FOOTAGE	HOURS
1	12 1/4"	J1	0'	518'	518'	5 1/4
2	7 7/8"	SE 327	518'	2995'	2477'	42 1/2
3	7 7/8"	S85F	2995'	5225'	2230'	103

SURVEYS

133 1/2	518 7/8	2529 1	4537 1
224 1/4	1025 3/4	2995 7/8	5068 1/2
315 1/2	1529 3/4	3503 1	5225
406 1/2	2031 1	4034 3/4	

DAILY CHRONOLOGY

DAYS OVER HOLE	DATE	8AM CST DEPTH	24 HOUR FOOTAGE	DAILY ACTIVITY
1	April 9	0'	0'	MIRU, spud at 19.15, drlg
2	April 10	518'	518'	drlg, run & cem csg, WOC, NU, drlg
3	April 11	1400'	882'	drlg
4	April 12	2685'	1485'	drlg
5	April 13	3330'	645'	drlg, TF hole in DP, drlg, work on rig, drlg
6	April 14	3835'	505'	drlg
7	April 15	4365'	530'	drlg, TF hole in DP, drlg
8	April 16	4715'	350'	drlg
9	April 17	5142'	427'	drlg, TD at 12.15, prep for & run logs
10	April 18	5225'	83'	logging

LOST CIRCULATION INTERVALS

1600'-1680' Lost 100 bbl LCM: Before: trace; After: 4

MUD REPORTS

Date	April 14	April 15	April 16	April 17
Depth	3733	4286	4646	5074
Weight	8.7	9.1	9.1	9.2
Funnel Viscosity	39	37	51	50
Plastic Viscosity	10	10	14	14
Yield Point	14	13	21	20
Gel Strengths	6/13	6/12	8/24	8/23
Water Loss	12.8	12.0	8.4	8.8
Filter Cake	1/32	1/32	1/32	1/32
Solids	4.0	5.6	5.6	6.4
Sand	tr	tr	tr	tr
pH	10.0	9.5	9.0	9.0
Alkalinity Pm	.8	.6	.4	.4
Calcium	40	60	40	40
Chlorides	350	350	350	350
LCM	1	1	1	1

SUMMARY

The #1 Blanca-State 32-12 was drilled on the Blanca/Heart Ranch Prospect. The location was picked upon the basis of sub surface geology.

The primary objectives were the fluvial Morrow Sandstones. Secondary objectives included Pennsylvanian and Mississippian carbonates. Total Morrow Clastic Interval was 255'. Within the Morrow, Non Marine intervals were encountered within the following intervals: 4963-4986', 5002-5029', 5051-5074'.

A Morrow Sandstone, potentially a V9, was encountered within the interval 5016-5029'; which correlates to the "lag" Sandstone at 5020-5024 in the Termo #1 Cheyenne State. Description: Sandstone clusters, Coarsening Downward: translucent to white, upper fine to medium to lower coarse grain, sub angular to sub round, poorly to very poorly sorted, very firm to very friable, fair to good to well consolidated with dolomitic and siliceous cementing and locally with heavy siliceous cement; clean to frequently moderately clay filled, commonly scattered glauconite grains, traces very coarse carbonaceous debris, generally tight appearing with frequent poor visible porosity; NSFOC. This interval was conclusively evaluated with a drill stem test after logging operations with water and mud.

Minor hydrocarbon shows were encountered within the Lansing, Marmaton, and Cherokee Formations.

SAMPLE DESCRIPTIONS

Unlagged Sample Depths and Log Tops

- 3710 Sh rdsh bn /vfreq uncon cg qtz cvngs Ls sm amt off wh vfxl-fxl cln /lt gysh arg vfrag sli aren
- 3720 Ls sm incr bec less frag incrly sparry & sli fos cont'd sli sdy
- 3730 Sd clr-trnsl-rrly amber cg-u.cg
- 3740 Sd AA Ls tr buf-lt gysh wh vfxl-micxl

SHAWNEE 3728'

- 3750 Ls buf-gysh wh vfxl-micxl dns cln app Sd lrg decr
- 3760 Ls lt gy-off wh micxl dns gen sli arg loc shly Sh sm amt lav-rdsh blkly vcalc-mrly
- 3770 Ls chng: trnsl-buf vfxl-fxl loc gran vbrit-vfri tr /pos g intgran poro NSOC
- 3780 Ls buf-off wh-trnsl vfxl-micxl gran gen dns sparry-rthy occ frag
- 3790 Ls chng: lt gy-gysh wh vfxl-Mdst mod fos sli arg Sh tr blk vcarb
- 3800 Sh incr blk & dk gy Ls chng: gysh bn arg loc dolie Dol buf-bnsh-buf fxl-mxl sli arg NSOC
- 3810 Ls buf-off wh vfxl cln fos sli aren
- 3820 Ls chng: decrly cln app sli mrly i.p. Cht trnsl gy fos Sh incr vdk gy-blk mod-vcarb
- 3830 Ls off wh-bnsh wh fxl-vfxl-micxl fos thru mod-vsparry hd-brit sli carb i.p. dolie
- 3840 Ls off wh-gy lt bn fxl-mxl-vfxl gen dns freq fri-brit cont'd dolie grds to Dol Sh incr blk gy rd
- 3850 Sh blk vcarb Dol incr amt buf-lt bn fxl-mxl sft-sli frm-fri
- 3860 Ls lt gy-off wh vfxl sdy-vsdy sli arg Ss off wh vfg vcalc w com Sh cont'd blk /incr rd
- 3870 Sh rd /sme blk Ls lt tn-lt gy-off wh vfxl-fxl-micxl sli fos gen sli arg loc sdy Ss AA
- 3880 Ls off wh cln app vfxl occ rthy freq blkly spar Sh def incr blk vcarb
- 3890 Ls off wh-lt tn cont'd Sh decr
- 3900 Sh def incr blk vcarb /freq rdsh orng
- 3910 Ls incr wh-off wh fxl-sb chky rthy txt fos Sh decr
- 3920 Ls cont'd wh AA /hvy tr vsparry fos Wkst vbrit
- 3930 Dol sm amt bnsh buf fxl fri-sft Sh rd & blk Ls cont'd cln app

HEEBNER 3919'

- 3935 Sh def incr blk vcarb Dol bn-dk bn fxl sli-mod carb NSOC
- 3940 Sh fr amt rd & blk Dol & Ls cont'd AA
- 3950 Sh cont'd amt Ls wh-off wh vfxl dns sdy-vsdy

TORONTO 3946'

- 3960 Ss vlt gysh wh vfg hvy calc cem vsli arg Ls cont'd vsdy grd to Ss Sh cont'd amt
- 3970 Ls off wh-wh cln Sh decr
- 3980 Ls wh cln fos sparry-vsparry
- 3990 Ls buf-off wh bec sli less cln app Sh sm incr rd & gn

LANSING 3972'

- 3995 Ls chng: wh-off wh vfxl-fxl-crpxl freq ool Pkst freq /vpr oolmoldic poro spotty mod bri-bri gnsh yel flor tr /vlt bn oil stn wk slo stmg-sb stmg gnsh yel ct
- 4000 Ls off wh vfxl-fxl freq rthy txt ool i.p. gen decr show AA Sh incr rd & gy /sm amt blk

- 4010 Sh sli incr blk & rd Ls gysh wh-off wh vfxl fos rthy-occ sparry txt
 4020 Ls wh vfxl vcln app mod sparry fos-vfos Sh decr
 4030 Ls buf-wh vfxl-fxl rthy-sparry fos
 4040 Ls wh cln app vfxl rthy-sparry bec vool grdg to ool Wkst i.p. vpr intxl poro /sme mod
 bri gnsh yel flor f mlky gnsh ct
 4050 Sh blk vcarb Ls chng: gysh wh micxl-vfxl bec less cln app occ fos
 4060 Ls lt gy-off wh vfxl-micxl dns-vdns sli arg Sh cont'd blk
 4070 Ls lt gy vfxl bec vfos grdg to Wkst cont'd sli arg
 4080 Ls cont'd fos & sli cln'r app
 4090 Ls chng: lt bn-bnsh wh vfxl sparry ool Wkst dns brit
 4100 Ls cont'd ool & gen /rthy txt loc sparry Sh sm incr rd gy blk
 4110 Ls chng: lt gy-off wh-bnsh wh fxl-vfxl rthy txt fos frag Wkst-Pkst occ /pr intfrag poro
 tr mod bri yel flor
 4120 Ls bnsh wh-off wh vfxl dns /freq mod sparry ool Wkst-Pkst
 4130 Ls cont'd ool AA /sm amt lt gy-lt bn vfxl sli arg & fos
 4140 Ls lt gy vfxl-micxl fos sli arg Cht smi trnsf wh fos
 4150 Ls lt gy-off wh-lt bnsh vfxl gen /rthy txt fos loc vfos sli carb
 4160 Ls lt bnsh wh vfxl-fxl ool Wkst rthy-mod sparry Cht hvy tr smi trnsf off wh Sh sm amt
 blk gy rd
 4170 Ls chng: vlt gysh wh vfxl rthy txt fos frag Pkst-Wkst occ /blky spar infill
 4180 Ls incr amt ool Wkst-Pkst AA /decr fos frag Wkst Sh m-dk gy & blk
 4190 Ls cont'd amt ool & fos AA gen / rgh txt
 4200 Ls chng: off wh-vlt gysh wh fxl-vfxl gen rthy txt sli fos Sh sm amt rd gy blk
 4210 Ls chng: bec vfrag sme vsdy grds Ss lt gysh wh vfg w srtd vhyv calc cem Sh cont'd blk
 4220 Ls lt gysh wh vfxl /scat fxl gen sli ool sme lt gy-lt bn vfxl-micxl vdns brit Sh incr blk
 vcarb dism pyr
 4230 Ss def incr lt gysh wh vfg w srtd hvy calc cem Ls chng: lt bn ool Pkst fxl infill vsli arg
 pr intxl tr vpr oolmoldic poro NSOC
 4240 Ss cont'd amt bec vsli pyr Sh def incr rd & gn gen vfn txt loc sli sdy
 4250 Dol off wh fxl-mxl vcln app fr intxl poro NSOC
 4260 Dol cont'd amt bec sli bnsh & carb incrly calc Ls off wh Sh def incr blk vcarb
 4270 Dol cont'd hvy amt Sh cont'd blk Ls chng: bn micxl vdns loc fos /rthy txt vsli arg
 4280 Sh def incr blk vcarb dism pyr /rd's Ls lt gy-lt bnsh vfxl-micxl dns brit loc sdy gen fos-
 vfos sli arg freq rthy txt
 4290 Ls off wh fxl rthy txt fos frag Wkst sli chky cln dolie i.p.
 4300 Ls lt gy-off wh vfxl-micxl fos-vfos gen sparry & cln Sh def incr blk & rd
 4310 Ls off wh-buf vfxl-micxl gen vdns loc rthy & frm fos thru out
 4320 Dol lt bnsh fxl fri-sft sli calc vsli carb NSOC
 4330 Sh incr rdsh orng bnsh rd vfn txt blk vcarb Ls lt gysh wh-off wh vfxl fos loc vsparry
 rthy i.p.
 4340 Ls wh vfxl-fxl brit occ chky sft vcln app Sh gy rd & blk
 4350 Ls cln AA
 4360 Sh rd gn gy Ls chng: bec less cln & vsdy i.p. loc ool Wkst Ss lt gy vfg vhyv calc cem

MARMATON 4353'

- 4370 Ls off wh-lt bnsh wh bec ool i.p. gen sli fos sparry vsli arg gen /dull gd flor tr /dull gn
 flor pr gn mlky ct

- 4380 Ls chng: wh micxl-lith-fxl dns brit-fri indist ool gen /blkyl spar xl's fr intxl poro sme /bri
gn flor f stmg gn ct
- 4390 Ls sli mot gysh bn vfos sli arg Sh blk vcarb /sme rdsh orng fn txt
- 4400 Ls chng: off wh ool & frag cln app Sh cont'd
- 4410 Ls lt gy-off wh abdt fos frag incrly sparry sli arg i.p. Sh sme gy & blk

Lagged Sample Depths

- 4410 Ss sm amt wh vfg calc cly filled Ls cont'd fos bec sdy i.p.
- 4418 Sh incr gy fn txt Ls fos & sdy

Pawnee Member 4419'

- 4429 Ls off wh-vlt gy micxl-vfxl dns hd-brit sli pyr
- 4440 Ls lt gy-off wh micxl-fxl-vfxl vfos cln sli arg i.p.
- 4448 Ls lt gy-lt bnsh wh vfos fxl sli arg
- 4458 Ls lt gy vfxl-micxl vdns brit-hd Sh tr blk vcarb /gy-dk gy fn txt

Ft. Scott Member 4458'

- 4469 Ls lt gy-gysh bn vfxl-micxl sli carb i.p.
- 4480 Ls lt bn-buf micxl-lith hd-brit vsli fos
- 4490 Ls lt bn-bnsh buf vdns AA tr vool & vsparry
- 4498 Ls bn vfxl-micxl gy micxl arg vdns thru out

CHEROKEE 4500'

- 4512 Sh hvhy tr blk vcarb dism pyr Ls off wh-gysh wh fxl-vfxl rthy-rgh txt vfos i.p.

Unlagged Sample Depths

- 4530 Sh blk vcarb dism pyr
- 4540 Ls lt-m gy vfxl-micxl mod arg sli fos /lt'r col vfos rgh txt AA Sh cont'd amt blk
- 4550 Ls lt bn-lt gy vfxl gen /rgh txt fos-vfos loc vfrag Sh decr
- 4560 Sh incr vdk gy blk vcarb i.p. Ls lt gy-lt bn fxl-vfxl bec ool i.p. gen sli-mod arg
- 4570 Ls sm amt lt bn fxl-vfxl sli fri-sft bri gn flor f mlky ct lt gysh bn vfxl arg incrly ool occ
vsparry ool Pkst Sh hvhy amt gy & blk
- 4580 Ls chng: off wh-vlt gysh vfxl-micxl dns brit vcln app tr /blkyl spar lined vuggy poro /incr
lt bn fxl fri-sft /show AA
- 4590 Ls lt bnsh-lt gysh vfxl-micxl-Mdst gen fos sli-mod arg Sh decr blk /incr dk gy blkyl mod
carb
- 4600 Sh incr dk gy & blk Ls off wh vool /scat Pkst cln'r app
- 4610 Ls lt bn-off wh vfxl-fxl pred ool vsli arg Sh blk & gy
- 4620 Ls chng: bec incrly frag sli-mod arg gen fos Sh cont'd
- 4630 Sh hvhy amt rd bd pos incr blk Ls chng: bn micxl vdns brit
- 4640 Ls incr lt gy-off wh vfxl-fxl chky freq /rthy txt sli fos
- 4650 Ls lt bn-lt gy Sh decr rd & blk
- 4660 Sh incr blk & rd Ls bnsh gy micxl incrly arg
- 4670 Sh incr lt-m gy blkyl fn txt /blk carb Ls bec dk gy vfxl arg
- 4680 Ls lt-dk gy vfxl- micxl rly Mdst sli pyr thru out Sh cont'd
- 4690 Ls m-dk gy vfxl-micxl vsli fos
- 4700 Ls off wh fxl-vfxl rthy txt cln'r app Sh incr m-dk gy & blk

ATOKA 4682'

- 4710 Ls bn-gy vfxl-micxl loc fos sme lt'r col mod sparry vool
- 4720 Sh decr amt gy"s /incr blk vcarb Ls chng: buf-vlt gysh wh fxl frm fos loc frag app gen cln'r app
- 4730 Ls lt bn-buf-gysh wh micxl-vfxl dns brit Sh decr
- 4740 Sh sm incr blk Ls dk bn-dk gy micxl vcarb
- 4750 Ls lt tn-gy vfxl-Mdst gen fos sli arg-arg
- 4760 Sh incr blk vcarb Ls lt-dk bn & gy's vfxl-micxl carb i.p. cln i.p.
- 4770 Ls lt gy-lt bn vfxl-Mdst Sh decr
- 4780 Ls lt-m-dk gy vfxl-Mdst Sh blk & vdk gy
- 4790 Ls lt tn-lt-m gy gen sli mot vfxl-Mdst sli fos
- 4800 Sh incr gy & blk
- 4810 Sh cont'd incr gy-blk mod-vcarb occ lt gn wxy sft Ls cont'd gy-bn
- 4820 Sh incr blk & gy sme gn Ls off wh-dk gy gen vfxl-micxl decr Mdst
- 4830 Ls incr m gy Mdst Sh decr
- 4840 Ls lt tn-off wh vfxl sparry fos vsli arg-cln app
- 4850 Ls cont'd cln'r app /freq dk gy micxl sli pyr Sh incr blk
- 4860 Ls chng: lt gy Mdst sft fos Sh blk vdk gy mod-vcarb occ m gysh gn fn txt

Lagged Sample Depths

- 4850 Ls off wh-buf fxl rthy txt lt tn vfxl dns brit /gy-dk gy micxl-vfxl dns carb

MORROW 4867'

- 4869 Sh pos incr blk vcarb /sme lt gnsh gy flky fn txt Ls gen lt'r col AA
- 4877 Sh chng: sm incr lt-m gy flky-plty fn txt
- 4890 Sh sm incr AA
- 4894 Coal hvy tr vitr plnt frags Sh blk & gy /occ lt bn lt gn Ls cont'd hvy amt
- 4898 Sh cont'd incr amt vdk gy /vrr lt bn blkgy-flky wxy txt tr lse cg qtz
- 4903 Ls lt-dk gy Sh chng: hvy tr buf wxy carb debr sli pyr occ lse cg qtz
- 4908 Sh sm incr lt'r col AA
- 4912 Sh gen incr amt lt & dk col's freq gn's vfn-sb wxy blkgy tr bn vsdy tr lse crs vitr carb debr scat lse cg qtz
- 4917 Sh incr lt gn wxy flky loc sdy lt gn fn txt plty lt gy withd app tr gysh lav Paleosol Coal tr glos blkgy
- 4923 Sh incr gy & gnsh gy mot i.p. withd app i.p. gen fn txt plty-flky tr lse vitr plnt frags
- 4928 Sh admixture lt & dk col's /pos incr lt gn & bn wxy rrly carb debr Ss tr wh fg cly fld w cem
- 4932 Sh incr dk-vdk gy fn txt
- 4936 Sh cont'd Ls chng: tr lt bn vfxl-micxl indist fos sparry sli glau
- 4939 Ls cont'd tr's lt gy-lt bn vfxl-sb gran fos sli glau Sh lt-m-dk gy flky lt gn plty
- 4944 Sh pos chng: lt gn flky sb wxy flky sli pyr loc vsdy tr lse vitr plnt debr
- 4948 Sh lt gn flky sb wxy vfxn txt occ /fn carb debr
- 4954 Sh incr dk-vdk gy fn txt flky plty
- 4959 Sh gen admixture lt & dk col's /vsm amt lt'r col wxy carb debr
- 4965 Sh pred m-dk gy fn txt sm amt lt bn-lt gn wxy rrly /carb debr freq tr's lse vitr debr Ss vsli tr lam clr cg cln vhvy sil cem
- 4970 Sh incr gn's vfn-sb wxy occ carb debr loc sdy sli pyr /hvy amt dk'r col's

- 4975 Sh incr dk-vdk gy fn txt sli wthd i.p. freq tr's lse vitr plnt debr Ss hvy tr lse clr mg-cg sb ang
- 4981 Sh chng: lt gy plty-blky rgh txt /hvy amt mic mica fnly pyr
- 4985 Pyr incr lse chnks Sh pred m-dk gy fn txt sme lt gy rgh txt AA occ lt gn vfn txt sli sdy i.p. Ss occ lse clr mg-cg
- 4993 Sh pos incr lt gn vfn txt blky-flky
- 4999 Sh def incr m gy plty fn txt Ss vsli tr clus trns l wh fg hvy cem sli glsu
- 5004 Ss hvy tr clus trns l wh-gysh wh sb ang w srt d w cem hd-fr m scat glau grns freq lse clr mg-cg Sh pred m-dk gy /sm amt lt'r col's sme vsdy
- 5007 Ss incr amt AA /chng: sli incr grn size bec less well srt d all tight thru out freq lse clr mg all NSFOC Sh gy rgh txt plty-blky
- 5012 Ss incrly arg i.p. /gen decr amt Sh incr m gy plty-blky rgh txt
- 5017 Ss incr wh-smi trns l wh fg pr srt d cly fld i.p. gen /hvy cem vfreq glau grns /freq lt gysh wh vfg vhd w cem sli arg

V7 or V9 Sandstone 5026-5029

- 5022 Ss incr amt: cln trns l u.fg sb rnd fr srt d fr-g cons fri-vfri i.p. sli cly fld i.p. dolie & sil cem vsli glau grns Clyst wh sft NSFOC
- 5027 Ss lrg incr clus trns l-wh u.fg-l.mg sb ang-sb rnd pr srt d fr-g-w cons /dolie & sil cem gen hvy cem freq mod cly fld scat glau grns tr carb debr Clyst sm amt AA
- 5032 Ss cont'd amt trns l-smi trns l wh bec u.fg-u.mg tr l.cg gen vpr srt d fr-w cons loc v hvy sil cem
- 5037 Ss cont'd u.fg-u.mg clus AA NSFOC
- 5043 Ss lrg decr Sh m-dk gy fn txt plty occ lt bn wxy /carb debr
- 5048 Sh m-dk gy Ss cont'd decr
- 5055 Sh m-dk gy Ss sm amt
- 5061 Ss pos sli incr amt clus gen AA trns l wh fg-mg pr srt d hvy cem cly fld i.p. NSFOC
- 5064 Sh m-dk gy plty
- 5068 Sh cont'd /decr SS
- 5072 Ss sli incr /chng: shr dy clus clr cg-mg ang-sb rnd pr-vpr srt d hd w cons hvy sil cem scat lse clr cg Sh pos incr
- 5075 Sh hvy amt m-dk gy plty fn txt /lt'r col's chng: hvy tr rdsh bn-rdsh lav /hi lust Paleosol
- 5079 Sh admixture /incr Paleosol Ls sm amt bn gran sli glau
- 5086 Sh AA
- 5094 Sh pos incr lt'r col's bn-gn vfn-wxy txt Ss cont'd tr's tight clus AA

Possible L. Morrow Limestone 5096'

- 5099 Ls sm amt gysh-off wh fxl rthy txt sli fos
- 5103 Ls gen sm incr sli sdy Sh gn-dk gy gen fn txt
- 5108 Sh gy-gn sli mot i.p. fn txt /scat lt bn wxy blky carb debr tr's lse crs vitr debr Ls decr tr's
- 5113 Sh gy-gn gen fn txt plty-flky wthd i.p.
- 5119 Sh pred m-dk gy fn txt Ls tr lt bnsh vfxl fos pyr

MISSISSIPPIAN 5123'

- 5125 Ls sm amt wh-off wh fxl-chky sft-fr m sli pyr /cg qtz incl tr bnsh vsparry ool Pkst
- 5130 Ls incr off wh-lt bnsh wh vfxl-fxl brit pred mod-vsparry ool Pkst loc sli sdy

- 5134 Ls wh vfxl-fxl cln app sli rthy to sparry ool Pkst-Wkst loc sli sdy
- 5138 Ls wh ool AA /sme buf micxl vdns brit sli ool
- 5142 Ls chng: lt gysh buf vfxl crs frag /fxl-mxl infill /sme dk bn micxl vdns tr Cht incl
- 5145 Ls buf-bn decrly ool Cht fr amt trnsf vshrdy app
- 5151 Ls AA Cht cont'd incr trnsf-smi trnsf wh

SPERGEN 5151'

- 5155 Dol vsli tr lt gysh buf mxl cln-vsli arg tight app Cht cont'd Ls pos chng: lt bnsh micxl-vfxl mod-sli sparry ool Wkst-Pkst
- 5158 Dol incr lt tn vlt gysh cxi-mxl cln-vsli arg
- 5172 Dol lt tn-lt gysh mxl-fxl occ cxi sft sli fri frm sli arg decrly cln app
- 5178 Dol lt tn-lt gy vfxl-Mdst
- 5189 Dol lt bnsh gy vfxl-fxl frm-sft /sli incr lt tn mxl vfri NSFOC
- 5198 Dol cont'd AA
- 5208 Ls lrg incr lt gy sparry to rthy txt vfxl bioclastic Wkst-Pkst sli arg
- 5225 Ls cont'd fos frag Wkst-Pkst bec incrly arg mrly i.p.