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OU4 Phase 1
Evap Ponds
Oct 2008

"Rite in the Rain"®
ALL-WEATHER
JOURNAL
No. 391

BOOK #1

"Rite in the Rain"®
ALL-WEATHER WRITING PAPER

Name Penny Bassett
Brown and Caldwell
Address 3264 Goni Rd, Suite 153
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Phone

Project 044 Phase 1
Yerington Mine Evaporation Ponds

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10/2/08 Thurs

0900 P Bassett onsite

- Assemble + test JMC soil probe sampler in the LEP to a depth of 3' total. Works well, penetrated asphalt liner and 1' VLT gravel. but was difficult w/ manual hammer, will need to purchase electric hammer. Volume of retrieved soil is pretty small w/ 1.2" core diameter. Will probably need to punch 2 parallel holes to get enough sample.

- Stake out borehole drill locations for 17 bore holes using handheld Garmin GPS. Modified a couple locations to be inside pond footprint rather than on embankment.

1500 Offsite

10/5/08 Sunday

0700 Arrive on site, meet WDC drill crew and John Batchelder at Weed Hts office for pre-start safety meeting + job review.

Field personnel: Penny Bassett (BC)
Rickey Smedley } WDC
Jake Trujillo }
John Batchelder (ARC)

Weather: clear, sunny temps ~ 60-75°. Yesterday a storm front moved thru but no precipitation in Yerington, soils are dry.

Safety Meeting:
- Review Site Worker safety orientation
- Incident reporting procedures,
- Contact names/numbers
- Site + job specific hazards
- Review JSA

WDC
0930 - Support truck experiencing mechanical problems, cannot move + unload drill until repaired, will likely start drilling in afternoon.

1330 Repairs complete; mobilize to LEP-01 and unload geoprobe

15:15 Collect MWMP sample first. This required drilling 3 holes to total depth of 15' each to get enough volume to fill 3gal bucket for tst. Each hole drilled ~6" apart

Soil descrip:

0-3" Pond sediment

3" - 1.5' VLT subbase

1.5' - 15' - Soil, mixture of dense plastic clay + coarse poorly graded sand layers Soils compacted somewhat in core sleeve.

4th boreal hole drill to water table

SWL = 24 btoc stickup 1.55

= 22.45 ft bgs

Soil core samples (Geochem)

15:30 OU4-LEP-01A-SC 1.5-7' composite core sample, collect in 1gal ziplock, mix & distribute portion to 100ml plastic bottle for metals analysis (glass jars have not arrived yet)

descrip - Silt and silty sandy, moist, slightly reddish in color, forms clumps

16:00 OU4-LEP-01B-SC 15-18' bgs

Composite core sample, blended in ziplock bag + small portion put in 100ml plastic.

descrip. - Med-coarse sand poorly graded

Soil Core (Geotechnical)

OU4-LEP-01A-~~GTSG~~ 7-10'

intact core sealed in core sleeve ~18" long (some compaction during drilling) Sandy soil

OU4-LEP-01B-~~GTSG~~ 18-20'

Intact core, Sandy soil

+ Geotech samples collected & immediately below geochem samples

17:00 Water Sample - OU4LEP-01-GW

Shallow water grab sample 22.45 - ~~29~~ 30 ft bgs

& Used 3/4" stainless steel bailer to collect

10/5/08

Sample in 9 1-liter bottles, unfilt + unpresen.
Will filter samples in field office using peristaltic pump + put in preserved bottles. Water is very muddy
Drillers used 10-slot hydropunch screen

field parameters
pH = 5.97
Cond ≈ 23,800

1730 Return to lab, filter samples check field pH + conductivity
Conductivity should be rechecked after sample has had time to settle, not sure if reads accurate w/ alot of suspended solids.

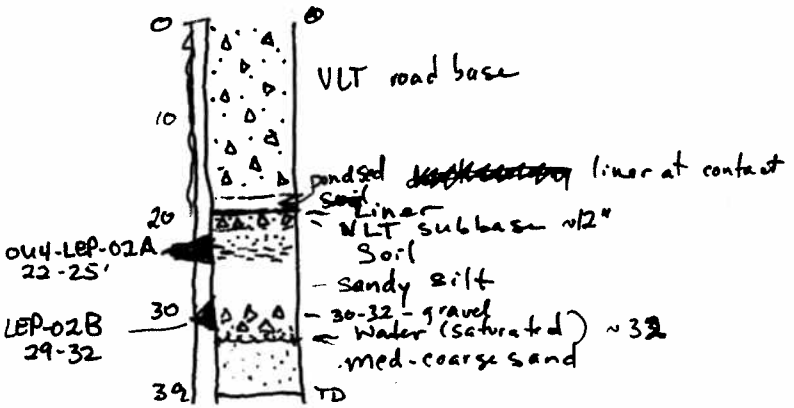
1900 Offsite

P Bassett

10/6/08 MONDAY

0630 Arrive at site, check in, load field supplies.
Personnel: P. Bassett (Bc)
Rick Smedley (WDC)
Jake Trujillo
Safety Meeting: Driving safety, mine site traffic, pipeline locations.

0800 Set up on OU4-LEP-02 located on pumpback road. Will drill through ~ 10' road gravel before sampling



SWL = 33.1 ft bgs
Insert geoprobe screen 35-39'
10 slot

10/6/08

Soil samples:

0815 OU4-LEP-02A-SC 20-25' bgs
- several inches dense hard clay, hard to break by hand. Grades downward from med-coarse sand → silt → dense clay over sample interval

0830 OU4-LEP-02B-SC 29-32' bgs
- ~8"-18" coarse gravel well graded (almost looks like VLT but rounded) plus ~12" silty sand in composite interval

~~1045~~

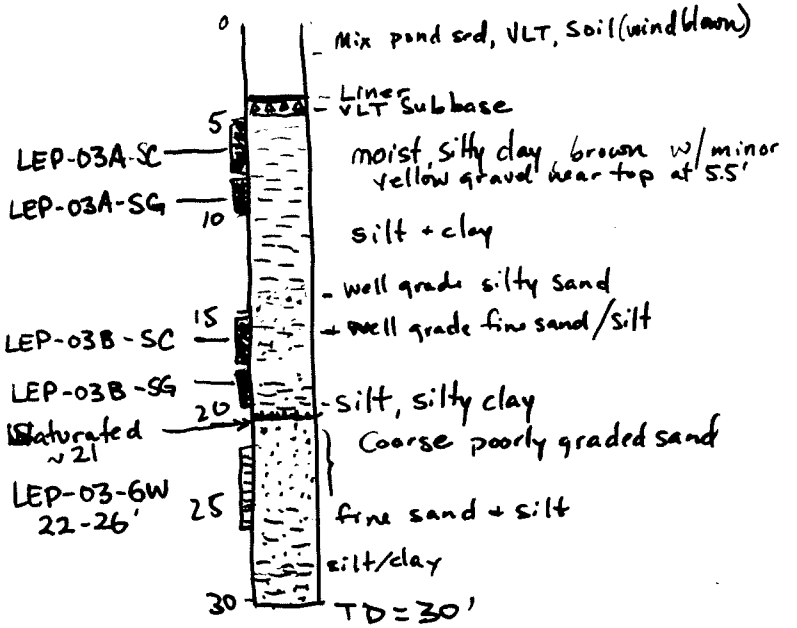
Water Sample:

10:45 OU4-LEP-02-GW 35-39' bgs
- 10-slot screen, geoprobe, 4' long
- bailer to collect sample – used reusable stainless steel bailer, deconed w/ alconox + pressure washer before use.
- Filled 250ml amber for TOC straight from bailer with sediment (yesterday let sediment settle in 1L bottle Then filled amber for ~~OU4~~ LEP-01)
- Filter in field office w/ peristaltic + 10 um, 1 um + 0.45 um filters

10/6/08

13:30 Mobilize to OU4-LEP-03
Start drilling w/ 3 parallel holes to collect MWMP sample (3gal bucket)

14:15 Collect sample OU4-LEP-03A-MW from interval 4.5 – 15' bgs, 3 parallel boreholes ~6" apart
- Soil is mostly clay, both moist, soft, sticky as well as hard, stiff, dry. Dark brown, some gypsum xtals visible below pond liner.



10/6/08

14:45 Collect shallow soil sample
OU4-LEP-03A-SC 5-8'
Composite sample
dense sticky clay + silt
OU4-LEP-03A-SG 8-10'
intact core ~18" long, kept in unopened core sleeve

15:15 Collect deep soil sample
OU4-LEP-03B-SC 15-18'
silty sand
OU4-LEP-03B-SG 18-20'
Intact core 18" long unopened core sleeve

16:15 Water sample
OU4-LEP-03-GW 22-26'
- Static water level ~21' bgs
- Set hydropunch screen in coarse sandy zone at 22-26'
- Collect sample w/ 3/4" stainless steel bailer, decon w/alconox before using
- for TOC sample, lab recommended dumping acid preserv before filling because of high sediment content to prevent reaction. Did that on this sample

10/6/08

17:00 Return to field office, unload sample + refridgerate. Will filter + preserve samples from LEP-03-GW tomorrow morning

17:30 offsite, drillers seal + grout all boreholes to abandon

Penny Bassett

10/7/08 TVES

06:45 Arrive on Site

Field personnel:
- Penny Bassett, Royanne Barringer } BC
- Rick Smedley, Jake Trujillo } WDC

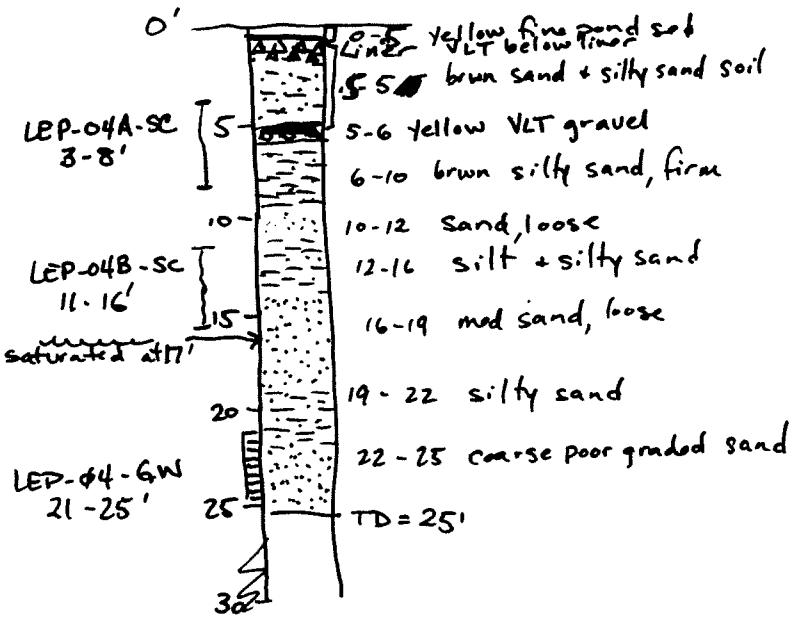
Safety meeting:
- Eyewash solution available in field kit if ~~w~~ sample water or preserv. splashes in eye
- Field office ~~sh~~ no water, pipeline will be fixed soon, eyewash bottles in there as well.
- Drillers had to get water from EPA water truck

Weather: Sunny, clear ~ 85°F high
Ponds + soil are dry

Royanne filtered LEP-03-GW samples from previous day + put in preserved bottles. Took field measurements for pH + conductivity

10/7/08

07:30 Mobilize to OU4-LEP-04 and begin drilling



Static WL = 18.1' bgs

08:45 OU4-LEP-04A-SC 3-8' (DUP)
Soil composite 5' interval
Silty sand w/ 1' interval of yellow VLT gravel in the middle

09:00 OU4-LEP-04B-SC 11-16' (DUP)
Soil composite 5' interval
Med sand + silty sand

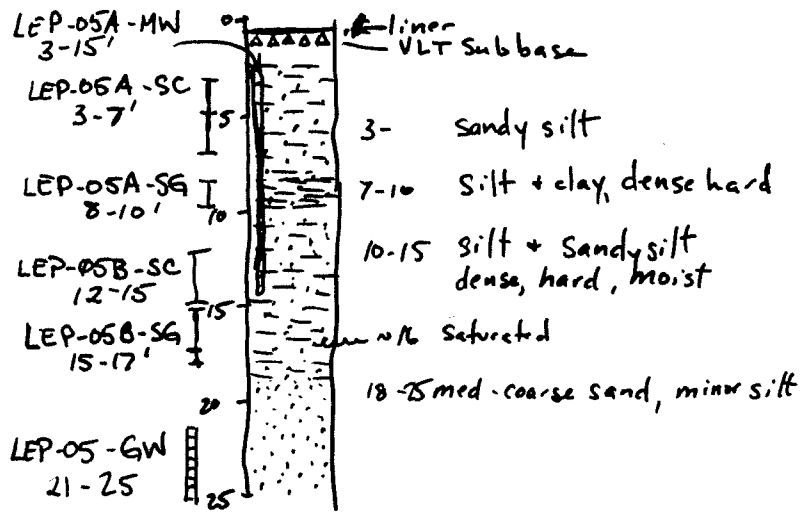
10/7/08

0930 OU4-LEP-04-GW (DUP) 21-25'
Ground water sample, 4' screen w/ hydropunch, sampled w/stainless steel bailer, deconned before using. Collect enough for duplicate of metals/alk/TOC but not for rads.
· TOC sample - dump acid preserv + collect unpreserved.

Duplicates of Soil + GW collected for Irvine lab only (metals + water chem.) Not enough volume for dups for Rad Soil or Water

1000 Drillers abandon hole, plug w/ cement grout, decon sample bailer + move to next location.

1045 Start drilling OU4-LEP-05 will collect geotech samples at this location from 3 parallel holes 0-15'



11:30 Collect 3gal bucket OU4-LEP-05A-MW from 2 parallel holes 3-15' (below liner + VLT subbase)
· Soil is silty clay, dense, hard + soft and greasy.

Lunch break

13:00 Collect shallow soil intervals
OU4-LEP-05A-SC 3-7' bgs
in ziplock bag Silty sand, well graded
OU4-LEP-05A-SG 8-10' bgs
Intact core for geotech, packed
silty sand brown

13:30 Collect deep soil samples
OU4-LEP-05B-SC 12-15' bgs
Ziplock bag, silty sand, looser + more crumbly, brown
OU4-LEP-05B-SG 15-17' bgs
Intact core sleeve

14:00 Collect water sample from 4' long hydropunch set from 21-25' in coarse sand, good producing water zone.
OU4-LEP-05-GW 21-25'
- Collect Toc sample in unpres. bottle
- Collect 10L in unfilt, unpres bottles, will filt + pres back in field office.

15:00 Back to field office to drop samples, filter water, add preservatives.
WDC driller says rig has seal going out on hydraulic line + They need to buy new one + allow oil to cool. Will replace in am. before drilling next hole

Measure field parameters for LEP-04 + LEP-05. Realized that field parameters were not measured on LEP-03 + samples have already been shipped + extra dumped

~~1600~~
1800 offsite, signed out

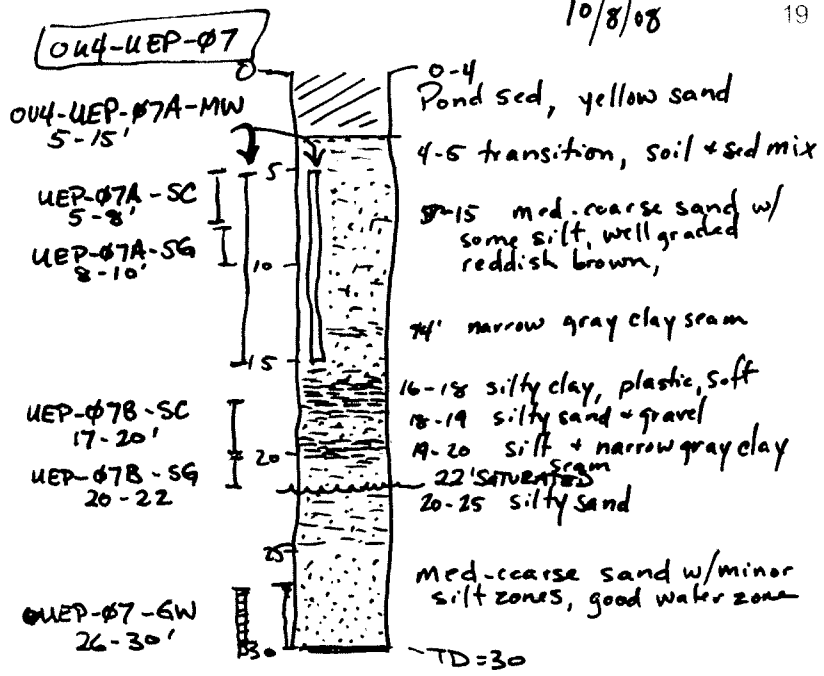
P Bassett

10/8/08 &WED

0630 Arrive on site, collect field supplies
Personnel: Penny Bassett, Royanne Barringer (BC)
Rick Smedley, Jake Trujillo (WDC)
Weather: Sunny, clear, no wind
Safety meeting:
- Use PPE as specified in JSA
- No open blades, use safety knife

0800 Mobilize to OU4-UEP-Ø7, set up and start drilling

0830 Collect 3 gal bucket for MW/MP samp
OU4-UEP-Ø7A-MW (5-15')
- Composite from 3 parallel boreholes spaced ~6" apart. Did not use 0-5' interval because it was pond sed from 0-4' and transition zone to soil 4-5'
- Soil from 5-15' is soft + crumbly well graded sand w/ minor silt brown w/ some red + yellow tones



09:00 Shallow soil sample
OU4-UEP-Ø7A-SC (5-8')
Collect in ziplock bag, break up clumps and blend for ~1 min to make homogeneous, put some in 4oz glass jar for Irvine lab. Silty sand, loose, breaks up easily.
OU4-UEP-Ø7A-SG (8-10')
Intact core for geotech tests, silty sand.

0930 Collect deeper soil sample
OU4-UEP-07B-SC (17-20')
- Mixture of silty sand and silt/clay blend in ziplock bag

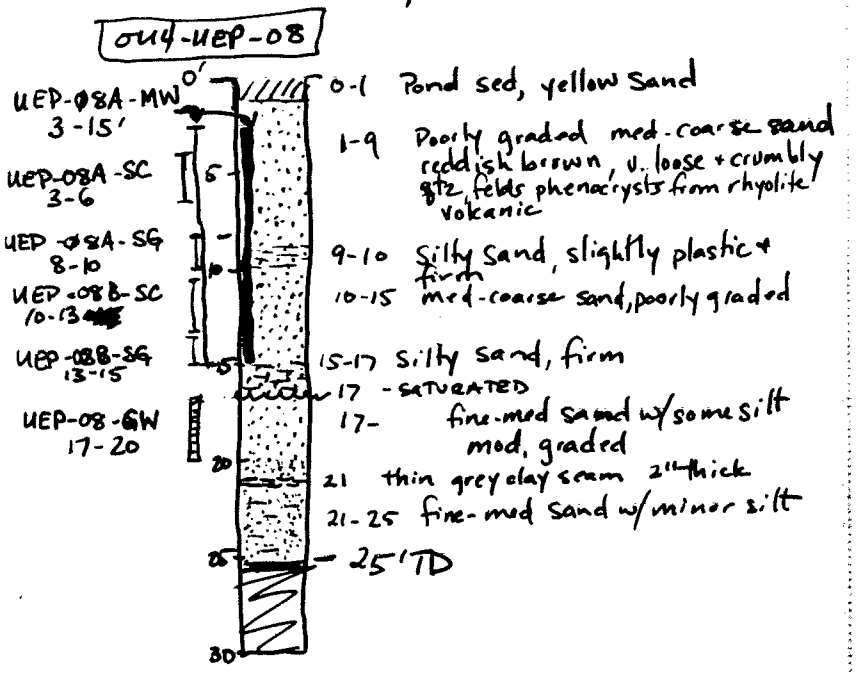
OU4-UEP-07B-SG (20-22')
- Intact core silty sand

1030 Collect water sample
OU4-UEP-07-GW (26-30')
- Hydropunch screen 0.01 slot size
- Collected by stainless steel bailer decon'ed w/alconox + pressure washer
- Static water at 22' bgs

1100 Bring samples back to field office for packing, filtering, etc. Roxanne to filter samples.

⊛ Ilke Dinkleman (CH2M) on site to observe for EPA, arrive ~ 8:30 am + stay to end of day. No split samples, just observation.

1315 Start drilling OU4-UEP-08



13:30 Collect 3-gal bucket for MWMP
OU4-UEP-08A-MW (3-15')
- Med-coarse sandy soil, reddish brown loose, crumbly

1400 Collect Shallow Soil sample
OU4-UEP-08A-SC (3-6')
- Ziplock bag composite, blended in bag + distributed to 4oz jar + duplicate UEP-08-SC-FD

10/8/08

OU4-UEP-08A-SG (8-10')
- Intact core sleeve for geotech
  Sand + silty sand

1430 Collect deep soil sample
OU4-UEP-08B-SC (10-13')
- Ziplock bag
- med-coarse loose sand, mod. graded
- fill 4oz jar + 2nd jar for duplicate
  UEP-08B-SC-FD

OU4-UEP-08B-SG (13-15')
- Intact core for geotech

1530 Collect water sample from hydropunch screen w/0.01" slots, screen set at 17'-20'
OU4-UEP-08-GW (17-20')
Set screen in coarse sand zone near top of water (static water @ ~17'), makes water slowly Collected sample w/ bailer and filled ~4-5 bottles but became v. hard to get water so used peristaltic pump w/clean silicone tubing for the remaining bottles.
~3 hrs to collect sample

1730 Return samples to field office, refridgerate TOC + Soils jar. Will filter + preserve water for metals + rad tomorrow a.m.

1830 Offsite

P Bassett

10/9/08 THURSDAY

0630 Arrive on Site, load field supplies

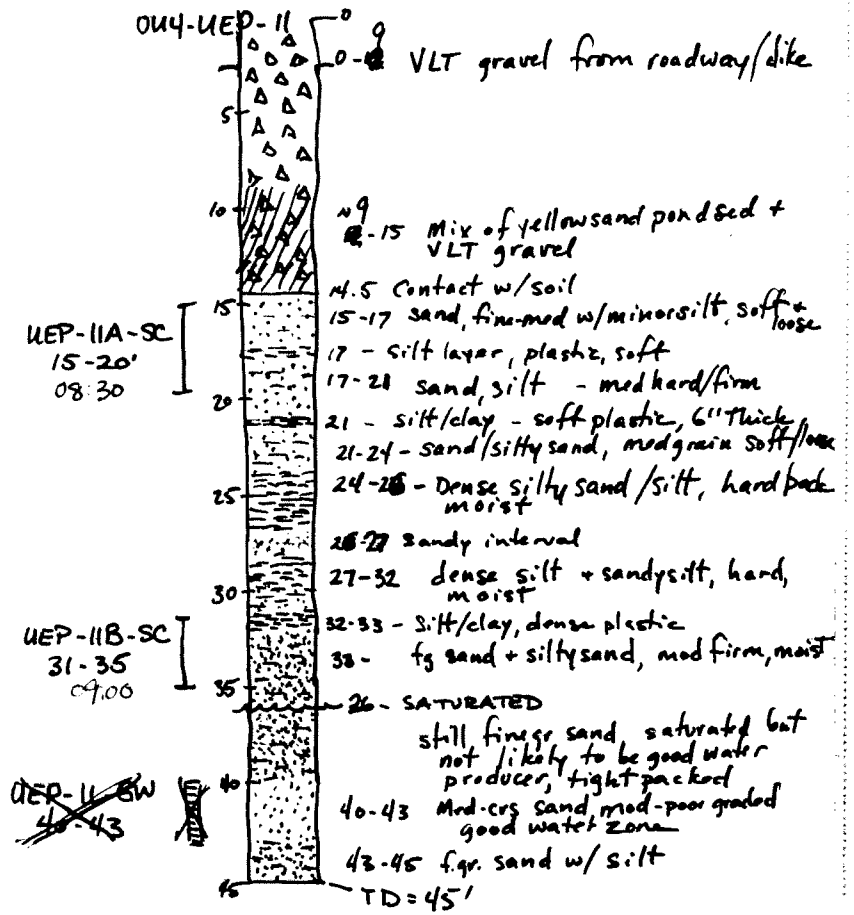
PERSONNEL: Penny Bassett, Royanne Barringer } BC
Rick Smedley, Jake Trujillo } WDC
Ilke Dinkleman (CH2M)

Weather: forcast to be cooler (high ~65°)
windy (20-30mph)

Safety Meeting:
Caution in wind, unattended things may blow away
Traffic around lab area, haul trucks are driving fast.

1800 Start drilling **OU4-UEP-11**

EPA contractor constructed access ramp to South side of UEP from road to allow access holes UEP-09 + UEP-10



- hole was dry after putting in screen
Not able to drill deeper so decided to leave hole open + drill deeper next week + try water sample again

0830 Collect shallow soil sample
OU4-UEP-11A (15-20')

0900 Collect deep soil sample
OU4-UEP-11B (31-35')

1115
OU4-~~FEP~~-48
A - VLT cap 0-~~6~~ 6"
B - Red pond Sed .5-5'
C - Red pond Sed 9-12'
bottom 12" very wet saturated
D - Soil 12-15'
sandy, dry. moist

11:45 OU4-FEP-49
A - VLT Cap 0-6"
B - Red pond Sed .5-4'
C - Soil 5-8' dry, sandy
yellowish brown

1200 Drill OU4-UEP-50
A - VLT 0-6"
B - Red pond Sed 6" - 2'
C - Soil 2-5'

1220 Drill OU4-FEP-51
A - VLT cap ~0-6"
- ~~v.~~ v. minor red pond sediment (~0.5" thick)
no sample of Sed
B - Soil (1-5')

12:35 Drill OU4-FEP-52
A - VLT cap 0-6"
B - Red pond sediment .5-4'
saturated at bottom
C - Soil, sandy loose 5-8'

1300 - Collect equipment blank on reusable stainless steel bailer
Decon bailer w/alconox + pressure washer Then pour lab provided e-pure water over + thru bailer, collect in empty e-pure water container + Then distribute to sample bottles
OU4-EQ01

10/12/08 Sun

0600 Arrive onsite. Do safety orientation for Chad Haley, review drilling task, JSA, PPE reqmts.

0700 Meet drillers do safety meeting, discuss drill schedule

PERSONNEL: Penny Bassett, Chad Haley } BC
Rick Smedley, Jake Trujillo } WDC

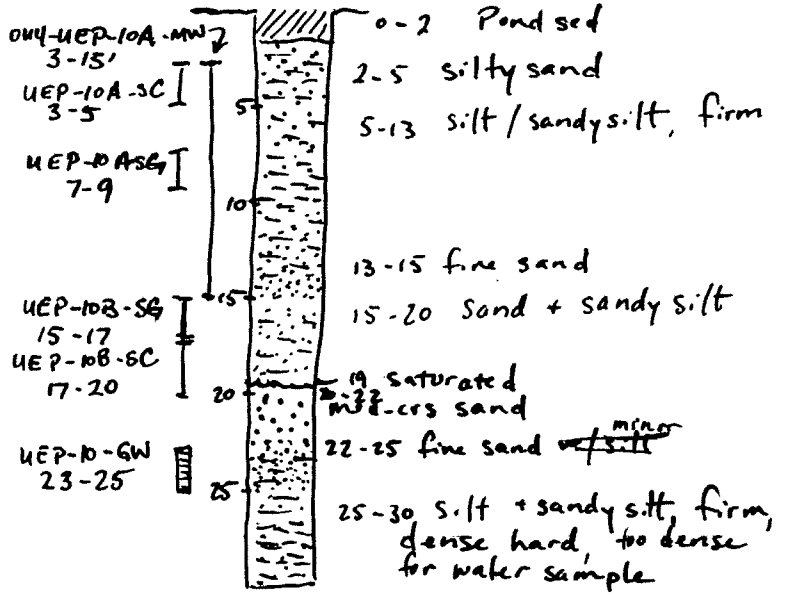
WEATHER: Sunny, clear, cold (below 32° in am., high ~ 60°F) Snowed at site on Friday but all melted. Pond sed is moist but not saturated, still firm + access for drill is not restricted.

SAFETY MEETING: Review use of PPE (gloves), need to check stability of pond sediments before driving rig out.

SCHEDULE: Drillers did not bring extra drill pipe with them, it will be delivered this p.m. Cannot do deeper holes in Finger Pond yet

Will set up + drill one of the holes in the UEP.

0900 Mobilize + set up at **OU4-UEP-10**



09:30 Collect 3gal bucket for MWMP OU4-UEP-10A-MW (3-15')

- 2 parallel holes to 15' deep
- Some smearing of pond sediment downside of core had to be included in sample

10/12/08

10:15 Collect shallow soil samples

OU4-UEP-10A-SC (3-5')
- Ziplock bag composite, silty sand homogenized in bag + split to 4oz jar

OU4-UEP-10A-SC (7-9')
- Intact core sleeve

10:30 Collect deep soil samples

OU4-UEP-10B-SC (17-20')
- Collected below the geotech core sleeve to avoid area with smeared pond sed on soil core

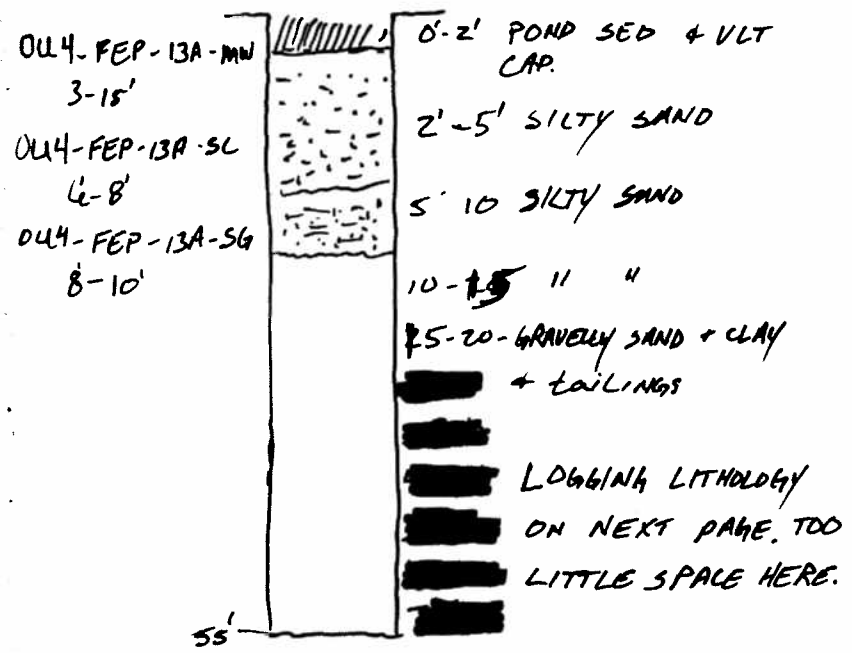
OU4-UEP-10B-SG (15-17')
- Intact core sleeve

Depth to water ~20.7' bgs

12:00 Collect GW sample from hydropunch screen + bailer

OU4-UEP-10-GW (23-25')
- Collect extra for duplicate for Irvine lab samples only.

1350 - START ON OU4-FEP-13



1420 - COLLECT OU4-FEP-13A-MW
3 gal BUCKET
- 2 HOLES 15' EACH

1440 - COLLECT OU4-FEP-13A SC
ZIPLOCK BAG COMPOSITE, SILTY SAND
- 4-8'
- MIXED + PUT INTO 4oz JAR

1445 - COLLECT OU4-FEP-13A-SG - INTACT CORE

20-25- SILTY SAND 70% SAND 30% SILT

25-30 - SILTY SAND- VARIED IN COMPACTION
[redacted]' VERY LOOSE SAND. 29',
tighter compaction 70% SAND
20% SILT

30-35- SILTY SAND - CONSISTENT COMPACTION
70% SAND 30% SILT

35-40 - SILTY SAND- 70% SAND 30% SILT

16:55 COLLECT OU4 - FEP - 13B - SG
17:00 COLLECT OU4 - FEP - 13B - SC

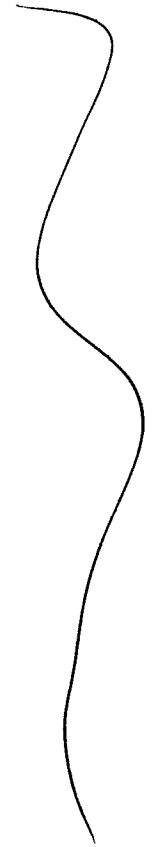
45-50 - SILTY SAND - HIGH MOISTURE

50-55- SILTY SAND- WATER LEVEL

OU4 - FEP - 13B - SG + -SC
WERE COLLECTED ABOVE GROUNDWATER.
SG- INTACT CORE SLEEVE [redacted]
• 43' - 45'
SC- ZIPLOCK BAG
• 40' - 43'

17:10- Secure site, will collect water samples IN MORNING.

18:00 DRILLERS & BC PERSONNEL off-site.



CTH

10/13/2008 MON

07:00 - ARRIVE ONSITE.

07:30 - MEET DRILLERS + HAVE H&S MEETING + SCOPE OF ACTIVITIES.

PERSONNEL: PENNY BASSETT, CHAD HALEY } BC
RICK SMEADLEY, JAKE TRUJILLO } WDC

WEATHER - LOW 20's IN MORNING, CLEAR + SUNNY WITH PROJECTED HIGH IN THE LOW 60's.

SAFETY MEETING TOPICS:
- COLD STRESS
- APPROPRIATE PPE TO BE USED
- INCREASED TRAFFIC ON MINE SITE

SCHEDULE OF ACTIVITIES.
- COLLECT WATER SAMPLES FROM OU4-FEP-13
- DRILL OU4-FEP-12
- COLLECT SAMPLES FROM FEP-12

TIME PERMITTING
4 COLLECT WATER FROM OU4-UEP-11

→

- POSITION ON ANOTHER HOLE IN UEP FOR EPA SAMPLES.

07:35 - WATER LEVEL - OU4-FEP-13
- ~ 42' bgs

07:45 - BEGIN COLLECTING WATER

09:00 - FINISHED COLLECTING WATER SAMPLES. HEADING TO FIELD OFFICE. DRILLERS MOB'ING TO OU4-FEP-12.

10:20 - BEGIN DRILLING FEP-12

CH
~~0-5~~ 0-2 - CAP
2-5 - RED SED
5-7 - LOW RECOVERY, MOSTLY SLUFF
7-10 - RED SEDS
10-11 - SLUFF
11-15 - SILTY SAND - TOOK SAMPLES FROM THIS INTERVAL

10/13/08

10:30 COLLECT <u>OU4-FEP-12A-SC</u>
- 11'-13'
- ZIPLOCK BAG.
- MIXED TO MAKE HOMOGENEOUS SAMPLE.

10:35 COLLECT <u>OU4-FEP-12A-SG</u>
- 13'-25'
- INTACT CORE

15-20 - SILTY SAND W/ SMALL GRAVEL SOME SMEARING OF RED SEDS PRESENT.
20-25 - SILTY SAND W/ SMALL GRAVEL ABOUT 6" LAYER OF CLAYIE SAND AROUND 24'.
25-30 SILTY SAND W/ SMALL GRAVEL

11:20 - PENNY TOLD ME NOT COLLECTING INTACT CORE HERE AT THIS HOLE LOCATION. ADDED 12A-SG TO 12A-SC ZIPLOCK BAG. NEW SAMPLE INTERVAL FROM 11-15'.

10/13/08

11:25 Doug Herlocker + JERRY ON SITE (TetraTech)

30-35 - SILTY SAND w/ GRAVEL. SMALL AMOUNTS OF CLAY INTERMIXED

35-40 - SLUFF FOR ABOUT 8'. SILTY SAND w/ GRAVEL.

40-45 - SILTY SAND. COLLECTED OU4-FEP-12B-SC

45-50 - SAND + SILT HARD DRILLING. SOME MOISTURE ENCOUNTERED @ ~ 48'. TRYING TO GO TO 55' TO GET BETTER WATER.

12:30 COLLECTED OU4-FEP-12B-SC
- ZIPLOCK BAG
- 41'-45'

12:45 - SCREEN @ ~52'
WATER @ ~ 45'

13:45 - STARTED COLLECTING WATER
15:15 - DONE COLLECTING WATER

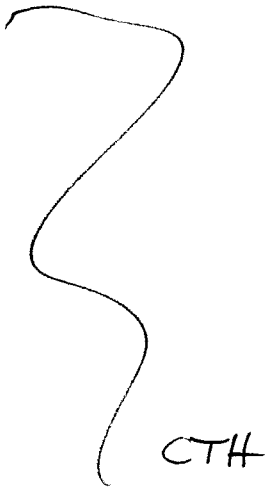
10/13/08

15:45 CLEAN AREA, GROUT HOLE, RELOCATE TO OU4-UEP-11 TO COLLECT WATER SAMPLES

16:10 SET UP ON UEP 11 TO GO TO 50'

16:30 DRILLED TO 50'. SET SCREEN AT 45' DUE TO SLUFF + SILT/SAND INFLOW. BAILED 2 times TO VERIFY PRESENCE OF SAMPLABLE AMOUNT OF WATER.

1700 OFF HOLE, DRILLERS OFFSITE CTH OVER TO FIELD OFFICE.



10/14/08 TUESDAY

07:00 - ARRIVE ON-SITE & MEET DRILLERS H&S MEETING. SCOPE OF TODAY'S WORK.
PERSONNEL: PENNY BASSETT } ISC
CHAD HALEY }
JAKE TRUJILLO } WDC
RICK SMEADLEY }
WEATHER - IN A.M. HIGH 20's. CLEAR SUNNY - SLIGHT BREEZE. IN AFTERNOON, LOW 60's.
SAFETY TOPICS - COLD STRESS
SLIP/TRIPS/FALLS
APPROPRIATE PPE
TRAFFIC
SCHEDULE - BAIL WATER AND COLLECT SAMPLES FOR OU4-UEP-11.
- MOB TO OU4-UEP-09 TO DRILL, COLLECT SAMPLES.
- MOB TO OU4-UEP-06 TO DRILL, COLLECT SAMPLES

7:30 - BEGIN BAILING.
8:50 - FINISHED COLLECTING WATER

9:30 FINISHED GROUTING HOLE
RELOCATING TO OU4-UEP-09

9:50 START DRILLING

0-5' POND SEDIMENT
YELLOWISH
5-10 - POND SEDS, SAND FROM 8'-10'
10-15' 6" SAND, SILTY SAND
REST OF INTERVAL

10:08 COLLECTED OU4-UEP-09A-SC
- ZIPLOCK BAG
- 10' - 15'
- COLLECTED 5' INTERVAL DUE TO DUPLICATE SAMPLING BY TETRATECH

10:40 - CHANGED SAMPLE INTERVAL
OU4-UEP-09A-SC
- 4'-7'

10/14/08

15-20 - SILTY SAND, GRADED SAND LAYERS INTERMIXED.

10:55 OU4-WEP-07B-SC
- 2 ZIPLOCK BAG
- 16'-20'
- COLLECTED BY CTH

20-25 - GW LEVEL APX 23', 24' SILTY SAND, WET

25-30 . SAND TILL 26.5' THEN SILTY SAND

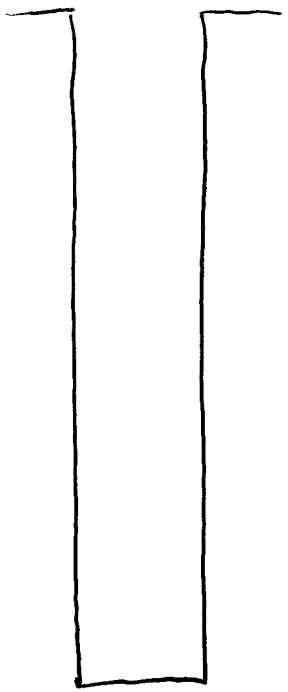
FINISHED DRILLING
11:00 STARTED COLLECTING WATER @ 23' USING PERISTALTIC PUMP

12:30 FINISHED WATER COLLECTION GO TO LUNCH

13:50 - MOBED TO OU4-WEP-06

10/14/08

OU4-WEP-09



13:55 BEGIN DRILLING
0-5. ROAD BERM MATERIAL. GRAVELLY SILTY SAND. PALE YELLOW
5-10 ROAD BERM MATERIAL
10-15 - ROAD BERM MAT. LAST 4" SILTY SAND PROBABLY NATIVE.
15-20 - HIGH CLAY CONTENT UNTIL 19' 19'-20' SAND.
OU4-WEP-06A-SC

10/14/08

20-25 SAND W/ MINOR SILT TO 23'
23'-25' - SILTY SAND
25-30' SANDY CLAY FROM 25-'29'
MOIST CLAY FROM 29'-30
30-35 - 30'-33' FINE TO COURSE SAND.
33'-35' SANDY SILT
35-40 - WET SILTY SAND

15:20 - BEGIN BAILING
16:20 - DONE BAILING
CLEAN UP OF SITE, GROUT HOLE
MOVE RIG.
17:00 HEAD TO OFFICE

* - TETRA TECH COLLECTED DUPLICATE SAMPLES FROM OU4-UEP-06, OU4-UEP-09. THE DUPS WERE OF BOTH THE A & B INTERVALS (SOIL) & THE GW SAMPLES.

CTH

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OU 4 PHASE 1
EVAP PONDS
OCT 2008

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ALL-WEATHER
JOURNAL
No. 391

Book #2

"Rite in the Rain"®
ALL-WEATHER WRITING PAPER

Name Penny Bassett / Chad Haley
Brown and Caldwell

Address 3264 Goni Rd, Suite 153
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10/15/08 WEDNESDAY

07:00 - BC PERSONNEL ON-SITE. HEAD OVER TO MEET DRILLERS.

07:30 H & S MEETING. SCOPE OF MORNING WORK.
PERSONNEL: PENNY BASSETT, CHAD HALEY, CORY STRAUSS (BC)
JAKE TRUJILLO, RICK SMEADLEY (WDC)

08:00 DRILLERS AUGERED 2-5' HOLES, 3" FOR MINE USE. WHILE THEY WERE DRILLING C. STRAUSS & C. HALEY WENT TO FIELD OFFICE TO COLLECT EQUIPMENT BLANK ON BAILER.

9:10 COLLECT OU4-EQ-01.
- 7 1-LITER BOTTLES PRESERVED W/ HNO_3 FILTERED
- 1 - 500 mL W/ HNO_3, FILTERED
- 1 - 500 mL NO PRES, NOT FILTERED
- 1 - 250 HCL, NOT FILTERED

10/15/08

09:30 - DRILLERS OFF-SITE.

10:30 INSPECT & TEST SOIL CORING EQUIPMENT, TAKING EARLY LUNCH TO ALSO GET GAS FOR GENERATOR, HACK-SAW, DISTILLED WATER.

12:30 GO OVER H & S & JSA.
PERSONNEL: PENNY BASSETT, CORY STRAUSS, CHAD HALEY (BC)
JERRY FAUCHEUX - WDC

SAFETY TOPICS
- EQUIPMENT LOADING/UNLOADING
- STRAIN FROM EQUIPMENT
- WALKING HAZARDS

1300 MOB TO 1st LOCATION

1320 - DRILL OU4-UEP-36
0-1 POND SEDS UEP-36A-SC
1-3 SILTY SAND UEP-36B-SC
DRILLED TWO CORES, 4 x-tra 12" INTERVALS ↓ pond seds

10/15/08

14:00 - MOB TO OU4 - UEP-37

14:05 COLLECT

OU4-UEP-37A-SC
- 0-1.5 pond seds
- ZIPLOCK BAG

OU4-UEP-37B-SC
- 1.5-3 SILTY SAND
- ZIPLOCK

1424 MOB TO OU4-UEP-~~ST~~ CH 40

1430 COLLECT

OU4-UEP-40A-SC
- pond seds
- Ziplock BAG
- 0'-1'

OU4-UEP-40B-SC
- SILTY SAND
- ZIPLOCK BAG
- 1'-3'

* TETRA TECH TAKING DUP ON UEP-40A

10/15/08

1440 MOB BACK TO VEHICLES

15:00 MOB TO OU4-LEP-26

15:15 COLLECT OU4-LEP-26A-SC
- POND SEDS
- ZIPLOCK BAG
- 0-.25'

OU4-LEP-26B-SC
- SOIL
- ZIPLOCK BAG
- 1'-3'

~~OT~~ CH

* 0.25'-1 SUB-BASE VLT GRAVEL NOT SAMPLED AT THIS TIME BY BC OR TETRA TECH

16:00 MOB TO OU4-LEP-19

16:05 COLLECT OU4-LEP-19A-SC
- 0'-1' POND SEDS
- ZIPLOCK BAG
- 1'-1.8" ASPHALT CAP + VLT

COLLECT OU4-LEP-19B-SC
- 1'8"-3'
- ZIPLOCK BAG

10/15/08

16:40 - HEAD BACK TO FIELD OFFICE

18:00 - FINISH PACKING SAMPLES + MAKING LABELS. BC PERSONNEL OFFSITE

10/16/08 THURSDAY ~~10/16/08~~ PS

0645 - C STRAUSS + C. HALEY ON-SITE. LOADING VEHICLE.

07:30 - H&S MEETING.
PERSONNEL - PENNY BASSETT, CHAD HALEY, LORY STRAUSS } BC

* WILL TAKE DUPLICATES @ 5 sample LOCATIONS FOR BOTH INTERVALS.

08:00 MOB TO OU4-UEP-38

8:12 OU4-UEP-38A-SC
- ZIPLOCK BAG
- 0-6"
- POND SED

OU4-UEP-38B-SC
- ZIPLOCK BAG
- 6"-3'
- SILTY SAND

1 DUP - WILL COLLECT DUPLICATES OF BOTH INTERVALS HERE

8:12 OU4-UEP-38A-SC-FD
OU4-UEP-38B-SC-FD

10/16/08

8:45- MOB TO OU4-UEP-39

8:50 COLLECT OU4-UEP-39A-SC
- POND SEDS
- 0-1'
- ZIPLOCK BAG

OU4-UEP-39B-SC
- SILTY SAND
- 1'-3'
- ZIPLOCK BAG

09:05 MOB TO OU4-UEP-43

9:10 COLLECT OU4-UEP-43A-SC
- ZIPLOCK BAG
- 0'-1'
- POND SEDS

OU4-UEP-43B-SC
- SILTY SAND (LAST 6"-8" SAND ONLY)
- 1'-3'
- ZIPLOCK BAG

10/16/08

9:30- MOB TO OU4-UEP-44

9:40 COLLECT OU4-UEP-44A-SC
- ZIPLOCK BAG
- 0-4"
- POND SED

OU4-UEP-44B-SC

2 DUP OU4-UEP-44A-SC-FD

OU4-UEP-44B-SC-FD

UEP-44B-SC
- ZIPLOCK BAG
- 4"-3'
- ~~SILTY SAND~~ SAND/ SILT

9:55 MOB TO OU4-UEP-45

10:05 COLLECT OU4-UEP-45A-SC
- ZIPLOCK BAG
- 0'-1'
- POND SEDS

OU4-UEP-45B-SC
- ZIPLOCK BAG
- 1-3
- SILTY SAND W/ MINOR CLAY

10:22 MOB TO OU4-UEP-46

10:30 OU4-UEP-46A-SC
- ZIPLOCK BAG
- 0-1.5'
- POND SEDS

OU4-UEP-46B-SC
- ZIPLOCK BAG
- 1.5'-3.0'
- SANDY SILT W/ INCREASING CLAY CONTENT CLOSE TO 3'

10:48 MOB TO OU4-UEP-47

10:55 OU4-UEP-47A-SC
- ZIPLOCK BAG
- POND SEDS
- 0-3

OU4-UEP-47B-SC
- ZIPLOCK BAG
- POND SEDS
- 3'-6'

3 DUP OU4-UEP-47A-SC-FD

OU4-UEP-47B-SC-FD

OU4-UEP-47C-SC-FD

OU4-UEP-47C-SC
- ZIPLOCK BAG
-
- 6'-9'

LUNCH

13:30 MOB TO OUP UEP-42

13:50 OU4-UEP-42A-SC
- ZIPLOCK BAG
- 0-4"
- POND SEDS (YELLOW)

OU4-UEP-42B-SC
- ZIPLOCK BAG
- 4"-2.5'
- POND SEDS (RED)

OU4-UEP-42C-SC
- ZIPLOCK BAG
- 2.5'-6'
- SILTY SAND W/ VARIABLE CLAY INTERMIXED.

14:15 MOB TO OU4-UEP-41

14:25 COLLECT OU4-UEP-41A-SC
- ZIPLOCK BAG
- 0-6"
- POND SEDS (YELLOW)

OU4-UEP-41B-SC
- ZIPLOCK BAG
- 6"-2'
- POND SEDS (RED)

OU4-UEP-41C-SC
- ZIPLOCK BAG
- 2'-3'
- SANDY SILT & CLAY

14145 MOB TO OU4-UEP-35

15:05 OU4-UEP-35A-SC
- ZIPLOCK BAG
- 0-1.5'
- POND SEDS

OU4-UEP-35B-SC
- ZIPLOCK BAG
- 1.5'-3.0'
- SILTY SAND

15:30 ON OUR WAY TO NEXT LOCATION CART BROKE, CALLED PENNY TO TELL HER, SHE DIRECTED US TO TRY A FIND A NEW CART IN TOWN, LEAVING SITE TO LOOK FOR NEW CART

16:45 BACK ON SITE, CHECKED ALL STORES IN YERRINGTON & SURROUNDING AREA NO CARTS. PENNY WILL GO TO CARSON CITY TONITE AND GET ONE

17:00 FINISH PACKING SAMPLES & FILLING OUT COC's.

17:30 BC PERSONNEL OFF-SITE

CTH

10/17/08 FRIDAY

07:00 H & S MEETING. DISCUSS TODAYS PLAN. PERSONNEL - PENNY BASSETT
JERY STRAUB
CHAD HALEY
BEGIN BUILDING NEW CART

08:00 FINISH W/ BUILDING CART. LOAD & MOB TO DU4-LEP-32

9:05 ON FIRST HOLE, DU4-LEP-32
9:20 DU4-LEP-32A-SC
- ZIPLOCK BAG
- 0-6"
- POND SEDS CYELLOW

* ASPHALT LINER BETWEEN A & B APX 1/2" - NOT SAVED

DU4-LEP-32B-SC
- ZIPLOCK BAG
- 6"-3'
- VLT CAP

DU4-LEP-32B-SC
- ZIPLOCK BAG
- 3'-6'
- SILTY SAND

9:30 MOB TO DU4-LEP-31
9:40 DU4-LEP-31A-SC
- ZIPLOCK BAG
- 0-4"
- POND SEDS CYELLOW

DU4-LEP-31B-SC
- ZIPLOCK BAG
- 4"-2'6"
- VLT CAP

DU4-LEP-31C-SC
- ZIPLOCK BAG CH
- 2'6" - ~~5~~ 6'
- SILTY SAND

9:55 MOB TO ~~DU4-LEP-30~~ CH 29
10:00 DU4-LEP-29A-SC
- ZIPLOCK BAG
- 0-6"
- POND SEDS (YELLOW)

DU4-LEP-29B-SC
- ZIPLOCK BAG
- 6"-2'
- VLT CAP

DU4-LEP-29C-SC
- 2'-5'
- ZIPLOCK BAG
- SILTY SAND

10:20 - MOB TO OU4-LEP-30

10:25 OU4-LEP-30A-SC
- ZIPLOCK BAG
- 0 - 6"
- POND SEDS (YELLOW

OU4-LEP-30B-SC
- ZIPLOCK BAG
- 6" - 2' 6"
- VLT CAP

OU4-LEP-30B-SC
- ZIPLOCK BAG
- 2'6" - 6'
- SILTY SAND INTERMIXED W/ VARIABLE CLAY CONTENT

4 DUP OU4-LEP-30A-SC-FD
OU4-LEP-30B-SC-FD
OU4-LEP-30C-SC-FD

10:40 MOB TO OU4-LEP-34

11:20 OU4-LEP-34A-SC
- ZIPLOCK BAG
- 0-2
- YELLOW SEDS

OU4-LEP-34B-SC
- ZIPLOCK BAG
- SANDS
- 2-3

12:00 HEAD TO FIELD OFFICE
LUNCH + CHAD HALEY LEAVE JOBSITE

1400 - Mob to OU4-FEP-58

14:10 OU4-FEP-58A-SC
- Ziplock bag
- 0-3"
- brown pondseds, possibly windblown dirt + mud from surface runoff
- 3"-6" yellowish VLT gravel

OU4-FEP-58B-SC
- 6" - 3'
- Sandy soil w/some fines, loose crumbly

1430 Mob to OU4-FEP-59

1435 OU4-FEP-59A-SC
- 0-6" Pond sed
  0-4" brown sandy dirt
  4-6" yellow fine gr pondsed

6" asphalt liner, 6"-1' VLT sub base

OU4-FEP-59B-SC
1' ~~6"~~ - 3' Soil ~~(no VLT subbase visible)~~ PB
Sandy, yellowish brown

1450 Mob to OU4-FEP-60

1455 OU4-FEP-60A-SC

- 0-3" Thin surface coat of yellow fine gr. pond sed over asphalt liner

~~OU4-FEP-60B-SC No VLT sub base~~

- 3"-~~6~~ 8' Soil, sandy + rocky/gravel some yellow pond sed coats outside of core during collection

1515 Mob to OU4-FEP-57

1520 OU4-FEP-57A-SC

- 0-3" Thin, yellow fine gr pond sed. asphalt liner barely visible

OU4-FEP-57B-SC

3"-~~3~~ 5' loose sandy soil w/gravel + crushed rock. No VLT sub liner

1530 Mob to OU4-FEP-56

~~1545 OU4-FEP-56A-SC~~

hit resistance at ~ 12", could go no deeper. Decided to go back to field office to repair equip + replenish supplies.

1615 Prepare samples collected today by blending, splitting to small sample jar, label/COC, refridgerate jars.

1730 Offsite

Called field blank sample by trasferring lab provided "e-pure" water from lab contain to sample container, filtering those that require it. Sample name OU4-FB-01

PBarnett

10/18/08 Saturday

0700 Onsite
Field personnell: Corey Strauss
Penny Bassett
Weather: Sunny - partly cloudy, no wind expected, no rain, Temp ~ 70-75°
Safety Meeting: Gloves, hand protection, body position when using hammer.

0900 Mobilize to OU4-FEP-56
0915 OU4-FEP-56A-SC
- 0-3" - collected w/ hand scoop (disposable plastic), yellow fine gr. sandy pond seds.

OU4-FEP-56B-SC
3" - 1' - hitting v. hard ground at 1' unable to penetrate. Collect 3 parallel holes to 1' depth. Loose sandy soil w/ gravel.

0935 Mobilize to OU4-FEP-53
Surface texture of pond seds is slightly glassy w/ deep red irridescence
0945 OU4-FEP-53A-SC
- 0-6" - Red/orange sandy pond sed w/ coating on surface as described above @6" thin asphalt liner
~~- 6" - 3'~~

OU4-FEP-53B-SC
- 6" - 3' - Med gr. Sandy soil slight orange color

1000 Mob to OU4-FEP-54
1005 OU4-FEP-54A-SC
- 0-3" - Yellow-orange fine gr. sandy pond sed. Supplement core w/ scoop of material disposable

OU4-FEP-54B-SC
- 3" - 3' - Med gr sand and Sand w/ gravel, Tan-brown

10/18/08

1020 Mob to OU4-FEP-55

1025 OU4-FEP-55A-SC

- 0-6" - Yellow w/slight orange fine gr. sandy pond sed (asphalt liner @ 6")

OU4-FEP-55B-SC

- 6"-3' Sand w/gravel, mod-well graded w/some fines Tan-brown.

1100 Mob to OU4-UEP-33

11:10 OU4-UEP-33A-SC

- 0-6" - Yellow f.g. sandy pond sediment w/ V. Thin surface of wind blown red dust but most of sample is yellow.

OU4-UEP-33B-SC

6"-3' - sandy soil w/gravel

11:30 Break for lunch

12:50 Mob to OU4-LEP-18

1305 Collect samples OU4-LEP-18A-SC

- 0-3" Yellow f.g. pond sed, dry powdery Supplement core sample w/plastic scoop
  - asphalt liner @ 3" bgs
  - VLT subbase 3"-18"

OU4-LEP-18B-SC

- 1'6"-3' Sandy + silty soil slightly clayey (plastic) in bottom 4" of hole

1320 Mob to OU4-LEP-28

13:30 OU4-LEP-28A-SC

- 0-3" yellow f.g. sandy pond sed. Supplement w/plastic scoop sampling
  - asph. liner @ 3"
  - VLT subbase @ 3"-1'

OU4-LEP-28B-SC

- 1'-3' - loose sandy soil. tan, brown

10/18/08

1340 Mob to OU4-LEP-27
Area slightly soft + moist. Jack sinks into mud, had to locate 2x8" board to provide stability

14:05 OU4-LEP-27A-SC
- 0-4" Moist f.g. sandy yellow pond sediment
- asphalt liner @ 4"
- VLT subbase @ 4"-2'

OU4-LEP-27B-SC
- 2'-3' - deep brown, moist silty soil, slightly plastic Only able to penetrate top 1' because soft sticky sed does not allow further penetration
- Collect from 3 parallel holes

1445 Mob to OU4-LEP-23

15:00 OU4-LEP-23A-SC
- 0-3" Yellow pond sed. w/white crust on surface
- asphalt liner @ 3"
- VLT subbase @ 3"-2' - wet+silty

OU4-LEP-23B-SC
- 2-3' dk brown, moist silty sand hard packed

1515 Mob to OU4-LEP-22

1525 OU4-LEP-22A-SC
- 0-6" - Yellow f.g. silty/sandy pond sed. w/ hard dry lt. yellow crust.
- asphalt liner @ 6"
- VLT subbase @ 6"-1'6"

OU4-LEP-22B-SC
- 1'6" - 2'6" - V. dk brown soil, hard packed, silty clay

1600 - Return to field office, prep + split samples, complete COCs, put 4oz jars in refridgerator.

1800 - Offsite

P Bassett

10/19/08 Sunday

0700 Onsite

FIELD PERSONNEL: Penny Bassett
Corey Strauss

WEATHER: Predicted sunny, high temp ~72°C, no rain

SAFETY MEETING: Extra gloves when collecting from LEP-24 (acidic mud), caution when lifting heavy loads, handling + disposing of used oil from generator

0800 Mob to OU4-LEP-21

0830 OU4-LEP-21A-SC
- 0-6" f.g. yellow silt/sandy pond sediment
- asphalt liner @ 6"
- VLT subbase @ 6"-1'6"

OU4-LEP-21B-SC
- 1'6"-3' - well graded silty sand, moist, sticky, slightly plastic med brown-tan.

0840 Mob to OU4-LEP-20

0850 OU4-LEP-20A-SC
- 0-3" - yellow f.g. silt/sand pond sed. moist but not muddy
- asphalt liner @ 3"
- VLT subbase @ 3"-1'6"

OU4-LEP-20B-SC
- 1'6"-2'6" - dk brown, sticky soil, clay, silt, fg. sand, well graded, hard, cohesive

0915 Mob to OU4-LEP-25

0925 OU4-LEP-25A-SC
- 0-3" - yellow f.g. silt/sand pond sediment, dry-moist
- asphalt liner @ 3"
- VLT subbase @ 3"-1'6"

OU4-LEP-25B-SC
- 1'6"-3' - dk brwn, moist silty sand, mod firm + plastic

10/19/08

0945 Mob to OU4-LEP-24

1000 OU4-LEP-24A-SC

- 0-6" - fg. silty yellow pond sed, v. wet + muddy, sticky. ~3" of white soft gelatinous crystals in top portion (included in sample) and hard cryst of wrinkled glassy green/yellow material (not included in sample)
- asphalt liner at 6"
- Did not collect underlying soil because of logistical difficulties w/ sample equip + safety hazard of low pH mud (<1 pH)
- Collected pond sed sample w/ disposable core sleeve but did not need to use impact hammer, just push in by hand.

10:20 Return to field office to process + split samples, decon equipment, dispose of wastes, etc. Sampling event complete.

1200 Offsite

P Bassett

10/20/08 MONDAY

0700 Arrive on site

BC Personnel: P. Bassett
C. Strauss
R. Barringer (well profiles)

Weather: Sunny, clear, no wind/rain predicted, hi temp ~70°

Safety meeting

0800 Do field QC samples

0800 OU4-FB-02 - field blank pump lab water from original container thru tubing/filter into sample bottles. Full bottle set

0830 OU4-EQ-03 - Equipment blank on manual core sampling barrel (JMC subsoil probe). Pour lab grade water over exterior bottom 6" & collect + filter into sample bottles. Only the 1" long cutting tip on the end was exposed to sample, interior of barrel was lined w/ single use plastic sleeves. Cutting tip was decon'ed after each sample location.

10/20/08

11:00 Troubleshoot bladder pump from B/W-25D. Replaced bladder and reinstalled in well, appears to be working properly.

- Pack Ship all remaining soil + water samples to labs.

MONDAY

10/27/08 AUGER DRILLING ACTIVITIES

12:00 - CHECK IN AT MAIN OFFICE.
CONDUCT INITIAL H&S MEETING
PERSONNEL: PENNY BASSETT, CHAD HALEY } BC
JOHN —
TORY, ADRIAN, CARLOS } CASCADE

1430 - FILL RIG & SUPPORT TRUCK WATER TANK

16:30 - SET RIG & TRUCKS UP ON DOG-FEB 16,

17:00 OFFSITE

* EQUIPMENT *
RIG- CME 75 EQUIPPED W/ AUGER
8" AUGER HOLLOW STEM
2" SPLIT SPOON SAMPLER
140 lb WEIGHT FOR HAMMER

10/28/08 TUESDAY ALLGER DRILLING

07:00 ON SITE. H&S MEETING

PERSONNEL - P. BARRETT } BC
C. HALEY
SOHN
TORY
ADRIAN } CARLOS
CARLOS

7:40 BEGIN DRILLING. TAKING FIRST SAMPLE 2' bgs.

7:50 COLLECT OU4-FEP-16A-SC
- ZIPLOCK BAG
- 2'-3.5'
- SILTY SAND

9:10 ~ 55' bgs HARD DRILLING

9:50 OU4-FEP-16B-SC
- ZIPLOCK BAG
- 65'-66.5'
- SILTY SAND

11:00 BEGIN COLLECTING OU4-FEP-16-GW
- 10 L GW
- BAILED BY HAND W/ 1" BAILER + STRING

85'-90'

FINISHED 13:45

12:00 STOP FOR LUNCH, EATING IN FIELD

14:00 GROUT + MOB TO NEW HOLE

OU4-FEP-17

15:00 BEGIN DRILLING

15:05 COLLECT OU4-FEP-17A-SC
- ZIPLOCK BAG
- 2'-3.5'
- SILTY SAND

1520- ~20' bgs - SILTY SAND

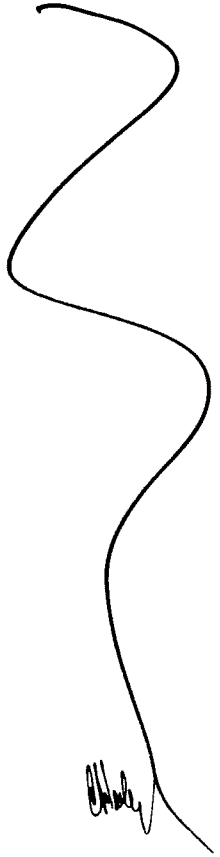
25-30 SILTY SAND W/ INCREASED GRAVEL CONTENT. GRAVEL UP TO 1"

10/28/08

30-70 SILTY GRAVELLY SAND

17:00 RIG OUT OF DIESEL. WILL FILL SUPPORT TRUCKS TANK AND FILL RIG IN MORNING. SECURING SITE.

17:10 ALL PERSONNEL OFFSITE



10/29/08 WEDNESDAY AUGER DRILLING

07:00 DRILL CREW & BC PERSONNEL ON SITE. FILLING RIG

07:30 RIG STARTED & WARMING UP. H&S MEETING DISCUSS SCOPE OF ACTIVITIES.

PERSONNEL: P. BASSETT } BC
C. HALEY }
CARLOS
TORY
ADRIAN

08:30 ~ 70 bgs. MAKING NO PROGRESS DOWN. P. BASSETT CONTACTED CHUCK ZIMMERMAN (PM) DECISION TO CALL REFUSAL & RELOCATE TO NEXT HOLE. TRIED TO TAKE DOWN HOLE SAMPLE, but NO RECOVERY FROM SAMPLER. NOT TAKING GRAB SAMPLE FROM CUTTINGS. PULLING AUGERS FROM HOLE & GROUTING UP. WILL MOB TO NEXT HOLE LOCATION SHORTLY

08:40 RIG OUT OF WATER. CALLED "QUALITY ENVIRONMENTAL" CONTRACTOR TO REQUEST A WATER TRUCK COME OVER AND FILL TANK.

09:55 MOB TO OU4-FEP-14
WILL BEGIN DRILLING SHORTLY

10:10 - COLLECT OU4-FEP-14A-SC
- ZIPLOCK BAG
- 2'-3.5'
- IMPACTED SILTY GRAVELLY SAND

OU4-FEP-14B-SC
- ZIPLOCK BAG
- 5'-6.5'
- IMPACTED SILTY GRAVELLY SAND

10:30 ~ 25-30 bgs - LARGER GRAVEL
- SILTY SAND

11:05 COLLECTED CORE AT 45' bgs
WILL COLLECT NEXT SAMPLE @ 60' bgs
IF DRY STILL.

11:35 WATER ~ 60 bgs WILL WE SAMPLE
AT 45'

14:30 FINISHED COLLECTING OU4-FEP-14-GW

C
OU4-FEP-14X-SC
- ZIPLOCK BAG
- 45-46.5
- SILTY SAND

14:35 GROUTING HOLE & MOBBING TO
NEXT LOCATION.

15:30 MOBBED TO OU4-FEP-15
WILL COLLECT SAMPLE FOR
5 gallon BUCKET FROM CUTTINGS.

15:35 OU4-FEP-15A-SC
- ZIPLOCK BAG
- 2-3.5'
- SILTY GRAVELLY SAND

15:40 OU4-FEP-15A-SG
- INTACT CORE 3 6" SLEEVE
- 3.5-5
- APPEARS TO BE SILTY GRAVELLY SAND

15:55 OU4-FEP-15
- 5 gal BUCKET
- GRAVELLY SILTY SAND

16:20 COLLECT OU4-FEP-15-I
- INTACT CORE
- 4"
- 35-35.5
- COLLECTED AS INTERMEDIATE SAMPLE FOR SOIL MOISTURE

16 CH

11:50 OU4-FEP-15B-SC
- ZIPLOCK BAG
- 50'-51.5'
- GRAVELLY SILTY SAND

16 CH

11:55 OU4-FEP-15B-SG
- INTACT CORE 51.5-53
- 5-4" SLEEVES
- GRAVELLY SILTY SAND

17:15 - WATER @ ~ 65 bgs

17:45 - TEMPORARY WELL SET
TD @ 70' bgs
TAKING SAMPLES TO FIELD OFFICE
DRILL SITE SECURE

* DRILLING ACTIVITIES PRODUCE A LOT OF STEAM. DURING HAMMERING OF SAMPLER, MOISTURE TRANSFER IS POSSIBLE.

10/30/08 THURSDAY AUGER DRILLING

07:00 BC & CDC PERSONNEL ON SITE, H&S MEETING & SCOPE of activities FOR TODAY.

PERSONNEL - P. BASSETT, C. HALEY } BC

TORY, ADNAN, CARLOS } CDC

-ACTIVITIES - BAIL WATER
- CLEAN & SECURE RIG + SUPPORT VEHICLES

07:30 BEGIN BAILING TO COLLECT OU4-FEP-15-GW
- APX 15 L water

08:30 - FINISHED COLLECTING WATER
- PULLING AUGERS + SCREEN
- TAKING DRILLING ACTIVITY TRASH TO ON-SITE LANDFILL

9:50 DRILL SITE CLEAN. RIGS LOCKED DOWN. HEADING TO FIELD OFFICE TO WASH RIG DOWN

11:00 PACKED SAMPLES. HEADING TO UEP TO GPS DRILL HOLE LOCATIONS.

15:30 Mobilize to OU4-LEP-24 to collect sub-surface soil sample w/ manual core. Clear 6" of pond sediment mud using shovel to expose asphalt liners. Use manual core w/ 1.2" plastic liner, pushed through liner + sub-base into soil using demolition hammer. Pull core out w/ jack stand set on firm asphalt liner. Collect 2 parallel cores to total depth of 3' below liner surface

16:10 OU4-LEP-24B-SC
- Brown silty clay, very plastic
- Liner in pretty good condition where it was protected by pond seds.
- Pondsed sample was collected last week (0-6")
- Liner @ 6", VLT sub base ~6-12" bgs
- Soil sample = 1.5-3' bgs

1/13/2009 Tues PB

Penny Bassett + Royanne Barringer

10:00 Arrive on site, check in, review JSA, complete safety forms, gather supplies. Weather: clear, sunny, calm ~45-50°F

11:00 Download pit lake transducer

11:20 Mobilize to UEP pond to collect additional sediment samples for particle size, etc characterization to supplement previous samples

11:45 Collect OU4-UEP-61-SED using 3" diam hand auger. Total sample depth 12" at location. Collected ~1.5 gal from 3 parallel auger holes spaced ~10" apart. Sample placed in plastic garbage bag inside 3gal plastic bucket w/lid. Sediment was fine gr. silt, yellow, only slightly moist. Near UEP-08

12:15 Collect OU4-UEP-62-SED 3 parallel hand auger holes to depth of 11". Red sediment visible in lower ~5", This sed is also wetter + more clayey. Near UEP-07

1/13/09 PB

13:20 Collect OU4-LEP-63-SED Use shovel to collect sample in bucket. Sediment ~7" deep to top of liner Mod wet-saturated, silty clay, moldable plastic sediment, yellow. Liner under material looked pretty intact. Located near LEP-03. No crust on top.

13:45 Collect OU4-LEP-64-SED Use shovel to collect sample from hole ~12" diam by 6" deep to top of liner. Similar to previous material: mod wet, plastic, yellow silty clay. No crust on top but located ~50' west of area w/ chemical crust. Located ~100' SW from LEP-03.

14:30 Collect OU4-FEP-65-SED Collect remaining red sed from preserved core sample from location OU4-FEP-12 2-8' interval. Not enough sample to fill bucket so sample was supplemented by additional collected adjacent to FEP-12 borehole. Removed ~12" VLT Cap +

1/13/09
PB

used hand auger to collect red pond sed from 12" to 34" bgs (~ top 2' of sed.) Sed was generally only slightly moist w/ evidence of higher moisture at bottom of bore hole at ~ 7-8'. Sed appears dark red, fine gr. Silt w/ not as much clay as other LEP + UEP seds. Not ~~as~~ plastic.

- Sediment collected from core sleeve does not represent accurate soil moisture since cores have been opened + exposed to drying since collection in Oct 2008.
- Soil core material represents only ~ 1/5 of total volume collected. All material composited into one sample container w/ the shallow hand auger collected material but both materials looked very consistent w/ each other.

GENERAL COMMENTS/OBSERVATIONS:

1. All sample locations were selected to be close to previous borehole locations, especially ones that had geotechnical samples collected.

1/13/09
PB

2. Hand auger + shovel were not cleaned or decontad between locations because no chemical analysis to be done on samples.
3. All sedidements were observed to be v. fine grained silt + clay, very homogeneous in particle size thru-out sample depths. Some color variations observed in the UEP and some moisture variation in UEP as well.
4. Samples submitted to AMEC lab in Reno for particle size analysis and hydrometer. Lab is not a project lab and not ~~t~~ lab methods or procedures are identified in Evap Pond work plan or QAPP. This is a supplemental sampling effort determined to be beneficial to vadose zone modelling activities after initial field implementation of work plan. Samples were hand delivered by R. Barringer on 1/13/09.

Penny Barrett
1/13/09

1/16/09 Fri PB

0930 Penny Bassett arrive on site, complete safety forms, collect field supplies
WEATHER: Sunny, clear, calm ~50°F
PURPOSE: Recollect pond sediment sample locations #61-65 using 6" x 2.5" brass sleeves in order to get intact, undisturbed sed samples for AMEC lab for saturated hydraulic conductivity tests.

1115 Recollect pond sed at OU4-UEP-61-SED in brass core sleeves. Collect 2 samples: ~~0-6" and 6-12"~~ (PB)
OU4-UEP-61-SED 0-6"
" " 6-12"
Both intervals look similar + both are slightly moist.

1140 Recollect OU4-UEP-62-SED.
2 samples in brass core sleeves from 0-6" and 6-12"

1200 Recollect OU4-LEP-63-SED
Only one sample from 0-6". Hit asphalt liner at 6". Sediment is mod wet + sticky thru out 6" depth

1220 Recollect OU4-LEP-64-SED
Only one sample from 0-5". Hit asphalt liner at 5". Sediment looks very consistent w/ previous location, also mod. wet + sticky, no chemical crust.

1240 Recollect OU4-LEP-65-SED
Only one sample at 10-16". Removed top VLT cap w/ shovel from 0-10" and collect sed sample at top of exposed pond sed. Several inches of upper pond sed appears as light tan/buff color w/ red seds beneath. Indicated to lab to use mostly red seds for test. Seds are moist + compact but not too wet/saturated.

P. Bassett

PB

136257. 5 DRILLING
. 4 HAND CORE

SAT
3 hrs TRAVEL

Sep
6 13 1/2
MON 13
TUE 12
WED 12 1/2

1/23/09 PBassett

11:30 PBassett/R Barringer onsite
14:00 Royanne Barringer collect surface water sample from LEP pond following rain event + pooling of water on pond surface. Sample was logged in "Tracer Study" log book but was named following OU4 naming convention as OU4-LEP-66-SW (SW= surface water)

- Penny Bassett mapped out perimeter of standing water area using track feauture of Garmin 60CSx GPS unit. Outlined most significant area of standing water but there was also numerous small puddles scattered over entire pond because it had just rained in previous 24 hrs + still raining.
- pH of water ~1.5-2.0 pH. PPE req'd included knee hi rubber boots, Tyvek coverall, nitrile gloves, splash goggles.

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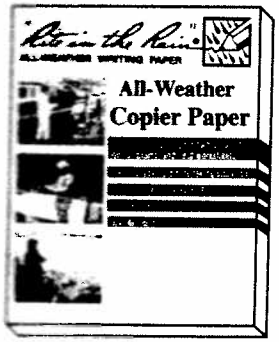

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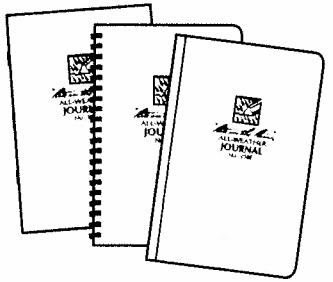
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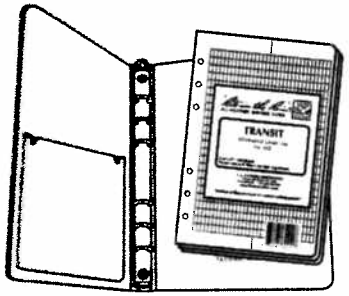
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No. 391

10/20/08

0700 Onsite w/ Corey Strauss.
Plan for the day - trouble shoot + repair bladder pump in B/W-25D monitor well.
- Air/water contact in discharge line indicates likely pinhole in bladder. Conversation w/QED confirms this
- Pump was pulled from well, bladder removed + new one put on (this is a 2 person job)
- Pump reinstalled in well + confirmed to work properly, no air in discharge line.

10/27/08

12:00 Meet with Cascade Drill crew + conduct pre-job site safety orientation + JSA review
Participants:
Penny Bassett } BC
Chad Haley }
John Batchelder - ARC
Tori }
Adrian American } Cascade.
Carlos Beas }

1400 Mobilize to drill site, fill trucks w/water
No drilling today

P Bassett

10/28/08 PBarrett

0700 Begin auger drilling on 4 deep boreholes in upper Finger Ponds. General observations:

- Ground is very hard in spots, especially @ ~60-65' bgs. Auger was able to penetrate at first hole (FEP-16) but ground even harder at 2nd hole (FEP-17) → (ultimately had refusal at 70' bgs on 10/29)
- Rig is CME-75 w/ 8" auger hollow stem, sampler is 2" split spoon w/ down hole hammer
- Soil samples collected in 2" diam, 6" long stainless steel sleeves for total of 18" core recovery.
- No continuous core sample therefore v. limited ability to see & describe soil types
- Soil samples collected at shallow (2-3.5') and deep (~65-66.5) locations in single use core sleeves. Samples removed from sleeves & put in ziplock bags to blend composite of 18" sample & fill 4oz jar.

- Water sampling done by installing temp. 2" PVC well w/ 10' sect. of 0.01" slot screen w/ remaining blank PVC. Pull auger back ~2-3' to expose bottom of screen.
- Sample w/ disposable plastic 2" bailer & fill 10 1L unpreserved bottles. Allow sediment to settle & then filter & preserve several hours later in field office.
- Backfill all boreholes immediately after sampling w/ cement grout from bottom to top. Remove temp well & screen first.
- Drillers deconed auger flights after each borehole w/ pressure wash & steam cleaner. Also deconed down hole hammer/split spoon between after each soil sample collection

PBarrett

10/29/08 PBarrett

0700 Onsite - Meet Chad Haley + Cascade drill crew. Tailgate safety meeting.

0800 Refuel drill rig + attempt to drill further on FEP-17 borehole. Hit refusal at 70', not able to progress any deeper after trying 1 hr yesterday pm + 1/2 hr This morn. Chuck Zimmerman gave approval to stop drilling + abandon hole. Only collected shallow soil sample, no deep soil + no water sample.

0945 Move to next location FEP-14

1300 Begin survey of sample locations using Trimble GeoXT. Take photos of each location for file documentation. Allow Trimble to average 10 -15 readings per location.

1730 Return to field office to process soil + water samples from FEP-14. Filter + preserve water, take field pH + Cond w/ YSI #1, blend + split soil samples.

1830 off site — PBarrett

10/30/08 PBarrett

0700 Onsite. Meet w/ Chad Haley + Cascade drill crew. Tailgate safety meeting. Collect bailed water sample on FEP-15, temp well was put in at end of day yesterday + allowed to sit + fill overnight.

P Barrett