

2006

EPV 015 Charton Field Notes 2006

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8 Feb, 2006

El Cafetal

light rainy morning after day and night of rain. This is the dry season but so far from what I'm told it's been very wet. The path around El Cafetal is muddy. All the excavation units are covered by a champa, the pit soil is still quite wet.

Objective this morning is to take 2-3 test pits (with trencha) 50-100m North of the structure and plaza. Chepe' is my helper. Spent a lot of time getting organized, i.e. getting compass, sample bags, 50m tape measurer. Will be more organized tomorrow.

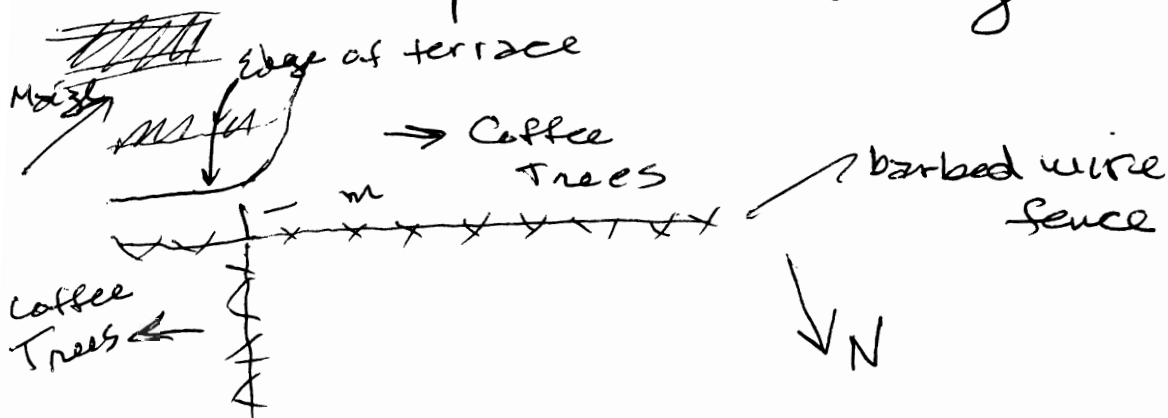
Per discussion with Marcello, will continue to use 07/05 sampling system for soil samples. Series to begin with 07/05/410. Also in discussion with Salvadore + Marcello on Feb 6th, approximate depths of planting corn and bean seeds are 4cm.

8 Feb, 2006

Coffee plants are planted as seedlings at a depth of 10 to 15 cm. All of our "floor" sampling for El Cafetal Plaza and Los Naranjitos was well below that.

The total station was not operational so locations of sample pits will be staked and spray painted.

07/05/410 North of plaza ^{4.4} 6 m ^{N of} beyond barbed wire fence on terrace edge. The terrace drops to a depression and series of rolling longitudinal mounds that are planted with maize.



Took measurement of trench - 11 cm.
Most pits dug last 2 seasons were N 20 cm in diameter.

8 Feb, 2006

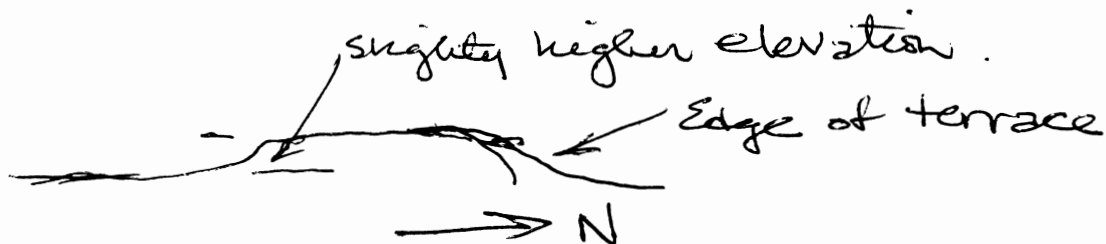
Took series of samples from pit wall

07/05/410-1 5-7 cm BGS

07/05/410-2 15 cm " Roots from tree

07/05/410-3 40 cm "

Gritty sandy, rolled U breaks

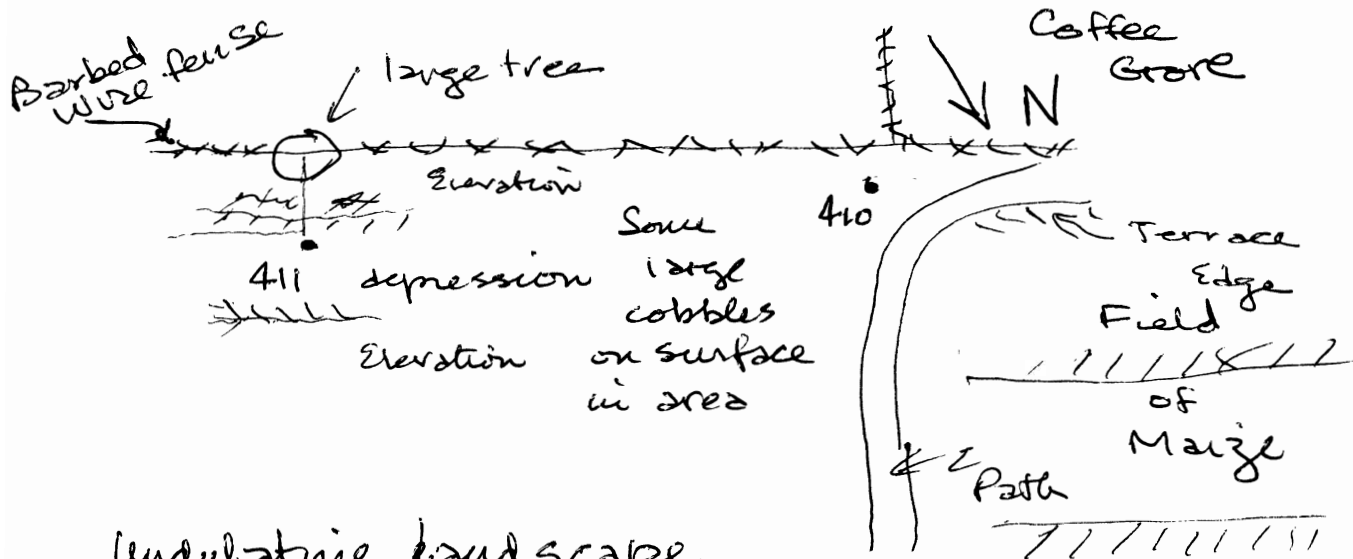
07/05/410-4 50-52 cm " hit rock, some
black shale like rocks
(sandy loam)No noticeable color change, some worms
near surface, few rocks ~ 5 2-7 cm.Note: Edge of terrace is a wide mound
that drops to a lower elevation

Could this have been a "flood" barrier
for El Cafetal or a naturally formed
elevated bank to a former stream
or brook?

8 Feb, 2006

07/05/411

East of 410 (~26.5m) and
6m North of barbed wire
fence



Undulating landscape
suggestive of streams
in depressed areas with
elevated banks in former
times.

↑ slight
depressions
and long mound
elevations

I thought this to be a non-agricultural area,
however Chepe' thinks it has coffee trees
will re-assess tomorrow. Note: 410 is in
a coffee grove.

Slight rise 2m N of test pit. low
shrubs + impatiens.

411-1 7-8cm, lt brown, some carbon
0-8cm

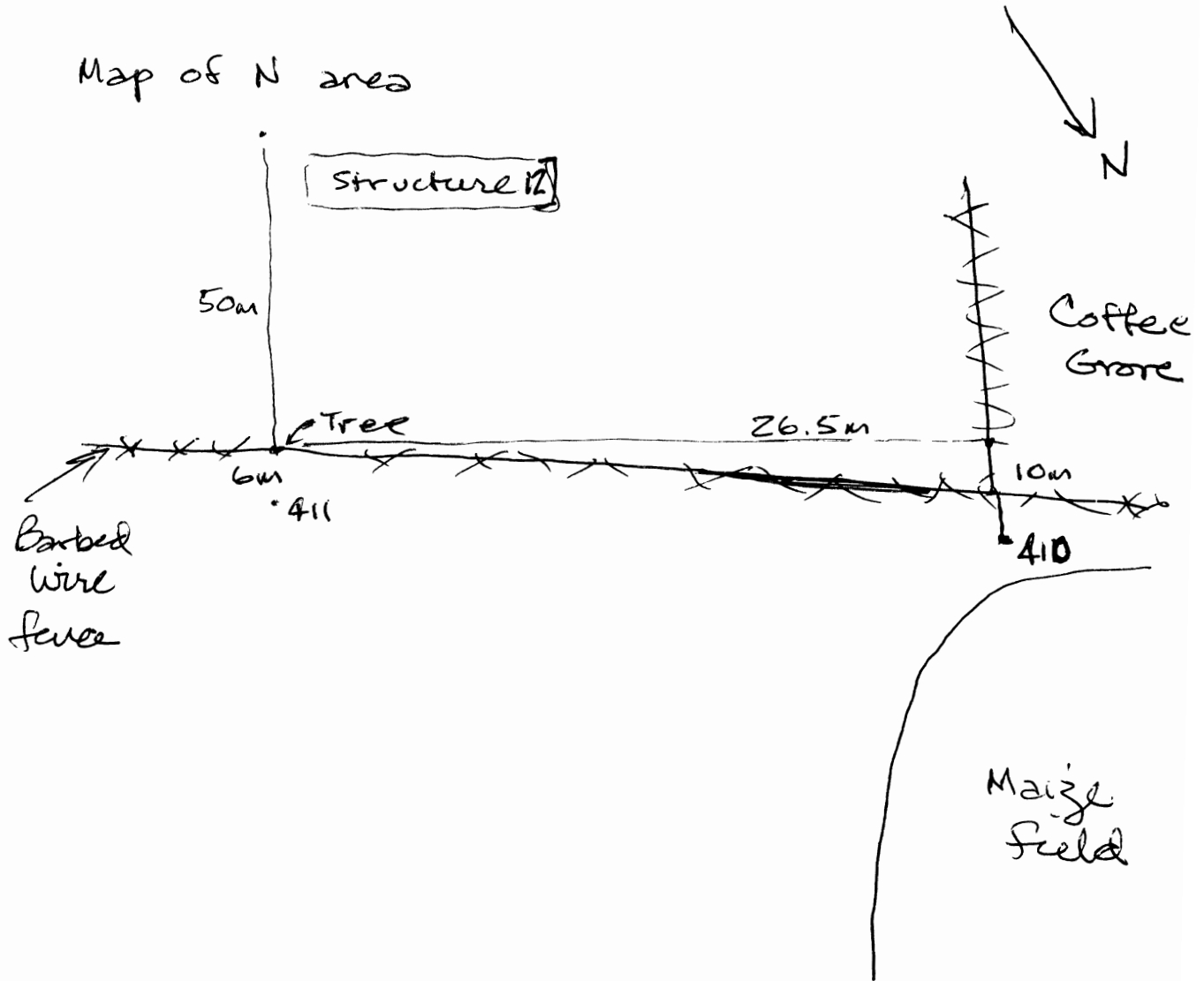
411-2 18 cm at 20cm some ~~black~~ ^{black} shale like

2006-15-5

8 Feb, 2006

rock, 1 angular round edged rock ~ 3cm long

411-3 28-30 cm hit rock



8 Feb, 2006

07/05/412 West of 410 in coffee grove, trying to get Western sample.

412-1 5-7cm BGS

At about 14cm began to hit shale + pebbles. ~~Rocks were~~ Black shale + white pebbles

412-2 18-19cm

412-R 2 small (at 14cm) + 1 large (19cm)
BGS BGS
 gray/blk rock with white shell, marl?

Hitting many rocks asked Chepe' to widen hole and dig deeper

23cm BGS larger rocks + pebbles

33cm BGS sandy, rocky

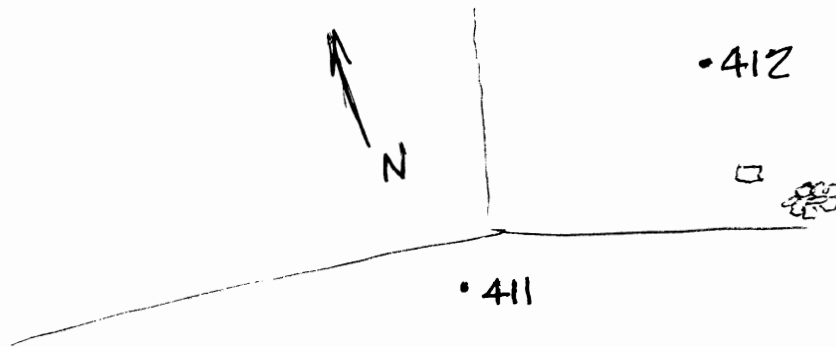
412-3 29-30cm BGS sandy

412-4 39cm BGS sandy

It began to rain heavier (11:23) decided to call it a day.

8 Feb, 2006

On return to El Cafetal, got a bit lost, noticed a mound (buried structure?) and a chimneco.



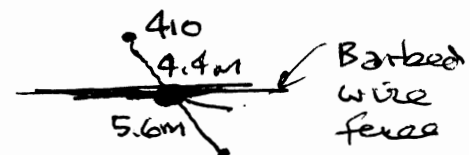
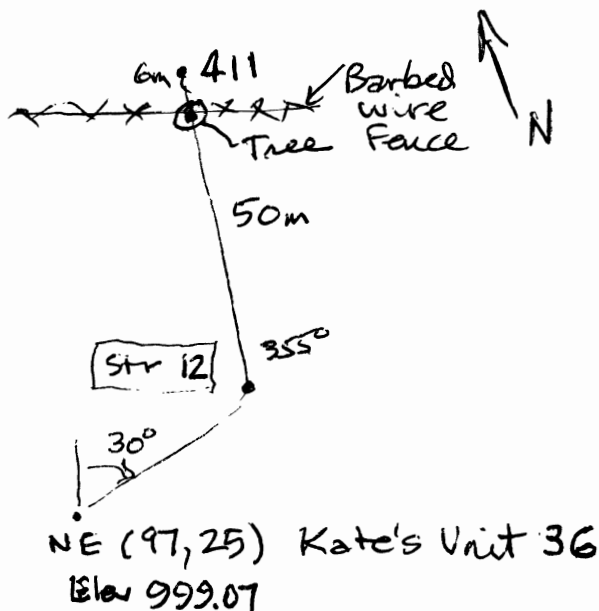
Note: On Feb 9, Ellen, Marcello and myself went to 07/05/412. Marcello believes the stones that formed a mound were stones cleared from the surface by farmers.

09 Feb, 2006

Skies are higher but still overcast. Last 12 hrs were without rain so hopefully this will continue. Better organized this morning and looking forward to getting things done.

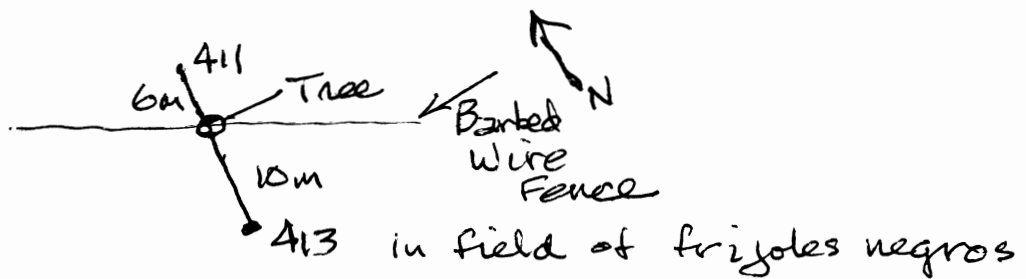
Objectives:

1. Review and finish measuring 08 Feb test pits. Spray paint stakes with gold paint for future Total Station plotting
2. Take soil samples from test pit closer to Plaza on terrace.
3. Review area and thoughts about terrace and river N of site.
4. Begin test pits S of site.



9 Feb, 2006

From 07/05/411 south to plaza there is a broad slightly elevated terrace (sl elevated in comparison to Plaza). Decided to sample this terrace to determine if plaza was excavated to form a floor. Selected a point about 16m S of 07/05/411



07/05/413
~~Sample~~

Approximately 16m S of 07/05/411 on sl elevated broad terrace N of El Cafetal Plaza

BGS

Upper 0-10cm, lt brn, silt/clay some worms

10-30cm sl drier than 1st 10-15cm

30cm vs sl sandy, ribbon 72" sticky

Core sample 0-32cm

9cm carbon

13cm sl color change med lt brn →
lt brn

32-50, same color hit shale/rock,
dk brn/blk

07/05/413-1 65-66cm BGS

68cm rock 10x7cm, rounded

9 Feb, 2006

07/05/413-2	6-8cm BGS	All samples scraped from wall.
07/05/413-3	19-21cm "	
07/05/413-4	44-45cm "	
07/05/413-5	57-58cm "	

At about 9:45 walked are with Marcello + Ellen. We agreed that undulated maize field N of 07/05/410 appeared to be the same as Ocoate River ~~stream~~ bed ^{buried} under rocks with 20-30cm of silt and clay, sand

Marcello suggested I core/test pit a sample about 300m NNE of 07/05/410 on another broad sl elevated terrace. I will do this after S and E samples are taken.

07/05/414 1st test pit SSW of Plaza

0-10cm BGS	some worms, soil dkr than 413
20-25cm "	ceramica + small rocks
35-37cm "	lighter color brown
40cm	
40cm "	shale like rock, sl sandy, grotty
>50cm "	numerous decomposing rocks.

9 Feb, 2006

soil still clay/silt with grit
60cm large cobble

07/05/414-1	12-15 cm BGS
07/05/414-2	7-9 cm
07/05/414-3	60-62 cm
07/05/414-4	26-28
07/05/414-5	35-38 cm
07/05/414-6	48-50 cm

Note: In **S** ^I are used corer to
sample ground before test pitting.
Will use corer for determining
horizon changes.

Also, samples were scraped from
side wall of test pit with trowel.
It is difficult to get deep samples
as hole is slightly larger than trowel.
Marcello is sensitive to making pits
too large, especially as we are often
sampling in household agricultural
fields. I will take a spoon tomorrow
as this may make sampling easier.

10 Feb, 2006

Objective: continue to test pit S perimeter and begin E.

Went with Marcello and Ellen to examine Whitney + Edwin's units (and respectively) Whitney is into the sandy, gravelly cobble layer at 110 cm and will dig another 20-40 cm) Edwin has yet to reach the same layer as Whitney and is still in a silty clay layer at about 80 cm BGS.

Went back to 07/05/414 to take core samples to identify horizon change.

0-10 cm 10YR 3/3 dk brn

10-27 cm 7.5YR 4/3 brn

07/05/415 20.3m W^(278°) of 414

Top soil 2.5YR 2.5/2 v dk brn (0-13 cm BGS)

Smooth, forms ball breaks < 1", sticky

(~~Clayey Silt~~) (Silt loam)

25-30 cm ceramica, rock (7x10 cm)

ceramic on side walls at 20, 24 cm

30 cm forms ball, 2⁺ cm 1" break, sl gritty not as sticky (silty clay loam)

7.5YR 4/3 brown

10 Feb, 2006

40cm bajareque? 7.5 YR 4.3 brn
 v gritty, forms ball 2" ribbon
 (Sandy Clay loam)

rock
 lens
 lens

50cm rocky, forms ball, sticky, v gritty
 1" ribbon (Sandy loam)

52cm decomposing rock
 10YR 5/4 Yellowish Brown

60cm less rock, forms ball, not sticky
 less gritty 1 1/2" ribbon (Silty Clay loam)

07/05/415-1 63cm

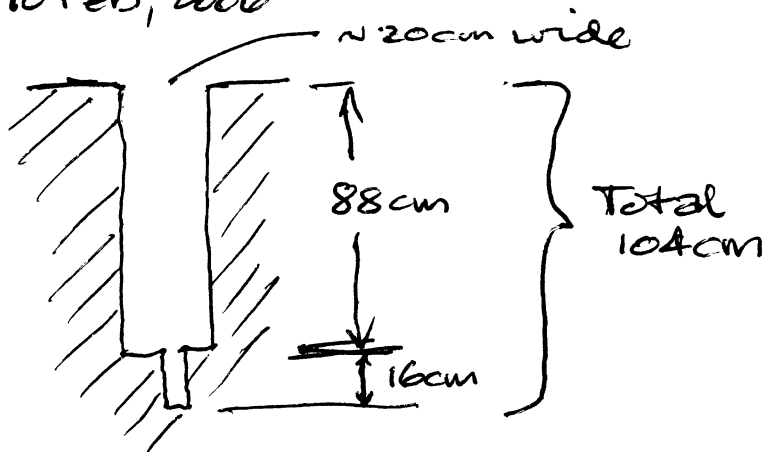
70cm 10YR 5/4 Yellowish brown
 forms ball, v sl sticky, 2" ribbon,
 v sl sandy (Silty Clay)

07/05/415-2 77cm

Chepe' began having problems digging further
 as French's handles were hitting side wall.
 He stopped digging at a depth of 88 cm,
 took cover samples beyond 88 cm.

07/05/415-3 101-4cm. Hit rocky layer
 at 104 cm.

10 Feb, 2006



Sampled side wall with new tool, a metal soup spoon, trowel was too wide and unmanageable in taking samples.

07/05/415-4	12-14cm	BGS	
07/05/415-5	30-32cm		} ceramic in wall
07/05/415-6	50-52cm		
07/05/415-7	40-42cm		
07/05/415-8	23-26cm		

Horizon levels based on cores

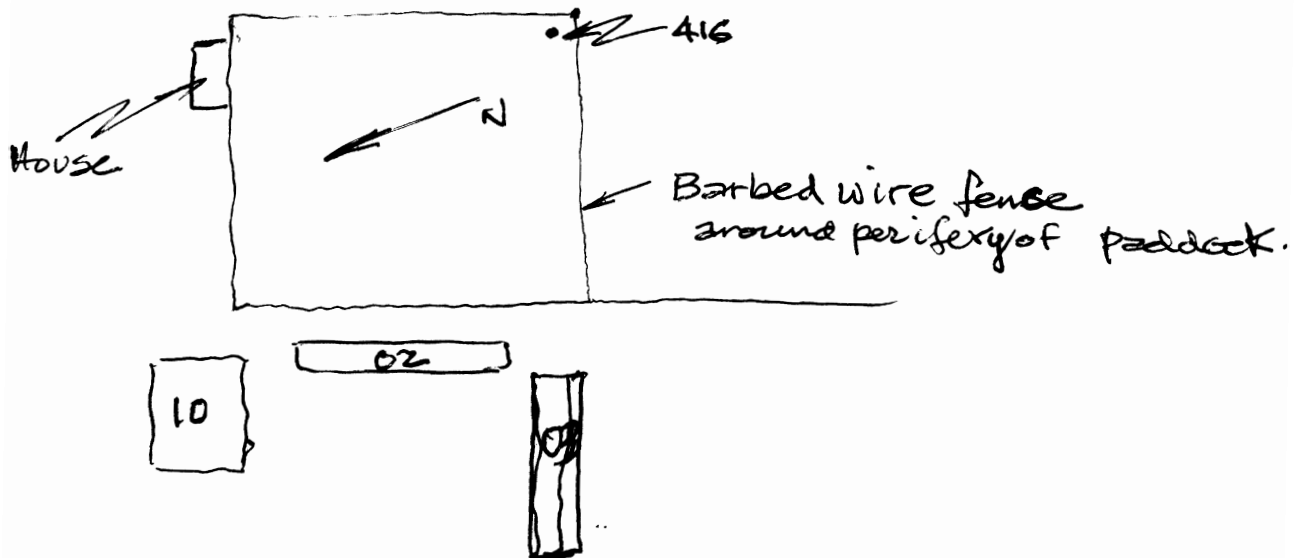
0-12cm dk brn	Ap		Ap	Ap
12-32cm med "	A	or	B	or B _w
>32cm lt brn	B _t		C	B _t

At about 10 AM returned to Plaza, gave John soil pH test kit and took a break. When Marcello arrived, he talked with campesinos cutting wood to the E of Str 02 and detar-

2006-15-15

10 Feb, 2006

mined that it was OK to test pit in adjacent cow pasture to the East of the site. Chepe and I walked to the SE corner of pasture or paddock and with corer sampled and established 416.



07/05/416 E of fence corner

with corer

0-14 dk brn

14-38 med brn

38-~~83~~ lt brn

81- hit rock

07/05/416-1 48-52cm (7.5YR 4/4 brown)

ball, 2" ribbon, st sandy, sl sticky
(Silty Clay Loam)

10 Feb 2006

- 07/05/416-2 65-70cm same color + texture
as 07/05/416-1
- 07/05/416-3 32-38cm dkr sample color +
same texture as 07/05/416-2
except not sticky
- 07/05/416-4 5-10 cm dk.

At orange house lab ran pH tests using
Hellige-Truog Soil Reaction Tester

<u>Sample</u>	<u>pH</u>	<u>Color</u>	
410 07/05/410-1	6.8	lt gruish blue	5-7cm BGS
07/05/410-2	6.5	" " "	15cm
07/05/410-3	7.0	lt blue	40cm
07/05/410-4	7.0	blue	50-52cm
07/05/411-1	6.5	lt grn	7-8 cm BGS
07/05/411-2	6.5 ⁺	sl dkr grn	18cm
07/05/411-3	8.0	dk blue	28-30cm
07/05/412-1	6.5	grn	5-7 BGS
07/05/412-2	8.0	blue	18-19
07/05/412-3	8.0	blue	} gritty not enough soil: 29-30 39 ↓
07/05/412-4	8.0	blue	

~~Found~~ Found Ran reagent along with indicator
powdr - result was a green color.

10 Feb, 2006

Located 07105/417 about 40m ^N of
07105/416. Having erratic readings with
electronic compass so bearing is suspect.

Test core: 0-17 dk brn
17-50 lt brn

Only cored 50cm, no samples will
retest Monday.

12 Feb, 2006

Objective: Run pH and PO₄ on soil samples obtained during the week

<u>Sample</u>	<u>pH</u>	<u>Color + Comments</u>	
07/05/413-1	7.0	lt blue	65-66cm BGS
07/05/413-2	6.5	lt bl/green	6-8
07/05/413-3	6.5	lt green	19-21
07/05/413-4	6.5	green	44-45
07/05/413-5	6.5	green	57-58
07/05/414-1	6.5	lt green	12-15cm BGS
07/05/414-2	6.5	lt green	7-9
07/05/414-3	7.0	lt blue	60-62
07/05/414-4	6.5	green	26-28
07/05/414-5	6.5	green	35-38
07/05/414-6	6.5	green	48-50
07/05/415-1	6.5	green	63cm BGS
07/05/415-2	6.5	green	77cm
07/05/415-3	6.5	green	101-104cm
07/05/415-4	6.5	green	12-14
07/05/415-5	6.5	green	30-32
07/05/415-6	6.5	green	50-52
07/05/415-7	6.5	green	40-42
07/05/415-8	6.5	green	23-26

2006-15-19

12 Feb, 2006

<u>Sample</u>	<u>pH</u>	<u>Color + Comments</u>	
07/05/416-1	6.5	green	48-52cm BGS
07/05/416-2	6.5	"	65-70cm
07/05/416-3	6.5	"	32-38
07/05/416-4	6.5	"	5-10

↓

1:38 PM lab Temp 20°C (68°F)

Observations:

- Samples N of Plaza were shallower before hitting rocky layer

410 52cm - on terrace

411 28-30cm } off terrace?

412 33cm }

413 53cm - on terrace

- Samples S of Plaza

414 60cm (50cm decomposing rock)

415 104cm (52cm decomposing rock lens)

- Samples E of Plaza

416 81cm

Need to get elevation data, suggests S + E are more heavily sedimented and an event at 50cm in S (lens of decomposing rock)

12 Feb, 2006

pH data indicates overall si acid soil with neutral to si alkaline pH at lower depths. S + E samples are si acid throughout profile ~~of~~ 60 to 104 cm BGS.

Need to test E of Str 11 and S of Str 3 to get representative samples of periphery of El Cafetal complex. Will not sample W due to close proximity of household clusters. Also need to sample close to E side of Str 02, 10, 11 to determine if soil depth above rocky horizon is deeper than in Plaza.

PO₄ tests

At this point 410, 413 (N), 415 (S) and 416 (E) are candidates. Will test top, middle and bottom. If time permits, will try to complete profiles of PO₄ (perhaps profile 1 sample).

12 Feb, 2006

PO₄ Testing

- 1) Prepared 1 mg/l liter std soln, 1 ml 50 ml/liter PO₄ Std Soln (lot A4121, Exp 4/07) to 49 ml distilled water in measured flask.
- 2) Prepared Mehlich 2 Stock soln, 20 ml conc (lot A4128, Exp May-08) same conc ~~std~~ solution used last summer (6/05) to distilled water up to line on plastic bottle neck.

Calibration Test

<u>Vial</u>	<u>Description</u>	<u>Zero</u>	<u>Amin</u>	<u>Corrctn</u>
1	1 ml stK soln + 9 ml dist H ₂ O	set (0.00)	0.41	0.41
2 ^{only}	Std Soln (1 mg/l)	0.00	1.31 blue	1.31
3	1 ml stK soln + 9 ml dist H ₂ O	0.01	0.29	0.28
4	1 ml stK soln + 9 ml " "	0.00	0.09	0.09

3) PhosVer 3 lot Z (lot A5307, EXP APR-09)

PhosVer 3 value = $\underbrace{0.41, 0.29, 0.09}$

$$\bar{x} = 0.26 \pm 0.15$$

Std Value = $1.31 - 0.26 = 1.05$ OK.

12 Feb, 2006

- 4) Tested preweighed soil samples.
 25 ml Mehlich 2 Stock sol'n : 2g soil
 Shake 5 min
 Filter

1 ml filtrate : 9 ml distilled H₂O

Re-Do Colloidal Interference

<u>Vial Sample</u>	<u>Description</u>	<u>Zero</u>	<u>Reading</u>	<u>Adj[*]</u>
1	1ml Stk Soln + 9ml H ₂ O	Set (0.00)	0.21	-
2	415-4	0.10	0.42	0.06
3	415-8	0.15	0.39	0.00
4	416-2	0.64	0.81	0.00
5	415-3	0.56	0.72	0.00
6	416-3	0.65	0.82	0.00
7	416-4	0.12	0.19	0.00

NOT USED

Note: Filtrate still cloudy + some color after filtering. Re filtered, st with little change. Dirty test tubes?

* Subtract 0.26 for PhosVer-3 reading.

There was no blue tint in samples. Perhaps the cloudiness + color were a colloid. Will talk to Melanie at Hoch when I get back to US.

13 Feb, 2006

The morning is cold and rainy, a bleak beginning to my last week. I spent some time early with Marcello + Ellen reviewing units:

John C (Unit 30) - 1m deep, soil uniform color below Ap horizon, texture silty clay loam, pH at 30cm same as 1m 6.5.

Alli (Unit 26) - last culture material at 40cm, currently at 60cm. large boulder about 60-80cm with flat bottom. Was stone tumbled from higher elevation? Does the stone hold some kind of significance? Alli to expand to a 2x2m Unit.

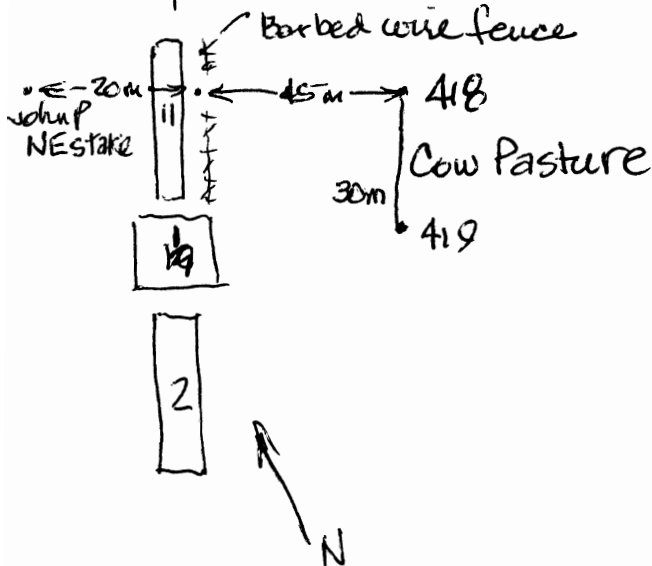
Thomas (Unit 29) - at 80cm, hit rock, sandy rocky layer, hit a rocky lens at 10-20cm, clay beneath, 35-40cm gravelly

(Unit 28)
Whitney - hit rocky layer at ~~10-20cm~~ 80cm currently at 1.6m

Edwin (Unit 27) - Multiple horizons
 ① up to 35cm dk med/brn, ② light clay silt,
 ③ decomposed layer with carbon (fire natural fire event?) ④ lt clay silt

13 Feb, 2006

Objective after further discussion with Marcello, decided to include 2 West samples. Will finish E and S with 2 in W.



07/05/418 : 65m E of John P NE stake, 45m E of structure 10" (Slight rise in elevation from surrounding area.)
In cow pasture.
5cm 2.5Y 3/2 v dk greyish brn
forms ball, gritty, ribbon < 1", not sticky
loam

0-18cm some lg rocks

20cm same color + texture, many rocks
as 5cm

07/05/418-1 10-12cm

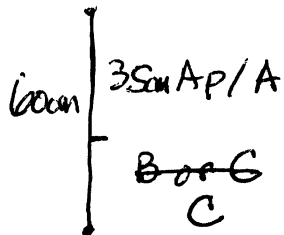
07/05/418-2 30-32cm

Took core sample to 60cm gravelly sandy bottom

Interfere at 35cm.

13 Feb, 2006

Believe are 07/05/418 is in may have been an elevated "sand bar". That is why gravelly layer is so shallow from the surface.



07/05/419 - Cow Pasture, 30m S of 418, E of Str 101.

18cm BGS: ceramic, obsidian

10cm 10YR 4/3 brn
sl sandy, ball, 1" ribbon, sticky - ~~silty clay~~
loam/loam

07/05/419-1 12-14cm

Color change at 25cm (slight) 10YR 4/4 dk yellow

28cm sl gritty, 1-2" ribbon, sticky silty clay
loam

07/05/419-2 27-30cm

Took core samples from 35cm pit bottom

Core length 29cm all the same color: 10YR 5/4 yellow

13 Feb, 2006

v. si gritty, ball, ribbon >2", sticky - silty clay
Below 35cm soil compact.

Cored another 4cm, hit rock?

Chepe' ~~does~~ excavated test pit with a trench
to 70cm. At 68cm hit decomposing rock,
shale gray/dive. At 70cm took 19cm
core

77cm - carbon

85cm - decomposing rock

Same color mat'l as 35cm bottom - 29"
CORE 10YR 5/4 yellowish brn

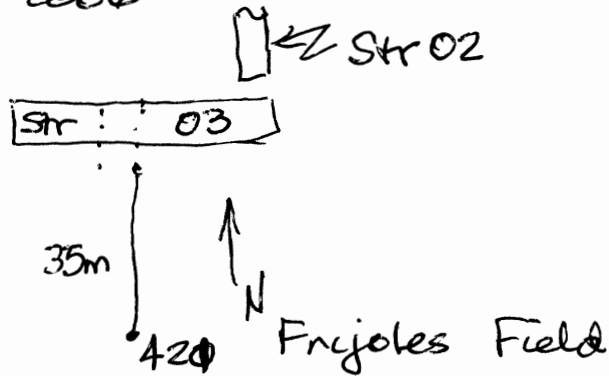
Took an additional 3cm core, hit rock at
92cm

07/05/419-3	61-64cm	BGS
07/05/419-4	48-50cm	
07/05/419-5	89-92cm	

Took sample for PO₄ analysis from
Marcello

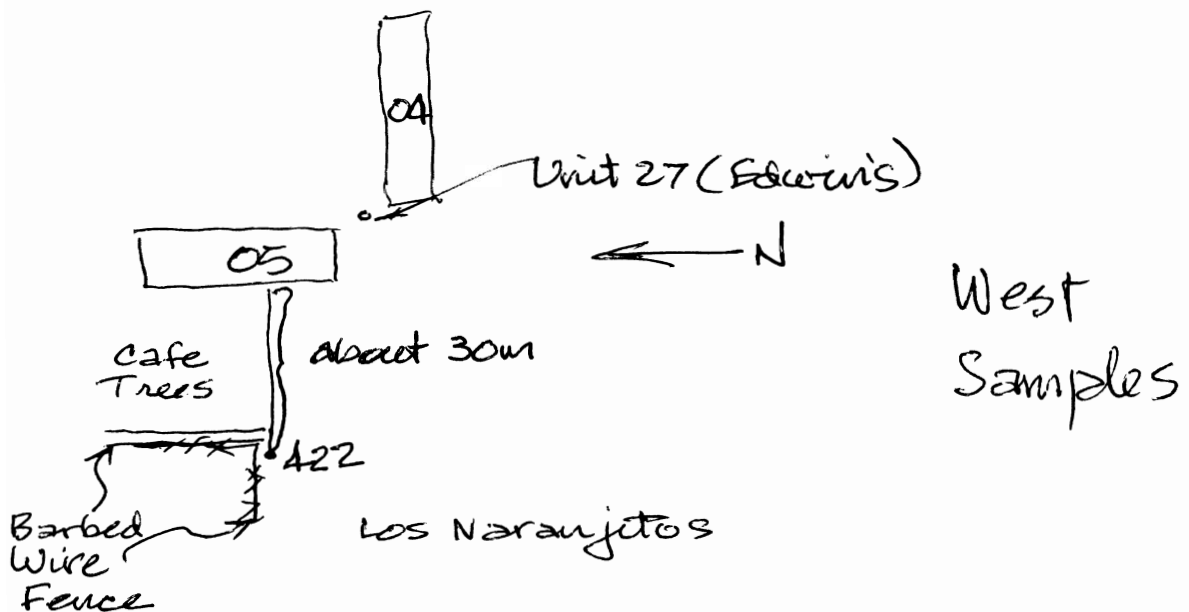
07/05/420 - 65-69cm 4.8m SW of
SW corner of Unit 27 (Edwin's)

13 Feb, 2006

South
Sample

07/05/421 - 35m S of SE (last peg) of
Str 02 N-S trench.

Did not excavate test pit, area was
sprayed with insecticide, the odor was
still noticeable.

West
Samples

07/05/422 About 30m (walking distance) from
W of Str 05 in NE corner of
Los Naranjitos

2006-15-28

13 Feb, 2006

07/05/422 (cont)

5-15cm large rocks

15cm 10YR 3/3 dk brn

ball, sticky, vs gritty, 4" ribbon - silt loam
ceramics

Interface at ~20cm

24cm No color chg

ball, less sticky, 1-2" ribbon, vs gritty -
silty clay loam

17cm bajareque

25cm ceramics

29cm chert

Cored at 40cm - 23cm core (~~sl dk than~~
~~core below 70cm~~)

07/05/422-1 15cm

07/05/422-2 28-30cm

07/05/422-3 57-60cm (core)

Cored an additional 17cm from 40cm bottom
(63-80cm core).

63-70cm 2" ribbon, vs gritty sticky -
silty clay loam / clay loam
2.5Y 4/3 olive brn

Cored an additional 20cm to 100cm (80-100cm)
no color change (noted chg at 80cm).

07/05/422-4 94-97cm (core)

2006-15-29

13 Feb, 2006

07/05/422 (cont)

Cored an additional 16 cm (100-116 cm)

Interface at 80 cm

2.57 4/6 olive yellow

07/05/422-5 123-126 cm (core)

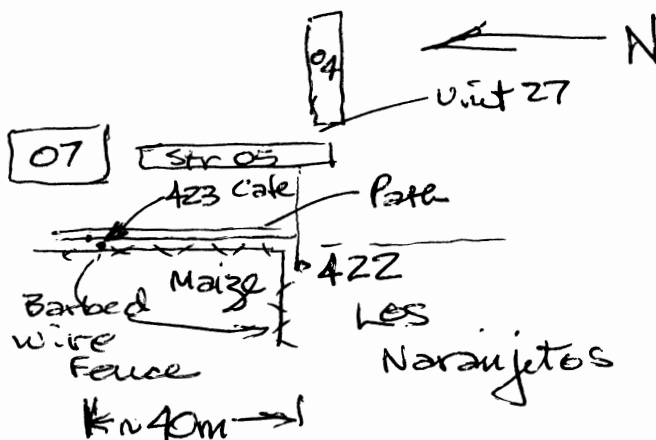
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<u>Sample</u>	<u>pH</u>	<u>color</u>	<u>Comments</u>
07/05/418-1	7.0	blue	10-12cm BGS
07/05/418-2	8.0	dk blue	30-32cm
07/05/419-1	6.5	green	12-14cm BGS
07/05/419-2	6.5	green	27-30cm
07/05/419-3	6.5	dk green	61-64cm
07/05/419-4	6.5	green	48-50cm
07/05/419-5	6.5	green	89-92 65-69cm
07/05/420	6.5	green	65-69cm BGS
07/05/422-1	6.5	green	13-15cm BGS
07/05/422-2	6.5/7.0	dk green blue grn	28-30cm
07/05/422-3	7.0	blue grn	57-60cm
07/05/422-4	7.0	blue grn	94-97cm
07/05/422-5	7.0	blue grn	123-126cm

14 Feb, 2006

No rain since yesterday morning, yesterday improved considerably after about 10AM.

Objective: Finish perimeter samples 1W and 1S (421 did not do yesterday due to insecticide)



07/05/423: About 40m (measured by Paces) N of 422 and E about 5m

1st Core sample bajareque @ 15cm, core 32cm long.

9-11cm 7.5YR 3/2 dk brn
ball, smooth, <1" ribbon - Silt loam

2nd Core sample 30cm long
Noted that depth of pit was 52cm while cores were 62cm. 10cm error

Found bajareque + ceramic in 2nd core.

2006-15-31

14 Feb, 2006

07/05/423-1 9-11cm BGS

07/05/423-2 35-38cm (same color + texture as 423-1)

07/05/423-3 ~~10YR 5/6 yellowish brn~~ 53-56cm
10YR 5/6 yellowish brn
ball, 2" ribbon, sl sticky, smooth - clay loam

18cm ceramic

15cm bajareque

38-40cm ceramics, many large pieces, 1 pc
fineware, bajareque

07/05/423-4 20cm (w ceramics)

0-38 A

38-43 A1/B

07/05/423-5 40cm

43- B

35cm ceramics

ball, 1-2" ribbon, sl gritty - silty clay loam

40cm 7.5YR 4/2 brn

smooth, sticky, 1-2" ribbon - clay loam

Color change at ~ 43cm

Took 18cm core at 60cm depth (60-78cm)

" additional 15cm core (78-93cm)

" " 8cm core (93-102cm)

07/05/423-6 75-78cm (core)

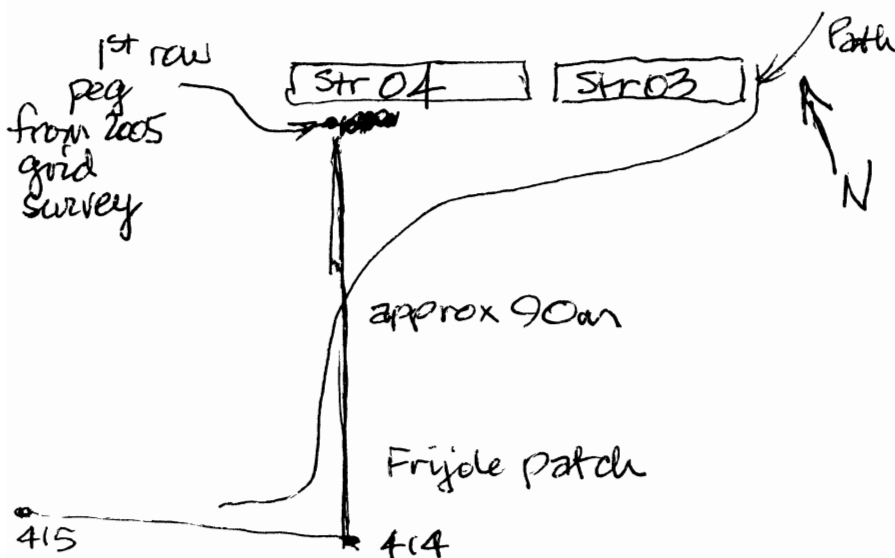
07/05/423-7 90-93cm (core)

} sl mottled w yellow/orange
Sticky, sl grit, 2" ribbon - silty clay loam / silty clay

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Bottom at 102cm (07/05/423)

Determined approx location of 07/05/414



Noted that gold spray painted stakes for 410, 413 and 414 were taken. I replaced them all.

07/05/410

Core testing

0-48cm 10YR 4/3 brn

ribbon < 2", sandy, not sticky - sandy clay loam

48-53cm bit gravelly

53cm rock

0-10 Ap

10-48 A

48- C

0-10cm 10YR 3/3 dk brn

smooth, < 1" ribbon, sl sticky - silt loam

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07/05/413

Corer sampling to identify horizons

0-10 cm sl dk

~~10-30 cm~~ 7.5 YR 4/3 brn

10-36 cm < 1" ribbon, sl gritty, sl sticky - loam

59 cm hit rock

1st core 0-36 cm

36-59 same color (7.5 YR 4/3 brn)

1-2" ribbon, sl gritty, not sticky - silt clay loam

07/05/421 - 35 m S of SE (last peg) of Str 02
N-S trench (see pg 2006-15-27)0-20 cm first horizon 7.5 YR 4/2 brn
sticky, < 1" ribbon, sl gritty - silt loam

20 cm - ceramic

27 cm - bajareque

30 cm sl color change 7.5 YR 4/3 brn

sl sticky, 1" ribbon, gritty - sandy clay loam
structure crumbly, some decomposed rock

45 cm shale decomposed rock

53 cm color sl lighter 7.5 YR 4/4 brn

58 cm same color as 53 cm, 2" ribbon, sl gritty, sticky - silt clay loam

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07/05/421 (covit)

At 58 cm took 12 cm core (58-70 cm)

took additional 10 cm core (70-80 cm) - shale,
crumbly sandy

additional 25 cm core (80-105) - loosely packed
(measured 12-15 cm) sand, shale

07/05/421-1 67-70 cm*

07/05/421-2 82-105 cm*

07/05/421-3 19-21 cm

07/05/421-4 31-33 cm

Took pH profile of Unit 27 (Edwin)

West wall

A 38 cm

B 63 cm

C 86 cm (Intrusion)

D 110 cm (Lower clay)

E 195 cm (Rocky layer)

pH

6.5

6.5

6.5

6.5

8.0

comments

green

green

dk green

green

blue

* core sample

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PH Analysis of samples taken today

Sample	PH	Color	Comments
07/05/421-1	8.0	# blue	67-70cm* BGS
07/05/421-2	8.0	lt blue	85-85*
07/05/421-3	6.5	lt green	19-21
07/05/421-4	6.5	lt green	31-33
07/05/421-5	7.0	bl/green	51-53*
07/05/423-1	6.5	green	9-11cm BGS
07/05/423-2	6.5	green	35-38cm*
07/05/423-3	6.5	green	53-56*
07/05/423-4	6.5	green	20cm
07/05/423-5	6.5	green	40cm
07/05/423-6	6.5	green	5-13*
07/05/423-7	6.5	green	9-93*

* RARE SAMPLE

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House lab

Will work in lab all day to finish PO₄ and assemble data. Will meet with Marcello in AM at about 3:30-4:00 PM. After cold night (55°F) the morning has clear skies with some clouds. It is almost 48 hrs without rain! The sun even poked its head out briefly (few minutes) yesterday.

Decided to run PO₄ analysis on samples (top, middle, bottom) of 422 representing the West. This corresponds to samples: 07/05/422-1, 07/05/422-3 and 07/05/422-5, in addition will run 07/05/423-4 and 07/05/423-5 found in association with ceramics. Will use new bottles of Methylch 2 conc sol'n to see if there is an issue with stock sol'n and cloudy ~~fast~~ filtrate. Will also run Marcello's sample 07/05/420.

Will not be able to run 07/05/423-4 and 5 today, they are still wet. Will check this PM.

1. Prepared fresh batch of 1mg/liter std sol'n (1ml: 49ul distilled H₂O, lot A421, EXP APR-08)
2. Prepared 2 bottles Methylch 2 stock sol'n using new Methylch 2 Conc, lot A4056, EXP FEB-08)

Will not rerun calibration test but

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will run 1mg/Liter std in 1st set.Will use 0.41, 0.29, 0.09, 0.21 $\bar{x} = 0.25$ as
PhosVer 3 Adjustment

Vial	Description	Weight	Zero Set	(4min) Reading	Reading Adj
1	1ml std sol'n + 9ml dist H ₂ O		Set (0.00)	0.16	0.00
2	410-1	1.9g	0.00	0.53	0.28
3	410-3	1.9g	0.00	0.30	0.05
4	1ml/liter std sol'n	1.9g	0.00 (blue)	1.25	1.00
5	410-4	1.9g	0.00	0.35	0.10
6	413-1 (roots)	1.9g	0.00	0.34	0.07
7	413-2	1.9g	0.00	0.25	0.00
8	413-4	2.0g	0.01	0.31	0.06

3. 25ml Melich 2 std sol'n to 2gm sample, shake 5 min + filter.

4. 1ml filtrate: 9ml distilled H₂O.

5. Zero before PhosVer 3, add PhosVer 3 shake 1 min, read after additional 3 minutes

Note: All filtrates clear will re-run 1st set.

1ml/liter std OK. Results OK.

10:25AM Lab Temp 19°C

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Ran additional set

Vial	Description	Zero	Reading (4min)	Reading ^{**} Adj
1	1ml stk soln + 9ml H ₂ O	Set (0.00)	0.29	-
2	420	0.00	1.17	0.92
3	422-5	0.00	0.37	0.12
4	422-1	0.00	0.43	0.18
5	415-2*	0.02	0.36	0.07
6	415-3	0.00	0.46	0.21
7	422-3	0.00	0.28	0.03

* Refiltered 1st filtration cloudy, clear 2nd filtration
 ** 0.25 PhosVer 3 adjustment

Marcello's sample is hot.

12:05 Temp: 20°C

Ran another set

Vial	Description	Zero	Reading (4min)	Adj ^{**} Reading
1	1ml stk soln: 9ml H ₂ O	Set (0.02)	0.27	-
2	423-5	0.02 (blue)	1.17	0.90
3	415-4	0.04	0.41	0.12
4	416-3	0.03	0.31	0.03
5	415-8	0.07	0.41	0.09
6	416-2	0.02	0.21	0.00
7	423-4	0.07 (1+blue)	0.76	0.44
8	416-4	0.03	0.30	0.02

Samples for both sets were 2.0 g.

2006-15-38

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Orange House Lab

After another dry evening, another good day although overcast. Today is wrap up day as tomorrow we leave for Fort Onoa and I will spend overnight at San Pedro Sula.

Objective:

Finish PO₄ analysis profile of 415 and 423. Copy notes and download photos to data base.

<u>Vial Sample</u>	<u>Description</u>	<u>Zero</u>	<u>(4min) Reading</u>	<u>Adj. Reading</u>
1	1ml Heblid. 2** soln: 9ml H ₂ O	Set (0.00)	0.26	—
2	423-1 (blue)	0.01	1.06	0.80
3	423-2	0.00	0.99	0.74
4	423-3	0.00	0.92	0.67
5	1ml/liter Std soln	0.00	1.17	0.92
6	423-6 1t blue	0.02	0.67	0.40
7	423-7 1	0.00	0.69	0.44

7:25 AM Temp = 20°C

** Subtract 0.25 PhosVer 3 adjustment
Std a bit low but OK.

423 was a test pet with many ceramics PO₄ readings ~~right~~ high throughout profile.

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<u>Vial</u>	<u>Description</u>	<u>Zero</u>	<u>Reading</u>	<u>Adj^{***} Reading</u>
1	1ml str soln: 4ml H ₂ O	Set (0.00)	0.17	—
2	415-1	0.00	0.39	0.14
3	415-2	0.00	0.42	0.17
4	415-5	0.01	0.37	0.11
5	415-6	0.00	0.29	0.04
6	415-7	0.01	0.27	0.01

Two soil profiles07/05/415 3

		<u>pH</u>	<u>PO₄</u>
1	63cm	6.5	0.14
2	77cm		0.17/0.09
3	101-104cm		0.31
4	12-14cm		0.12
5	30-32cm		0.11
6	50-52cm		0.04
7	40-42cm		0.01
8	23-26cm		0.09

07/05/423 E (Possible midden)

		<u>pH</u>	<u>PO₄</u>
1	9-11cm	6.5	0.80
2	35-38cm*		0.74
3	53-56cm*		0.67
4	20cm		0.44
5	40cm		0.90
6	75-78*		0.40
7	90-93*		0.44

* core sample

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Samples taken by corer for pH and/or PO_4 analysis

07/05/416: 1, 3, 4

07/05/419: 3, 4, 5

07/05/420

07/05/421: 1, 2

07/05/422: 3, 4, 5

07/05/423: 3, 6, 7