Hydrosphere Investigation

Data Sheet

School name: ________________________  Class or group name: __________________

Name(s) of Student(s) collecting data: _________________________________________

Measurement Time: *

Year: _____  Month: ____  Day: ____  Time: __:__ (UT)  Time: __:__ (Local)

Name of Site : ____________________________________________________________

Water State: (check one) *

☐ Normal  ☐ Flooded  ☐ Dry  ☐ Frozen  ☐ Unreachable

Note: If Normal is selected, continue below; all other selections stop here

Sky Conditions (Check one):

☐ Clear (no Clouds Visible)
☐ Clouds Visible (1% to 100% Covered by Clouds or Contrails)
☐ Obscured (More than 25% of the Sky is not Visible)

Note: selecting Obscured will prevent data entry on clouds and contrails; therefore skip the cloud type and cover and the contrail type and cover sections and proceed to the Obscured section. If clouds and contrails are visible in non-obscured areas of the sky, these data can be entered in the Metadata field.

If Clouds are Visible select all Cloud Types Seen

High (in the sky):
(Check all types seen)

☐ Cirrus  ☐ Cirrocumulus  ☐ Cirrostratus

Middle (of the sky):
(Check all types seen)

☐ Altostratus  ☐ Altocumulus

Low (in the sky):
(Check all types seen)

☐ Stratus  ☐ Stratocumulus  ☐ Cumulus

Rain or Snow Producing Clouds:
(Check all types seen)

☐ Nimbostratus  ☐ Cumulonimbus
**What Percent of the Sky is Covered by Clouds?**

(Check One) *Three-quarters or More of the Sky is Visible:*

<table>
<thead>
<tr>
<th>Cloud Cover (Check One)</th>
<th>0%</th>
<th>10 to 25%</th>
<th>25 to 50%</th>
<th>50 to 90%</th>
<th>&gt;90%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Clouds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isolated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scattered</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broken</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overcast</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Are There Contrails in the Sky?**

(Check One)  □ No Contrails  □ Contrails are Visible

If Contrails are Visible Record the Number of Each Type Seen

<table>
<thead>
<tr>
<th>Type</th>
<th>Number Observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-lived</td>
<td></td>
</tr>
<tr>
<td>Persistent Non-Spreading</td>
<td></td>
</tr>
<tr>
<td>Persistent Spreading</td>
<td></td>
</tr>
</tbody>
</table>

**What Percent of the Sky is Covered by Contrails?**

(Check one):

□ 0 to 10%  □ 10 to 25%  □ 25 to 50%  □ >50%

If you Selected Obscured (> 25% of the Sky is not Visible) (Check all that apply):

□ Blowing Snow  □ Heavy Snow  □ Heavy Rain  □ Fog

□ Sand  □ Spray  □ Volcanic Ash  □ Smoke

□ Dust  □ Haze

Comments: ______________________________________________________________
________________________________________________________________________
________________________________________________________________________
Transparency
Enter data below, depending on whether you are using the Secchi Disk or the Transparency Tube method.

Secchi Disk
Secchi Disk Test 1:
Distance from observer to:
to water surface _____ m
where disk disappears _____ m where disk reappears _____ m

OR
☐ Secchi Disk reaches the bottom and does not disappear.
  to water surface _____ m depth to the bottom of the water site ___

Secchi Disk Test 2:
Distance from observer to:
to water surface _____ m
where disk disappears _____ m where disk reappears _____ m

OR
☐ Secchi Disk reaches the bottom and does not disappear.
  to water surface _____ m depth to the bottom of the water site ___

Secchi Disk Test 3:
Distance from observer to:
to water surface _____ m
where disk disappears _____ m where disk reappears _____ m

OR
☐ Secchi Disk reaches the bottom and does not disappear.
  to water surface _____ m depth to the bottom of the water site ___

Transparency Tube
Transparency Tube Test 1: _____ cm
☐ Greater than depth of Transparency Tube

Transparency Tube Test 2: _____ cm
☐ Greater than depth of Transparency Tube

Transparency Tube Test 3: _____ cm
☐ Greater than depth of Transparency Tube

Comments: ____________________________________________________________________
______________________________________________________________________________
**Water Temperature:** Measured with (check one) ___ alcohol-filled thermometer ___ probe

Temperature Test 1: ____ °C
Temperature Test 2: ____ °C
Temperature Test 3: ____ °C

Comments: ______________________________________________________________
_____________________________________________________________________

**Dissolved Oxygen:**
Dissolved Oxygen kit: Manufacturer ________  Model _______  Salinity _____ (ppt)

Dissolved Oxygen Test 1: ____ (mg/L)
Dissolved Oxygen Test 2: ____ (mg/L)
Dissolved Oxygen Test 3: ____ (mg/L)

Dissolved Oxygen probe: Manufacturer ________  Model _______

<table>
<thead>
<tr>
<th></th>
<th>Probe Measure</th>
<th>Salinity Correction Factor</th>
<th>Dissolved Oxygen (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test 3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Salinity correction factor is taken from the manufacturer’s instructions for the probe.

Comments: ______________________________________________________________
_____________________________________________________________________

**Electrical Conductivity:**
Temperature of water sample being tested: ____ °C
Conductivity of standard: ____ MicroSiemens/cm (μS/cm)

Conductivity Test 1: ____ μS/cm
Conductivity Test 2: ____ μS/cm
Conductivity Test 3: ____ μS/cm

Comments: ______________________________________________________________
Salinity

Tide Information

Time of High or Low Tide before Salinity Measurement (UTC 24hr): ______

Check one: □ High Tide: □ Low Tide

Time of High or Low Tide after Salinity Measurement (UTC 24hr): ______

Check one: □ High Tide: □ Low Tide

Location of tide: __________________________________________________________

Latitude of Measurement: ______ □ North □ South (of the equator)

Longitude of Measurement: ______ □ East □ West (of the prime meridien)

Salinity kit (for Salinity Titration samples) manufacturer _________ model _________

Salinity (Complete for method used)

Hydrometer Method

<table>
<thead>
<tr>
<th></th>
<th>Temperature of water sample in 500 mL tube (˚C)</th>
<th>Specific Gravity</th>
<th>Salinity of Sample (ppt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test 3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Salinity Titration Method

Salinity Test 1: ____ ppt

Salinity Test 2: ____ ppt

Salinity Test 3: ____ ppt

Comments: ______________________________________________________________
_______________________________________________________________________

Water pH: Measured with: (check one) □ pH Paper □ pH Meter

<table>
<thead>
<tr>
<th>If salt added, conductivity (μS/cm)</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>

Value of buffers used: □ pH 4 □ pH 7 □ pH 10 (Check all used)

Comments: ______________________________________________________________
_______________________________________________________________________
Alkalinity:
Alkalinity kit: manufacturer __________ model __________
Kit used reads alkalinity directly
Alkalinity Test 1: ____ mg/L as CaCO3
Alkalinity Test 2: ____ mg/L as CaCO3
Alkalinity Test 3: ____ mg/L as CaCO3

Kit used counts drops

<table>
<thead>
<tr>
<th>Number of drops</th>
<th>X</th>
<th>Conversion constant for your kit</th>
<th>= Alkalinity (mg/L as CaCO3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test 3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments: ______________________________________________________________
_______________________________________________________________________

Nitrate
Nitrate kit: manufacturer __________ model __________

<table>
<thead>
<tr>
<th>Nitrate and Nitrite (mg/L NO₃⁻N + NO₂⁻N)</th>
<th>Nitrate (mg/L NO₂-N) Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test 1</td>
<td></td>
</tr>
<tr>
<td>Test 2</td>
<td></td>
</tr>
<tr>
<td>Test 3</td>
<td></td>
</tr>
</tbody>
</table>

Comments: ______________________________________________________________
_______________________________________________________________________