

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



| Session No: | Verifiers (pre-sampling): | Pre Date: | Pre Time: | Verifiers (post-sampling): | Post Date: | Post Time: |
|-------------|---------------------------|-----------|-----------|----------------------------|------------|------------|
| 65 | M. Brown | 6/21/21 | 1:15pm | T. Starke | 6/24/21 | 10:45 am |

| QA/QC Check | Inst # | Probe # | Last Cal Date | | PRE: Verification Value | | POST: Verification Value | | Acceptable Range | Comments/ Notes | QA? |
|------------------|----------|---------|---------------|---------|-------------------------|-----------------------|--------------------------|-----------------------|--------------------------|---|-----|
| Temperature | NIST | n/a | n/a | Std Val | NIST | NIST | NIST | NIST | ± 0.6 °C of NIST | Compare to NIST Std value in tap water | |
| | 10/16/20 | | | | 29.4 °C | 29.4 °C | 27.5 °C | — °C | | | |
| | 1 | 1 | n/a | | 29.7 | | 27.8 | | | Pre Ambient Air 29.7 °C | |
| | 1 | 2 | n/a | | | 29.5 | | — | | post : 27.5 °C | |
| Salinity | | | 3 months | Std Val | Tap water | Salin Std | Tap water | Salin Std | ± 1 ppt | Tap water - compare pre & post values Salinity Std - compare to value on Salinity Std bottle | |
| | | | | | 0.33 | 5/10/21 date 35.0 ppt | 0.33 | 5/10/21 date 35.0 ppt | | | |
| | 1 | 1 | 5/31/21 | | 0.37 | 35.3 | 0.37 | 35.5 | | | |
| | 1 | 2 | 5/31/21 | | 0.36 | 35.0 | — | — | | | |
| Dissolved Oxygen | | | 1 year | Std Val | 100% | | 100% | | ± 5 % | | |
| | 1 | 1 | 11/2/20 | | 97.4 | | 99.0 | | | | |
| | 1 | 2 | 11/2/20 | | 98.9 | | — | | | | |
| 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 | |
| | 1 | 1 | 6/21/21 | | 6.97 | 9.98 | 6.99 | 9.99 | | | |
| | 1 | 2 | 6/21/21 | | 7.01 | 9.98 | — | — | | | |
| Turbidity | | | 3 months | Std Val | BLANK <0.1 | LOW 1-10 NTU | BLANK <0.1 | LOW 1-10 NTU | ± 0.18 NTU Low 1-10 | Compare to Gel LOW 1-10 Std Calibration value | |
| | 1 | n/a | 6/21/21 | | 0.07 | 6.21 | 0.06 | 6.16 | | | |
| | broken 2 | n/a | — | | — | — | — | — | | | |

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

Lab: DHS

| | | | | | |
|---------------------|--|--|-----------------------------|-------|-------------|
| Team Kamaole | Samplers (Last Name, 1st Initial) | Margie Cyr Harry Heck Scott Groves | Meters and Probes ID | | |
| Session 65 | | | HQ40d: 1 | | 2100Q: 1 |
| Date 6/22/21 | | | pH: 3 | DO: 1 | Salinity: 1 |

| 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) | | | Entero | People (within 100 ft) | | |
|-------------------------------|-----------------------------|----------------------------|--------------------------|--------------------------------------|------------------|-------------------------|-----------------------|--------------------|------|------|--------|------------------------|-------|------|
| | | | | | (mg/L) | (%) 85-105 normal | | | | | CFU | water | beach | camp |
| Kalepolepo North NKN210622 | N | 8:01 | 26.1 | 33.0 | 5.87 | 87.0 | 8.11 | 2.04 | 3.19 | 2.41 | Na | 0 | 11 | 0 |
| Waipuilani Park KWP210622 | N | 8:20 | 25.4 | 31.9 | 5.63 | 82.2 | 8.02 | 2.73 | 2.98 | 3.25 | Na | 0 | 1 | 2 |
| Kihei South KKS210622 | N | 8:36 | 26.3 | 31.9 | 6.19 | 91.5 | 8.08 | 2.96 | 3.36 | 2.99 | NA | 3 | 5 | 0 |
| Kalama Park KKP210622 | N | 8:57 | 26.4 | 34.9 | 6.81 | 102.5 | 8.14 | 4.57 | 5.62 | 4.90 | NA | 0 | 10 | 0 |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

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

* Blank - High but tried all procedures.
8:07 - NKN 8:09
8:28 - 8:30 KWP
8:44 - 8:47 - KKS
9:03 9:06 - KKP

Sites with potential for freshwater flow: All

TURBIDITY VERIFICATION

| | Blank (must be <0.10) | Low | Med | High |
|---------------|--------------------------|------|------|------|
| Standard | 0.07 | 6.21 | 54.8 | 578 |
| Pre-sampling | *0.15 | 6.27 | 54.6 | 577 |
| Post-sampling | 0.05 | 6.22 | 54.8 | 578 |

CHAIN OF CUSTODY INFORMATION

| | # of samples | Relinquished to | Contact |
|-----------|--------------|-----------------|---------|
| Sediment | 4 | alts | MBrown |
| Nutrients | | | |
| | | | |

Signature (Team/Lead):

Printed Name: Mitch Brown

| | | |
|----------------|---------|--|
| Team | Kamaole | Samplers (Last Name, 1st Initial) <i>Cyr M Hecht H graves S.</i> |
| Session | 65 | |
| Date | 6/22/21 | |

| Sample ID | Location Name | Sample taken? | Duplicate sample? | Time | Volume | Protocol Notes | Comments |
|------------------|------------------|-------------------------------------|--------------------------|------|--------|---|----------|
| Nutrients | | | | | | | |
| NKN210622-N-1 | Kalepolepo North | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 8:01 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |
| KWP210622-N-1 | Waipuilani Park | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 8:20 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |
| KKS210622-N-1 | Kihei South | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 8:36 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |
| KKP210622-N-1 | Kalama Park | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 8:57 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |
| | | | | | | | |
| | | | | | | | |

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|---|------------------------------------|
| Signature (Team Lead): <i>[Signature]</i> | Printed Name: Mike Brown |
|---|------------------------------------|

| | | | | | | |
|---------|---------------|---|-----------------------|----------------------|-------|-------------|
| Team | Wailea-Makena | Samplers (Last Name, 1st Initial) | N. Sharpe T. Stark | Meters and Probes ID | | |
| Session | 65 | | | HQ40d: 1 | | 2100Q: 1 |
| Date | 06/23/21 | | | pH: 3 | DO: 1 | Salinity: 1 |

| Location Name Sample ID | Freshwater Flowing (Y/N) | Time (of collection) | Temp (°C) variable | Salinity (ppt) 30-35 normal | Dissolved Oxygen | | pH 8-8.3 normal | Turbidity (NTU) | | | Entero | People (within 100 ft) | | |
|--------------------------------|--------------------------------|----------------------------|--------------------------|--------------------------------------|------------------|-------------------------|-----------------------|--------------------|------|-------------------------|--------|------------------------|-------|------|
| | | | | | (mg/L) | (%) 85-105 normal | | | | | CFU | water | beach | camp |
| Cove Park KCP210623 | N | 8:48 | 27.2 | 31.9 | 6.91 | 104.1 | 8.09 | 4.30 | 4.59 | 3.29 2.87 | — | 2 | 2 | 1 |
| S Maluaka Beach MMB210623 | N | 9:31 | 27.0 | 34.8 | 6.51 | 99.2 | 8.12 | 1.17 | 1.14 | 1.28 | — | 18 | 17 | 0 |
| Ahihi Kinau North MAN210623 | N | 10:00 | 26.5 | 35.4 | 7.39 | 111.9 | 8.13 | 1.86 | 1.65 | 1.52 | — | 7 | 5 | 0 |
| Ahihi Kinau South MAS210623 | N | 10:21 | 27.4 | 35.2 | 6.62 | 101.8 | 8.10 | 2.37 | 2.32 | 2.19 | — | 3 | 12 | 0 |

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

KCP: Dog near sampling area; 1 camper
is man who lives here; 2 dogs total.
Took ~~4th~~ 5th reading and was 3.94.
MMB: swimmers nearby
MAN: snorkelers jetting out near camping site;
small waves
MAS: some swell (per usual); low tide

Sites with potential for freshwater flow: Cove Park

TURBIDITY VERIFICATION

| | Blank (must be <0.10) | Low | Med | High |
|---------------|--------------------------|------|------|------|
| Standard | 0.05 | 6.21 | 54.8 | 578 |
| Pre-sampling | 0.06 | 6.15 | 54.4 | 578 |
| Post-sampling | 0.05 | 6.15 | 54.7 | 578 |

CHAIN OF CUSTODY INFORMATION

| | # of samples | Relinquished to | Contact |
|-----------|--------------|-----------------|----------|
| Sediment | - | - | - |
| Nutrients | 4 | DHS | T. Stark |
| Bacteria | - | - | - |

Signature (Team Lead):

[Signature]

Printed Name:

Tiara Stark

* swirl versus invert turbidity vial (blank) - must be consistent across the board

| | | | |
|----------------|---------------|--|-----------------------|
| Team | Wailea-Makena | Samplers (Last Name, 1st Initial) | N. Sharpe T. Stark |
| Session | 65 | | |
| Date | 06/23/21 | | |

| Sample ID | Location Name | Sample taken? | Duplicate sample? | Time | Volume | Protocol Notes | Comments |
|------------------|-------------------|-------------------------------------|--------------------------|-------|--------|---|----------|
| Nutrients | | | | | | | |
| KCP210623-N-1 | Cove Park | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 8:48 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |
| MMB210623-N-1 | S Maluaka Beach | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 9:31 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |
| MAN210623-N-1 | Ahihi Kinau North | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 10:00 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |
| MAS210623-N-1 | Ahihi Kinau South | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 10:21 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |

| | | | | | | | |
|------------------|--|--------------------------|--------------------------|--|--------|--|--|
| Sediments | | | | | | | |
| | | <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 | | |

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|--|-------------------------------------|
| Signature (Team Lead): diana stark | Printed Name: Tiara Stark |
|--|-------------------------------------|

| | | | | | | |
|---------|-------------|---|---------------------|----------------------|-------|-------------|
| Team | North Kihei | Samplers (Last Name, 1st Initial) | F. Bahr T. Stark | Meters and Probes ID | | |
| Session | 65 | | | HQ40d: 1 | | 2100Q: 1 |
| Date | 06/24/21 | | | pH: 3 | DO: 1 | Salinity: 1 |

| Location Name Sample ID | Freshwater Flowing (Y/N) | Time (of collection) | Temp (°C) variable | Salinity (ppt) 30-35 normal | Dissolved Oxygen | | pH 8-8.3 normal | Turbidity (NTU) | | | Entero CFU | People (within 100 ft) | | |
|-------------------------------|--------------------------------|----------------------------|--------------------------|--------------------------------------|------------------|-------------------------|-----------------------|--------------------|------|------|---------------|------------------------|-------|------|
| | | | | | (mg/L) | (%) 85-105 normal | | | | | | water | beach | camp |
| Maalaea Harbor NMH210624 | N | 7:57 | 25.6 | 35.3 | 6.21 | 92.5 | 8.10 | 1.80 | 1.51 | 1.56 | | 0 | 0 | 0 |
| Maalaea Condos NMC210624 | N | 8:18 | 25.6 | 32.4 | 7.50 | 109.9 | 8.16 | 5.19 | 5.37 | 5.57 | | 0 | 0 | 0 |
| Haycraft Park NHP210624 | N | 8:37 | 25.8 | 34.8 | 6.85 | 102.3 | 8.11 | 9.10 | 9.71 | 9.01 | | 7 | 4 | 0 |
| Kealia Pond NKP210624 | N | 9:00 | 25.9 | 35.6 | 6.74 | 101.2 | 8.15 | 1.24 | 1.17 | 1.28 | | 1 | 1 | 4 |
| Kihei Canoe Club NKC210624 | N | 9:16 | 26.8 | 34.8 | 6.70 | 101.6 | 8.06 | 12.7 | 14.5 | 11.8 | | 0 | 6 | 0 |

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

NMH: tourist boat nearby sampling area (very close)
NMC: some stagnant water in channelized ditch
- super low tide (king tides); churning water near sample area w/ rocks - may account for ↑ O₂.
NHP: waves & body boulders & low tide. Higher NTU than normal. Red mud under sand may be getting stirred up.
NKP: low tide, waves, 11 fishing poles
NKC: waves, brown water

Sites with potential for freshwater flow: Maalaea Harbor, Maalaea Condos, Kealia Pond, Kihei Canoe Club

TURBIDITY VERIFICATION

| | Blank (must be <0.10) | Low | Med | High |
|---------------|--------------------------|------|------|------|
| Standard | 0.05 | 6.21 | 54.8 | 578 |
| Pre-sampling | 0.05 | 6.22 | 54.6 | 578 |
| Post-sampling | 0.06 | 6.16 | 54.7 | 578 |

CHAIN OF CUSTODY INFORMATION

| | # of samples | Relinquished to | Contact |
|-----------|--------------|-----------------|----------|
| Sediment | - | - | - |
| Nutrients | 5 | DHS | T. Stark |
| Bacteria | - | - | - |

Signature (Team Lead):

fiara 8th

Printed Name:

Tiara Stark

| | | | |
|----------------|-------------|--|---------------------|
| Team | North Kihei | Samplers (Last Name, 1st Initial) | F. Bahr T. Stark |
| Session | 65 | | |
| Date | 06/24/21 | | |

| Sample ID | Location Name | Sample taken? | Duplicate sample? | Time | Volume | Protocol Notes | Comments |
|------------------|------------------|-------------------------------------|--------------------------|------|--------|---|----------|
| Nutrients | | | | | | | |
| NMH210624-N-1 | Maalaea Harbor | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 7:57 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |
| NMC210624-N-1 | Maalaea Condos | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 8:18 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |
| NHP210624-N-1 | Haycraft Park | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 8:37 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |
| NKP210624-N-1 | Kealia Pond | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 9:00 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |
| NKC210624-N-1 | Kihei Canoe Club | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 9:16 | 125 ml | Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters | |

| | | | | | | | |
|------------------|--|--------------------------|--------------------------|--|--------|--|--|
| Sediments | | | | | | | |
| | | <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:

Tiara Stark