

- Removed triangular labelling plastic parts b/c they were annoying.

May 5, 2011

- Re-greased all plungers and put g.u.'s back together.
- ~~Re~~ Packed all equipment back into boxes.
- * Exchange Units need to be recalibrated before use! *

- I stole the following items for JOIS 2011 and will return to kit upon arrival back to LOS:

- #13 Bottle Top Dispenser
- Comm cables, A/D Converter
- USB cable (2x)
- Serial to USB converter
- 2x PRT sensors



Returned May 30, 2016

June 1, 2016

- System set up for first time in ~5 yrs for use on this year's C30 leg on the Laurier.
- Dosimat and exchanger units were all cleaned and tested prior to use.
- K103 Dosimats 665-5 and 665-6 calibrated with #20 10 ml exchange unit for ~~the~~ preparing steps. See sheet attached to inside of titrator for calibrated volumes.
- New water traps were made as the previous ones did not seal properly and rubber stoppers were quite deteriorated.
- Borrowing SWL - Backup - Walrus laptop computer for use with oxygen system. It was recently upgraded to Windows 10 and the LV02 software with appropriate drivers were also installed.
- Upon set up and first start up, all seems to be communicating and working properly with good agreement between thermistors that were quickly checked with a few other thermometers set up near the rig.

System Configuration

KIO₃ Dosimat = 665-S

" x.u. = 20

Thio Dosimat = 665-Y

" x.u. = 22

Calibrated vol. = 10.0017 mL

btd's = #4,6,9

computer = Walrus.

Chemicals

MnCl₂ = 15 MIX

NaOH = 15 MIX

H₂SO₄ = 1602

KIO₃ = 1603

Thio = 1415 MIX

} Previously opened

→ NEW

• System is being tested by running standards and blanks and analyzing samples for Debby Janson's student Ellie Simpson.

KIO₃ T = 22.9°C

Gain = 6.12 @ 2.54 V

• Fresh water in bath and flask after being thoroughly cleaned.

Standards

1) 0.4997

2) 0.5000

3) 0.5002

4) 0.4996

5) 0.4996

6) 0.4995

(avg) 0.49954

Blanks

1) 0.0503 - 0.0500 = 0.0003

2) 0.0503 - 0.0501 = 0.0002

3) 0.0504 - 0.0500 = 0.0004

4) 0.0505 - 0.0500 = 0.0005

5) 0.0504 - 0.0500 = 0.0004

(avg) 0.00037

THIO N = 0.23597

• Very nice!

SZ:

Kenny teaching Sarah & to use the system in prep for the C30 SWL cruise.

8 June 2016

Computer (HP2015-02 W-lvs) reset its date mid-day from June 8 to May 28.

Manually changed date to

9 June 2016 01:11 am UTC

at local 8 June 2016 04:11 Pacific time changed date to "update manually" to keep it from being automatically changed again.

8000.0 = 6020.0 - 8000.0
 8000.0 = 1020.0 - 8000.0
 4000.0 = 6020.0 - 4000.0
 2000.0 = 6020.0 - 2000.0
 4000.0 = 8020.0 - 4000.0
 8000.0 (pre)
 8000.0 (pre)

8000.0 - 1000.0

8000.0

C30 SWL leg 1 - Oxygen System setup

June 20, 2016

- System set up on center bench in main lab
- Connected all cabling and power cords and turned system on with no complaints

System Configuration

K103 Dosimat = 665-1 → setup a diff base on board

K103 Exchange Unit = 20

Thio Dosimat = 665-4

Thio Exchange Unit = 22

Computer = HP 2015-62 Walrus

Bottle top dispensers = #9 #8 #4

$MnCl_2$ ↓ H_2SO_4
 N_2 / $MnOH$

Chemical Configuration

Prepared Bottle

$MnCl_2$ = 1661

$NaOH$ = 1502

H_2SO_4 = 1603

KIO_3 = 1607

Thio = 1603

Feb 9, 2016 5
 Sept. 1, 2015 119
 June 14, 2016 144
 June 14, 2016 109
 June 14, 2016 7

2 July 2016 20:00 local Zimmerman

CRUISE 2016-17 SWL

Put bottle top dispensers on full bottles of H_2SO_4 , $NaI/NaOH$, $MnCl_2$

Connect KIO_3 and Thio bottles to dosimets and flush

System Configuration:

KIO_3 Dosimet: 665-5

KIO_3 Exchange Unit: #20

Thio Dosimet: 665-4

Thio Exchange unit: #22

Computer: HP2015-02 W-lms

Bottle Top Dispensers: $MnCl_2$ #9

$NaI/NaOH$ #8

H_2SO_4 #41

Chemicals - see previous page from June 20
All chemicals opened today (2 July 2016)

$V = 2.8$ before STDs (of DI in flask)

Test run of STDs + Blanks after setup

Standards

Blanks

1) 0.5119

1) 0.0005

2) 0.5123

2) 0.0008

2) 0.5135 ^{BAD}

3) 0.0005

3) 0.5112

4) 0.0008

4) 0.5110

~~0.5111~~

STDs:

- Too much DI was added initially so flasks were too full to mix well w/ addition of each chem. reagent.

- Bubbles in DI - need to fill brown halgene right before to let bubbles off gas (like Kenny said to do!) Oh wait I've got a whole carboy of DI...

Dosimet for KIO_3 actg. add.

Volume set for 10.0, enter, confirm Hit '60' and dosimet dispenses + then says "V-LIM reached!"

and then does not fill automatically need to press fill manually.

OK - will let system shut for the night and then run sample again before samples tomorrow.

3 July 2016

Set

Prep for run STDs
Voltage of DI water reads 3.05
Changed dial so it now reads 2.556

STD BIKS
~~0.5111~~ 0.0006
0.5107 ~~0.0009~~
0.5108 0.0005
0.5107 0.0006
Add another ... 0.0006
0.5107

AUG 0.51071 0.00053

Thio Norm 0.24046

Detector reads 2.53
" 2.43 and end of sample run
" 1 (and old water in bath)

Samples read in duplicate,
run from cust 1 - looks great!
replicates

Run NP-1 Event 1
~~NP-2 Event 4~~ 2.52 after cleaning bath
Event 4 originally and replacing water

4 July 2016 (local 1600, UTC = 0103 July 5)

Bubbles on top of KIO3 plunger base again today. Removed.

STDs

- 1) over filled w/ DI
Burette had drop on end so flushed, then ~1 min after adding all reagents finally ran STD 0.5105
- 2) while mixing, couple drops came out after adding NaF/NaOH
0.5181
- 3) 0.5108
- 4) 0.5109
- 5) 5.104

Changed dist water in bath + flask V=2.50

Repeat STDs

1. 0.5108 1. 0.0005
2. 0.5106 2. 0.0006
3. 0.5106 ~~3. 0.0001~~ delete
4. 0.5105 4. 0.0005
0.5106 5. 0.0008
Thio N= 0.0006 0.24057

Ready to run samples v=2.48

Run NP-2 Event ~~4~~ 4? originally called cut ~~2.3~~
NP-3 Event ~~4~~ 6? so filenames mixed up.
V=2.44 afterwards clean bath and re-tire fill

5 July 2016 1325 local 1021pm UTC

Lamp on 1325 local

KIO₃ was able to form disintegrate base V-LIM off,
(Volume + made somehow...) and wash it
will dispense 10.0ml + refill.

A few tiny bubbles in corner. I tried to
remove without success. A few black bits
came from syringe + now rest on plunger
base. Perhaps they are from the syringe
plunger? Too sticky / heavy to suck up.
Smell... will leave them.

Thio burette looks good. Flushed ex.

Bath water changed. $V = 2.46$ g (manually) increased to $V.250$

STDs BLKs

0.5106	0.0006
0.5107	0.0004
0.5109	0.0005
0.5107	0.0005
0.51073	0.00053

Starts samples at 1444 local

$V = 2.49$ Thio $N = 0.24051$

Box 3 NP-4 event #11
" 1 NP-5 " #15

6 July 2016 1339 local 1039pm UTC

Lamp on ~ 1300 local

New water in bath + Flask $V = 2.50$

KIO₃
Used 2nd KIO₃ syringe (1/2 curved needle) to
remove bubbles on side (a bit larger than the ones
that were left in yesterday) + the bit of black
debr. looks good now. Give 2x more flush.
Thio burette

A few bubbles in top line (this bottle to switch)
opened detached blue line from switch, liquid
went back into bottle, reattached line, ~~re-~~
suction was not working, detached + wiped with
kimwipe + reattached. This time Thio flow was
good. All bubbles flushed from lines.

STDs

1) 0.5102	} Had flask ready to go but then decided to	Blanks
2) 0.5107		
3) 0.5108	} Thio $V.250$ so ~ 1 min delay until in bath w/ thio	1) 0.0005
4) 0.5106		2) 0.0006
5) 0.5107	3) 0.0005	4) 0.0004
Aug 0.5107	Aug 0.0005	

Thio Norm = 0.240494

$V = 2.48$ start

Box 3 NP-6 event 18
Box 1 NP-7 event 01

Dropped 3187
which fell + smashed 1352
Replaced 3187 w/ 1200

7 Jul 2016

KIO₃ burette - a few tiny bubbles slipped out w/
long carry noodle.

Carbuoy 1/3 full was filled to 2/3 w/ lab's DI.
last night. Sat overnight for use this afternoon

STD	Bkls
0.5101 delete	0.0002 delete
0.5105	0.0007 delete
0.5108 - curve a little wobbly	0.0002
0.5106	0.0004
0.5107	0.0004
Avg 0.5106	Avg 0.0004

This Norm 0.2405024

Start'd system up for the dry the
computer had a slow time connecting to
Burette (Thru).

Mid ev't the system froze doing a
sample - burette lost communication. Power
burette off used task manager to end
VVO₂. Rebooted computer. Still slow
connecting to data two desimint. Unplugged
& replugged the easy connections, w/sg had
the tight connections btw PC + Desimint.
used for

I wonder about the desimint performance
during the 1st station as
origen values don't look real -
will check against STD. So
maybe issues w/ doing ~~last~~ the last
w/ desimint earlier in
same station.
I had been switching btw Low O₂
and normal options for dispensing
rate... and values look odd
typically after a change of the option.

Step Analy 2-d NP-8 + NP-9
#24 #28

8 Jul 2016

KIO₃ burette - a few small bubbles were removed

Thio burette - still clear! whole trip!

KIO₃ ~300ml @ start of day.
Lamp red from 4.88 to 2, 4.88 → 2.50 w/dial

STDs	Bks
1 0.5106 0.5106	1) 0.0007
2 0.5107	2) 0.0006
3 0.5108	Flushed burette due to
4 0.5109	slight hiccup/jump in curves..
5 0.5106	3) 0.0003 - curve looks
Ag 0.5107	4) 0.0005 better grad.
	5) 0.0005

Thio Norm
0.240541

Samples Run
Cst 32 NP-10
Cst 36 NP-11

Run another set of samples mixing after last addition

1) 0.5105	
2) 0.5108	- Fill w/dial mixing & bubble on inside
3) 0.5102	" " of flask
4) 0.5106	" "

Change KIO₃ to 2nd bottle for comparison
Flask #132, 1608, June 14 2016, 1/2
Bottle
N=0.119758

STDs	Bks
1) 0.4980	1) 0.0005
2) 0.4983	2) 0.0005
3) 0.4982	3) 0.0006
4) 0.4984	4) 0.0006
5) 0.4984	± TEST After adding last reagent

waited 20 seconds before putting in both.
Just wondering how time dependant this operation is and associated error?
↑ #4 Blank also tested - after adding last reagent, waited 20 sec before adding to both
NO DIFF

One last STD w/ 5th bottle...
waited 60 sec after mixing 0.4984 good!

Reagent check of volume dispensed:
H₂SO₄ = X Already washed dispenser before reagent - verifying test.
NaI/NaOH = 9.9 ml, 9.9 ml
MnCl₂ = 10.0 ml
~~compare~~ 10 squirts (10 mL) in graduated cylinder
(Measure volume of)

July 8 + 9 2016

Packing:

- Bottle top dispensers rinsed w/ DI and packed but still dripping.

- Files copied ~~removed~~ from laptop.

- Chemicals sealed w/ wrap of electrical tape around caps

- Flasks rinsed w/ tap water. Air dried but not fully dry before packing.

- Syringes, flask, bottles all rinsed w/ DI and left to dry as long as possible

- Burettes rinsed w/ DI 3x at least and system flushed ~ 10 times at least

- Exchange vials packed w/ bottle tops + dispensing tips

- Foam bottle holders rinsed but still not dry. They were packed in wood analysis box to continue drying

- Flasks: A total of 33 flasks were broken and chips were found on two

spots
Broken flasks - in bags, in end of boxes

3166 - cap stuck, broke while trying to open

3 broke - one fell from my hand as it was put back to box and landed on another

Chips
1188
1130

Packing list updated (paper copy has hand counts)

In hold: most boxes
Chemicals in Fume hood

Computer w/ SE

Bucket still in lab