	TR0886	ACCESSION NUMBER	77-0241

DDF A:3:06

DATA DOCUMENTATION FORM

NOAA FORM 24-13
(3-73)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEANOGRAPHIC DATA CENTER
RECORDS SECTION
ROCKVILLE, MARYLAND 20852

FORM APPROVED
O.M.B. No. 41-R2651

This form should accompany all data submissions to NODC. Section A, Originator Identification, must be completed when the data are submitted. It is highly desirable for NODC to also receive the remaining pertinent information at that time. This may be most easily accomplished by attaching reports, publications, or manuscripts which are readily available describing data collection, analysis, and format specifics. Readable, handwritten submissions are acceptable in all cases. All data shipments should be sent to the above address.

NEGO

A. ORIGINATOR IDENTIFICATION

THIS SECTION MUST BE COMPLETED BY DONOR FOR ALL DATA TRANSMITTALS

1. NAME AND ADDRESS OF INSTITUTION, LABORATORY, OR ACTIVITY WITH WHICH SUBMITTED DATA ARE ASSOCIATED

Richard Feely
Pacific Marine Environmental Laboratory/ERL/NOAA
3711 - 15th Ave. N.E.
Seattle, WA 98105

2. EXPEDITION, PROJECT, OR PROGRAM DURING WHICH DATA WERE COLLECTED

OCSEAP (Bureau of Land Management)
Research Unit 152/154

3. CRUISE NUMBER(S) USED BY ORIGINATOR TO IDENTIFY DATA IN THIS SHIPMENT

760413

Tape 9741 File 2

4. PLATFORM NAME(S)

DISCOVERER
RP-4-Di-76A-IV

5. PLATFORM TYPE(S) *(E.G., SHIP, BUOY, ETC.)*

Ship

6. PLATFORM AND OPERATOR NATIONALITY(IES)

PLATFORM	OPERATOR
USA	USA

7. DATES

FROM: MO/DAY/YR	TO: MO/DAY/YR
04/14/76	04/28/76

8. ARE DATA PROPRIETARY?

[X] NO [ ] YES

IF YES, WHEN CAN THEY BE RELEASED FOR GENERAL USE? YEAR____ MONTH____

9. ARE DATA DECLARED NATIONAL PROGRAM (DNP)?
(I.E., SHOULD THEY BE INCLUDED IN WORLD DATA CENTERS HOLDINGS FOR INTERNATIONAL EXCHANGE?)

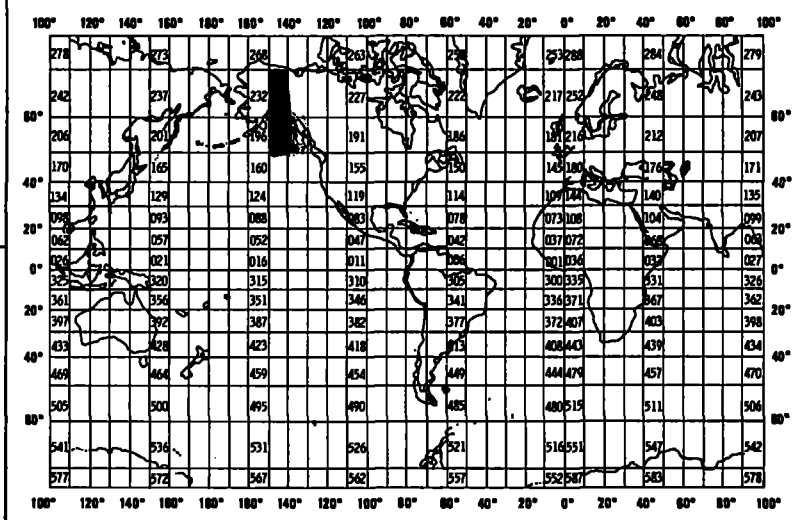
[✓] NO [ ] YES [ ] PART *(SPECIFY BELOW)*

10. PERSON TO WHOM INQUIRIES CONCERNING DATA SHOULD BE ADDRESSED WITH TELEPHONE NUMBER *(AND ADDRESS IF OTHER THAN IN ITEM-1)*

Dr. Richard Feely
PMEL/ERL/NOAA
[illegible]42-4800 (commercial)
[illegible]9-4800 (FTS)

11. PLEASE DARKEN ALL MARSDEN SQUARES IN WHICH ANY DATA CONTAINED IN YOUR SUBMISSION WERE COLLECTED.

GENERAL AREA



B. SCIENTIFIC CONTENT

Include enough information concerning manner of observation, instrumentation, analysis, and data reduction routines to make them understandable to future users. Furnish the minimum documentation considered relevant to each data type. Documentation will be retained as a permanent part of the data and will be available to future users. Equivalent information already available may be substituted for this section of the form (i.e., publications, reports, and manuscripts describing observational and analytical methods). If you do not provide equivalent information by attachment, please complete the scientific content section in a manner similar to the one shown in the following example.

EXAMPLE (HYPOTHETICAL INFORMATION)

NAME OF DATA FIELD	REPORTING UNITS OR CODE	METHODS OF OBSERVATION AND INSTRUMENTS USED (SPECIFY TYPE AND MODEL)	ANALYTICAL METHODS (INCLUDING MODIFICATIONS) AND LABORATORY PROCEDURES	DATA PROCESSING TECHNIQUES WITH FILTERING AND AVERAGING
Salinity	‰	Nansen bottles	Inductive salinometer (Hytech model S510)	N/A (Not applicable)
		STD Bissett-Berman Model 9006	N/A	Values averaged over 5-meter intervals
Water color	Forel scale	Visual comparison with Forel bottles	N/A	N/A
Sediment size	ϕ units and percent by weight	Ewing corer	Standard sieves. Carbonate fraction removed by acid treatment	Same as "Sedimentary Rock Manual," Folk '65

(SPACE IS PROVIDED ON THE FOLLOWING TWO PAGES FOR THIS INFORMATION)

C. DATA FORMAT

This information is requested only for data transmitted on punched cards or magnetic tape. Have one of your data processing specialists furnish answers either on the form or by attaching equivalent readily available documentation. Identify the nature and meaning of all entries and explain any codes used.

1. List the record types contained in your file transmittal (e.g., tape label record, master, detail, standard depth, etc.).

2. Describe briefly how your file is organized.

3-13. Self-explanatory.

14. Enter the field name as appropriate (e.g., header information, temperature, depth, salinity.

15. Enter starting position of the field.

16. Enter field length in number columns and unit of measurement (e.g., bit, byte, character, word) in unit column.

17. Enter attributes as expressed in the programming language specified in item 3 (e.g., "F 4.1," "BINARY FIXED (5.1)").

18. Describe field. If sort field, enter "SORT 1" for first, "SORT 2" for second, etc. If field is repeated, state number of times it is repeated.

C. DATA FORMAT

COMPLETE THIS SECTION FOR PUNCHED CARDS OR TAPE, MAGNETIC TAPE, OR DISC SUBMISSIONS.

1. LIST RECORD TYPES CONTAINED IN THE TRANSMITTAL OF YOUR FILE
GIVE METHOD OF IDENTIFYING EACH RECORD TYPE

Record type 1 - 1 in Col. 10

Record type 2 - 2 in Col. 10

Record type 3 - 3 in Col. 10

Record type 4 - 4 in Col. 10

2. GIVE BRIEF DESCRIPTION OF FILE ORGANIZATION

File is composed of data from 1 cruise.

Record type 1 is a cruise and station description header card;

Record type 2 is a station number card;

Record type 3 is a data listing card;

Record type 4 is a continuation of record type 3.

3. ATTRIBUTES AS EXPRESSED IN ☐ PL-1 ☐ ALGOL ☐ COBOL ☒ FORTRAN ☐ _____ LANGUAGE

4. RESPONSIBLE COMPUTER SPECIALIST:
NAME AND PHONE NUMBER Jane Fisher (206) 442-4800
ADDRESS PMEL, Hangar 32, 7600 Sandpoint Way N.E., Seattle, WA 98115

COMPLETE THIS SECTION IF DATA ARE ON MAGNETIC TAPE

5. RECORDING MODE
☐ BCD ☐ BINARY
☐ ASCII ☒ EBCDIC
☐ _____

6. NUMBER OF TRACKS (CHANNELS)
☐ SEVEN
☒ NINE
☐ _____

7. PARITY
☒ ODD
☐ EVEN

8. DENSITY
☐ 200 BPI ☒ 1600 BPI
☐ 556 BPI
☐ 800 BPI
☐ _____

9. LENGTH OF INTER-RECORD GAP (IF KNOWN) ☐ 3/4 INCH
☐ _____

10. END OF FILE MARK
☐ OCTAL 17
☐ _____

11. PASTE-ON-PAPER LABEL DESCRIPTION *(INCLUDE ORIGINATOR NAME AND SOME LAY SPECIFICATIONS OF DATA TYPE, VOLUME NUMBER)*

12. PHYSICAL BLOCK LENGTH IN BYTES
4000

13. LENGTH OF BYTES IN BITS
8 bits/byte

C. DATA FORMAT

USER TAPE

COMPLETE THIS SECTION FOR PUNCHED CARDS OR TAPE, MAGNETIC TAPE, OR DISC SUBMISSIONS.

1. LIST RECORD TYPES CONTAINED IN THE TRANSMITTAL OF YOUR FILE GIVE METHOD OF IDENTIFYING EACH RECORD TYPE

Four distict record types: (1) Station Header record; (2) Text record; (3) Data I record; and (4) Data II record differentiated by byte 10.

2. GIVE BRIEF DESCRIPTION OF FILE ORGANIZATION

One physical file with data sorted by station number and record type within each station.

ATTRIBUTES AS EXPRESSED IN ☐ PL-1 ☐ ALGOL ☐ COBOL ☒ FORTRAN ☐ _____ LANGUAGE

4. RESPONSIBLE COMPUTER SPECIALIST:

NAME AND PHONE NUMBER Pete Topoly 4-7505

ADDRESS DSF&I Branch (D752)

COMPLETE THIS SECTION IF DATA ARE ON MAGNETIC TAPE

5. RECORDING MODE
☐ BCD ☐ BINARY
☐ ASCII ☒ EBCDIC
☐ _____

6. NUMBER OF TRACKS (CHANNELS)
☐ SEVEN
☒ NINE
☐ _____

7. PARITY
☐ ODD
☒ EVEN

8. DENSITY
☐ 200 BPI ☒ 1600 BPI
☐ 556 BPI
☐ 800 BPI
☐ _____

9. LENGTH OF INTER-RECORD GAP (IF KNOWN) ☒ 3/4 INCH ☐ _____

10. END OF FILE MARK ☒ OCTAL 17 ☐ _____

11. PASTE-ON-PAPER LABEL DESCRIPTION *(INCLUDE ORIGINATOR NAME AND SOME LAY SPECIFICATIONS OF DATA TYPE, VOLUME NUMBER)*

VOL=SER=002555 LABEL=(1,NL)

LRECL=80
BLKSIZE=4800

12. PHYSICAL BLOCK LENGTH IN BYTES

4800

13. LENGTH OF BYTES IN BITS

NOAA FORM 24-13

Trace Metals (Station/Sample Header)

RECORD FORMAT DESCRIPTION

RECORD NAME _____

14. FIELD NAME	15. POSITION FROM-1 MEASURED IN bytes (e.g., bits, bytes)	16. LENGTH NUMBER	16. LENGTH UNITS	17. ATTRIBUTES	18. USE AND MEANING
File Type	1	3	Bytes	A3	Always '021'
File Identifier	4	6	"	A6	'YYMMDD on Originator's data 'TRXXXX on User data
Record Type	10	1	"	A1	Always'1'
Sequence Number	11	3	"	I3	Ascending order for sorting
Station Number	14	5	"	A5	
Latitude,					
Degrees	19	2	"	I2	
Minutes	21	2	"	I2	
Seconds	23	2	"	I2	
Hemisphere	25	1	"	A1	Always 'N' or 'S'
Longitude					
Degrees	26	3	"	I3	
Minutes	29	2	"	I2	
Seconds	31	2	"	I2	
Hemisphere	33	1	"	A1	Always 'E' or 'W'
Sample Collection Date-Time					
Year	34	2	"	I2	00 to 99
Month	36	2	"	I2	01 to 12
Day	38	2	"	I2	01 to 31 G.M.T.
Hour	40	2	"	I2	00 to 23
Minutes	42	2	"	I2	00 to 59
Depth to Bottom	44	5	"	I5	Whole Meters
Sphere Code	49	1	"	A1	
Blank	50	31	"	31X	

NOAA FORM 24-13

RECORD FORMAT DESCRIPTION

RECORD NAME _____

14. FIELD NAME	15. POSITION FROM-1 MEASURED IN _____ (e.g., bits, bytes)	16. LENGTH		17. ATTRIBUTES	18. USE AND MEANING
		NUMBER	UNITS		

NOAA FORM 24-13

RECORD FORMAT DESCRIPTION

RECORD NAME Trace Metals (Station/Sample Header)

14. FIELD NAME	15. POSITION FROM-1 MEASURED IN Bytes (e.g., bits, bytes)	16. LENGTH NUMBER	16. LENGTH UNITS	17. ATTRIBUTES	18. USE AND MEANING
File Type	1	3	Bytes	A3	Always '021'
File Identifier	4	6	Bytes	A6	'YYMMDD' = date of file creation or unique cruise number
Record Type	10	1	Bytes	A1	Always '1'
Sequence Number	11	3	Bytes	I3	Ascending order for sorting
Station Number	14	5	Bytes	A5	
Latitude,					
Degrees	19	2	Bytes	I2	
Minutes	21	2	Bytes	I2	
Seconds	23	2	Bytes	I2	
Hemisphere	25	1	Bytes	A1	'E' or 'W'
Sample Collection					
Date-Time					
Year	34	2	Bytes	I2	00 to 99
Month	36	2	Bytes	I2	01 to 12
Day	38	2	Bytes	I2	01 to 31 } G.M.T.
Hour	40	2	Bytes	I2	00 to 23
Minutes	42	2	Bytes	I2	00 to 59
Depth to Bottom	44	5	Bytes	I5	Whole meters
Sphere Code	49	1	Bytes	A1	
Blank	50	31	Bytes	21X	

RECORD FORMAT DESCRIPTION

RECORD NAME Trace Metals (Text)

14. FIELD NAME	15. POSITION FROM-1 MEASURED IN Bytes (e.g., bits, bytes)	16. LENGTH NUMBER	16. LENGTH UNITS	17. ATTRIBUTES	18. USE AND MEANING
File Type	1	3	Bytes	A3	Always '021'
File Identifier	4	6	Bytes	A6	'YYMMDD' = date of file creation or unique cruise number
Record Type	10	1	Bytes	A1	Always '2'
Sequence Number	11	3	Bytes	I3	Ascending order for sorting
Station Number	14	5	Bytes	A5	
Text	19	62	Bytes	62A1	Any descriptive alpha-numeric information

RECORD FORMAT DESCRIPTION

RECORD NAME Trace Metals (Data II)

14. FIELD NAME	15. POSITION FROM-1 MEASURED IN Bytes (e.g., bits, bytes)	16. LENGTH NUMBER	16. LENGTH UNITS	17. ATTRIBUTES	18. USE AND MEANING
File Type	1	3	Bytes	A3	Always '021'
File Identifier	4	6	Bytes	A6	'YYMMDD' = date of file creation or unique cruise number
Record Type	10	1	Bytes	A1	Always '4'
Sequence Number	11	3	Bytes	I3	Ascending order for sorting
Station Number	14	5	Bytes	A5	
Sample Depth	19	4	Bytes	I4	Whole meters
Replicate Number	23	1	Bytes	I1	
Lab Sample Number	24	4	Bytes	I4	
Titanium Dioxide (TiO_2)	28	5	Bytes	I5	% by weight to thousandths
Trace Code	33	1	Bytes	A1	*
tal Chromium	34	6	Bytes	I6	Parts per million by weight to tenths
Trace Code	40	1	Bytes	A1	*
Total Manganese	41	5	Bytes	I5	Parts per million by weight to tenths
Trace Code	46	1	Bytes	A1	*
Total Iron	47	5	Bytes	I5	% by weight to thousandths
Trace Code	52	1	Bytes	A1	*
Total Nickel	53	5	Bytes	I5	Parts per million by weight to tenths
Trace Code	58	1	Bytes	A1	*
Total Copper	59	5	Bytes	I5	Parts per million by weight to tenths
Trace Code	64	1	Bytes	A1	*
Total Zinc	65	5	Bytes	I5	Parts per million by weight to tenths
ace Code	70	1	Bytes	A1	*

RECORD FORMAT DESCRIPTION

RECORD NAME Trace Metals (Data II) (Continued)

14. FIELD NAME	15. POSITION FROM-1 MEASURED IN Bytes (e.g., bits, bytes)	16. LENGTH NUMBER	16. LENGTH UNITS	17. ATTRIBUTES	18. USE AND MEANING
Total Lead	71	5	Bytes	I5	Parts per million by weight to tenths
Trace Code	76	1	Bytes	A1	*
Blank	77	4	Bytes	4X	

*Trace code - to be used when no concentrations recorded

' ' = no information

'1' = trace found but too small to measure

'2' = measurement beyond limits of instrumentation

B. SCIENTIFIC CONTENT

NAME OF DATA FIELD	REPORTING UNITS OR CODE	METHODS OF OBSERVATION AND INSTRUMENTS USED (SPECIFY TYPE AND MODEL)	ANALYTICAL METHODS (INCLUDING MODIFICATIONS) AND LABORATORY PROCEDURES	DATA PROCESSING TECHNIQUES WITH FILTERING AND AVERAGING
Particulate major and minor elements: C,N,MgO,Al_2O_3, SiO_2, K_2O, CaO, TiO_2,Cr,Mn,Fe , Ni, Cu, Zn and Pb.	C- Wt. % N- Wt. % MgO- Wt. % Al_2O_3- Wt. % SiO_2- Wt. % K_2O- Wt. % CaO- Wt. % TiO_2- Wt. % Cr- ppm Mn- ppm Fe - Wt. % Ni- ppm Cu- ppm Zn- ppm Pb- ppm	See attached sheet.	See attached sheet.	See attached sheet.

USCOMM-DC 44289-P72

B. SCIENTIFIC CONTENT

NAME OF DATA FIELD	REPORTING UNITS OR CODE	METHODS OF OBSERVATION AND INSTRUMENTS USED (SPECIFY TYPE AND MODEL)	ANALYTICAL METHODS (INCLUDING MODIFICATIONS) AND LABORATORY PROCEDURES	DATA PROCESSING TECHNIQUES WITH FILTERING AND AVERAGING

D. INSTRUMENT CALIBRATION

This calibration information will be utilized by NOAA's National Oceanographic Instrumentation Center in their efforts to develop calibration standards for voluntary acceptance by the oceanographic community. Identify the instruments used by your organization to obtain the scientific content of the DDF (i.e., STD, temperature and pressure sensors, salinometers, oxygen meters, velocimeters, etc.) and furnish the calibration data requested by completing and/or checking ("✓") the appropriate spaces. Add the interval time (i.e., 3 months, 6 months, 9 months, etc.) if the fixed interval calibration cycle is checked.

INSTRUMENT TYPE (MFR., MODEL NO.)	DATE OF LAST CALIBRATION	INSTRUMENT WAS CALIBRATED BY		CHECK ONE: INSTRUMENT IS CALIBRATED					INSTRUMENT IS NOT CALIBRATED
		YOUR ORGANIZATION (√)	OTHER ORGANIZATION (GIVE NAME)	AT FIXED INTERVALS (√)	BEFORE OR AFTER USE (√)	BEFORE AND AFTER USE (√)	ONLY AFTER REPAIR (√)	ONLY WHEN NEW (√)	(√)
PMEL ANALOG NEPHELOMETER	7/28/75		UNIV. OF WASH. DEVELOPMENTAL LABORATORY	✓					

RECORD FORMAT DESCRIPTION

RECORD NAME Trace Metals (Data I)

14. FIELD NAME	15. POSITION FROM-1 MEASURED IN Bytes (e.g., bits, bytes)	16. LENGTH NUMBER	16. LENGTH UNITS	17. ATTRIBUTES	18. USE AND MEANING
File Type	1	3	Bytes	A3	Always '021'
File Identifier	4	6	Bytes	A6	'YYMMDD' = date of file creation or unique cruise number
Record Type	10	1	Bytes	A1	Always '3'
Sequence Number	11	3	Bytes	I3	Ascending order for sorting
Station Number	14	5	Bytes	A5	
Sample Depth	19	4	Bytes	I4	Whole meters
Replicate Number	23	1	Bytes	I1	
Lab Sample Number	24	4	Bytes	I4	
Nephels	28	5	Bytes	I5	Whole kHz
Total Suspended Matter (TSM)	33	6	Bytes	I6	Micrograms per liter
Total Particulate Carbon (TPC)	39	5	Bytes	I5	% by weight to thousandths
Trace Code	44	1	Bytes	A1	*
Total Particulate Nitrogen (TPN)	45	5	Bytes	I5	% by weight to thousandths
Trace Code	50	1	Bytes	A1	*
Magnesium Oxide (MgO)	51	5	Bytes	I5	% by weight to thousandths
Trace Code	56	1	Bytes	A1	*
Aluminum Trioxide (Al_2O_3)	57	5	Bytes	I5	% by weight to thousandths
Trace Code	62	1	Bytes	A1	*
Silicone Dioxide (SiO_2)	63	5	Bytes	I5	% by weight to thousandths
Trace Code	68	1	Bytes	A1	*
Potassium Oxide (K_2O)	69	5	Bytes	I5	% by weight to thousandths

RECORD FORMAT DESCRIPTION

RECORD NAME Trace Metals (Data I) (Continued)

14. FIELD NAME	15. POSITION FROM-1 MEASURED IN Bytes (e.g., bits, bytes)	16. LENGTH NUMBER	16. LENGTH UNITS	17. ATTRIBUTES	18. USE AND MEANING
Trace Code	74	1	Bytes	A1	*
Calcium Oxide (CaO)	75	5	Bytes	I5	% by weight to thousandths
Trace Code	80	1	Bytes	A1	*
					*Trace code - to be used when no concentrations recorded ' ' = no information '1' = trace found but too small to measure '2' = measurement beyond limits of instrumentation

USCOMM-DC 44289-P72

RU 152

ANALYTICAL METHODS

Particulate carbon and nitrogen are being analyzed by The Micro-Damas dry combustion method, employing a Hewlett-Packard 185B C-H-N analyzer (sharp, 1974). Particulate matter is removed from 1-liter volumes by vacuum filtration and the carbon and nitrogen combusted to CO_2 and N_2. After separation by gas chromatography. The gases are quantitatively determined by thermal conductivity. Standardization is effected with NBS acetanilide.

The major and trace inorganic elements in the suspended matter are determined by secondary emission x-ray fluorescence spectrometry. Radiation from a silver x-ray tube is used to obtain a monochromatic source of x-rays from a secondary taryet. USGS standard rocks and NBS glass standards are used for calibration of the individual elements.

SAMPLING METHODS

Water samples were collected in 10-liter Top-drop Niskin bottles and filtered under vacuum, through preweighed 0.4μm Naclepore and Selas silver filteres. The filters were removed from the filtration apparatas, placed into individually marked petri dishes, dried in a dessicator for 24 hours and stored for shipment to the laboratory.

The vertical distribution of suspended matter was determined with a continuously recording integrating nephelometer. The instrument was interfaced into the Plessey CTD system using the sound velocity channel (14-16KHz) such that real time measurements of forward light scattering were obtained at each station.

DATA PROCESSING TECHNIQUES WITH FILTERING AND AVERAGING

The concentration of each element was calculated from the corrected peak areas and compared to peak areas from standards prepared in the same manner as the samples.

Accuracy

The accuracy of the NBS standards are quoted to be in the range from 0.5-20.0%.

Precision

The total precision for each element, based on replicate sample analysis, is estimated to be:

Element	Coefficient of Variation
Carbon	10.6
Nitrogen	14.0
Magnesium	16.4
Aluminum	9.8
Silicon	9.6
Potassium	10.3
Calcium	17.9
Titanium	9.3
Chromium	16.9
Manganese	9.4
Iron	9.9
Nickel	52.3
Copper	16.1
Zinc	11.3
Lead	14.3

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Chromium	16.9
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Iron	9.9
Nickel	52.3
Copper	16.1
Zinc	11.3
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RU 152

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Copper	16.1
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SAMPLING METHODS

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TR0887 RECEIVED ACCESSION NUMBER 77-0241

DOF A:3:06

DATA DOCUMENTATION FORM

NOAA FORM 24-13
(4-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEANOGRAPHIC DATA CENTER
RECORDS SECTION
ROCKVILLE, MARYLAND 20852

NEGOA

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O.M.B. No. 41-R2651

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Richard Feely
Pacific Marine Environmental Laboratory/ERL/NOAA
3711 - 15th Ave. N.E.
Seattle, WA 98105

2. EXPEDITION, PROJECT, OR PROGRAM DURING WHICH DATA WERE COLLECTED

OCSEAP (Bureau of Land Management)
Research Unit 152/154

3. CRUISE NUMBER(S) USED BY ORIGINATOR TO IDENTIFY DATA IN THIS SHIPMENT

760622

Tape 774/ File 1

4. PLATFORM NAME(S)	5. PLATFORM TYPE(S) (E.G., SHIP, BUOY, ETC.)	6. PLATFORM AND OPERATOR NATIONALITY(IES)		7. DATES	
		PLATFORM	OPERATOR	FROM: MO/DAY/YR	TO: MO/DAY/YR
NOAA Bell 206B Helicopter	Helicopter	USA	USA	06/25/76	06/26/76

8. ARE DATA PROPRIETARY?

[X] NO [ ] YES

IF YES, WHEN CAN THEY BE RELEASED FOR GENERAL USE? YEAR____ MONTH____

9. ARE DATA DECLARED NATIONAL PROGRAM (DNP)?
(I.E., SHOULD THEY BE INCLUDED IN WORLD DATA CENTERS HOLDINGS FOR INTERNATIONAL EXCHANGE?)

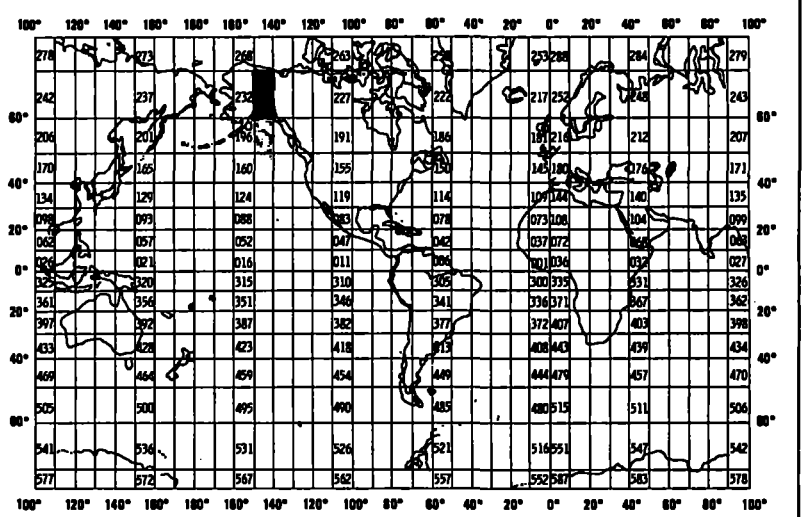
[X] NO [X] YES [ ] PART *(SPECIFY BELOW)*

10. PERSON TO WHOM INQUIRIES CONCERNING DATA SHOULD BE ADDRESSED WITH TELEPHONE NUMBER *(AND ADDRESS IF OTHER THAN IN ITEM-1)*

Dr. Richard Feely
PMEL/ERL/NOAA
442-4800 (commercial)
399-4800 (FTS)

11. PLEASE DARKEN ALL MARSDEN SQUARES IN WHICH ANY DATA CONTAINED IN YOUR SUBMISSION WERE COLLECTED.

Gulf of Alaska
GENERAL AREA



USCOMM-DC 44289-P72

B. SCIENTIFIC CONTENT

Include enough information concerning manner of observation, instrumentation, analysis, and data reduction routines to make them understandable to future users. Furnish the minimum documentation considered relevant to each data type. Documentation will be retained as a permanent part of the data and will be available to future users. Equivalent information already available may be substituted for this section of the form (i.e., publications, reports, and manuscripts describing observational and analytical methods). If you do not provide equivalent information by attachment, please complete the scientific content section in a manner similar to the one shown in the following example.

EXAMPLE (HYPOTHETICAL INFORMATION)

NAME OF DATA FIELD	REPORTING UNITS OR CODE	METHODS OF OBSERVATION AND INSTRUMENTS USED (SPECIFY TYPE AND MODEL)	ANALYTICAL METHODS (INCLUDING MODIFICATIONS) AND LABORATORY PROCEDURES	DATA PROCESSING TECHNIQUES WITH FILTERING AND AVERAGING
Salinity	‰	Nansen bottles	Inductive salinometer (Hytech model S510)	N/A (Not applicable)
		STD Bissett-Berman Model 9006	N/A	Values averaged over 5-meter intervals
Water color	Forel scale	Visual comparison with Forel bottles	N/A	N/A
Sediment size	ϕ units and percent by weight	Ewing corer	Standard sieves. Carbonate fraction removed by acid treatment	Same as "Sedimentary Rock Manual," Folk '65

(SPACE IS PROVIDED ON THE FOLLOWING TWO PAGES FOR THIS INFORMATION)

B. SCIENTIFIC CONTENT

NAME OF DATA FIELD	REPORTING UNITS OR CODE	METHODS OF OBSERVATION AND INSTRUMENTS USED (SPECIFY TYPE AND MODEL)	ANALYTICAL METHODS (INCLUDING MODIFICATIONS) AND LABORATORY PROCEDURES	DATA PROCESSING TECHNIQUES WITH FILTERING AND AVERAGING
Particulate major and minor elements: C,N,MgO,Al_2O_3 SiO_2, K_2O, CaO, TiO_2, Cr, Mn, Fe, Ni, Cu, Zn and Pb	C- Wt. % N- Wt. % MgO- Wt. % Al_2O_3- Wt. % SiO_2 - Wt. % K_2O- Wt. % CaO- Wt. % TiO_2- Wt. % Cr- ppm Mn- ppm Fe- Wt. % Ni- ppm Cu- ppm Zn- ppm Pb- ppm	See attached sheet.	See attached sheet.	See attached sheet.

B. SCIENTIFIC CONTENT

NAME OF DATA FIELD	REPORTING UNITS OR CODE	METHODS OF OBSERVATION AND INSTRUMENTS USED (SPECIFY TYPE AND MODEL)	ANALYTICAL METHODS (INCLUDING MODIFICATIONS) AND LABORATORY PROCEDURES	DATA PROCESSING TECHNIQUES WITH FILTERING AND AVERAGING

C. DATA FORMAT

This information is requested only for data transmitted on punched cards or magnetic tape. Have one of your data processing specialists furnish answers either on the form or by attaching equivalent readily available documentation. Identify the nature and meaning of all entries and explain any codes used.

1. List the record types contained in your file transmittal (e.g., tape label record, master, detail, standard depth, etc.).

2. Describe briefly how your file is organized.

3-13. Self-explanatory.

14. Enter the field name as appropriate (e.g., header information, temperature, depth, salinity.

15. Enter starting position of the field.

16. Enter field length in number columns and unit of measurement (e.g., bit, byte, character, word) in unit column.

17. Enter attributes as expressed in the programming language specified in item 3 (e.g., "F 4.1," "BINARY FIXED (5.1)").

18. Describe field. If sort field, enter "SORT 1" for first, "SORT 2" for second, etc. If field is repeated, state number of times it is repeated.

C. DATA FORMAT

COMPLETE THIS SECTION FOR PUNCHED CARDS OR TAPE, MAGNETIC TAPE, OR DISC SUBMISSIONS:

1. LIST RECORD TYPES CONTAINED IN THE TRANSMITTAL OF YOUR FILE
GIVE METHOD OF IDENTIFYING EACH RECORD TYPE

Record type 1 - 1 in Col. 10

Record type 2 - 2 in Col. 10

Record type 3 - 3 in Col. 10

Record type 4 - 4 in Col. 10

2. GIVE BRIEF DESCRIPTION OF FILE ORGANIZATION

File is composed of data from 1 cruise.

Record type 1 is a cruise and station description header card;

Record type 2 is a station number card;

Record type 3 is a data listing card;

Record type 4 is a continuation of record type 3.

3. ATTRIBUTES AS EXPRESSED IN ☐ PL-1 ☐ ALGOL ☐ COBOL ☒ FORTRAN ☐ _____ LANGUAGE

4. RESPONSIBLE COMPUTER SPECIALIST:
NAME AND PHONE NUMBER Jane Fisher (206) 442-4800
ADDRESS PMEL, Hangar 32, 7600 Sand Point Way N.E., Seattle, WA 98115

COMPLETE THIS SECTION IF DATA ARE ON MAGNETIC TAPE

5. RECORDING MODE ☐ BCD ☐ BINARY ☐ ASCII ☒ EBCDIC ☐ _____

6. NUMBER OF TRACKS (CHANNELS) ☐ SEVEN ☒ NINE ☐ _____

7. PARITY ☒ ODD ☐ EVEN

8. DENSITY ☐ 200 BPI ☒ 1600 BPI ☐ 556 BPI ☐ 800 BPI ☐ _____

9. LENGTH OF INTER-RECORD GAP (IF KNOWN) ☐ 3/4 INCH ☐ _____

10. END OF FILE MARK ☐ OCTAL 17 ☐ _____

11. PASTE-ON-PAPER LABEL DESCRIPTION *(INCLUDE ORIGINATOR NAME AND SOME LAY SPECIFICATIONS OF DATA TYPE, VOLUME NUMBER)*

12. PHYSICAL BLOCK LENGTH IN BYTES
4000

13. LENGTH OF BYTES IN BITS
8 bits/byte

C. DATA FORMAT USER TAPE

COMPLETE THIS SECTION FOR PUNCHED CARDS OR TAPE, MAGNETIC TAPE, OR DISC SUBMISSIONS.

1. LIST RECORD TYPES CONTAINED IN THE TRANSMITTAL OF YOUR FILE GIVE METHOD OF IDENTIFYING EACH RECORD TYPE

Four distinct record types: (1) Station Header record; (2) Text record; (3) Data I record; and (4) Data II record differentiated by byte 10.

2. GIVE BRIEF DESCRIPTION OF FILE ORGANIZATION

One physical file with data sorted by station number and record type within each station.

3. ATTRIBUTES AS EXPRESSED IN ☐ PL-1 ☐ ALGOL ☐ COBOL ☒ FORTRAN ☐ _____ LANGUAGE

4. RESPONSIBLE COMPUTER SPECIALIST:

NAME AND PHONE NUMBER Pete Topoly 4-7505

ADDRESS DSF&I Branch (D752)

COMPLETE THIS SECTION IF DATA ARE ON MAGNETIC TAPE

5. RECORDING MODE
☐ BCD ☐ BINARY
☐ ASCII ☒ EBCDIC
☐ _____

6. NUMBER OF TRACKS (CHANNELS)
☐ SEVEN
☒ NINE
☐ _____

7. PARITY
☐ ODD
☒ EVEN

8. DENSITY
☐ 200 BPI ☒ 1600 BPI
☐ 556 BPI
☐ 800 BPI
☐ _____

9. LENGTH OF INTER-RECORD GAP (IF KNOWN) ☒ 3/4 INCH ☐ _____

10. END OF FILE MARK ☒ OCTAL 17 ☐ _____

11. PASTE-ON-PAPER LABEL DESCRIPTION *(INCLUDE ORIGINATOR NAME AND SOME LAY SPECIFICATIONS OF DATA TYPE, VOLUME NUMBER)*

VOL=SER=02555 LABEL=(2,NL)

LRECL=80
BLKSIZE=4800

12. PHYSICAL BLOCK LENGTH IN BYTES
4800

13. LENGTH OF BYTES IN BITS

NOAA FORM 24-13

C. DATA FORMAT

This information is requested only for data transmitted on punched cards or magnetic tape. Have one of your data processing specialists furnish answers either on the form or by attaching equivalent readily available documentation. Identify the nature and meaning of all entries and explain any codes used.

1. List the record types contained in your file transmittal (e.g., tape label record, master, detail, standard depth, etc.).

2. Describe briefly how your file is organized.

3-13. Self-explanatory.

14. Enter the field name as appropriate (e.g., header information, temperature, depth, salinity.

15. Enter starting position of the field.

16. Enter field length in number columns and unit of measurement (e.g., bit, byte, character, word) in unit column.

17. Enter attributes as expressed in the programming language specified in item 3 (e.g., "F 4.1," "BINARY FIXED (5.1)").

18. Describe field. If sort field, enter "SORT 1" for first, "SORT 2" for second, etc. If field is repeated, state number of times it is repeated.

RECORD FORMAT DESCRIPTION

RECORD NAME Trace Metals (Station/Sample Header)

14. FIELD NAME	15. POSITION FROM-1 MEASURED IN Bytes (e.g., bits, bytes)	16. LENGTH NUMBER	16. LENGTH UNITS	17. ATTRIBUTES	18. USE AND MEANING
File Type	1	3	Bytes	A3	Always '021'
File Identifier	4	6	Bytes	A6	'YYMMDD' - date of file creation or unique cruise number
Record Type	10	1	Bytes	A1	Always '1'
Sequence Number	11	3	Bytes	I3	Ascending order for sorting
Station Number	14	5	Bytes	A5	
Latitude,					
Degrees	19	2	Bytes	I2	
Minutes	21	2	Bytes	I2	
Seconds	23	2	Bytes	I2	
Hemisphere	25	1	Bytes	AI	'E' or 'W'
Sample Collection					
Date-Time					
Year	34	2	Bytes	I2	00 to 99
Month	36	2	Bytes	I2	01 to 12
Day	38	2	Bytes	I2	01 to 31 G.M.T.
Hour	40	2	Bytes	I2	00 to 23
Minutes	42	2	Bytes	I2	00 to 59
Depth to Bottom	44	5	Bytes	I5	Whole meters
Sphere Code	49	1	Bytes	A1	
Blank	50	31	Bytes	21X	

INSERT
26 3
29 2
31 2
33 1

RECORD FORMAT DESCRIPTION

RECORD NAME Trace Metals (Text)

14. FIELD NAME	15. POSITION FROM-1 MEASURED IN Bytes (e.g., bits, bytes)	16. LENGTH NUMBER	16. LENGTH UNITS	17. ATTRIBUTES	18. USE AND MEANING
File Type	1	3	Bytes	A3	Always '021'
File Identifier	4	6	Bytes	A6	'YYMMDD' - date of file creation or unique cruise number
Record Type	10	1	Bytes	A1	Always '2'
Sequence Number	11	3	Bytes	I3	Ascending order for sorting
Station Number	14	5	Bytes	A5	
Text	19	62	Bytes	62A1	Any descriptive alpha-numeric information

RECORD FORMAT DESCRIPTION

RECORD NAME Trace Metals (Station/Sample Header)

14. FIELD NAME	15. POSITION FROM - 1 MEASURED IN bytes (e.g., bits, bytes)	16. LENGTH NUMBER	16. LENGTH UNITS	17. ATTRIBUTES	18. USE AND MEANING
File Type	1	3	Bytes	A3	Always '021'
File Identifier	4	6	"	A6	'YYMMDD' on originator's data 'TRXXXX' on user data
Record Type	10	1	"	A1	Always '1'
Sequence Number	11	3	"	I3	Ascending order for sorting
Station Number	14	5	"	A5	
Latitude					
Degrees	19	2	"	I2	
Minutes	21	2	"	I2	
Seconds	23	2	"	I2	
Hemisphere	25	1	"	A1	Always 'N' or 'S'
Longitude					
Degrees	26	3	"	I3	
Minutes	29	2	"	I2	
Seconds	31	2	"	I2	
Hemisphere	33	1	"	A1	Always 'E' or 'W'
Collection Date					
Year	34	2	"	I2	00 to 99
Month	36	2	"	I2	01 to 12
Day	38	2	"	I2	01 to 31
Hour	40	2	"	I2	01 to 23
Minutes	42	2	"	I2	01 to 59
Depth to Bottom	44	5	"	I5	Whole Meters
Sphere Code	49	1	"	A1	
Blank	50	31	"	31X	

RECORD FORMAT DESCRIPTION

RECORD NAME _____

14. FIELD NAME	15. POSITION FROM - 1 MEASURED IN _____ (e.g., bits, bytes)	16. LENGTH		17. ATTRIBUTES	18. USE AND MEANING
		NUMBER	UNITS		

NOAA FORM 24-13

RECORD FORMAT DESCRIPTION

RECORD NAME Trace Metals (Data I)

14. FIELD NAME	15. POSITION FROM-1 MEASURED IN Bytes (e.g., bits, bytes)	16. LENGTH NUMBER	16. LENGTH UNITS	17. ATTRIBUTES	18. USE AND MEANING
File Type	1	3	Bytes	A3	Always '021'
File Identifier	4	6	Bytes	A6	'YYMMDD' - date of file creation or unique cruise number
Record Type	10	1	Bytes	A1	Always '3'
Sequence Number	11	3	Bytes	I3	Ascending order for sorting
Station Number	14	5	Bytes	A5	
Sample Depth	19	4	Bytes	I4	Whole meters
Replicate Number	23	1	Bytes	I1	
Lab Sample Number	24	4	Bytes	I4	
Nephels	28	5	Bytes	I5	Whole kHz
Total Suspended Matter (TSM)	33	6	Bytes	I6	Micrograms per liter
Total Particulate Carbon (TPC)	39	5	Bytes	I5	% by weight to thousandths
Trace Code	44	1	Bytes	A1	*
Total Particulate Nitrogen (TPN)	45	5	Bytes	I5	% by weight to thousandths
Trace Code	50	1	Bytes	A1	*
Magnesium Oxide (MgO)	51	5	Bytes	I5	% by weight to thousandths
Trace Code	56	1	Bytes	A1	*
Aluminum Trioxide (Al_2O_3)	57	5	Bytes	I5	% by weight to thousandths
Trace Code	62	1	Bytes	A1	*
Silicone Dioxide (SiO_2)	63	5	Bytes	I5	% by weight to thousandths
Trace Code	68	1	Bytes	A1	*
Potassium Oxide (K_2O)	69	5	Bytes	I5	% by weight to thousandths

RECORD FORMAT DESCRIPTION

RECORD NAME Trace Metals (Data I) (Continued)

14. FIELD NAME	15. POSITION FROM-1 MEASURED IN Bytes (e.g., bits, bytes)	16. LENGTH NUMBER	16. LENGTH UNITS	17. ATTRIBUTES	18. USE AND MEANING
Trace Code	74	1	Bytes	A1	*
Calcium Oxide (CaO)	75	5	Bytes	I5	% by weight to thousandths
Trace Code	80	1	Bytes	A1	*
					*Trace code - to be used when no concentrations recorded ' ' = no information '1' = trace found but too small to measure '2' = measurement beyond limits of instrumentation

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RECORD FORMAT DESCRIPTION

RECORD NAME Trace Metals (Data II)

FIELD NAME	15. POSITION FROM-1 MEASURED IN Bytes (e.g., bits, bytes)	16. LENGTH NUMBER	16. LENGTH UNITS	17. ATTRIBUTES	18. USE AND MEANING
File Type	1	3	Bytes	A3	Always '021'
File Identifier	4	6	Bytes	A6	'YYMMDD' = date of file creation or unique cruise number
Record Type	10	1	Bytes	A1	Always '4'
Sequence Number	11	3	Bytes	I3	Ascending order for sorting
Station Number	14	5	Bytes	A5	
Sample Depth	19	4	Bytes	I4	Whole meters
Replicate Number	23	1	Bytes	I1	
Lab Sample Number	24	4	Bytes	I4	
Titanium Dioxide (TiO_2)	28	5	Bytes	I5	% by weight to thousandths
Trace Code	33	1	Bytes	A1	*
Total Chromium	34	6	Bytes	I6	Parts per million by weight to tenths
Trace Code	40	1	Bytes	A1	*
Total Manganese	41	5	Bytes	I5	Parts per million by weight to tenths
Trace Code	46	1	Bytes	A1	*
Total Iron	47	5	Bytes	I5	% by weight to thousandths
Trace Code	52	1	Bytes	A1	*
Total Nickel	53	5	Bytes	I5	Parts per million by weight to tenths
Trace Code	58	1	Bytes	A1	*
Total Copper	59	5	Bytes	I5	Parts per million by weight to tenths
Trace Code	64	1	Bytes	A1	*
Total Zinc	65	5	Bytes	I5	Parts per million by weight to tenths
Trace Code	70	1	Bytes	A1	*

RECORD FORMAT DESCRIPTION

RECORD NAME Trace Metals (Data II) (Continued)

14. FIELD NAME	15. POSITION FROM-1 MEASURED IN Bytes (e.g., bits, bytes)	16. LENGTH		17. ATTRIBUTES	18. USE AND MEANING
		NUMBER	UNITS		
Total Lead	71	5	Bytes	I5	Parts per million by weight to tenths
Trace Code	76	1	Bytes	A1	*
Blank	77	4	Bytes	4X	
					*Trace code - to be used when no concentrations recorded ' ' = no information '1' = trace found but too small to measure '2' = measurement beyond limits of instrumentation

This calibration information will be utilized by NOAA's National Oceanographic Instrumentation Center in their efforts to develop calibration standards for voluntary acceptance by the oceanographic community. Identify the instruments used by your organization to obtain the scientific content of the DDF (i.e., STD, temperature and pressure sensors, salinometers, oxygen meters, velocimeters, etc.) and furnish the calibration data requested by completing and/or checking ("✓") the appropriate spaces. Add the interval time (i.e., 3 months, 6 months, 9 months, etc.) if the fixed interval calibration cycle is checked.

INSTRUMENT TYPE (MFR., MODEL NO.)	DATE OF LAST CALIBRATION	INSTRUMENT WAS CALIBRATED BY		CHECK ONE: INSTRUMENT IS CALIBRATED					INSTRUMENT IS NOT CALIBRATED
		YOUR ORGANIZATION (√)	OTHER ORGANIZATION (GIVE NAME)	AT FIXED INTERVALS (√)	BEFORE OR AFTER USE (√)	BEFORE AND AFTER USE (√)	ONLY AFTER REPAIR (√)	ONLY WHEN NEW (√)	(√)

RU 152

ANALYTICAL METHODS

Particulate carbon and nitrogen are being analyzed by The Micro-Damas dry combustion method, employing a Hewlett-Packard 185B C-H-N analyzer (sharp, 1974). Particulate matter is removed from 1-liter volumes by vacuum filtration and the carbon and nitrogen combusted to CO_2 and N_2. After separation by gas chromatography. The gases are quantitatively determined by thermal conductivity. Standardization is effected with NBS acetanilide.

The major and trace inorganic elements in the suspended matter are determined by secondary emission x-ray fluorescence spectrometry. Radiation from a silver x-ray tube is used to obtain a monochromatic source of x-rays from a secondary taryet. USGS standard rocks and NB' glass standards are used for calibration of the individual elements.

DATA PROCESSING TECHNIQUES WITH FILTERING AND AVERAGING

The concentration of each element was calculated from the corrected peak areas and compared to peak areas from standards prepared in the same manner as the samples.

Accuracy

The accuracy of the NBS standards are quoted to be in the range from 0.5-20.0%.

Precision

The total precision for each element, based on replicate sample analysis, is estimated to be:

Element	Coefficient of Variation
Carbon	10.6
Nitrogen	14.0
Magnesium	16.4
Aluminum	9.8
Silicon	9.6
Potassium	10.3
Calcium	17.9
Titanium	9.3
Chromium	16.9
Manganese	9.4
Iron	9.9
Nickel	52.3
Copper	16.1
Zinc	11.3
Lead	14.3

SAMPLING METHODS

Water samples were collected in 10-liter Top-drop Niskin bottles and filtered under vacuum, through preweighed 0.4μm Naclepore and Selas silver filteres. The filters were removed from the filtration apparatas, placed into individually marked petri dishes, dried in a dessicator for 24 hours and stored for shipment to the laboratory.

The vertical distribution of suspended matter was determined with a continuously recording integrating nephelometer. The instrument was interfaced into the Plessey CTD system using the sound velocity channel (14-16KHz) such that real time measurements of forward light scattering were obtained at each station.

RU 152

ANALYTICAL METHODS

Particulate carbon and nitrogen are being analyzed by The Micro-Damas dry combustion method, employing a Hewlett-Packard 185B C-H-N analyzer (sharp, 1974). Particulate matter is removed from 1-liter volumes by vacuum filtration and the carbon and nitrogen combusted to CO_2 and N_2. After separation by gas chromatography. The gases are quantitatively determined by thermal conductivity. Standardization is effected with NBS acetanilide.

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Element	Coefficient of Variation
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Nitrogen	14.0
Magnesium	16.4
Aluminum	9.8
Silicon	9.6
Potassium	10.3
Calcium	17.9
Titanium	9.3
Chromium	16.9
Manganese	9.4
Iron	9.9
Nickel	52.3
Copper	16.1
Zinc	11.3
Lead	14.3

SAMPLING METHODS

Water samples were collected in 10-liter Top-drop Niskin bottles and filtered under vacuum, through preweighed 0.4μm Naclepore and Selas silver filteres. The filters were removed from the filtration apparatas, placed into individually marked petri dishes, dried in a dessicator for 24 hours and stored for shipment to the laboratory.

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RV 1.5-2

ANALYTICAL METHODS

Particulate carbon and nitrogen are being analyzed by The Micro-Damas dry combustion method, employing a Hewlett-Packard 185B C-H-N analyzer (sharp, 1974). Particulate matter is removed from 1-liter volumes by vacuum filtration and the carbon and nitrogen combusted to CO_2 and N_2. After separation by gas chromatography. The gases are quantitatively determined by thermal conductivity. Standardization is effected with NBS acetanilide.

The major and trace inorganic elements in the suspended matter are determined by secondary emission x-ray fluorescence spectrometry. Radiation from a silver x-ray tube is used to obtain a monochromatic source of x-rays from a secondary target. USGS standard rocks and NBS glass standards are used for calibration of the individual elements.

DATA PROCESSING TECHNIQUES WITH FILTERING AND AVERAGING

The concentration of each element was calculated from the corrected peak areas and compared to peak areas from standards prepared in the same manner as the samples.

Accuracy

The accuracy of the NBS standards are quoted to be in the range from 0.5-20.0%.

Precision

The total precision for each element, based on replicate sample analysis, is estimated to be:

Element	Coefficient of Variation
Carbon	10.6
Nitrogen	14.0
Magnesium	16.4
Aluminum	9.8
Silicon	9.6
Potassium	10.3
Calcium	17.9
Titanium	9.3
Chromium	16.9
Manganese	9.4
Iron	9.9
Nickel	52.3
Copper	16.1
Zinc	11.3
Lead	14.3

SAMPLING METHODS

Water samples were collected in 10-liter Top-drop Niskin bottles and filtered under vacuum, through preweighed 0.4μm Naclepore and Selas silver filteres. The filters were removed from the filtration apparatas, placed into individually marked petri dishes, dried in a dessicator for 24 hours and stored for shipment to the laboratory.

The vertical distribution of suspended matter was determined with a continuously recording integrating nephelometer. The instrument was interfaced into the Plessey CTD system using the sound velocity channel (14-16KHz) such that real time measurements of forward light scattering were obtained at each station.

```
Password:
 accNo   fleA refNo  proj inst ship    startDate  cruise   catId
 ------- ---- ------ ---- ---- ------- ---------- -------- ----------
 7700241 F144 TR0887 0081 313F 32HP    1976/06/23 NULL         302968
 7700241 F144 TR0886 0081 313F 31DS    1976/04/14 RP4DI76A     302967

(2 rows affected)
```

```
Password:
 accNo   fleA refNo  ship staCnt recCnt startDate  endDate
 ------- ---- ------ ---- ------ ------ ---------- ----------
 7700241 F144 TR0887 32HP 31     193    76/06/23   76/06/26
 7700241 F144 TR0886 31DS 49     1227   76/04/14   76/04/28

(2 rows affected)
```