

Cabled-6_TN326_Discrete_Summary Information:

File Mapping:

Hex files were renamed from the original ship-provided files for consistency and ease of processing. Original file names are listed below on the left, with corresponding new file names on the right. Original Hex files are accessible for each cruise in the Cruise Data folder under the “Ship Data” sub-directory. Bottle files used to populate the discrete summary can be found in the Water Sampling sub-directory under “Shipboard Data”.

TN326_CTD01 = TN326_CTD-001
TN326_CTD02 = TN326_CTD-002
TN326_CTD03 = TN326_CTD-003
TN326_CTD04 = TN326_CTD-004
TN326_CTD05 = TN326_CTD-005
TN326_CTD06 = TN326_CTD-006
TN326_CTD07 = TN326_CTD-007
TN326_CTD08 = TN326_CTD-008
TN326_CTD09 = TN326_CTD-009
TN326_CTD10 = TN326_CTD-010
TN326_CTD11 = TN326_CTD-011
TN326_CTD12 = TN326_CTD-012
TN326_CTD13 = TN326_CTD-013
TN326_CTD14 = TN326_CTD-014
TN326_CTD15 = TN326_CTD-015
TN326_CTD16 = TN326_CTD-016
TN326_CTD17 = TN326_CTD-017
TN326_CTD18 = TN326_CTD-018
TN326_CTD19 = TN326_CTD-019
TN326_CTD20 = TN326_CTD-020
TN326_CTD21 = TN326_CTD-021
TN326_CTD22 = TN326_CTD-022
TN326_CTD23 = TN326_CTD-023

TN326_CTD24 = TN326_CTD-024
TN326_CTD25 = TN326_CTD-025
TN326_CTD26 = TN326_CTD-026
TN326_CTD27 = TN326_CTD-027
R1842 = TN326_R1842
R1849 = TN326_R1849
R1855 = TN326_R1855
R1859 = TN326_R1859
R1866 = TN326_R1866

Summary Notes:

TN326, CTD-001, Niskin 6, Discrete Oxygen Flag: "Bottle #223 did not clear when blue I-starch complex disappeared, +1ml H2SO4 added and continued titrating."
TN326, CTD-003, Niskin 10, Niskin Flag: "Difficult to dispense water"
TN326, CTD-003, Niskin 17, Niskin Flag: "Difficult to dispense water"
TN326, CTD-004, Niskin 10, Niskin Flag: "Difficult to dispense water"
TN326, CTD-004, Niskin 17, Niskin Flag: "Difficult to dispense water"
TN326, CTD-004, Niskin 20, Niskin Flag: "Difficult to dispense water"
TN326, CTD-005, Cast Flag: "30m/min winch speed until 200m"
TN326, CTD-011, Niskin 7, Discrete Carbon Flag: "2nd aliquot of HgCl2 added"
TN326, CTD-011, Niskin 9, Discrete Carbon Flag: "2nd aliquot of HgCl2 added"
TN326, CTD-011, Niskin 11, Discrete Carbon Flag: "2nd aliquot of HgCl2 added"
TN326, CTD-012, Cast Flag: "CTD cast log missing, event details extracted from eLog and bottle files. Bottom depth is approximate."
TN326, CTD-013, Cast Flag: "CTD cast log missing, event details extracted from eLog and bottle files. Bottom depth is approximate."
TN326, CTD-014, Niskin 1, Discrete Fluorometer Flag: "sample discarded before analysis due to contamination with jelly matter"
TN326, CTD-014, Niskin 5, Discrete Fluorometer Flag: "sample discarded before analysis due to contamination with jelly matter"
TN326, CTD-015, Cast Flag: "30m/min winch speed until 220m"
TN326, CTD-017, Cast Flag: "Zooplankton net attached to CTD for sampling between 350m and 400m; net tangled, unusable."
TN326, CTD-018, Cast Flag: "Zooplankton net attached to CTD for sampling between 350m and 400m."
TN326, CTD-019, Cast Flag: "Zooplankton net attached to CTD for sampling between 250m and 300m."

TN326, CTD-022, Cast Flag: "No surface soak."

TN326, CTD-023, Niskin 6, Discrete Salinity Flag: "bottle overfilled"

TN326, R1842, Cast Flag: "No depth indicated on cast log, bottom depth is approximate."

General File Notes:

- Discrete sample fields containing text or non-decimal numbers ("DIC-###", "CH-##", "OX-###", "SA####", or "673") list sample bottle numbers and not analyzed data. Bottle numbers are included when data are not yet available, and will be replaced with analysis results as data are received from analysis labs.
- Fill value = -9999999
- Carbon analysis was provided by Burke Hales lab at Oregon State University. All Carbon parameters are provided at in situ temperatures. Calculated carbon parameters were provided by Hales using custom software routines using published values for the various carbon chemistry constants. Hale's lab provides the following references regarding constants used in the calculations. For further information, please contact Burke Hales (bhales@coas.oregonstate.edu).
 - o Carbonic acid dissociation constants: Millero (2010), with full resolution constants provided by Millero via private conversation, equal to Lueker's constants at $S > 25$).
 - o K_w : Millero (1995)
 - o K_b : Dickson (1990)
 - o K_{sp} for calcite and aragonite: Mucci (1980)
 - o K_h : Weiss (1973)
 - o Alkalinity is modeled as: $HCO_3^- + 2CO_3^{2-} + B(OH)_4^- + OH^- - H^+$

Data Flag bit maps:

Bit Position	Cast Flags	CTD File Flags	CTD Parameter Flags	Niskin Flags	Discrete Sample Flags	Discrete Replicate Flags
0	Notes/Other	Notes/Other	Notes/Other	Notes/Other	Notes/Other	Notes/Other
1	Delayed start to data collection	Data cast only, no Niskins triggered	Not calibrated	Bottle information unavailable	Sample for this measurement was drawn from water bottle but analysis not received	Duplicate analysis on same sample
2	Acceptable; normal cast according to SOP	Acceptable; file processed according to SOP	Acceptable measurement	No problems noted	Acceptable; sample processed according to SOP	Single sample
3	Non-standard winch speed	File processed using modified parameters	Questionable measurement	Leaking	Questionable measurement	Duplicate analysis from same Niskin
4	Non-standard surface soak time	File processed using alternate XMLCON	Bad measurement	Ran out of water during sampling	Bad measurement	Triplicate analysis from same Niskin
5	Non-standard bottle soak time before Niskin trip	Missing scans as indicated by modulo error counts	Not reported	Vent open	Not reported	Unassigned
6	Sensor issues but cast completed and data collected	Missing metadata	Calibration coefficients > 1 year old	Misfire at wrong depth	Sample collected out of order	Unassigned
7	Cable issues but cast completed and data collected	Unassigned	Corresponding discrete sample	Unknown problem	Sample processed using alternative method; see notes	Unassigned
8	Winch issues but cast completed and data collected	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
9	Premature cast end with data and/or data loss	Unassigned	Unassigned	Sample not drawn for this measurement from this bottle	Unassigned	Unassigned
10	Significant ship heave	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
11	Station position not adequately maintained during cast	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
12	Tow-yo, Yo-yo cast	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
13	ROV bottle sample	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
14	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
15	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned