

MIRAI MR16-06 Bottle Sampling Water Chemical Analysis

Last Modified: 2018-10-31

ReadMe Observation Data Data Format Quality Information

Cruise ID: **MR16-06**

Bottle Sampling Water Chemical Analysis: Processed (PI)

Data Policy: **JAMSTEC**

Observation Items: Temperature, Salinity, Dissolved oxygen, Potential temperature, Density, Fluorescence, Transmittance, PAR, Nitrate, Silicate, Nitrite, Phosphate, Ammonia, Total inorganic carbon, Alkalinity, Chlorophyll, POC

Science Keywords:

OCEANS	> OCEAN CHEMISTRY	> AMMONIA
OCEANS	> OCEAN CHEMISTRY	> INORGANIC CARBON
OCEANS	> OCEAN CHEMISTRY	> NITRATE
OCEANS	> OCEAN CHEMISTRY	> NUTRIENTS
OCEANS	> OCEAN CHEMISTRY	> OXYGEN
OCEANS	> OCEAN CHEMISTRY	> PHOSPHATE
OCEANS	> OCEAN CHEMISTRY	> SILICATE
OCEANS	> OCEAN CHEMISTRY	> SALINITY
OCEANS	> OCEAN CHEMISTRY	> CHLOROPHYLL
OCEANS	> OCEAN TEMPERATURE	> WATER TEMPERATURE
OCEANS	> SALINITY/DENSITY	> SALINITY
OCEANS	> OCEAN OPTICS	> EXTINCTION COEFFICIENTS
OCEANS	> OCEAN OPTICS	> PHOTOSYNTHETICALLY ACTIVE RADIATION
BIOSPHERE	> ECOLOGICAL DYNAMICS	> ECOSYSTEM FUNCTIONS
OCEANS	> OCEAN CHEMISTRY	> ALKALINITY
BIOSPHERE	> ECOLOGICAL DYNAMICS	> ECOSYSTEM FUNCTIONS
OCEANS	> OCEAN CHEMISTRY	> CARBON
OCEANS	> OCEAN OPTICS	> FLUORESCENCE
OCEANS	> OCEAN TEMPERATURE	> POTENTIAL TEMPERATURE

Cruise Report

http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR16-06_all.pdf

For Using Data

Principal Investigator

CTDMP, CTDSAL, CTDCND, CTDOXY, CTDNITRATE : Shigeto Nishino (JAMSTEC)
 SBE35 : Shigeto Nishino (JAMSTEC)
 XMISS, FLUOR, PAR, TURB : Shigeto Nishino (JAMSTEC)
 DNSSAL : Hiroshi Uchida (JAMSTEC)
 SALNTY, OXYGEN : Shigeto Nishino (JAMSTEC)
 SILCAT, NITRAT, NITRIT, PHSPHT, AMMONA : Michio Aoyama (JAMSTEC/Fukushima Univ.)
 TCARBON, ALKALI : Shigeto Nishino (JAMSTEC)
 d-POC : Shigeto Nishino (JAMSTEC)
 CHLWEL, SIZECHL : Shigeto Nishino (JAMSTEC)

Use Constraints

See [Terms and Conditions](#) about constrain of use.

Data Citation

See [Terms and Conditions](#) about data citation.

Instrument

Instrument:

Salinity measurement system



Instrument:

Nutrient analyzer(5ch) (MR09-02 -)



Instrument:

Total dissolved inorganic carbon measurement system (MR11-05 Leg1 -)



Instrument:

Titration for DO Dissolved oxygen titration equipment (MR11-06 -)



Instrument:

Titration for total alkalinity (MR14-03 -)



Instrument:

Fluorometer (TURNER DESIGNS)



Information on CTD data

Pressure sensor

Model : SBE9plus, Sea-Bird Electronics, Inc.
 Measurement range : 0 to 10500 m
 Accuracy : $\pm 0.015\%$ of full scale range
 Resolution : 0.001% of full scale

Temperature sensor

Model : SBE03-04/F, Sea-Bird Electronics, Inc.
Measurement range : -5 to +35 °C
Accuracy : ± 0.001 °C
Resolution : 0.0002 °C

Deep Ocean Standards Thermometer

Model : SBE35, Sea-Bird Electronics, Inc.
Measurement range : -5 to +35 °C
Accuracy : 0.001 °C
Resolution : 0.000025 °C

Salinity sensor

Model : SBE04C, Sea-Bird Electronics, Inc.
Measurement range : 0 to 7 S/m
Accuracy : ± 0.0003 S/m
Resolution : 0.00004 S/m

DO sensor

Model : RINKO III JFE Advantech Co., Ltd.
Measurement range : 0 - 200%
Accuracy : ± 2% FS
Model : SBE43, Sea-Bird Electronics, Inc.
Measurement range : 120% of surface saturation
Accuracy : ± 2% of saturation

Transmissometer

Model : C-Star, WET Labs, Inc.
Linearity : 99% R²

Fluorometer

Model : Seapoint Chlorophyll Fluorometer, Seapoint Sensors, Inc.
Measurement range : 0 - 5 µg/l
Resolution : 0.02 µg/l

Turbidity

Model : Seapoint Turbidity Meter (S/N 14953), Seapoint Sensors, Inc.

PAR sensor

Model : PAR-Log ICSW, Satlantic, Inc.
Measurement range : 0 - 5000 µmol photons m⁻² s⁻¹
Accuracy : -

UV Nitrate Sensor

Model : Deep SUNA (S/N 385), Satlantic, Inc.

Information on Chemical and Biological data

DNSSAL

Instruments : oscillation-type density meter DMA 5000M (Anton-Paar GmbH)
Methods : see "Cruise report"
Precision : root-mean square of the absolute difference of replicate samples was 0.0009 g/kg (19 pairs)
Reference Material/Calibration : Dn-RM1 and PRE18 (Kanso Technos Co., Ltd.)

Salinity

Instruments : Autosal salinometer model 8400B (Guildline Instruments Ltd.)
Methods : -
Precision : average of the double conductivity ratio of SSW was 1.99971, standard deviation of the double conductivity ratio 0.00002 (65 bottles)
Reference Material/Calibration : IAPSO Standard Sea Water P159 (Ocean Scientific International Ltd.)

Dissolved Oxygen

Instruments : Burette: APB-510/APB-620 manufactured by Kyoto Electronic Co. Ltd. /10 cm³ of titration vessel
Detector and Software: Automatic photometric titrator DOT-01X manufactured by Kimoto Electronic Co. Ltd
Methods : Winkler method/photometric methods
Precision : Standard deviation of the replicate measurement was 0.26 µmol kg⁻¹
Reference Material/Calibration : CSK standard of potassium iodate Lot KPG8393, Wako Pure Chemical Industries Ltd., 0.0100N

Silicate

Instruments : QuAAtro 2-HR systems, BL-Tech K.K
Methods : Molybdenum blue method
Precision : C.V. 0.13 %
Reference Material/Calibration : RMNS, Silicon standard solution SiO₂ in NaOH 0.5 mol/L CertiPUR® (Merck KGaA), Lot.HC54715536, CAS No.: 1310-73-2

Nitrate

Instruments : QuAAtro 2-HR systems, BL-Tech K.K
Methods : Diazotization method (reduced to nitrite by Cd - Cu tube)
Precision : C.V. 0.17 %
Reference Material/Calibration : RMNS, potassium nitrate 99.995 suprapur® (Merck KGaA), Lot.B0771365211, CAS No.:7757-91-1

Nitrite

Instruments : QuAAtro 2-HR systems, BL-Tech K.K
Methods : Diazotization method
Precision : C.V. 0.17 %
Reference Material/Calibration : RMNS, sodium nitrite (Wako Pure Chemical Industries, Ltd.), Lot ECP4122, Code. No. 140-06451

Phosphate

Instruments : QuAAtro 2-HR systems, BL-Tech K.K
Methods : Molybdenum blue method
Precision : C.V. 0.14 %
Reference Material/Calibration : RMNS, potassium dihydrogen phosphate anhydrous 99.995 suprapur® (Merck KGaA), Lot. B1144508528, CAS No.: 7778-77-0

Ammonia

Instruments : QuAAtro 2-HR systems, BL-Tech K.K
Methods : Indophenol method
Precision : C.V. 0.38 %
Reference Material/Calibration : ammonium Chloride (NMIJ), NMIJ CRM 3011-a

Total inorganic carbon

Instruments : TCO2 measuring system (Nippon ANS, Inc.) equipped with coulometer Model 3000 (Nippon ANS, Inc.)
Methods : coulometry
Precision : average of the differences 1.44 umol kg⁻¹, standard deviation of the differences 1.33 umol kg⁻¹

Reference Material/Calibration : CRM of Scripps Institution of Oceanography

Total alkalinity

Instruments : Spectrophotometric system(Nippon ANS, Inc.). The system comprises of a spectrophotometer (Carry 50 Scan, Varian)

Methods : Single step acid additional procedure/spectrophotometry

Precision : average of the differences 2.00 $\mu\text{mol kg}^{-1}$, standard deviation of the differences 1.70 $\mu\text{mol kg}^{-1}$

Reference Material/Calibration : CRM of Scripps Institution of Oceanography

Carbon uptake rate (d-POC)

Instruments : ANCA-SL (SerCon Ltd.)

Methods : Simulated *in-situ* incubation method

Chlorophyll a

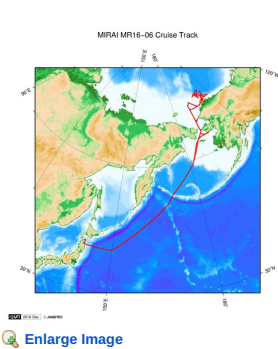
Instruments : Fluorophotometer model 10-AU-005 (Turner design)

Methods : Extract in N, N-dimethylformamide //fluorometric determination (Welschmeyer non-acidification method)

Precision : -

Reference Material/Calibration : Chlorophyll a from Anacystis nidulans algae (SIGMA), Lot #BCBQ7209, PCode 101709836

Related Information



MR16-06

Ship Name: MIRAI

Period: 2016-08-22 - 2016-10-05

Chief Scientist: Shigeto Nishino (JAMSTEC)

Project Name: [Arctic Ocean Climate System Reaserch]

Proposal ▶ Predictability study on weather and sea-ice forecasts linked with user engagement

Title:

Update History

2018-10-31 An observation data was registerd.

JAMSTEC

Site Policy

Privacy Policy

Application for Data and Samples

Data Policy

What's New

Update History

Feeds

Lists

Publication List

Amount of Public Info.

Data

Map Search

Data Tree

Detailed Search

Information of the Ships

NATSUSHIMA

KAIYO

YOKOSUKA

MIRAI

KAIREI

CHIKYU

KAIMEI

SHINSEI MARU

HAKUHO MARU

Information of the Submersibles

KAIKO

SHINKAI 2000

SHINKAI 6500

DEEP TOW

HYPER-DOLPHIN

URASHIMA

YOKOSUKA DEEP TOW

6K Camera DEEP TOW

6K Sonar DEEP TOW

KM-ROV

POWER GRAB SAMPLER (SHELL)

POWER GRAB SAMPLER (CLOW)

BMS

Go to a Cruise Information

Cruise ID:

Go

Go to a Dive Information

Dive ID:

Go

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JAPAN AGENCY FOR MARINE-EARTH SCIENCE AND TECHNOLOGY

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Last Modified: 2018-10-31

[ReadMe](#) | [Observation Data](#) | [Data Format](#) | [Quality Information](#)

 Cruise ID: [MR16-06](#)

Bottle Sampling Water Chemical Analysis: Processed (PI)

 Data Policy: [JAMSTEC](#)

Exchange Format

Provided in the Exchange Format of CCHDO (CLIVAR and Carbon Hydrographic Data Office).

Please see the following link for details of Exchange Format.

[CCHDO | CLIVAR & Carbon Hydrographic Data Office](#)

Format Information

Column No.	Column Heading Mnemonic	Units Mnemonic	Reporting Precision FORTRAN Format	Comments
1	EXPCODE		A14	ExpoCode
2	SECT_ID		A6	Section ID
3	STNNBR		A6	Station Number
4	CASTNO		I3	Cast Number
5	SAMPNO		A7	Sample Number
6	BTLNBR		A7	Bottle Number (S/N fixed to the sampling device)
7	BTLNBR_FLAG_W		I1	Bottle quality flags
8	BOTTLE		A7	bottle
9	DATE		I8	Cast date
10	TIME	UTC	A4	Cast time
11	LATITUDE	DEG	F8.4	Latitude
12	LONGITUDE	DEG	F9.4	Longitude
13	DEPTH	METERS	I5	Bottom depth
14	CTDDPT	METERS	F9.1	Depth
15	CTDDPT_FLAG_W		I1	Quality flags for CTD data
16	CTDPRS	DBAR	F9.1	Pressure
17	CTDPRS_FLAG_W		I1	Quality flags for CTD data
18	CTDTMP	ITS-90	F9.4	Temperature (primary sensor)
19	CTDTMP_FLAG_W		I1	Quality flags for CTD data
20	SBE35	ITS-90	F10.5	Temperature from Deep Ocean Standards Thermometer
21	SBE35_FLAG_W		I1	Quality flags for CTD data
22	CTDSAL	PSS-78	F9.4	Salinity (primary sensor)
23	CTDSAL_FLAG_W		I1	Quality flags for CTD data
24	CTDCND	S/M	F11.6	Conductivity (primary sensor)
25	CTDCND_FLAG_W		I1	Quality flags for CTD data
26	DNSSAL	G/KG	F9.4	Quality-controlled density salinity data
27	DNSSAL_FLAG_W		I1	Quality flags for water samples
28	DNSSAL_1	G/KG	F9.4	Quality-controlled density salinity data (replicate)
29	DNSSAL_1_FLAG_W		I1	Quality flags for water samples
30	CTDOXY	UMOL/KG	F9.2	CTD-oxygen (primary sensor)
31	CTDOXY_FLAG_W		I1	Quality flags for CTD data
32	CTDOXV	V	F9.4	CTD-oxygen voltage (primary sensor)
33	CTDOXV_FLAG_W		I1	Quality flags for CTD data
34	THETA	DEG C	F9.4	Potential temperature (primary sensor)
35	THETA_FLAG_W		I1	Quality flags for CTD data
36	SIG0	KG/CUM	F9.4	Density (primary sensor)
37	SIG0_FLAG_W		I1	Quality flags for CTD data
38	XMISS	%TRANS	F9.3	Transmissometer
39	XMISS_FLAG_W		I1	Quality flags for CTD data
40	XMISSCP	/METER	F9.4	Beam attenuation coefficient
41	XMISSCP_FLAG_W		I1	Quality flags for CTD data
42	XMISSV	V	F9.4	Transmissometer voltage
43	XMISSV_FLAG_W		I1	Quality flags for CTD data
44	FLUOR	MG/CUM	F9.3	Fluorescence
45	FLUOR_FLAG_W		I1	Quality flags for CTD data
46	PAR	UE/SQM/S	F9.3	PAR
47	PAR_FLAG_W		I1	Quality flags for CTD data
48	TURB	FTU	F9.3	Turbidity
49	TURB_FLAG_W		I1	Quality flags for CTD data
50	CTDNITRATE	UMOL/KG	F9.2	CTD_Nitrate
51	CTDNITRATE_FLAG_W		I1	Quality flags for CTD data
52	CTDNITRATEV	V	F9.2	CTD_Nitrate voltage
53	CTDNITRATEV_FLAG_W		I1	Quality flags for CTD data
54	SALNTY	PSS-78	F9.4	Bottle Salinity
55	SALNTY_FLAG_W		I1	Quality flags for water samples
56	SALNTY_1	PSS-78	F9.4	Bottle Salinity (duplicate)
57	SALNTY_1_FLAG_W		I1	Quality flags for water samples
58	OXYGEN	UMOL/KG	F9.2	Bottle Oxygen
59	OXYGEN_FLAG_W		I1	Quality flags for water samples
60	OXYGEN_1	UMOL/KG	F9.2	Bottle Oxygen (duplicate)
61	OXYGEN_1_FLAG_W		I1	Quality flags for water samples
62	SILCAT	UMOL/KG	F9.2	Silicate
63	SILCAT_FLAG_W		I1	Quality flags for water samples

Column No.	Column Heading Mnemonic	Units/KG Mnemonic	Reporting Precision FORTRAN Format	Uncertainty of Silicate data Comments
66	SILCAT1_FLAG_W		I1	Quality flags for water samples
67	SILCAT2	UMOL/KG	F9.2	Silicate (duplicate)
68	SILCAT2_FLAG_W		I1	Quality flags for water samples
69	NITRAT	UMOL/KG	F9.2	Nitrate
70	NITRAT_FLAG_W		I1	Quality flags for water samples
71	NRAUNC	UMOL/KG	F9.2	Uncertainty of Nitrate data
72	NITRAT1	UMOL/KG	F9.2	Nitrate
73	NITRAT1_FLAG_W		I1	Quality flags for water samples
74	NITRAT2	UMOL/KG	F9.2	Nitrate (duplicate)
75	NITRAT2_FLAG_W		I1	Quality flags for water samples
76	NITRIT	UMOL/KG	F9.2	Nitrite
77	NITRIT_FLAG_W		I1	Quality flags for water samples
78	NRIUNC	UMOL/KG	F9.2	Uncertainty of Nitrite data
79	NITRIT1	UMOL/KG	F9.2	Nitrite
80	NITRIT1_FLAG_W		I1	Quality flags for water samples
81	NITRIT2	UMOL/KG	F9.2	Nitrite (duplicate)
82	NITRIT2_FLAG_W		I1	Quality flags for water samples
83	PHSPHT	UMOL/KG	F9.3	Phosphate
84	PHSPHT_FLAG_W		I1	Quality flags for water samples
85	PHPUNC	UMOL/KG	F9.3	Uncertainty of Phosphate data
86	PHSPHT1	UMOL/KG	F9.3	Phosphate
87	PHSPHT1_FLAG_W		I1	Quality flags for water samples
88	PHSPHT2	UMOL/KG	F9.3	Phosphate (duplicate)
89	PHSPHT2_FLAG_W		I1	Quality flags for water samples
90	AMMONA	UMOL/KG	F9.2	Ammonium
91	AMMONA_FLAG_W		I1	Quality flags for water samples
92	NH4UNC	UMOL/KG	F9.2	Uncertainty of Ammonium data
93	AMMONA1	UMOL/KG	F9.2	Ammonium
94	AMMONA1_FLAG_W		I1	Quality flags for water samples
95	AMMONA2	UMOL/KG	F9.2	Ammonium (duplicate)
96	AMMONA2_FLAG_W		I1	Quality flags for water samples
97	TCARBN	UMOL/KG	F9.1	Total Carbon CT
98	TCARBN_FLAG_W		I1	Quality flags for water samples
99	TCARBN_1	UMOL/KG	F9.1	Total Carbon CT (duplicate)
100	TCARBN_1_FLAG_W		I1	Quality flags for water samples
101	ALKALI	UMOL/KG	F9.1	Total alkalinity
102	ALKALI_FLAG_W		I1	Quality flags for water samples
103	ALKALI_1	UMOL/KG	F9.1	Total alkalinity (duplicate)
104	ALKALI_1_FLAG_W		I1	Quality flags for water samples
105	d-POC_C1	mgC/m^3/day	F9.4	Carbon uptake rate
106	d-POC_C1_FLAG_W		I1	Quality flags for water samples
107	d-POC_C2	mgC/m^3/day	F9.4	Carbon uptake rate (duplicate)
108	d-POC_C2_FLAG_W		I1	Quality flags for water samples
109	d-POC_C1-Dark	mgC/m^3/day	F9.4	Carbon uptake rate (dark)
110	d-POC_C1-Dark_FLAG_W		I1	Quality flags for water samples
111	d-POC_C2-Dark	mgC/m^3/day	F9.4	Carbon uptake rate (dark)(duplicate)
112	d-POC_C2-Dark_FLAG_W		I1	Quality flags for water samples
113	CHLWEL	UG/L	F9.2	Chlorophyll a
114	CHLWEL_FLAG_W		I1	Quality flags for water samples
115	CHLWEL_1	UG/L	F9.2	Chlorophyll a (duplicate)
116	CHLWEL_1_FLAG_W		I1	Quality flags for water samples
117	SIZECHL>20um	UG/L	F9.2	Chlorophyll a > 20um
118	SIZECHL>20um_FLAG_W		I1	Quality flags for water samples
119	SIZECHL10-20um	UG/L	F9.2	Chlorophyll a 10-20um
120	SIZECHL10-20um_FLAG_W		I1	Quality flags for water samples
121	SIZECHL2-10um	UG/L	F9.2	Chlorophyll a 2-10um
122	SIZECHL2-10um_FLAG_W		I1	Quality flags for water samples
123	SIZECHL<2um	UG/L	F9.2	Chlorophyll a < 2um
124	SIZECHL<2um_FLAG_W		I1	Quality flags for water samples

ODV Format

Please see the following link for details of ODV Format and ODV Software.

[Ocean Data View \(ODV\)](#)

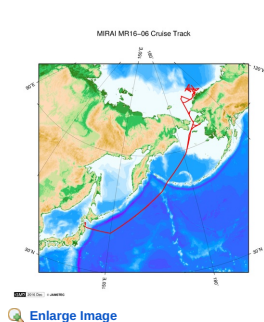
Format Information

Column No.	Column Heading	Comments
1	EXPCODE	Cruise Label
2	Cruise	Cruise
3	STNNBR	Station number_Cast number
4	Station	Station
5	Type	Station type
6	Bottle	bottle
7	mon/day/yr	Cast date
8	hh:mm	Cast time
9	Latitude[degrees_north]	Latitude
10	Longitude[degrees_east]	Longitude
11	Bot. Depth[METERS]	Bottom depth
12	CTDDPT[METERS]	Depth
13	QF	Quality flags for CTD data
14	CTDPRS[DBAR]	Pressure

Column No.	Column Heading	Comments
15	CTDTMP[ITS-90]	Quality flags for CTD data
16	CTDTMP[ITS-90]	Temperature (primary sensor)
17	QF	Quality flags for CTD data
18	SBE35[ITS-90]	Temperature from Deep Ocean Standards Thermometer
19	QF	Quality flags for CTD data
20	CTDSAL[PSS-78]	Salinity (primary sensor)
21	QF	Quality flags for CTD data
22	CTDCND[S/M]	Conductivity (primary sensor)
23	QF	Quality flags for CTD data
24	DNSSAL[G/KG]	Quality-controlled density salinity data
25	QF	Quality flags for water samples
26	DNSSAL_1[G/KG]	Quality-controlled density salinity data (replicate)
27	QF	Quality flags for water samples
28	CTDOXY[UMOL/KG]	CTD-oxygen (primary sensor)
29	QF	Quality flags for CTD data
30	CTDOXV[V]	CTD-oxygen voltage (primary sensor)
31	QF	Quality flags for CTD data
32	THETA[DEG C]	Potential temperature (primary sensor)
33	QF	Quality flags for CTD data
34	SIG0[KG/CUM]	Density (primary sensor)
35	QF	Quality flags for CTD data
36	XMISS[%TRANS]	Transmissometer
37	QF	Quality flags for CTD data
38	XMISSCP[METER]	Beam attenuation coefficient
39	QF	Quality flags for CTD data
40	XMISSV[V]	Transmissometer voltage
41	QF	Quality flags for CTD data
42	FLUOR[MG/CUM]	Fluorescence
43	QF	Quality flags for CTD data
44	PAR[UE/SQM/S]	PAR
45	QF	Quality flags for CTD data
46	TURB[FTU]	Turbidity
47	QF	Quality flags for CTD data
48	CTDNITRATE[UMOL/KG]	CTD_Nitrate
49	QF	Quality flags for CTD data
50	CTDNITRATEV[V]	CTD_Nitrate voltage
51	QF	Quality flags for CTD data
52	SALNTY[PSS-78]	Bottle Salinity
53	QF	Quality flags for water samples
54	SALNTY_1[PSS-78]	Bottle Salinity (duplicate)
55	QF	Quality flags for water samples
56	OXYGEN[UMOL/KG]	Bottle Oxygen
57	QF	Quality flags for water samples
58	OXYGEN_1[UMOL/KG]	Bottle Oxygen (duplicate)
59	QF	Quality flags for water samples
60	SILCAT[UMOL/KG]	Silicate
61	QF	Quality flags for water samples
62	SILUNC	Uncertainty of Silicate data
63	QF	Quality flags for water samples
64	SILCAT1[UMOL/KG]	Silicate
65	QF	Quality flags for water samples
66	SILCAT2[UMOL/KG]	Silicate (duplicate)
67	QF	Quality flags for water samples
68	NITRAT[UMOL/KG]	Nitrate
69	QF	Quality flags for water samples
70	NRAUNC	Uncertainty of Nitrate data
71	QF	Quality flags for water samples
72	NITRAT1[UMOL/KG]	Nitrate
73	QF	Quality flags for water samples
74	NITRAT2[UMOL/KG]	Nitrate (duplicate)
75	QF	Quality flags for water samples
76	NITRIT[UMOL/KG]	Nitrite
77	QF	Quality flags for water samples
78	NRIUNC	Uncertainty of Nitrite data
79	QF	Quality flags for water samples
80	NITRIT1[UMOL/KG]	Nitrite
81	QF	Quality flags for water samples
82	NITRIT2[UMOL/KG]	Nitrite (duplicate)
83	QF	Quality flags for water samples
84	PHSPHT[UMOL/KG]	Phosphate
85	QF	Quality flags for water samples
86	PHPUNC	Uncertainty of Phosphate data
87	QF	Quality flags for water samples
88	PHSPHT1[UMOL/KG]	Phosphate
89	QF	Quality flags for water samples
90	PHSPHT2[UMOL/KG]	Phosphate (duplicate)
91	QF	Quality flags for water samples
92	AMMONA[UMOL/KG]	Ammonium
93	QF	Quality flags for water samples
94	NH4UNC	Uncertainty of Ammonium data
95	QF	Quality flags for water samples
96	AMMONA1[UMOL/KG]	Ammonium

Column No.	Column Heading	Comments
97	QF	Quality flags for water samples
98	AMMONA2[UMOL/KG]	Ammonium (duplicate)
99	QF	Quality flags for water samples
100	TCARBN[UMOL/KG]	Total Carbon CT
101	QF	Quality flags for water samples
102	TCARBN_1[UMOL/KG]	Total Carbon CT (duplicate)
103	QF	Quality flags for water samples
104	ALKAL[UMOL/KG]	Total alkalinity
105	QF	Quality flags for water samples
106	ALKAL_1[UMOL/KG]	Total alkalinity (duplicate)
107	QF	Quality flags for water samples
108	d-POC_C1[mgC/m ³ /day]	Carbon uptake rate
109	QF	Quality flags for water samples
110	d-POC_C2[mgC/m ³ /day]	Carbon uptake rate (duplicate)
111	QF	Quality flags for water samples
112	d-POC_C1-Dark[mgC/m ³ /day]	Carbon uptake rate (dark)
113	QF	Quality flags for water samples
114	d-POC_C2-Dark[mgC/m ³ /day]	Carbon uptake rate (dark)(duplicate)
115	QF	Quality flags for water samples
116	CHLWEL[UG/L]	Chlorophyll a
117	QF	Quality flags for water samples
118	CHLWEL_1[UG/L]	Chlorophyll a (duplicate)
119	QF	Quality flags for water samples
120	SIZECHL>20um[UG/L]	Chlorophyll a > 20um
121	QF	Quality flags for water samples
122	SIZECHL10-20um[UG/L]	Chlorophyll a 10-20um
123	QF	Quality flags for water samples
124	SIZECHL2-10um[UG/L]	Chlorophyll a 2-10um
125	QF	Quality flags for water samples
126	SIZECHL<2um[UG/L]	Chlorophyll a < 2um
127	QF	Quality flags for water samples
128	SAMPNO	Sample Number
129	QF	Bottle quality flags

Related Information



MR16-06

Ship Name: MIRAI
 Period: 2016-08-22 - 2016-10-05
 Chief Scientist: Shigeto Nishino (JAMSTEC)
 Project Name: [Arctic Ocean Climate System Reaserch]
 Proposal ▶ Predictability study on weather and sea-ice forecasts linked with user engagement
 Title:

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Information of the Submersibles
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 SHINKAI 6500
 DEEP TOW
 HYPER-DOLPHIN
 URASHIMA
 YOKOSUKA DEEP TOW
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MIRAI MR16-06 Bottle Sampling Water Chemical Analysis

Last Modified: 2018-10-31

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Cruise ID: [MR16-06](#)

Bottle Sampling Water Chemical Analysis: Processed (PI)

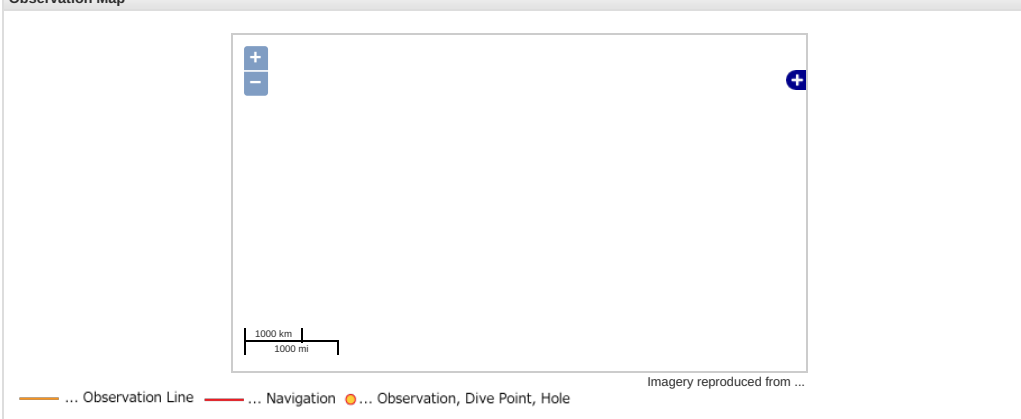
Data Policy: [JAMSTEC](#)

Observation Items: Temperature, Salinity, Dissolved oxygen, Potential temperature, Density, Fluorescence, Transmittance, PAR, Nitrate, Silicate, Nitrite, Phosphate, Ammonia, Total inorganic carbon, Alkalinity, Chlorophyll, POC

Science Keywords:

OCEANS	> OCEAN CHEMISTRY	> AMMONIA
OCEANS	> OCEAN CHEMISTRY	> INORGANIC CARBON
OCEANS	> OCEAN CHEMISTRY	> NITRATE
OCEANS	> OCEAN CHEMISTRY	> NUTRIENTS
OCEANS	> OCEAN CHEMISTRY	> OXYGEN
OCEANS	> OCEAN CHEMISTRY	> PHOSPHATE
OCEANS	> OCEAN CHEMISTRY	> SILICATE
OCEANS	> OCEAN CHEMISTRY	> SALINITY
OCEANS	> OCEAN CHEMISTRY	> CHLOROPHYLL
OCEANS	> OCEAN TEMPERATURE	> WATER TEMPERATURE
OCEANS	> SALINITY/DENSITY	> SALINITY
OCEANS	> OCEAN OPTICS	> EXTINCTION COEFFICIENTS
OCEANS	> OCEAN OPTICS	> PHOTOSYNTHETICALLY ACTIVE RADIATION
BIOSPHERE	> ECOLOGICAL DYNAMICS	> ECOSYSTEM FUNCTIONS
OCEANS	> OCEAN CHEMISTRY	> ALKALINITY
BIOSPHERE	> ECOLOGICAL DYNAMICS	> ECOSYSTEM FUNCTIONS
OCEANS	> OCEAN CHEMISTRY	> CARBON
OCEANS	> OCEAN OPTICS	> FLUORESCENCE
OCEANS	> OCEAN TEMPERATURE	> POTENTIAL TEMPERATURE

Observation Map



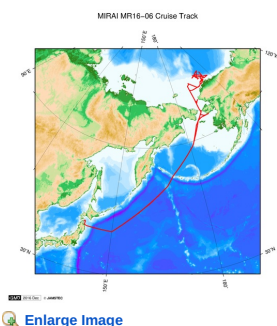
Data List

☐ File names

☐ MR160600_ex_bot.csv

☐ MR160600_odv_bot.txt

Related Information



MR16-06

Ship Name: MIRAI

Period: 2016-08-22 - 2016-10-05

Chief Scientist: Shigeto Nishino (JAMSTEC)

Project Name: [Arctic Ocean Climate System Research]

Proposal ▶ Predictability study on weather and sea-ice forecasts linked with user engagement

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