

MIRAI MR02-K01 Bottle Sampling Water Chemical Analysis

Last Modified: 2017-07-28

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Cruise ID: [MR02-K01](#)

Bottle Sampling Water Chemical Analysis: Processed (DMO/PI)

Data Policy: [JAMSTEC](#)

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

Science Keywords:

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-K01_all.pdf

For Using Data

Principal Investigator

CTDTMP : -
CTDSAL : -
SALNTY : -
CTDOXY : -
OXYGEN : -
FLUOR : -
CHLORA : Kazuhiko Matsumoto (JAMSTEC)
CHLWELSH : Kazuhiko Matsumoto (JAMSTEC)
PPHYTN : Kazuhiko Matsumoto (JAMSTEC)
XMISS : -
SILCAT : Kazuhiko Matsumoto (JAMSTEC)
NITRAT : Kazuhiko Matsumoto (JAMSTEC)
NITRIT : Kazuhiko Matsumoto (JAMSTEC)
PHSPHT : Kazuhiko Matsumoto (JAMSTEC)
TCARBN : 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:
Fluorometer (TURNER DESIGNS)



Notice

- 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.
- Data flags of FLUOR and XMISS are Unknown (flag1) because of lack of the calibration.

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 7S/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 : 0-15ml/(120% of surface saturation)
Accuracy : 0.1ml/(2% of saturation)
Resolution : 0.01ml/l

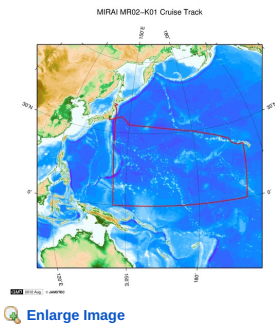
(5) Fluorometer
Model : Seapoint Sensors, Inc.

(6) Transmissometer
Model : WET Labs, Inc.

Information on Chemical and Biological data

1. Dissolved Oxygen
(1) Instruments : Titrator:Model 716 DMS Titrino(Metrohm)
Detector:Pt electrode
(2) Methods : Winkler method/potentiometric method
(3) Precision : The precision was 0.20(2sigma / max concentration in this cruise×100).
(4) Reference Material/Calibration : 0.0100N KIO3 solution/Comparison of each standard to CSK standard solution
2. Salinity
(1) Instruments : Autosal salinometer model 8400B(Guildline Instruments Ltd.)
(2) Methods : -
(3) Precision : -
(4) Reference Material/Calibration : IAPSO Standard Sea Water batch P139(Ocean Scientific International Ltd.)
3. Silicate
(1) Instruments : TRAACS800 (Bran+Luebbe)
(2) Methods : Molybdenum blue method
(3) Precision : At this repeat analysis range of CV (concentration average to standard deviation) was 0.02 to 0.83 % except for nitrite
(4) Reference Material/Calibration : -
4. Nitrate
(1) Instruments : TRAACS800 (Bran+Luebbe)
(2) Methods : Diazotization method
(3) Precision : At this repeat analysis range of CV (concentration average to standard deviation) was 0.02 to 0.83 % except for nitrite
(4) Reference Material/Calibration : -
5. Nitrite
(1) Instruments : TRAACS800 (Bran+Luebbe)
(2) Methods : Diazotization method (reduced to nitrite by Cd - Cu tube)
(3) Precision : -
(4) Reference Material/Calibration : -
6. Phosphate
(1) Instruments : TRAACS800 (Bran+Luebbe)
(2) Methods : Molybdenum blue method
(3) Precision : At this repeat analysis range of CV (concentration average to standard deviation) was 0.02 to 0.83 % except for nitrite
(4) Reference Material/Calibration : -
7. Total inorganic carbon
(1) Instruments:Samples were analyzed at the laboratory in MRI
(2) Methods : -
(3) Precision : -
(4) Reference Material/Calibration: -
8. Chlorophyll-a
(1) Instruments : Fluorophotometer model 10-AU-005 (Turner design)
(2) Methods : extract in N,N-dimethylformamide/fluorometric determination (traditional acidification method)
(3) Precision : -
(4) Reference Material/Calibration : -
9. 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-K01
Ship Name: MIRAI
Period: 2002-01-07 - 2002-02-15
Chief Scientist: Takeshi Kawano (JAMSTEC)

Update History

2017-07-28	An observation data was registerd.
2015-05-29	An observation data was registerd.
2013-08-23	An observation data was registerd.
2012-12-25	An observation data was registerd.

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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:

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Dive ID:

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MIRAI MR02-K01 Bottle Sampling Water Chemical Analysis

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Cruise ID: **MR02-K01**

Bottle Sampling Water Chemical Analysis: Processed (DMO/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	F8.4	LATITUDE
11	LONGITUDE	DEG	F9.4	LONGITUDE
12	DEPTH	M	I5	Reported depth to bottom.
13	CTDDPT	M	I9	Depth
14	CTDDPT_FLAG_W		I1	Quality flag for CTD data
15	CTDPRS	DBAR	I9	Pressure
16	CTDPRS_FLAG_W		I1	Quality flag for CTD data
17	CTDTMP	ITS-90	F9.3	Temperature
18	CTDTMP_FLAG_W		I1	Quality flag for CTD data
19	CTDSAL	PSS-78	F9.3	CTD Salinity sensor
20	CTDSAL_FLAG_W		I1	Quality flag for CTD data
21	SALNTY	PSS-78	F9.3	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	F9.1	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	PPHYTN	MG/CUM	F9.2	Phaeophytin
34	PPHYTN_FLAG_W		I1	Quality flags for water samples
35	XMISS	%TRANS	I9	Transmissometer
36	XMISS_FLAG_W		I1	Quality flag for CTD data
37	SILCAT	UMOL/KG	F9.2	Silicate
38	SILCAT_FLAG_W		I1	Quality flags for water samples
39	NITRAT	UMOL/KG	F9.2	Nitrate
40	NITRAT_FLAG_W		I1	Quality flags for water samples
41	NITRIT	UMOL/KG	F9.2	Nitrite
42	NITRIT_FLAG_W		I1	Quality flags for water samples
43	PHSPHT	UMOL/KG	F9.2	Phosphate
44	PHSPHT_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	F9.2	Potential temperature
48	SIG0	KG/CUM	F9.2	Density

ODV Format

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

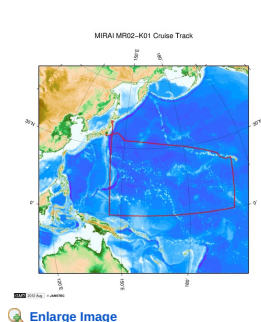
[Ocean Data View \(ODV\)](#)

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	QF	Quality flag for CTD data
13	CTDTMP[ITS-90]	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/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	PPHYTN[MG/CUM]	Phaeophytin
30	QF	Quality flags for water samples
31	XMISS[%TRANS]	Transmissometer
32	QF	Quality flag for CTD data
33	SILCAT[UMOL/KG]	Silicate
34	QF	Quality flags for water samples
35	NITRAT[UMOL/KG]	Nitrate
36	QF	Quality flags for water samples
37	NITRIT[UMOL/KG]	Nitrite
38	QF	Quality flags for water samples
39	PHSPHT[UMOL/KG]	Phosphate
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



[Enlarge Image](#)

MR02-K01
Ship Name: MIRAI
Period: 2002-01-07 - 2002-02-15
Chief Scientist: Takeshi Kawano (JAMSTEC)

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6K Camera DEEP TOW
6K Sonar DEEP TOW
KM-ROV
POWER GRAB
SAMPLER (SHELL)
POWER GRAB
SAMPLER (CLOW)
BMS

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Cruise ID: [MR02-K01](#)

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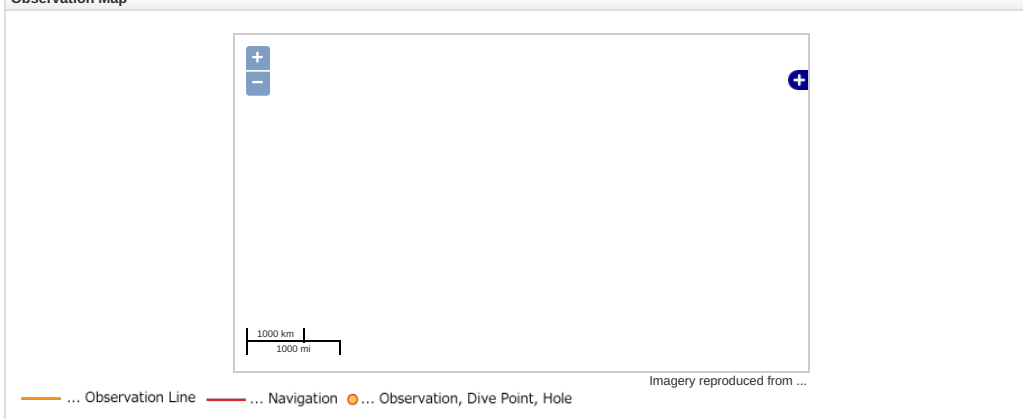
Data Policy: [JAMSTEC](#)

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

Science Keywords:

OCEANS > OCEAN CHEMISTRY > INORGANIC CARBON
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OCEANS > OCEAN OPTICS > FLUORESCENCE
OCEANS > OCEAN TEMPERATURE > POTENTIAL TEMPERATURE

Observation Map



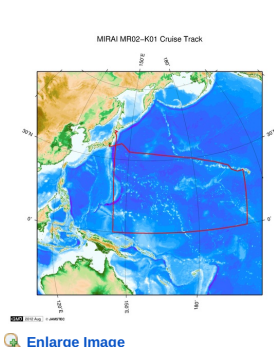
Data List

☐ File names

☐ MR02K0100_ex_bot.csv

☐ MR02K0100_odv_bot.txt

Related Information



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MR02-K01

Ship Name: MIRAI

Period: 2002-01-07 - 2002-02-15

Chief Scientist: Takeshi Kawano (JAMSTEC)

Update History

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