

SOKKIA

MADE IN CHINA

SOKKIA

BACKSCATTER

**FIELD
BOOK**

Research
2022 - 2023



No. 8152-6

INDEX

4. KTK Moore site operation

10-7-2022 p. 1-3

P. 14-17 Reef SAN 11/2022

18-74 11-2022 - 4/2023

ROV Caudex, etc. - fixed /
Gradst; ROV stability /
Autonomous.

P. 75 - 4/2023 ROV obs.

Diving @ CCA, Reef SAN
1.83 lab

P. 83-118. ROV SANADNAH,
Box One (3).

P. 119 - Blue Light Study
P. 129-132: lost ROV,
Recovery.

P. 133-160. Camera adventure
w/ Blue Robotics.

Property of

En. Garza, P.T.

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Package:

9090



This Book is manufactured using a paper made from wood-free materials and is acid-free and archive safe.

815260



KIR-Madera Site 10-7-22 1

RD1 Prop# 2 - 12:20 PM

Found bag(s). Good ideas

Look to record holes for
vehicle connections
connect to next hole in

31.31.059' ? Back position
49.00.130' ? @ Madera

Seas. (Colm Air Temp 80°F
Water 74.35°F. (Garmin))

Scam close to Madera;
low profile structure
8000 ft in pits.

RD1 up @ 1 PM. DVA 3.

Knobs.

This
fro
arc

Tel

Ad

Pro

KTK MONT cont. - 10.7.22

3

Grab Samples: GPS 1:10 PM

31° 31.0634' N (#144)
81° 00.1375' W.

Grabs 1-4: Sediment

Grab #5: Empty

Grab #6: Good (see Good notes)

Grab #7: Good on bags

Grab #8: 31° 31.0598' N
81° 00.1351' W

Left KTK @ 1:40 PM

First Landing Fuel Dock @ 2:06 PM

SKID: 3 PM

UGA

10-10-22

3

KTK Grab Sample Coordinates

* Grab #1: 31° 31.058' N (58?)

81° 00.32' W

* Grab #2: 31° 31.575 (0575)

81° 00.858

Grab #3: 31° 31.0575

81° 00.258

Grab #4: 31° 31.0575

81° 00.358

Grab #5: 31° 31.0653

81° 00.376

NO Sample & recovery

Grab #6: 31° 31.0622

81° 00.1375

ON

Grab #7: 31° 31.0569

81° 00.1331

MODENA

Grab #8: 31° 31.0560

81° 00.1321

LOAN +

* 10/17: Had to convert to decimal degrees for ArcPro: used same coords for Grabs #1-4

UGA Lab

10-13-22

4

- Weigh Sediment samples

CCA: 8.85 kg total

U: 3.30 kg total

KTK: 4.75 kg total

- charge extra dead battery using double connection method (205)

- KTK Sample Weights

Grab 1 .05 kg * fine (pollen & DNA)

Grab 2 .30 kg * fine (pollen & DNA)

Grab 3 1.35 kg

Grab 4 .50 kg

Grab 5 X

Grab 6 .85 kg

Grab 7 .80 kg

Grab 8 .85 kg

X = missed

S = potential scour

- CCA Sample Weights

Grab 1 X

Grab 2 .15 kg

Grab 3 X

Grab 4 1.05 kg

Grab 5 X

Grab 6 X

Grab 7 1.70 kg

Grab 8 1.20 kg

Grab 9 1.65 kg

Grab 10 1.65 kg

Grab 11 X

Grab 12 X

Grab 13 X

Grab 14 1.50 kg

X = missed

S = potential scour

UGA Lab

10-13-22

5

• JV - Sagebrush Sample Weights

Grab 1	x	
S Grab 2	.201g	
Grab 3	.80 kg	
S Grab 4	.75 kg	
Grab 5	x	
Grab 6	x	
* Grab 7	1.25 kg	
Grab 8	x	
Grab 9	x	
Grab 10	x	
Grab 11	x	
Grab 12	x	
S Grab 13	0.35 kg	* fine (pollen & sand)
Grab 14	x	

X = missed S = potential score

- leakage in the battery compartment tank test? pool test?
- Switch out O rings
- sand accumulation in back seal needs to be removed and cleaned
- moisture in the O rings

UGA Lab

10/13/22

- new buoy marker for drop line
- brackets removed to take battery compartment out

Video Check

- 1HD video good both days
- 4K video has issues.
- loss of picture sounds on battery enclosure in preparation of cleaning & cleaning enclosure.

October 1-1 - UGA Lab

8

- cleared bottom enclosures with water and Kinnipies; re-grassed O-rings.

- bagged CCA grab 5 and 6 from 8/24/22.

• Kelly wants pollen/ DNA from;

KTK #4 or 2 seen muddiest!

Sagebrush #13 muddy!

CA → all sandy; rats from August are better for pollen/ other analysis
h/c they are muddier + still new

UGA Lab

9/10/17/22

• Arc Pro

- converted KTK coordinates into decimal degrees

→ uploaded to Arc, look good

- downloaded 1.tif file for KTK (SSP area); did not show image on Arc, only a black box

⇒ also, SS #19 is not in the drop range from 197, too far east

LGK Receipt Notes on grabs (EG)

10-10-22: CCA: Significant amount of sediment in several grabs (#7/14). Cf. p. 5.

IX Seaground: 5/14 grabs returned sample sediment (cf. p. 6). 10/13 - DNA & Pollen sample taken.

KK-Matona: 7/8 grabs recovered sediment. Grabs #1 Fine sediment.

Grab #2 Fine sediment, little shell.

Grabs 3, 4, 6, 7, 8. Coarse sediment w/ shell. Large samples.

LGK LAB

IX Seaground Grabs

Grab 4

- in scum, close to reef
- ~80 kg sediment
- only grab in scum that got sediment

Grab 13

- far away from reef/scum $\Rightarrow$ 90m
- fine sediment, what we would expect in scum
- very interesting

Grabs 2 + 3

- roughly 60m away from reef
- nothing too special?



Grab 13

- 90m away from reef

Grab 3, 2

- 60m away from reef

Filled Seed DNA vials from

Sagebrush #4, #13

2 vials each in fridge

bleached: bags, gloves, seed stripers

sagebrush #13 (lost) has a worm(?)

in it. It better show up in DNA

1

Sam 10/5
Sagebrush

LAB/UGA

10/18/22

Video Editing - Kelsey

Finished CCA #1 video

Working on second CCA video &
left off at 30 seconds

LAB/UGA

10/19/22

Video editing - Kelsey

CCA Dive #1 ☒

CCA Dive #2 ☒ *very visible smudge on camera lens

JY Sagebrush Dive #1 ☐ *large smudge on cam lens

KTK Modena Dive #1 ☐ *left off at 10 min

KTK Modena Dive #2 ☐ in JY Sagebrush

KTK Modena Dive #3 ☐

Might need to wipe camera lens after each dive; smudges are distorting videos

Boat - Oct 21

47

No dov video: no data beam sent

Finally: resealed battery and
got video - still want to
find out why it is doing
this

left dock ~ 8:50 AM

Dropped anchor outage to ~ 10:16

- Small PONAR drop

grab #1 @ ~ 10:24 positive
Lost the pin??

switched pin from big ponar
grab to small

- Small PONAR drop
Grab #2 { 31° 54.302 JD Grab 1
80° 47.224 W }

31° 54.302 - didn't deploy
80° 47.225

- Grab #3 Positive negative

31° 54.303 but did deploy
80° 47.227

- Grab #4 - didn't open

31° 54.208
80° 47.229

Reef SAV 10-21-22

N 31° 54.304
W 080° 47.226

31° 54.302 Grab 1
080° 47.224

Grab 5 31° 54.208
80° 47.227

Didn't open

15

video beam cutoffs in & out, many times

Boat - Oct 21

47

No don video; no. as seen

Emily: resealed battery and

got video - still want to

find out why it is doing
this

left dock ~ 8:50 AM

Dropped anchor outage ~ 10:16

- Small POUAR drop

grab #1 @ 10:24 positive

Lost the pin??

switched pin from big pore
grab to small

- Small POUAR drop {31' 54.302 N Grab
(80' 47.225 W

grab #2

31° 54.302 - didn't deploy
80° 47.225

- Grab #3

31° 54.303 Positive negative
80° 47.227 but did deploy

- Grab #4

31° 54.208 - didn't open
80° 47.229

Reef Sav

1 31 54.302 N 31.905033
80 47.224 W - 80.787067

2 31 54.302 N 31.905033
80 47.225 W - 80.787083

3 31 54.303 31.90505
80 47.227 - 80.7871167

4 31 54.208 31.903467
80 47.229 - 80.787150

5 31 54.209 31.903483
80 47.227 - 80.7871167

6 31 54.209 31.903483
80 47.227 - 80.7871167
(same as 5)

Boat - Oct 21

14

No down video; gears worn and
finally: resealed battery and

got video - still want to
find out why it is doing
this

Left dock ~ 8:50 AM

Dropped anchor at age 6 ~ 10:16

- Small PONAR drop

grab #1 @ 10:24 positive

Lost the pin??

switched pin from big ponar
grab to small

- Small PONAR drop

Grab #2

31° 54.302 - didn't deploy

80° 47.225

- Grab #3

Positive negative

31° 54.303

but did deploy

80° 47.227

- Grab #4

didn't open

31° 54.208

80° 47.229

Grab 5

31° 54.208
80° 47.227

Didn't open

Grab 6

Sum coords @
9:15

Ping CONAR started @ 10:46 AM

PONAR deployed @ 11:02

Cable started @ 10:54

Anchor is dragging, resetting
new anchor time @ 10:59 AM

rough coords

31° 54.294' N

80° 47.236' W

No wave near shore or reef

Current v. strong (boat & dragons sway)

Saw jellyfish @ 11:07

video keep cutting in & out; many files

15

REV Drop #2

16

Ted letter through Dabit to keep up out of engine

Drag too bad, so we pulled anchor + used engine to keep us.

on top of barge

current strong enough to shunt wrapped

REV

Pulled in ~11:30

REV NOTES: forgot to record drop time - can deduct last video time from 11:30 to estimate.

Wind picked up too much, anchor was dragging, and current was too strong - REV was barely moving due to current, could barely turn or move forward in the direction needed.

Too windy, waves a bit too much to do anymore sediment samples too

Boat / Reef SAV

17

10/21/2022

When taking battery out of microscope water came out. Need to look for lines

Returned to dock & UGA.

Reef SAV Growth (coords) $\Rightarrow$ dec. dec.

- ① 31.905033, -80.787067
- ② 31.905033, -80.7870833
- ③ 31.90505, -80.78711607
- ④ 31.903467, -80.787150
- ⑤ 31.903483, -80.78711667 - same
- ⑥ 31.903483, -80.78711667 - coords

Lab/UEA

10/24

18

- Battery #3 down to 4 volts and corrosion on the plug.
- Going to do scary charge and submerge plug in vinegar to remove corrosion

To Dos

- ✓ - pick up seed samples for Oct. 6-7
- - Collect seed samples from Oct 20-21
- - finish sorting out bottom enclosure.
- ✓ - Schedule lab Mts. for Wed. 26
- - plan tank and pool tests
- - make rough plan for November
- ✓ - look through Oct 21 env video
- Southern Bays - Site #10
 - video looked through
 - spotted a few things and took screen grab
- Battery #3 caught on fire when plugged into voltage reader *reader and charger are okay

Lab/UEA

10-24-22

19

- UY Sagebrush Grab #7 and #3. have been compromised from fire extinguisher use

- Packaged two vials UY Grab #13 to send to Jonah Ventures in Boulder
- UPS - 2nd Day Air.

Lab/UEA

10-25-22

Video 2022-10-21 11:05:29.

@ 3:32 blue light illuminator round object - shell? - viewed w/ black & white goggles.

Video: 2022-10-21 11:26:13

bottom of red black, phosphate - shell

@ 5:44 - another black phosphate-like object
x 15-20cm long

Video: UEA 1. Good perspective of scene adjacent to bridge. SSS.

Lab Meeting

10-25-22

20

10:30 AM - E. Jones, K. Grunewald,
K. O'Donnell, A. Perez, Alex
Tele. J.

Drum's samples: C1, SN
Repeat Battery enclosure.
Select RC samples.
Video & GPS. Drops for
Motherhead, KTK, SM

Lab / VGH

10-26-22

21

Lab Meeting @ 10:30am

- all in attendance
- pool test next Wed. 11/2 @ 9:00am
- proposal for Savannah
- Kelly: Radiocarbon & Sediment Preparation
- Kelsey: Sed. sample collection for USGS
- Emily: GIS for sites BATTERY
- Andrew & Alex: Sed. preparation
- ROV Battery Enclosure
 - soaked plugs in vinegar to remove corrosion
 - black wire on end cap is exposed; fixing w/ liquid tape
 - leak has gotten worse
 - potentially replace all D-rings
 - need to reseal everything
 - need to deep clean enclosure and whole ROV due to extra salt buildup
 - check O-rings in red plugs

ROV Bottom Enclosure

22

- took end cap apart and cleaned, re-greased, and tightened nuts and bolts
- soaked nuts/bolts in soap, water, and vinegar
- liquid tape not working

LAB

10-31-2022

- Finished + printed Reef SAV map
- completed maps as of 10/31:
 - SAV
 - JY-Sagbush
 - KTK-Madana
 - CCA
- began working on maps for K-Motherlode and KLB from 08/2021
 - coordinates are limited
 - ↳ used wrist GPS, coordinates did not update as much as boat GPS, so most drops have the same coords

LAB

23

10/31/2022

- Kelsey beginning to collect USGS samples
- KTK #1 collected
- JY #2 collected
- JY #7 collected
- 100g of JY #4, JY #13, and CCA #4 have been placed on trays to dry out for USGS sample.
- *if using oven, Dr. Willard says 50°C
- SAV Grab #1? Sed Sample for USGS?
- AB 11/2 & 11/4 for ROV work
 - potential pop test on Friday 11/4 if ROV reassembled from cleaning

LAB

24

11/2

Continued ROV cleaning

- Cleaned the following:

- battery enclosure cap
- brain ~~enclosure~~ enclosures (w2)
- plug O-rings

Tank test

- Emily + Andrew

- using battery #12

* Computer issues!

→ couldn't turn on for

about 30-45 min despite

being plugged in. Similar

issue on boat trip 10/26

- ROV worked well in tank, lost

video when arrived*, but it came

back after a minute

- Andrew noted the battery enclosure

was a lot harder to get off =

better seal?

= NO WATER IN ENCLOSURE!!

Pool/VGA

25

11/4/22

Emily, Andrew, Kelsey, Tr.C

• 10:20am - Marine Science pool for ROV test to check for leakage.

• video works and recording

• GoPro on and recording

• ROV in water at 10:35am

• video dropped out as soon as

Andrew dropped ROV in the water

- loose connection?

• ROV out water at 10:45am

- lost connection between

ROV and controller

- had to retrieve by tether

- yaw alignment issue

- water/moisture in battery enclosure after 10mins

at 8ft depth

- video greys out every few minutes

Pool/lob

26

11/4

① clean battery enclosure
next week

Agenda for next 2 weeks:

- Sediment staff
- POV

- clean front battery enclosure

- open up brain and check connections - make sure they aren't loose

→ if video issues

persist, we might need to look at

downloading a

new version of QGC

POD back in pool @ 11:09 am

Checking for moisture in battery enclosure. Am/ grabbed extended for test in recovering a shell.

11/4

POD/POD TEST
cont. -

27

- video working and recording

- GoPro on and recording

- grabber too high off ground and no angle means the shells are out of reach barely

- look at button controls to see about grabber buttons

- thrusters shift shells around easily and makes grabbing difficult

- video greyed out when changed from manual to depth hold

- sight issues with driving straight

- alignment issue?

- thruster issue?

28
11/4

Pool/UGA

- occasional thruster resistance
- don't know if it's flight mode or thrusters themselves
- when in manual, starts to turn when moving forward when depth joystick is not being used
- YAW issues w/ alignment is causing the ROV to tilt up when moving forward in manual
 - recalibrate YAW?
- possible change to ROV: somehow get gripper arm to an angle
- while hovered and only using forward joystick, ROV went in a complete circle w/o any turning
- when positioning for motor-check, switched to depth hold and still armed the ROV dropped to bottom (may have overlooked - Kelsey)

29
11/4

Pool/UGA

- motor check passed
- ROV out water at 11:33am
- water still leaking into battery enclosure
- ROV in water for 24 minutes mainly at 8ft depth
- buy new O-rings (backups)
- IT came to check out laptop. We believe it was an issue of the battery notting to level and needing extended charge time before turning back on. ROV updates to BIDS. Computer is recharging.
- Laptop has been charging, looked @ around 50-60% charged but will red light by charging port.

Lab MGA

11-7-12

30

Opened front of battery enclosure. Reattached O-rings and closed.

Sent copies of graph plots to SKTD.

LAB

11-8-12

"Final" draft of Research Vessel Request to SKTD.

Filed test tank for battery enclosure test 11/9/12.

Lab/UGT

11/9/12

31

- drying CCA samples

- Signe KTK samples and do GRADIST analysis

KTK Graph #2

KTK Graph #3

etc weight

weight

#5 19.2 g

105.3 g

#10 26.1 g

205.5 g

#18 24.0 g

188.8 g

#35 31.4 g

206.3 g

#60 57.8 g

209.1 g

#120 60.0 g

111.2 g

#230 3.0 g

4.9 g

catch pen 1.2 g

1.2 g

Total 227.7 g

1,032.3 g

Lab/UGA

11/9/22 32

END

KTk grab 4

KTk grab 6

#5 71.2g

92.9g

#10 80.0g

140.0g

#18 51.7g

162.5g

#35 33.1g

83.1g

#60 25.6g

85.1g

#120 16.0g

76.0g

#230 1.5g

5.4g

catcher 1.4g

2.2g

Total 283.5g

587.2g

KTk grab 7

KTk grab 8

#5 75.3g

97.7g

#10 134.6g

149.2g

#18 120.0g

125.3g

#35 92.2g

101.4g

#60 74.5g

91.0g

#120 56.9g

65.0g

#230 4.2g

2.9g

catcher 3.2g

1.0g

Total 554.9g

633.5g

Lab/UGA

11/11/22 33

• ROV Tank test

- submerged for 30 minutes

START: 12:35 pm END: 1:05 pm

- no leaks detected BUT not a definitive test

- still ordering new O-rings

- prepare to do good test

- Monday? Wednesday?

• All samples for USGS collected and packaged

- send out Monday (11/14) AM

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LAB/UGA

11/14/22

- USGS samples sent off in mail to Dr. Willard
- Watch video presentation from GSA
- Continue video editing for 10/6-10/7

Examined 4000 μ m fractions for

RTK 2, 3, 4, 6, 7, 8.

Oyster in Gobs 3, 6, 8
from fragments from house.
in gobs 2, 3, 6

Dr. Garrison

POOL/UGA Emily, Andrew, Kelsey

11/16/22

35

- RVN Pool test
 - used battery #1
 - EX11 connection established
 - HD video working
 - LR video recording
 - pumped down & air sealed
- RVN in water @ 10:38 am
 - controls
 - thrusters: $\nearrow$ smoother than last test
Still shifts sideways
- HD video greyed out: ~~XXXX~~ 1
Gain?
- Forward control still turning slightly $\downarrow$
- Grabber arm extended & works properly
- Putting RVN in stability to try shifting down towards objects to grab easier (successful)
- Lights working
- Checking Motor Setup bc turning
 - Thrusters 1, 2, 3, 4 appear to be functioning properly & stable

pool/UGA

11-16, 22

36

- Turning issue may be due to YAW reading to be recalibrated
OR
weight imbalance on one side of RVN
 - Andrew practiced driving RVN
 - POOL Test cut short due to low battery on the laptop
 - RVN out of water @ 10:53 am
 - NO water in battery enclosure ("E. Jones downloaded 4K and Rick video to laptop")
 - laptop freezes and shuts. Cooled FORT.
- 11/17, 22
- FORT fixed laptop issues. Windows update caused video issue.

LAB

11-18, 22

37

Reviewed CCA & KTK videos
2022-10-07-12, 30, 18 MKU) file
is good backup of KTK
uploaded and shared KTK
video w/ DMR.

Lab/Unit 1

12/2/22

- sieve CCA samples, bag and do GRADISTAT analysis.

Sieve	CCA grab 2	CCA grab 4
#5	11.5 g	8.8 g
#10	8.6 g	16.1 g
#18	20.5 g	38.1 g
#35	45.9 g	136.3 g
#60	30.5 g	365.5 g
#120	4.0 g	173.0 g
#230	0.0 g	2.2 g
Catchpan	0.0 g	0.0 g
Total	121.0 g	740.0 g

Sieve	CCA grab 7	CCA grab 8
#5	6.9 g	4.8 g
#10	17.1 g	17.0 g
#18	52.6 g	31.3 g
#35	178.8 g	89.4 g
#60	76.5 g	412.3 g
#120	212.9 g	246.9 g
#230	5.9 g	3.8 g
Catchpan	0.0 g	0.3 g
Total	1299.2 g	865.8 g

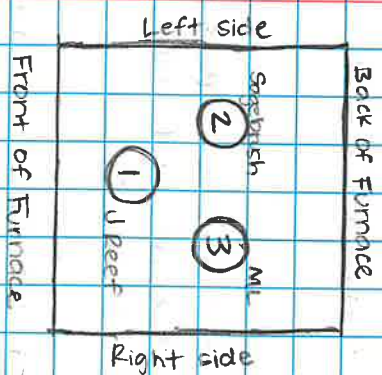
39

Sieve	CCA grab 9	CCA grab 10
#5	16.3 g	7.2 g
#10	34.7 g	20.0 g
#18	100.0 g	13.0 g
#35	280.0 g	276.8 g
#60	714.5 g	830.1 g
#120	123.4 g	85.8 g
#230	5.6 g	3.0 g
Catchpan	0.7 g	0.3 g
Total	1275.2 g	1296.2 g

Sieve	CCA grab 14
#5	0.9 g
#10	14.4 g
#18	18.6 g
#35	70.8 g
#60	973.7 g
#120	50.0 g
#230	2.1 g
Catchpan	0.0 g
Total	1130.5 g

1. Stabilize Hs balance
 2. Clean furnace vessels
 3. Weigh each vessel
 4. Measure 5-10g of sediment
 5. Bake in furnace @ 400°C for 4 hours
- Hyper-sensitive Balance stable at 0.024g (essentially 0g before any weighing)
 - Weighing Paper: 0.23g
 - Ashing Bowl: 84.15g
 - Triple Ashing Bowl: 65.31g
- J-Reef Catch Pan (00-28-06)
- Measured out ~7g into ashing bowl
 - Total Weight w/ AB: 91.00g
- Sagebrush (Grab 13) → very muddy & silty
- Measured out ~4g into triple ashing bowl
 - Total Weight w/ TAB: 69.35g
- When transferring ashing bowls w/ sediment into the furnace, the triple ashing bowl was placed but the single ashing bowl fell and spilled

- Due to spill, triple ashing bowl was compromised and the furnace had to be cleaned and reset
 - ↳ furnace cooled completely
 - ↳ discarded both samples
- After furnace was cleaned, we restarted the process
- New vessels found to hold sediment
 - ↳ all identical
 - ↳ oven safe
- Furnace set to 400°C
- Furnace temp. dropped to 325°C when loading sediment samples
- Start Time: 11:30 am
- Bake for 4 hours



LOSS ON IGNITION (LOI)

12-5-22

Geochem Lab

~~12/21/22~~

1. measure 5-10g sediment
2. place in ashing vessel
3. bake in oven @ 1000°C
- for about an hour

Weights

.23g =

.024 = balance, AFA - $\emptyset$ g weighing paper
↳ hypersensitive balance

84.15 g = vessel weight,
the ashing bowl

65.31 g = triple ashing bowl weight

J-Reef catch can (00-28-06)

→ putting in ~~45g~~ into ashing bowl
↳ 47g (total w. = 91.00g)
bowl ashing bowl

Sagebrush Grab 13

→ putting into triple ashing bowl
→ Sagebrush 13 = the really muddy/silty grab
→ 4g

total weight
at bowl

69.35g

Geochem Lab - L01

12/5/22

- Put in ashing bowls

- triple went in fine

- ashing bowl (single) fell

- Took both out, needs to cool completely

- in order to clean the oven

- Triple began the process - had to

- stop due to single ashing bowl

- compromise

- Oven (aka: Furnace) cleaned

- Found new bowls

- ↳ all identical

Back of furnace

Next page

- Bowl weight: 11.175g

- Balance: .005g

- Bowl weight =

Sagebrush

ML

P

1 reef

Iron 10 opening
at furnace

Furnace @ 400°C
= 4 hrs. cook

time

- temp. drop to 325°C while loading

- Start time = 11:30 AM

- with ~~likely~~ reach 400°C @ ~~noon~~

Geochem - L01

Balance weight = .005g

Bowl 1

- Bowl weight = 11.175g

- Will hold 5-reef catchpan (100-28-0.0)

- Total weight = 16.702g

- = 5-reef amount = ~5g

Bowl 2

- Bowl weight = 11.113g

- Will hold Sagebrush Grav 13

- Total weight = 16.805g

- = Sagebrush 13 amount = ~5g

Bowl 3

- Bowl weight = 11.192g

- Will hold Motherlode Grav 5

- Total weight = 19.216g

- = Motherlode 5 amount = ~8g

Samples done around 4:00pm
Weights out @ 5:20pm @ 500°C

Bowl 1: 16.562g 5 Reef

Bowl 2: 16.368g Sagebrush

Bowl 3: 19.127g Motherlode

12-6-22

SEDLER LOT CONT-

$$\% \text{ O.M.} = \left[\frac{\text{Wt.}_{\text{DRY}}}{\text{FURNACE}} - \text{Wt.}_{\text{DRY}} \right] \times 100 / \text{Wt.}_{\text{DRY}}$$

$$\% \text{ O.M.} = (16.702 - 16.562) 100 / 16.702$$

(Bowl 1)
1. Reet

2.7% O.M.

$$\% \text{ O.M.} = (16.805 - 16.368) \times 100 / 16.805$$

Bowl 2
Sogetush 2.16% O.M.

$$\% \text{ O.M.} = (19.216 - 19.127) 100 / 19.216$$

Bowl 3
Motherbode 0.46% O.M.

Geochron Lab - L01

12/5/22

- Put in ashing bowls
- triple went in fine
- ashing bowl (single) fell
- Took both out, need to cool completely in order to clean the oven
- Triple began the process - had to stop due to single ashing bowl compromise

- Oven (aka: Furnace) cleaned
- Found new bowls
- ↳ all identical
- Back at Furnace

Next page

Bowl 1 weight: 11.175g

Balance: .005g

Bowl 2 weight =

Sogetush

(2) (3) (4)

(1) Reet

Furnace @ 400°C

= 4 hrs. cool

From opening of furnace

- time
- temp. drop to 325°C while loading
- Start time = 11:30 AM
- 11:34 AM
- with likely cool 400°C @ 11:34 AM

19.216
-11.192

8.024g

→ lost from Motherlode

49693
VSS94

91.00

-84.15

5.85g

5.850
+5.527
11.377

2105 7
30.000

-11.377

19.223g

J-Reef

69.35

-65.31

(SPILL)

4.04g

→ Amount lost

from Sagebrush

16.805

-11.113

(FURNACE)

5.892g

→ Amount lost

from Sagebrush

5.892

+4.040

9.932g

→ TOTAL LOST (J+ Sage.)

LOI FORMULA 12-6-22

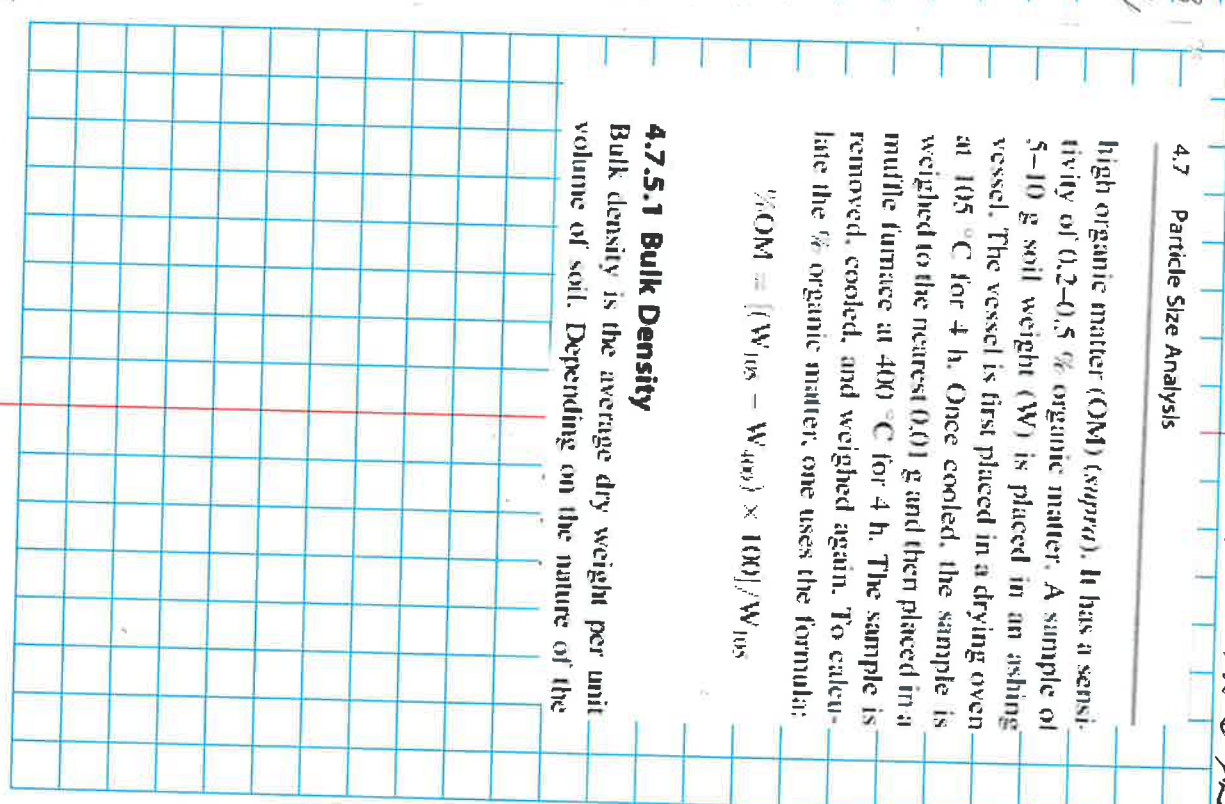
4.7 Particle Size Analysis

high organic matter (OM) (*supra*). It has a sensitivity of 0.2-0.5 % organic matter. A sample of 5-10 g soil weight (W) is placed in an ashing vessel. The vessel is first placed in a drying oven at 105 °C for 4 h. Once cooled, the sample is weighed to the nearest 0.01 g and then placed in a muffle furnace at 400 °C for 4 h. The sample is removed, cooled, and weighed again. To calculate the % organic matter, one uses the formula:

$$\%OM = [(W_{105} - W_{400}) \times 100] / W_{105}$$

4.7.5.1 Bulk Density

Bulk density is the average dry weight per unit volume of soil. Depending on the nature of the



11-13-2023

Box 8, Top Drive 2 in
Sample 10 (Aluminum)

Attest Canada Balsam,
known to dry,

11:05 AM -

LOT

Bottom Core 8

Cupula

11.17775

Empty

Empty

Top Core 8

Cupula

11.19935

Spl. wt

2.476 tray

10.555 + spl.

8.079 spl.

Pro heat

18.8617 spl.

+ Cupula

Pro heat

11.1777 Cupula

8.355 spl.

19.5325

Post heat

19.424

Post heat

18.783

GEOCHEM LAB / VEA (LOI) 12/5/22

Balance weight: .005g

• BOWL 1: J-Reef (00-28-16)

- Vessel weight: 11.175g
- Total Weight (Vessel & Sed.): 16.702g
- Sediment weight: 5.527g

• BOWL 2: Sagebrush (Grab 13)

- Vessel weight: 11.113g
- Total Weight (Vessel & Sed.): 16.805g
- Sediment weight: 5.892g

• BOWL 3: Methelode (Grab 5)

- Vessel weight:
- Total Weight (Vessel & Sed.): 19.216g
- Sediment weight: 8.024g

• WEIGHTS AFTER FURNACE

- BOWL 1 (J-Reef):
- BOWL 2 (Sagebrush 13):
- BOWL 3 (Methelode):

* Location in furnace diagram on the page before this one *

LAB

12-14-22

43

Emily Jones came in. We discussed RN BARNHART cruise options. She made a list of CAA & SAGEBRUSH grab coordinates to use for April cruise activities.

Locations on blue sticky note, overleaf P.45.

Reviewed CCA Dive #1, pt. 1 P.42.

RN dropped on barge, moved to stern and (south side?). Seama surface is mottled sand-sand. No dove wave area inripples. CCA turbulence. @ dark adjusted to barge structure. This texture continues to where bottom and barge meet. No deep swim - broad area. RN may have rounded end of structure.

LAB

447

Video CCA, Dive #2, Bottom
texture much less smooth than
Dive 1. Mottled mud substrate -
no shell. fish in water column,
no large is nearby. Bottom
hard bottoms.
Bottom texture much like
SF Research ledge w/ bio-
foulation in silty sand.

R/V SAV locations

45

JN-Sagebrush

- Grab 3 : 31.610410 ° N
80.797250 ° W
- Grab 4 : 31.610150 ° N
80.796920 ° W

CCA

- Grab 5/6 : 31.700762 ° N
^{October}
points 80.701028 ° W

ADD: TANGER ISLAND

31° 36.58' N ↗
80° 47.83' W

LAB

44

Video CCA, Dive #2. Bottom texture much less smooth than Dive 1. Mottled but objects - no shell. fish in water column, no large is nearby. Bottom good but uneven. Bottom texture much like ST research ledge w/ bio-fabrication in slightly sand.

R/V SAV Dec. Deg $\Rightarrow$ DMS

M - Sagebrush

Grab 3 : $31^{\circ} 36' 37.476''$ N

$80^{\circ} 47' 50.1''$ W

Grab 4 : $31^{\circ} 36' 36.54''$ N

$80^{\circ} 47' 48.912''$ W

CCA

Grabs 5/6 : $31^{\circ} 42' 2.7432''$ N

$80^{\circ} 42' 3.7008''$ W

ROV Dive 1 : $31^{\circ} 42.05'$ N

$80^{\circ} 42.06'$ W

Lab 4E

12-21-22

Emily Jones and Dr. Garrison worked on GIS. Added ROV drop location on CCA, 10-6-22.

ROV drops were in different sediment types.

↳ ROV Drop 1 was in the

Scour of the reef, closest sediment grabs 3-6, 7-10, and 12-13.

- ROV Drop 1 is exactly where we want to be, it is where we saw all of the shells

↳ ROV Drop 2 was further away from the reef, which might be why we didn't see as much shell. Closest sediment grabs were 1-2, 14-15.

↳ 10/6/2022 ROV 1 Drop coords:

31° 42.05' N
80° 42.06' W

Lab

4/7

11/7/2023

In lab with Dr. G, Emily, Kelsey, and Yasmine when turning on ROV, one light stayed on and did not react to controller commands—other 3 lights responded. Turned off ROV and took out light.

Got light working again. Didn't do anything besides take it a part. For future reference, the lights are connected to CHANNEL 9 — change channel =

change in what the buttons control.

~~FIXED~~

Camera stopped tilting when seeing it was a channel issue, it showed as "Disabled" for out put channel—when changing channel, thrusters began to move—disconnected the tether and they continued to move. Had to disconnect battery to make it stop

Camera issues fixed. Same as lights, it was a channel issue. Camera hit needs to be on CHANNEL 10. Don't know why thumbnails continued after disconnecting though.

New Challenge: getting the video fixed. Greying out too much. Before, this issue was caused by having a too-old version of QGC for the Lenovo. However, this version was installed etc more updated versions of QGC wouldn't talk to the POV. Going to try downloading a newer version of QGC.

Current version: v4.0.7

Downloaded v4.1.2 $\Rightarrow$ no greyed out talks to POV, button assignment is good. Thumbnails working. -Going to keep v4.0.7 as a backup for now.

CCA Greco #5 (from 10/6/2022)

Weight: 760 g. (w/ tray)

* (tracing Yasmine PSA) *

- 218 g (tray)

$\rightarrow$ Sample weight = 738.2 g

- put in shaker for 10 min

CCA Greco #5

#5 3.8 g

#10 4.2 g

#18 31.2 g

#35 83.2 g

#60 57.7 g

#120 70.5 g

#230 01.0 g

CD 0.2 g

TOTAL ~~218.0 g~~ 757.8 g

~~#15~~

microns

#5 = 4000

#10 = 2000

#18 = 1000

#35 = 500

#60 = 250

#120 = 125

#230 = 63

* Paper = 2.0 g

* Plastic tray = 27.0 g

Medium Sand

* more than started?

used different scales, could have contributed to error

Lab 50

1-19-2023

Took thru Reef SAV sediment
grabs to GS Rock Prop
for drying

Munsell colors for Reef SAV:

Grab 7: wet: 3/104 grey (Roundness:)

dry: 6/104 grey (Sub-angular-sub rounded)

Grab 1: wet: 3/104 grey (Roundness:)

dry: 5/104 grey (Subrounded)

LC Barge 6 (Grab #1) ~~20113012023~~ 20113012023

#5	1.8g
#10	9.5g
#18	70.2g
#35	63.9g
#60	389.4g
#120	406.9g
#230	11.4g
CP	0.5g
Total	903.9g

Lab/LC/A

2
2/24/2023

LC Barge 6 #1 (Dried) (hrs) (d)

initial weight w/ bag: ~90g

* (-8.8 bag)

~~2/26/2023~~

LC

LC Barge 6 #2 (Dried) (hrs)

initial weight w/ bag: 1,125g

* DO munsell, Sieve: gradistat

2/26/2023

LC Barge 6 (Grab #7)

* Paper: 2.0g
* Plastic tray: 27.5g

#5	6.4g
#10	12.0g
#18	27.4g
#35	96.4g
#60	676.4g
#120	343.9g
#230	11.7g
CP	0.7g
Total	1,104.6g

initial weight w/ bag:
1,116.2g

Lab

2/7/2023

- Working on laser
 - can fit in front so long as laser is slightly pointed down
 - Pausing on work until Dr. G gets here for drilling holes into PAV frame
- Noticed that front 2 thrusters have more damage to blades than the others - not too bad of damage but we should keep an eye on them over a dive
- Went to Louie's to buy 14" tie wraps
 - ↳ did not use laser mount => too bulky with little room
 - instead we have attached the laser using the 14" tie wraps.
 - might add more for extra security...

Lab

2/14/2023

- Installed laser => working properly with PAV, GAG, and controller
 - use 'B' button to turn on/off
 - residing in Phoenix AUX out #4
 - Got camera mount controls working again => started acting up, changed channel from 10 (cloud) to 11 for camera
 - Cloud arm is also functioning again
 - ↳ need to create channel #15
 - Started adding new O-rings. Only got enough for one end of each enclosure. Ordered more
- 2.15.2023
- Re-set laser on frame. Moved to left to provide clearance for camera knob. Changed knob to shorter length. Re-set cable ties.
- Battery charge error. Checking.

Feb

2-15-2023

54

Tied down orange laser cables.
Secured to frame to avoid
thrusters.

Battery charged. Took charge of
BATKIS charge made p.g.
No balance Port connection.
Charge made w/o incident.

Regular charging is 5-1-0-15.
2 hours for 2 volt gain.

2-28-23

Drives are in correct size.
Could install an enclosure.
Controlled Left Control Blue
hubs to assist. etc. is
checking sizes and shipping
w/ Blue Robots.
Emily will install next
week for delivery of correct
size and number of
overings.

Feb

3-3-23

55

Rescheduled Dive Cruise to
April 10-13. Housing set.

Next week will be ROV
refit and water test of
new laser (overings).

3-7-23

Emily & I finished overings
charge of both
enclosures.

Back test in small tank
Broke vehicle QC
station. Vacuum
detained. Plug in
ROV in tank @ 12:49.

Video going strong. Going to keep
ROV in tank for 10-15 minutes to
check seal in battery enclosure.
ROV is slightly off balance - we
believe this is due to adding the
laser. Will re-balance in future
ROV taken out at 1:30 PM

Lab

3/7/2023

56

- ROV taken out roughly @ 1:30 PM
- Video started on for 30 min. No water in battery enclosure - maybe a super-small amount of condensation.
- Battery only fell to 73% in that time, though the ROV was disarmed.

15V

Lab

3-8-2023

P.O. for ROV battery created.
Took by Jeff Rogers
about 10:00 AM, No luck.

Pool

3-14-2023

Emily Jones; Jasmine Rivera; Em
VPing SONAR code: 7090 Garrison

- While stable (on diving board),
OGC shows ROV as not balanced,
with a lower right side - need
to fix
base (creates some tilt).

Pool cont. -

3-14-23

57

Observations: Laser testing, laser
end of pool

- Points visible when moved
- Dr. G. is "nearly" as he says.
- Stabilized did not work well in
laser.

• Depth hold is best. Hold laser.

Before and after laser on pool
side & off the ROV.

No moisture damage. 
Ring working well. Reordered.

Stopped GOR at 11:30 AM.

Yasmine given ROV instructions

Batteries @ 85% 11:35 AM

Lead ~~light~~ as toward Em, OGC

"Depth hold light mode"

lights tested. OK.

Lasers on @ 11:50 AM Yasmine
operated.

Dr. G. worked on communication
@ noon. Reordered ROV
manually.

Lots of water battery enclosure!

58

Back to lab.

Smiley checked BP forum -
water in battery enclosure
not rare.

Check vacuum level &
penetrator.

lab

3-16-23

Checked battery enclosure sensors.
OK.

Replaced back plate O-rings
for battery enclosure.

Replaced vacuum bag O-rings.

Decided to NOT change penetrators
to new design for battery
enclosure back plate. NO end
caps for new penetrators.

Pumped enclosure to 4 Bar.
Tank test: 10:08 - 11:07

→ water in enclosure, endplate
was fully in - seen by Yasmine, Emily,
and Dr. G

There is a leak

→ attempts to pump to 11 Bar
(with both pumps) was
difficult to even reach 10,
lost air quickly. No vacuum.

We disassembled the battery
enclosure BP & end caps
and all penetration removed
and no sealed & replaced.

→ dipped only the battery
enclosure in tank → still
leaking. Changing penetrators
and penetrator O-rings now.

Blew air into battery penetrator area.
We believe the leak is coming from
the battery wire penetrator. Going
to use liquid tape to hopefully
seal it.

lab

3.17.23

Replaced seal on power cable.
Added a drip to clear small air
bubble. New Battery arrived.

59 3/16/2023

Nasmine & Emily are trying to fix + test pumping down the battery enclosure. Noticed what looked like a small opening on the outside part of penetrator. After putting liquid tape over the entire upper rim we were able to pump up to 5 bar and hold. We then pumped down to 10-11 bar and it stayed. Slight decrease if we left it alone — not a fast loss of pressure, seemed like a normal, minimal decrease. Plugged @ 10-11 bar pressure.

Tank Test: no water in enclosure.

Some water on plug? Don't know when that occurred. Also some water on second o-ring (closer to where the piston would go) that I didn't like. Next step to put POV together and try a longer kit? Re-grease o-rings first.

Go-Pro mount is off — not having trouble getting enclosure + holder in, so we took off Go-Pro mount. Was struggling to put it on, lower right screw hole for mount (on mount) is not secure — don't know if it was already like that or if that happened when attempting to re-attach. Either way, cannot use that hole to mount Go-Pro stand, no secure.

Battery enclosure moves some while in the crane. Don't know if that is normal/happened before. Want Dr.G to check it out.

After putting everything back together + regreasing o-rings, I couldn't pump down to more than 5 bar. Pressure lost faster than last try, but a bit slower than other days. Still, I don't like the rate of pressure loss.

LAB

62 3/21/2023

Also: Noticed small knife to the poly-coating on top of penetrator for thruster 5 (?). Coated those with liquid tape. Also re-applied another layer of liquid tape to battery penetrator.

Attempted to pump down again... only got to ~6-7 bar. And it went down quicker than I'd like. I don't know what's happening and want to wait until D-G and Yasmine get back to see if it's just human error on my part.

lab

3-23-23 63

Dropped off new penetrator/pens. Most w/ Emily, Yel; D-G re: cable repair.

Had pressure relief valves added. Old plug removed.

Notepad spent morning in SS Elevator Shaft. Recovered after lunch. ☺

Lab

3-24-23

Completed drop map & screw shaft for drive and pusher rods in April.
Blue Robotics has shipped new battery cable. USPS.

LAB

64

3/28/2023

Emily Jones + Yasmine Rivera

Things to do:

- ① Install new battery/power cable
- ② Find KTK Gradistat save, we were the printouts but cannot find the digital version
- ③ Find 3V PSA + Gradistat

① POWER CABLES

*PSM ordered on 2/28

As of Fall 2021, Bive Robotics

changed their power cables. Instead of one cable that held both positive and negative cables within, it was then changed to two separate cables, one for positive and one for negative.

ISSUE: the old power cable had

3.5 mm bullet connectors. The new cables' bullet connectors are 5.5 mm. We now need a new power sense module for the 'brain', as our current PSM is made for 3.5 mm connectors.

LAB

65

3/28/2023

② KTK Gradistat

We have printed versions of the KTK Gradistat. KTK Grados 2-4 and 6-8 were all done by Alex Colely on 11/9/2022.

ISSUE:

When searching the computer, I could not find anything. There was one Gradistat save that was modified on 11/9/2022 - Motuscode Grab 5, which was done by Callin on 2/19/2022. We concluded that Alex forgot to save the Gradistats after printing them. Motuscode Grab 5 was probably opened by Alex to look at it copy the name. Motuscode Grab 5 Gradistat is fine and undisturbed. We do have KTK Gradistat info, but only printed. We can scan it and save the image onto the computer.

LAB

660 3/28/2023

③ JY-Sagebrush

It seems we simply looked over / forgot to do PSA on JY-5.

Maxine will start doing PSA

and Gradstat for JY-Sagebrush

JY-Sagebrush Grab 4

312812023

Sieve JY Grab 4

plastic tray: 3.1g
basin: 1.4g
clear tray: 21.0g

#5 8.0g

#10 20.4g

#18 31.4g

#35 44.0g

#60 29.3g

#120 297.6g

#230 9.7g

CP 0.6g

Total 501.0g

Initial weight

$$90.0g - 31.1g = 58.9g + (473.0 - 31.1) = 58.9g + 441.9g = 500.8g \text{ I.N.}$$

Gradstat completed on both 4's

JY-Sagebrush Grab 7

Sieve Grab 7

Initial weight: ~900g

#5 1.4g

#10 6.3g

#18 17.8g

#35 33.4g

#60 54.1g

#120 65.1g

#230 22.4g

CP 0.4g

Total 854.9g

JY-Sagebrush Grab 11 (970g)

#5 0.2g (small)

#10 1.5g (shell)

#18 6.1g (shell/seed)

#35 10.5 (seed/shell)

#60 18.8 seed

#120 57.3 seed

#230 3.4 seed

CP 2.4 silt/clay

Total 97.2g

Medium-Fine Sand
fine dry Nevada C-field

Grab 14 New #5

68

#18 = 0.9g

#35 = 3.4g

#60 = 16.8 + 2.1

#120 = 54.3 + 7.9

#230 = 3.4 + 0.9

CP = 2.4 + 0.8

#5 = 0.2 | #10 = 1.5g

JY Sagebrush Grab 14 (updated)

*initial weight: 97.0g

#5 = 0.2g

#10 = 1.5g

#14 = 0.9g

#35 = 3.4g

#60 = 20.9g

#120 = 62.8g

#230 = 4.3g

CP = 3.2g

Total = 96.6g

JY Sagebrush Grab 2

69

*initial weight: 94.7g

*Cradiostat completed

#5 = 4.6g

#10 = 2.7g

#15 = 3.4g

#35 = 5.7g

#60 = 8.9g

#120 = 65.2g

#230 = 3.5g

CP = 0.1g

Total = 94.6g

Lab 03/30/2023

Yasmine completed Grab 14 postle-resieve

for #18 & 35. Cradiostat completed for that.

A150 done Grab 2 for JY & completed

Cradiostat

Yasmine could not find murrell 100k so

could not do murrell on grab 5

4/6/23

Lab

Murrell returned

Remains of 100k & connected

arrived

hab

4-6-23

70

Turtalina Power Source module.
(Emergency)

Kelsey linking. Here 3+ Black to
Wiffremate. Connection to
power complete.

Power Source Exhaust cable
not connecting w/ new
cables. No need over old
cable. Functionality.

Benel Test of new battery
cable assembly.

New battery is #3.

TY Sagebrush

Grab 3

06 April 2023

initial: 576.9g

#5 35.9g

#10 46.9g

#18 111.5g

#35 84.9g

#60 116.2g

#120 191.6g

#20 22g
CP 0.4g
Total 576.6g

Yasmine completed all TY Sagebrush
Grab Sieve, gradistat, munsell

hab

4-11-23

Close and lock electronics
enclosure BEFORE proof test. ✓

Reset battery enclosure
cables & shunts. ✓
Reinstallled GoPro mount on
frame. ✓

POE @ 11:58 AM

Problem: New peno reactor on
battery enclosure disintegrated
in lab. We have to
use larger pump fitting
to pump battery enclosure.

71

Pool

4-11-23 ⁷²

ROV in @ 11:55

ROV is unbalanced at
near. Nook wt. on front.

- Sonar reading confidence jumping everywhere and not reporting correct depth
→ may need to reset

- ROV back heavy / unbalanced
→ may need counter weights

- Possible YAW problem

- Added light weight to back @ 12:16
→ did not help. the upward tilt problem

ROV out @ 12:20 PM

→ no water even w/o

pump down

TODO:

- 1 reset SONAR
- 2 re-calibrate YAW
- 3 Add weight to front
- 4 Get new pump plug to fit battery plug

Pool

4-11-23 ⁷³

Added trim weight to front frame.
Change pump fitting and
pumped down batteries
one device to 7.

Pool test on Tuesday 4/13 to
re-calibrate yaw and to
practice setting up again.
Reset SONAR before leaving lab.

Pool

4-13-23

12:20 AM Set up ROV w/
new battery trim.

-ROV has less lift in front, still
some when going forward in Manual,
might just be thrusters

→ Did not "reset" sonar perse, did
reset ping to standard, but don't know
why it was ever changed. Don't know
if it just happened randomly.

LAB

Pool Test results continued:

• SONAR: reads correctly when floating in water. Used depth hold setting and got accurate and stable reading that matched the depth shown by AGC.

We believe the issue is when the POV is on bottom, where SONAR should read 0' in. Could be signal going through the ground. So we are cleaning the SONAR "fixed".

74
4/13/2023

Tyber Island

75
4-15-23

Met Elizabeth II @ Kazan to meet (labeled DOR).
loaded you and left dock @ 9:05 AM
2x mile to CCA Road, est. 2 hours
Bernard Bacon (Captain)
Matt Malby (UFL)
Bard Pruitt (NOA)
Jody Hemmings (AES)
Erin Barnison (UGA)
Tommy Fyler (UGA)
Kyle Sheffield (Co-Captain)
Seas 21 Under Light
10007 Sunny

Arrived Mill M @ Reef at anchor overnight
At 10:00 AM 3 divers to deploy Buoy @ 3' No log, begin SA,
MUST All Suit up. Procedures.

4-15-23

Reef CA 76

DIVE #1

Divers in @ 1205 hrs.

No issues. Little current.

*1220: Hemmings up. Reason?

Signal OK.

SURFACE SWIM TO ANTERIOR BLADE.

BACK DOWN UNDER @ 12:24.

Air Temp. 75°F.

DIVERS @ Surface 12:40

GO BOARD: 1245 PM

STRONG CURRENT @ bottom

Vis good under bottom.

Noted away from barge.

No scum observed.

No barge observed.

Resatting and use a spear to
site. DRY set on the barge.

1:14 leaving for the barge.

1:18 Resat 58' depth.

ST 1.1 hours @ 1:18

4-15-23

Reef CA

77

Anchor on barge proper.

Will arrive west side.

400 in @ 1345-1347 DIVE #2

Under is clean, wind-bury

75+°F. Seals < 2ft. No

swell. Nice day.

Divers up @ 1400 hrs.

Bag collection of shell.

Vis. dark. Colder. Current.

2. Vias difficulty.

Sample Recovery: Good

Hemming's Chalked (strong fossil)

Volcanic cone, clams,

echinoids & sponges.

Cataglyphis (engaged) Lab.

Dive #3 set for same area.

- Good scum facies.

DIVE #3 Start: 1545

Collected on west side of barge

DOWN: 1546 hrs.

REFCCA

4-15-23

78

Rivers up 1612 hrs.
Line cleaned for anchors
Zeros discharging. No holes.
Sediment collected from
deepest portion of west side.
Fished up @ 1630 hrs.
Towed to Tybee Island
dock Dock @ 6:

Tomorrow, TX-Sagehen work.

Weather is changed.
Streams forecast for
afternoon. TX Sagehen
is 30 minutes south of
CCA.

4-16-23

Ref STN

79

Discussed location at Burnett
Bacon. TX Sagehen to trip
scrubbed. New targets.

Ref STN

Underway @ 8:28 AM.

Cloudy & Cool. Overcast.

lights shroud.

Tanks filled. Onboard.

3 sites loaded. 1012 targets.

Sagehen most barge.

#6, #5 is used up by

On site @ 9:19 AM. Divers

suit up.

Barge @ 315Y, 33N

RD 47:00 N

Barge #6 Check. ✓

Depth: 41'

Set and down.

31, 54, 3 N

80, 42, 216 W

Dive in: 9:59 AM

Currents,

Quads: 3000

Reef SAM

4-16-23

80

Dive #1, Bang #6 (1991).

Depth 417 ft.

Down up: 1034 AM

Samples: 4 bags;

1 bag sediment;

3 bags wood boxes;

snags; wood; rock.

Moved boat to Bang #13
(hang 2/wood box)

Set and down @ 11:04 AM.

Dive #2 1038:00 @

Bang #13

Depth 46'

Position: 31° 54', 67° 3' N

80° 47', 209 W

Drifts N: 1146

Depth 39'

Team on board & 100% boot

headed to boat @ 1210.

Up @ 1225 AM

Reef SAM

4-16-23

81

Dive #2

Int. Survey @ 1226 hrs.

DIVERS Recovered M and L live
sediment & wood.

2 DIVERS OPS. Ben's

BCD buoys. BOTL Andy &
Matt used.

Sea: 2-3 and choppy.

Subst up @ 1251.

Reef SAM's wet dove Fishing
bags on site.

Departed Reef SAM Bang 13
@ 1249-1250.

lost grab wood @ surface,
wood @ 14'. All collection
on 4x video.

Debrief @ 14:00

17 April 2023

Lab ^{B3}

3.9 ~~kg~~ ^{kg} → Barge 6 Sediment grab

2.40 kg Barge 6 Scoop bag #2

2.10 kg → Barge 6 bag #3

0.90 kg → Barge 6 bag #4

4.8 kg → Barge 3 bag #2 (Sediment)

5.45 kg → Barge 3 bag #2 (Sediment)

0.38 kg → Barge 3 bag #3 (wood)

* logged on physical accession sheet *

• Doing CCA tomorrow 18 April 2023

• letting samples from Barge 6, 13 dry

• New battery for R → Junior lost 14 charging now

* Friday 21st Go to Barge 5 Reef Survey
MC Mother loaded *

LAB

Looked out video taken from dives at
SAV and CCA

• Samples for AMS Dating @ CAIS

- Wood from SAV Barge 6

- Wood from SAV Barge 13

- Oyster shell from SAV Barge 13

→ wood
all samples taken on 4/16/2023
sent for testing on 4/18/2023
Holding onto oyster until we get results on wood

TRAVEL SKED 4-19-23

Departed USCA CCA lot
at 12:10 PM Arrived @
SKED housing @ 5:46 PM

All students & staff
nourished. Pizza ordered.
Pickup @ 7:15 AM for
cruise.

^{B3}
4/18/2023

R/V SNAKEHEAD

84

10:30 AM Weather: Clear, 100°F

NO wind.

Sea: 2-3'

Load ship @ 7:15 AM

Arrive @ Reef Sav - 10:30 AM

* SBP data begin 10 mins before

REST-SVP consistency

Done w/ LA/4005

ETA road 11:15 AM

• Pond Grab 11:35 AM

• Box Core 2nd [Finished] @ 12:04 PM

↳ Box 2 = Drop 1

• Starting Drop 2 = Box core 9 @ 12:07 PM

12:15 Box Core 9: Reef SAV

12:25 up. Good sample.

Moving Ship to KC Motuloda

Box Core 8th In @ 2:37

Out @ 2:40

* SBA - Sub bottom Profiler 3.5 kHz

R/V SNAKEHEAD

85

KC Motuloda @ 1:30 PM

Under deployment R/V

ROV deployed @ KC Motuloda

@ 1:52 PM

Reel DE of ship location 30m

Out Motuloda @ 1:57 PM

Out @ 2:10 PM

Down Reel #2 2:20 PM

Up @ 2:26 PM

Closed Op @ 2:27 PM

DID #1: Good video. Secura

Soil moved Secura OP.

• ROV drop 2, video: 2023-04-21 14:18:03

@ 2:25 = possible scanning sighting

#8

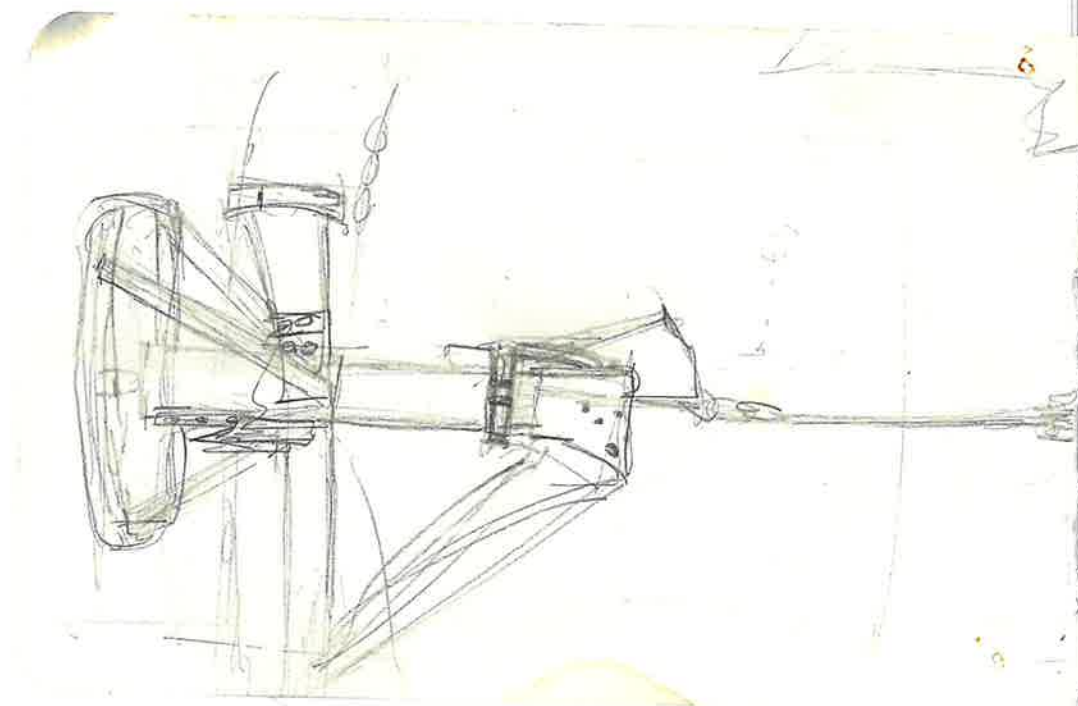
Box core on South side of site.

30m Secura site.

Left site @ 3 PM

ETA 6 PM, Dispers @ 5 PM

Grab 2, Motuloda, P. cross & banded.



Get Carver 15/1
M/14-21-23

86 Lab USA

4-22-2023

Offloaded all gobs and
box core samples.

Core box cores: put gobs
samples in re-fridge for.

LAB

4/24/2023

Took out wood from PANA 6 and 1

@ Motherlode (4/21/2023) and put
in separate bag to send to
CAIS for AMS testing.

- Notes of interest for PANA 6 and 1:

• razor clams

• round organic
material

• wood x 4

biggest piece going to CAIS,
other 3 were separated from
the shells, placed in gub
bag, and put in fridge.

Desquid 4-16-23 sediment separation
see p. 88

lab

4-24-2023 87-

Plan to open Box Core 8 w/
lid clear.

Ms. Jones stopped sample
sediment down to

extract clean DNA
sample.

Waterlinked

• used old FXT box and reassigned
its IP as: 192.168.2.100 with
subnet mask 255.255.255.0

• a with option of "Underwater GPS"

Shoved up. I connected to this but
don't know if that was because
of reconfiguring the IP.

→ Will need to recheck once ROV is
set back up

• went to '192.168.2.94' in a web
browser and reached the waterlinked
site

→

Lab

4-24-2023

"Hemming's Boat Sample" *

Bag 2.3 compacted sediment

Sieves # 30/100 100/200 200/400 400/600 600/800 800/1000 1000/1250 1250/1500 1500/1750 1750/2000 2000/2500 2500/3000 3000/3500 3500/4000 4000/4500 4500/5000 5000/5600 5600/6300 6300/7100 7100/8000 8000/9000 9000/10000 10000/11200 11200/12500 12500/14000 14000/16000 16000/18000 18000/20000 20000/22400 22400/25000 25000/28000 28000/31500 31500/35000 35000/39000 39000/42500 42500/47500 47500/52500 52500/58000 58000/63000 63000/69000 69000/75000 75000/80000 80000/87500 87500/95000 95000/105000 105000/115000 115000/125000 125000/135000 135000/145000 145000/155000 155000/165000 165000/175000 175000/185000 185000/195000 195000/205000 205000/215000 215000/225000 225000/235000 235000/245000 245000/255000 255000/265000 265000/275000 275000/285000 285000/295000 295000/305000 305000/315000 315000/325000 325000/335000 335000/345000 345000/355000 355000/365000 365000/375000 375000/385000 385000/395000 395000/405000 405000/415000 415000/425000 425000/435000 435000/445000 445000/455000 455000/465000 465000/475000 475000/485000 485000/495000 495000/505000 505000/515000 515000/525000 525000/535000 535000/545000 545000/555000 555000/565000 565000/575000 575000/585000 585000/595000 595000/605000 605000/615000 615000/625000 625000/635000 635000/645000 645000/655000 655000/665000 665000/675000 675000/685000 685000/695000 695000/705000 705000/715000 715000/725000 725000/735000 735000/745000 745000/755000 755000/765000 765000/775000 775000/785000 785000/795000 795000/805000 805000/815000 815000/825000 825000/835000 835000/845000 845000/855000 855000/865000 865000/875000 875000/885000 885000/895000 895000/905000 905000/915000 915000/925000 925000/935000 935000/945000 945000/955000 955000/965000 965000/975000 975000/985000 985000/995000 995000/1000000

Sieve #	Weight	# Pan	Net wt
#5	1		
#10	28.5		28.5
#18	1		
#35	16.1	3.4	19.5
#60	3.2	1.1	4.3
#120	3.6	1.1	4.7
#230	0.1	1.3	1.4
Catchpan	1.8	0.4	2.2
		11.3	

Totals 76.7g 88.0g 38g

Graded: Done; Graded #1: Bag 2
Bag 2 & Graded 1-26-23

* Hand Sample collected by Dr. Rudy Hemming 4-16-2023

4-28-23 - Added Clay from Catchpan 2 to sample wt. 12.6g
Glet 1, 6/107

Lab

89

ANOTHER LODGE SITE #2

Decanting Box 8: (MOTHER LODGE)

Box Length: 600 mm

Sediment: 290 mm

GLFHS/107 > MUMSBILL

GLFHS/5/56

1 CORE DNA SAMPLE

Taken from Box 8 KC Mammals

- Graded core tube
- core container used
- capped
- sealed

BOX 2 FROM SITE #1: REEF SAN BARTOLO

1 CORE DNA SAMPLE TAKEN

- BLF MOTHER CORE Tube
- core container
- capped + sealed

Box 9, Reef SXV

Lab 4-27-23 RDN back =

hole

4-28-2023

Downloaded 4K video from

4-21-23.

Video is good for KC Mithunbada. Moves electrode in water due to camera's proximity to the water.

Download clip from to house. Deleted ✓

Butterflies (2) changed.

Take horizontal sample from Box 8 of waterline from 4/4 trip from mottled horizon, 8 cm depth from top. Clean sample to send in for DNA analysis

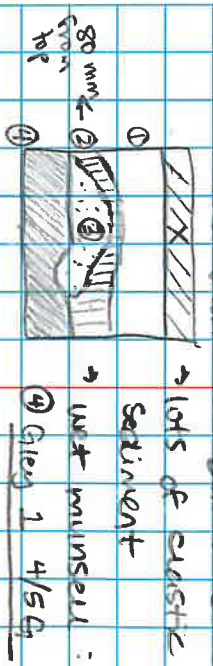
Opening box 2 at waterline average 16, Reef SHV

Stratigraphy is different from the last box 8

22 cm at maximum profile depth Stratigraphy of note:

④ - 60 mm from bottom, continues from left to right at same depth, until 16 cm across

(full width of box is 20 cm).



Munsell ① 2.5 4/3 4/3

② ③ ④ grey 1 4/5 G

iron fragment

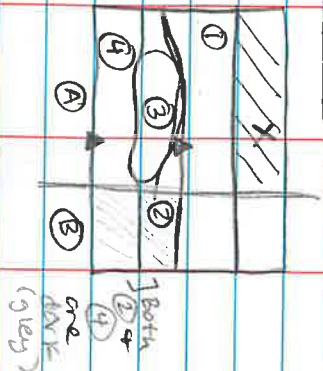
LAP

22

5/3/23

BOX 2, Barge 16 continued

- on right-most side of core, (3) is not really there. Sub. divided in drawing as (A) with (3), and (3) (with out)



- Dark black object at the junction of top layer (1) and dark layer (2), identified by A symbol. Has binnacle on it, cannot ID from angle
- (3) could be a burrow/corotation
- Removing object (A) and bagging
 - Sat at contact of strata from (1) and (3) (aka. light sand and darker grey)
 - piece of barge is
- Possible wool found at base of profile. dead cow (B)
- Found a leaf!

hals

5-3-23

Sat up spoon stake for box 2. 5-4-23

Begin Excavation of Box 2 @ 11:05 AM.

E. Sinner leveling surface to 210 mm. left side of box @ 235 mm.

Mass shed on left side of the site level.

@ 105 mm a bone-like fragment - mostly found. Top of grey stratum

Leaf fragment in screen fraction.

DNA samples @ 90 mm x 50 mm STRATUM 2 (grey)

Box 2 closed @ 11:15 PM
Continue Excavation next week.

LAB

5-5-2023 ⁹⁴

Freeze Drying Measurements

"Wood #1": 55.1 mm
"Wood #2": 53.0 mm

Wt of 300 ml Freeze Drying Tube:

Photograph of two wood samples, Boxes 13, Rest SN

Designated sample from wood edge and "Wood #1"

Designated sample from adjacent to fossil bone as "Wood #2"

Wood:

Photographed w/ Minolta Film Camera
Photographed w/ Canon SX camera

5/8/2023

Wt of 100 ~ 3 gm
ID Box 13 Box 4
Box 3

Lab

5-9-2023 ⁹⁵

Updating Box Dimensions on Labview.
FOIT We think it has to be manually
refreshing updated this fixwork. Not a
VGA server issue

Box 2 Box -

Removed -60 to -30 cm across
unit. Several fragments of
bone found in the matrix.
@ -30 cm to 0 the material
is more silt/clay. 0.001.
Net 13.4 g (4/53). (No change)

Left 0-15 cm 1 → 2 in situ.
Photographed.
Block removed for PSA

During removal of contact
block, almost intact sand
dollar in situ (box cover
damaged left edge of shield).

Sand dollar dia. 106.1 mm
removed on block.
Box Cover Film block. 1:00 PM.

96
Lab

5-10-2023

Updated Q Groundwater.

Quoted BR re: Firmware

update method:

1) use to fix handle or

2) load update on SD

and replace in fix handle.

Lab

5-11-2023

Continued conversation on

firmware update. BR

recommends SD Flash

method.

Ms. Jones advised ROL WHITE

video for today for Hansen.

Lab

5/12/2023

Downloaded Comparison

firmware for SD card image.

Prepped Bar Code #2 for

opening.

Open @ 10:45 AM

Box 9 PROFILE DATA

97

Sketch Map

0 100 200 300m

(270)

(Ground Surface/ Sand)

Stratum 1 (2.5/5/4 wet)

(TUS) (Strat 3/17/23)

Stratum 2 (GLY 1, 3/10) not 140m

Stratum 2 (GLY 1, 3/10) Russell

(DUT GALT)

Stratum 3 (GLY 1, 5/10)

(Shoal Thatch) (GLY 1, 4/55) (Stratum 4)

GLY 1, 4/55 (GLY 1, 4/55) (Stratum 4)

* Macrobenthic: Twig @ 150m level

Stratum 2

** DNA sample @

Rock (small) @ 80m

Sand 150m Stratum 3/4

Box 9, Burge 6 Core

98

Observed

8.12.2023

Stratum is less shelly than Stratum 2.

Stratum 1 is very similar to

Box 2

Stratum 2, is more shelly perhaps more so than Box 2.

Stratum 3 has grey silt sediment than Box 2.

No large fragments in Stratum 1 or Stratum 2.

100-120 mm The sediment is

more homogeneous than below.

This layer. More shell.

At Burge 6, both cores

NO medium sand sheet

Stratum observed.

* Brown shelly sand is

Mid-Holocene Comet;

Grey sand is MIS 3.

Box 9, Burge 6 Core

99

Excavation. begun @ 11.20 AM;

Natural layer. No shell

Ms. River travelling across top of sand in Stratum 1.

Excavated 10 cm @ 11.15 pm.

Sediment is homogeneous

brown sand

Down 40 mm @ 11.50 pm

@ 200 mm, Plain view photo of

blackened area around with

view. 21.40 PM

Missed: Gley 1 4/10' (wet)

Two 15 found @ 150-200 mm.

Two large fragments below 180 mm

Pyritized at the same level.

Closed box @ 4.30 PM

level 140 mm

100 lab

5-15-2023

Boxed backlist - from Boxes 289 into core boxes for temporary storage.

POV: Added trim weight (1) to mid-frame. Added to and p w/ station keeping in current.

housed electronics customer for firmware update operation: Tuesday 5/16/2023

Discussed wood sample ind. w/ Dr. Owen, Miss. State U. Will look @ samples sending contact / making information.

Reschedule @ Nature Metrics call to 0900. 10:30 A.M. CE. Metadale W.

lab

5-16-2023

101

Updated firmware on SD: vista 002 SD card in Pyhawk.

Reconnected vol 100 - acclimation, company etc. Updated @ Ground control.

Now using GFC v. 4.2.0 and using Analysis Firmware

V. 4.1.0, companion Software v. 0.0.31

→ to check + update these, go to: 192.168.2.2:2770

- Video stable, flight param. all good. Sensors reading. Only issue is direction/compass/balance reader - should fix in pool

Greenham lab:

- Wood sample 1 from leaf SAV, B12 is successfully freeze-dried. Taking back to lab

- Wood sample 2nd is now in freeze-dryer

5-17-2023

Yammine River to finish Box 9
excavation.
Trees being cut near road 2.

Bagged shell from Box 2, Stratum
2. Several pyritized oyster shells.

PLA sample taken @ 100mm x
100 mm location in Box 2.
Good sample. Capped and
refrigerated.

Dark gray sediment @ back of
Box 2, down 80-90mm.
Shells had no shell level (see
photo's). (Stratum 3)
@ 70mm shell level extends
across entire level.

@ 30mm + GRAY SILT SAND FILL
SPARS (Stratum 4).

Box 9 has 4 levels, lowest (4)
clearly resembles hand sample
from Bag 13, trees.

Box 2 excavation cont. -

@ 10mm level, Stratum 4, a black area
in left rear resembles a "mud"
of a decayed plant/vegetation.

@ 100mm, Box 2 effective sample.
Covering off bottom of box.

Back dirt from -140mm to 0mm
weight: 1625 kg. *

Covered box completely,
covered all sides,

5-18-2023

Removed Wood 3 (Bag 6)
from Tree 30 dump.

Boxed samples for
shipment to Mississippi State
University lab for id.

Began ArcGIS updates for
Box 2 excavation notes.
Early in charge of ArcGIS.

* Box 2 weight: 17,75 kg.

Lab 104
Updated QTS for Keel SAT
5-18-2023

NOTE: Bungee was boxed
MT 13

All designations changed to
correct charges.

Added coordinates to KC
Methodology.

Checked possible typo in Station
coordinates. Merged the same, SKTD

Cleaned up OnDisk files -
Shared and My Files compacted

Lab 5-19-2023

Attended session @ SEM2 w/
DOA Chief Scientist Dr. Sarah
Kagwick 9-12.

✓ After lunch, 200m session on Q65
w/ Morgan Brewer (Ust library)

Lab 105
5-19-2023

✓ Recorcle Group 6 & Group 13
coordinates & DMR designation
w/ SKTD files.

Group 5: 16 TGE-115
Group 6: 16 TGT D-103
Group 13: 16 TGT A-220-213

* Download adjacent

lab

5-22-2023

106

Tried import of Baltimore files into

QGIS project! Files are "SRT

but files and will not open in

Q, QGIS SRT.

Additionally, QGIS SRT (Mike

Edison/Morgan (studying) about

SRT knowledge format data files.

Then are converting to SEG-Y

format and saving on HSPack.

Will see if I can get it.

[Bags 1, 2, Bags 13 hand]

Samples, 4-46-2023]

Examined these samples for:

a) inclinations

b) MMSL data

Bags 1 *

a) relatively shallow; protodipster

(small bore). A few (bore);

recess (small)

Sample in form more shallow than

bag 2,

bag 1, 4/53 (wet)

(same as hand 4, bag 9)

lab

5-22-2023

107

Bags 13 hand samples cont -

Bag 2

a) large, bag 13 (10m)

radial symmetry, few specimens

in bag 2,

b. Gey 1, 5/105 (wet)

(same number as small thin layer

P 97)

* same color, texture as

Bag 9, Bag 6

GIS cont. -

Q accepted new 2m Gey 1.

bagging file.

Morgan sent - bag files of SRT

for 4-21-2023 (good

quality. Data will not

print in lab printer. Will try

GIS copy.

Kelly suggests Profoscopy.

Lab

5-23-2023

108

GIS and Bunge 6, Reef SHV.

Add SBP transect to laptop and ARC GIS.

Add Box Core dump to McQuendo.

Lab

5-25-2023

Adding transect to GIS.

SBP Station 1, Reef SHV

ARC GIS. Smiley Tower.

SSS Panel 2 down + extend to Start coordinate for SBP Station 1. Askal GRID for Panel 1 tie.

Folded GIS on laptop

Going to excavate Box 8 on Tuesday, 5/30. Also will try to get POC GIS online.

Lab

5-26-2023

109

Tested Blue light Fluorescence.

on Box 8 sediments.

Red fluorescence observed in the clay-banded layering in upper portion of the core.

Tuesday, 5-30-2023, IPH 2022.

Used Blue light and recorded the sediment's fluorescence, more accurately.

Lab

5-30-2023

Tested blue light fluorescence on box 8.

a. Soften up black filter

b. Canon G1X camera w/ black 12' box

Off the ship, (b) recorded fluorescence more accurately. (c) as shown

= Fluorescence intensity increased w/ camera nearer the profile light.

Inset into geofluous bridge to show the outer profile.

Tuesday: XPD of sediment

lab

5-30-2023 cont.

110

Fluorescence observed in bag of sediment from Mather Lake.

The color matched that of the box core sample from box 8 - Mather Lake.

Bag of sediment was not fluorescent except for moist section on lower corner of bag.

Fluorescence is absent from the lower profile area of the box core. On the upper half of the box core is a fluorescent under blue light.

lab

5-31-2023

Took 122 g sediment sample from Box 8 profile.

Transported to XRD lab for qualitative analysis.

Submitted sample, Box 8 lead fragment for AMS-Radiating.

lab

6-1-2023

111

XRD results: En Schmelzer.

LOTS of Quartz. Minor peaks for: argonite, albite, hornblende, microcline, maybe pyrite.

lab

6-6-2023

Box 8 excavation, Strat

250mm.

Fluorescence (blue light) observed on surface of box deposits. Used black filter and took 10mm photos. Fluorescence bluish.

Fluorescent object on left side @ 230mm. Photographed and

sample placed under stereo microscope. Observed sand grains w/ some weak fluorescence.

(white-pale yellow).

@ 200mm - small column and lead fragment.

Lab

112
6-6-2023

Box 8 excavation cont. -

White mottling observed @ 200mm level. Rusty grayed.

Mottling extensive below 200mm.

Shells are small, fragile.

Amalid worm (live) found @ 140mm

Intact shell whole (small) @ 130mm

Razor clams tend to be intact.

No fluorescence of 100mm level.

Some mottling remains.

Area of DDT sample was

weakly fluores out. Material

brought down to 100mm level by

sample column.

Stopped work until Thursday.

Level 100mm.

Lab

113
6-8-2023

Box 8 continued

@ and below 70mm - mottling continues

level color: Grey + 10'

Will do live light fluorescent check @ 50mm level

razor clams (small) & small shell

encrusted @ 70-80mm level.

Very fragile shell except razor

clams which are complete or

nearly so. Scattered fragments.

shell is minute ~ 5mm or less.

Razor clams ~ 30mm

Used 4K camera for blue

light check. Very little red-

ible fluorescence. Some greenish

fluorescence. Some greenish

File for 20062/18

Scallops shell (very small) @ 30mm

(photographed)

114
lab

6-8-2003

Box 8 cont. -

PSA begun on box 8, XAD sample.
100g - sample + dish
92g - sample weight
10 minute shake down time ✓

Excavation cont. -

Nettline continues below 30mm
Scallop fragment recovered. Part of
specimen from 30mm level?

Box 8 matrix is medium sand
w/ mottling top-bottom.
Shell is small, fragmentary.
Only one "large" specimen -
Scallop valve @ 30mm level.
Fluorescence is at the base of upper
100+ mm of core.

Complete 8 at 1 P.M.

Good visible record. AKK04K.

Box 8 PSA Results

6-8-2003

115

Sieve	Total	Passes	WT (Sample)
# 5	2.6	2.6	< 1g
# 10	4.8	2.6	0.2
# 18	2.1	1.3	0.8
# 25	3.9	2.6	1.3
# 60	15.9	2.6	13.3
# 120	71.4	2.6	73.8
# 230	5.1	2.6	2.5
# CP	2.6	2.6	< 1g

92.0g / 92.0g

Sample is 80% fine sand;
14% Medium Sand;
2.7% Very fine Sand

11/6 Lab

Box 8 cont. -

6-8-2023

Cursory Examination of - three
Size fractions: 35, 60, 120 under
Blue light.

No red fluorescence observed also
any of the three fractions.
Some off-white ground fluorescence in
35 fraction; less in 60 fraction.
None observed in 120 fraction.

LAB

6-9-2023

Evolution of the Video for Range 13,

4-16-2023,

Framo Gales of small & trees

@ Range 13.

lab

PSA for Range 6 Bag #2

(4-11-23) * Not Box code

• Original bag weight = 2 kg

- Sieve 1 = 1.2 kg

- Sieve 2 = 0.5 kg

PSA Range 6, Bag #2, Sieve 1 + letting dry overnight

#	Total	paper	Sample weight
#5	170	2.5	167.5 g
#10	153.6	2.6	151 g
#15	251.3	4.0	247.3 g
#35	500	3.7	496.3 g
#60	91.3	4.6	86.7 g
#120	15.3	4.3	9.3 g
#230	4.9	4.5	0.4 g
CP	4.6	4.5	0.1 g

- took the remaining sediment from Range 6 and spread out in pans to dry

- error in weight due to sieve clog and re-runs

11/7

6/13/2023

UGA 118

6/14/2023

- transferred Barge to Bag #1 into chamber pans to dry faster for sieving
- not fully dry after overnight
- Barge to Bag #2 sieve pans left overnight to dry out to continue sieving and prevent pans from clogging with sand
- Barge to Bag #2 in sieve shaker for 10 minutes (pt. 1)
- Barge to Bag #2 in GRADISTAT

UGA LAB

119
6-15-2023

Blue Lizard Studies

XRD of =

I. Reef, Sagebrush, NoMud loss-on-ignition samples.

Round #:

1. I. Reef? Strong peaks @ 60.00 & 60.01 (Red)
2. Sagebrush? Quartz, Calcite, (food scans), brown blende (blue)
3. NoMud? Quartz, Calcite, (food scans) (blue)

To DO:

- a) Box 8 upper
- b) Box 8, lower

- Barge to Bag #2 sieve pt. 2 run for 10 minutes in shaker

120
UGA

6/15/23

Barge to Bag #7 Sieve pt. 7

	Total	Paper	Sieve	pt. 7
#5	26.8g	2.6g	24.2g	
#10	48.0g	2.4g	45.6g	
#18	96.8g	4.7g	92.1g	
#35	250g	4.6g	245.4g	
#60	96.1g	4.5g	91.6g	
#120	30g	4.4g	25.6g	
#230	5.5g	4.5g	1.0g	
catch pan	4.8g	4.6g	0.2g	

Barge to Bag #2 pt. 2 in GRADSTAT

SK10

6/19/2023

121

On board turned on KOL Camera
quality gets funny and pixelated
when it first boots up, the video
was very pixelated. Computer apparently
needs a reboot from Franklin QIT
and from the computer. Trying to
restart for QIT and hoping that
will help the video issues

Ref SAN Buggy @ 9:30 A.M.
4th of Space 1-2-1-10 Dicks 5 Crick
Dropping a 510 can in 1 bag

4th of - loss connection to FOU
Refactor Q: Video in,
Refactor lens, Refactor Q,
disrupted FX for Noisy.
PC issue.

Analysing still in process.
Reconnected between 1 and 2.
Jumped down @ 10:35 A.M.
Analysing - just 10:15 pm.
Q active: 11:30 am. Ready
to drive. Computer not
analyzed. No visual.

Reef SAV cont.

122

Scrapped out aluminum
Dangl's for steel version.
Boat looks a lot like a house.

Deployed POV @ 1135 hrs.
Deployed Spins. Bottom
M 390m, Sand, Fish.
Switched to control. 4.1.2

- issue wasn't OGC version

↳ NO Forward motion,

* spinning
motors and controls
are all messed up.
lots of spinning

lost motor control - could no
w battery dropped to 4.5V

While we were trying to
configure motors. However, motor
control is still an issue, we can't
move the ROV forward.

Left site @ Noon. Dock @ 4:15.

SK10/the car

123

Debriefing

What we need to do:

1.) Tone test

- get motors back in order

- look for auto-calibration on 4.2.0 OGC

- Find laser changed on 4.2.0 and
reprogram it in button A

2.) Pool test

- make sure ROV drives properly

- make sure laser works

Want to get another version
of OGC, but want still occasionally

cuts out. We've updated the

firmware. Maybe look at other

versions - after successfully getting

POV back in order. V. 4.1.2 success

and should only be a week up

Arrived @ 10:40 PM.

1st Lab - UGA

6.30.2023

Unloaded equipment.

Reviewed GoPro video. Camera slightly tilted up. Good distance viewing. Lots of flacout in water.

1st video: GoPro 1582 } fixed on lab PC
2nd video: GoPro 1583 } during

1st video: Sea floor @ 4:30 mins.

Emily maneuvered ROV 4:45 -
vehicle will not maneuver.

Some fish observed, near buoy;
ROV undulated when disarmed;

heavy maneuvering @ 9m depth. No
real change in position

Thrusters dead; ROV pinks;
2nd video: loss movement;
more flacout observed.

Discussed anchoring issue with
SKID. Calling Roops in July.

lab UGA

125

ROV.

Before trying auto-configuration I
am trying to fix its horizon issue.

Level horizon is not accurate (90°
discrepancy) - was not fixing upon
sensor setup

→ tried fixing compass. After
compass test the response was
not as useful as compass as
it was not accurate

→ Fix it in pool on Monday

Auto-detect direction test worked

- I believe the issue thruster is 4

- auto-detect test is weird - says

thrusters 1, 2, & 5 are reversed

no matter if I click to reverse

them or not. Do not know why

- EKF3 lane switch 1 message

→ sensor issue? Could fix

with recalibration → yea?

- balance fixed during test

- video dropping in and out, not too bad

but still randomly dropping

Lab - U6A

6/22/2023

120

JOYSTICK SETUP - Armando Guevara

- Camera = Channel 11 - must check
- Arm = Servo 2
- Laser, in Aux out #4 look @ pg. 53
By all accounts, the laser for reviews should work. I assigned AUX output #4 to delay 3 (in parameters) and then assigned that to button 0 (the A button). Nothing happened. I went to the Blue Robotics forum and someone had a similar relay issue. The solution was to go to B&D - PWM - don't in advanced parameters and change the count to 3. I did this - and we only have 3 AUX inputs listed for relays anyway - and yet nothing changed. Attempt on software versions 4.1.2 and 4.2.0 have same results of no lasers.

NOTE: Pool Monday. Finish
Set up of robot and firmware.

U6A

6/24/2023

121

POOL TEST

- Re-calibrated accelerometer
 - Fixed motors
 - Reversed motors: 1, 2, 5, 8
 - ↳ 1+2 = forward/backward:
still some turning when going forward, but it is small and easily fixed by correcting the turns using the up/down joystick
↳ 5+8 = up/down
 - Controller working correctly.
 - gyroscope works, joysticks calibrated.
 - laser works! Didn't do anything since 6/22 to laser and settings but it now works.
↳ A Button
- Requested FoIT check graphics card drivers on laptop. Re: Pixelation issue w/ FoV video feed is now missing.

12/8 UGL

6-36-2023

Dr. Corwin continued analysis of skulls from Range 6, Bag 2.

Lab

7-5-2023

Handed Box 8, LOT (2) samples to Dr. Schroeder for XRD analysis.

Picked up bin box for ROV peripherals. Loues. #22.

Lab

7-7-2023

Dr. Schroeder sent XRD results for Box Core 8, Motherlode. Will run Blue Light tests Monday.

7/13/2023

SK 10/Decon

129

8 AM

got on Tank Blower,

went to check ROV before

we hit Reef SAV

- Testing batteries. lot of

camera lag - usually a

battery issue

- tried battery #2 after

never battery (infinite) had

lots of lag. Battery #2

could not even "turn"

Camera/Video on. Check

voice at lab. #3

- Went back to white battery

for ROV check off deck

leave dock ~ 8:37 AM

- motors turned

31.911217°

20.786733°

Entered into BLADON's navigation

mode @ Buoy 3 @ 9:33 PM.

Deposited and on.

130

Reef SN Ops. 7-13-23

ROV operational.

Deployed:

Depth: 40'

Spas: 1, winds light, SD

Temp: 86°F

Deploy @ 9:48 AM

ended @ 9:55 AM

-video cut out, lost

connection, battery

was not low.

-did find reef

changed battery and
regained connection

@ 10:02 AM

Got tether stuck on reef
and cannot move itTether broke. ROV down
in reef still - with water?

Reef SN 7-13-23

131

Bon finite & Beverly A Brown
will recover the ROV11
hrs

2M

out
up

12:00 to 12:30 AM

DP. 7-13-23

Wds Light, SD

9:48 AM

9:55 AM

out, lost

in, battery

low.

very good
direction

AM

Snuck on reef
more in

ke. PD down
with water?

Reef SA

7-13-23

131

From Finette & Benoit at Brown
will recover the ROL

DIVE #1 Gopri587 7.13.2023

In @ 1:05

Bottom @ 2:33

4:44 - frame of work boat?

Surface @ 8:34

Dive #2, Gopri588

In @ 48

Bottom @ 1:16

@ 5:08: area of sponge
and growth on concrete
conduits; lasers not on. No scale.

@ 5:42 half buried conduit
just adjacent to sponges.
lasers on.

@ 7:47 - "trouble". low structure,
iron.

@ 14:20 - back conduits. Sponges.

1/30

Ref SA ops.

7-13-23

ROI operational.

Deployed:

De
Se
T

S

Ch

C

ar

T

in

Ref SA

7-13-23

131

Ben Ruette & Benjamin Bacon
will recover the ROI
at a convenient time.
Salvage #.

left site @ 11:20 PM.

Dee 12:30.

Ordnance salvaged in w/ 1
1. Bomb (Eaton 4' in diameter
2. 500 lbs 74493, Cordivados
mud w/ plastics.

Bounced 8 Port Villa out @ 4:50 PM
Ben available tomorrow.

USA @ 6:45 PM.

9 PM.

Ben & Bacon called to report
fire trip to La Boca & recover
ROI to be made @ 7:30 AM.

UGA

132
7.14.23

Ben Ruett texted image of
removed ROV @ 9:48 AM.
Success!!

7.17.23

Emilia Jones Picked up ROV
and bag of materials (Barge
13) from SRTS (John Biddy).
Returned to UGA.

7.18.23

ROV battery tests. Non-
clearable. - Barge 13
another changed battery to
ROV. Full functional.
John confirmed no ads
replacement required.

Recovered GoPro video.

Stop recording @ 13.8 GB
45GB unused. Downloaded &
transferred to R & removed.

hab

7.21.23
133

Recovered GoPro video footage
@ Diver 182. 7.13-2023.

Dive #1 = 10:43 minutes

Good footage of workboat
trimming?

Dive #2 = 14:47. Successful
trimming. Concrete
conduits in manure bldg.
grogg, and some algae.

Norm - Visiting SREL
stand.

Aftersun; Recovered Battery
from Barge 13 dive, 7.13-2023.
Changed to 14.7 volts.

Ran PSA for Bacteria,
Bacteria, Station 1
Station 2. Added to QI
outside draft.

134
USF LAB

7-25-23

Will take letter off reel and
pack for shipment to
Salem, Traverse City, MI for
repairs.

Put tether in box to ship out to Aaron Bottle to fix.

Submitted abstract to CISA for 2023 conference

7.22.23

Received Gold video from
Burg 13 date 7/13.2023.
Emily Jordan EST 102
Early Career Entertainer.

Afternoon. Reorganized collections in laboratory/ refrigerator. Consolidated NSF DNA tube samples. Relabeled Dan Gribble's Anolis Barro Colorado (Sediment) =

UEA lab

$$\underline{135}$$

8-1-2023

Cleared lab for (Parron) to
strip and work (Parron) on
Monday. Ms. Jones and
DAG, shared / cleared
it out to Parron 16 for
temporary storage.

James & Gossman introduced
concept of $\text{W}(\Delta)$ link $\subseteq \text{PS}$.
PS is a notation of set of
IDs we need in the $\text{W}(\Delta)$.
Aunt's response.

Afternoon, Mrs. Williams in @
4PM.
K.K. visited #3, no directed
VIC. Ranney. Smedley.
Staves for pickup.

Baseline was a traditional
market. Snapshot.

136

Lab NGT

8-3-23

Underlined GPS router.
 Rejoice Youtube channel.
 Attempting connection as /
 GPS packet. Captured, No
 answering No Reply Link

Waterlinded (on Pg. 87)

- IP: 192.168.2.100
- Subnet mask: 255.255.255.0
- Router: 192.168.2.94

• got waterlinded up by assigning IP
 and subnet mask to old FXTI box.

A wifi signal for the "Underwater GPS"

showed up and I connected to it. I don't
 know if I needed to re-assign the
 IP for the FXTI for this to work or
 if I could reassign it to the Underwater
 GPS IP. I don't know how that will
 react with the ROV, which makes me
 question where the IP reassignment
 should be. We will have to retry
 with ROV connected.

GPS Plan

- need to re-try once we have ROV
 back up.
- need to see if changing IP of FXTI box
 affects the connection to ROV/Arduino
- if so change IP back to ROV/Arduino
 IP. Then try changing "Underwater
 GPS" with signal's IP to what
 is listed on Pg. 136
- need to make sure we can talk to
 ROV and reach GPS before trying
 the antenna. Then, we can go
 to the lake.

was old IP
 192.168.2.1?

8/24/2023

137

UGA

132
7.14.23

Ben Pruitt texted image of
recovered ROV @ 9:48 AM
Success!! u

7.17.23

Emilia Jones Picked up ROV
and bag of materials (Barges
13) from SIDS (John Biddy).
Returned to UGA.

7.18.23

ROV battery tests. Non-
chargeable. - Janned
another charged battery to
ROV. Fully functional.
John completed needs
replacement of repair.

Recovered GoPro video.

Stopped recording @ 13.8 GB
45GB unused. Downloaded &
transferred to PC & removed.

lab

133
7.21.23

Recovered GoPro video from
@ Diver 182 7.13-2023.

Dive #1 = 10:43 minutes

Good footage of watercraft
forming u

Dive #2 = 14:44. Successful @
framing. Camera

concluded. Minimum video.
Janned, and done @ 09:00.

Moan - Visiting SREL
stands.

Afternoon: Recovered Battery
from Barge 13 Dive, 7.13-2023.
Changed to 14:51-18:00.

Ran PSTAT Boxed,
Barge 1 Station 1
Station 2. Added to QI
article draft.

134
UGA LAB

7.25-13

Will take letter off reel and
pack for ship mail to
Subcom, Traverse City, MI. for
repairs.

Put letter in box to ship
out to Aaron Botke to fix.

Submitted abstract to GSA for
2023 conference

7.27.13

Reviewed GORP video from
Bang 13 drive 7/13.2023.
Emily joined GSA and
Gandy Larson Professorial.

Afternoon. Reorganized
collections in lab which/
reidentified. Consolidated
NSF Deltabesa mpls. Relabeled
Dr. G. Tala's Lucidella Bay
collections (Sedimentally

UGA lab

135

8-1-2023

Cleared Lab for processing to
Stroud and work floors on
Monday. Ms. Jones and
Dr G. Shured / cleared
items to Band 16 for
temporary storage.

Jones & Seawison initiated
chat w/ Wade & Dr. G.
RS: direction of return
Do we need active info?
Awaiting response.

Afternoon, Ms. Dilkins in @
4PM.
KTK video #3 reviewed
VIC Tracey Sharpshut.
Saves for future.

Reside under Patradina from
mat @ KTK! Sharpshut.

136

Lab UGA

8-3-23

Unlinked GPS router -
 Raised Youtube channel -
 Attempting connection w/
 GPS port and laptop. No
 answering No Rollover link

Waterlinked (on pg. 87)

- IP: 192.168.2.100
- Subnet mask: 255.255.255.0
- Router: 192.168.2.94

• got waterlinked up by assigning IP and subnet mask to old EXTI box. A wif signal for the "Underwater GPS" showed up and I connected to it. I don't know if I needed to re-assign the IP for the EXTI for this to work or if I could reassign it to the Underwater GPS IP. I don't know how that will react with the ROV, which means we question where the IP reassignment should be. We will have to retry with ROV connected.

137

GPS Plan

- need to re-try once we have ROV back up.
- need to see if changing IP of EXTI box affects the connection to ROV/Arduino
- if so, change IP back to ROV/Arduino IP. Then try changing "Underwater GPS" wif signal's IP to subnet is listed on pg. 136
- need to make sure we can talk to ROV and reach GPS before trying the antenna. Then, we can go to the lake.

was old IP
192.168.2.1?

8/24/2023

Lab-VGA

188
8/15

• Opened and tested tether

→ tether works! Dev turned

on

→ not spoiled yet → SPOILED! ✓

• Tested camera - still some

pixelation with fast movement.

Does not seem as bad but as

we've exhausted every physical

possibility w/ camera lag that

means it's most likely that

we need to switch to the

Blue OS firmware

• Possible pool test Thursday

• Need to GPS test w/ it again

and calibrate newer FITL box

for GPS (next Tuesday?)

→ Sent email to Daniel inquiring

about instructions and possible

camera issues

Thursday, Aug. 17

180

✓ GSA

✓ Hotel

\$932.77

✓ Plane tickets

\$288.96

□ Edit abstract

\$365

✓ Register (early career prof.)

□ Pool test?

Next Tuesday

OGPS

8-22-2023

Lab - V6A

138
815

• Opened and tested tether

→ tether works! DOV turned on

→ not spoiled yet → SPOILED! ✓

• Tested camera - still some

pixelation with fast movement.

Does not seem as bad but as

we're exhausted every physical

possibility w/ camera lag that

means it is most likely that

we need to switch to the

Blue OS firmware.

• Possible pool test Thursday.

• Need to GPS test w/ it again

and calibrate newer FXTI box

for GPS (next Tuesday?)

• Sent email to Daniel inquiring about instructions and possible camera issues

No reply from BR on camera software / Blue OS.

Reply from BR. S. Torres sends options for camera issue. Firmware 4.2.8.

Latest version. Small

format sub 00pix digit in

Booster.

1. Michael 'low latency mode' under Applications setting.

2. The Force Software decoder. Almost no pixelation.

No delay

Pool test on Tuesday.

* Ordered two Dino Gears for tether.
Also computer.

POOL/UGA

slr

170

- Pool test $\Rightarrow$ unchecked low latency + switch to 'force safe mode' detector. Still had pixelation. Worse than at 10b.
- Switch to 'Force NVIDIA decoder' with pixelation but not as bad. Low latency was still off. Turning low latency on seem to create lag but not pixelation.
- Switch to 'Force DirectX3D 11' decoder. w/ low latency off. Horrible lag w/ some pixelation. Turning low latency on = lag and pixelation.
- Switch to 'default' w/ low latency off. pixelation + lag. worse than NVIDIA.
- Changing source from 'UDP h.264' to 'UDP h.265' $\Rightarrow$ no video. Switched back.
- Mag anomaly? Says you is realigned. Occurs when moving forward, no sharp movements or altitude changes.

POOL

2/21 171

POV is turning while going straight. Going to test motor.

Current motor setup:

1 R	5 R
2 R	6
3	7
4	8 R

- reversed 2 = X (went in circles)
- reversed 3 = X (went in circles)
- reverse 3+4 $\frac{X}{2}$ struggled to spin
- unreverse 3+4, unreverse 4+2 = X (wouldn't move forward)
- reverses 1+2, reverse 6+7 = X

Motor setup is best left alone. Issue might (hopefully) be yaw or weight issue?

- Video stream went out for a sec. $\rightarrow$ might need to switch to Windows 11
- video still cut out when moving camera tilt too quickly
- switched back to default + couldn't get video feed. Switching back to NVIDIA did not fix.

- Occasionally had video regain when tether-pulling. Lights turned on by themselves and wouldn't respond to joystick. Disconnected to CPU and lights remained.
- This has happened before.
- Lights only turn off when battery is physically disconnected.
- Want to re-check wiring (all) for PDV
- no water in enclosure
- 4K video - Good.

Video stream and various controls w/ video card options suggested by G. Torres (BER), DO

lights are enable still address turn after video issue resolved.

Joystick buttons non-functional. No light! No camera controls. Successful FXTI boxes.

No connection w/ QSG on old FXTI box.

LESD010 + Old FXTI = Connection but NO video (doesn't matter which QSG version used).

NO longer the case for connection

HP + Old FXTI = connection & video w/ minimal pipe delay, NOT good test.

LESD010 + New FXTI = Video but not disconnected).

144
hok

8-24-2023

Video clock continued.

Checking IP addresses.

IP address + remove ≠ video
192.168.2.100

Opened ethernet enclosure
to check all connections.
200 connections good.
Reconnected to R01.

Switched to HP + 200 EXTI
100 Video but no
video connection.

Changed IP address; NO
video. 192.168.2.100

On both computers and both EXTI
boxes, having IP 192.168.2.100 gives
us connection but no video. IP of
192.168.2.1 gives us video but no
connection. Tried multiple times.

"Called" BA for advice. Videoed.

hok

8-24-2023

145

Online w/ G. Jones. To do
so rescheduled for Tuesday
8-29-2023. Tentative.

192.168.2.1

= video → default

192.168.2.100 =

connection

LAB

8-25-2023

Reconnected 192.168.2.100 as
default. No difference in
functionality.

Pumped down EVR, Reconnected
own hardware w/ video EXTI.
Video (w/ lag) and functionality
highlights still "on".

Job

8-25-2013

146

Attached "Old" FX11 w/
"Old" (removed) dock cable
to HP laptop for functionality
tests.

Functionality for gripper, camera.
None for Jigs - given
repairs but no change in

Reset IP w/ 192.168.2.1.

Video required, lost
vehicle functionality. Video
has bug.

"Either-OR" - OSC + Video

Good news: Old FX11 &
Old Dock Cable functional.

Vehicle repairs w/ I.P.

192.168.2.100; Video lost

Video required w/ I.P.

192.168.2.1; Vehicle lost.

"Old" controller functional.

Job

147

8-29-23

Addressed IP & connectivity
of PA1.

Subnetted BOTH connections
& video then lost it? ?

Reset IP's. NO DOT.
Changed dock cable & FX11
cable - no change.

IP: 192.168.2.1

Subnet: 255.255.255.0

Default Gateway: 192.168.2.2

as per Aaron Botte's

Turned off PA1's wifi and
immediately got a Windows Firewall
notification saying it blocked dot.
Checked firewall and thought we
allowed all dot things through the
firewall. Have connection + video.

- If we can't connect, turn wifi
off and try. Then turn wifi
back on. K/L & M/F!

IP

148

habs

8-29-2023

Will email Jeff Aaron re
Camera settings to change
Resolution 30
FX4? FX3?

Go to USB Browser

192.168.2.2:277

Change Camera Settings

or

Following G-Tones advice e.g.
"Force Video Card" UDe are
forcing DGC to use our AMD
 Radeon card. ^{can't} download AMD card
center.

Added DGC 4.2.8 to AMD Catalyst

Control Center and to Radeon

Software. Tried to program

graphics settings but it is

trial + error. Messed up graphic

settings in Radeon software +

changed DGC decode priority

to software decoder + changed

frame rate to 25 fps and frame

size to 1280x720

habs

8-29-2023

149

Disconnecting DGC Pixhawk
On hold until we have
needleless pliers available.

Applied BT (G-Tones) 5/1 program
on R01 functionality.

8-31-2023

G-Tones suggest de-crimping Yellow
(lights) lead (AUX1). Move yellow
lead to red power connection.

Removed yellow (lights) lead

connected to Red (power) terminal

lead. No response, lights on.

PWM signal in lights themselves

are damaged. Would have to

go into each light - Aaron says

this is very hard to without

severely damaging the components

(getting new lights)

- 1us + 59 ent \$1056 on new lights ✓

150
lab

9-3-2023

lights. Reopened front a-ring.
Attempted to open main light
housing. Screws cut, penknives
opened - no access.
Enrolled G. Toner.

Requested shipping for light
set from Blue Link.

9-5-2023

Thursday: Begin GPS setup
on bench. Old FXTI needs IP
reconfiguration w/ Lemo. Also,
unplug/replug camera. USE 3

Next Tuesday: L16THPTS (install)

Pool Test next Thursday?

9-7-2023

Added Default Gateway (192.168.2.2)
to old FXTI box to begin GPS
set up

Got connection w/ old FXTI. Then
turned on GPS. Connect lost for
about 1 sec, then regained. WiFi
was disconnected from PAMs, and

151

9-7-2023

"Underwater GPS" autoconnected.
This is needed and I would've
forgot - so def make sure about *
this.
Went to - 192.168.2.94' and
got connection. No antenna
connection b/c we are in the
lab. But receivers, timesync,
and compass are active.
* PC 136 has IP as '192.168.2.100',
I kept IP as '192.168.2.1'.
and had no problems. If GPS
doesn't work in lake, then
we can try changing the IP,
but I don't think it'll be an
issue

* Checked camera tilt. While I get
no pixelation when moving my
hand in front of the camera, down
tilt causes immediate video loss. Up
tilt took a little longer but video
loss happened again. No lag, no
pixelation, just video loss. ~~It~~ could
be just a shorting issue?
Short circuit, or connection setting
crossed?

152 Lab

9-7-2023

Tuesday Lights; Thursday Post

9-12-2023

Tether float arrived. Fitted to cable.

Awaiting lights kit delivery.
9-13-23 ✓

9-14-2023

Assembling lights onto POV.

Also unplugged + replugged camera USB and camera tilt plug. Enclosures Secured.

Pool test Friday, 9/15

9/15/2023

Pool Test

Dr. G fell in $\frac{\times}{0}$

• Testing GTS and lights

• Camera quality: some pixelation, lost connection even during a

• soft drop into pool

• camera very pixelated and dropping

• POV not moving correctly, turning when supposed to go

straight

153

9/19/2023

• GPS warning (connection issues)

• ~~POV turning inside when~~

~~Suggested to go forward =~~
~~if analysis is needed up?~~

~~✓ - changing to 151.3~~
~~3 4 5 6 + 8~~

POV is left and back heavy

(left looking at it from behind)

• POV driver straight in (mode)

STABLE mode (still externally

• GPS 2 channel 2-? (lost signal)

↳ GPS is not moving
- not loc ble of pool

• Camera continues to drop out, whenever POV is lowered

(w/ thrusters or manually)

ND 149176, See, Web site (BR) 1

Zooma 00 sd for 9-19-2023

to discuss lights w/ BR-1 linked

157 Lab

9-19-2023

Talked w/ Jeff Conger @ Blue
linked. Daniel said not
available to discuss lights
issue today. Tentative for
Thursday A.M.

Completed Synopsis for Jeff
Re: BR issues.

5PM - Phone call from Jeff
Conger. Daniel G. says no
incompatibility issue w/ our
lights. Zero. Check leads
@ Pixhawk. Work w/ Gervase
Toner.

LAB: AS per Daniel's (?) 9-21-2023

suggestion, we flipped the
lights yellow wire (that
connects to Pixhawk). Flipping
it means it is in the other
direction than all the other
connections. Lights now work

Beare

Aper



→

LAB 155

9-21-2023

• Question: why do the lights
work when the connector is
flipped? Why does this connector
need a bottom-wire connection
while all the others are
top-connection.

• Destructing camera
Does camera drop/freeze?
when yellow is disconnected
and wired?

Plans: Tuesday, 9.26.2023.
Lake Chapman, GPS
calibration,
SS static test @ dock.

LAKE CHAPMAN 9-26-2023

RDV up + running @ 10:18 AM
- setting up GPS antenna
Video cutting out & pixelating
when just looking at water,
RDV not even moved

156
Lake Chapman

9-26-2023

- GPS is up: @ 10:27 AM
 - Depth X Timesync ✓
 - Locator X Guss ✓
 - Receivers ✓ Compass ✓
- ↳ "Acoustic signal from locator not detected"; locator = PDV = not in water yet.
- PDV in water @ 10:30
- Lost video when was picked up PDV
- Cannot "see" GPS position on map, probably b/c no wifi signal
 - Go to 'Diagnostics' = coordinates for locator (PDV) + topside unit
- GPS still does not have Depth or locator acoustic signal
 - ↳ "external depth not received"
- "Acoustic signal view" shows change = receiving acoustic signal from PDV?
- Different coordinates for locator + topside unit = good, but coordinates don't change when PDV moves?

LAKE

AST 9/26/2023

- GPS is also not reading speed of PDV (@ 0.00), while detecting it for topside unit (0.01 speed)
- Had to re-adjust antenna baseline; had to plug in as to the right of topside when it is to the left. After changing that, locator briefly checked (✓) but then went back to 'X'. Checked diagnostics again and locator coordinates did change. ✓
- ↳ Changing = 'apply' antenna configuration ⇒ did this again and got 'locator ✓' for 1 second before going back to 'locator X'; coordinates changed again
- GPS topside unit is fully functional, fully connected to satellite and changes accordingly. Locator seems to be the issue,

158

LAB

10/2/2023

- Camera arrived yesterday evening; installing today.

- Camera installed

TEST

- Opened QGC, video appeared.

- Less lag + pixelation, but when tilted up & down, there was still pixelation. Video

feed didn't drop, but still pixels.

Why? Cross-connection? Where?

We already replugged the camera tilt in awkward multiple times. Now with new camera + wires and still pixelation?!

- Forgot to do what G. Times said to do. Which was testing the new camera cable w/ the old camera. I think I can do this without uninstalling, but can't check tilt the same way.

LAB

159

10/2/2023

- Plugged new camera wire into old camera. Way less pixelation than before. Still a bit more than the new camera, but it looked promising. Seems the biggest issue was the old camera wire.

- While old camera was not installed onto POV, I still tried tilting up & down to see if there was any cross-connection. No video grey-out, minimal pixelation, slight lag only a few times.

- Replugged new wire into new camera. There is still some pixelation when the camera tilts. However, can full-tilt full up and down without any video dropping and minimal pixelation.

- Still get pixelation when POV moves or if video subject moves. Slight lag.

- Pixelation gets better with time? (at least in lab)

LAB

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10/2/2023

• Checked camera wire and made sure it was secure and fully seated. Still pixelation, and some lag.

• Changed camera settings from 'force software decoder' to 'Default'

- slight pixelation at first. Grey screen when opening QGC, but no video cut-out. Little to no pixelation when tilting camera. Most pixelation came from physically moving pov.

• Didn't record video using old camera ~~2x~~

• Moved video tests into own folder within video folder

Table I-
Table II-
Table III-
Table IV-

Useful Relations

- Table V-T
- Table VI-INCHES TO DECIMALS OF A FOOT
- Table VII-MINUTES IN DECIMALS OF A DEGREE
- Table VIII-MIDDLE ORDINATES OF RAILS
- Table IX-SHORT RADIUS CURVES
- Table X-RODS IN FEET, 10THS AND 100THS OF FEET
- Table XI-LINKS IN FEET, 10THS AND 100THS OF FEET

Bye!
Don't forget
to give you
cup!
7/2

SOKKIA

MADE IN CHINA