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

| Session No: | Verifiers (pre-sampling): | Pre Date: | Pre Time: | Verifiers (post-sampling): | Post Date: | Post Time: |
|---|---|---|---|---|---|---|
| 69 | Bruce Banker, Cathy Maxwell | 2/18/20 | 8:50am | Bruce Banker, Cathy Maxwell | 2/21/20 | 10:40 am |

| QA/QC Check | Inst # | Probe # | Last Cal Date | | PRE: Verification Value | | POST: Verification Value | | Acceptable Range | Comments/ Notes | QA? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Temperature** | NIST ~~23.3~~ CM | n/a | n/a | Std Val | NIST 22.3 °C | NIST 22.0 °C | NIST ~~21.7~~ CM ~~22.5~~ °C | NIST 22.5 °C | ± 0.6 °C of NIST | Compare to NIST Std value in tap water | |
| | 2 | 2 | n/a | | 22.1°C | | ~~21.4~~ ~~22.2~~ CM | | | | |
| | 1 | 3 | n/a | | | 21.5°C | | 22.2 | | | |
| **Salinity** | | | 3 months | Std Val | Tap water | Salin Std 9/20/19 date 34.3 ppt | Tap water ~~0.04~~ CM | Salin Std 1/27/20 date 34.2 ppt | ± 1 ppt | Tap water - compare pre & post values<br>Salinity Std - compare to value on Salinity Std bottle | |
| | 2 | 2 | 1/6/20 | | 0.05 | 34.2 | 0.04 | 34.~~3~~ CM | | | |
| | 1 | 3 | 1/6/20 | | 0.04 | 34.3 | 0.04 | 34.2 | | | |
| **Dissolved Oxygen** | | | 1 year | Std Val | 100% | | 100% | | ± 5 % | | |
| | 2 | 2 | 8/5/19 | | 96.8% | | 97.2% | | | | |
| | 1 | 1 | 5/13/19 | | 101.5% | | 101.6% | | | | |
| **pH** | | | 3 weeks | Std Val | pH 7.00 | pH 10.00 | pH 7.00 | pH 10.00 | ± 0.1 pH of pH std value | Compare to Manufacturer pH Std value on bottle | |
| | 2 | 6 | 2/18/20 | | 7.03 | 10.05 | 7.06 | 10.07 | | | |
| | 1 | 5 | 2/18/20 | | 7.03 | 10.05 | 7.04 | 10.06 | | | |
| **Turbidity** | | | 3 months | Std Val | BLANK <0.1 | LOW 1-10 5.59 5.75 NTU | BLANK <0.1 | LOW 1-10 ~~5.59~~ ~~5.75~~ NTU | ± 0.18 NTU Low 1-10 | Compare to Gel LOW 1-10 Std Calibration value | |
| | ~~YSI~~ NBBF 1 | n/a | 01/27/20 | | 0.06 | 5.53 | 0.05 | 5.51 | | | |
| | NBBF | n/a | 01/27/20 | | 0.05 | 5.74 | 0.06 | 5.75 | | | |

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

note: Changed the time it takes the pH probe to determine the pH to medium on both meters for this session (from fast) (CSM)

Hui O Ka Wai Ola - Sample Collection Datasheet

| | | | | | |
|---|---|---|---|---|---|
| **Team** | R2RS | **Samplers (Last Name, 1st Initial)** | Kranberg, J<br>Strickland, J<br>Hehemann, C | **Meters and Probes ID** | |
| **Session** | 69 | | | HQ40d: 1 | 2100Q: ~~DBBF~~ #1 |
| **Date** | 2/19/20 | | | pH: 5 | DO: 1 Salinity: 3 |

| Location Name Sample ID | Streams Flowing (Y/N) | Time (of collection) | Temp (°C) variable | Salinity (ppt) 30-35 normal | Dissolved Oxygen (mg/L) | Dissolved Oxygen (%) 85-105 normal | pH 8-8.3 normal | Turbidity (NTU) | | | People (within 100 ft) water | People (within 100 ft) beach | People (within 100 ft) camp |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Napili Bay RNS200219 | N | 8:20 | 23.6 | 35.3 | 7.08 | 101.4 | 8.15 | 1.59 | 1.98 | 1.78 | 2 | 8 | 0 |
| Pohaku RPO200219 | N | 8:55 | 23.4 | 33.3 | 7.02 | 99.3 | 8.16 | 8.19 | 7.74 | 8.37 | 0 | 2 | 0 |
| Kaanapali Sh RKS200219 | N | 9:21 | 23.4 | 35.5 | 7.08 | 101.3 | 8.16 | 1.88 | 1.79 | 2.02 | 2 | 0 | 0 |
| Canoe Beach RCB200219 | N | 9:51 | 24.7 | 35.2 | 6.93 | 101.4 | 8.20 | 0.88 | 0.96 | 0.99 | 6 | 20 | 0 |
| Wahikuli RWA200219 | N | 10:17 | 24.6 | 34.7 | 6.96 | 101.5 | 8.20 | 1.04 | 1.26 | 1.11 | 0 | 1 | 0 |
| | | | | | | | | | | | | | |

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

Very Clear and Calm at all sites

**TURBIDITY VERIFICATION**

| | Blank (must be <0.10) | Low | Med | High |
|---|---|---|---|---|
| **Standard** | 0.06 | 5.59 | 58.7 | 640 |
| **Pre-sampling** | 0.08 | 5.53 | 58.9 | 638 |
| **Post-sampling** | 0.06 | 5.55 | 59.3 | 639 |

**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)** | KRAMBERG, J.<br>STRICKLAND, J.<br>HEIHEMANN, C. |
| **Session** | 69 | | |
| **Date** | 2/19/20 | | |

| Sample ID | Location Name | Sample taken? | Storm sample? | Time | Volume | Protocol Notes | Comments |
|---|---|---|---|---|---|---|---|
| **Nutrients** | | | | | | | |
| **RNS200219-N-1** | **Napili Bay** | ☑ | ☐ | 08:20 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |
| **RPO200219-N-1** | **Pohaku** | ☑ | ☐ | 08:55 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |
| **RKS200219-N-1** | **Kaanapali Sh** | ☑ | ☐ | 09:21 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |
| **RCB200219-N-1** | **Canoe Beach** | ☑ | ☐ | 09:51 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |
| **RWA200219-N-1** | **Wahikuli** | ☑ | ☐ | 10:17 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |
| | | | | | | | |
| **Sediments** | | | | | | | |
| | | ☐ | ☐ | | 500 ml | | |
| | | ☐ | ☐ | | 500 ml | | |
| | | ☐ | ☐ | | 500 ml | | |
| | | ☐ | ☐ | | 500 ml | | |

**Signature (Team Lead):** Catherine Maxwell **Printed Name:** Catherine Maxwell

| | | | | | |
|---|---|---|---|---|---|
| **Team** | Polanui | **Samplers (Last Name, 1st Initial)** | Maxwell, J<br>Harris, K | **Meters and Probes ID** | |
| **Session** | 69 | | | HQ40d: 2 | 2100Q: NBBF |
| **Date** | 02/19/2020 | | | 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 (mg/L) | Dissolved Oxygen (%) 85-105 normal | pH 8-8.3 normal | Turbidity (NTU) | | | People (within 100 ft) water | People (within 100 ft) beach | People (within 100 ft) camp |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 505 Front St PFF200219 | Y | 8:21 | 24.1 | 34.8 | 6.16 | 88.7 | 8.10 | 7.29 | 8.52 | 8.76 | 0 | 7 | 0 |
| Lindsey Hale PLH200219 | N | 8:51 | 24.3 | ~~6.18~~ 35.5 KH | 6.18 | 89.9 | 8.12 | 1.14 | 1.05 | 1.03 | 0 | 3 | 0 |
| Lahaina Town PLT200219 | — | 9:17 | 24.8 | 34.8 | 6.15 | 89.8 | 8.13 | 2.83 | 2.75 | 2.84 | 2 | 3 | 0 |
| Olowalu Pier OSF200219 | — | 9:54 | 24.1 | 35.8 | 6.82 | 98.9 | 8.19 | 2.73 | 3.37 | 3.56 | 0 | 0 | 0 |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

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

DO NOT TAKE NUTRIENT SAMPLE FROM OLOWALU PIER THIS EVENT
(Will Only Be Taken Quarterly)

PFF stream path is ≈20' north of typical flow path

**TURBIDITY VERIFICATION**

| | Blank (must be <0.10) | Low | Med | High |
|---|---|---|---|---|
| **Standard** | 0.05 | 5.75 | 59.9 | 621 |
| **Pre-sampling** | 0.07 | 5.77 | 59.9 | 620 |
| **Post-sampling** | 0.05 | 5.57 | 60.7 | 619 |

**CHAIN OF CUSTODY INFORMATION**

| | # of samples | Relinquished to | Contact |
|---|---|---|---|
| **Sediment** | - | - | - |
| **Nutrients** | 3 | LLHS | BH.BANKER |
| **Bacteria** | - | - | - |

**Signature (Team Lead):** BH.Banker **Printed Name:** BRUCE H. BANKER

| | | | |
|---|---|---|---|
| **Team** | Polanui | **Samplers (Last Name, 1st Initial)** | MAXWELL, J.<br>HARRIS, K. |
| **Session** | 69 | | |
| **Date** | 02/19/2020 | | |

| Sample ID | Location Name | Sample taken? | Storm sample? | Time | Volume | Protocol Notes | Comments |
|---|---|---|---|---|---|---|---|
| **Nutrients** | | | | | | | |
| **PFF200219-N-1** | **505 Front St** | ☑ | ☐ | 08.21 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 µm disposable filters | |
| **PLH200219-N-1** | **Lindsey Hale** | ☑ | ☐ | 08.51 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 µm disposable filters | |
| **PLT200219-N-1** | **Lahaina Town** | ☑ | ☐ | 09:17 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 µm disposable filters | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| **Sediments** | | | | | | | |
| | | ☐ | ☐ | | 500 ml | | |
| | | ☐ | ☐ | | 500 ml | | |
| | | ☐ | ☐ | | 500 ml | | |
| | | ☐ | ☐ | | 500 ml | | |

| **Signature (Team Lead):** | **Printed Name:** |
|---|---|
| B H. B | BRUCE H. BANKER |

| | | | | | |
|---|---|---|---|---|---|
| **Team** | Olowalu | **Samplers (Last Name, 1st Initial)** | Naponen, Richard<br>Ramieri, Lindsay | **Meters and Probes ID** | |
| **Session** | 69 | | | HQ40d: 2 | 2100Q: NBBF |
| **Date** | 02/20/2020 | | | 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 (mg/L) | Dissolved Oxygen (%) 85-105 normal | pH 8-8.3 normal | Turbidity (NTU) | | | People (within 100 ft) water | beach | camp |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Martin Hale OPM200220 | N | 7:12 | 22.1 | 35.8 | 6.18 | 86.4 | 8.14 | 2.05 | 2.05 | 2.18 | 0 | 0 | 0 |
| Camp Olowalu OCO200220 | N | 7:32 | 22.8 | 35.9 | 6.34 | 89.8 | 8.16 | 1.81 | 1.63 | 1.65 | 0 | 0 | 0 |
| Ukumehame OUB200220 | N | 7:45 | 21.9 | 35.9 | 6.80 | 94.8 | 8.19 | 16.3 | 18.4 | 16.5 | 0 | 0 | 0 |
| Papalaua Beach OPB200220 | N | 8:00 | 21.9 | 35.8 | 6.83 | 95.3 | 8.20 | 13.5 | 13.8 | 13.4 | 0 | 4 | 2 |
| Papalaua Pali OPP200220 | N | 8:12 | 22.4 | 35.1 | 6.83 | 95.8 | 8.17 | 14.8 | 15.2 | 16.2 | 0 | 0 | 4 |
| | | | | | | | | | | | | | |

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

DO NOT TAKE NUTRIENT SAMPLES THIS EVENT
(Will Only Be Taken Quarterly)

Very windy sampling day!

**TURBIDITY VERIFICATION**

| | Blank (must be <0.10) | Low | Med | High |
|---|---|---|---|---|
| Standard | 0.05 | 5.75 | 59.9 | 621 |
| Pre-sampling | 0.08 | 5.78 | 60.1 | 619 |
| Post-sampling | 0.05 | 5.74 | 60.0 | 619 |

**CHAIN OF CUSTODY INFORMATION**

| | # of samples | Relinquished to | Contact |
|---|---|---|---|
| Sediment | 0 | N/A | N/A |
| Nutrients | 0 | N/A | N/A |
| Bacteria | 0 | N/A | N/A |

Signature (Team Lead): BHB

Printed Name: Bruce H. Barker

| | | | |
|---|---|---|---|
| **Team** | Olowalu | **Samplers (Last Name, 1st Initial)** | KOPOMEN, R.<br>RAINERI, L |
| **Session** | 69 | | |
| **Date** | 02/20/2020 | | |

| Sample ID | Location Name | Sample taken? | Storm sample? | Time | Volume | Protocol Notes | Comments |
|---|---|---|---|---|---|---|---|
| **Nutrients** | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| **Sediments** | | | | | | | |
| | | ☐ | ☐ | | 500 ml | | |
| | | ☐ | ☐ | | 500 ml | | |
| | | ☐ | ☐ | | 500 ml | | |
| | | ☐ | ☐ | | 500 ml | | |

| Signature (Team Lead): | Printed Name: |
|---|---|
| BH-Bar | BRUCE H. BARKER |

| | |
|---|---|
| **Team** | R2RN |
| **Session** | 69 |
| **Date** | 2/21/20 |

**Samplers (Last Name, 1st Initial):** Hutchings, L; Strickland, J

| **Meters and Probes ID** | | | |
|---|---|---|---|
| HQ40d: 2 | 2100Q: N13BF | | |
| 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 (mg/L) | Dissolved Oxygen (%) 85-105 normal | pH 8-8.3 normal | Turbidity (NTU) | | | People (within 100 ft) water | People (within 100 ft) beach | People (within 100 ft) camp |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Honolua Bay RHL200221 | N | 7:55 | 22.7 | 34.9 | 6.43 | 90.6 | 8.17 | 6.08 | 6.85 | 6.86 | 0 | 0 | 0 |
| Oneloa Bay RON200221 | | 9:40 | 23.3 | 35.7 | 6.74 | 96.4 | 8.21 | .62 | .66 | .61 | 0 | 2 | 0 |
| Kapalua Bay RFS200221 | | 9:05 | 24.0 | 33.6 | 6.72 | 96.0 | 8.14 | 1.37 | 1.38 | 1.40 | 12 | 17 | 6 |
| Ka'opala Bay RKO200221 | N | 9:35 | 23.6 | 34.7 | 6.57 | 93.8 | 8.17 | 4.83 | 5.04 | 4.89 | 1 | 6 | 0 |
| Kahana Village RKV200221 | | 10:00 | 23.7 | 34.8 | 6.96 | 99.7 | 8.21 | 2.96 | 3.54 | 3.64 | 0 | 4 | 0 |
| | | | | | | | | | | | | | |

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

RKV - did 4th turbidity reading - 2.65

**TURBIDITY VERIFICATION**

| | Blank (must be <0.10) | Low | Med | High |
|---|---|---|---|---|
| **Standard** | 0.05 | 5.75 | 59.9 | 621 |
| **Pre-sampling** | 0.06 | 5.78 | 59.9 | 620 |
| **Post-sampling** | 0.06 | 5.75 | 60.0 | 619 |

**CHAIN OF CUSTODY INFORMATION**

| | # of samples | Relinquished to | Contact |
|---|---|---|---|
| **Sediment** | - | - | - |
| **Nutrients** | 5 | LLHS | CMaxwell |
| **Bacteria** | - | - | - |

**Signature (Team Lead):** Catherine Maxwell **Printed Name:** Catherine Maxwell

| | | | |
|---|---|---|---|
| **Team** | R2RN | **Samplers (Last Name, 1st Initial)** | Hutchings, L<br>Strickland, J |
| **Session** | 69 | | |
| **Date** | 2/21/20 | | |

| Sample ID | Location Name | Sample taken? | Storm sample? | Time | Volume | Protocol Notes | Comments |
|---|---|---|---|---|---|---|---|
| **Nutrients** | | | | | | | |
| **RHL200221-N-1** | **Honolua Bay** | ☑ | ☐ | 7:55 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |
| **RON200221-N-1** | **Oneloa Bay** | ☑ | ☐ | 8:40 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |
| **RFS200221-N-1** | **Kapalua Bay** | ☑ | ☐ | 9:05 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |
| **RKO200221-N-1** | **Ka'opala Bay** | ☑ | ☐ | 9:35 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |
| **RKV200221-N-1** | **Kahana Village** | ☑ | ☐ | 10:00 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |
| | | | | | | | |
| **Sediments** | | | | | | | |
| | | ☐ | ☐ | | 500 ml | | |
| | | ☐ | ☐ | | 500 ml | | |
| | | ☐ | ☐ | | 500 ml | | |
| | | ☐ | ☐ | | 500 ml | | |

**Signature (Team Lead):** Catherine Maxwell **Printed Name:** Catherine Maxwell