

Dissolved Oxygen Analysis Log Sheet

Institute of Ocean Sciences
Water Properties Group



Last Updated: July 2018

NA TOOK NOTES

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:	2019.006	1		1	2099	10.9	-0.317	Sulfur smell	1					
Event:	1	2		2	2049	10.7	-0.297	Sulfur smell	2					
Station:	S103	3		3	3037	10.7	-0.295	Sulfur smell	3					
Event Date (Local):	02.06.19	4		4A	3076	10.7	-0.179	→ sulfur smell	4	4B	3014	10.7	-0.181	sulfur smell
Analysis Date (Local):	05.06.19	5		5	3081	10.7	-0.053	sulfur smell	5					
Analyst:	MG	6		6	3110	10.5	0.034		6					
Stdization Date (Local):	05.06.19	7		7	3078	10.3	0.310		7					
KIO ₃ N:	0.0118108	8		8	3131	10.1	1.100		8					
Standard Titer:	0.493307	9		9	3029	10.1	1.518		9					
Blank Titer:	0.0009402	10		10	2085	10.2	1.903	leak from bottom, adjusted	10					
THIO N:	0.240051	11		11	1459	10.1	2.170		11					
Sample Flask Water Seal?	Yes	12		12A	620	10.0	2.786	→	12	12B	622	10.1	2.787	
	No	13		13	3018	10.0	3.687		13					
Reagent Change?	MnCl ₂	14		14	3048	10.5	4.990		14					
(Please circle reagent that was changed prior to sampling and standardization)	NaI/NaOH/NA	15		15	3120	11.9	5.380		15					
NOTE NEW BATCH IN LOG BOOK	H ₂ SO ₄ CHANGED END OF LAPEROUSE	16		16A	3041	12.5	5.638	→	16	16B	3155	12.5	5.640	
	KIO ₃	17		17	3044	15.5	7.752		17					
	THIO	18							18					
Notes:	TURTLE	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.

1 Oxy SI03 200 m 19-006 Bot 1	2 Oxy SI03 185 m 19-006 Bot 2	3 Oxy SI03 165 m 19-006 Bot 3	4 A Oxy SI03 150m 19-006 Bot 4	4 B Oxy SI03 150m 19-006 Bot 4	5 Oxy SI03 135 m 19-006 Bot 5	6 Oxy SI03 120 m 19-006 Bot 6	7 Oxy SI03 110 m 19-006 Bot 7	8 Oxy SI03 100 m 19-006 Bot 8	9 Oxy SI03 97 m 19-006 Bot 9	10 Oxy SI03 90 m 19-006 Bot 10	11 Oxy SI03 85m 19-006 Bot 11	12 A Oxy SI03 75 m 19-006 Bot 12	12 B Oxy SI03 75 m 19-006 Bot 12	13 Oxy SI03 60 m 19-006 Bot 13
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14 Oxy SI03 40 m 19-006 Bot 14	15 Oxy SI03 20 m 19-006 Bot 15	16 A Oxy SI03 10 m 19-006 Bot 16	16 B Oxy SI03 10 m 19-006 Bot 16	17 Oxy SI03 0 m 19-006 Bot 17
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Turtle

Cruise and Analysis Information							Nisk ID	Nisk Int V	Nisk Int 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: 2019-006	1	✓	✓	22	3111	8.5	2.224		1						2	23B	3143	10.0	4.020	
Event: 6	2	✓	✓	23A	3099	10.1	4.020	→	3						4					
Station: P1	3	✓	✓	24	3135	12.6	7.631		5						6					
Event Date (Local): June 3, 2019	4								7						8					
Analysis Date (Local): 05.06.19	5								9						10					
Analyst: MG	6								11						12					
Stdization Date (Local): 05.06.19	7								13						14					
KIO ₃ N: 0.018108	8								15						16					
Standard Titer: 0.4933307	9								17						18					
Blank Titer: 0.0009402	10								19						20					
THIO N: 0.240051	11								21						22					
Sample Flask Water Seal? Yes	12								23						24					
Reagent Change? MnCl ₂	13																			
(Please circle reagent that was changed prior to sampling and standardization)	14																			
NOTE NEW BATCH IN LOG BOOK	15																			
	16																			
	17																			
	18																			
Notes:	19																			
turtle	20																			
	21																			
	22																			
	23																			
	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.

22
OXY
P1
Bot--10
19-006
Bot 1

23A
OXY
P1
30 m
19-006
Bot 2

23B
OXY
P1
30 r
19-006
Bot 2

24
OXY
P1
5 m
19-006
Bot 3

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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: 2019-005	1		26A	456	8.4	1.782							→ OVERTITRATE WONKY CURVE	1	26B	3093	8.4	1.776	
Event: 7	2		28	3148	9.6	1.973								2					
Station: P2	3		30	570	9.1	3.691								3					
Event Date (Local): June 3, 2019	4		32	3138	9.5	3.638								4					
Analysis Date (Local): 05-06-19	5		34	3126	10.1	4.317								5					
Analyst: MG	6		36A	510	13.2	7.451							→	6	36B	745	13.3	7.461	
Stdization Date (Local): 05-06-19	7		38	612	13.7	7.926								7					
KIO ₃ N: 0.0118108	8													8					
Standard Titer: 0.4933307	9													9					
Blank Titer: 0.0009402	10													10					
THIO N: 0.240051	11													11					
Sample Flask Water Seal? ☒ Yes ☐ No	12													12					
Reagent Change? MnCl ₂	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					
Notes:	19													19					
Bender	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.

26 A

Oxy

P2

Bot-10

19-006

Bot 1

26 B

Oxy

P2

Bot-10

19-006

Bot 1

28

Oxy

P2

100 m

19-006

Bot 3

30

Oxy

P2

75 m

19-006

Bot 5

32

Oxy

P2

50 m

19-006

Bot 7

34

Oxy

P2

25 m

19-006

Bot 9

36 A

Oxy

P2

10 m

19-006

Bot 11

36 B

Oxy

P2

10 m

19-006

Bot 11

38

Oxy

P2

5 m

19-006

Bot 13

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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: 2019-006		1		71	3074	3.9	0.577	noisy curve, accidentally flipped	1	71B				
Event: 13		2		72	9304	4.1	0.497		2					
Station: P4		3		73	3133	4.0	0.490		3					
Event Date (Local): 2019/6/3		4		74	3103	4.5	0.284		4					
Analysis Date (Local): 5 June 2019		5		75A	3080	5.1	0.216		5	75B	3101	5.2	0.218	
Analyst: SR		6		76	3086	5.8	0.578		6					
Stdization Date (Local): 5 June 2019		7		77	3084	6.2	1.051		7					
KIO ₃ N: 0.0113108		8		78	3142	6.3	1.245		8					
Standard Titer: 0.4933307		9		79A	3095	6.6	1.537		9	79B	3079	6.7	1.537	
Blank Titer: 0.0008402		10		80	3098	7.2	2.141	lower vent leaking (fixed)	10					
THIO N: 0.240051		11		81	3088	7.6	2.906		11					
Sample Flask Water Seal? ☒ Yes		12		82	3089	7.9	2.794		12					
		13		83	3090	8.3	2.971		13					
Reagent Change? MnCl ₂		14		84	2094	8.1	4.713	lower cap leaking (fixed)	14					
(Please circle reagent that was changed prior to sampling and standardization)		15		85	1442	8.3	6.205		15					
NOTE NEW BATCH IN LOG BOOK		16		86	3006	9.6	6.652		16					
		17		87A	3036	10.9	6.854		17	87B	3106	10.9	6.861	
		18		88	458	11.2	6.940		18					
Notes: sperm whale		19		89	3173	11.4	6.814		19					
		20							20					
		21							21					
		22							22					
		23							23					
		24		5013A	3180	12.6	6.868		24	5013B	1422	12.6	6.865	

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.

71
Oxy
P4
Bot-10
19-006
Bot 1

72
Oxy
P4
1250 m
19-006
Bot 2

73
Oxy
P4
1250 m
19-006
Bot 3

74
Oxy
P4
1000 m
19-006
Bot 4

75 A
Oxy
P4
800 m
19-006
Bot 5

75 B
Oxy
P4
800 m
19-006
Bot 5

76
Oxy
P4
600 m
19-006
Bot 6

77
Oxy
P4
400 m
19-006
Bot 7

78
Oxy
P4
300 m
19-006
Bot 8

79 A
Oxy
P4
250 m
19-006
Bot 9

79 B
Oxy
P4
250 m
19-006
Bot 9

80
Oxy
P4
200 m
19-006
Bot 10

81
Oxy
P4
175 m
19-006
Bot 11

82
Oxy
P4
150 m
19-006
Bot 12

83
Oxy
P4
125 m
19-006
Bot 13

84
Oxy
P4
100 m
19-006
Bot 14

85
Oxy
P4
75 m
19-006
Bot 15

86
Oxy
P4
50 m
19-006
Bot 16

87 A
Oxy
P4
25 m
19-006
Bot 17

87 B
Oxy
P4
25 m
19-006
Bot 17

88
Oxy
P4
10 m
19-006
Bot 18

89
Oxy
P4
5 m
19-006
Bot 19

5013
oxy
loop (B)
P4
19-006

5013
oxy (A)
loop
P4
19-006

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Cruise Number: 2019-06	1		119	3046	3.7	1.332								1						
Event: 23	2		120A	2089	4.0	0.590	→							2	120B	371	4.2	0.509		
Station: P8	3		121	2055	4.5	0.371								3						
Event Date (Local): 04-06-19	4		122	1094	5.2	0.223								4						
Analysis Date (Local): 5 June 2019	5		123	396	5.7	0.248								5						
Analyst: ST	6		124	471	6.0	0.481								6						
Stdization Date (Local): 5 June 2019	7		125	3137	6.7	1.301								7						
KIO ₃ N: 0.0113109	8		126A	3049	7.3	1.934	→							8	126B	1055	7.2	1.861	Wish A. But was half empty?	
Standard Titer: 0.4933357	9		127	1406	7.6	2.246								9						
Blank Titer: 0.0009402	10		128	2060	7.8	2.319								10						
THIO N: 0.240051	11		129	2068	8.3	2.672								11						
Sample Flask Water Seal? ☒ Yes ☐ No	12		130	3059	8.5	2.836								12						
Reagent Change? MnCl ₂	13		131	3073	8.3	5.159								13						
(Please circle reagent that was changed prior to sampling and standardization)	14		132	505	8.9	6.415								14						
NOTE NEW BATCH IN LOG BOOK	15		133A	3057	9.7	6.650	→							15	133B	3030	9.7	6.689		
	16		134	2065	10.6	6.581								16						
	17		135	3005	10.9	6.610								17						
	18		136	1409	11.6	6.493								18						
	19		137	3194	11.7	6.469								19						
Notes: NESSIE	20		138	94	11.7	6.447								20						
	21		139	621	12.7	6.484								21						
	22		140	1408	12.2	6.433								22						
	23		141A	3050	12.3	6.425								23	141B	1407	12.3	6.467		
	24		5023A	3161	14.1	6.447	→							24	5023B	3091	14.1	6.432		

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.

119 OXY P8 2000 m 19-006 Bot 1	120 OXY A P8 1500 m 19-006 Bot 2	120 B OXY P8 1500 m 19-006 Bot 2	121 OXY P8 1250 m 19-006 Bot 3	122 OXY P8 1000 m 19-006 Bot 4	123 OXY P8 800 m 19-006 Bot 5	124 OXY P8 600 m 19-006 Bot 6	125 OXY P8 400 m 19-006 Bot 7	126 OXY A P8 300 m 19-006 Bot 8	126 B OXY P8 300 m 19-006 Bot 8	127 OXY P8 250 m 19-006 Bot 9	128 OXY P8 200 m 19-006 Bot 10	129 OXY P8 175 m 19-006 Bot 11	130 OXY P8 150 m 19-006 Bot 12
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131 OXY P8 100 m 19-006 Bot 13	132 OXY P8 75 m 19-006 Bot 14	133 OXY A P8 60 m 19-006 Bot 15	133 B OXY P8 60 m 19-006 Bot 15	134 OXY P8 50 m 19-006 Bot 16	135 OXY P8 40 m 19-006 Bot 17	136 OXY P8 30 m 19-006 Bot 18	137 OXY P8 25 m 19-006 Bot 19	138 OXY P8 20 m 19-006 Bot 20	139 OXY P8 15 m 19-006 Bot 21	140 OXY P8 10 m 19-006 Bot 22	141 OXY A P8 5 m 19-006 Bot 23	141 B OXY P8 5 m 19-006 Bot 23
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10.1 A
5023
OXY
LoopP8
LOOP
19-006
Bot 1

14.1 B
5023
OXY
LoopP8
LOOP
19-006
Bot 1

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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: 2019-006		1		160	3047	3.1	2.280		1					
Event: 32		2		161A	2025	2.9	2.257	→	2	161B	3199	3.2	2.249	
Station: P12		3		162	3117	3.1	2.248		3					
Event Date (Local): June 5, 2019		4		163	2007	3.1	1.848		4					
Analysis Date (Local): 06.06.19		5		164	3192	3.5	1.281		5					
Analyst: MG		6		165	3094	3.9	0.542		6					
Stdization Date (Local): 05.06.19		7		166	3033	4.5	0.346		7					
KIO ₃ N: 0.0118108		8		167	3065	5.0	0.227		8					
Standard Titer: 0.4933307		9		168A	3062	5.5	0.252	→	9	168B	3054	5.7	0.250	
Blank Titer: 0.0609402		10		169	2047	5.9	0.598		10					leaky bottle
THIO N: 0.240051		11		170	2092	6.8	1.252		11					
Sample Flask Water Seal? ☒ Yes ☐ No		12		171	3032	7.1	1.446		12					
Reagent Change? MnCl ₂		13		172A	3116	7.5	1.590	→	13	172B	3009	7.6	1.585	
(Please circle reagent that was changed prior to sampling and standardization)		14		173	2043	7.8	1.753	overtitrate late curve	14					leaky bottle
NOTE NEW BATCH IN LOG BOOK		15		174	2052	7.9	1.859		15					
		16		175	2016	8.1	2.223		16					
		17		176	2015	8.2	3.102		17					
		18		177	2019	8.3	5.424		18					
Notes:		19		178A	3109	9.1	6.591	→	19	178B	3158	9.1	6.598	
		20		179	2027	10.3	6.726		20					
		21		180	3100	11.7	6.480		21					
		22		181	1429	11.7	6.443		22					
		23		182	3145	11.7	6.422		23					leaky bottle
		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.

5032 A 3147 13.0 6.425

5032 B 3072 13.0 6.426

160 Oxy P12 Bot-10 19-006 Bot 1	161A Oxy P12 3000 m 19-006 Bot 2	161B Oxy P12 3000 m 19-006 Bot 2	162 Oxy P12 3000 m 19-006 Bot 3	163 Oxy P12 2500 m 19-006 Bot 4	164 Oxy P12 2000 m 19-006 Bot 5	165 Oxy P12 1500 m 19-006 Bot 6	166 Oxy P12 1250 m 19-006 Bot 7	167 Oxy P12 1000 m 19-006 Bot 8	168A Oxy P12 800 m 19-006 Bot 9	168B Oxy P12 800 m 19-006 Bot 9	169 Oxy P12 600 m 19-006 Bot 10	170 Oxy P12 400 m 19-006 Bot 11	171 Oxy P12 300 m 19-006 Bot 12	172A Oxy P12 250 m 19-006 Bot 13	172B Oxy P12 250 m 19-006 Bot 13
173 Oxy P12 200 m 19-006 Bot 14	174 Oxy P12 175 m 19-006 Bot 15	175 Oxy P12 150 m 19-006 Bot 16	176 Oxy P12 125 m 19-006 Bot 17	177 Oxy P12 100 m 19-006 Bot 18	178A Oxy P12 75 m 19-006 Bot 19	178B Oxy P12 75 m 19-006 Bot 19	179 Oxy P12 50 m 19-006 Bot 20	180 Oxy P12 25 m 19-006 Bot 21	181 Oxy P12 10 m 19-006 Bot 22	182 Oxy P12 5 m 19-006 Bot 23	5032A P12 Loop	5032B P12 Loop			

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Cruise Number:	2019-06	1		252	456	3.1	2.727		1					
Event:	45	2		253A	3093	3.1	2.688	→	2	538	3148	3.3	2.681	
Station:	P16	3		254	570	3.1	2.686		3					
Event Date (Local):	06.06.19	4		255	3138	3.1	2.404	OVERTITRATE LATE & A LITTLE BUMPY	4					
Analysis Date (Local):	11.06.19	5		256	3126	3.3	1.919		5					
Analyst:	MG	6		257	510	3.3	1.280		6					
Stdization Date (Local):	11.06.19	7		258	745	3.8	0.525		7					
KIO ₃ N:	0.0118108	8		259A	612	4.0	0.314	→	8	259B	575	4.3	0.310	First bottle cracked 3043
Standard Titer:	0.4921506	9		260	2098	4.3	0.284		9					NEW FLASK
Blank Titer:	0.0011043	10		261	3146	4.7	0.344		10					
THIO N:	0.240564	11		262	708	5.2	0.505	FORGOT TO PUT TIP IN LEBBOY C	11					
Sample Flask Water Seal?	Yes	12		263	611	5.7	1.261		12					
	No	13		264	3165	6.2	2.041		13					
Reagent Change?	MnCl ₂	14		265A	3175	6.5	2.688	→	14	265B	3002	6.5	2.683	
(Please circle reagent that was changed prior to sampling and standardization)	NaI/NaOH	15		266	3190	7.0	3.414		15					
NOTE NEW BATCH IN LOG BOOK	H ₂ SO ₄	16		267	3129	7.2	3.525	OVERTITRATE BUMPY CURVE LATE	16					
	KIO ₃	17		268	3162	7.3	3.837		17					
	THIO	18		269	3053	7.3	4.715	OVERTITRATE LATE IN CURVE	18					
Notes:	BENDER	19		270	3038	8.0	6.053		19					
		20		271A	3209	8.8	6.676	→	20	271B	3096	8.8	6.673	
		21		272	3144	9.2	6.927		21					
		22		273	3066	11.2	6.674		22					
		23		274	3023	11.5	6.564		23					
		24		275	3132	11.5	6.567		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.

Loops 5045A 1223 12.7°C ⇒ 6.536

5045B 712 12.7°C 6.540

OVERTITRATE LATE IN CURVE

252	253	253	254	255	256	257	258	259	259	260	261	262	263	264
Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy
P16	P16	P16	P16	P16	P16	P16	P16	P16	P16	P16	P16	P16	P16	P16
Bot-10	3500 m	3500 m	3500 m	3000 m	2500 m	2000 m	1500 m	1250 m	1250 m	1000 m	800 m	600 m	400 m	300 m
19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006
Bot 1	Bot 2	Bot 2	Bot 3	Bot 4	Bot 5	Bot 6	Bot 7	Bot 8	Bot 8	Bot 9	Bot 10	Bot 11	Bot 12	Bot 13

265	265	266	267	268	269	270	271	271	272	273	274	275	5045	5045
Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	OXY	OXY
P16	P16	P16	P16	P16	P16	P16	P16	P16	P16	P16	P16	P16	LoopP16	LoopP16
250 m	250 m	200 m	175 m	150 m	125 m	100 m	75 m	75 m	50 m	25 m	10 m	5 m	LOOP	LOOP
19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006
Bot 14	Bot 14	Bot 15	Bot 16	Bot 17	Bot 18	Bot 19	Bot 20	Bot 20	Bot 21	Bot 22	Bot 23	Bot 24	Bot 1	Bot 1

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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: 2019-006							1		354	2099	2.6	2.890		1					
Event: 65							2		355	2049	2.6	2.802		2					
Station: P20							3		356	3037	2.7	2.711		3					
Event Date (Local): Jun 8, 2019							4		357	3076	2.7	2.459		4					
Analysis Date (Local): 12.06.19							5		358A	3014	3.1	1.885	→	5	358B	3081	3.1	1.892	
Analyst: MG							6		359	3110	3.1	1.259		6					
Stdization Date (Local): 11.06.19							7		360	3078	3.5	0.516		7					
KIO ₃ N: 0.0118108							8		361	3131	3.8	0.370	OVER TITRATE WACKY CURVE, LATE	8					
Standard Titer: 0.4921506							9		362	3029	4.2	2.319		9					
Blank Titer: 0.0011043							10		363	2085	4.7	0.343		10					
THIO N: 0.240564							11		364A	1459	5.2	0.527	→	11	364B	620	5.4	0.520	
Sample Flask Water Seal? ☒ Yes ☐ No							12		365	622	5.7	1.821		12					
Reagent Change? MnCl ₂							13		366	3018	6.1	2.081		13					
(Please circle reagent that was changed prior to sampling and standardization)							14		367	3048	6.3	2.678		14					
NOTE NEW BATCH IN LOG BOOK							15		368	3120	6.7	3.528		15					
							16		369A	3041	6.9	3.775	→	16	369B	3155	7.0	3.774	
							17		370	3044	7.0	4.154		17					
							18		371	1311	7.2	4.910		18					
Notes:							19		372	3111	7.8	5.874		19					
turtle							20		373	3059	8.4	6.772		20					
							21		374	3143	8.6	6.813	OVER TITRATE WEIRD, SLOWED STIRRER, LATE SUSPECT CRUTTER, BOW	21	REMOVED				
							22		375	3135	10.7	6.723		22					
							23		376A	3083	10.9	6.702	→	23	376B	3121	10.9	6.729	?
							24		377	3164	10.9	6.759		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.

5065 A 3019 12.1°C 6.767

5065 B 932 12.1°C 6.778

354 Oxy P20 Bot-10 19-006 Bot 1	355 Oxy P20 3500 m 19-006 Bot 2	356 Oxy P20 3500 m 19-006 Bot 3	357 Oxy P20 3000 m 19-006 Bot 4	358A Oxy P20 2500 m 19-006 Bot 5	358B Oxy P20 2500 m 19-006 Bot 5	359 Oxy P20 2000 m 19-006 Bot 6	360 Oxy P20 1500 m 19-006 Bot 7	361 Oxy P20 1250 m 19-006 Bot 8	362 Oxy P20 1000 m 19-006 Bot 9	363 Oxy P20 800 m 19-006 Bot 10	364A Oxy P20 600 m 19-006 Bot 11	364B Oxy P20 600 m 19-006 Bot 11	365 Oxy P20 400 m 19-006 Bot 12	366 Oxy P20 300 m 19-006 Bot 13	367 Oxy P20 250 m 19-006 Bot 14
368 Oxy P20 200 m 19-006 Bot 15	369A Oxy P20 175 m 19-006 Bot 16	369B Oxy P20 175 m 19-006 Bot 16	370 Oxy P20 150 m 19-006 Bot 17	371 Oxy P20 125 m 19-006 Bot 18	372 Oxy P20 100 m 19-006 Bot 19	373 Oxy P20 75 m 19-006 Bot 20	374 Oxy P20 50 m 19-006 Bot 21	375 Oxy P20 25 m 19-006 Bot 22	376A Oxy P20 10 m 19-006 Bot 23	376B Oxy P20 10 m 19-006 Bot 23	377 Oxy P20 5 m 19-006 Bot 24	5065A OXY LoopP20 LOOP 19-006 Bot 1	5065B OXY LoopP20 LOOP 19-006 Bot 1		

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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:	2019-06	1	✓	471	3046	3.5	1.168		1					
Event:	713	2	✓	472	2089	4.0	0.504		2					
Station:	P25	3	✓	473	371	4.5	0.376	⇒	3	473 ^B	2055	4.7	0.365	
Event Date (Local):	09.06.19	4	✓	474	1094	5.0	0.539		4					
Analysis Date (Local):	12.06.19	5	✓	475	396	5.5	0.993		5					
Analyst:	MG	6	✓	476	471	5.6	1.397		6					
Stdization Date (Local):	11.06.19	7	✓	477	3137	5.8	2.087		7					
KIO ₃ N:	0.0118108	8	✓	478	3049	5.9	2.809		8					
Standard Titer:	0.4921506	9	✓	479	1055	6.2	3.494		9					
Blank Titer:	0.0011043	10	✓	480	1406	6.3	3.698	⇒ OVERTITRATE, LATE WAY!	10	480 ^B	2060	6.3	3.705	
THIO N:	0.240564	11	✓	481	2068	6.3	4.214		11					
Sample Flask Water Seal?	Yes No	12	✓	482	3059	6.4	4.809	FORGOT TO PUT TIP IN	12					
Reagent Change?	MnCl ₂	13	✓	483	3073	6.9	5.720		13					
(Please circle reagent that was changed prior to sampling and standardization)	NaI/NaOH	14	✓	484	505	7.0	6.770		14					
NOTE NEW BATCH IN LOG BOOK	H ₂ SO ₄	15	✓	485	3057	8.0	6.890		15					
	KIO ₃	16	✓	486	3030	10.4	6.815		16					
	THIO	17	✓	487	2065	10.8	6.750		17					
Notes:	NESSIE	18	✓	488	3005	10.9	6.765		18					
		19		489					19					
		20	✓	490	1409	10.9	6.768	⇒	20	490 ^B	3194	10.9	6.769	
		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.

471	472	473A	473B	474	475	476	477	478	479	480A	480B	481	482	483	484
Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy	Oxy
P25	P25	P25	P25	P25	P25	P25	P25	P25	P25	P25	P25	P25	P25	P25	P25
2000 m	1500 m	1000 m	1000 m	750 m	500 m	400 m	300 m	250 m	200 m	175 m	175 m	150 m	125 m	100 m	75 m
19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006
Bot 1	Bot 2	Bot 3	Bot 3	Bot 4	Bot 5	Bot 6	Bot 7	Bot 8	Bot 9	Bot 10	Bot 10	Bot 11	Bot 12	Bot 13	Bot 14

485	486	487	488	490A	490B
Oxy	Oxy	Oxy	Oxy	Oxy	Oxy
P25	P25	P25	P25	P25	P25
50 m	25 m	10 m	5 m	0 m	0 m
19-006	19-006	19-006	19-006	19-006	19-006
Bot 15	Bot 16	Bot 17	Bot 18	Bot 20	Bot 20

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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: 2019-006		1		511	3074	2.8	3.186		1					
Event: 77		2		512	930	2.7	3.134		2					
Station: P26		3		513	3133	2.4	2.900		3					
Event Date (Local): 2019-06-10		4		514 ^A	3103	2.8	2.496	→	4	514 ^B	3080	3.1	2.489	HIT NORMAL FINISH INSTEAD OF GO
Analysis Date (Local): 12.06.19		5		515	3101	3.1	2.318		5					
Analyst: MG		6		516	3086	3.2	1.176		6					
Stdization Date (Local): 11.06.19		7		517	3084	3.7	0.577		7					
KIO ₃ N: 0.0118108		8		518	3142	4.0	0.432		8					
Standard Titer: 0.4921506		9		519	3095	4.3	0.427		9					
Blank Titer: 0.6011043		10		520	3079	4.7	0.518	OVER TITRATE WEIRD CURVE	10					
THIO N: 0.240564		11		521 ^A	3098	4.7	0.696	→ 5.4	11	521 ^B	3088	5.4	0.708	
Sample Flask Water Seal? Yes		12		522	3089	5.6	1.303	WRONG FLASK # 3090 - SURE	12					
	No	13		523	3090	5.7	1.808	WRONG FLASK # 2090	13					
Reagent Change? MnCl ₂		14		524	2094	5.6	2.422		14					
(Please circle reagent that was changed prior to sampling and standardization)	NaI/NaOH	15		525	1442	6.0	3.163		15					
NOTE NEW BATCH IN LOG BOOK	H ₂ SO ₄	16		526 ^A	3000	6.2	3.535	→	16	526 ^B	3036	6.3	3.539	3.539
	KIO ₃	17		527	3106	6.3	3.894		17					
	THIO	18		528	458	6.2	4.805		18					
Notes: Sperm whale		19		529	3173	7.2	6.515		19					
		20		530	1422	7.0	6.848		20					
		21		531	3180	8.7	6.911	OVER TITRATE BUBBLE WORKY CURVE	21					
		22		532	1416	10.3	6.909	FORGOT TIP ABOUT START AGAIN	22					
		23		533 ^A	3010	10.5	6.885	→ leak (top cap)	23	533 ^B	3114	10.5	6.898	!
		24		534	435	10.5	6.918		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.

5077A 3047 11.6 6.896

5077 2025 11.6 6.903

511 Oxy P26 Bot-10 19-006 Bot 1	512 Oxy P26 4000 m 19-006 Bot 2	513 Oxy P26 3500 m 19-006 Bot 3	514 ^A Oxy P26 3000 m 19-006 Bot 4	514 ^B Oxy P26 3000 m 19-006 Bot 4	515 Oxy P26 2500 m 19-006 Bot 5	516 Oxy P26 2000 m 19-006 Bot 6	517 Oxy P26 1500 m 19-006 Bot 7	518 Oxy P26 1250 m 19-006 Bot 8	519 Oxy P26 1000 m 19-006 Bot 9	520 Oxy P26 800 m 19-006 Bot 10	521 ^A Oxy P26 600 m 19-006 Bot 11	521 ^B Oxy P26 600 m 19-006 Bot 11	522 Oxy P26 400 m 19-006 Bot 12	523 Oxy P26 300 m 19-006 Bot 13
524 Oxy P26 250 m 19-006 Bot 14	525 Oxy P26 200 m 19-006 Bot 15	526 ^A Oxy P26 175 m 19-006 Bot 16	526 ^B Oxy P26 175 m 19-006 Bot 16	527 Oxy P26 150 m 19-006 Bot 17	528 Oxy P26 125 m 19-006 Bot 18	529 Oxy P26 100 m 19-006 Bot 19	530 Oxy P26 75 m 19-006 Bot 20	531 Oxy P26 50 m 19-006 Bot 21	532 Oxy P26 25 m 19-006 Bot 22	533 ^A Oxy P26 10 m 19-006 Bot 23	533 ^B Oxy P26 10 m 19-006 Bot 23	534 Oxy P26 5 m 19-006 Bot 24	5077 ^A OXY LoopP26 LOOP 19-006 Bot 1	5077 ^B OXY LoopP26 LOOP 19-006 Bot 1

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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: 2019-006	1		5077A	3047	11.6		⇒		1	5077	2025	11.6			5077	2025	11.6		P26 deep cast loops
Event: 94	2	1	597A	3199	10.4	6.817	NO WATER TOP OF FLASK		2	597	3117	10.4	6.824		597	3117	10.4	6.824	
Station: PA-043	3	2	598A	2007	10.3	6.843			3	598B	3192	10.3	6.847		598B	3192	10.3	6.847	
Event Date (Local): 12-06-19	4	3	599A	3094	10.5	6.849			4	599B	3033	10.4	6.844		599B	3033	10.4	6.844	
Analysis Date (Local): 13-06-19	5	4	600A	3065	10.5	6.845			5	600B	3062	10.5	6.846		600B	3062	10.5	6.846	
Analyst: MG	6								6										
Stdization Date (Local): 11-06-19	7								7										
KIO ₃ N: 0.0118108	8								8										
Standard Titer: 0.4921506	9								9										
Blank Titer: 0.0011043	10								10										
THIO N: 0.240564	11								11										
Sample Flask Water Seal? Yes	12								12										
	13								13										
Reagent Change? MnCl ₂	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: Shark	19								19										
	20								20										
SAMPLES SAT IN LAB OVERNIGHT	21								21										
	22								22										
APPROX SAME TEMP AS OUTSIDE JUST NO WIND	23								23										
	24								24										

SAMPLING PATTERN
RISKIN
EACH BOTTLE - O₂ (105) 20NR (PML) O₂ (105)

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.

597 A	597 B	598 A	598 B	599 A	599 B	600 A	600 B
OXY	OXY	OXY	OXY	OXY	OXY	OXY	OXY
PA-013	PA-013	PA-013	PA-013	PA-013	PA-013	PA-013	PA-013
15 m	15 m	10 m	10 m	5 m	5 m	0 m	0 m
19-006	19-006	19-006	19-006	19-006	19-006	19-006	19-006
Bot 1	Bot 1	Bot 2	Bot 2	Bot 3	Bot 3	Bot 4	Bot 4

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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:	2019-006	1		601A	2092	10.6	6.797		1	601B	3032	10.5	6.812	
Event:	95	2		602A	3116	10.5	6.828	OOPS on FIRST NO STIRRED DAY!	2	602B	3009	10.5	6.803	
Station:	PA-012	3		603A	2043	10.5	6.802		3	603B	2032	10.5	6.800	
Event Date (Local):	13 JUN 2019	4		604A	2016	10.5	6.799		4	604B	2015	10.5	6.804	
Analysis Date (Local):	13 JUN 19	5						NISKIN SAMPLING PATTERN	5					
Analyst:	MG	6						O ₂ FIRST IOS	6					
Stdization Date (Local):	11-06-19	7						20MB AFTER PML	7					
KIO ₃ N:	0.0118108	8							8					
Standard Titer:	0.4921506	9							9					
Blank Titer:	0.0011043	10							10					
THIO N:	0.240564	11							11					
Sample Flask	Yes	12							12					
Water Seal?	No	13							13					
Reagent Change?	MnCl ₂	14							14					
(Please circle reagent that was changed prior to sampling and standardization)	NaI/NaOH	15							15					
	H ₂ SO ₄	16							16					
NOTE NEW BATCH IN LOG BOOK	KIO ₃	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.

601 A
OXY
PA-012
15 m
19-006
Bot 1

601 B
OXY
PA-012
15 m
19-006
Bot 1

602 A
OXY
PA-012
10 m
19-006
Bot 2

602 B
OXY
PA-012
10 m
19-006
Bot 2

603 A
OXY
PA-012
5 m
19-006
Bot 3

603 B
OXY
PA-012
5 m
19-006
Bot 3

604 A
OXY
PA-012
0 m
19-006
Bot 4

604 B
OXY
PA-012
0 m
19-006
Bot 4

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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: 209-006		1		609	3158	5.2	0.439		1					
Event: 102		2		610	439	5.1	0.411		2					
Station: P4		3		611A	3199	5.1	0.404	→	3	611B	3117	5.4	0.403	
Event Date (Local): 16-06-19		4		612	2007	5.5	0.250	OVERTITRATE LATE	4					
Analysis Date (Local): 16-06-19		5		613	3192	5.8	0.221		5					
Analyst: MG		6		614	3094	6.0	0.337		6					
Stdization Date (Local): 16-06-19		7		615	3033	6.5	0.877		7					
KIO ₃ N: 0.0118108		8		616A	3065	6.7	1.152	→	8	616B	3062	6.7	1.151	
Standard Titer: 0.5119582		9		617	3054	6.9	1.306		9					
Blank Titer: 0.0007651		10		618	2047	7.1	1.623		10					
THIO N: 0.230962		11		619	2092	7.4	1.850		11					
Sample Flask Water Seal? ☒ Yes ☐ No		12		620	3032	7.8	2.110		12					
Reagent Change? MnCl ₂		13		621A	3116	8.3	2.409	→	13	621B	3009	8.3	2.393	
(Please circle reagent that was changed prior to sampling and standardization)		14		622	2043	8.5	2.714		14					
NOTE NEW BATCH IN LOG BOOK		15		623	2032	8.6	3.163		15					
		16		624	2010	9.1	3.676	OVERTITRATE LATE IN CURVE	16					
		17		625	2015	12.2	5.896		17					
		18		626A	2019	13.3	6.317	→	18	626B	3109	13.3	6.314	
Notes: SHARK		19		627	3072	13.5	6.312		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.

609 628 OXY P4 Bot-10 19-006 Bot 1	610 629 OXY P4 1250 m 19-006 Bot 2	611 A 630 OXY P4 1250 m 19-006 Bot 3	612 B 631 OXY P4 1250 m 19-006 Bot 3	613 632 OXY P4 1000 m 19-006 Bot 4	614 633 OXY P4 800 m 19-006 Bot 5	615 634 OXY P4 600 m 19-006 Bot 6	616 635 OXY P4 400 m 19-006 Bot 7	617 636 A OXY P4 300 m 19-006 Bot 8	618 637 B OXY P4 300 m 19-006 Bot 8	619 638 OXY P4 250 m 19-006 Bot 9	620 639 OXY P4 200 m 19-006 Bot 10	621 640 OXY P4 175 m 19-006 Bot 11	622 641 OXY P4 150 m 19-006 Bot 12	623 642 A OXY P4 125 m 19-006 Bot 13	624 643 B OXY P4 125 m 19-006 Bot 13
625 644 OXY P4 100 m 19-006 Bot 14	626 645 OXY P4 75 m 19-006 Bot 15	627 646 OXY P4 50 m 19-006 Bot 16	628 647 OXY P4 25 m 19-006 Bot 17	629 648 OXY P4 10 m 19-006 Bot 18	630 649 OXY P4 5 m 19-006 Bot 19	631 650 OXY P4 10 m 19-006 Bot 18	632 651 OXY P4 5 m 19-006 Bot 19								