

**FIELD EQUIPMENT VERIFICATION (PRE/POST A WEEKLY SAMPLING):**

Session No:	Verifiers (pre-sampling):	Pre Date:	Pre Time:	Verifiers (post-sampling):	Post Date:	Post Time:
63	Banker, B, Maxwell C	10/7/19	11:01 am	Maxwell, C, Banker, B	10/11/19	11:20 am

QA/QC Check	Inst #	Probe #	Last Cal Date		PRE: Verification Value	POST: Verification Value	Acceptable Range	Comments/ Notes	QA?
Temperature	NIST 2	n/a	n/a	Std Val	NIST 22.3°C	NIST 22.0°C	NIST 22.4 °C	± 0.6 °C of NIST	Compare to NIST Std value in tap water
	2	2	n/a		22.2		22.2		
	2	3	n/a			21.6			
Salinity			3 months	Std Val	Tap water Salin Std 10/10/20 date 35.0 ppt	Tap water Salin Std 10/10/20 date 35.0 ppt		± 1 ppt	Tap water - compare pre & post values Salinity Std - compare to value on Salinity Std bottle
	2	2	10/7/19		0.03	35.0	0.05	35.1	10/7/19 lab Temp 20.7°C HACH STD USED 10/4/19 lab Temp 22.2°C Hach Std Used
	2	3	10/7/19		0.03	34.9			HACH STD USED
Dissolved Oxygen			1 year	Std Val	100%	100%		± 5 %	
	2	2	8/5/19		98.0	98.9			
	2	1	5/13/19		103.2				
pH			3 weeks	Std Val	pH 7.00	pH 10.00	pH 7.00	pH 10.00	± 0.1 pH of pH std value
	2	6	10/7/19		7.01	10.06	7.05	10.07	Compare to Manufacturer pH Std value on bottle
	2	5	10/7/19		7.01	10.05			
Turbidity			3 months	Std Val	BLANK <0.1	LOW 1-10 5.76 NTU	BLANK <0.1	LOW 1-10 5.76 NTU	± 0.18 NTU Low 1-10
	NBBF	n/a	7/15/19		0.05	5.79	0.06	5.82	Compare to Gel LOW 1-10 Std Calibration value
		n/a							

QA:  
 \* Are pre- and post within one week?  
 \* Delay times are ok?  
 \* Other equipment issues?

TURBIDITY measured  $\frac{\text{low}}{\text{med}} 0-100$  59.0  $\frac{\text{high}}{\text{med}} 0-1000$  609

Team	R2RS	Samplers (Last Name, 1st Initial)	Brenda Tarmakani, Jamie Kranberg						Meters and Probes ID			
Session	63		Cathy Maxwell						HQ40d:	2	2100Q:	NBBF
Date	10/08/19								pH:	6	DO:	2
									Salinity:	2		

Location Name Sample ID	Streams Flowing (Y/N)	Time (of collection)	Temp (°C) variable	Salinity (ppt) 30-35 normal	Dissolved Oxygen		pH 8-8.3 normal	Turbidity (NTU)			People (within 100 ft)		
					(mg/L)	(%) 85-105 normal					water	beach	camp
Napili Bay RNS191008	0	8:12	27.5 21.4 cm	36.2	6.38	98.9	8.19	1.70	1.92	2.53	0	2	0
Pohaku RPO191008	0	8:39	27.6	34.6	6.45	98.5	8.15	21.6	21.3	21.0	0	0	0
Kaanapali Sh RKS191008	—	9:21	27.7	36.2	6.44	100.2	8.18	5.08	5.28	6.81	4	3	0
Canoe Beach RCB191008	—	9:48	28.7	35.6	6.41	101.0	8.23	2.59	2.46	2.48	2+2	0	0
Wahikuli RWA191008	—	10:08	28.5	36.1	6.28	98.9	8.23	1.83	1.87	1.80	0	2	0

## NOTES AND COMMENTS (trends, equipment problems, errors, concerns).

Use the back of the form if needed.

- RNS: clear, low clouds, high surf (2-3 ft), high tide over Molokai - tape on nutrient bottle (loose Temperature corrected by re-reading instrument)
- 2100Q Turbidity Machine gave values much higher than "the Blank" in pre-sampling; tried to re-fill bottle w/ distilled water. Could NOT get true Blank value lower in reflector H2O.
- RPO sandy near shore due to large shorebreak ~ 3ft swell
- RKS still 5.40 4th reading after better mixing
- RWA - flat water - no waves

## TURBIDITY VERIFICATION

	Blank (must be <0.10)	Low	Med	High
Standard	0.05	5.76	58.9	609
Pre-sampling	0.13	5.78	59.1	608
Post-sampling	0.06	5.81	59.7	606

## CHAIN OF CUSTODY INFORMATION

	# of samples	Relinquished to	Contact
Sediment	-	-	-
Nutrients	5	LLHS	C Maxwell
Bacteria	-	-	-

Signature (Team Lead):

Catherine Maxwell

Printed Name:

Catherine Maxwell

Team	R2RS	Samplers (Last Name, 1st Initial)	Brenda Jarmakani, Jamie Kranberg			
Session	63		Cathy Maxwell			
Date	10/8/19					

Sample ID	Location Name	Sample taken?	Storm sample?	Time	Volume	Protocol Notes	Comments
<b>Nutrients</b>							
RNS191008-N-1	Napili Bay	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:12	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RPO191008-N-1	Pohaku	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:39	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RKS191008-N-1	Kaanapali Sh	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:21	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RCB191008-N-1	Canoe Beach	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:48	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RWA191008-N-1	Wahikuli	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10:08	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	

<b>Sediments</b>							
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml		
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml		
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml		—
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml		

Signature (Team Lead):

*Catherine Maxwell*

Printed Name:

Catherine Maxwell

Team	Polanui	Samplers (Last Name, 1st Initial)	Bayley, R. Tyler, L. Harris, K.						Meters and Probes ID			
Session	63								HQ40d: 2		2100Q: NBBF	
Date	10/09/2019								pH:	6	DO:	2

Location Name Sample ID	Streams Flowing (Y/N)	Time (of collection)	Temp (°C) variable	Salinity (ppt) 30-35 normal	Dissolved Oxygen		pH 8-8.3 normal	Turbidity (NTU)			People (within 100 ft)		
					(mg/L)	(%) 85-105 normal					water	beach	camp
505 Front St PFF191009	Y	8:10	27.4	33.4	5.75	88.0	8.03	5.31	5.71	5.74	0	10	0
Lindsey Hale PLH191009	N	8:34	27.7	35.8	5.70	88.6	8.05	6.08	6.04	5.88	0	2	0
Lahaina Town PLT191009	—	8:53	28.1	36.2	5.92	92.7	8.07	1.92	1.71	1.50	5	2	0
Olowalu Pier OSF191009	—	9:21	28.3	36.3	6.07	95.5	8.07	.93	1.04	.99	0	4	0

NOTES AND COMMENTS (trends, equipment problems, errors, concerns).  
Use the back of the form if needed.

Drainage at PLH is still totally covered

Outrigger in water w/5 people

1 possibly 2 monk seals in water at PLT

High cirrus clouds

Steady Kona wind

#### TURBIDITY VERIFICATION

	Blank (must be <0.10)	Low	Med	High
Standard	0.06	5.76	58.9	609
Pre-sampling	0.08	5.80	59.5	607
Post-sampling	0.05	5.78	60.1	607

#### CHAIN OF CUSTODY INFORMATION

	# of samples	Relinquished to	Contact
Sediment	—	—	—
Nutrients	4	LLHS	BRIAN BARKER
Bacteria	—	—	—

Signature (Team Lead):

Printed Name:

BRIAN H. BARKER

Team	Polanui	Samplers (Last Name, 1st Initial)	BALLEY, R. TYLER, L. HARRIS, K.			
Session	63					
Date	10/09/2019					

Sample ID	Location Name	Sample taken?	Storm sample?	Time	Volume	Protocol Notes	Comments
<b>Nutrients</b>							
PFF191009-N-1	505 Front St	<input checked="" type="checkbox"/>	<input type="checkbox"/>	08:10	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 µm disposable filters	
PLH191009-N-1	Lindsey Hale	<input checked="" type="checkbox"/>	<input type="checkbox"/>	08:34	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 µm disposable filters	
PLT191009-N-1	Lahaina Town	<input checked="" type="checkbox"/>	<input type="checkbox"/>	08:53	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 µm disposable filters	
OSF191009-N-1	Olowalu Pier	<input checked="" type="checkbox"/>	<input type="checkbox"/>	09:21	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 µm disposable filters	

		<input type="checkbox"/>	<input type="checkbox"/>		500 ml		
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml		
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml		
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml		

Signature (Team Lead):



Printed Name:

Bruck H. Barker

Team	Olowalu	Samplers (Last Name, 1st Initial)	GVnd, Kristy Raniesi, Lindsay Barker, Bruce							Meters and Probes ID			
Session	63									HQ40d:	2	2100Q: NBBF	
Date	10/10/2019			pH:	6	DO:	2	Salinity:	2				

Location Name Sample ID	Streams Flowing (Y/N)	Time (of collection)	Temp (°C) variable	Salinity (ppt) 30-35 normal	Dissolved Oxygen		pH 8-8.3 normal	Turbidity (NTU)			People (within 100 ft)		
					(mg/L)	(%) 85-105 normal					water	beach	camp
Martin Hale OPM191010	-	07:09	27.6	36.3	5.35	83.2	7.98	2.36	2.39	2.38	2	2	2
Camp Olowalu OCO191010	-	07:28	28.4	36.4	6.00	94.6	8.05	5.47	5.22	5.28	2	5	2
Ukumehame OUB191010	N	07:44	28.7	36.6	6.08	96.5	8.09	16.5	16.9	16.5	2	2	8
Papalaua Beach OPB191010	N	07:59	28.6	36.5	6.27	99.3	8.10	7.18	6.67	6.75	2	2	2
Papulua Pali OPP191010	✓	08:13	28.6	36.3	6.28	99.5	8.13	3.01	3.42	3.57	2	2	3

## NOTES AND COMMENTS (trends, equipment problems, errors, concerns).

Use the back of the form if needed.

OPM- 1 SHARK IN WATER (BLACK TIP)

OUB- NEAR SHORE WAVE BREAK

## TURBIDITY VERIFICATION

	Blank (must be <0.10)	Low	Med	High
Standard	0.05	5.76	58.9	609
Pre-sampling	0.06	5.82	60.1	608
Post-sampling	0.07	5.80	59.7	607

## CHAIN OF CUSTODY INFORMATION

	# of samples	Relinquished to	Contact
Sediment	0	N/A	N/A
Nutrients	5	UCHS	BH.BARKER
Bacteria	0	N/A	N/A

Signature (Team Lead):

Printed Name:

BRUCE H. BARKER

Team	Olowalu	Samplers (Last Name, 1st Initial)	GUND, K. RANIÉRI, L. BANNER, B.			
Session	63					
Date	10/10/2019					

Sample ID	Location Name	Sample taken?	Storm sample?	Time	Volume	Protocol Notes	Comments
<b>Nutrients</b>							
OPM191010-N-1	Martin Hale	<input checked="" type="checkbox"/>	<input type="checkbox"/>	07:09	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 µm disposable filters	
OCO191010-N-1	Camp Olowalu	<input checked="" type="checkbox"/>	<input type="checkbox"/>	07:28	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 µm disposable filters	
oub191010-N-1	Ukumehame	<input checked="" type="checkbox"/>	<input type="checkbox"/>	07:44	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 µm disposable filters	
OPB191010-N-1	Papalaua Beach	<input checked="" type="checkbox"/>	<input type="checkbox"/>	07:59	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 µm disposable filters	
OPP191010-N-1	Papulua Pali	<input checked="" type="checkbox"/>	<input type="checkbox"/>	08:13	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 µm disposable filters	

<b>Sediments</b>						
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml	
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml	
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml	
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml	

Signature (Team Lead):



Printed Name:

BRUCE H. BANNER

Team	R2RN	Samplers (Last Name, 1st Initial)	Hutchings, L Bing, L Bunker, B						Meters and Probes ID				
Session	63								HQ40d: 2			2100Q: NBBF	
Date	10/11/19								pH:	6	DO:	2	Salinity:

Location Name Sample ID	Streams Flowing (Y/N)	Time (of collection)	Temp (°C) variable	Salinity (ppt) 30-35 normal	Dissolved Oxygen		pH 8-8.3 normal	Turbidity (NTU)			People (within 100 ft)		
					(mg/L)	(%) 85-105 normal					water	beach	camp
Honolua Bay RHL191011	N	7:50A	27.6	35.0	5.59	85.9	8.12	3.38	3.31	3.14	8	2	0
Oneloa Bay RON191011	-	8:30A	28.2	36.3	6.39	100.0	8.16	1.39	1.21	1.43	2	2	0
Kapalua Bay RFS191011	-	9:50A	28.4	34.3	6.23	96.6	8.07	2.23	2.50	2.19	6	17	0
Ka'opala Bay RKO191011	N	9:15A	28.3	34.9	5.99	93.2	8.09	5.38 6.00	5.65	5.59	0	3	0
Kahana Village RKV191011	-	9:35A	28.6	35.4	5.62	88.0	8.08	6.61	6.60	6.35	0	2	0

## NOTES AND COMMENTS (trends, equipment problems, errors, concerns).

Use the back of the form if needed.

RKO - 4 min TURBIDITY 5.22

## TURBIDITY VERIFICATION

	Blank (must be <0.10)	Low	Med	High
Standard	0.07	5.76	58.9	609
Pre-sampling	0.07	5.80	59.7	608
Post-sampling	0.06	5.82	59.8	608

## CHAIN OF CUSTODY INFORMATION

	# of samples	Relinquished to	Contact
Sediment	-	-	-
Nutrients	5	C. MAXWELL	C. MAXWELL
Bacteria	-	-	-

Signature (Team Lead):

Printed Name:

Catherine Maxwell Catherine Maxwell

Team	R2RN	Samplers (Last Name, 1st Initial)	<i>HUTCHINGS, L.</i>				
Session	63		<i>BERG, L.</i>				
Date	10/11/19		<i>BANKIER, B.</i>				

Sample ID	Location Name	Sample taken?	Storm sample?	Time	Volume	Protocol Notes	Comments
<b>Nutrients</b>							
RHL191011-N-1	Honolua Bay	<input checked="" type="checkbox"/>	<input type="checkbox"/>	07:50	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RON191011-N-1	Oneloa Bay	<input checked="" type="checkbox"/>	<input type="checkbox"/>	08:30	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RFS191011-N-1	Kapalua Bay	<input checked="" type="checkbox"/>	<input type="checkbox"/>	08:50	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RKO191011-N-1	Ka'opala Bay	<input checked="" type="checkbox"/>	<input type="checkbox"/>	09:15	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RKV191011-N-1	Kahana Village	<input checked="" type="checkbox"/>	<input type="checkbox"/>	09:35	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	

<b>Sediments</b>							
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml		
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml		
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml		
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml		

Signature (Team Lead):

*Catherine Maxwell*

Printed Name:

*Catherine Maxwell*