

MIRAI MR02-K06 Leg3 Bottle Sampling Water Chemical Analysis

Last Modified: 2017-07-28

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Cruise ID: [MR02-K06 Leg3](#)

Bottle Sampling Water Chemical Analysis: Processed (PI)

Data Policy: [JAMSTEC](#)

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

Science Keywords:

OCEANS > OCEAN CHEMISTRY > AMMONIA
OCEANS > OCEAN CHEMISTRY > INORGANIC CARBON
OCEANS > OCEAN CHEMISTRY > NITRITE
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 TEMPERATURE > SEA SURFACE TEMPERATURE
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/MR02-K06_leg3-4_all.pdf

For Using Data

Principal Investigator

CTDTMP : Kazuhiko Matsumoto (JAMSTEC)
CTDSAL : Kazuhiko Matsumoto (JAMSTEC)
SALNTY : Kazuhiko Matsumoto (JAMSTEC)
CTDOXY : Kazuhiko Matsumoto (JAMSTEC)
OXYGEN : Kazuhiko Matsumoto (JAMSTEC)
FLUOR : Kazuhiko Matsumoto (JAMSTEC)
CHLORA : Kazuhiko Matsumoto (JAMSTEC)
CHLWELSH : Kazuhiko Matsumoto (JAMSTEC)
XMISS : Kazuhiko Matsumoto (JAMSTEC)
SILCAT : Kazuhiko Matsumoto (JAMSTEC)
NITRAT : Kazuhiko Matsumoto (JAMSTEC)
NITRIT : Kazuhiko Matsumoto (JAMSTEC)
PHSPHT : Kazuhiko Matsumoto (JAMSTEC)
NH4 : Kazuhiko Matsumoto (JAMSTEC)
TCARBON : Masao Ishii (Meteorological Research Institute)

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(4ch) (- MR09-01)



Instrument:

Total dissolved inorganic carbon measurement system (- MR11-E02)



Notice

- 25 Dec.,2012 : The "OXYGEN", "XMISS", and "NH4" data were added.
- Temperature data measured by a mercury thermometer is listed in CTDTMP column at SAMPNO 0 which means sampled by bucket. Please notice that this data is different from other data in format (f9.1) and instrument.

Information on CTD data

(1) Temperature sensor

Model : SBE3, Sea-Bird Electronics, Inc.
Measurement range : -5.0 to +35degC
Accuracy : 0.001degC
Resolution : 0.0002degC

(2) Salinity sensor

Model : SBE4, Sea-Bird Electronics, Inc.
Measurement range : 0.0 to 75/m
Accuracy : 0.0003S/m

Resolution : 0.00004S/m

(3) Pressure sensor

Model : SBE9plus, Sea-Bird Electronics,Inc.

Measurement range : up to 10500m

Accuracy : 0.015%F.S.

Resolution : 0.001%F.S.

(4) DO sensor

Model : SBE43, Sea-Bird Electronics,Inc.

Measurement range : 0 to 15ml/l

Accuracy : 0.1ml/l

Resolution : 0.01ml/l

(5) Fluorometer

Model : Seapoint Chlorophyll Fluorometer, Seapoint Sensors, Inc.

(6) Transmissometer

Model : C-Star, WET Labs,Inc.

Information on Chemical and Biological data

- 1.Dissolved Oxygen
- (1)Instruments Titraror : Model 716 DMS Titrimo(Metrohm)
- Detector : Pt electrode
- (2)Methods : Winkler method/potentiometric method
- (3)Precision : -
- (4)Reference Material/Calibration : -
- 2.Salinity
- (1)Instruments: Autosol salinometer model 8400B(Guildline Instruments Ltd.)
- (2)Methods : -
- (3)Precision : see cruise report
- (4)Reference Material/Calibration: IAPSO Standard Sea Water batch P141
- 3.Silicate
- (1)Instruments: TRAACS800 (Bran+Luebbe)
- (2)Methods : Molybdenum blue method
- (3)Precision : C.V. 0.23% (170 µM)
- (4)Reference Material/Calibration: -
- 4.Nitrate
- (1)Instruments:TRAACS800 (Bran+Luebbe)
- (2)Methods :Diazotization method (reduced to nitrite by Cd - Cu tube)
- (3)Precision :C.V. 0.27% (50 µM)
- (4)Reference Material/Calibration:-
- 5.Nitrite
- (1)Instruments:TRAACS800 (Bran+Luebbe)
- (2)Methods :Diazotization method
- (3)Precision :C.V. 0.59% (1.2 µM)
- (4)Reference Material/Calibration: -
- 6.Phosphate
- (1)Instruments: TRAACS800 (Bran+Luebbe)
- (2)Methods : Molybdenum blue method
- (3)Precision : C.V. 0.34% (3.1µM)
- (4)Reference Material/Calibration: -
- 7.Ammonia
- (1)Instruments : TRAACS800 (Bran+Luebbe)
- (2)Methods : gas diffusion method(GDM)
- (3)Precision : C.V. 0.5 to 1.5%
- (4)Reference Material/Calibration: (NH₄)₂SO₄ solution
- 8.Total inorganic carbon
- (1)Instruments: the automated TCO₂ analyzer (Nippon ANS Co., Ltd.) equipped with carbon coulometer 5012 (UIC Co., Ltd.)
- (2)Methods : coulometry
- (3)Precision : -
- (4)Reference Material/Calibration:For quality assurance, we also analyzed TCO₂ in the Certified Reference Material (batch #58) provided by Dr. A. Dickson in Scripps Institution of Oceanography and in the reference seawater prepared in MRI (batch "U").
- 9.Chlorophyll-a
- (1)Instruments : Fluorophotometer model 10-AU-005 (Turner design)
- (2)Methods : extract in N,N-dimethylformamide/fluorometric determination (acidification method)
- (3)Precision : -
- (4)Reference Material/Calibration : -
- 10.Chlorophyll-a(Welschmeyer method)
- (1)Instruments : Fluorophotometer model 10-AU-005 (Turner design)
- (2)Methods : extract in N,N-dimethylformamide /fluorometric determination (Welschmeyer non-acidification method)
- (3)Precision : -
- (4)Reference Material/Calibration : -

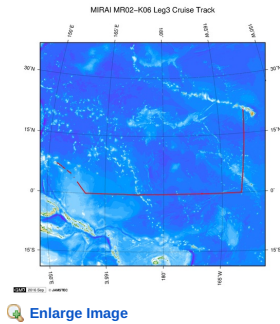
Related Information

MR02-K06 Leg3

Ship Name: MIRAI

Period: 2003-01-13 - 2003-01-31

Chief Scientist: Kazuhiko Matsumoto (JAMSTEC)



Update History

2017-07-28	An observation data was registered.
2016-10-11	An observation data was registered.

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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

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MIRAI MR02-K06 Leg3 Bottle Sampling Water Chemical Analysis

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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	Expedition code
2	SECT		A6	For WOCE data the WHP section identifier
3	STNNBR		A6	Station number
4	CASTNO		I3	Cast number
5	SAMPNO		A7	Sample number
6	BTLNBR		A7	Bottle identification number
7	BTLNBR_FLAG_W		I1	Bottle quality flag
8	DATE		I8	Cast date(UTC)
9	TIME	UTC	I4	Cast time (UTC)
10	LATITUDE	DEG	F8.3	LATITUDE
11	LONGITUDE	DEG	F9.3	LONGITUDE
12	DEPTH	M	I5	Reported depth to bottom.
13	CTDDPT	M	F9.1	Depth
14	CTDDPT_FLAG_W		I1	Quality flag for CTD data
15	CTDPRS	DBAR	F9.1	Pressure
16	CTDPRS_FLAG_W		I1	Quality flag for CTD data
17	CTDTMP	ITS-90	F9.4	Temperature
18	CTDTMP_FLAG_W		I1	Quality flag for CTD data
19	CTDSAL	PSS-78	F9.4	CTD Salinity sensor
20	CTDSAL_FLAG_W		I1	Quality flag for CTD data
21	SALNTY	PSS-78	F9.4	Salinity
22	SALNTY_FLAG_W		I1	Quality flags for water samples
23	CTDOXY	UMOL/KG	F9.2	CTD Oxygen sensor
24	CTDOXY_FLAG_W		I1	Quality flag for CTD data
25	OXYGEN	UMOL/KG	F9.2	Oxygen
26	OXYGEN_FLAG_W		I1	Quality flags for water samples
27	FLUOR	UG/L	F9.4	Fluorometer
28	FLUOR_FLAG_W		I1	Quality flag for CTD data
29	CHLORA	MG/CUM	F9.2	Chlorophyll a
30	CHLORA_FLAG_W		I1	Quality flags for water samples
31	CHLWELSH	MG/CUM	F9.2	Chlorophyll a (Welschmeyer method)
32	CHLWELSH_W		I1	Quality flags for water samples
33	XMISS	%TRANS	F9.3	Transmissometer
34	XMISS_FLAG_W		I1	Quality flag for CTD data
35	SILCAT	UMOL/KG	F9.2	Silicate
36	SILCAT_FLAG_W		I1	Quality flags for water samples
37	NITRAT	UMOL/KG	F9.2	Nitrate
38	NITRAT_FLAG_W		I1	Quality flags for water samples
39	NITRIT	UMOL/KG	F9.2	Nitrite
40	NITRIT_FLAG_W		I1	Quality flags for water samples
41	PHSPHT	UMOL/KG	F9.2	Phosphate
42	PHSPHT_FLAG_W		I1	Quality flags for water samples
43	NH4	UMOL/KG	F9.2	Ammonium
44	NH4_FLAG_W		I1	Quality flags for water samples
45	TCARBN	UMOL/KG	F9.1	Total carbon
46	TCARBN_FLAG_W		I1	Quality flags for water samples
47	THETA	DEG C	F9.4	Potential temperature
48	SIG0	KG/CUM	F9.4	Density

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	Cruise	Cruise Label
2	Station	Station number_Cast number
3	Type	Station type
4	mon/day/yr	Cast date(UTC)
5	hh:mm	Cast time (UTC)
6	Latitude [degrees_north]	LATITUDE
7	Longitude [degrees_east]	LONGITUDE
8	Bot. Depth [m]	Reported depth to bottom.
9	CTDDPT[M]	Depth
10	QF	Quality flag for CTD data
11	CTDPRS[DBAR]	Pressure

Column No.	Column Heading	Comments
12	CTDTMP[ITS-90]	Quality flag for CTD data Temperature
14	QF	Quality flag for CTD data
15	CTDSAL[PSS-78]	CTD Salinity sensor
16	QF	Quality flag for CTD data
17	SALNTY[PSS-78]	Salinity
18	QF	Quality flags for water samples
19	CTDOXY[UMOL/KG]	CTD Oxygen sensor
20	QF	Quality flag for CTD data
21	OXYGEN[UMOL/KG]	Oxygen
22	QF	Quality flags for water samples
23	FLUOR[U/G/L]	Fluorometer
24	QF	Quality flag for CTD data
25	CHLORA[MG/CUM]	Chlorophyll a
26	QF	Quality flags for water samples
27	CHLWELSH[MG/CUM]	Chlorophyll a (Welschmeyer method)
28	QF	Quality flags for water samples
29	XMISS[%TRANS]	Transmissometer
30	QF	Quality flag for CTD data
31	SILCAT[UMOL/KG]	Silicate
32	QF	Quality flags for water samples
33	NITRAT[UMOL/KG]	Nitrate
34	QF	Quality flags for water samples
35	NITRIT[UMOL/KG]	Nitrite
36	QF	Quality flags for water samples
37	PHSPHT[UMOL/KG]	Phosphate
38	QF	Quality flags for water samples
39	NH4[UMOL/KG]	Ammonium
40	QF	Quality flags for water samples
41	TCARB[UMOL/KG]	Total carbon
42	QF	Quality flags for water samples
43	THETA[DEG C]	Potential temperature
44	QF	Quality flag for CTD data
45	SIG0[KG/CUM]	Density
46	QF	Quality flag for CTD data
47	SAMPNO	Sample number
48	QF	Bottle quality flag

Related Information

MR02-K06 Leg3
 Ship Name: MIRAI
 Period: 2003-01-13 - 2003-01-31
 Chief Scientist: Kazuhiko Matsumoto (JAMSTEC)

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Update History

2017-07-28	An observation data was registered.
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 - POWER GRAB SAMPLER (CLOW)
 - BMS

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Bottle Sampling Water Chemical Analysis: Processed (PI)

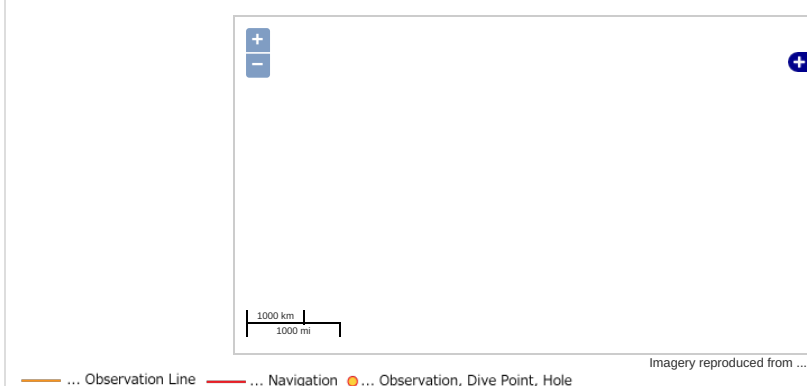
Data Policy: [JAMSTEC](#)

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Observation Map



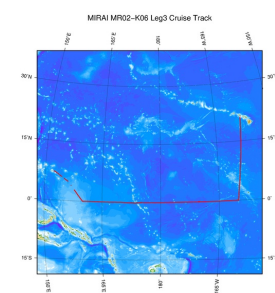
Data List

☐ **File names**

☐ MR02K0603_ex_bot.csv

☐ MR02K0603_odv_bot.txt

Related Information



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Period: 2003-01-13 - 2003-01-31

Chief Scientist: Kazuhiko Matsumoto (JAMSTEC)

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