Pavillion prep

(b)(6) privacy [Landowner name] [redacted] well – PGDW23
3 hr. purge @ 14 gallon/min (2500)
flow cell purge ~ last hour @ lower rate.
D= 500 ft. (WL~70, 6", 2500)

(b)(6) privacy [Landowner na [redacted] well – PGDW20
3 hr purge @ 10 gallons/min (1800)
flow cell ~ last hour @ lower rate.
D: 460 ft. (WL~150, 5") (2500)

(b)(6) privacy [Landowner na [redacted] well – PGDW30
1.5 hr purge
~1 hr flow cell
D: 260 ft. (WL~150, 6", 650)

(b)(6) privacy [Landowne [redacted] well – PGDW05
15 minutes empty tank.
Recharge 90 minutes / YSI while time.
D= 207 ft (WL ?, 6", 40 gallons)

Pavillion Prep.

Prepared alkalinity check solutions
$NaHCO_3$ = 0.164 g/L
pH = 7.8 (100 ppm alk $CaCO_3$)

Measured
1) 97
2) 98 average = 98.5
3) 101 St. Dev = 1.7
4) 98

Ferrous fe check
1) 1.06
2) 1.01 average = 1.00
3) 0.99 St. Dev = 0.05
4) 0.95

HACH Turbidity meter
checked 20 NTU = 19.8 NTU

EPAPAV0022181

[redacted] Domestic PGDW20/20d

Calibrate YSI
pH 7.00 + 10.00
read 7.00 = 7.00
SC 1413 calibrate
SC = 1412 uS/cm
DO calibrate 100%
zero DO = 0.02 ppm
ORP Standard = +215.1 mV

Turb. Blank = 0.65
Fe(II) Blank = 0.00
$H_2S$ Blank = 0.00

Started purge at 10:02
Total flow rate 10 ± 0.5 gpm
from waste/flow cell/gas flow
flow cell = 0.95 L/min

Purge time 10:00 – 12:20 (140 min)



- Equip Blk 1 10:00 Am
- Field Blk 1 11:00 Am
- PGDW20 12:30pm
- PGDW20d 12:30pm

T = 9.80 pH = 8.88
SC = 2.429 ORP = -249.2 mV
TDS = 1.579
DO = -0.01 Data use from YSI log

final PGDW20

Alk = 65, 66, 68 ppm
$H_2S$ 94, 88, 85 mg/L
Turb = 2.26, 1.57, 1.69 NTU
Fe(II) = 0.00, 0.00, 0.01 ppm

YSI confidence
17.0°
SC = 7.970 ✓ zero DO = 0.01 ✓
pH = 7.12 ✓
ORP = 235 mV ✓

pH = 12.49 (12.46) – Standard
17°C (12.64 at 20°)
High pH check, prior to EPA MW02 purge.

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EPAMW02-0412-1 (first log on YSI)
2:35 pm start logging.
Flow cell rate = ~~870 mL/min~~ (PTW)
1.39 L/min

2:50 pm Sample time

Alk = 388, 398, 384
Turb. = 4.08, 4.76, 4.55
Fe(II) = 0.00, 0.00, 0.00
$H_2S$ = 17, 10, 11 mg/L

SC = 3.86 EZtestr.

37 gallons – 95 gallons sample collection
flow stopped from split line ~3:30
Stopped logging resumed at 3:58pm
1.64 L/min @ 3:59 flow cell

Temperature on flow cell is likely high.

100 ppm Alkalinity check = 96, 96, 98
1 ppm Iron = 0.91, 0.95, 0.97



Blank Turb. = 0.40
Blank Fe(II) = 0.00
Blank $H_2S$ = 0.00
Blank Alk = 1

[4:53pm]

T = 15.24 pH = 12.06
SC = 3.373 ORP = -194.8 mV
TDS = 2.192
DO = -0.01 550 mL/min = flow cell.
Data use from YSI log.

Reset 10.00 = 10.05 / 12.46 = 12.40 @ 23°C
SC 1413 µS/cm = 1400 µS/cm
Zero DO = 0.01 mg/L
ORP = +214.6 mV

PGDW23 Flow rate cell = 0.9 L/min
Alk 70, 70, 64
Turb. 0.88, 0.54, 0.66
Fe(II) 0.00, 0.00, 0.00
$H_2S$ 0.00, 0.00, 0.00

See Next Page.

SC = 1017 µS/cm

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Location Pavilion Date 4/17/2012

Project / Client

Calibrated YSI
pH 7.00 + 10.01
pH 7.00 = 7.00
SC calibrated w/ 1413 ms/cm
DO calibrated 100%
Zero DO = 0.00 ppm
ORP standard = +215.6 mV

Blank Turbidity = 0.41
Blank Fe(II) = 0.00
Blank $H_2S$ = 0.00

Check pH 7.00 = 7.02 / SC 1413 = 1390

PGDW23 (Start purge 9:12AM)
14gpm
Alk 70, 70, 64 sample at 11:45AM
Turb. 0.88, 0.54, 0.66 (150min)
Fe(II) 0.00, 0.00, 0.00
$H_2S$ 0.00, 0.00, 0.00

SC = 1017 ms/cm
Sampled 11:45 AM



Location Pavilion Date 4/17/2012

Project / Client

PGDW30

Started purge at 12:30 / 7 gpm
noticed DO levels increasing through purge.

Alk 88, 90, 94
Turb 0.85, 0.91, 0.86
Fe(II) 0.01, 0.00, 0.00
$H_2S$ 0.00, 0.00, 0.00

Flow rate cell = 0.75 L/min
(45 min)

pH check 10.01 = 9.98
Blank Turbidity = 0.35
Blank Fe(II) = 0.00
Blank $H_2S$ = 0.00
SC 1413 = 1382 ms/cm

Shipped samples
Field Blk 01
Equip Blk 01
Trip Blk 01
PGDW20 / PGDW20d - 0412
PGDW23 - 0412
PGDW20 - 0412
GPAMW02 - 0412-1

EPAPAV0022184

Pavillion 4/18/2012

YSI Calibration
pH 7.00 + 10.01
7.00 = 7.00
SC 1413 uS/cm
= 1410 uS/cm
100% for DO calibration
Zero $O_2$ = 0.01 mg/L
ORP = + 214.1 mV

Blank Turbidity = 0.33
FE(II) Blank = 0.00

PGDW05 -
purged tank completly ~ 50 gallons
logged under PGDW051 / 0.7 L/min
wait 45 minutes / sample 12:00PM

Field Blk02 9:00AM
Equip Blk02 10:00AM

Sampling purge log is PGDW052 - Blank log
→ log not recorded - only final value.

Pavillion 4/18/2012

Alk 90, 96, 86 ppm
Turb. 1.42, 1.65, 1.62
FE(II) 0.00, 0.01, 0.00 ppm
$H_2S$ 0.01, 0.01, 0.02 ppm
PGDW05

SC = 906 uS/cm

T 11.33
SC 0.837
TDS 0.544
DO 0.11 ppm
pH 9.30
ORP = -102.3
After final purge

12:15 sample time MOAS PGDW20
PGDW20d
resampled after no 15 min. purge
4/18/2012 due to lost FEDEX shipment.

MW02 pumped ~125 gallons ≈ 475 gallons
logged YSI, flow rate 0.88 L/min
SC 1413 = 1390 uS/cm
pH 12.46 standard = 12.49 (22°C)
Should be 12.64 @ 20°C
12.46 @ 25°C

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Pavillion 4/18/2012

Turb. Blank = 0.33
Fe(II) Blank = 0.01
$H_2S$ Blank = 0.00
Alk Blank = 1

Shipped samples
FieldBlk02
EquipBlk02
PGDW05-0412

MBAS for PGDW20-0412
PGDW20d-0412
EPAMW02-0412-1
sampled after ≈ 345 gallons
after purging 45 gallons through exit.
Also collected ZL Las Vegas sample.

100 ppm Alkalinity = 95, 98
1 mg/L Iron = 1.01, 0.97, 0.92
pH 10.01 = 9.97
pH 12.46 = 12.42 24°C
DO zero = 0.01 mg/L
1413 µS = 1330 µS

Pavillion 4/19/2012

Calibrate YSI
pH 7.00 + 10.01
pH 7.00 = 7.00 / 10.01 = 10.61
SC 1413 µS/cm
SC = 1400 µS/cm
DO = 100%
Zero DO = 0.01 mg/L
ORP = +213.6 mV

Blank Turbidity = 0.39 NTU
Blank Fe(II) = 0.01
Blank $H_2S$ = 0.00
Blank Alk = 1

PGDW50-0412 1.2 L/min flow cell
200' total depth
5 gallons / 43 sec. Total flow 7 gpm

Alk 38, 30, 30 (30 min)
Turb. 0.47, 0.50, 0.51
$H_2S$ 0.00, 0.00, 0.00
Fe(II) 0.00, 0.00, 0.00

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Pavillion 4/19/2012

Checked YSI calibrations
pH 7.00 = 7.03 20°C
SC 1413 uS = 1398 uS
DO - zero = 0.02 ppm
ORP = +214.9 mV

Shipped MBAS sample PGDW50-0412

4/20/2012

Calibrate YSI
pH 7.00 & 10.01
10.01 = 10.01
SC = 1413 uS/cm 1405 uS/cm
100% DO / zero DO = 0.00 ppm
ORP = +216.1 mV

pH 12.46
12.43 @ 18°C 1413 uS / 1350 uS
zero $O_2$ = 0.01
EPAMW02 purge EPAM02C log
≈ 57 gallons

Pavillion 4/20/2012

Sample PGMW02-0412
~4:00 pm purge 4 gpm
flow cell 0.9 L/min
pH 10.01 = 9.99 (~60 min)

Alk 74, ~~90~~, 78, 78
Turb. 0.40, 0.38, 0.37
Fe(II) 0.12, 0.10, 0.12
$H_2S$ 0.024, 0.017, 0.020

Turb Blank = 0.31
Fe(II) Blank = 0.00
$H_2S$ Blank = 0.01
SC 1413 = 1387 uS/cm
ORP = +216.1 mV
zero DO = 0.04 mg/L
pH 7.00 = 6.97
SC 1413 uS/cm = 1395 uS/cm

EPAPAV0022187

Location Pavilion Date 4/22/2012

Project/Client

Field Blank 03 12:00 pm

Equip Blank 03 1:00 pm

Ethoxylates RSKSOR 259

GRO MBAS

R8-8260

DRO

R8-8270

Pav Compounds

Trip Blank 03 3:00 pm

Calibrated YSI 1:30 pm

pH 7.00 + 10.01 12.41

10.01 = 10.01 / 12.46 = 12.41 @ 25°C

SC 1413 µS/cm = 1410 µS/cm

DO = 100%

Zero $O_2$ = 0.01 mg/L

ORP = +215.2 mV



Location Pavilion Date 4/22/2012

Project/Client

Blank Turb = 0.33 NTU

Blank Fe(II) = 0.00

Blank $H_2S$ = 0.00

Blank Alk = 1

To Sample EPAMW02-0412-2 @ 2:45 pm

Sample after 45 gallons purged.

Alk ~~308~~, 250, 268, 244

Turb. 16.0, 15.5, 15.6

Fe(II) 0.00, 0.00, 0.00

$H_2S$ 0.009, 0.015, 0.009 mg/L

SC 2.39 mS/cm

Blank Turb. = 0.37

Blank Fe(II) = 0.01

Blank $H_2S$ = 0.00

Measured pH 12.46 = 12.35 @ 25°C

ORP = +216.6 mV

Zero DO = 0.00

SC = 1490 µS/cm (1413 µS/cm)

EPAPAV0022188

Location Pavillion Date 4/23/2012

Project / Client

Field Blk 4 ✓ 10:00 Am
Equip Blk 4 ✓ 2:00 pm
Trip Blk 4 ✓ 3:00

Equip Blk 4
Glycols
Ethoxylaters
SVOCS
VOCS

4/24/2012

YSI calibration
pH 7.00 + 10.01 buffers
10.01 = 10.01 / 12.46 = 12.85 @ 13°C
SC = 1413 uS/cm (read 1410 uS/cm)
100% Air for DO calibration
Zero DO = 0.01
ORP = + 216.4 mV

100 ppm Alkalinity = 100, 95, 96
1 ppm Iron = 0.96, 0.99, 0.90

Location Pavillion Date 4/24/2012

Project / Client

Blank Turb = 0.40 [429 gallons]
Blank Fe(II) = 0.00 1 borehole V.
Blank $H_2S$ = 0.00

YSI Confidence
20° 7650 uS/cm ✓
+ 231 mV ✓
pH = 7.01 ✓

Start 11:10 Am / EPMW01A Started // flow = 836 mL/min
flow = 1.1 L/min
flow 1.0 L/min
b 1 (White) 670 gal. 209 P - 734 2:77 Pm flow 1.17 L/min
c 2 (Pink) 845 gal - 852 3:21 - 3:24
d 3 (Teal) 900 - 906 3:42 3:44
a 4 (Yellow) 618 gallons (641) 1:49 - 1:58
e 5 (Purple) 960 - 964 4:05 - 4:07
g 6 (Blue) 1080 - 1083 4:52 - 4:54
f 7 (Red) 1020 - 1036 4:28 - 4:35
h ~~g~~ 8 (Silver) 1140 - 1146 5:17 - 5: 5:20
i ~~h~~ 9 (Brown) 1213 - 1218 5:46 - 5:49
j ~~i~~ 10 (orange) 1300 - 1346 6:21 - 6:40

USGS off 2:17 pump off.

EPAPAV0022189

Pavillion 4/24/2012

Alk 220, 208, 204, 220
Turb. 1.83, 2.09, 1.95
Fe(II) 0.00, 0.01, 0.00
$H_2S$ 1.45, 1.55, 1.60
] EPA MW01-0412-1

$H_2S$ at sample 9 0.488 x 5 = 2.41 ppm

Alk 180, 182, 182
Turb. 2.57, 2.76, 2.51
Fe(II) 0.00, 0.01, 0.01
$H_2S$ 2.50, 2.46, 2.58
] EPA-MW01-0412-10

SC 1474 ms/cm (Eztester)

OH 10.01 - 9.99
pH 12.46 12.61 @ 15°C
SC of YSI (1413 ms/cm) = 1370 ms/cm
ORP + 212.1 mv
Zero DO > 0.02 ms/L

Blank Turb. = 0.39 NTU
Blank Fe(II) = 0.01 ppm
Blank $H_2S$ = 0.00 ppm

Raton Basin 5/14/12

Trinidad Hospital Location
Mount San Rafael Hospital
410 Benedicta Ave.
Trinidad, CO 81082

Purged Sanchinator MW
WL at >545'
COGCC sample time @ 10:00AM

PW01 - Sanchinator TR 11:15AM

PW03 - Sanchinator Vermejo 1:15PM
original well.

Need to get adapters for Sanchinator Production wells. 1 1/4" threads
↳ labelled 12M ?
1 1/4" to 3/8" Tubing.

SW02 - Wet Canyon location.

EPAPAV0022190