

# Dissolved Oxygen Analysis Log Sheet

Institute of Ocean Sciences  
Water Properties Group



Last Updated: July 2018

| Cruise and Analysis Information                                                |                                |    |  |    |      |      | Nisk ID | Nisk Int V S | Sample ID | Flask 1 | Draw T 1 (°C) | OXY-1 (mL/L) | OXY-1 Comments | Nisk ID     | Sample ID | Flask 2 | Draw T 2 (°C) | OXY-2 (mL/L) | OXY-2 Comments |
|--------------------------------------------------------------------------------|--------------------------------|----|--|----|------|------|---------|--------------|-----------|---------|---------------|--------------|----------------|-------------|-----------|---------|---------------|--------------|----------------|
| Cruise Number:                                                                 | 2019-008                       | 1  |  | 1  | 2007 | 10.4 | 0.00    | anoxic       | 1         |         |               |              |                |             |           |         |               |              |                |
| Event:                                                                         | 1                              | 2  |  | 2  | 2098 | 10.3 | 0.00    | anoxic       | 2         |         |               |              |                |             |           |         |               |              |                |
| Station:                                                                       | S103                           | 3  |  | 3  | 3020 | 10.3 | 0.00    | anoxic       | 3         |         |               |              |                |             |           |         |               |              |                |
| Event Date (Local):                                                            | AUG 14/19                      | 4  |  | 4  | 650  | 10.3 | 0.037   | less anoxic  | 4         | 4       | 2000          | 10.3         | 0.015          | less anoxic |           |         |               |              |                |
| Analysis Date (Local):                                                         | AUG 17, 2019                   | 5  |  | 5  | 2061 | 10.4 | 0.251   |              | 5         |         |               |              |                |             |           |         |               |              |                |
| Analyst:                                                                       | MS 11.11                       | 6  |  | 6  | 691  | 10.3 | 0.490   |              | 6         |         |               |              |                |             |           |         |               |              |                |
| Stdization Date (Local):                                                       | AUG 16, 2019                   | 7  |  | 7  | 1314 | 10.4 | 0.660   |              | 7         |         |               |              |                |             |           |         |               |              |                |
| KIO <sub>3</sub> N:                                                            | 0.0118243                      | 8  |  | 8  | 425  | 10.3 | 0.666   |              | 8         |         |               |              |                |             |           |         |               |              |                |
| Standard Titer:                                                                | 0.4901871                      | 9  |  | 9  | 429  | 10.3 | 0.644   |              | 9         |         |               |              |                |             |           |         |               |              |                |
| Blank Titer:                                                                   | 0.0007229                      | 10 |  | 10 | 1470 | 10.3 | 0.549   |              | 10        |         |               |              |                |             |           |         |               |              |                |
| THIO N:                                                                        | 0.241312                       | 11 |  | 11 | 3070 | 10.3 | 0.693   |              | 11        |         |               |              |                |             |           |         |               |              |                |
| Sample Flask Water Seal?                                                       | Yes                            | 12 |  | 12 | 2040 | 10.4 | 0.950   |              | 12        | 12      | 2035          | 10.4         | 0.951          |             |           |         |               |              |                |
|                                                                                | No                             | 13 |  | 13 | 1019 | 11.0 | 2.694   |              | 13        |         |               |              |                |             |           |         |               |              |                |
| Reagent Change?                                                                | MnCl <sub>2</sub>              | 14 |  | 14 | 3075 | 11.3 | 3.086   |              | 14        |         |               |              |                |             |           |         |               |              |                |
| (Please circle reagent that was changed prior to sampling and standardization) | NaI/NaOH                       | 15 |  | 15 | 3200 | 12.4 | 3.582   |              | 15        |         |               |              |                |             |           |         |               |              |                |
| NOTE NEW BATCH IN LOG BOOK                                                     | H <sub>2</sub> SO <sub>4</sub> | 16 |  | 16 | 1015 | 13.8 | 5.123   |              | 16        | 16      | 1465          | 13.9         | 5.125          |             |           |         |               |              |                |
|                                                                                | KIO <sub>3</sub>               | 17 |  | 17 | 438  | 16.1 | 6.763   |              | 17        |         |               |              |                |             |           |         |               |              |                |
|                                                                                | THIO                           | 18 |  |    |      |      |         |              | 18        |         |               |              |                |             |           |         |               |              |                |
| Notes:                                                                         |                                | 19 |  |    |      |      |         |              | 19        |         |               |              |                |             |           |         |               |              |                |
|                                                                                |                                | 20 |  |    |      |      |         |              | 20        |         |               |              |                |             |           |         |               |              |                |
|                                                                                |                                | 21 |  |    |      |      |         |              | 21        |         |               |              |                |             |           |         |               |              |                |
|                                                                                |                                | 22 |  |    |      |      |         |              | 22        |         |               |              |                |             |           |         |               |              |                |
|                                                                                |                                | 23 |  |    |      |      |         |              | 23        |         |               |              |                |             |           |         |               |              |                |
|                                                                                |                                | 24 |  |    |      |      |         |              | 24        |         |               |              |                |             |           |         |               |              |                |

Bottle integrity: First test the top vent (V) by opening the lower spigot (S) then test the spigot by opening the vent. Mark 'x' in the appropriate column if either fails the integrity check and explain this in the comments column.

# Dissolved Oxygen Analysis Log Sheet

Institute of Ocean Sciences  
Water Properties Group



Last Updated: July 2018

| Cruise and Analysis Information                                                | Nisk ID | Nisk Int V S | Sample ID       | Flask 1 | Draw T 1 (°C) | OXY-1 (mL/L) | OXY-1 Comments | Nisk ID | Sample ID       | Flask 2 | Draw T 2 (°C) | OXY-2 (mL/L) | OXY-2 Comments |
|--------------------------------------------------------------------------------|---------|--------------|-----------------|---------|---------------|--------------|----------------|---------|-----------------|---------|---------------|--------------|----------------|
| Cruise Number: 2019-008                                                        | 1       |              | 18              | 3046    | 9.7           | 2.793        |                | 1       |                 |         |               |              |                |
| Event: 2                                                                       | 2       |              | 19              | 2089    | 9.7           | 2.870        |                | 2       |                 |         |               |              |                |
| Station: 59                                                                    | 3       |              | 20 <sup>A</sup> | 371     | 10.3          | 3.278        |                | 3       | 20 <sup>B</sup> | 2055    | 10.3          | 3.276        |                |
| Event Date (Local): 14 AUG 2019                                                | 4       |              | 21              | 1094    | 10.4          | 3.366        |                | 4       |                 |         |               |              |                |
| Analysis Date (Local): AUG 17/19                                               | 5       |              | 22              | 396     | 10.6          | 3.451        |                | 5       |                 |         |               |              |                |
| Analyst: H.A.                                                                  | 6       |              | 23              | 471     | 10.7          | 3.548        |                | 6       |                 |         |               |              |                |
| Stdization Date (Local): AUG 16/19                                             | 7       |              | 24              | 3137    | 10.9          | 3.678        |                | 7       |                 |         |               |              |                |
| KIO <sub>3</sub> N: 0.0118243                                                  | 8       |              | 25              | 3049    | 11.0          | 3.718        |                | 8       |                 |         |               |              |                |
| Standard Titer: 0.4901871                                                      | 9       |              | 26              | 1055    | 11.1          | 3.860        |                | 9       |                 |         |               |              |                |
| Blank Titer: 0.0007229                                                         | 10      |              | 27              | 1406    | 11.3          | 3.925        |                | 10      |                 |         |               |              |                |
| THIO N: 0.2411312                                                              | 11      |              | 28 <sup>A</sup> | 2060    | 11.7          | 4.172        |                | 11      | 28 <sup>B</sup> | 2068    | 11.7          | 4.162        |                |
| Sample Flask Water Seal? <input checked="" type="radio"/> Yes                  | 12      |              | 29              | 3059    | 11.8          | 4.231        |                | 12      |                 |         |               |              |                |
|                                                                                | 13      |              | 30              | 3073    | 11.8          | 4.231        |                | 13      |                 |         |               |              |                |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      |              |                 |         |               |              |                | 14      |                 |         |               |              |                |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      |              |                 |         |               |              |                | 15      |                 |         |               |              |                |
| NaI/NaOH                                                                       | 16      |              |                 |         |               |              |                | 16      |                 |         |               |              |                |
| H <sub>2</sub> SO <sub>4</sub>                                                 | 17      |              |                 |         |               |              |                | 17      |                 |         |               |              |                |
| NOTE NEW BATCH IN LOG BOOK                                                     | 18      |              |                 |         |               |              |                | 18      |                 |         |               |              |                |
| KIO <sub>3</sub>                                                               | 19      |              |                 |         |               |              |                | 19      |                 |         |               |              |                |
| THIO                                                                           | 20      |              |                 |         |               |              |                | 20      |                 |         |               |              |                |
|                                                                                | 21      |              |                 |         |               |              |                | 21      |                 |         |               |              |                |
|                                                                                | 22      |              |                 |         |               |              |                | 22      |                 |         |               |              |                |
|                                                                                | 23      |              |                 |         |               |              |                | 23      |                 |         |               |              |                |
|                                                                                | 24      |              |                 |         |               |              |                | 24      |                 |         |               |              |                |

Bottle integrity: First test the top vent (V) by opening the lower spigot (S) then test the spigot by opening the vent. Mark 'x' in the appropriate column if either fails the integrity check and explain this in the comments column.

Dissolved Oxygen Analysis Log Sheet

Institute of Ocean Sciences  
Water Properties Group



Last Updated: July 2018

| Cruise and Analysis Information                                                | Nisk ID | Nisk Int V S | Sample ID | Flask 1 | Draw T 1 (°C) | OXY-1 (mL/L) | OXY-1 Comments | Nisk ID | Sample ID | Flask 2 | Draw T 2 (°C) | OXY-2 (mL/L) | OXY-2 Comments |
|--------------------------------------------------------------------------------|---------|--------------|-----------|---------|---------------|--------------|----------------|---------|-----------|---------|---------------|--------------|----------------|
| Cruise Number: 19-008                                                          | 1       | ✓✓           | 31        | 3057    | 8.5           | 8.5          | 1.525          | 1       |           |         |               |              |                |
| Event: 8                                                                       | 2       | ✓✓           | 32        | 3030    | 10.1          | 3.658        |                | 2       |           |         |               |              |                |
| Station: P1                                                                    | 3       |              | 33A       | 2065    | 14.6          | 6.710        | ⇒              | 3       | 33B       | 3005    | 14.6          | 6.718        |                |
| Event Date (Local): 15/8/19                                                    | 4       |              |           |         |               |              |                | 4       |           |         |               |              |                |
| Analysis Date (Local): AUG 17/19                                               | 5       |              |           |         |               |              |                | 5       |           |         |               |              |                |
| Analyst: J.H.                                                                  | 6       |              |           |         |               |              |                | 6       |           |         |               |              |                |
| Stdization Date (Local): AUG 16/19                                             | 7       |              |           |         |               |              |                | 7       |           |         |               |              |                |
| KIO <sub>3</sub> N: 1.0118243                                                  | 8       |              |           |         |               |              |                | 8       |           |         |               |              |                |
| Standard Titer: 0.4901871                                                      | 9       |              |           |         |               |              |                | 9       |           |         |               |              |                |
| Blank Titer: 0.0007229                                                         | 10      |              |           |         |               |              |                | 10      |           |         |               |              |                |
| THIO N: 0.241312                                                               | 11      |              |           |         |               |              |                | 11      |           |         |               |              |                |
| Sample Flask Water Seal? Yes                                                   | 12      |              |           |         |               |              |                | 12      |           |         |               |              |                |
| No                                                                             | 13      |              |           |         |               |              |                | 13      |           |         |               |              |                |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      |              |           |         |               |              |                | 14      |           |         |               |              |                |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      |              |           |         |               |              |                | 15      |           |         |               |              |                |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      |              |           |         |               |              |                | 16      |           |         |               |              |                |
|                                                                                | 17      |              |           |         |               |              |                | 17      |           |         |               |              |                |
|                                                                                | 18      |              |           |         |               |              |                | 18      |           |         |               |              |                |
| Notes:                                                                         | 19      |              |           |         |               |              |                | 19      |           |         |               |              |                |
|                                                                                | 20      |              |           |         |               |              |                | 20      |           |         |               |              |                |
|                                                                                | 21      |              |           |         |               |              |                | 21      |           |         |               |              |                |
|                                                                                | 22      |              |           |         |               |              |                | 22      |           |         |               |              |                |
|                                                                                | 23      |              |           |         |               |              |                | 23      |           |         |               |              |                |
|                                                                                | 24      |              |           |         |               |              |                | 24      |           |         |               |              |                |

Bottle integrity: First test the top vent (V) by opening the lower spigot (S) then test the spigot by opening the vent. Mark 'x' in the appropriate column if either fails the integrity check and explain this in the comments column.

# Dissolved Oxygen Analysis Log Sheet

Institute of Ocean Sciences  
Water Properties Group



Last Updated: July 2018

| Cruise and Analysis Information                                                |                                | Nisk ID | Nisk Int V S | Sample ID | Flask 1 | Draw T 1 (°C) | OXY-1 (mL/L) | OXY-1 Comments             | Nisk ID | Sample ID | Flask 2 | Draw T 2 (°C) | OXY-2 (mL/L) | OXY-2 Comments  |
|--------------------------------------------------------------------------------|--------------------------------|---------|--------------|-----------|---------|---------------|--------------|----------------------------|---------|-----------|---------|---------------|--------------|-----------------|
| Cruise Number:                                                                 | 2019-008                       | 1       | ✓✓           | 46A       | 3074    | 8.2           | 4.974        | DIC TAKEN BT 6 OVERTITRATE | 1       | 46B       | 930     | ?             | 2.033        | USED 8.2 NISK 1 |
| Event:                                                                         | 12                             | 2       | ✓✓           | 48        | 3133    | 8.8           | 2.181        |                            | 2       |           |         |               |              | NISK 3          |
| Station:                                                                       | PZ                             | 3       | ✓✓           | 50        | 3103    | 9.3           | 4.198        |                            | 3       |           |         |               |              | NISK 5          |
| Event Date (Local):                                                            | 15/8/19                        | 4       | ✓✓           | 52A       | 3080    | 10.1          | 6.024        |                            | 4       | 52B       | 3101    | 10.2          | 6.027        | NISK 7          |
| Analysis Date (Local):                                                         | 17.08.19                       | 5       | ✓✓           | 54        | 3079    | 13.3          | 6.950        |                            | 5       |           |         |               |              | NISK 9          |
| Analyst:                                                                       | MG                             | 6       | ✓✓           | 56        | 3085    | 18.0          | 5.874        |                            | 6       |           |         |               |              | NISK 11         |
| Stdization Date (Local):                                                       | AUG 16, 2019                   | 7       | ✓✓           | 58        | 3142    | 18.3          | 5.834        |                            | 7       |           |         |               |              | NISK 13         |
| KIO <sub>3</sub> N:                                                            | 0.018243                       | 8       |              |           |         |               |              |                            | 8       |           |         |               |              |                 |
| Standard Titer:                                                                | 0.4901871                      | 9       |              |           |         |               |              |                            | 9       |           |         |               |              |                 |
| Blank Titer:                                                                   | 0.0007229                      | 10      |              |           |         |               |              |                            | 10      |           |         |               |              |                 |
| THIO N:                                                                        | 0.241312                       | 11      |              |           |         |               |              |                            | 11      |           |         |               |              |                 |
| Sample Flask Water Seal?                                                       | Yes                            | 12      |              |           |         |               |              |                            | 12      |           |         |               |              |                 |
|                                                                                | No                             | 13      |              |           |         |               |              |                            | 13      |           |         |               |              |                 |
| Reagent Change?                                                                | MnCl <sub>2</sub>              | 14      |              |           |         |               |              |                            | 14      |           |         |               |              |                 |
| (Please circle reagent that was changed prior to sampling and standardization) | NaI/NaOH                       | 15      |              |           |         |               |              |                            | 15      |           |         |               |              |                 |
|                                                                                | H <sub>2</sub> SO <sub>4</sub> | 16      |              |           |         |               |              |                            | 16      |           |         |               |              |                 |
| NOTE NEW BATCH IN LOG BOOK                                                     | KIO <sub>3</sub>               | 17      |              |           |         |               |              |                            | 17      |           |         |               |              |                 |
|                                                                                | THIO                           | 18      |              |           |         |               |              |                            | 18      |           |         |               |              |                 |
| Notes:                                                                         |                                | 19      |              |           |         |               |              |                            | 19      |           |         |               |              |                 |
|                                                                                |                                | 20      |              |           |         |               |              |                            | 20      |           |         |               |              |                 |
|                                                                                |                                | 21      |              |           |         |               |              |                            | 21      |           |         |               |              |                 |
|                                                                                |                                | 22      |              |           |         |               |              |                            | 22      |           |         |               |              |                 |
|                                                                                |                                | 23      |              |           |         |               |              |                            | 23      |           |         |               |              |                 |
|                                                                                |                                | 24      |              |           |         |               |              |                            | 24      |           |         |               |              |                 |

Bottle integrity: First test the top vent (V) by opening the lower spigot (S) then test the spigot by opening the vent. Mark 'x' in the appropriate column if either fails the integrity check and explain this in the comments column.

# Dissolved Oxygen Analysis Log Sheet

Institute of Ocean Sciences  
Water Properties Group



Last Updated: July 2018

| Cruise and Analysis Information                                                |                                | Nisk ID | Nisk Int V S | Sample ID        | Flask 1 | Draw T 1 (°C) | OXY-1 (mL/L) | OXY-1 Comments                         | Nisk ID | Sample ID        | Flask 2 | Draw T 2 (°C) | OXY-2 (mL/L) | OXY-2 Comments            |
|--------------------------------------------------------------------------------|--------------------------------|---------|--------------|------------------|---------|---------------|--------------|----------------------------------------|---------|------------------|---------|---------------|--------------|---------------------------|
| Cruise Number:                                                                 | 2019-008                       | 1       | ✓✓           | 90               | 3194    | 5.2           | 0.469        | LEAKING AT BOTTOM CAP - TOP CAP OFFSET | 1       |                  |         |               |              |                           |
| Event:                                                                         | 17                             | 2       | ✓✓           | 91               | 94      | 5.1           | 0.370        |                                        | 2       |                  |         |               |              |                           |
| Station:                                                                       | P4                             | 3       | ✓✓           | 92               | 621     | 5.2           | 0.365        |                                        | 3       |                  |         |               |              |                           |
| Event Date (Local):                                                            | 15-08-19                       | 4       |              | 93               | 1408    | 5.6           | 0.205        |                                        | 4       |                  |         |               |              |                           |
| Analysis Date (Local):                                                         | 17-08-19                       | 5       |              | 94 <sup>A</sup>  | 3050    | 5.9           | 0.241        | ⇒                                      | 5       | 94 <sup>B</sup>  | 1407    | 6.1           | 0.235        |                           |
| Analyst:                                                                       | MC                             | 6       |              | 95               | 3161    | 6.3           | 0.491        |                                        | 6       |                  |         |               |              |                           |
| Stdization Date (Local):                                                       | 15-08-19                       | 7       |              | 96               | 3091    | 6.8           | 1.198        | OVERTITRATE COULD NOT SEE CURVE        | 7       |                  |         |               |              |                           |
| KIO <sub>3</sub> N:                                                            | 0.0118243                      | 8       |              | 97               | 196     | 7.5           | 1.892        |                                        | 8       |                  |         |               |              |                           |
| Standard Titer:                                                                | 0.4901871                      | 9       |              | 98 <sup>A</sup>  | 3084    | 7.7           | 2.391        | ⇒                                      | 9       | 98 <sup>B</sup>  | 3086    | 7.9           | 2.400        |                           |
| Blank Titer:                                                                   | 0.007229                       | 10      |              | 99               | 1442    | 8.3           | 2.729        |                                        | 10      |                  |         |               |              |                           |
| THIO N:                                                                        | 0.241312                       | 11      |              | 100              | 3089    | 8.5           | 2.965        |                                        | 11      |                  |         |               |              |                           |
| Sample Flask Water Seal?                                                       | Yes                            | 12      |              | 101              | 3090    | 8.7           | 3.181        |                                        | 12      |                  |         |               |              |                           |
|                                                                                | No                             | 13      |              | 102              | 2094    | 8.6           | 4.121        |                                        | 13      |                  |         |               |              |                           |
| Reagent Change?                                                                | MnCl <sub>2</sub>              | 14      |              | 103              | 3088    | 8.7           | 5.185        |                                        | 14      |                  |         |               |              |                           |
| (Please circle reagent that was changed prior to sampling and standardization) | NaI/NaOH                       | 15      |              | 104              | 3000    | 9.2           | 6.277        | OVERTITRATE LATE IN CURVE              | 15      |                  |         |               |              |                           |
| NOTE NEW BATCH IN LOG BOOK                                                     | H <sub>2</sub> SO <sub>4</sub> | 16      |              | 105              | 1422    | 10.9          | 6.900        |                                        | 16      |                  |         |               |              |                           |
|                                                                                | KIO <sub>3</sub>               | 17      |              | 106 <sup>A</sup> | 3180    | 11.4          | 6.650        | ⇒ 15.1 °C                              | 17      | 106 <sup>B</sup> | 3173    | 15.2          | 6.661        | OVERTITRATE LATE IN CURVE |
|                                                                                | THIO                           | 18      |              | 107              | 3458    | 18.6          | 5.705        |                                        | 18      |                  |         |               |              |                           |
| Notes:                                                                         |                                | 19      |              | 108              | 3106    | 18.8          | 5.691        |                                        | 19      |                  |         |               |              |                           |
|                                                                                |                                | 20      |              |                  |         |               |              |                                        | 20      |                  |         |               |              |                           |
|                                                                                |                                | 21      |              |                  |         |               |              |                                        | 21      |                  |         |               |              |                           |
|                                                                                |                                | 22      |              |                  |         |               |              |                                        | 22      |                  |         |               |              |                           |
|                                                                                |                                | 23      |              |                  |         |               |              |                                        | 23      |                  |         |               |              |                           |
|                                                                                |                                | 24      |              |                  |         |               |              |                                        | 24      |                  |         |               |              |                           |

Bottle integrity: First test the top vent (V) by opening the lower spigot (S) then test the spigot by opening the vent. Mark 'x' in the appropriate column if either fails the integrity check and explain this in the comments column.

# Dissolved Oxygen Analysis Log Sheet

Institute of Ocean Sciences  
Water Properties Group



Last Updated: July 2018

| Cruise and Analysis Information                                                |                                | Nisk ID | Nisk Int V S | Sample ID | Flask 1 | Draw T 1 (°C) | OXY-1 (mL/L) | OXY-1 Comments                                      | Nisk ID | Sample ID | Flask 2 | Draw T 2 (°C) | OXY-2 (mL/L) | OXY-2 Comments |
|--------------------------------------------------------------------------------|--------------------------------|---------|--------------|-----------|---------|---------------|--------------|-----------------------------------------------------|---------|-----------|---------|---------------|--------------|----------------|
| Cruise Number:                                                                 | 2019-008                       | 1       |              | 186A      | 3158    | 4.2           | 1.813        | → OVERTITRATE NO CURVE SWITCH TO LOW O <sub>2</sub> | 1       | 186B      | 439     | 4.5           | 1.309        |                |
| Event:                                                                         | 28                             | 2       |              | 187       | 3199    | 4.5           | 0.642        |                                                     | 2       |           |         |               |              |                |
| Station:                                                                       | P8                             | 3       |              | 188       | 3117    | 5.0           | 0.381        |                                                     | 3       |           |         |               |              |                |
| Event Date (Local):                                                            | 16 AUG 2019                    | 4       |              | 189       | 2007    | 5.5           | 0.240        |                                                     | 4       |           |         |               |              |                |
| Analysis Date (Local):                                                         | 17.08.19                       | 5       |              | 190       | 3192    | 6.0           | 0.268        |                                                     | 5       |           |         |               |              |                |
| Analyst:                                                                       | MG                             | 6       |              | 191       | 3094    | 6.3           | 0.490        |                                                     | 6       |           |         |               |              |                |
| Stdization Date (Local):                                                       | 15.08.19                       | 7       |              | 192       | 3033    | 6.9           | 1.340        |                                                     | 7       |           |         |               |              |                |
| KIO <sub>3</sub> N:                                                            | 0.0118243                      | 8       |              | 193       | 3065    | 7.3           | 2.069        |                                                     | 8       |           |         |               |              |                |
| Standard Titer:                                                                | 0.4901871                      | 9       |              | 194       | 3062    | 7.7           | 2.596        |                                                     | 9       |           |         |               |              |                |
| Blank Titer:                                                                   | 0.0007229                      | 10      |              | 195A      | 3054    | 8.2           | 3.320        | →                                                   | 10      | 195B      | 2047    | 8.3           | 3.317        |                |
| THIO N:                                                                        | 0.241312                       | 11      |              | 196       | 2092    | 8.5           | 3.534        |                                                     | 11      |           |         |               |              |                |
| Sample Flask Water Seal?                                                       | Yes                            | 12      |              | 197       | 3032    | 8.6           | 3.950        |                                                     | 12      |           |         |               |              |                |
|                                                                                | No                             | 13      |              | 198       | 3116    | 9.0           | 5.765        | OVERTITRATE BAD CURVE                               | 13      |           |         |               |              |                |
| Reagent Change?                                                                | MnCl <sub>2</sub>              | 14      |              | 199       | 3009    | 9.5           | 6.353        | top valve open                                      | 14      |           |         |               |              |                |
| (Please circle reagent that was changed prior to sampling and standardization) | NaI/NaOH                       | 15      |              | 200A      | 2043    | 10.05         | 6.577        | →                                                   | 15      | 200B      | 2032    | 10.6          | 6.574        |                |
| NOTE NEW BATCH IN LOG BOOK                                                     | H <sub>2</sub> SO <sub>4</sub> | 16      |              | 201       | 2016    | 11.1          | 6.693        |                                                     | 16      |           |         |               |              |                |
|                                                                                | KIO <sub>3</sub>               | 17      |              | 202       | 2015    | 13.1          | 7.114        | OVERTITRATE NO CURVE                                | 17      |           |         |               |              |                |
|                                                                                | THIO                           | 18      |              | 203       | 2019    | 15.4          | 6.608        |                                                     | 18      |           |         |               |              |                |
| Notes:                                                                         |                                | 19      |              | 204       | 3109    | 17.1          | 6.068        |                                                     | 19      |           |         |               |              |                |
| SHARK                                                                          |                                | 20      |              | 205A      | 3072    | 18.0          | 5.791        | →                                                   | 20      | 205B      | 2027    | 18.1          | 5.794        |                |
|                                                                                |                                | 21      |              | 206       | 3100    | 18.1          | 5.778        |                                                     | 21      |           |         |               |              |                |
|                                                                                |                                | 22      |              | 207       | 1429    | 18.1          | 5.778        |                                                     | 22      |           |         |               |              |                |
|                                                                                |                                | 23      |              | 208       | 3145    | 18.1          | 5.779        |                                                     | 23      |           |         |               |              |                |
|                                                                                |                                | 24      |              | 209       |         |               |              |                                                     | 24      |           |         |               |              |                |

Bottle integrity: First test the top vent (V) by opening the lower spigot (S) then test the spigot by opening the vent. Mark 'x' in the appropriate column if either fails the integrity check and explain this in the comments column.

# Dissolved Oxygen Analysis Log Sheet

Institute of Ocean Sciences  
Water Properties Group



Last Updated: July 2018

| Cruise and Analysis Information                                                |                                |    |    |      |      |      | Nisk ID | Nisk Int V S                                                                  | Sample ID | Flask 1 | Draw T 1 (°C) | OXY-1 (mL/L) | OXY-1 Comments | Nisk ID | Sample ID | Flask 2 | Draw T 2 (°C) | OXY-2 (mL/L) | OXY-2 Comments |
|--------------------------------------------------------------------------------|--------------------------------|----|----|------|------|------|---------|-------------------------------------------------------------------------------|-----------|---------|---------------|--------------|----------------|---------|-----------|---------|---------------|--------------|----------------|
| Cruise Number:                                                                 | 2019-008                       | 1  | ✓✓ | 274  | 2087 | 3.5  | 2.296   | 1-4 + 5A capped then uncapped to add chems<br>OVERTITRATE COULD NOT SEE CURVE | 1         |         |               |              |                | 1       |           |         |               |              |                |
| Event:                                                                         | 39                             | 2  | ✓✓ | 275  | 2088 | 3.3  | 2.307   |                                                                               | 2         |         |               |              |                | 2       |           |         |               |              |                |
| Station:                                                                       | P12                            | 3  | ✓✓ | 276  | 3020 | 3.4  | 2.293   |                                                                               | 3         |         |               |              |                | 3       |           |         |               |              |                |
| Event Date (Local):                                                            | 17.08.19                       | 4  | ✓✓ | 277  | 650  | 3.5  | 1.902   |                                                                               | 4         |         |               |              |                | 4       |           |         |               |              |                |
| Analysis Date (Local):                                                         | 26.08.19                       | 5  | ✓✓ | 278A | 2000 | 3.8  | 1.309   | ⇒                                                                             | 5         | 278B    | 2069          | 4.3          | 1.312          | 5       |           |         |               |              |                |
| Analyst:                                                                       | Ms                             | 6  | ✓✓ | 279  | 691  | 4.5  | 0.636   |                                                                               | 6         |         |               |              |                | 6       |           |         |               |              |                |
| Stdization Date (Local):                                                       | 26.08.19                       | 7  | ✓✓ | 280  | 1314 | 4.8  | 0.358   |                                                                               | 7         |         |               |              |                | 7       |           |         |               |              |                |
| KIO <sub>3</sub> N:                                                            | 0.018243                       | 8  | ✓✓ | 281  | 425  | 5.4  | 0.263   |                                                                               | 8         |         |               |              |                | 8       |           |         |               |              |                |
| Standard Titer:                                                                | 0.489766                       | 9  | ✓✓ | 282  | 429  | 5.8  | 0.294   |                                                                               | 9         |         |               |              |                | 9       |           |         |               |              |                |
| Blank Titer:                                                                   | 0.0007545                      | 10 | ✓  | 283  | 1470 | 6.2  | 0.529   | vent open (top)                                                               | 10        |         |               |              |                | 10      |           |         |               |              |                |
| THIO N:                                                                        | 0.241504                       | 11 | ✓✓ | 284A | 3070 | 6.9  | 1.532   | ⇒                                                                             | 11        | 284B    | 2040          | 7.0          | 1.522          | 11      |           |         |               |              |                |
| Sample Flask Water Seal?                                                       | Yes<br>No                      | 12 | ✓✓ | 285  | 2035 | 7.7  | 2.193   |                                                                               | 12        |         |               |              |                | 12      |           |         |               |              |                |
| Reagent Change?                                                                | MnCl <sub>2</sub>              | 13 | ✓✓ | 286  | 1019 | 8.2  | 2.337   |                                                                               | 13        |         |               |              |                | 13      |           |         |               |              |                |
| (Please circle reagent that was changed prior to sampling and standardization) | NaI/NaOH                       | 14 | ✓✓ | 287  | 3075 | 8.6  | 2.461   |                                                                               | 14        |         |               |              |                | 14      |           |         |               |              |                |
| NOTE NEW BATCH IN LOG BOOK                                                     | H <sub>2</sub> SO <sub>4</sub> | 15 | ✓✓ | 288  | 3200 | 9.0  | 2.562   |                                                                               | 15        |         |               |              |                | 15      |           |         |               |              |                |
|                                                                                | KIO <sub>3</sub>               | 16 | ✓✓ | 289A | 1015 | 9.2  | 2.704   | ⇒                                                                             | 16        | 289B    | 1465          | 9.3          | 2.702          | 16      |           |         |               |              |                |
|                                                                                | THIO                           | 17 | ✓✓ | 290  | 438  | 9.4  | 3.032   |                                                                               | 17        |         |               |              |                | 17      |           |         |               |              |                |
| Notes:                                                                         | Swift                          | 18 | ✓✓ | 291  | 3008 | 9.3  | 4.249   |                                                                               | 18        |         |               |              |                | 18      |           |         |               |              |                |
|                                                                                |                                | 19 | ✓✓ | 292  | 2075 | 9.4  | 5.282   |                                                                               | 19        |         |               |              |                | 19      |           |         |               |              |                |
|                                                                                |                                | 20 | ✓✓ | 293  | 3108 | 10.1 | 6.383   | OVERTITRATE COULD NOT SEE CURVE                                               | 20        |         |               |              |                | 20      |           |         |               |              |                |
|                                                                                |                                | 21 | ✓✓ | 294A | 2090 | 15.0 | 6.542   | ⇒                                                                             | 21        | 294B    | 1053          | 15.2         | 6.544          | 21      |           |         |               |              |                |
|                                                                                |                                | 22 | ✓✓ | 295  | 1054 | 17.9 | 5.753   | OVERTITRATE NO CURVE                                                          | 22        |         |               |              |                | 22      |           |         |               |              |                |
|                                                                                |                                | 23 | ✓✓ | 296  | 3007 | 18.2 | 5.753   |                                                                               | 23        |         |               |              |                | 23      |           |         |               |              |                |
|                                                                                |                                | 24 |    |      |      |      |         |                                                                               | 24        |         |               |              |                | 24      |           |         |               |              |                |

Bottle integrity: First test the top vent (V) by opening the lower spigot (S) then test the spigot by opening the vent. Mark 'x' in the appropriate column if either fails the integrity check and explain this in the comments column.

# Dissolved Oxygen Analysis Log Sheet

Institute of Ocean Sciences  
Water Properties Group



Last Updated: July 2018

| Cruise and Analysis Information                                                |                                | Nisk ID | Nisk Int V S | Sample ID | Flask 1 | Draw T 1 (°C) | OXY-1 (mL/L) | OXY-1 Comments               | Nisk ID | Sample ID | Flask 2 | Draw T 2 (°C) | OXY-2 (mL/L) | OXY-2 Comments |
|--------------------------------------------------------------------------------|--------------------------------|---------|--------------|-----------|---------|---------------|--------------|------------------------------|---------|-----------|---------|---------------|--------------|----------------|
| Cruise Number:                                                                 | 2019-008                       | 1       |              | 397       | 3194    | 3.5           | 2.726        | Bottle leaking @ top cap     | 1       |           |         |               |              |                |
| Event:                                                                         | 55                             | 2       |              | 398       | 94      | 2.3           | 2.672        |                              | 2       |           |         |               |              |                |
| Station:                                                                       | P16                            | 3       |              | 399A      | 621     | 3.3           | 2.666        | →                            | 3       | 399B      | 1408    | 3.4           | 2.666        |                |
| Event Date (Local):                                                            | 18.08.19                       | 4       |              | 400       | 3050    | 3.3           | 2.383        |                              | 4       |           |         |               |              |                |
| Analysis Date (Local):                                                         | 26.08.19                       | 5       |              | 401       | 1407    | 3.6           | 1.926        |                              | 5       |           |         |               |              |                |
| Analyst:                                                                       | MC                             | 6       |              | 402       | 3161    | 3.7           | 1.291        |                              | 6       |           |         |               |              |                |
| Stdization Date (Local):                                                       | 26.08.19                       | 7       |              | 403       | 3091    | 4.3           | 0.478        | Small BUBBLE                 | 7       |           |         |               |              |                |
| KIO <sub>3</sub> N:                                                            | 0.0118243                      | 8       |              | 404       | 196     | 4.6           | 0.268        | SPLIT SOME AFTER ADDING ACID | 8       |           |         |               |              |                |
| Standard Titer:                                                                | 0.489766                       | 9       |              | 405       | 3084    | 4.9           | 0.317        |                              | 9       |           |         |               |              |                |
| Blank Titer:                                                                   | 0.0007545                      | 10      |              | 406A      | 3086    | 5.5           | 0.320        | →                            | 10      | 406B      | 1442    | 5.6           | 0.313        |                |
| THIO N:                                                                        | 0.241504                       | 11      |              | 407       | 3089    | 5.7           | 0.559        |                              | 11      |           |         |               |              |                |
| Sample Flask Water Seal?                                                       | Yes<br>No                      | 12      |              | 408       | 3090    | 6.3           | 1.589        |                              | 12      |           |         |               |              |                |
| Reagent Change?                                                                | MnCl <sub>2</sub>              | 13      |              | 409       | 2094    | 6.7           | 2.209        | OVERTITRATE CRAPPY CURVE     | 13      |           |         |               |              |                |
| (Please circle reagent that was changed prior to sampling and standardization) | NaI/NaOH                       | 14      |              | 410       | 3088    | 7.1           | 3.132        |                              | 14      |           |         |               |              |                |
| NOTE NEW BATCH IN LOG BOOK                                                     | H <sub>2</sub> SO <sub>4</sub> | 15      |              | 411       | 3000    | 7.7           | 3.695        |                              | 15      |           |         |               |              |                |
|                                                                                | KIO <sub>3</sub>               | 16      |              | 412A      | 1422    | 7.8           | 3.790        | → TOP CAP LEAKING: NOT SET   | 16      | 412B      | 3180    | 7.9           | 3.783        |                |
|                                                                                | THIO                           | 17      |              | 413       | 3173    | 7.9           | 4.875        |                              | 17      |           |         |               |              |                |
| Notes:                                                                         |                                | 18      |              | 414       | 458     | 7.8           | 5.124        |                              | 18      |           |         |               |              |                |
|                                                                                |                                | 19      |              | 415       | 3106    | 8.4           | 5.922        | OVERTITRATE LATE IN CURVE    | 19      |           |         |               |              |                |
|                                                                                |                                | 20      |              | 416       | 3036    | 9.3           | 6.542        |                              | 20      |           |         |               |              |                |
|                                                                                |                                | 21      |              | 417       | 1416    | 10.1          | 6.606        |                              | 21      |           |         |               |              |                |
|                                                                                |                                | 22      |              | 418       | 3010    | 16.0          | 6.419        |                              | 22      |           |         |               |              |                |
|                                                                                |                                | 23      |              | 419A      | 3114    | 16.0          | 5.749        | →                            | 23      | 419B      | 435     | 18.0          | 5.759        |                |
|                                                                                |                                | 24      |              | 420       | 3047    | 17.9          | 5.755        |                              | 24      |           |         |               |              |                |

Bottle integrity: First test the top vent (V) by opening the lower spigot (S) then test the spigot by opening the vent. Mark 'x' in the appropriate column if either fails the integrity check and explain this in the comments column.

# Dissolved Oxygen Analysis Log Sheet

Institute of Ocean Sciences  
Water Properties Group



Last Updated: July 2018

| Cruise and Analysis Information                                                |                                | Nisk ID | Nisk Int V S | Sample ID | Flask 1 | Draw T 1 (°C) | OXY-1 (mL/L) | OXY-1 Comments                                 | Nisk ID | Sample ID | Flask 2 | Draw T 2 (°C) | OXY-2 (mL/L) | OXY-2 Comments       |
|--------------------------------------------------------------------------------|--------------------------------|---------|--------------|-----------|---------|---------------|--------------|------------------------------------------------|---------|-----------|---------|---------------|--------------|----------------------|
| Cruise Number:                                                                 | 2019-008                       | 1       |              | 536       | 3046    | 3.8           | 3.094        | FIRST TITER NO THIO? STOPPED + RE-RAN (LOOSED) | 1       |           |         |               |              |                      |
| Event:                                                                         | 71                             | 2       |              | 537       | 2089    | 3.6           | 2.754        | TOP CAP NOT SEATED - LEAKING                   | 2       |           |         |               |              |                      |
| Station:                                                                       | P20                            | 3       |              | 538       | 371     | 3.7           | 2.758        |                                                | 3       |           |         |               |              |                      |
| Event Date (Local):                                                            | 20.08.19                       | 4       |              | 539       | 2055    | 3.8           | 2.419        |                                                | 4       |           |         |               |              |                      |
| Analysis Date (Local):                                                         | 20.08.19                       | 5       |              | 540A      | 1094    | 4.0           | 1.904        | ⇒                                              | 5       | 540B      | 396     | 4.3           | 1.912        | Small BUBBLE         |
| Analyst:                                                                       | MC                             | 6       |              | 541       | 471     | 4.2           | 1.310        |                                                | 6       |           |         |               |              |                      |
| Stdization Date (Local):                                                       | 20.08.19                       | 7       |              | 542       | 3137    | 4.7           | 0.556        |                                                | 7       |           |         |               |              |                      |
| KIO <sub>3</sub> N:                                                            | 0.0118243                      | 8       |              | 543       | 3049    | 5.0           | 0.336        |                                                | 8       |           |         |               |              |                      |
| Standard Titer:                                                                | 0.489766                       | 9       |              | 544A      | 1055    | 5.4           | 0.283        | ⇒ OVERTITRATE LATE IN CURVE                    | 9       | 544B      | 1406    | 5.6           | 0.287        |                      |
| Blank Titer:                                                                   | 0.0007545                      | 10      |              | 545       | 2660    | 5.7           | 0.349        |                                                | 10      |           |         |               |              |                      |
| THIO N:                                                                        | 0.241504                       | 11      |              | 546       | 2068    | 6.0           | 0.518        |                                                | 11      |           |         |               |              |                      |
| Sample Flask Water Seal?                                                       | Yes                            | 12      |              | 547       | 3059    | 6.4           | 1.333        |                                                | 12      |           |         |               |              |                      |
|                                                                                | No                             | 13      |              | 548       | 3073    | 6.8           | 1.991        |                                                | 13      |           |         |               |              |                      |
| Reagent Change?                                                                | MnCl <sub>2</sub>              | 14      |              | 549A      | 505     | 7.0           | 2.643        | ⇒                                              | 14      | 549B      | 3057    | 7.1           | 2.644        |                      |
| (Please circle reagent that was changed prior to sampling and standardization) | NaI/NaOH                       | 15      |              | 550       | 3030    | 7.6           | 3.010        |                                                | 15      |           |         |               |              |                      |
| NOTE NEW BATCH IN LOG BOOK                                                     | H <sub>2</sub> SO <sub>4</sub> | 16      |              | 551       | 2065    | 7.8           | 3.241        |                                                | 16      |           |         |               |              |                      |
|                                                                                | KIO <sub>3</sub>               | 17      |              | 552       | 3005    | 8.2           | 3.245        |                                                | 17      |           |         |               |              |                      |
|                                                                                | THIO                           | 18      |              | 553       | 1409    | 8.2           | 4.002        |                                                | 18      |           |         |               |              |                      |
| Notes:                                                                         | pleisiosaur                    | 19      |              | 554       | 3074    | 8.5           | 5.784        |                                                | 19      |           |         |               |              |                      |
|                                                                                |                                | 20      |              | 555A      | 930     | 8.9           | 6.617        | ⇒                                              | 20      | 555B      | 3133    | 9.1           | 6.325        | ? CALLED 556 IN FILE |
|                                                                                |                                | 21      |              | 556       | 3103    | 9.6           | 6.736        |                                                | 21      |           |         |               |              |                      |
|                                                                                |                                | 22      |              | 557       | 3080    | 10.4          | 5.922        | 5 DROPS IN FLASK - WILL RETIRE FOR TITRATION   | 22      |           |         |               |              |                      |
|                                                                                |                                | 23      |              | 558       | 3101    | 17.2          | 5.745        |                                                | 23      |           |         |               |              |                      |
|                                                                                |                                | 24      |              | 559       | 3079    | 17.1          | 5.745        |                                                | 24      |           |         |               |              |                      |

Bottle integrity: First test the top vent (V) by opening the lower spigot (S) then test the spigot by opening the vent. Mark 'x' in the appropriate column if either fails the integrity check and explain this in the comments column.

# Dissolved Oxygen Analysis Log Sheet

Institute of Ocean Sciences  
Water Properties Group



Last Updated: July 2018

| Cruise and Analysis Information                                                |    | Nisk ID | Nisk Int V S | Sample ID | Flask 1 | Draw T 1 (°C) | OXY-1 (mL/L) | OXY-1 Comments                 | Nisk ID | Sample ID | Flask 2 | Draw T 2 (°C) | OXY-2 (mL/L) | OXY-2 Comments |
|--------------------------------------------------------------------------------|----|---------|--------------|-----------|---------|---------------|--------------|--------------------------------|---------|-----------|---------|---------------|--------------|----------------|
| Cruise Number: 2019-008                                                        | 1  | ✓       | ✓            | 711       | 3158    | 3.2           | 3.155        |                                | 1       |           |         |               |              |                |
| Event: 90                                                                      | 2  | ✓       | ✓            | 712       | 439     | 3.0           | 3.113        |                                | 2       |           |         |               |              |                |
| Station: P26                                                                   | 3  | ✓       | ✓            | 713       | 3199    | 3.1           | 2.876        | ⇒                              | 3       | 713       | 3117    | 3.3           | 2.882        |                |
| Event Date (Local): Aug. 23, 2019                                              | 4  | ✓       | ✓            | 714       | 2007    | 3.2           | 2.464        |                                | 4       |           |         |               |              |                |
| Analysis Date (Local): 26.08.19                                                | 5  | ✓       | ✓            | 715       | 3192    | 3.5           | 1.842        |                                | 5       |           |         |               |              |                |
| Analyst: MG                                                                    | 6  | ✓       | ✓            | 716       | 3091    | 3.5           | 1.185        |                                | 6       |           |         |               |              |                |
| Stdization Date (Local): 26.08.19                                              | 7  | ✓       | ✓            | 717       | 3033    | 4.0           | 0.505        |                                | 7       |           |         |               |              |                |
| KIO <sub>3</sub> N: 0.0118243                                                  | 8  | ✓       | ✓            | 718       | 3065    | 4.3           | 0.421        |                                | 8       |           |         |               |              |                |
| Standard Titer: 0.489766                                                       | 9  | ✓       | ✓            | 719       | 3062    | 4.7           | 0.372        |                                | 9       |           |         |               |              |                |
| Blank Titer: 6.0007545                                                         | 10 | ✓       | ✓            | 720       | 3054    | 5.2           | 0.558        | ⇒                              | 10      | 720       | 2047    | 5.2           | 0.560        |                |
| THIO N: 0.241504                                                               | 11 | ✓       | ✓            | 721       | 2092    | 5.6           | 0.726        |                                | 11      |           |         |               |              |                |
| Sample Flask Water Seal? Yes                                                   | 12 | ✓       | ✓            | 722       | 3032    | 5.7           | 1.269        |                                | 12      |           |         |               |              |                |
|                                                                                | 13 | ✓       | ✓            | 723       | 3116    | 5.9           | 0.022        |                                | 13      |           |         |               |              |                |
| Reagent Change? MnCl <sub>2</sub>                                              | 14 | ✓       | ✓            | 724       | 3009    | 6.1           | 2.555        | ⇒                              | 14      | 724       | 2043    | 6.2           | 2.539        | ?              |
| (Please circle reagent that was changed prior to sampling and standardization) | 15 | ✓       | ✓            | 725       | 2032    | 6.3           | 3.374        |                                | 15      |           |         |               |              |                |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16 | ✓       | ✓            | 726       | 2016    | 6.5           | 3.926        |                                | 16      |           |         |               |              |                |
|                                                                                | 17 | ✓       | ✓            | 727       | 2015    | 6.6           | 4.603        |                                | 17      |           |         |               |              |                |
|                                                                                | 18 | ✓       | ✓            | 728       | 2019    | 7.3           | 5.937        |                                | 18      |           |         |               |              |                |
|                                                                                | 19 | ✓       | ✓            | 729       | 3109    | 7.9           | 6.498        |                                | 19      |           |         |               |              |                |
| Notes: Shark                                                                   | 20 | ✓       | ✓            | 730       | 3072    | 8.6           | 6.517        | ⇒                              | 20      | 730       | 2027    | 8.7           | 6.520        |                |
|                                                                                | 21 | ✓       | ✓            | 731       | 3100    | 9.5           | 6.536        |                                | 21      |           |         |               |              |                |
|                                                                                | 22 | ✓       | ✓            | 732       | 1429    | 15.5          | 5.989        |                                | 22      |           |         |               |              |                |
|                                                                                | 23 | ✓       | ✓            | 733       | 3145    | 16.0          | 5.975        | OVER-TITRATE LATE IN CURVE     | 23      |           |         |               |              |                |
|                                                                                | 24 | ✓       | ✓            | 734       | 3127    | 16.0          | 6.449        | " WEIRD CURVE AGAIN LATE CURVE | 24      | 50 TWICE  |         |               |              |                |

Bottle integrity: First test the top vent (V) by opening the lower spigot (S) then test the spigot by opening the vent. Mark 'x' in the appropriate column if either fails the integrity check and explain this in the comments column.

# Dissolved Oxygen Analysis Log Sheet

Institute of Ocean Sciences  
Water Properties Group



Last Updated: July 2018

| Cruise and Analysis Information                                                        |    |  |     |      |      |       | Nisk ID                | Nisk Int V S | Sample ID | Flask 1 | Draw T 1 (°C) | OXY-1 (mL/L) | OXY-1 Comments     | Nisk ID | Sample ID | Flask 2 | Draw T 2 (°C) | OXY-2 (mL/L) | OXY-2 Comments |
|----------------------------------------------------------------------------------------|----|--|-----|------|------|-------|------------------------|--------------|-----------|---------|---------------|--------------|--------------------|---------|-----------|---------|---------------|--------------|----------------|
| Cruise Number: 2019-008                                                                | 1  |  | 868 | 2049 | 16.2 | 5.952 | LEAKING, VENT OPEN     | 1            | 868       | 2049    | 16.2          | 5.955        | LEAKING, VENT OPEN |         |           |         |               |              |                |
| Event: 101                                                                             | 2  |  | 869 | 3037 | 16.1 | 5.996 |                        | 2            | 869       | 3076    | 16.2          | 6.001        |                    |         |           |         |               |              |                |
| Station: PA-13                                                                         | 3  |  | 870 | 3014 | 16.2 | 6.001 |                        | 3            | 870       | 3091    | 16.3          | 6.010        |                    |         |           |         |               |              |                |
| Event Date (Local): 24/8/19                                                            | 4  |  | 871 | 3110 | 16.3 | 6.066 | BLACK FLECKS IN SAMPLE | 4            | 871       | 3078    | 16.3          | 6.008        |                    |         |           |         |               |              |                |
| Analysis Date (Local): 27.08.19                                                        | 5  |  |     |      |      |       |                        | 5            |           |         |               |              |                    |         |           |         |               |              |                |
| Analyst: MG                                                                            | 6  |  |     |      |      |       |                        | 6            |           |         |               |              |                    |         |           |         |               |              |                |
| Stdization Date (Local): 26.08.19                                                      | 7  |  |     |      |      |       |                        | 7            |           |         |               |              |                    |         |           |         |               |              |                |
| KIO <sub>3</sub> N: 6.0118243                                                          | 8  |  |     |      |      |       |                        | 8            |           |         |               |              |                    |         |           |         |               |              |                |
| Standard Titer: 0.489766                                                               | 9  |  |     |      |      |       |                        | 9            |           |         |               |              |                    |         |           |         |               |              |                |
| Blank Titer: 0.0007545                                                                 | 10 |  |     |      |      |       |                        | 10           |           |         |               |              |                    |         |           |         |               |              |                |
| THIO N: 0.241504                                                                       | 11 |  |     |      |      |       |                        | 11           |           |         |               |              |                    |         |           |         |               |              |                |
| Sample Flask Water Seal? <input checked="" type="radio"/> Yes <input type="radio"/> No | 12 |  |     |      |      |       |                        | 12           |           |         |               |              |                    |         |           |         |               |              |                |
| Reagent Change? MnCl <sub>2</sub>                                                      | 13 |  |     |      |      |       |                        | 13           |           |         |               |              |                    |         |           |         |               |              |                |
| (Please circle reagent that was changed prior to sampling and standardization)         | 14 |  |     |      |      |       |                        | 14           |           |         |               |              |                    |         |           |         |               |              |                |
| NOTE NEW BATCH IN LOG BOOK                                                             | 15 |  |     |      |      |       |                        | 15           |           |         |               |              |                    |         |           |         |               |              |                |
|                                                                                        | 16 |  |     |      |      |       |                        | 16           |           |         |               |              |                    |         |           |         |               |              |                |
|                                                                                        | 17 |  |     |      |      |       |                        | 17           |           |         |               |              |                    |         |           |         |               |              |                |
|                                                                                        | 18 |  |     |      |      |       |                        | 18           |           |         |               |              |                    |         |           |         |               |              |                |
|                                                                                        | 19 |  |     |      |      |       |                        | 19           |           |         |               |              |                    |         |           |         |               |              |                |
|                                                                                        | 20 |  |     |      |      |       |                        | 20           |           |         |               |              |                    |         |           |         |               |              |                |
|                                                                                        | 21 |  |     |      |      |       |                        | 21           |           |         |               |              |                    |         |           |         |               |              |                |
|                                                                                        | 22 |  |     |      |      |       |                        | 22           |           |         |               |              |                    |         |           |         |               |              |                |
|                                                                                        | 23 |  |     |      |      |       |                        | 23           |           |         |               |              |                    |         |           |         |               |              |                |
|                                                                                        | 24 |  |     |      |      |       |                        | 24           |           |         |               |              |                    |         |           |         |               |              |                |

Bottle integrity: First test the top vent (V) by opening the lower spigot (S) then test the spigot by opening the vent. Mark 'x' in the appropriate column if either fails the integrity check and explain this in the comments column.

# Dissolved Oxygen Analysis Log Sheet

Institute of Ocean Sciences  
Water Properties Group



Last Updated: July 2018

| Cruise and Analysis Information                                                |                                | Nisk ID | Nisk Int V S | Sample ID | Flask 1 | Draw T 1 (°C) | OXY-1 (mL/L) | OXY-1 Comments                               | Nisk ID | Sample ID | Flask 2 | Draw T 2 (°C) | OXY-2 (mL/L) | OXY-2 Comments       |
|--------------------------------------------------------------------------------|--------------------------------|---------|--------------|-----------|---------|---------------|--------------|----------------------------------------------|---------|-----------|---------|---------------|--------------|----------------------|
| Cruise Number: 2019-008                                                        |                                | 1       | ✓✓           | 873       | 2087    | 4.8           | 0.471        |                                              | 1       |           |         |               |              |                      |
| Event: 117                                                                     |                                | 2       | ✓✓           | 874       | 2088    | 4.7           | 0.406        |                                              | 2       |           |         |               |              |                      |
| Station: P4                                                                    |                                | 3       | ✓✓           | 875       | 3020    | 4.8           | 0.402        |                                              | 3       |           |         |               |              |                      |
| Event Date (Local): 27/8/19                                                    |                                | 4       | ✓✓           | 876A      | 650     | 5.4           | 0.240        | ⇒                                            | 4       | 876B      | 2000    | 5.4           | 0.237        |                      |
| Analysis Date (Local): 27.08.19                                                |                                | 5       | ✓✓           | 877       | 2069    | 5.9           | 0.258        |                                              | 5       |           |         |               |              |                      |
| Analyst: MG                                                                    |                                | 6       | ✓✓           | 878       | 691     | 6.3           | 0.483        |                                              | 6       |           |         |               |              |                      |
| Stdization Date (Local): 26.08.19                                              |                                | 7       | ✓✓           | 879       | 1314    | 7.1           | 1.238        |                                              | 7       |           |         |               |              |                      |
| KIO <sub>3</sub> N: 0.0118243                                                  |                                | 8       | ✓✓           | 880A      | 425     | 7.7           | 1.694        | ⇒ KENNY WILL FIX U WRONG SAMPLE ID + FLASK # | 8       | 880B      | 429     | 7.7           | 1.859        |                      |
| Standard Titer: 0.489766                                                       |                                | 9       | ✓✓           | 881       | 881     | 8.0           | 2.132        | 1470                                         | 9       |           |         |               |              |                      |
| Blank Titer: 0.0007545                                                         |                                | 10      | ✓✓           | 882       | 3070    | 8.5           | 2.607        |                                              | 10      |           |         |               |              |                      |
| THIO N: 0.241504                                                               |                                | 11      | ✓✓           | 883       | 2040    | 8.7           | 2.478        |                                              | 11      |           |         |               |              |                      |
| Sample Flask Water Seal? Yes                                                   |                                | 12      | ✓✓           | 884       | 2035    | 8.9           | 3.159        |                                              | 12      |           |         |               |              |                      |
|                                                                                | No                             | 13      | ✓✓           | 885       | 1019    | 8.7           | 3.870        |                                              | 13      |           |         |               |              |                      |
| Reagent Change? MnCl <sub>2</sub>                                              |                                | 14      | ✓X           | 886       | 3075    | 8.7           | 5.475        | ⇒ spigot leaking                             | 14      | 886B      | 3200    | 8.8           | 5.483        | OVERTITRATE NO CURVE |
| (Please circle reagent that was changed prior to sampling and standardization) | NaI/NaOH                       | 15      | ✓✓           | 887       | 1015    | 9.5           | 6.284        |                                              | 15      |           |         |               |              |                      |
| NOTE NEW BATCH IN LOG BOOK                                                     | H <sub>2</sub> SO <sub>4</sub> | 16      | ✓✓           | 888       | 1465    | 11.0          | 6.729        |                                              | 16      |           |         |               |              |                      |
|                                                                                | KIO <sub>3</sub>               | 17      | ✓✓           | 889       | 438     | 17.7          | 5.731        | OVERTITRATE NO CURVE                         | 17      |           |         |               |              |                      |
|                                                                                | THIO                           | 18      | ✓✓           | 890       | 3008    | 17.9          | 5.733        |                                              | 18      |           |         |               |              |                      |
| Notes: swift                                                                   |                                | 19      | ✓✓           | 891       | 2075    | 18.0          | 5.705        | ⇒                                            | 19      | 891B      | 3108    | 18.1          | 5.766        | ?                    |
|                                                                                |                                | 20      |              |           |         |               |              |                                              | 20      |           |         |               |              |                      |
|                                                                                |                                | 21      |              |           |         |               |              |                                              | 21      |           |         |               |              |                      |
|                                                                                |                                | 22      |              |           |         |               |              |                                              | 22      |           |         |               |              |                      |
|                                                                                |                                | 23      |              |           |         |               |              |                                              | 23      |           |         |               |              |                      |
|                                                                                |                                | 24      |              |           |         |               |              |                                              | 24      |           |         |               |              |                      |

Bottle integrity: First test the top vent (V) by opening the lower spigot (S) then test the spigot by opening the vent. Mark 'x' in the appropriate column if either fails the integrity check and explain this in the comments column.