

MIRAI MR14-06 Leg3 Bottle Sampling Water Chemical Analysis

Last Modified: 2018-05-08

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Cruise ID: [MR14-06 Leg3](#)

Bottle Sampling Water Chemical Analysis : Processed (PI)

Data Policy: [JAMSTEC](#)

Observation Items: Temperature, Salinity, Dissolved oxygen, Fluorescence, Silicate, Nitrate, Nitrite, Phosphate, Chlorophyll, Potential temperature, Density

Science Keywords:

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 > FLUORESCENCE
 OCEANS > OCEAN TEMPERATURE > POTENTIAL TEMPERATURE

Cruise Report

http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR14-06_leg3_all.pdf

i For Using Data

Principal Investigator

CTDTMP : Iwao Ueki (JAMSTEC)
 CTDSAL : Iwao Ueki (JAMSTEC)
 CTDCND : Iwao Ueki (JAMSTEC)
 SALNTY : Iwao Ueki (JAMSTEC)
 CTDOXY : Iwao Ueki (JAMSTEC)
 OXYGEN : Iwao Ueki (JAMSTEC)
 FLUOR : Iwao Ueki (JAMSTEC)
 SILCAT : Iwao Ueki (JAMSTEC)
 NITRAT : Iwao Ueki (JAMSTEC)
 NITRIT : Iwao Ueki (JAMSTEC)
 PHSPHT : Iwao Ueki (JAMSTEC)
 CHLWEL : Iwao Ueki (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:

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



Instrument:

Fluorometer (TURNER DESIGNS)



Information on CTD data

Pressure sensor

Model : SBE9plus, Sea-Bird Electronics, Inc.
 Measurement range : 0 to 6800 m
 Accuracy : ± 0.015% of full scale range
 Resolution : 0.001% of full scale

Temperature sensor

Model : SBE3, Sea-Bird Electronics, Inc.
 Measurement range : -5 to +35 °C
 Accuracy : ± 0.001 °C
 Resolution : 0.0002 °C

Salinity sensor

Model : SBE4, Sea-Bird Electronics, Inc.
Measurement range : 0 to 7 S/m
Accuracy : ± 0.0003 S/m
Resolution : 0.00004 S/m

DO sensor

Model : SBE43, Sea-Bird Electronics, Inc.
Measurement range : 120% of surface saturation
Accuracy : $\pm 2\%$ of saturation

Fluorometer

Model : Seapoint Sensors, Inc.
Measurement range : 0 - 5 $\mu\text{g/l}$
Resolution : 0.02 $\mu\text{g/l}$

Information on Chemical and Biological data

Salinity

Instruments : Autosal salinometer model 8400B (Guildline Instruments Ltd.)
Methods : -
Precision : The average and the standard deviation of absolute difference among 9 pairs of replicate samples were 0.0004 and 0.0003 in salinity
Reference Material/Calibration : IAPSO Standard Sea Water batch P157

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 : 0.08 $\mu\text{mol kg}^{-1}$
Reference Material/Calibration : 0.001667M KIO₃ solution

Silicate

Instruments : BL TEC K.K QuAAtro 2-HR
Methods : Molybdenum blue method
Precision : C.V. 0.11%
Reference Material/Calibration : RMNS, Silicon standard solution SiO₂ in NaOH 0.5 mol/L CertiPUR® (Merck KGaA)

Nitrate

Instruments : BL TEC K.K QuAAtro 2-HR
Methods : Diazotization method (reduced to nitrite by Cd - Cu tube)
Precision : C.V. 0.09%
Reference Material/Calibration : RMNS, potassium nitrate 99.995 suprapur® (Merck KGaA)

Nitrite

Instruments : BL TEC K.K QuAAtro 2-HR
Methods : Diazotization method
Precision : C.V. 0.12%
Reference Material/Calibration : RMNS, sodium nitrite (Wako Pure Chemical Industries, Ltd.)

Phosphate

Instruments : BL TEC K.K QuAAtro 2-HR
Methods : Molybdenum blue method
Precision : C.V. 0.10%
Reference Material/Calibration : RMNS, potassium dihydrogen phosphate anhydrous 99.995 suprapur® (Merck KGaA)

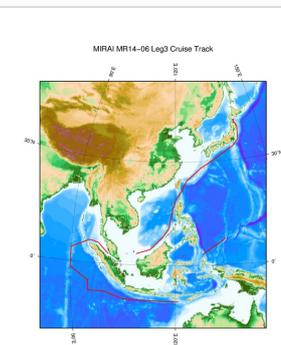
Chlorophyll a

Instruments : Fluorophotometer model 10-AU-005 (Turner design)
Methods : Extract in N, N-dimethylformamide /fluorometric determination (Welschmeyer non-acidification method)
Precision : -
Reference Material/Calibration : Pure chlorophyll a (Sigma-chemical Co.)

About this data

There are some description error for nutrient data of this cruise.
Please refer to the errata of the cruise report.

Related Information



MR14-06 Leg3

Ship Name: MIRAI
Period: 2015-01-22 - 2015-02-25
Chief Scientist: Iwao Ueki (JAMSTEC)
Proposal ▶ Study of structure and formation process of the Ontong Java Plateau
Title:

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Update History

2018-05-08	An observation data was registered.
2018-01-25	An observation data was registered.
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2017-02-25	An observation data was registered.

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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
7	BTLNBR_FLAG_W		I1		Bottle quality flags
8	DATE		I8		Cast date
9	TIME	UTC	A4		Cast time
10	LATITUDE	DEG	F8.4		-
11	LONGITUDE	DEG	F9.4		-
12	DEPTH	METERS	I5		Bottom depth
13	CTDDPT	METERS	F9.1		Depth
14	CTDDPT_FLAG_W		I1		Quality flags for CTD data
15	CTDPRS	DBAR	F9.1		Pressure
16	CTDPRS_FLAG_W		I1		Quality flags for CTD data
17	CTDTMP	ITS-90	F9.4		Temperature
18	CTDTMP_FLAG_W		I1		Quality flags for CTD data
19	CTDTMP_1	ITS-90	F9.4		Temperature (secondary sensor)
20	CTDTMP_1_FLAG_W		I1		Quality flags for CTD data
21	CTDSAL	PSS-78	F9.4		Salinity
22	CTDSAL_FLAG_W		I1		Quality flags for CTD data
23	CTDSAL_1	PSS-78	F9.4		Salinity (secondary sensor)
24	CTDSAL_1_FLAG_W		I1		Quality flags for CTD data
25	CTDCND	S/M	F11.6		Conductivity (primary sensor)
26	CTDCND_1	S/M	F11.6		Conductivity (secondary sensor)
27	SALNTY	PSS-78	F9.4		Bottle Salinity
28	SALNTY_FLAG_W		I1		Quality flags for water samples
29	SALNTY_1	PSS-78	F9.4		Bottle Salinity (replicate)
30	SALNTY_1_FLAG_W		I1		Quality flags for water samples
31	CTDOXY	UMOL/KG	F9.2		Oxygen_CTD
32	CTDOXY_FLAG_W		I1		Quality flags for CTD data
33	CTDOXY_1	UMOL/KG	F9.2		Oxygen_CTD (secondary sensor)
34	CTDOXY_1_FLAG_W		I1		Quality flags for CTD data
35	CTDOXV	V	F9.4		Oxygen_CTD voltage (primary sensor)
36	CTDOXV_1	V	F9.4		Oxygen_CTD voltage (secondary sensor)
37	OXYGEN	UMOL/KG	F9.2		Oxygen
38	OXYGEN_FLAG_W		I1		Quality flags for water samples
39	OXYGEN_1	UMOL/KG	F9.2		Oxygen (replicate)
40	OXYGEN_1_FLAG_W		I1		Quality flags for water samples
41	FLUOR	MG/CUM	F9.3		Fluorescence
42	FLUOR_FLAG_W		I1		Quality flags for CTD data
43	SILCAT	UMOL/KG	F9.2		Silicate
44	SILCAT_FLAG_W		I1		Quality flags for water samples
45	SILCAT2	UMOL/KG	F9.2		Silicate (replicate)
46	SILCAT2_FLAG_W		I1		Quality flags for water samples
47	SILCAT_AVE	UMOL/KG	F9.2		Silicate (average)
48	SILCAT_AVE_FLAG_W		I1		Quality flags for water samples
49	NITRAT	UMOL/KG	F9.2		Nitrate
50	NITRAT_FLAG_W		I1		Quality flags for water samples
51	NITRAT2	UMOL/KG	F9.2		Nitrate (replicate)
52	NITRAT2_FLAG_W		I1		Quality flags for water samples
53	NITRAT_AVE	UMOL/KG	F9.2		Nitrate (average)
54	NITRAT_AVE_FLAG_W		I1		Quality flags for water samples
55	NITRIT	UMOL/KG	F9.2		Nitrite
56	NITRIT_FLAG_W		I1		Quality flags for water samples
57	NITRIT2	UMOL/KG	F9.2		Nitrite (replicate)
58	NITRIT2_FLAG_W		I1		Quality flags for water samples
59	NITRIT_AVE	UMOL/KG	F9.2		Nitrite (average)
60	NITRIT_AVE_FLAG_W		I1		Quality flags for water samples
61	PHSPHT	UMOL/KG	F9.3		Phosphate
62	PHSPHT_FLAG_W		I1		Quality flags for water samples
63	PHSPHT2	UMOL/KG	F9.3		Phosphate (replicate)
64	PHSPHT2_FLAG_W		I1		Quality flags for water samples
65	PHSPHT_AVE	UMOL/KG	F9.3		Phosphate (average)

Column No.	Column Heading	Units Mnemonic	Reporting Precision	FORTRAN Format	Comments
66	PHSPHT_AVE_FLAG_W		I1		Quality flags for water samples
67	CHLWEL	UG/L	F9.2		Chlorophyll a
68	CHLWEL_FLAG_W		I1		Quality flags for water samples
69	CHLWEL_1	UG/L	F9.2		Chlorophyll a (replicate)
70	CHLWEL_1_FLAG_W		I1		Quality flags for water samples
71	THETA	DEG C	F9.4		Potential temperature
72	THETA_1	DEG C	F9.4		Potential temperature (secondary sensor)
73	SIG0	KG/CUM	F9.4		Density
74	SIG0_1	KG/CUM	F9.4		Density (secondary sensor)

ODV Format

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

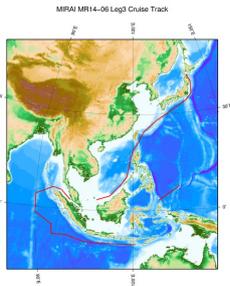
[Ocean Data View \(ODV\)](#)

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
5	hh:mm	Cast time
6	Latitude [degrees_north]	-
7	Longitude [degrees_east]	-
8	Bot. Depth [METERS]	Bottom depth
9	CTDDP[METERS]	Depth
10	QF	Quality flags for CTD data
11	CTDPRS[DBAR]	Pressure
12	QF	Quality flags for CTD data
13	CTDTMP[ITS-90]	Temperature
14	QF	Quality flags for CTD data
15	CTDTMP_1[ITS-90]	Temperature (secondary sensor)
16	QF	Quality flags for CTD data
17	CTDSAL[PSS-78]	Salinity
18	QF	Quality flags for CTD data
19	CTDSAL_1[PSS-78]	Salinity (secondary sensor)
20	QF	Quality flags for CTD data
21	CTDCND[S/M]	Conductivity (primary sensor)
22	QF	Quality flags for CTD data
23	CTDCND_1[S/M]	Conductivity (secondary sensor)
24	QF	Quality flags for CTD data
25	SALNTY[PSS-78]	Bottle Salinity
26	QF	Quality flags for water samples
27	SALNTY_1[PSS-78]	Bottle Salinity (replicate)
28	QF	Quality flags for water samples
29	CTDOXY[UMOL/KG]	Oxygen_CTD
30	QF	Quality flags for CTD data
31	CTDOXY_1[UMOL/KG]	Oxygen_CTD (secondary sensor)
32	QF	Quality flags for CTD data
33	CTDOXY[V]	Oxygen_CTD voltage (primary sensor)
34	QF	Quality flags for CTD data
35	CTDOXY_1[V]	Oxygen_CTD voltage (secondary sensor)
36	QF	Quality flags for CTD data
37	OXYGEN[UMOL/KG]	Oxygen
38	QF	Quality flags for water samples
39	OXYGEN_1[UMOL/KG]	Oxygen (replicate)
40	QF	Quality flags for water samples
41	FLUOR[MG/CUM]	Fluorescence
42	QF	Quality flags for CTD data
43	SILCAT[UMOL/KG]	Silicate
44	QF	Quality flags for water samples
45	SILCAT2[UMOL/KG]	Silicate (replicate)
46	QF	Quality flags for water samples
47	SILCAT_AVE[UMOL/KG]	Silicate (average)
48	QF	Quality flags for water samples
49	NITRAT[UMOL/KG]	Nitrate
50	QF	Quality flags for water samples
51	NITRAT2[UMOL/KG]	Nitrate (replicate)
52	QF	Quality flags for water samples
53	NITRAT_AVE[UMOL/KG]	Nitrate (average)
54	QF	Quality flags for water samples
55	NITRIT[UMOL/KG]	Nitrite
56	QF	Quality flags for water samples
57	NITRIT2[UMOL/KG]	Nitrite (replicate)
58	QF	Quality flags for water samples
59	NITRIT_AVE[UMOL/KG]	Nitrite (average)
60	QF	Quality flags for water samples
61	PHSPHT[UMOL/KG]	Phosphate
62	QF	Quality flags for water samples
63	PHSPHT2[UMOL/KG]	Phosphate (replicate)
64	QF	Quality flags for water samples
65	PHSPHT_AVE[UMOL/KG]	Phosphate (average)
66	QF	Quality flags for water samples
67	CHLWEL_1	Chlorophyll a

Column No.	Column Heading	Comments
68	QF	Quality flags for water samples
69	CHLWEL_1[UG/L]	Chlorophyll a (replicate)
70	QF	Quality flags for water samples
71	THETA[DEG C]	Potential temperature
72	QF	Quality flags for CTD data
73	THETA_1[DEG C]	Potential temperature (secondary sensor)
74	QF	Quality flags for CTD data
75	SIG0[KG/CUM]	Density
76	QF	Quality flags for CTD data
77	SIG0_1[KG/CUM]	Density (secondary sensor)
78	QF	Quality flags for CTD data
79	SAMPNO	Sample Number
80	QF	Bottle quality flags

Related Information



MR14-06 Leg3

Ship Name: MIRAI
 Period: 2015-01-22 - 2015-02-25
 Chief Scientist: Iwao Ueki (JAMSTEC)
 Proposal ▶ Study of structure and formation process of the Ontong Java Plateau
 Title:

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Update History

2019-05-08	An observation data was registered.
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Bottle Sampling Water Chemical Analysis: Processed (PI)

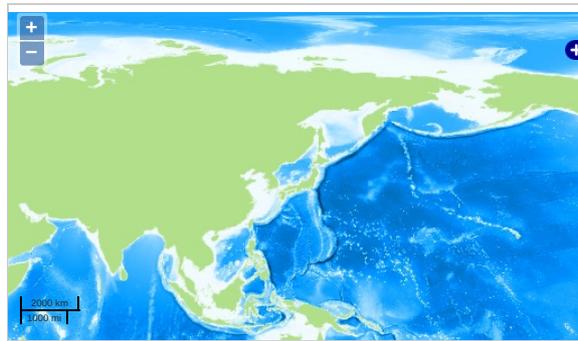
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- OCEANS > SALINITY/DENSITY > SALINITY
- OCEANS > OCEAN OPTICS > FLUORESCENCE
- OCEANS > OCEAN TEMPERATURE > POTENTIAL TEMPERATURE

Observation Map



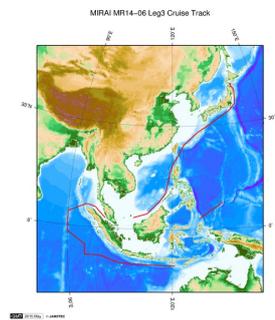
Imagery reproduced from ...

— Observation Line — Navigation ● Observation, Dive Point, Hole

Data List

- File names
- MR140603_ex_bot.csv
- MR140603_odv_bot.txt

Related Information



[Enlarge Image](#)

MR14-06 Leg3

Ship Name: MIRAI

Period: 2015-01-22 - 2015-02-25

Chief Scientist: Iwao Ueki (JAMSTEC)

Proposal ▶ Study of structure and formation process of the Ontong Java Plateau

Title:

Update History

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Feeds

SHINSEI MARU
HAKUHO MARU

YOKOSUKA DEEP TOW
6K Camera DEEP TOW
6K Sonar DEEP TOW
KM-ROV
POWER GRAB SAMPLER
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