### CORE ENVIRONMENTAL MONITORING FORM

**PLEASE PRINT LEGIBLY**

<table>
<thead>
<tr>
<th>Site ID #Sample Depth (meters)</th>
<th>(not total depth)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Scientist’s Name</td>
<td></td>
</tr>
<tr>
<td>Site Description</td>
<td></td>
</tr>
<tr>
<td>Group or Affiliation</td>
<td></td>
</tr>
<tr>
<td>Core monitoring type conducted</td>
<td></td>
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**Field Observations:**

- **FLOW SEVERITY:** 1-no flow 2-low 3-normal 4-flood 5-high 6-dry
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- **WATER CONDITIONS:** 1-calm 2-ripples 3-waves 4-white caps
- **PRESENT WEATHER:** 1-clear 2-cloudy 3-overcast 4-rain
- **DAYS SINCE LAST SIGNIFICANT PRECIPITATION** (runoff)
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**Coastal Area Salinity Tests and Observations:**

- **SALINITY** (ppth)
- **TIDE STAGE:** 1-low 2-falling 3-slack 4-rising 5-high

**Comments:**

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**CERTIFIED COMMUNITY SCIENTIST’S SIGNATURE**

**DATE**

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Prepared in cooperation with the Texas Commission on Environmental Quality and the United States Environmental Protection Agency.

Revised February 7, 2024.
CORE FIELD QUALITY CONTROL CHECKLIST

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General Procedures
- Gloves were worn or hand sanitizer was applied throughout.
- No chemical reagents used for testing were expired and all chemical reagents were stored in an environment protected from extreme weather prior to use. Sampling was conducted at approximately the same time/day as previous sampling events at this site, preferably before noon or after 4pm. Monitoring sample was collected from the centroid of flow with minimal streambed disturbance.
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- Sample Depth: The sample depth is either 0.3 m or 1/3 of the total depth.
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- Transparency Tube: Be careful to not scrape the streambed or disturb or kick up sediment.
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Field Audit Session
This section should be filled out by a certified trainer ONLY if a Field Audit Session was conducted. Field Audit Sessions are required at a minimum every two years.

Legible Trainer Full Name: ___________________________ Trainer Signature: ___________________________

Trainer Comments: ___________________________
# CORE ENVIRONMENTAL MONITORING FORM

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## Core Tests and Measurements:

- **AIR TEMPERATURE (°C):**
- **SECCHI DISC TRANSPARENCY (meters):**
  - Average: Disappears _________ Appears _________
- **TOTAL DEPTH (meters):**
- **TRANSPARENCY TUBE (meters):**
- **WATER TEMPERATURE (°C):**
- **DISSOLVED OXYGEN (mg/L):**
  - Average: 1st titration _________ 2nd titration _________
- **CONDUCTIVITY (μS/cm):**
- **pH (standard units):**

## Coastal Area Salinity Tests and Observations:

- **SALINITY (ppth):**
- **TIDE STAGE:** 1-low 2-falling 3-slack 4-rising 5-high

## Comments:

- ____________________________________________________________________________
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## Quality Control Checklist

- ____________________________________________________________________________

- **TOTAL TIME SPENT SAMPLING AND TRAVELING:** Minutes
- **TOTAL ROUNDTRIPT DISTANCE TRAVELED:** Miles
- **TOTAL NUMBER OF PARTICIPANTS:** __________

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Trainer Comments: ____________________________________________________________
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<table>
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<tr>
<th>M</th>
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<th>D</th>
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<th>Y</th>
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**Sample Time (military)**

<table>
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**Community Scientist’s Name**


**Site Description**


**Group or Affiliation**


**Core monitoring type**

- [ ] Standard Core
- [ ] Probe Core
- [ ] Other

**Site ID #**

1|0|1|0|1

**Sample Depth (meters)**

(not total depth)

---

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**Core Tests and Measurements:**

- **AIR TEMPERATURE (°C)**
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- **pH** (standard units)

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Legible Trainer Full Name: ___________________________ Trainer Signature: ___________________________

Trainer Comments: ____________________________________
STANDARD CORE SALINITY FIELD GUIDE – MONITORING PROCEDURES

Please note, this Field Guide is for monitoring salt or brackish waters primarily in coastal areas with a refractometer.

Equipment Needed
• Standard Core Kit (with unexpired reagents)
• Bucket
• Deionized (DI) Water or salinity calibration solution of known concentration
• Waste Bin
• Gloves or Hand Sanitizer
• Vee Gee STX-3 Refractometer
• Transparency Tube (optional for shallow waters)

At Site
1. Record Field Observations and Comments on Core Environmental Monitoring Form.

2. Hang thermometer out of direct sunlight, wait 2-3 minutes; record Air Temperature to nearest 0.5 °C.

3. Measure Transparency by selecting a method below that is most applicable to your monitoring site:
   A. Secchi Disc Transparency for deeper water, Lower Secchi disc until it disappears, mark depth, then raise Secchi disc until barely visible, and mark depth again. Average both depth readings and record to nearest 0.1 m.
   B. Transparency Tube for shallow waters:
      1. Rinse bucket and tube 2X with sample water.
      2. Standing in the centroid of flow of the waterbody and downstream of the tube, dip the tube into the water facing upstream to fill it.
         a. If centroid is not accessible, or the waterbody is unsafe to stand in, use a bucket to collect sample water and pour into the tube immediately after collection to prevent settling of suspended materials.
      3. Holding the tube vertically, look down the tube to see if the disc at the bottom is visible. If disc is not visible, release water until visible and record the water level in meters on Monitoring Form.
         a. If the tube is filled to the top and the disc is completely visible, record the measurement as > the maximum tube length (>1.2 m or >0.6 m).

4. Measure Total Depth by lowering Secchi disc into water until cord becomes slack, then raise until straight. Mark and record to 0.1 m.

5. Conduct bucket grab, rinse bucket 2X with sample water and discard water downstream.

6. Measure Water Temperature in the bucket sample with thermometer for 1-1/2 minutes. Read thermometer while in water to the nearest 0.5 °C.

Dissolved Oxygen (DO) Measurement (Titration Method)
1. Rinse 2 sample bottles and caps 2X with sample water.

2. Fill each bottle with sample water and cap below sample water surface, check for air bubbles.

Fixing the DO Sample:
1. Add 8 drops Manganous Sulfate Solution to each bottle. The bottle will overflow slightly.

2. Add 8 drops Alkaline Potassium Iodide Azide. Cap both bottles, slowly invert 25 times. Allow precipitate to settle below the shoulder of the bottles, then invert 10 more times and allow settling again.

3. Add 8 drops Sulfuric Acid. Cap both bottles and slowly invert for minimum of 3 minutes or until reagent and precipitate dissolve. Sample is now “Fixed” and can be finished at home within 4 hours if weather or other conditions warrant.

Titrating the DO Sample:
1. Rinse 1 vial 2X with a small volume of fixed solution from sample #1. Fill vial with fixed solution from sample #1 to 20 mL line and cap. Repeat for sample #2 and set aside.

2. Ensure pink titrator tip is in place and fill titrator with Sodium Thiosulfate – the plunger ring should be at 0.0. Expel air bubbles from titrator barrel. Place titrator into hole on vial cap. Add 1 drop at a time of titrator solution to vial and swirl to mix after each drop until the yellow-brown solution turns a pale yellow or straw color.

3. Uncap vial with titrator STILL INSERTED and keep tip suspended above mouth of vial. Add 8 drops of Starch Indicator Solution, cap vial, and swirl to mix.
4. Continue titration drops and swirls, 1 drop at a time, until the solution becomes clear. Check against white background for any remaining color.

5. Read and record total number of units at plunger ring to nearest 0.1 mg/L under 1st titration. Eject remainder of titrator solution into vial and dispose of vial solution in waste container.

6. Repeat titration process (Steps 1-5) with fixed solution for sample #2 and record these results under 2nd titration. The second result must be within 0.5 mg/L of the 1st titration, if not repeat steps 1-5 for sample #1. If error limit still isn’t met repeat steps 1-5 for sample #2. If repeating steps 1-5 for both samples doesn’t meet the error limit, collect a new bucket grab and start over from the beginning with step #1.

7. Calculate the average of both titration results to nearest 0.1 mg/L and record under Dissolved Oxygen.

8. Rinse DO bottles, titration vials, and caps 2X with DI water.

**Refractometer**

Calibrate with DI water or salinity calibration solution. Record 0 under Standard Value in the Conductivity/Salinity row on Monitoring Form if using DI water or the concentration of the salinity calibration solution.

**Pre-Test Calibration**

1. Rinse the prism and translucent cover flap 2X with DI water or salinity calibration solution.

2. Using a pipette, place a few drops of DI water or salinity calibration solution on the prism. Cover the prism with the flap and wait until the temperature equilibrates and the measurement stabilizes.

3. Hold to a light source and look through the eyepiece. Observe the scale inside the field of view.

4. Record the Pre-Test Calibration Initial Reading.

5. The blue line on the scale should read 0 with DI water or the salinity calibration concentration.
   a. If not, use the mini screwdriver to loosen the screw on the refractometer ring. Adjust the ring until the scale reads 0 with DI water or the salinity calibration concentration.

The meter is now calibrated. Record under Calibrated To on Monitoring Form.

6. Rinse refractometer 2X with DI water and dry.

**Measurement**

1. Rinse refractometer 2X with sample water.

2. Use the pipette to cover the prism with sample water. Close the cover flap and make sure there are no air bubbles.

3. Wait until the temperature equilibrates and the measurement stabilizes.

4. Hold to a light source, look through the eyepiece, and record the Salinity measurement.

**Post-Test Calibration**

1. Rinse the prism and translucent cover flap 2X with DI water or salinity calibration solution.

2. Using a pipette, place a few drops of DI water or salinity calibration solution on the prism. Cover the prism with the flap and wait until the temperature equilibrates and the measurement stabilizes.

3. Hold to a light source and look through the eyepiece. Observe the scale inside the field of view.

4. Record the Post-Test Calibration Initial Reading. The difference between the Calibrated To value and the Post-Test Calibration Initial Reading should meet the error limit of ±1 ppt.

**pH Measurement**

1. Rinse test tube and cap 2X with sample water.

2. Determine the type of pH viewer you are using:
   a. If using the Octet Comparator (2193 and/or 2196) or the Liquid Wide Range pH Viewer (2192), fill round test tube with sample water to the 5 mL indicator line.
   b. If using the Octa-Slide 2 Viewer (1101) with color bars (2196-01 and 2193-01) fill the square test tube with sample water to the 10 mL line.

3. Invert pH Wide Range Indicator bottle a few times to mix, add 10 drops to sample, cap tube, and invert 10 times.

4. Insert the tube in Color Comparator Viewer, remove cap, and hold up to white background. Estimate to nearest 0.1 s.u. and record under pH.

5. Rinse tube and cap 2X with DI water.

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