

MIRAI MR12-E02 Leg3 Bottle Sampling Water Chemical Analysis

Last Modified: 2020-11-10

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

Cruise ID: [MR12-E02 Leg3](#)

Bottle Sampling Water Chemical Analysis: Processed (PI)

Data Policy: [JAMSTEC](#)

Observation Items: Temperature, Practical salinity, Transmittance, Dissolved oxygen, Silicate, Nitrate, Nitrite, Phosphate, Ammonia, Chlorophyll, Alkalinity, Dissolved Inorganic Carbon, LTA

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 CHEMISTRY	> ALKALINITY
OCEANS > OCEAN OPTICS	> FLUORESCENCE

Cruise Report

http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR12-E02_leg3_all.pdf

For Using Data

Principal Investigator

Masahide Wakita (JAMSTEC)

Use Constraints

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

Data Citation

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

Instrument

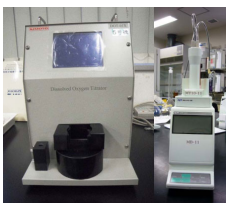
Instrument:

Salinity measurement system



Instrument:

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



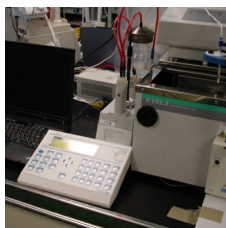
Instrument:

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



Instrument:

Titration for total alkalinity (- MR14-02)



Instrument:

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



Instrument:

Fluorometer (TURNER DESIGNS)



Notice

· Temperature data measured by a mercury thermometer is listed in CTDMP 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

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

Information on Chemical and Biological data

Salinity

Instruments : Autosal salinometer model 8400B (Guildline Instruments Ltd.)
Methods : -
Precision : -
Reference Material/Calibration : IAPSO Standard Seawater (Ocean Scientific International Ltd.)

Dissolved Oxygen

Instruments : Burette: 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 0.16 μmol kg⁻¹
Reference Material/Calibration : CSK standard of potassium iodate Lot EPJ3885

Silicate

Instruments : BL TEC K.K QuAAtro 2-HR
Methods : Molybdenum blue method
Precision : -
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 : -
Reference Material/Calibration : RMNS, potassium nitrate 99.995 suprapur® (Merck KGaA)

Nitrite

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

Ammonia

Instruments : BL TEC K.K QuAAtro 2-HR
Methods : Indophenol method
Precision : -
Reference Material/Calibration : ammonium sulfate (Wako Pure Chemical Industries, Ltd.)

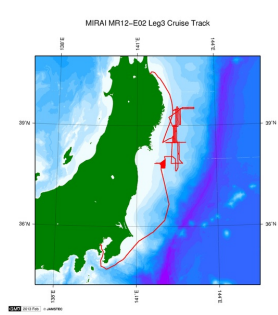
Chlorophyll a

Instruments : Fluorophotometer model 10-AU-005 (Turner design)
Methods : Extract in N, N-dimethylformamide /fluorometric determination (Non-acidification method and 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



MIRAI MR12-E02 Leg3 Cruise Track

MR12-E02 Leg3
Ship Name: MIRAI
Period: 2012-03-22 - 2012-03-30
Chief Scientist: Hidetaka Nomaki (JAMSTEC)
Project Name: [Tohoku Ecosystem-Associated Marine Sciences (TEAMS)]
Proposal Title: Marine Ecosystems Investigation, Impact by the mega-earthquake (the 2011 Earthquake of the Pacific coast of Tohoku) and Tsunami: For Recovery and Rebuilding of Sanriku Fisheries Activities

Update History

2020-11-10	An observation data was registered.
2018-01-25	An observation data was registered.
2015-05-29	An observation data was registered.
2015-03-05	An observation data was registered.
2014-10-03	An observation data was registered.

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SHINSEI MARU
HAKUHO MARU

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SHINKAI 6500
DEEP TOW
HYPER-DOLPHIN
URASHIMA
YOKOSUKA DEEP TOW
6K Camera DEEP TOW
6K Sonar DEEP TOW

Go to a Cruise Information

Cruise ID:

Go to a Dive Information

Dive ID:

KM-ROV
POWER GRAB SAMPLER
(SHELL)
POWER GRAB SAMPLER
(CLOW)
BMS

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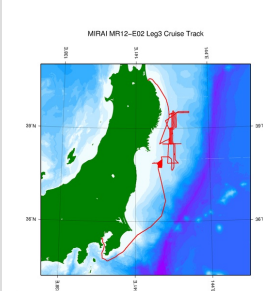
Bottle Sampling Water Chemical Analysis: Processed (PI)

Data Policy: [JAMSTEC](#)

Format Information

Column No.	Column Heading	Comments
1	Cruise	Cruise Label
2	Type	Station type
3	Station	Station number_Cast number
4	Year	Year
5	Month	Month
6	Day	Day
7	Hour	Hour
8	Minute	Minute
9	LATITUDE	LATITUDE
10	LONGITUDE	LONGITUDE
11	Bot. depth	Reported depth to bottom.
12	Pressure [db]	Pressure
13	QF	Quality flag for CTD data
14	Depth [m]	Depth
15	Temp. [C]	Temperature
16	QF	Quality flag for CTD data
17	Salinity-SBE	CTD Salinity sensor
18	QF	Quality flag for CTD data
19	Light transmission [%]	Light transmission
20	QF	Quality flag for CTD data
21	Salinity-Bottle	Salinity
22	QF	Quality flags for water samples
23	Oxygen [umol/kg]	Oxygen
24	QF	Quality flags for water samples
25	Silicate [umol/kg]	Silicate
26	QF	Quality flags for water samples
27	Nitrate [umol/kg]	Nitrate
28	QF	Quality flags for water samples
29	Nitrite [umol/kg]	Nitrite
30	QF	Quality flags for water samples
31	Phosphate [umol/kg]	Phosphate
32	QF	Quality flags for water samples
33	NH4 [umol/kg]	Ammonium
34	QF	Quality flags for water samples
35	Chl.a-Wel [ug/l]	Chlorophyll a (Non-acidification method)
36	QF	Quality flags for water samples
37	Chl.a-Hol [ug/l]	Chlorophyll a (Acidification method)
38	QF	Quality flags for water samples
39	TA [umol/kg]	Total alkalinity
40	QF	Quality flags for water samples
41	DIC [umol/kg]	Dissolved inorganic carbon
42	QF	Quality flags for water samples
43	DOC [umol/kg]	Dissolved organic carbon
44	QF	Quality flags for water samples
45	LTA [%]	LTA [%]
46	QF	Quality flags
47	TDN[umol/kg]	Total dissolved nitrogen
48	QF	Quality flags for water samples
49	18O	Oxygen isotope ratio of seawater
50	QF	Quality flags for water samples

Related Information



[Enlarge Image](#)

MR12-E02 Leg3

Ship Name: MIRAI

Period: 2012-03-22 - 2012-03-30

Chief Scientist: Hidetaka Nomaki (JAMSTEC)

Project Name: [Tohoku Ecosystem-Associated Marine Sciences (TEAMS)]

Proposal Marine Ecosystems Investigation, Impact by the mega-earthquake (the 2011 Earthquake of the Pacific coast of Tohoku) and Tsunami: For Recovery and Rebuilding of Sanriku Fisheries Activities

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POWER GRAB
SAMPLER (SHELL)
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SAMPLER (CLOW)
BMS

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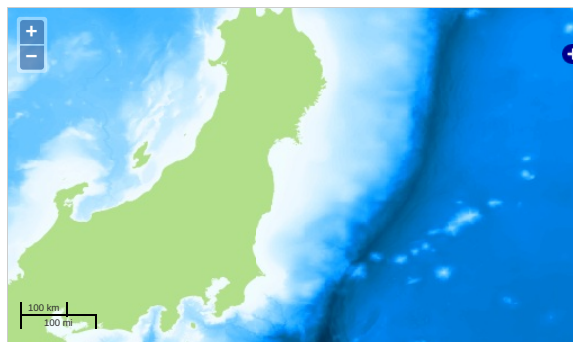
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OCEANS > OCEAN OPTICS > FLUORESCENCE

Observation Map



Imagery reproduced from ...

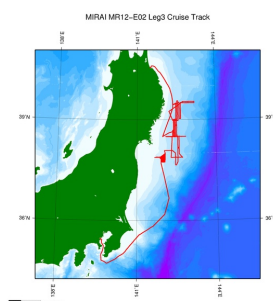
... Observation Line ... Navigation ... Observation, Dive Point, Hole

Data List

File names

☐ MR12-E02_bottle_data.xlsx

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[Enlarge Image](#)

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POWER GRAB SAMPLER
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