

1 of 3  
pts 1-296



*"Rite in the Rain"*®

ALL-WEATHER  
**GEOLOGICAL**

No. 540F



Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

① Landis Quad 7-17-07  
 Long Creek, west of Landis, AR  
 Near Turkey Creek (to South of point)  
 35 56 5.7 ± 19  
 92 27 34.0

## Plattin Limestone:

outcrop ~ 15-20' thick  
 thin-med planar bedding  
 weathers white  
 light to med grey, micritic to  
 fine crystalline lmst; some  
 possible paleo karst slumping  
 in small (~1' x 3') area, beds  
 display slight down warp to slump

② Landis Quad 7.17.07  
 1:52 pm  
 Back toward Landis  
 35 56 1.5 ± 22  
 92 27 27.5  
 outcrop ~ 20-30' off in woods to  
 Fernvale Lmst

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

Fernvale Limestone (paleostone)  
 med to thick beds, (possibly  
 slight dip or channel beds)  
 weathered to rounded knobs <sup>covered</sup> (lichen & moss)  
 dark grey to pinkish  
 coarsely crystalline light colored  
 (less pink than other areas)

N 60 E 2° SE (taken on  
 Plattin surface  
 below)

covered section (with organic debris)  
 may contain Kimswick  
 (photo by R. Hutto)

③ N 10 W 5° E (taken from across bank)  
 Long Creek Landis Quad

Plattin Limestone, dipping in Creek  
 thin beds weathered white

35 56 0.5 ± 19 photos by E. Smart  
 92 28 10.8 ± 19  
 pos. flatten down stream  
 @ SE Plate

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

④ break b/t St Peter ss to W  
with Platin ls to East  
(may be Jasper ls of Everton Fm ??)

35	56	6.0		
92	28	20.1	±	25'

definite qtz arenite of St Peter with  
what appears to be platin below!

continuing west along 263 platin no appears  
above the qtz arenite St Peter (photo)

contact @ ⑤

(of flat and  
sandstone)

35	56	15.3	±	21'
92	28	31.9	-	15'

3:30 PM 7-17-07

photos @ wildcat hollow; spring  
along NW fork (barely on Harriet @)  
contact b/t platin and St Peter  
Dp Osee

Location Hwy 65 Date 7-18-07

Project / Client \_\_\_\_\_

BEAR CREEK

Scale \_\_\_\_\_

- ✓ ⑥
- |    |    |      |   |     |
|----|----|------|---|-----|
| 35 | 56 | 25.3 | ± | 22' |
| 92 | 42 | 49.2 |   |     |
- ✓ ⑦
- |    |    |      |   |     |
|----|----|------|---|-----|
| 35 | 59 | 36.2 | ± | 59' |
| 92 | 42 | 33.6 | - | 59' |
- thin to thick bedded; ~20' of oc  
Vfgr - micritic lst  
small stylolites
- ✓ ⑧
- |    |    |      |   |     |
|----|----|------|---|-----|
| 35 | 59 | 33.1 | ± | 30' |
| 92 | 42 | 38.5 | - | 30' |
- thin, micritic beds (~15')  
below massive beds (Pos Boona)
- ✓ ⑨
- |    |    |      |   |     |
|----|----|------|---|-----|
| 35 | 59 | 36.3 | ± | 59' |
| 92 | 42 | 33.6 | - | 59' |
- snst/micrite 1st contact  
snst is ~39 (copied from RH; ??)
- off map ⑩
- |    |    |                |     |   |     |
|----|----|----------------|-----|---|-----|
| 36 | ?? | (see RH notes) | 5.5 | ± | 35' |
| 92 | 43 | 47.4           |     |   |     |
- 70 SE (dip) N50°E strike  
flattens out on either side (unclapping surf  
possibly)  
basal ms snst by road; contact w/St. Joe  
is coarsely xline w/black blebs; friable, cln  
poor sort of snst

Location Marshall Square Date 7-19-07  
 Project / Client STATE MAP 07-08

✓ (11) 35 54 37.4 +19  
 92 37 56.6 -19

Moorefield shale (~10' thick) below Batesville  
 sandst (~10' thick, capping some across the  
 road); sand is buff to orange fine gr, ruggy,  
 iron cemented

✓ (12) near Zack above 'spring' and on line  
 w/ log cabin pos Plattn below  
 Ferrevale maybe 6-8' of Kimswick b/t

35 57 39.7 ±36  
 92 39 59.4

✓ (13) 35 57 10.2 ±20  
 92 39 39.7

pos pt @ top of Silurian  
 Boone above St. Joe (~10-15' th)  
 with Silurian below that; loose  
 bottom w/ clean contact in creek  
 there is a dark grey crinoidal lmst  
 in creek (float) poss St. Joe

Location Zack Date 7-19-07  
 Project / Client Stmap

Scale

✓ (14) 35 57 8.2 +19  
 92 39 26.7 -19

gravel pit in Boone lmst  
 ~ 75 x 75 yards

✓ (15) 35 56 27.7 +18  
 92 39 40.9

lmst 15 18" - 24"; stylolitic  
 Qtz arenite w/ phosphate pebbles  
 poss a small window of prems lime  
 (Lafferty?) lmst is grey; fine xtal

✓ (16) 35 56 31.3 ±23  
 92 39 48.8

good section of basal ms sand at  
 creek level w/ 8-10' of thin  
 bedded crinoidal pink lmst +  
 w/ tan-green shale partings thru  
 20' of cherty Boone lmst

✓ (17) old Hwy 27 gravel pit

35 55 10.5 ±17  
 92 37 55.1 -17

100 yds long next to old Hwy 27

Location Marshal Quad, Brushy Creek Date 7.23.07Project / Client STATE MAP 2007-2008

E. Smart

(18) 35 56 08.3 ± 19  
92 39 25.6 - 19  
Brushy  
Creek

outcrop of crinoidal lmst (St Joe)  
in bank of creek upstream  
are Silurian Rocks (Brass, St Clair Laff)

St Joe is thin bedded, grey lime, <sup>dip 30° N</sup><sub>E W strike</sub>  
fine xtl crinoidal;

3-8' of outcrop  
1-3' of

JOINTS N 75 W  
N 85 W  
N 30 E  
PHOTOS R. HUTTO (2)

Silurian rocks are pink - grey w/  
pink 'blebs'; vf-f xtl line  
outcrop ~

(19) "waterfall" area (dry) in Brushy Creek  
8-10' of M<sub>STJOE</sub>

"reentrant" of basal M<sub>SN</sub>, ~ 1-2' exposed

35 56 14.3 ± 19  
92 39 30.8 - 19

Location BRUSHY CREEK Date 7.23.07Project / Client STATE MAP 2007-2008

E. Smart

Scale

(19 cont'd)

St Joe is thin bedded, crinoidal lmst  
(wackestone - packestone) grey - pinkish grey

M<sub>SN</sub> is vf-f med well sorted, white  
w/ blackish grains (st / pebbly), calc cement  
med-thin beds

mass + lichens on surface

35 56 21.9 ± 17  
92 39 33.3 - 17

(20) "complete" section with Silurian  
rocks exposed in creek bed; 1-3' of  
basal M<sub>SN</sub>; 8-10' St Joe, possible  
Boone above (covered by veg, less resistant)

[bend in creek extends 30-40 yards]

- Sil rocks are weathered white w/ pink -  
greyish xtl line, calcareous vugs, pink blebs

- M<sub>SN</sub> is calcareous vf-f med sorted  
dark tan to white w/ shaly + plus pebbles  
shale 'lenses' ~ 4" - 6" b/t sht and M<sub>ST</sub>  
some calc veins

- M<sub>ST</sub> is thin parallel beds, stylolite surf  
weathered grey w/ lichens; lt grey - pinkish  
fine xtl line crinoidal wkst - pkst.

Marshall Quad  
 Location Brushy Creek Date 7.23.07  
 Project / Client STATEMAP 07-08 1:05 pm  
E. Smart

(20 cont'd)	Joints	dip measured on 2 NW un surf of M <sub>snd</sub>
M <sub>snd</sub>		strike N65E
N10W		
N7W		

M<sub>B</sub> is exposed in small area at the  
 N end of outcrop  
 cherty thin-med beds of lsst

(21) 35 56 4.6 ± 14 (2)  
 92 39 19.8

contact on hill side, along  
 road (hiking back to Jeep from  
 creek)

Silurian, Lafferty type rocks (thick bed)  
 in contact w/ lsst above (thin beds)

pass to S-SW of Home along creek

(22) 35 56 6.3 ± 40' (2D Batteries low)  
 92 39 21.5

contact b/t St Joe + Sil Rex crossing  
 the road No M<sub>snd</sub> noted, lots of veg.  
 almost directly across from Home.

Marshall Quad  
 Location Marshall Quad Date 7.23.07  
 Project / Client \_\_\_\_\_  
 Scale \_\_\_\_\_

(23) 35 55 50.3 ± 25  
 92 39 13.3 → top of Lafferty

point taken at the exposure of  
 'lenticular' bedded micritic - w/ xtl  
 line above Lafferty ish beds  
 (xtaline lt green w/ pink blebs)

(Mystery Rock) def sil in creek bed  
 poss st clear brass Lafferty

area of chert bed (~1" thick exp)  
 approx 30' away. [NO M<sub>sst</sub>?]

photo by #Hutto

(24) possible Veg line follow 2:45 pm  
 35 55 43.1 ± 21 (or 38')  
 92 39 13.2

Boone Regolith; Red, cherty

(25) 35 56 2.1 ± 23  
 92 39 11.0

contact on hillside, moderate veg  
 Silurian Lafferty (thick beds) below  
 M<sub>sst</sub> Joe (thin bed outcrops ~1-2')

Location \_\_\_\_\_

Date 7.23.07

Project / Client \_\_\_\_\_

26 35 56 1.1 ± 19'  
92 39 6.8

- Contact w/ Sil and st JOE  
beds strike N45E <sup>45</sup>  
dip  $\frac{1}{2}^{\circ}$  S55W  
6°

- ~4' of Msnd exposed  
well rounded med well sort drns  
white - buff (photo, look for scale)

- Sil is grey w/ pink blobs; <sup>interp</sup> Lafferty

27 35 55 59.4 ± 22' 3:50 pm  
92 38 59.4

✓ first Boone exposure up from <sup>26</sup>  
Cherty

28 35 56 57.8 ± 25'  
92 39 49.7

Northern most contact where ~~st~~  
Batesville Snd / Mansfield sn are mapped  
on the 1962 quad.

No sand beds found, Rare float  
all tripblitic chert

Location Zack, Marshall Quad

Date 7.23-24.07<sup>13</sup>

Project / Client STATEMAP 07-08

E/Smart

Scale \_\_\_\_\_

29 35 59 59.0 ± 17'  
92 40 58.1

(pass) (with) →  
Basal Msnd exposed in the road  
white whetted - friable  
slt & pepper appearance. Hcl is  
absorbed immediately; no fizz  
photo by R Hutto

30 7.24.07 9:10 am cool/crisp  
sunny  
52 photos (4+5) rock hammer on <sup>~680</sup>  
Ok/Op etc

contacts b/t platin (creek bed str)  
Kimswick (w/4"th) and ~~ter~~ fernvale

RH several photos; 2 hammers showing  
Op/Ok/Op contacts; impressive  
of platin in creek

point taken in middle of creek

35 57 17.9 ± 35'  
92 39 59.3

- platin is micritic w/ calcite veins; grey - drk gr  
- kimswick is v. fine, white - lt grey (wksst)  
- fernvale is coarsely xtlime; pink (wksst)  
total outcrop along bank is ~ 10-15'



Location \_\_\_\_\_

Date

7.24.07

Project / Client STATEMAP 07-08

E. SMART

30 cont'd

Joints in plattm

N/S exact N 50 E

N 40° E N 33 W

N 75° E N 45 W

31 10:34 am 07.24.07

NPS Road to Brush Creek and Buffalo

River confluence 36 00 00.5 +g

Contacts in the road are 92 41 03.4 -g

indicative of Oc formations

show ~8-12' of interbedded dolomites,

mod-well cemented snos and limestones. A walk around

the old (overgrown) homestead indicates

contacts w/ St Pete snos (arenites) in some areas. Series of photos by R. Hutto w/ E. Smart on

31A photo by R. Hutto

diag. micritic - of xtaline dolomite w/ white

calcite-filled vugs. Some small fractures/joints

on top of exposure

[Also see 31A.5] grn well cemented snly dolostn

31B tan-buff, moderately well sorted subround

to round quartz grains; min or amount of opaque

grains calcite-cemented (modwell-well)

Location NPS Road to Brush Creek and Buffalo

Date 07.24.07

Project / Client

STATE MAP

E. SMART

Scale \_\_\_\_\_

31C

32 35 59 51.4 ± 18'

92 41 16.8

11:08 am; Driven up into Brushy Creek

- photo 6 by E. Smart showing rock hammer resting w/ a sandstone interbed between upper and lower dolostones in

Oc. Sandst is white, slight fizz

(possibly leached out by weathering as the sand is slightly friable)

unit is ~1-2' thick

- sandst white & well sorted <sup>subang-subround</sup> fine grained qtz arenite, some calc cement and silica cement

- dolomites are of xtaline micritic gray-dark grey

- total exposed area is ~40 yards in length (to 50)

- photo 7 showing R. Hutto where head meets another sandst unit ~4' up in section

possible ~~sn~~ matrixites in this area indicated by wavy beds [sandst is white-tan weath qtz arenite, no fizz; silica cement mod-well; subang-subround grains well sorted]

- photo 8 showing length of oc

Location Brush Creek, Marshall Quad Date 07.24.07Project / Client STATE MAP 07-08E. Smart

- photos 9, 10, 11 of old railroad trestles and roots on De ~ 100 yards down from pt 32 rocks show gtz arenite white w/ greyish bands - v low fizz (pos dol cement) w/ dolostone on top; dolostone is red grey w/ xtal.

11:35 am

- Calcite cemented vugs in dolostone (fine xtaline red grey) have prolific oolite as described on Jasper Quad (M. Hudson) thin bedded to massive
- Sands are also grey in fresh surface w/ v well cemented by dolomite, w/ gravel - fine gr gtz dominant. [each sand/dolomite unit is ~1'-2' thick]

- photos 12, 13, 14 of features in Brush creek "spring" area (Rocks, maple leaf)

- photos 15, 16, 17 during lunch break (upstream, leaves, lilies)

(33) 35 59 53.9 + 40  
92 40 58.2

parked at the fence line crossing Brush creek and confluence w/ Cedar hollow (minor water neck) outcrop ~ 40-50' thick (to base of road); maybe along possible bearing to M<sub>end</sub> @ point (29) • photo # 18

Location Marshall Quad, Brush Crk Date 07.24.07Project / Client STATE MAPE. Smart

Scale

(33) centd

Plattin strike N40E

4° E/SE

(34) 35 59 53.7 + 23'  
92 40 58.2 - 23'

1:12 pm Sunny; warmer 80°

point taken after hike up the outcrop from 33; point indicates the first exposure of the Ofanvale (coarse xtaline pinkish) possible Kimswick b/t fast Op; but vegetation is thick (grey fine xtaline fossils w/ wax) pieces appear as float rather than distinctive beds; also some sandst float similar to M<sub>end</sub> (v small ~1' x 1')

- photo ~ 10 yards from pt (33) showing 19' contact b/t St Pete and Plattin
- photo 20 showing rock hammer resting on shaly surface above a thin bedded, black dolostone, shale (greenish), laminated sands and silt (Op)
- photo 21 c/c b/t friable greenish-grey sand and black rock (shaly, well cemented to silty, dolomite indicated by fizz; bed is ~10" thick mass lenticular possibly contact b/t Op and De (below) (above))
- photo 22 spiders w/ red symbiotes photo by R. Hutto shows rock hammer hanging from probable St Pete/Plattin c/c; oe below in E.S. photos 20, 21

Location Marshall Quad; Cedar Hollow Date 07.24.07

Project / Client STATEMAP 07-08

E. Smart

(35) 35 59 48.2 + 19'  
92 40 48.9

Op strike / dip R Htto

(36) first visual of Op in Cedar Bend  
35 59 46.7 + 20'  
92 40 40.5

large tree down in creek  
Op snd is gray-brn on weathered surface  
gray in fresh exposure; slight fine (dolomit?)  
medium well sorted subround qtz granite  
well cemented.

s N5E 27°W

(37) 35 59 35.1 + 25' (11 when screws release)  
92 40 17.6

contact taken to be Op/Op

(38) 35 59 41.8 + 30' • photo 25  
92 40 1.3

etc b/c = Ok/Op no plattin around  
Ok = 4-5'  
Op = 40-15'

Location Longcreek; LANDIS Quad Date 07.26.07

Project / Client STATEMAP 07-08

E. Smart Scale

(39) 35 56 36.2 + 51'  
92 28 47.7

Down stream, adj to Long Creek Bridge  
~20' exposure of massive, white,  
medium well sorted subround qtz granite  
exposure is ~5-10' above creek bed  
snd is also exposed in creek bed  
(flung logs, some waterfalls  
coming off of bluff.)

photo by R. Hutto of friable  
ledge; E. Smart for scale

(40) 35 56 34.2 + 27'  
92 28 51.7

9:42 am  
contact of snd (Op) with micritic limestone  
(Op) [triked along to off to find point]

(41) 35 50 38.3 + 16'  
92 28 49.5

standing on uppermost Op (most, some Op and  
defiant Op above (coarsest, pinkish weather)  
pieces and rounded snt

Location Near Long Creek, LANDIS Q Date 7.26.07Project / Client STATE MAP 07-08

E. Smart

(42) 35 56 41.1 ± 25' 10:16am  
92 28 50.0

Hiked up the hill side above pt 39 and;  
near the top of the slope along a fence line

Very minor outcrops have Of / Mst

Characteristic of coarse xtc of Of, pinkish  
in parts, but also greyish like Mst but  
no ~~crinoids~~ crinoids present.

probably Of

some brachiopods on weathered surf

R. Hutto broke the surface where brachiopods  
on surface, and found some crinoids...

also noticed ~~st~~ greenish patings

as seen in ~~Mst~~ Mst; Samples taken R.H.

(43) 35 56 42.3 ± 25' "watch cows"  
92 28 51.7 10:30am

still searching for definitive change b/t

Of / Mst lithologies

point taken where 'white' xtl Mst was found  
on a weathered rounded surface w/ lichens

~~brachiopods~~  
(one)

no Mst and arand. lots of veg  
and leaves...

Location LUNG CREEK, LANDIS Q Date 07.26.07Project / Client STATE MAP 07-08

ESMART

Scale

(44) 35 56 21.8 ± 25'  
92 28 45.1

Upstream from Long Creek Bridge

(good swim hole)

w/ Anapla + Kristian

first walk

showing Ospe in creeks; point taken @  
contact b/t Ospe (shaly) and  
grey lime (med. good size) taken to be  
Op [thin beds, planar, grey micritic]

veg is more dense than point taken  
downstream from creek.

(45) 35 56 20.8 ± 25'  
92 28 46.0

standing on contact of Op / Of  
on hillside above Long Creek  
upstream from bridge.

Families just arrived @ swim hole

dense veg no rocks taken to be Ok

(46) 35 56 26.6 ± 22'  
92 28 48.4

• photo by R. Hutto

Ospe has vanished from creek bed.  
standing ~ 70 yards ~~to~~ upstream from  
bridge

Location Long Creek; Landis Date 07.26.07Project / Client STATE MAP 07-08

E. Smart

(46 cont'd)

beds in creek are very thin - thin beds  
 of apparent limst (~10-15" of crop) changing  
 to thick (mod thick) to massive (~10-15")  
 of visible outcrop

(47) 35 56 30.6 ± 25"  
 92 28 48.6

under bridge on downstream side  
 bridge rests on qtz arenite sands of  
 Ospe

strike dip by R Hutto

~~E/W~~

4°-5° N

~~S/W~~

S

~~N/S~~

E/W

Location RR Grade above Brush Creek Date 07.30.07 23Project / Client STATE MAP 07-08

E. Smart

Scale

(48) Pseudo Beginning of Ospe exposures  
 along old RR Grade above Brush Creek  
 (E of Cedar Hollow)

35 59 50.2 ± 21" (2D)  
 92 41 3.2

[possible Os in Grade just to the N.]

35 59 50.2 ± 17" (3D)  
 92 41 2.8

(49) 35 59 45.0 ± 18"  
 92 41 04.0

contact on hillside (above PRG crop)

Op / of rocks; lots of veg

(50) 35 59 44.5 ± 17"  
 92 41 5.4

'New Road' (Not on Quad map)

apparent M sand in Road; probably  
 in place; below are apparent Siderite  
 rocks and Ospe, most of which looks  
 like flow.

Location Brush Creek Marsh (Q10) Date 07.30.07Project / Client STATEMAP 07 08E. Smart

(51) 35 59 39.2 ± 24  
92 40 59.6

St Joe similar to Hobo Hotel, red, crinoidal.  
(10" thick)

Below, is found a 6-8' section of  
Silurian Rocks, pinkish fine xtl  
lime w/ calcite 'veins'; white w/ pinkish  
blobs; powders when hit w/ hammer  
lots of lichen

(52) in drainage; 0f looks like sand!  
but good exposures are fine coarse xtl  
pink-white, not any fossils

35 59 23.1 ± 18.  
92 40 58.6

(53) 35 59 22.8 ± 37" (~26")  
92 40 44.4

creek bed

etc ~~B~~ M<sub>st</sub> / M<sub>o</sub>

M<sub>st</sub> is crinoidal; dark grey - grey

M<sub>o</sub> is cherty

Location Brush Creek Marsh (Q10) Date 07.30.07Project / Client STATEMAP 07.08E. Smart

Scale

(53 contd)

M<sub>st</sub> is a 7-10" thick  
with a ~~6-8"~~ 2" of M<sub>sd</sub>

(dark - light [silt/frag] calc/silicena  
Snd)

(54) c/t b/t  
Silurian and M<sub>sd</sub> (~6")

35 59 23.5 ± 28.0  
92 40 42.0

in creek / drainage bed

(55) 35 59 24.6 ± 16.  
92 40 39.8

c/t b/t O<sub>p</sub> and O<sub>f</sub>

thin beds  
O<sub>p</sub> is weathered white w/ micritic fine xtl

thick - massive  
O<sub>f</sub> is weathered w/ lichen and  
rounded surfaces; white - pink

fine - coarse xtl one large-ish  
calcareous m<sub>tl</sub> (~4 mm dia)

Location Bush Creek, Marshall Co Date 07.30.07Project / Client STATEMAP 07-08E Smart

(56) 35 59 28.7 + 21' (8.5 on ext)  
 92 40 34.3 - 28.8  
 34.2

dip 10° W

N 15 W

Veered from road grade out into "field area"  
 walked slightly up stream along  
 Osp outcrop. Tons of vertical "icicle"  
 features along outcrop  
 photos by R.H and E.S  
 S+D by R.H

(57) 35 59 32.5 ± 15'  
 92 40 37.3

Large bluff of Osp (photos by ES+  
 RH!!)  
 apparent contact w/ Oe  
 in creek

Oe is dark grey line (slight fizz)

looks like folks hang out here; tables  
 and chairs. Rock altar in mid creek  
 point taken sitting on only exposure of  
 Oe. Rocks have changed dip direction  
 as would in a "mound/anticline" area!

Location Buffalo River, Marshall Co Date 7.31.07<sup>27</sup>Project / Client STATEMAP 07-08E Smart

Scale

(57 cont'd) dip on Osp is N10 E  
 there are no "icicles" 5° W  
 on bluff, it's all smooth

also dips do not indicate  
 moving; nor do they agree with  
 what I perceive with my eyes...

(58) R.H.

(59) 35 58 56.0 ± 27'  
 92 40 57.4

Bluff NW of Hwy 65 bridge  
 Float Day,

Came ashore on sil (loaferty);

thin (1-3') of Msnd (slt peppery  
 w/ well rounded Qtz) above; <sup>Msnd is 61' ab.</sup>  
 in weathered <sup>surf</sup>

Ms is seen above the Msnd, but  
 lots of vegetation hides the  
 contact w/ Mb; smp is lt grey-grey  
 crinoidal pack-grst

Mb is ~60-70' thick

• photos 7+8 (different lighting) by E Smart

Location BNR, MARSHALL Quad Date 07.31.07Project / Client STATEMAP 07-08E SMART

(60) 35 59 11.8 + 16' point taken @ ctc  
92 44 33.7 - 16' b/t sil + Msnd

Downstream from Hwy 65 Bridge (Grinders Ferry)

Large Bluff is Sil (pinkish w/ calcite lens) vugs  
40-50' thick, massive

point taken sitting on Sil, w/ basal Msnd  
(phosph nodules; silt pep, tan buff, fine gr  
well cemented) 1-3' thick

8.27.07: Revisit w/ A.C.  
Sil is pink-purple m-c xtl w/ calc vugs drk mottled face to the Msnd  
Msnd is white-pinkish m-c xtl (some is finer) w/ fine mott

Msnd outcrops above sand; lt grey-grey  
small conoids (water-pack - >10% conoids)  
f-mod xtl, w/ iron clasts (rich)

(61) just upstream from "Shineeye bluff"  
standing where Sil emerges from river;  
Msnd and St Joe slightly 'plunging' into  
river (visual est on Msnd to be ~50

35 59 05.8 + 24' down into NNW  
92 44 03.6 - 24' river

Msnd is ~1-3' s tan to lt greenish  
mod well-well cemented phosphates

Msnd is ~10-15' thick (thin bedded ori)  
some pyrite xtl!

RH dips 5° W; N10° W for strike

see page 79

Location BNR, MARSHALL Q Date 07.31.07Project / Client STATEMAP 0908E SMART

Scale

(62) Shineeye bluff (downstream)

~40' of sil bluff, pink m-c xtl  
calcite in veins, and vugs  
also, evidence of sand filling in  
along veins and joints

some times appears <sup>thinly-med</sup> bedded but  
overall massive ~~to~~ thick bedded  
apparent angular w/ conformity  
w/ Msnd

35 59 20.0 + 21' dip on  
92 44 7.9 - 21' bedding surf  
reads 180° E

Msnd is ~20-30' above

\* b/t 61 + 62

several photos (10-14) of  
soft sed of Msnd. "churned" appeared  
phosphate pebbles (coarse sand - cobble)  
w/ beds of msnd dipping to N

Sil rock "dip" below into river and back  
out again.

dip on  
apparent  
bedding surf  
reads 180° E  
N10W  
strike  
[Joints:  
N80E, N90W]



Location Buff N River Date 7.31.07Project / Client STATEMAP 07-08

E. Smart

(63) first bend @ LANE BEND  
 Sil Bluf ~ 20-25' thick  
 thin (10') st Joe above, No Msnd  
 Mb above (10-15' thick)

35 59 31.0 + 20'  
 92 44 30.0 - 20'

(64) 35 59 52.4 + 26  
 92 41 4.1

Large gravel bar  
 due across + upstream

taken @ LANE BEND; Apparent of  
 in the river bed (deep hole)

pink f-m xTL Crinoidal packst <sup>grm st</sup>  
 of massive to thick bedded, ~20° of  
 exposure

Msnd = white-tan (buff)  
 ~3' thick exposed w/ shaly  
 beds; beds of nodular phosphate

Msj = dark red; lots of crinoids  
 crust. ~20° exposed  
 pyrite + phos pebs @ base of unit

Mb @ top of hill ~ 5-8' thick

Location BNR Marshall Quad Date 7.31.07Project / Client STATEMAP 07-08

E. Smart

Scale

(65) 35 59 36.2 + 24'  
 92 43 45.2 - 24'

area where Sil rocks appear  
 above river level (gravel bar, slump  
 m. @ bend is just upstream)  
 rocks are pinkish-white, white Calcite  
 vugs med @ line

No Casan shale as mapped on  
 previous quad; possibly covered  
 by veg and slumping @ Lane bend.

(66) 35 59 19.2 + 19'  
 92 43 46.6 - 19'

~15-20' Sil exposed

~18" Msnd

~5' MST

exposure in bend

After across ~~no~~ gravel bar

Location BNR MARSHALL QAD Date 07.31.07Project / Client STATEMAP 07-08

Esmart

67 35 59 6.1 ± 17-  
92 43 17.1

along bank just upstream from Gilbert  
apparent S. l. rex in ~~creek~~ riverbed and  
just banking out (upto 10' exposed downst)

Msd is slumping down in blocks  
and is intact just below Mst  
~1-2' exposed, 18"

Mst. dipping 7° SW dip about 1-2' exposed  
N45W strike and covered w/  
soil and veg

08.01.07

68 35 59 52.8 ± 22  
92 41 53.8

Hot, Humid,  
sunny

float day 2

along horse trail, hiking back to Gilbert  
11:05 am; Glory hole in apparent Msd

large ish drainage down to RIVER; looks  
like interbedded limestone + sandst  
below Msd (Msd is also seen as  
float in Road). w. ll have to  
check lith of lower strat rex on  
float in. Lots of trees and veg in thole

Location BNR MARSHALL Q Date 07.31.07Project / Client STATEMAP 2007-2008

68 cont'd Esmart Scale

Joints

N10E

N/S

oops! looks more  
like  $\text{Osp}$  base  
on pt 69

69 on bluff N of confluence w/ Bear  
Creek

35 59 50.6 ± 27-  
92 42 09.8

Osp sands outcrop from RR Grade/Horse  
about ~15' to c/c w/  $\text{O}_p$

still showing worm-to-be 'circle' things  
like seen in bear brush creek area  
also; where contact is not d,  
there are calc. sand, lime interbeds.

\* fine silt/clay; greenish + drk grey  
note below (within?) osp.

perhaps could this be w/ De?

Joints

70 35 59 49.6 ± 20  
92 42 8.8

R.N. 10yats E of  
pt 10W

dip w/ 18° N10E on plateau; up from pt  
5° @ near  
42 pt 69

Location BNR MARSHALL Q Date 08.01.07Project / Client STATEMAP 2007-2008E. SMART

base of  
 (71) old spring @ GILBERT  
 35 59 14.9  $\pm$  19'  
 92 42 53.0

pp w/ shaly inter bed; all micritic

(72) 1:00 pm just starting on the River  
 35 59 19.3  $\pm$  22'  
 92 42 ~~53.0~~ 41.7

platin exposures coming above  
 river level ~ 1' exposed

jumped as esp on old map?

(73) 35 59 49.3  $\pm$  20'  
 92 42 6.5

Stopped after lunch (almost ran into tree!)  
 outcrop (~ 1-3' exposed) limest below sands  
 (calc cemented sands)

limest is pass Oe (Jasper member) is  
 str gray to tan ~~str~~ (inter bedded)  
 lt gray to whitish mic interbeds  
 micritic v-fine gr w/ xtl in ~~bed~~ laminations  
 and lenses, few fossils

Location BNR MARSHALL Q Date 08.01.07Project / Client STATEMAP 07-08E. SMART

Scale

(73) note that latitudes are similar  
 to point 70, where beds  
 show extreme dipping;

possible monocline type feature  
 through ordis. area.

• Also Oe samples have greenish cras  
 (laminations not apparent in some areas)  
 possible ~~malachite~~  
 malachite

Osp sands are white w/ fgr, slight  
 calcareous - friable (w/ 2" thick)  
 (crinoid)

(74) 08.02.07  
 35.58.38.1  $\pm$  23  
 38.1  
 92 37.44.0

Road to Rocky Creek (Piney Road)

outcrop on hillside exposes ~ 5-8' on N  
 side (pass Shivan's box)

weathered light buff to gray, covered w/  
 lichen and leaves

fresh exposures are firm xtl slightly  
 aringoidal, pinkish w/ red 'blebs' (also  
 white f-m exposed on S side of road)

thin planar beds, slight (~ 3° dip to SW)

Location Rocky Creek, Marshall Co Date 08.02.07Project / Client STATE MAP 07-08

E Smart

✓ ~~75~~ 35 58 31.3 + 13'  
92 37 51.0 -

Old Homestead on Rocky Creek +  
Piney Road intersection.

cfc b/t Op and Of above  
old terrace gardens

old spring was not located, only  
piping (mass gravity fed?)

amazing home acomodates lots of folks!  
why not live here?!

Joints taken in creek (trib)

NSW N70W N80W

↓ dip 7°N N70E

✓ ~~76~~ 35 58 20.8 + 23'  
92 37 44.0 -

hiked up drainage to Rocky Creek  
behind old homestead.

cfc in creek b/t Op and Of; possible  
Or found as float-type 'bed' below

Location Rocky Creek, Marshall Date 08.02.07Project / Client STATE MAP 07-08

E. SMART

Scale

✓ ~~77~~ Boone rex in tributary  
35 58 10.8  
92 37 39.5 ± 30'

✓ ~~78~~ 35 58 13.2 ± 33'  
92 37 39.7 -

top of apparent ~~MS~~ MS

any crinoidal granitoid w/ sawtooth  
blebs; possibly the thinnest St Joe  
Section to date. also no sighting  
of Madison but w to crinoid  
to call latterly... will ask  
others in office upon return...

\* additional samples taken the area  
contain pyrite and greenish shale-  
micrite clasts... sooooo. prob MS

79  
✓ ~~79~~ 35 58 17.2 ± 35'  
92 37 41.5 -

walking back down stream  
first apparent Silurian ROX  
white - light pinkish fine-mid gr. XH  
pale-grnst. Shugart texture  
possible St Clair

Location Rocky Creek Area, Marshall Date 08.02.07Project / Client STATE MAP 07-08E-Smart

81  
 35 58 18.9 + 28-  
 92 37 40.2 - 28-

exposure of Msj (and absent) in drainage area. Ocrop thickness is 25-8" until c/c w/ MB; white shugary m-coarse x/lite rax (described in pt 80) are below

Msj is grey-greenish grey crinoid w/ greenish shaly/micritic "clasts" and surfaces; red "iron" blebs

Me above the c/c is cherty dimst; about 5-8" exposed over ledge (presumably it is also on hillside above)

82  
 35 58 25.4 + 19-  
 92 37 49.6 -

c/c Op/Os on hill side; probably boulders that slumped down slightly, but very decalcified outcrop. sections across the creek are level and appear in place perhaps veg covers to an extent

Location Rocky Creek Area, Marshall Date 08.02.07Project / Client STATE MAP 07-08E-Smart

Scale

82  
 35 58 31.8 + 19-  
 92 38 2.4 - 19-

Rocky Creek, looking for Asp c/c w/ Op. found some Asp as float! w/ Op in creek bed.

Joints on Op are nearly rectangular  
 N80E, N20W also N50E  
 N/S N85E

83  
 35 58 43.1 + 55-  
 92 38 25.4 -

Asp in creek bed. Apparent dip is opposite direction of previous Platina beds.

Spring above ~ 20'

Location MARSHALL QUAD, BEAR CREEK Date 8.6.07

Project / Client STATEMAP 07-08

E. SMART

85 ✓  
 35 57 11.5 + 19'  
 92 42 49.2 -

Down from cabin; Stacy Hole  
 c/c b/t ~~M<sub>S</sub>~~ and M<sub>B</sub>; M<sub>S</sub> in  
 creek bed.

- M<sub>S</sub> is light grey to pink; crinoidal  
 lnst
- M<sub>B</sub> is fine grained-micritic; light grey  
 cherty lnst.

86 ✓  
 35 57 12.0 + 18'  
 92 42 54.5 -

Apparent base of M<sub>B</sub> in creek  
 [crossing to bluffs @ falls]

Joints

N 37 E

86 ✓  
 87 ✓  
 35 57 14.6 + 36'  
 92 43 15.9 -

"Hoodoo" area; Hiked into Hollow  
 M<sub>B</sub>

Location BEAR CREEK; Marshall Co Date 08.06.07

Project / Client STATEMAP 07-08

E. SMART

Scale

87 ✓  
 35 57 12.3 + 18'  
 92 42 44.6 -

First probable Sil rox in creek  
 bank:

f-m xtl; light tan's grey-pink  
 just downstream are f-m xtl, fine  
 pinkish lnst w/ calc vugs.

probably Lafayette and Brassfield

88 ✓  
 35 57 17.4 + 18'  
 92 42 38.7 -

c/c b/t M<sub>S</sub> (pink fam vtl  
 w/ crinoids; iron  
 blebs)

and Sil rox

→ interbedded (thin beds) of  
 f-m xtl, light pink-pink w/  
 red blebs; one xtl bed (greyish) also  
 observed. Some calc. Altd vugs.  
 Similar to bluff @ Grinders Ferry.  
 probably Brassfield.

Location MARSHALL Quad Date 8.7.07Project / Client STATE MAP 07-08✓ E. Smart

89 35 59 18.6 ± 22'  
92 42 37.1

- Sil Rox along NPS road down  
to bear Creek / BNR area

only 1-2' exposed.

grey w/ mottled appearance, red  
blebs, vf - f xtl

- c/c w/ Msr is a in the  
bend of the road ~ 10' away  
Msr is darker red, or no. dark  
variety

- Sil exposure continues ~ 10' down road  
(2-4' exposed) f-m xtl pinkish; interbed.  
w/ light grey-white m xtl

total exposure along road continues  
~ 30' along road; about ~~15-20~~ thick  
continues down road

next curve in road ~ 40' xtl

90 35 59 17.6 ± 50'  
92 42 41.1

last exposure of sil on roadside

Location MARSHALL Quad Bear Creek BNR Date 8.7.07Project / Client STATE MAP 07-08✓ E. Smart Scale

90A 35 59 19.3 ± 18'  
92 42 40.7

continuing down along road,  
still seeing Sil Rox; confirming  
~ 40' thickness (all along nose)

91 35 59 17.8 ± 18'  
92 42 15.8

section of sandst. vf-far, weath  
reddish (iron stain / cement) fresh  
is lit tan-buff w/ reddish areas  
well-sorted

looks like Batesville, but  
Dsp makes more sense

Dip: 10° <sup>top</sup> N58E ; <sup>below</sup> 11° N45E  
40

Joints: N17W N10E  
N30E N47E E/W

some deformation bands noted  
through out. possibly some small pipes

→ N34E 13°W @ pt

Location MARSHALL Quad Date 8.7.07Project / Client STATEMAP 07-08✓ E Smart

(92) 35 59 12.1 + 20'  
92 42 13.5 - 20'

first Op in place along roadside

weathered white - lt grey,  
wf - micritic lmst

exposed in ~ 8" portions (3-4 exposures)  
continuing up the road ~ 10' to  
corner

• photo # 21 (after tractor photos)

oops... all additional exposures  
in the photo, up road from the  
GPS point are f-m xl, white-  
pinkish of Op. some bryozoans  
and crinoids also noted

~ thickness of Op is ~ 10' - 15'

Op section ~ 50-60' covered b/t

"top" of Ospnd of pts 91

Location Marshall Quad Date 08.07.07Project / Client STATEMAP 07-08✓ E Smart Scale

(93) 35 59 10.6 + 23'  
92 42 15.7 - 23'

first top of Msd in place  
along the road. → <sup>shows shaly</sup> pinkish surf.

weathered tan w/ phosph nodules  
fresh shows for sand, qtz crenite  
~ 6-12" exposed @ point

• photo 22 + 23

M<sub>55</sub> (float <sup>apparent</sup>) is greenish (shaly)  
crinoidal packst - grnst.

(94) 35 59 41.0 + 19'  
92 41 53.0 - 19'

tiny knob of Op exposed in  
the road. ~ 2' x 2'

• photo # 30

looked like Bone in the grade  
all the way down from the bus;  
no other exposures

"just upstream" the bluff is ~ 50'  
of Op up to part of Osp. waterfall



E. Smart

95 35 59 43.6 + 27-  
92 42 4.3 - 27-

d @ first exposure of Op @  
Bear Creek / BNR Confluence  
most of creek bed covered in  
gravel, point taken @  
~10-15' outcrop up the W side  
of the Bear Creek bank

smaller oc on the E side  
has only ~1' of rock exposed  
with beds dipping upstream  
dip 10° S, N 75° W strike

this oc extends ~20-30 yds  
along the bank back upstream

96 35 59 32.1 + 17-  
92 42 1.9 -

Op beds dipping opposite direction  
w/ st down (stream) from this point  
(~10') R.H. is up a small  
narrowed area where occasional rocks  
are in contact, white-ish, crinoidal

E. Smart

Scale

96 cont. for "trough" hollow area

R.H. was exploring looked  
pretty odd Op-essue vox

there were Op-essue vox...  
werid. may return another  
day. Should make contact  
w/ July this afternoon

REVISED DIP @ GPS pt  
N80W 11° NNE

MUSE strike 13° SE other side take  
on strike back to top

97 35 59 25.1 + 28-  
92 41 58.2 -

walking upstream still, pt @  
small oc of Op in creek bed  
~6' (lengthwise) x 4" (height)  
well rounded, well sorted g/c granite

Nice, ~80+ ft, of complete exposure  
on east bank of creek

cherty nodules of Mb visible on top  
then apparent massive for all the  
way down. lots of reg in the way

ES photo #31 boulder @ bottom is Op!

RA showing "chunky/smooth" etc on bluff

Location Marshall Quad, Bear Crk Date 8.7.07Project / Client STATE MAP 07-08✓ E Smart

98 35 59 23.9 ± 19'  
92 42 13.5 ± 19'

JOINTS

N85W, N60W;  
N55E N25E

Osp in creek w/ stinky poopoo...  
fg, weathered white white-orange  
on fresh; qtz onite

tractors working @ Crane Bottom  
above

✓

99 35 59 25.5 ± 30'  
92 42 21.7 ± 30'

outcrop of Op on bank ~10-15"  
exposed

(ditto) grey vfg - micritic lsst, thin beds

✓

100 35 59 24.6 ± 38'  
92 42 28.3 ± 38'

etc of Of and Op on hillside  
just down stream from cave

bluffs are massive; visible though  
vegetated from creek.

Location Marshall Quad, Bear Date 8.7.07Project / Client STATE MAP 07-08✓ ESMART

Scale

101 35 59 25.9 ± 32'  
92 42 28.7 ± 32'

etc (above cave fencing and  
through under brush/veg)

Of / Oc / Sil contact

of taken below

Oc is ~1' exposure of greenish  
shale below Sil

Sil is massive bluff approx  
~20-30' to top; that's all I can  
see. Tractors hauling across the  
way.

lots of briars to this contact.

R. H. took a sample on the  
way up (float) that was  
1/2 pink, fgr xtl w/ vfg glass throughout

Location MARSHALL QUAD, BEAR CREEK Date 8.8.07Project / Client STATEMAP 07-08

E. Smart

102

35 59 21.7 + 44'  
92 43 09.9 -

Adjacent to Dry Creek, at the end of the campground, remnant (poss) of old RR GRADE.

Op rock incut, ~5-8 ft height, ~15' yards long

at pink-white matrix. 1 mat

103

35 59 19.5 + 23'  
92 43 6.3 -

walking "apparent" downstream in Dry Creek, first Op rock in creek; float here, but boulders on down.

possible undulations of Op in Dry Creek will return on another day. left to meet July.

Location MARSHALL QUAD, BEAR CREEK Date 8.8.07Project / Client STATEMAP 07-08

E. Smart

Scale

104

35 57 22.2 + 18'  
92 42 22.7 -

July shuttled us to the boundary of his property. Just down from the cabin, it's visible on the hill. Point taken where Sil rock (w/ <sup>vfg shly sst, greenish brown gr</sup> ~~carbon below~~ ~2' exposed) meet the Bear Creek

Sil rock is ~10-15' thick

↳ w/ gr-micritic <sup>lime</sup> wackestone  
(~8') massive bluff face w/ wavy thin beds above (~5-6'); high fire... fossils are mostly brachiopods... ~~some bryoz.~~

• photo for and some by R. H.

Wavy beds form ledge; beds are dipping down into creek upstr.

→ at point increasing to ~13° downstr (N45E) traced downstr rock look

dike Platten. maybe fossil is <sup>OK?</sup> ~~has swagay text~~

Location BEAR CREEK, Marshall Co Date 8.8.07Project / Client STATEMAP 07-05

Esmant

105 35 57 24.5 + 19'  
92 42 29.8 -

Op rock downstream (benches) still  
Oc in creek bed, only ~1' exposed

106 35 57 36.0 + 16'  
92 42 47.1 -

Small exposure (10' x 8') of Op  
in creek bed, partially submerged  
very near where July told us the  
stream had eroded his field;  
lots of new cotton woods are  
growing; also just N of (almost under)  
where pavement crosses the creek.

107 35 57 41.6 + 19'  
92 42 39.8 -

Op exposed downstream, (power lines  
still in sight)

N20W 8°ENE

~1' exposed up out of creek  
good gravel bars around.

Location BEAR CREEK, Marshall Co Date 08.08.07 53Project / Client STATEMAP 07-08

Esmant

Scale

108 35 57 47.1 + 30'  
92 42 32.1 -

After lunch, 30-40' Op  
ledge/bluff, small cave  
and big cat prints!

ONE pass shaly lime bed within

109 35 57 47.1 + 30'  
92 42 32.1 -

35 57 53.5 + 20'  
92 42 25.7 -

Op sandst! exposed ~70 yds  
along the bank (in the creek  
and ~2' thick).

110 35 57 55.8 + 23'  
92 42 20.6 -

- Bizzaro world! point taken where

Op meets a grey micritic dmst. (~2 in  
to 3')

However there is ~10' of additional  
guts arenite sand (looks like 'conglomerate'  
above that. texture, pebbly, washed)

SUMMS

N80W

N12E

There looked to be mud cracks and  
wavy bedding on the lime. →

Location BEAR CREEK, MARSHALL Date 08.08.07Project / Client STATE MAP 07-08ESMART110 cont'd

the rock above the sand core  
Op. asque, grey lsst → shaly lsst  
(greenish); interbedded thin-thick  
beds (thinner shaly beds, greenish)  
grey lsst w/ iron (pyrite?) nodules  
(~1-3mm in size), total exposure  
in bluff is ~30' thick.

some calc patties under cliff.

upon additional inspection, there  
are some very stromatolite surfaces  
on the "anorthite lsst"

• photo by R/H

also sand surface "slumps" over  
so as to terminate the "l. lsst"  
looks like it pinches out.

• photos 43+44 showing hammer head  
on lsst w/ angle of sand coming  
down from above. The lsst here  
is coarser gr (vf-f) w/ sugary texture

Location BEAR CREEK, Marshall Date 08.08.07Project / Client STATE MAP 07-08ESMART

Scale

110 cont'd lsst looks like it fins  
upward and is more  
micritic / mudst w/ calc veins (small)  
in upper portion before sand.

• add'l photos of contacts...

▲ simpl of "marching" by R. H.

111 35 57 52.6 ± 28  
92 42 17.0

samples of sand taken along  
creek bed (several in ~1' up)  
Some calc sandst, some dolomitic  
sands (high and low fire)

Really dolomites (sandy dolost)  
in creek bed, interbedded sandy  
areas where  $\text{Osp}$  is cutting  
down in! (D<sub>U</sub>H)

OE about 15-20' up  
from creek is the under

112 35 57 50.1 ± 17  
92 42 10.7

Op along bluff (cedar Bend)  
Op all the way back to Harris  
Hollow

Location BEAR CREEK, Marshall Date 08.08.07

Project / Client STATEMAP 07-08

E SMART

112 cont'd some  $Op$  @ very top of bluff... some pinkish areas ~30' up the bluff;

currently interpreted as ~50-60'

of  $Op$  w/ little  $Q$  @ top based on one "rounded" bed.

113 35 57 48.9 + 19'  
92 42 27.5 -

on the way out: stopped in the road side behind the old house and pond.

MxTL - coarse, pink - lt pink  $lms$ ;  $Op$  in road + <sup>outcrop</sup> on hillside below; approx thickness

is ~15'

114 35 57 45.6 + 18'  
92 42 32.3 -

contact of  $Mst$  w/ top of  $Op$  even saw some  $Mst$  float just barely up the road from 113. Some  $Op$  rex still appear in road  $Mst$  is on 1-2" oc in road cut

Location Road back from Bear Creek Date 08.08.07

Project / Client STATEMAP 07-08

Scale

114 cont'd ~30-40 yds from the GPS loc. There is an old spring w/ a trough sitting on black-tan  $fb$  site (eroded) shale [poss *Dchatanuga*] approx 4" thick then  $Mst$  above (w/ small greenish bed of shale 2" thick)

08.14.2007 BEAR CREEK

115 35 56 32.2 + 14'  
92 42 31.4 -

walked down creek from H65 bridge. Raft trip failed. It's hot.

Silurian rocks outcrop from creek bed more exposed further down. ~70 yds along creek bed

116 35 56 37.2 + 29'  
92 42 30.5 -  
thin bedded "slabby"  $Mst$  in creek bed. Crinoidal, w/ pyrite.

CHECK ATTRIBUTE TABLE!

Location BEAR CREEK; Marshall Date 8.14.2007Project / Client STATE MAP 07-08ESmart

(117) 35 56 41.4 + 7  
92 42 33.7 - 7

standing in creek; east bank has  
etc b/t MST and Boone. photo by R.H.

8.20.07

(118) 35 57 46.6 + 23'  
92 42 11.8 - 23'

Back along Bear Creek,  
driving along bottoms / creekbed  
where July brought us.

Outcrop, ~ 8' thick adjacent to  
gravel road. ~~Osp~~ Osp  
tan, f-m gr. well sorted sn+  
weathered grey ledges w/p. Hs

Location BEAR CREEK; Marshall Date 8.14.07Project / Client STATE MAP 07-08ESmart

Scale

(119) 35 58 4.5 + 12  
92 42 10.8 - 12

Only Op in creek bed available  
to inspect. Passed lots of  
overgrown bluffs along the way  
that looked like Osp; but  
some of those beds are thin  
bedded Op. Exposure was ~ 1-2'  
on creek bed. North side of  
Bear creek shoe.

(120) 35 58 12.9 + 17  
92 42 24.7 - 17

Standing on gravel bar where  
creek bends sharply to my right  
apparent Op bluff ~ 15-20'  
thick; med-thick beds of lms+  
w/ small (~ 1' thick) bed of  
shaly lms+ near base. R.H.  
took a sample of shaly

Location BEAR CREEK Date 8.21.07Project / Client STATE MAP 07-08

(121) 35 58 22.6 + 31'  
92 42 27.6 - 31'

etc of Op and Of in drainage  
closing in on Patterson bottom

(122) 35 58 23.8 + 25'  
92 42 32.4 - 25'

solid Op above the fork  
as shown on previous map

(123) 35 58 22.3 + 40'  
92 42 39.2 - 40'

basal msnd on bank of creek  
w/ Ms

(124) 35 58 21.1 + 40'  
92 42 29.9 - 40'

etc of Op and Of in small  
bk of drainage.

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

(125) 35 58 20.3 + 18'  
92 42 17.5 - 18'

Op data pt near Patterson  
bottom. on the way out for  
the day. Grove of oak and  
hickory trees occupy the  
outcrops + 8' exposed in  
ridges ~~32~~<sup>33</sup>° dip to NE  
N40W strike

8.21.07 Good weather  
Sunny ~ 75°  
some breeze.

(126) 35 58 23.4 + 28'  
92 42 9.4 - 28'

Op outcrop ~ 5' thick  
N30E 13°NW - 23°  
Joints: N55E 10° - 16° just further  
N70W downstr  
N55E



Location BEAR CREEK, MARSHALL Date 8.21.07Project / Client STATE MAP

(127) 35 58 22.6 + ~~30~~ 9.1  
92 42 5.8 -

etc b/t  $O_p$  and  $O_{sp}$  in  
creek bed. pt taken in the middle  
of the stream. Sand is grey to tan  
w/ high  $Al_2O_3$ .

Mapped on previous as  $O_e$ .  
Joints are N45E N55W

Approximate length of exposure  
in creek bed is 40-60 yds

(128) 35 58 22.6 ± 17  
92 42 00.6 -

etc of grey micritic lsst w/  
white-tan dolomitic sands. well  
cemented greenish similar to  
 $O_e$  @ Bear Creek. no worm tubes  
as seen in previous  $O_{sp}$ .

~~N50E~~ 13° W  
N20E  
w/ water surface

Location BEAR CREEK, MARSHALL Date 8.21.07

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

(129) 35 58 28.1 ± 25  
92 41 59.3 -

N50E 13° NW

along the bend a large bluff shows  
beds dipping back into the river  
dip is taken on an  $O_p$  surface  
just ~ 15 yds down stream is  
an apparent etc of  $O_p$  and  $O_f$ .  
only about 1-2' of  $O_p$  exposed  
w/ ~ 10-15' of  $O_f$  exposed.

(130) 35 58 31.0 ± 21  
92 42 5.9 -

$O_p/O_f$  etc, dip has <sup>apparently</sup> changed

$O_f$  has crinoids!

surface of  $O_p$  shows

N40E 7.5° SE

Location BEAR CREEK, MARSHALL Date 8.21.07

Project / Client STATE MAP 07-08

131 35 58 37.3 + 15'  
92 42 21.7 - 15'

sitting on the gravel bar across  
from a large bluff ~80' high  
(R.H. photos, ~50' to 'tree line' above  
smooth area)



extends 700 yds along creek

bluff's smooth ledge may be sil  
Op is thin bedded @ creek level  
Of Right above / behind first tree lvl  
~15' thick

highest tree line is probable Ms/s  
previous map shows thin cason shale  
associated w/ section here...

this is the area we first visited on Bear  
Creek recon trip. canoes and camping here.

Location BEAR CREEK MARSHALL Date 8.21.07

Project / Client

Scale

131 cont'd

R.H. climbed up up, stood behind  
a dead maple tree to find the  
etc. where Op ends (thin - thick  
beds up from creek) to find  
the etc w/ Of (massive face in  
~30-40' up from creek bed photos)

132 35 58 46.8 + 30' (22 after)  
92 42 21.3 - 30'

tried to hike up drainage after  
lunch, but it was overgrown today  
Saw the of outcrop on the way out  
hiked up to confirm. point taken <sup>on SW</sup> bank  
just below the exposure; is ~5' th.  
w/ more up on hillside, ~20' total.

Op in drainage to this point

133 35 58 47.4 + 19'  
92 42 16.5 - 19'

etc in creek where Op / Osp rocks are  
contact in creek. About 6-8' under water

Location BEAR CREEK, Marshall Date 8.21.07Project / Client STATEMAP 07-08133 contd

beds are dipping to the NE (est)  
 Osp is f-m gr tan-white w/black  
 fl and some shales, Op is grey micrite

134

35 59 4.5 + 22'  
 92 42 14.2 -

point taken on gravel bar across from  
 bluff on the N side of Bear creek.  
 this area was previously mapped  
 as Oe, but since the last point  
 (Op/Osp) we never saw evidence of  
 this (NO Oe anywhere) there appears  
 to have been some significant  
 change to the channel location  
 as there are eroded soil banks  
 and downed trees all along this  
 one ~ from Bobblis knob to Crane  
 Bottom

The bluff is ~ 80' high. Carbonate rock  
 of Ordovician, but trees conceal contacts.  
 Revisit in fall.

Location Bear Creek Date 8.21.07Project / Client STATEMAP 07-08

Scale

135

35 ~~58~~ 3.0 +  
 59 3.0 + 22'  
 92 42 24.3 -

on south side of bank ~ 8'-10' of  
 rocks exposed (mainly slumped + displaced  
 are grey dolomitic ~~beds~~ / sandy dolostone  
 R.H. climbed through veg ~ 30' up  
 to find "erosional contact" b/t  
 everton and saint pete

Oe

Osp

shugary / v. fine

point taken to be everton in creek  
 bed.

R.H. photos showing contact + Osp digging  
 down into Oe; samples also showing b/t  
 Oe is grey, shugary / v. ~~fine~~ sand dolostone  
 some peritidalitic to slightly (low fine)  
 Osp is white v-f gr (mod well-sorted)  
 mod micrite, now-low flz sorted

136

etc in creek bed b/t

Osp and Oe downstream

35 59 4.3 + 21'  
 92 42 28.9 -

N 65 E

7-11° dip ~~SEW~~

Location Bear Creek Date 8.21.07Project / Client STATE MAP136 contd

bluff along creek downstr  
from point is ~100' high  
will be good to view when leaves  
fall. ~~top~~ top look like  
smooth weathered Of like at  
point 131. it appears to form  
the top of the bluff, a waterfall  
probably cascades down here  
(~40-50 yds from GPS loc)

137

35 59 12.5 ± 22'  
92 42 32.8

walking along creek bed, found beds  
of <sup>very</sup> coarsely xtl crinoidal / brachiopodal  
redish <sup>grey</sup> limst. point taken where these  
Fennellian rocks overlie Op (micritic)  
in creek bed. etc is submerged in ~6"  
of water.

Op is reddish in water dries to grey w/  
red blebs.

Location Bear Creek Date 8.21.07Project / Client STATE MAP

Scale

137 contd

hammering on some Of (like) just  
~70 yds down stream from etc.  
there are tows of brachs in  
this section big over small ones  
almost grainstone; crinoids too  
but abundant brachs.

138

35 59 20 ± 16'  
92 42 16.4

middle of hay field Op just a  
few inches exposed.

139

35 58 31.2 ± 23'  
92 42 24.5

Driving a 'new road' out. just  
up [ ] from where we had  
lunch. The drainage is adj to the  
(131) road; we are on the S side of  
The drainage. There are small (<1'  
exposures along the road bed  
for ~10' thick, then beds along  
the cut are thin bedded, moss covered,  
grey-red bleby crinoidal f-coarse xtl  
limst. looks more like Msr than Of.

Location BRUSH CREEK, ZACIC Date 8.22.07

Project / Client STATE MAP 07 08

(140) 35 57 31.4 + 100.  
92 39 54.8 -

## Approximate Location of

~10-15' Blowing cave; Used to store  
above strawberries when Rail Road  
creek level (MNA) came through in early

20<sup>th</sup> Century. Cave is formed

in Op Joints N50W, N60E are  
joints in cave

→ kids obviously hang out. Most formations  
are broken, trash, fire pits and soot  
on walls; some horse trails above  
the cave hill; there is even a  
box spring resting on the ground!  
road crosses creek and comes  
right up to the cave. several bolts

(141) 35 57 31.9 + 65' (20)  
92 39 53.4 -

etc b/t Op and Op; followed 'harsetr'  
up onto hillside, looks like were  
just above the cave

Location BRUSH CREEK, ZACK Date 8.22.07

Project / Client STATE MAP 07 08

Scale

(142) 35 57 58.0 + 24'  
92 40 6.1 -

Smith Hollow Hike; pt  
taken @ exposure of Osp w/  
Op. There is a 'lense' ~.5'  
thick of the black-tan  
shale w/ shale bed of white-  
greenish sand (no fizz)

Visible Op is ~1-2' thick, grey  
microtic

• photo by R.H.

Osp is tan-puff w/ slight fizz  
w/ visible deformation bands  
1-2" thick grey

Outcrop extends ~40' long (15-20'  
wide)

One deformation band appeared  
to cut through Osp and Op above  
• photo R.H.

(143) 35 58 5.0 + 16'  
92 39 56.6 -

Got to the apparent 'flat' area of forks  
in Smith Hollow but it was too over-  
grown. Followed an old road out that runs  
adjacent to the drainage, ~~and~~

Location Brush Creek (Smith Hollow) Date 8.22.07Project / Client STATE MAP 07-08ESMAP143 cont'd

on closer inspection, R.H. found  
Op still above this point, but  
then Op was apparent higher  
up. ~10-15' above the GPS point  
(~ one contour) and ~20-25'  
above the creek (Smith) bed

The rocks here are Op (m-cxtl)  
and some possible Ok (white  
white f-mxtl w/ <sup>crinoidal</sup>  
some larger calcite etc (wk-pk)  
<sub>stone</sub>)

Ok is about 5-8' thick; crystalline limestone

144 35 58 4.1 + 19' N60E  
92 40 11.9 - 30' N40W } Joints

Lunched here where Osp pgs  
up in Brush Creek. Exposure  
extends about ~~60~~<sup>20 yards</sup> yards. Some  
warm tube covr. fine - med grain, med<sup>low to 2</sup>  
cemented (low fizz); tan/buff - greenish  
white, well sorted subround - round.  
some creek-washed surfaces are very white  
no significant dip

Location Brush CreekDate 8.22.07Project / Client STATEMAPESMAP

Scale

144 cont'd

There is a transitional 'layer'  
about 6" thick where sandy lime of  
is present then Op forms small  
"3-4" caps on top of the Osp.

Osp continues down along the original  
est 60 yds but has greenish gray  
color in fresh sample w/ high fizz

Gravel mixing is apparent in the area

145 35 58 32.7 + 30'  
92 40 37.0 - 30'

USGS gauging station at  
springs. holding tanks, pumps  
for water supply! Also, wooden trestles  
for old RR bridge  
across creek

146

Location BNR w/ Angela Date 8.27.07Project / Client STATE MAP 07-08SS MAP

Afternoon hike down to <sup>HWY 65 Bridge</sup> ~~SHINEEYE~~ <sup>GRINDERS FERRY</sup>  
BLUFF looking to find the contact  
between the Brassfield and the  
St Clair. There appears to be  
approximately  $\rightarrow$  20-30' of the  
Brassfield (dark red <sup>(RH = 59)</sup> - pink w/ blebs  
up from river m-coarse xtl w/ chrinoids)  
river calcate vugs

Contact w/ St Clair is said to  
be stylolitic but we did not see much  
of this (pos for much veg debris)  
but the Brassfield appears to be  
more pink, less red on the way up  
 $\rightarrow$  (~40-50' from river <sup>(one ceador on etc adi tone that is down)</sup>)  
the St Clair is possibly w/ less  
blebs, ~~it~~ but goes completely white  
offine - med xtl, branches ~ 30-40'  
up the river edge. ~5-8' <sup>thick</sup> before  
the sand.

(46) 35 59 08.3 + 17.  
92 44 40.9 -

Location BNR field w/ H.C. Date 8.27.07Project / Client STATE MAP 07-08F. Smart

Scale

(46 contd) point taken standing on  
Silice rock in creek bed where ~2-3"  
calcate/snd (Mass) vein runs N80E  
through the Sil; where sil in river  
bed is covered by Qz is ~35' upstream  
various thicknesses of sand filled veins,  
joints and/or solution cavities are filled  
w/ apparent Mn and are ~~are~~ visible @  
this location and down stream @ SHINEEYE  
snd veins are var cemented and range  
in thickness to 1/2" to mm in size..  
WAY COOL, runs through Sil @ Shineeye  
(and into Sbr @ bluff there j in See here  
@ Grinders Ferry  
Sand in veins is vf-f gr w/ black  
specks, well rounded, well sorted.

Location Field w/A.C. Date 8.28.07  
 Project / Client STATEMAP 07-08

(127) 35 59 52.7 ± 19'  
 92 41 22.2

(pt taken in creek across hembend/oc)  
 BEAR CREEK BEND INTO BNR. Outcrop  
 25-35' thick exposed for ~50 yards  
 (vegetated up the hill, total <sup>thickness</sup> exposure is  
 ~50-60' thick)

interpreted to show the contact (photos by A.C.)  
 b/t  $O_e$  (black dolost + sandy dolost) and  $O_{sp}$   
 (well rounded/sorted sandst).  $O_e$  is ~8-10' thick,  
 $O_{sp}$  is ~25' thick.  $O_p/O_{sp}$  is covered  
 but  $O_p$  is ~30' up from creek.

$O_{sp}$  doesn't 'cut' down into the  $O_e$  as well  
 as it does in some places... but is similar  
 to other interpreted  $O_c$ 's in Bear Creek

there is a small spring coming down the  
 slope ~30 yds from the point, where  
 R.H. climbed up to ~~sp~~  $O_{sp}/O_p$  etc

Location LANDIS CURVE: Field w/A.C. Date 8.28.07<sup>77</sup>  
 Project / Client STATEMAP 07-08

Scale

(148) 35 56 12.9 ± 22'  
 92 30 45.8 - 22'

good  $O_f$  on Hwy 74 (adj to long  
 Creek?)  
 white-pinkish w/ blebs; coarsely  
 X'te w/ barrel crinoids;  $O_{sp}$  extends  
 ~50 yards along road; only 2-4' thick  
 [R.H. thinks he sees  $M_{sp}$  float]

also has some greenish areas (possibly  
 weathered w/ silty clayish material) some  
 brachiopods also noted.

behind the hill w/ bee boxes...  
 looked for the upper etc w/ sil or  $M_{sp}$  rock  
 but could not find it today.

(149) 35 56 16.3 ± 18'  
 92 30 51.1 - 18'

top of  $O_f$  on hill side (point taken in road  
 behind up from gate)  
 $O_f$  was spotted in the road cut along 74  
 road continues up. Boone ~~the~~ rubble above

(150) 35 56 17.3 ± 18'  
 92 30 53.9 - 18'

top of  $O_p$  where jeep was parked.



Location Harriet ANDIS Quad Hwy 74 Date 8.28.07

Project / Client \_\_\_\_\_

(151) 35 56 22.0 ± 23'  
92 30 58.0 ± 23'

- photos by A.C.

Osp (white-tan well rounded (sarcinoidal) sandst)  
etc. w/ Op

point taken @ large road cut where Osp  
"domes up" total thickness of cut  
is ~50' x 50 yards

at most, Osp is ~8' thick but  
pinches out @ ends of cut where  
dip in Op ~~is~~ beds are changing

etc is massive Osp w/ grey thin bedded  
Op above (photos by A.C.)

possible ~~dry~~ spring

(152) 35 56 25.1 ± 19'  
92 31 4.2 ± 19'

etc of Oe / Osp along Hwy 74

Osp appears to cut down into Oe. top  
of Oe is sugary lines tone

- photos by A.C.

Location Harriet ANDIS Quad Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

(152 cont'd) Osp top dips into the road toward  
151 and bottom is up @ 152  
18° dip to the E (R.H.) N/S strike  
70° E / NE

(153) 35 56 37.4 ± 20'  
92 31 29.9 ± 20'

Walked east along Hwy 74 road cut  
MB to point. GPS taken where  
Ocarbon is exposed (~1' thick) w/ Msnd  
(~1-2' thick) and Mss (~5' thick) and  
MB (~5-8' thick) above

looks like road cut ends @ bend  
in the road to my right (just before  
house. have  
descend the  
street)

~~Silt rock exposed to that point~~  
Eventually Of rises up (~15-20')

Op / Of etc is exposed (see next pt)

(154) 35 56 36.1 ± 20'  
92 31 26.1 ± 20'

heads up  
digitized Op / Of etc @ end of Road cut.

Location Hwy 74, field w/ A.C. Date 8.28.07

Project / Client STATE MAP 07-08

(155) 35 56 37.7 ± 17'  
92 32 38.5

Small ~ 2-3' or along Hwy 74, adj to  
Big Creek orig map has ~20-40' of  
Sil rock but we can not see any of it  
only ~~of~~ of / Mss etc w/o  
Mend! there is also a small hollow  
on this South side of the  
road next to a school bus  
sign.

(156) 35 57 57.7 ± 18'  
92 29 5.4

We gained access to BIG CREEK through  
a private gate on WILD CAT SPRINGS.  
we drove up through creek bed and  
upon to some slopes trying to  
find access to Hwy 14 but didnt  
find it. the point is taken @ of  
saw some cool Osp pipes @ the  
family's camp ground.

point taken where small knob of  
Op is visible in field.

Location BIG CREEK, LANDS Date 9.28.07

Project / Client STATEMAP 07-08

Scale

(157) 35 58 0.2 ± 20'  
92 29 9.4

pt taken on road back down  
from the Op knob. I am  
sitting on a big (~3' dia) sandst  
pipe in Osp. this is the  
last exposure of Osp at this  
hillside.

WAY cool sandst pipe; another  
~ 20 yds down from mine

• photos by K.H. and A.C.

(158) 35 58 13.2 ± 20'  
92 29 16.0

pt taken in road where Osp surface  
is visible. Prob the top of Osp, missed

the Oe / Osp etc b/c there is just  
too much rubble and float and  
veg covering the "road cut" Op knob  
in road is ~ 20 yds uphill.

(159) 36 58 13.1 ± 20'  
92 29 18.3

A.C. took a GPS @ Op knob

Location Big Creek Date 8.28.07Project / Client STATEMAP 07-08

(160) 35 58 14.1 ± 17'  
92 29 22.4

of cut in road.

8.29.07

(161) 35 59 17.7 +  
92 43 4.8 - 26'

Dry Creek Hike (w/A.C.)

point taken where Op lines the creek bed (~5-10' thick) and is up the bank. the Of etc is ~8' up the oc. Op exposed on the oc is ~10-12' thick.

R.H. found a great raynoceous just upstream in Of float.

- Joints taken ~30 yds from pt in Op  
NSW 180E, NSSW, NSOW, N70W  
NSS'E, 65W

Strike: EWSSAC.  
dip: 6SSW

Location Dry Creek, Marshall Date 8.29.07Project / Client STATEMAP 07-08

Scale

Hiking down some from 161 the shaly sections noted in upper Op are present along the bank / bed etc; (limonite calc.)  
• photos by A.C.

(162) 35 59 13.6 ± 30'  
92 43 9.7

pt taken where Of rex contact the creek bed

coarse xtl, pinkish grey, stylolitic soil present in weathered surface

there is about 6" of Op exposed (below Qal) where crack meets BNR, but any Op in river is under water; rocks along bank (North bank of BNR) are Of

(163) 35 59 24.8 + 20'  
92 43 11.0

pt taken where Of rex apparently 'cut' down into Op. small shaly, sugary bed pinches out below.

• photos by A.C.

Location Dry Creek, Mason Date 8.29.07Project / Client STATE MAP 07-08

~~167~~ 35 59 31.1  $\pm 40'$   
92 43 11.0  $\pm 40'$

N65W 70SSW

N80W 50SSW

just up stream: (just adj to Hwy 233)  
road is  $\approx 20'$  above usJoints N/S N80W  $\approx 40-50$  yds to LW bridge

~~170~~ 35 59 35.8  $\pm 35'$   
165 92 43 17.8  $\pm 18'$

Op/Of

pt taken where a few inches of  
Op are exposed below Of, mostly  
covered by Gal. Gilbert pop sign  
is visible near road.

~~171~~ 35 59 44.0  $\pm 18'$   
166 92 43 28.0  $\pm 18'$

Op are exposed in creek bed

$\approx 25' \times 12'$  exposed, crusty surf.  
surrounded by  $\Delta$  or

~~172~~ 35 59 53.1  $\pm 20'$   
167 92 42 35.6  $\pm 20'$

Of in creek bed and up on bank; Oc  
on bank is  $\approx 15'-20'$  thick

Location \_\_\_\_\_

Date 9.4.2007

Project / Client \_\_\_\_\_

light Rain  $\approx 80'$ 

Scale \_\_\_\_\_

~~168~~ 35 58 44.1  $\pm 22'$   
92 27 36.3  $\pm 22'$

pt taken on Hwy 27 Roadcut where  
Boone / St. Joe etc hits the road. Ms/Mo  
total oc is  $\approx 18'$  thick w  $\approx 5-8'$  Ms  
and  $\approx 10-15'$  of Mo (stood on S side of  
road to get point)

within this cut there are two small  
faults  $\approx 8'$  apart. displacement on  
the most western (left-most) fault  
is  $\approx 1-2'$ . the easterly fault shows

$\approx 6"$  of displacement, fault is  
visible through MB and Ms beds  
Orientation (RH)  $\approx N50^\circ E$  down  
dip to NW (down dip to N!)

- also, spotted another one  $\approx 20$  yds  
to west along bend in the road  
still  $\approx N70^\circ E$  w/  $\approx 1-2'$  displacement

(vertical faults)

Ms appears to be one more massive  
turning to greenish grey.

(169) 35 58 46.1 + 16'  
92 27 42.0 - 16'

etc b/t Op and Of. I am standing  
down in the ditch beside the road.  
etc is eye level ~~at my feet~~.

21' of Of exposed Op at my feet.

(170) 35 58 45.2 + 25'  
92 27 41.2 - 25'

walked up to meet R.H. on hillside  
to another op / Of etc there  
is a pond below us ~ 15' down  
its platform all the way down

Of exposure is ~ 13' thick

upper etc are exposed w/veg.

(171) 35 58 44.8 + 19'  
92 27 46.6 - 19'

continued up the hillside always  
looking for upper etc w/ Of.

pt taken where m-coarse xtl me  
part w/ crinoids, brachs and some  
greenish blebs is outcropping along

(171 cont'd)

the dirt road just w of powerline  
pinkish whiteish to lg gray w/ pinkish  
"bobs" texture is ~ waka-pink.

think its Of w/ MSJ esqe qualities

R.H. wanders Silurian

there is a small knob of Mb  
~ 15' up the road from this  
point and R.H. frs pyroclastic  
MSJ fragment (very green)

(172) 35 58 46.2 + 22'  
92 27 44.5 - 22'

O.K. we're orama. pt taken  
where looking South. Of is on  
my right Op is to my left

"fault" taken to trend N80W  
down dip to NW

(173)

Location LANDSD. HWY 27 KC Date 9.11.2007Project / Client STATEMAP 07-08(173) 35 58 49.3 ± 20'  
92 27 44.6pt taken @ Op / Op etc on hillside  
along the N side of the Hwy.Op beds in S road cut appear to  
dip to the NNE. R.H. took  
dips on the Op beds near this  
pt showing N10E 8-10° ESE(174) 35 58 51.1 ± 16'  
92 27 46.7etc @ Op / Msj. rocks look  
(some very similar (pinkish grey xtlms)  
surface) except for bedding and weathering(23<sup>exp</sup>) Msj is thin bedded, more crinoids w/  
fine-m xtl and grey, some p. white(23<sup>exp</sup>) Op is massive, rounded w/ lichens  
slightly coarser xtl; generally more  
pinkish

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

(175) 35 59 00.6 ± 25'  
92 28 2.3etc of Op w/ some mysterious  
coarse xtl, pink w/ some white calc  
veins and veins...weathering looks like op w/  
visible x-bed and up ~~to~~ from the  
etc there are rounded (weathered) w/  
lichen @ ~ 8-10' up on the hillsidepossible fault surface visible here  
or maybe another area whereOp is cutting down into the Op. <sup>though</sup> most surf  
is planar

Op type rocks are ~ 20-25' thick

- Dip N of fault N20E 6° NE  
taken @ road to Shepard of the Ozarks (Shepard  
Rd)

Op etc is ~ 15-20' up on hillside

- Dip on E side of fault is N50E 11° NW

etc appears to be welded @ this dip loc.  
also dip along fault area.

Several photos by R. Ho (Op has thin bedded, under bed of a-3" shales)

176 35 59 8.1 ± 18'  
92 28 25.9

pt taken where Osp / Oe etc rises at road surface. There is a small drainage to the West of the point and Osp rises to (~5-8') steady or along road cut until a sudden rise in Osp ~~continues to the~~ appears to truncate along Oe bed.

and deeper gorge along N side of road R. If want down in creek, all Osp

Osp has the small ~6" bed of <sup>green</sup> shaly sand. ~~sun has come out~~

177 35 59 9.4 ± 17'  
92 28 38.6

photos by R.H.

fault rocks near vertical again

pt taken @ sudden rise in Osp etc w/ Oe is ~15 yds due W of trap point. (sandy dolostone)

Osp exposed is ~25' thick, massive

Oe continues to rise upon around in road to >10' etc is undulatory w/ some cherty

178 35 58 41.7 ± 15' cloudy  
92 28 54.4

pt marks an overhang (w/ lots of graffiti). lower portion of the exposure is Oe (~5-8' thick from base of the road) w/ Osp cutting in (may appear to truncate some Oe beds) top of Oe is blackish (grey w/ fresh) dolostone w/ floating sand grains

Osp is ~35' thick to top of ledge (massive w/ some beds on weathered surface worm tubes, well rounded, sorted, qtz cement)

Small cabin on S side of road, bridge over creek (big?) to the east.

179 35 58 46.1 ± 50'  
92 28 49.7

photos by R.H. Maidenhair ferns

Oe / Osp @ waterfall east (and on S side) ~~of~~ of bridge

greenish cherty (photo. ferns + etc) calc veins

Osp ledge is ~15' to top of visible ledge  
Oe is ~20' down to dirt road (peck over ledge is ~30')

Location CANDISO, Hwy 14 oc's Date 9.5.2007

Project / Client \_\_\_\_\_

180 35 58 48.3 + 18-  
92 29 4.8 - 18-

coming up along Hwy 14. First  
exp of Op above Osp. Contact  
is not quite visible, only assumed.  
we can see "top" of Osp just  
around the bend in the road  
below the old house.

181 35 58 45.4 + 15  
92 29 24.0 - 15

Raining  
pt taken in  
deep

first exposure of Op is in culvert  
area ~ 30' back from point. Contact  
w/ Op is prob ~ 50 back covered by  
grass.

first oc of Msj is ~ 50 up from point

182 35 58 45.4 + 30'  
92 29 26.5 - 30'

visible Msj w/ phosphate pebbles  
etc is mostly covered but there  
is evidence of Op to this pt.  
conical  
open flatter w/ e nautilus id pass 21?

Location HARRET / LANDIS Date 9.10.07Project / Client STATEMAP 07-08

Scale \_\_\_\_\_

from pt 16

183 35 58 49.2 + 34'  
92 30 6.4 - 34'

pt marks (probable) etc of  
Mss and Ms. Exposures here are  
small (2' x 3') and thin (~ 1-2" thick)  
Mss is thin bedded, grey-pinkish  
crinoidal lmst; some iron/pyrite evidence  
micritic  
Ms is grey, shaly texture  
we just pulled down wildcat sp. RD

pt 17

184 35 58 46.4 + 34'  
92 30 5.6 - 34'

standing where last evidence (float)  
of Mss is visible in road ditch. Top  
of Op outcrops ~ 1-2' thick.

etc w/ Op is visible ~ 35 yds down in  
road. 35 yds down is a pt in Ms

185 35 58 44.6 + 17'  
92 30 6.6 - 17'

etc of Op / Op

Op is pinkish w/ barrel crinoids  
Op is thin bedded micrite on way down

Spring water  
is cloudy today  
big dead snail



Location HARRIET / LANDIS Date 9.10.07Project / Client STATE MAP 07-08E. Smart

186 35 58 37.2 ± 50°  
92 29 55.8

pt marks the spring (cloudy, stinky)  
where Osp/Op is exposed

Osp is ~5' thick w/ Op above <sup>(~25' to top of ridge)</sup>

~5 gal - 10 gal pm

187 35 58 39.3 ± 24°  
92 29 41.3

pt marks first exposure of  $O_e$   
knob in the road. the unit thickens  
down to where we parked the jeep  
by the outcrop of  $O_e$ .  $O_e$  is  
~5' thick then covered by veg.  
driving over, we followed the

Osp/Op etc then suddenly it  
was all covered by veg.

R.H. climbed up the hill where,  
on the same level Op turns into

Osp. Osp/Op etc upon hill looks  
like ~35-40' up

Location HARRIET / LANDIS Date 9.10.07Project / Client STATE MAP 07-08E. Smart

Scale

187 (cont'd) pt is probable location  
of a fault. R.H. says rocks  
dip ~6° into the face of the hill  
(WNW) there are Osp floats  
along the road w/ deformation bands.

188 35 58 39.2 ± 37°  
92 29 39.0

$O_e$  coming up out of road visible  
 $O_e$  is ~5' thick. Need to come  
back to verify the Osp etc when  
leaves fall.

189 35 58 35.3 ± 25°  
92 29 35.4 ± 25°  
etc of Osp/Op.

possible 5D  
N15E 3°WNW  
very questionable  
surface.

$O_e$  is very greenish in fresh exposures  
weathered tan; worm tubes visible along  
road up.  
 $O_p$  is gray micrite.

Location HARRIS / LANDIS Date 9.10.07Project / Client STATE MAP 07-08E. SMART

(190) 35 58 33.0 + 19'  
92 29 37.3 -

in road etc of Op / Qp

9.11.2007

(191) 35 59 21.2 + 80'  
92 28 5.9 -

Shepherd of the Ozarks road  
LANDIS Quad,

Drove up the road, very few oc  
along the road saw a tiny  
nub of rock in the road, it was  
Op visible to this point the  
nub turned out to be

Mst. dark grey - redish here  
small exposure on E hillside is  
~ 1' thick; nub is ~ 6" - 8"

(192) 35 59 39.1 + 77'  
92 28 40.3 -

Wow! Op / Msd / Msi; No Qp

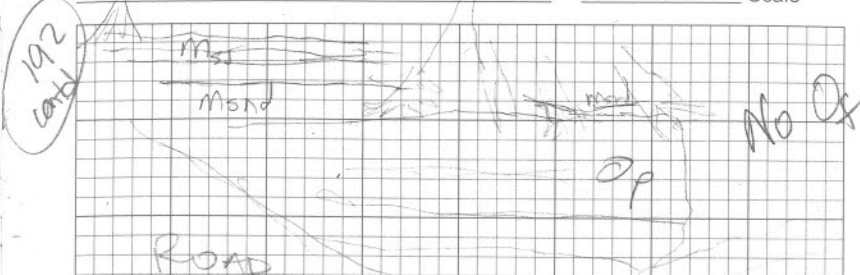
Op = ~ 5' exposed

Msn = 6-8"

Mw = 15' est to veg.

Location LANDIS Date 9.11.2007Project / Client STATE MAP 07-08E. SMART

Scale



wp # 26

(193) 35 59 29.8 + 19'  
92 28 40.5 -

etc of Op / Msd / Msi

Msd is var well cemented w/ phos pebbles  
porulitic texture; ~ 2-3" only  
can see Op down the bluff on bluff  
any Op is covered or absent as  
in 192. Msi exposed is ~ 2-3" then veg.

these are all new roads dozed in  
the last month or so by Shepherd  
of the Ozarks couldn't drive down  
b/c of loose debris on road

Beautiful Day.

E-SMART

194	35	59	31.9	+ 19'
	92	28	34.8	-

Op/Msj no snd visible here  
possibly ~1-2" of a vfg limy snd or  
sandy lime, but no good grains or  
phos pebs to determine if its snd  
or not...

wpt 28-29?

195	35	59	30.6	+ 24'
	92	28	33.2	-

ctc of Osp and Op.

Op is thin bedded at bottom, massive  
on topOsp is tan-greyish white, well rounded  
greenish or weathered w/ worm  
tubes.

could be ~15-20' thick from  
where we first noticed it, but  
haven't seen Oe etc.

Standing on ~~Op~~ Osp/Op etc, very  
thin distinctive l.l.

Scale

194 cont'd on hike up from 195  
we encountered a 2-3" oc of  
the sample from ~~195~~ 194  
it is more distinctively sandy  
but there are obvious micritic  
lime clasts (Op?) reworked  
in some beds, still vfg, no  
phos pebs

Dip on Op is N35E strike  
30 NW

196	35	59	59.9	+ 17'
	92	28	25.7	-

Edge of map. Standing in the  
filled in dam (a Shepherd at  
the Ozark (Soto) Rocks are Osp.

wpt 3

197	35	59	56.5	+ 72'
	92	28	24.7	-

Assumed ctc b/t Osp/Op, the ctc  
is mostly covered in this loc due  
to trail maintenance, power line +  
veg. but good Op oc are ~5' above  
the pt w/ Osp ~5' below the pt  
etc continued along the bluff where  
we had lunch below.

Location LANDIS QUAD Date 9.11.07Project / Client STATE MAP 07-08E SMART

(198) 35 59 59.7 ± 26'  
92 28 22.5

- standing on top of  $O_{sp}$ , butt sits on  $O_p$
- great  $O_p$  bluff / oc ~ 20' high to top dips  $60^\circ$  due SE (into bluff face) N 70 E  
6° SSE
- lots of  $M_e$  regolith / soils covering tops of ledges, still kind of muddy from rain.
- there is a great trail following the bluff; lots of scripture.  $\checkmark$

(199) 36 00 1.9 ± 136'  
92 28 18.8

- photos by R.H. (standing on first  $O_p$  bed) etc bt  $O_{sp}$  /  $O_p$  standing just above where we had lunch. great view out!

$O_{sp}$  appears to be undulating, as do  $O_p$  thin beds above.  $O_{ops}$  / just off the map. buzzards are coming for us.

Location LANDIS QUAD Date 9.11.07Project / Client STATE MAP 07-08E SMART

Scale

(200) 35 59 54.9 ± 30'  
92 28 26.6

first exposure of  $M_{ss}$  up from road (WILDERNESS PAINTBALL). only saw  $O_{sp}$  and along road. <sup>man</sup>

$O_p$  is probably covered.

$M_{ss}$  is crinoidal, grey-greenish, some pinkish blebs in the grey crinoidal. Grast. also shaly part is greener. pinkish w/ pyrite.

pass Bachelor / Chattanooga... maybe.

(201) 35 59 50.4 ± 18  
92 28 48.7

$O_e$  ~ 15-20' up from creek bed

$O_{sp}$  ~ 20-25' to top of bluff

looks like it plunges back toward the west (upstream) etc / creek was covered by veg. Great swim hole.

Dips ~ 35°

Location WANDIS QUAD, SOTO Date 9.11.07Project / Client STATOMAP

wpt 36

(202) 35 59 39.9 ± 22'  
92 28.42 ±

ctc b/t Op / Op, small spring just above the ctc. Hearing the falls down bluff. n to Big Creek. GREAT DAY!

We have hiked back over to where we began the day (saw the "Happy Trails" horse barn), the ctc is just ssw of there. (pass?)

(203) 35 59 52.7 ± 19'  
92 28 34.7

more Op / Op just adjacent to road.

(ctc) is small one (~1' noticeable) but the road is sand, and there is a good (~10' high) Op oc just ~~sw~~ sw of here.

(204) 35 59 59.6 ± 22  
92 28 6.0

Op / Op. ctc is just adjacent to the road end in road (white, friable). Op is oc N of road thin bedded, ~20-25' exposed, then veg 25-30 R.H.

Location WANDIS QUAD Date 9.11.2007

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

(205) 35 59 57.6 ± 17'  
92 28.11.3

Within time! but we found some Op (Front only) Largest 'boulder' is 23x5x2'; some other small pieces beside the road. There is a drainage in the west of the boulder where there is good Op and some Msj... lots of brush + veg in the drainage ctc's could be covered...

even find another smattering on bearing ~ N40E from ~~the~~ pt. (on other side of road)

9.12.2007

wpt 40

(206) 35 59 25.8 ± 35'  
92 29 58.9

pt marks the contact b/t Op / Msj. ctc is covered by veg + debris but there is an oc of Op ~3-5" thick and an oc of Msj ~3-5" thick above.

~~207~~ 35 59 28.9 ± 17'  
92 29 55.1

etc on upper road where Op and M<sub>5</sub>  
are visible in the road. ~2' exposed  
of each.

wpt 42

~~208~~ 35 59 35.9 ± 28'  
92 29 49.6

O<sub>5</sub>/O<sub>6</sub> in old Mt View Lodge road  
near Bratton Creek / trip area

wpt 43

~~209~~ 35 59 39.2 ± 20'  
92 29 45.3

- hiked up the old Road to Mt. View  
cabin, ran in place on the road  
so we explored the hill slopes  
below. found Op / Of / m<sub>5</sub> etc  
at this point (standing on Of / m<sub>5</sub>)

Only ~2' of Op be fine M<sub>5</sub> exposure  
Only ~1' of m<sub>5</sub> visible

there are a bunch of M<sub>5</sub> pipes all  
around. most of's are covered  
in the area. Hard to est thickness

wpt 44

~~208\*~~ 35 59 37.1  
92 29 48.4  
N80E N10W  
N35E N5E

Joints in  
O<sub>5</sub>

~~210~~

35 59 39.6 ± 30'  
92 29 47.4

Near Lower Pond (not on old map)  
but followed road around a bit.  
the road pretty much follows  
the O<sub>5</sub> / O<sub>6</sub> etc. The Pond appears  
to be a captured spring.

photos by R.H.

wpt 46

~~211~~ 35 59 40.2 ± 24'  
92 29 48.4

hiked back down to original road  
here in the drainage we see  
O<sub>5</sub> cutting down into O<sub>6</sub>

O<sub>6</sub>/O<sub>5</sub>: O<sub>6</sub> continues on down the  
bluff in the drainage ~15' high

Location LANDIS QUAD Date 9.12.07Project / Client STATEMAP 07-08

E. Smart

WA  
47

<del>212</del>	35	59	54.4	+ 50'	54.7
	92	29	40.0		40.9 ±32

Bratton Cave; lower portion of cave is  $O_e$ , upper portion of cave is  $O_{sp}$ . "Cave" forms out of an enlarged solution joint.

$O_{sp}$  rises ~30-40' up before break in  $O_e$ .

? is this former property of SOTO?  
signs look similar.

• photos by R. H.

<del>213</del>	36	00	7.2	+ 26'	$O_{ops}$
	92	29	54.6		

great  $O_e$  in Bratton Creek Bend  
 $O_{sp}$  etc looks to be on the top of the ledge or on up 50+ feet.

Location LANDIS QUAD Date 9.12.07Project / Client STATEMAP 07-08

E. Smart

Scale

<del>214</del>	35	59	5.9	+ 22'
	92	29	19.5	

very minor  $O_e$  /  $M_{sj}$  etc. in a road, w/ small exposures of  $O_p$  in place.  $M_{sj}$  is questioned in place?

<del>215</del>	35	59	5.4	+ 27'
	92	29	5.5	

last exposure of  $O_p$  before

"slobs" of  $O_{sp}$  below.

probably a hunting camp here  
nobody home.

get st

<del>216</del>	35	59	8.3	+ 18'	$O_e/O_{sp}$
	92	29	3.2		

first  $O_e$  visible in Road  $O_{sp}$  just above

<del>217</del>	35	58	43.2	+ 30'
	92	29	23.1	

top of  $O_{sp}$ . Great bluff below w/ pos  $O_e$ . wrecked cars @ bottom some  $O_p$  float but no  $O_e$  around (only seen in road cut)  
New GATE + Key on road

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

218 35 58 44.6 + 26'  
92 29 32.9 -

rather spring @ Osp/Op! <sup>Fun dem</sup> (ML DAY TO DAY)  
hiked over the gate. Nice "flunting"  
Cabin - Spring house have 200 gal  
tanks, insulated, lit. Nice Place.

219 35 58 41.3 + 40'  
92 29 29.8 -

hiked on their trail down below  
the bluffs (will try to find cars)

found Oe/Osp  
• photos R.H.

Osp cuts down into Oe. there are  
thin beds of dark dolomite, large  
clasts reworked within, w/ which well  
rounded sandst below... we rd  
channel reworkings... Oe Osp look  
like they are intermingled

Location LANDIS QUAD Date 9.12.07

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

220 35 59 44.8 + 23'  
92 28 49.5 -

Drove up old 4wheeler road.  
Didn't see the Osp/Op etc as  
marked on the map pt marker  
the first Op beds exposed  
at the turn.

Osp/Op R.H. found Op in  
Road just on up from  
the turn (E from turn Op  
W from turn Osp)

221 35 59 8.1 + 20'  
92 28 34.9 -

Stopped along "itc road" where <sup>first</sup>  
MSJ is located/visible in road

Op is all over drainage just west  
of here (± 5-10' thick) no  
Op noticed yet.

222 35 59 7.4 + 20'  
92 28 33.6 -  
top of MSJ in quarry <sup>MSB</sup>



9.12.07

223 35 59 6.6 ± 18  
92 28 29.4

etc in road (down from quarry) of  
Op / Msj; very good etc but still  
no Op or Msnd!

Msj is crinoidal grnst, pink-red. wood.  
oc is ~ 8' thick; Op exposure is  
a knob in road ~ 3' x 5'

total Msj exposure along road shows  
~ 20-30' thick; lighter (white-pink)

upt 59 at the upper most unit

224 35 59 4.5 ± 27  
92 28 21.3

yeah! Op! exposed as small  
knob in road bed w/ a few pieces of  
float on down, just near the thuy.  
NO Msnd; Op to Op is ~ 50'

9.13.07

225 35 58 4.6 ± 32' (18)  
92 26 26.6

Downhill Rd pt marks area on road where  
Msj rocks are exposed. There  
is def Mb above, but the  
"transition" between the two  
is not clear. R. Ho collected  
some samples. Will evaluate  
further

~~Msj~~ Msj is greyish-greenish  
w/ rusty spots

above is crinoidal w/ blackish  
matrix and rusty spots

total exposure is ~ 6' thick in the  
ditch.

S/D on top of Mb: ~ 12° NE  
N85W

The drainage below has about  
6' of Op, before etc is covered

upt 61 • Op below to bottom of creel.

226 35 58 3.4 ± 37' etc Op/Or  
92 26 26.6  
OK, we find Op back in ditch below  
Msj etc @ pt 225

~~227~~ 35 58 11.7 ± 18'  
92 26 12.2

west end of quarry. its 200+ yds long  
all M<sub>3</sub>; no other fossils  
all flat dryrox

wpt 6/3

~~228~~ 35 58 5.8 ± 28' 6.0 ± 15'  
92 26 21.1 21.1

first M<sub>5j</sub> visible in creek bed. M<sub>3</sub>  
all the way down from quarry  
thickness is ~ 2-3'; M<sub>5nd</sub> below  
then O<sub>f</sub>.

M<sub>5j</sub> ~ 2-3'NS strike  
4° E dipM<sub>5nd</sub> ~ 8-10'O<sub>f</sub> / ~

~~229~~ 35 57 59.8 ± 28'  
92 26 27.2

got ticks, ran away  
got caught by the  
landowner. nice  
lady is  
told us about Eva  
Pimbertos

first O<sub>sp</sub> in creek; no good O<sub>p</sub>  
anywhere near here. covered by Oal  
O<sub>sp</sub> N55W 12° NE

~~229 contd~~

JOINTS

N80 E N32 E

wpt 6/5 N10 W

~~230~~ 35 57 49.6 ± 18'  
92 26 41.6

first O<sub>e</sub> in creek. looks like its  
"coming up" Oal w/ O<sub>sp</sub> bluffs down  
to here. ~ 10-15' of O<sub>sp</sub> above the etc

JOINTS

N55 E N40 W

N80 E

S/D

N50W 12° NE

~~231~~ →

(231) 35 57 45.5 + 17'  
92 26 5.9 -

M<sub>8</sub> Quarry on the side of the road  
~80-100 long by 20 yds wide

previous (kick) land owner told us about  
this one; brother didn't get paid

not 67

(232) 35 57 21.3 + 27'  
92 25 9.9 -

top of M<sub>8</sub>. M<sub>m</sub> is visible in  
road ditch ~15' thick, 60 yds up the  
road. M<sub>m</sub> is

(233) 35 57 19.6 + 48'      19.6 + 9'  
92 25 5.9 -                  6.0 - 9'

top of M<sub>m</sub> etc w/ M<sub>3V</sub>

is redish tan-buff bit vfg

(234) 35 56 19.6 + 21'      12:25 pm  
92 26 57.1 -

long creek. walked upstream  
to this point where O<sub>sp</sub> rocks  
outcrop. etc w/ O<sub>p</sub> is covered  
by much Qal to here.

only little oc ~3-5' thick  
w/ watercross and some flowing  
water. doesn't appear to be dipping  
N30W 2° NE (hard to tell) much

(235) 35 56 29.0 + 15'  
92 26 22.9 -

long creek Road (Coed # 64)

Stopped to wade in long creek  
pt marks area where O<sub>p</sub>  
rocks line the creek bed. Surround  
oc is under water  
by Qal

pink M-C xtl some  
crinoids

Location LANDIS QUAD Date 9.17.07Project / Client STATEMAP 07-08ESMART

236 35 56 30.6 ± 16'  
92 26 18.6

hiked upstream from 235, found some of lining creek bed (25" thick) w/ Mst above.

~~Op/Mst~~ Op/Msnd/Mst

Msnd is ~ 4-6" thick whitish-tan w/ phosphate pebbles and grains

Mst is greyish-pink w/ iron-pink rusties and high ~~gr~~ crinoids (paleo-granstone)

there is a weird cow pond/gravel mine here. dug out surrounded by electric fence.

spearmint on the ground

237 35 56 22.8 ± 16' N15W 12'E  
92 26 33.9

walked back downstream to find Op etc. PT marks ~ 5-10" thick Oc of Op  
photos by Rtt; right next to they #4

Location LANDIS QUAD Date 9.17.07Project / Client STATEMAP 07 08ESMART

Scale

238 35 56 24.6 ± 22'  
92 26 35.8

Osp comes up (undulating) from creek just ~~to~~ westerly from here, then dips back down (following the undulation) and is in etc w/ Op at the point.

at the point Op comes down to cover Osp (slumping, etc) but we followed the etc one to here.

- where Osp comes up, there are many bundles of deformation bands • photos by Rtt. many are offset!  
Osp is ~ 15-20" thick  
N55W N75E N55E  
mostly sine →

239 35 56 23.8 ± 27' →  
92 26 39.3

standing at top of Osp etc w/ Op at the top of the fold described in 238. (undulation)

def bands also seen in Op as collected by Rtt

Location LANDIS QUAD Date 9.17.07Project / Client STATEMAP 0708ESMART239 cont'd

looks like Op plunges  
right back into creek  
not 25-30' from the pond.

wpt 7

240

35 56 21.7 + 20'  
92 26 34.9 - 20'

first Op exposed on S side  
of road E of old house.

Op exposed is a small knob in  
the bank of the road. Old house  
is built on Osp dome! Osp  
rx were dipping to West

Op rx are dipping:

N30W 16 NE

241

35 56 17.5 + 30' (15')  
92 26 31.5

Small knobs on small roadside  
ditch one taken to be Op

grey-pinkish m-c wake-pedertone  
(darker pink ~ 20' ups  
up the road w/ clay  
as seen in pt # 256)

etc w/ Miss

Location LANDIS QUADDate 9.17.07 119

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

242

35 56 12.3 + 15'  
92 26 30.7 - 15'

etc of Op w/ Miss

Miss is dark grey, red bleb w/  
crinoids, minimal rust.

wow! thick Op. Some lighter  
beds of the Op (whiteish) may be

Op, but are not f-m rll; instead  
one m. coarse rll; some brachs  
and crinoids observed.

- some points of this Op or really  
look similar to Saras. - stylolitic  
dark pink, w/ calcite veins + vugs  
and even has 'clay' lenses...  
also it would be an awfully  
thick Op ... maybe it is Sil...

wpt 10

243

35 56 59.2 + 30'  
92 27 29.5

Tur Key Creek Rd; just S of house  
etc in road b/t Op and Op  
strikes toward the creek. Op is 20'  
thick

R. H. found another that looks just like

Silurian

243 would

However,  
bigger pieces of float ~~etc~~  
look like across of Op and MST!

weird drama. grey-pink f-m xtl  
waterore; iron-pyrite  
sample ← blebs; clay <sup>tan</sup> <sup>buff</sup> lenses

244

35 55 55.7 + 16'  
92 27 20.0 - 16'

opponent etc of Op / MST  
etc is mostly covered by grass  
bit of rocks as below (w/ bluff  
on turkey creek below) and  
MST esq rocks as on hill slope  
above.

MST is non classic grey-pink  
(pink blebs) w/ low crinoids  
fine med xtl.

245

35 55 52.0 + 22'  
92 27 17.1 - 22'

back to Op. Op was on ~5-10'  
thick above the ~~to~~ point, back  
down the road. Must really be  
a small MST occ.

246

35 55 37.9 + 16'  
92 26 55.6 - 16'

still searching for top of column.  
pt makes assumed etc bit  
of / of. Op not due turkey  
creek below Op rocks visible  
in hillside

9.18.2007

wpt 4

247

35 55 49.8 + 25'  
92 33 43.6 - 25'

Davis Creek Road Drive on  
Harnet Quad Looking from  
Mbr / Fayetteville etc.

On the top of the hill. Highest  
OC is Mbr

f-m or tan <sup>pinkish</sup> buff, iron stained  
etc calcite; med well sub round-subang  
med cement

Location Harnett Quad, Davis Crk Date 9.18.07

Project / Client \_\_\_\_\_

wpt 15

(248) 35 55 48.5 ± 16'  
92 33 40.6

Limestone (w/ waterstone) ~~at the below~~  
The Batesville. Oa's visible in ditch  
along side road.

grey-tan micritic - f/m xtl, few  
fossils. some iron pyrite (~1%)  
Galc. replaced slight petroliferous odor  
~~possibly the Moore field.?~~

Some other area beds are crinoidal and  
cherty. so assessment is:

M<sub>6</sub> = light grey-whiteish fm xtl  
w/ cherty beds is common.

M<sub>m</sub> = grey-tan micritic - fine  
waterstone. ~~is present~~

point taken @ M<sub>m</sub> w/ M<sub>6</sub> below  
(walking down the hill.)



(249) 35 55 35.4 ± 19'  
92 33 45.4

Quarry in M<sub>6</sub>: point for Mike

Location Harnett QuadDate 9.18.07

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

wpt 17

(250) 35 55 53.3 ± 30'  
92 32 4.8

Hiking in Davis Creek  
at markers etc b/t M<sub>55</sub>/M<sub>6</sub>

M<sub>5</sub> is dark grey w/ some pinkish  
blebs. crinoidal (waterstone)

Outcrops right at the water level /  
extends down stream ~ 30-40 yds

M<sub>6</sub> bluff above is slightly covered  
w/ 20-25' high top.

wpt 18

(251) 35 56 1.7 ± 25'  
92 32 2.6

M<sub>55</sub>/O<sub>5</sub> etc; No msnd visible

Top one only exposed ~ 2-4' at  
this pt. but there is a ~ 10'  
thick oc of O<sub>5</sub> at the creek.

wpt 19

(252) 35 56 7.4 ± 17' →  
92 31 53.4

O<sub>p</sub>/O<sub>p</sub>

pseudo N<sub>55W</sub>  
50NE dip

Small ~ 1-2' oc of O<sub>p</sub> at creek bed but  
(grave of trees and dry hole) of boulders  
above.

Location HARRIET and Davis Crk Date 9.18.07Project / Client STATE MAP 07 '08258 cont'd

N65W N10E N80W

took some joints on a nice, flat  
~~of~~ <sup>of the</sup>  $O_p$  just a short way down

wpt 20 from the pt.

259 35 56 12.3  $\pm 19'$   
~~259~~ 92 31 46.9

$O_p/O_f$  etc up on hillside, in  
 The Road.

wpt 21

260 35 56 9.6  $\pm 19'$   
~~259~~ 92 31 47.7

Upper most  $O_p$  exposed in the road.  
 Mss covered before  $M_p$  is everywhere

261 35 56 15.2  $\pm 25'$   
~~255~~ 92 31 44.6

another  $O_p/O_f$  etc @  
 creek level.  $O_f$  continues  
 to dip down to creek level

N40E  
 70 SE

There is a  $\sim 15'$   $O_c$  down str from

wpt 23 here. Undulations

262 35 56 13.1  $\pm 18'$   
~~256~~ 92 31 23.1

$O_{sp}/O_p$  @ creek M  $O_{sp} = -3-5'$

Location Davis Creek HARRIET Q Date 9.18.07

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

wpt 24

263 35 56 15.7  
~~263~~ 92 31 18.0  $\pm 28'$  (13')

$O_c$  emerges as a reentrant  
 here below  $O_{sp}$ . Grey sandy  
 dolostones w/ some wavy beds  
 (stromatolites?) exposure continues  
 downstream as  $O_{sp}$  as can  
 see ( $\sim 50$  yds then bend)

one conglomeratic (sandy  $P_b$ s) lense  
 ( $\sim 1-2'$  thick) deformation bands

Throughout.  $O_{sp}$  bluff above is  
 $\sim 20-25'$  to visible top. good bluff

wpt

264 35 56 10.9  $\pm 20'$   
~~258~~ 92 31 18.5

climbed up on hill behind/adj to  
 $O_{sp}$  bluff in bend. pt marks tree  
 etc 6ft  $O_p/O_f$ . lots of talus  
 on the climb up covers most  $O_p$  etc.  
 $O_p$  is at least 15-20' thick.  
 Then a more massive bluff face  
 rises  $\sim 10-15'$ . could be more of  
 could be mss ( $M_p$ ) ?



Location HARRIS + 0 Meers Crk Date 9.18.07

Project / Client \_\_\_\_\_

wpt 26

~~(259)~~ 35 55 47.3 ± 30'  
92 31 15.5

standing on small bed of Msnd  
(~1" thick) M<sub>ST</sub> outcrops below.  
small bed of (poss) S<sub>1</sub> above  
(~12-14" thick) then Of

Of / Sc / Msnd / M<sub>ST</sub>

bed b/t Msnd and Of is grey micritic -  
w/ red blebs, some clay streaks through.

N50W 150NE

JOINTS

N50E

N62E

N/S

wpt 27

~~(260)~~ 35 55 31.3 ± 10'  
92 31 43.8

Back to M<sub>ST</sub>. small bed  
of Msnd below. M<sub>ST</sub> is about  
3-4" thick (some beds are underwater)

M<sub>8</sub> is above. Snd maybe underwater.  
M<sub>ST</sub> = grey mudsupported crinoidal w/ some  
pyrite; w/ red blebs

there is a well house here w/ M<sub>ST</sub> / M<sub>8</sub>

Location MEERS CRK HARRIS Date 9.18.07

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

~~(261)~~ 35 55 17.5 ± 22  
92 31 48.8

ended our hike up Meers Crk.  
wpt 29 M<sub>8</sub> to this point.

~~(262)~~ 35 55 44.7 ± 34  
92 31 25.9

Road side pit/quarry; apparently  
in M<sub>8</sub>. It's too grainy to (succiniferous)  
to really tell.

wpt 30

9.19.07

~~(263)~~ 35 59 6.8 ± 15'  
92 35 34.2

Driving down old road to Dry Prong Creek  
saw Of on road (small nub) and some  
down hill side into drainage. No M<sub>8</sub> visible  
nearby. covered by M<sub>3</sub> reg. and veg. Assumed  
top of Of, but covered. some Of is brownish.

~~(264)~~ 35 58 58.8 ± 18'  
92 35 28.7

top of M<sub>ST</sub>. pt marks c/c w/ M<sub>8</sub>.  
total M<sub>ST</sub> exposed is ~5"

M<sub>ST</sub> is white w/ pink blebs; crinoidal w/  
iron pyrite stain. white M<sub>8</sub> chert above.

wpt 31

~~(265)~~ 35 58 50.9 ± 30' 35 58 49.6 ± 34'  
92 35 28.7 92 35 32.7

Drove up to S of Dry Prong. pt marks the  
c/c of Msnd and M<sub>ST</sub>. M<sub>ST</sub> is deep black red w/  
iron pyrite stain; Of comes up, and rocks the  
way small trickle of water

Project / Client \_\_\_\_\_

wpt 34

(266) 35 58 52.1 ± 22°  
92 35 34.3 ± 22°

Hiking down dry PRONGS CREEK. Hiked through of at pt 265, found top of Op. Pt marks Op/Of etc in creek small amt of Qal bt two beds (~20')

Op has stylolites

wpt 35  
(267) 35 58 58.4 ± 22°  
92 35 24.3

DRY  
Osp/Op in PRONG CREEK. wte little waterfall over Osp beds!

wpt 36  
(268) 35 59 6.8 ± 24°  
92 35 20.3 - 24°

good  
thicker  
Oe/Osp in creek; sandy dolostone/dolo  
Oe or is a small nub (~1-2') on the west(?) side of creek. not really apparent on other side of the point.

(269) 35 59 13.0 ± 22°  
92 35 18.2 - 22°

Oe/Osp in small over hang ~15' up from creek bed. Osp visible on hillslope opposite of pt.

great stromatolites on upper surface of Oe. thin bedded, wavy, sandy.

DS - Crossing/intersecting joints + def bands.  
stress is apparent  
vertical soln in sp N25E N35W → ~60°/30°

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

wpt 38

(270) 35 59 9.3 ± 22°  
92 35 22.8 ± 22°

top of Osp w/ 1st Op beds (knobs in road)  
Osp must be extr. thick! Green friable snbs seen on the way up. Hiking up the old road (presume it's the one on the old top) Mc is visible only in the road. ~~covered in~~ w/ some oc

wpt 39

(271) 35 59 7.8 15 ± 16° Op dips 15° E/Wstr  
92 35 24.7 - 16°

Hiked just ~20-30 yds up the road to find the first Of knob in the road pt stands b/t last Op bed and first Of some of also visible (rounded boulders) on hillside (~15' up)

(272) 35 59 9.3 ± 16°  
92 35 23.9 - 16°

Hiked up to where R.H. took s/d. there was another Op/Op etc up on the hillside!

wpt 41

(273) 35 58 52.7 ± 22°  
92 35 38.4

top bed of Mst observed in drainage (back @ Jade). Bottom of Mst w/ M sand pt # 265. Note Mst thickness

wpt 42

(274) 35 59 20.6 ± 35° (20°)  
92 35 18.0 - 35°

Drove back down to Kimball Creek  
still in Dry Prong. pt marks Oe/Osp etc similar to pt # 269. stromatolites dark crevices etc  
Creek level in 50-60 yds down st.

Project / Client

not  
43

(275) 35 59 35.8 + 25  
92 35 16.8 = 25

up 44 Hiked up some branch... 220' up Brun creek  
pt marks Oe / Osp

(276) 35 59 43.8 + 34'  
92 35 32.0 = 34'

Hiking up Kimball Ck. following osp/Oe etc. pt marks Oe/Osp etc 25' up from creek bed. Oe ~ 4" thick from pt # to etc w/ Osp (osp ~ 10" to top) really beautiful down here flowing creek, steps of Oe...

dip on Osp N55W 80SW

(277) 35 59 45.0 + 21'  
92 35 43.0 = 21'

Hiked as far as we could go. ~15' high waterfall over Osp/Oe etc. WAY COOL. Bluffs around here ~ 10-15' Osp w/ 5-8' Op visible. Looks like it might dip to SW...

Osp has  
beaut  
X<sup>2</sup>  
bedded  
green  
sand

great over bank where channel used to flow. collapse cut it off "travertine natural bridge"

Project / Client

seop 132

Scale

(278) 36.00 00.4 + 10'  
92 30 37.9 = 10'

Just drove on to the map area. Pt marks the location of Op beds in creek

(279) 36 00 00.0 Oe  
92 30 41.0

Old Quarry in the Ordovician. pretty cranny up but sections from Miss. cherts Op are exposed on face. Osp boulders around

OK. Reassess bottom of Quarry in Oe 250'

Osp ~~8-10'~~ (inches not to e) not really undulating

Op ~ 20'

Or ~ 8-10'

• photos by R. H.

Oss ~ 8' (small ~ 10" th of Miss.)

particulate texture w/ phosphate pebbles

What we are talking to be Osp bed is thin (2-8" th) not classic Osp bed v far, well-mad well cemented. Less

Op 2 are arenitic... some blackish coloring (speckles/blotches) possibly organic or opaque... ?? some iron staining; Calcite veins (mm - few cm th) calcite w iron pink blebs, larger (4" x 18") faces of calcite on exposed bluff edges. Very different but sections seen on road in are more classic

up 48

in nature w/ warty tubes in spots. also pts in strat section sequence.

(280) 36 00 6.9 + 44 (24)  
92 30 29.7 = 44

Back up Bee hollow Rd. Op/Oe etc (section 15 similar to that in quarry)

wpt 49

278 35 59 59.1 ± 24  
92 30 36.7 ± 24

Osp in creek. have to edit all previous finds of Oe/Osp in quarry!!! makes for a weird sandy shale bed in Op. Very classic dsp here. Bottom of Quarry is dsp, just covered up. editing from previous 278, b/c we were so close to the etc.

281 35 59 50.7 ± 19  
92 30 27.4

Op/Osp w/spring! AGAIN

282 35 59 52.7 ± 25  
92 30 19.9

walking through roads on old, trashy, stinky homestead. Hiked up to Mst/Mo missed Op, found sandy/shaly Op along the way up

nearby (~3' above) is top of Op, no Op around, and not much rain for it anyway. small bed of Mend (detrital w/ black str.) Snd is white (cemented); we shared ls. maroon (amber) lots of mottled, pinkish brown w/ plus pebs.

wpt 50

283 35 59 56.5 ± 22  
92 30 21.4

Op/Msd/⊙ Mst NO Op! HA!  
base of Mst is grey-pink conoidal there is a old pit above here w/ dark shaly Mst.

284 35 59 50.1 ± 20  
92 30 26.1

Oe/Osp at creek level!

wpt 1

285 35 52 49.3 ± 35  
92 37 23.3

on south mountain

Hiked up "Kelley" Creek to find the Mp etc w/ Mst. Saw several fossiliferous (greenstone/bioclasts) beds in the MF. First definitive Mp bed is at this point! All others were interbedded w/ Mst shales + micrites

286 35 52 50.1 ± 19  
92 37 25.9

pt marks etc b/t Mp/Pch green yellowish / reddish brown sandst.

Pch det or boulders all along the top of the hill, but there are no good dc's also appears to dip to SE but not any beds in place...

Location MARSHALL Q / South Mt Date 9.25.07

Project / Client \_\_\_\_\_

(286)  
cont'd

N85E N5E Joints in MF.

35 52 39.3 ± 21'

92 37 17.1

Anomalous bed, apparently in MF

almost  
a foss. <sup>Hajasm</sup> Extremely fossiliferous, bioclast/grainston  
bed (another bedic on up shear almost  
equivalent in comp and size)

~18" in th; laminated (wavy lam.) w/

wpt4 / dark sh micrite below. small shaly part  
in creek bed.

(288) 35 52 27.9 ± 23'

92 37 11.3

Near Edge of Map (MARSHALL). MF  
lines creek bed.

5° NNE N75W - 80° NNE

wpt5 / Joints N60E, N25E, N80E

(289) 35 52 37.7 ± 17'

92 36 52.7

leaving South Mt. Road at shows  
etc b/t MP / Pch

wpt6

(290) 35 59 16.6 ± 42'

92 33 58.7

OLD MILL SPRING RD. at pt; Of (Mst (no snd)  
Of all the way down to the road

9.26.07

Location MARSHALL Q. dom. U.Sp. Date 9.26.07

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

(290) cont'd

OC @ pt is ~ 4' thick thin beds  
(one bed of white w/ mtc xtl); slope down  
road. small cave + spring below; at  
road.

(291) 35 59 18.7 ± 45'

92 33 58.2

pt marks etc of Op / Of on hillside  
couldn't see the etc in the road.  
small stream follows the road.

wpt6 (292) 35 59 23.2 ± 21'

92 33 57.9

Spring @ Osp / Op etc (pt taken in rd)  
Very pretty, travertine falls @ spring  
Same Osp etc are ~ 10-15" thick  
massive beds

photos by RH

at the point N80E ← S/D taken on Osp  
etc on the opposite  
side of drainage

Op etc from N70W ← 4° N, 10° SW  
road ~ 15' high overlooks like a  
dome surface.

(293) 35 59 22.8 ± 19'

92 34 2.4

Nice ladder down the Op / Osp etc.  
Ofcp thick ness ~ 15' / wavy strat w/  
thin - thick beds of dolostone below

photos by RH. Nice trail from ladder  
to water fall. SSS @ water fall  
25' below etc is stratolite

Location OLD MILL CREEK Date 9.26.07

Project / Client \_\_\_\_\_

293 cont'd

NSE N65E

wpt 10

35 59 27.7 ± 30'

92 34 10.7

250 yds down from where  $O_e/O_{sp}$   
crosses the creek bed, standing on  
"talus" slope where  $O_e$  meets  
slope. Bluffs here are ~ ~~15~~ 20'

wpt 11

28' of  $O_e$  then ~10' of  $O_{sp}$ 

294 35 59 12.3 ± 17'

92 34 17.8

old

Found a new road out on the Mill Springs  
fork. pt marks c/c of  $O_{sp}/O_e$   
have one knob of  $O_{sp}$  in road (w/  
som  $O_{sp}$  in creek below; thin  
bedded  $O_e$  above, visible also  
at same lvl on opposite hill slope.

295

35 59 1.4 ± 21'

92 34 15.6

hiked up old road (hoping for  $O_e$ ) but  
no  $O_e$ 's visible. Mg rubble all around  
us. Thunder is closer w/ darker clouds  
now

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

