

ACCESSION
NUMBER

76-1930

DDF A:3:01

DATA DOCUMENTATION FORM

TR 0643

NOAA FORM 24-13
14-721

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEANOGRAPHIC DATA CENTER
RECORDS SECTION
FEDERAL BUILDING
FISHERVILLE, MARYLAND 21052

FORM 24-13
11-72, 11-73

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.

A. ORIGINATOR IDENTIFICATION

THIS SECTION MUST BE COMPLETED BY DONOR FOR ALL DATA TRANSMITTALS

1. NAME AND ADDRESS OF INSTITUTION, LAND OR SEA, OR AGENCY WITH WHICH SUBMITTED DATA ARE ASSOCIATED				
Joel Cline Pacific Marine Environmental Laboratory/ERL/NOAA 3711 - 15th Avenue NE Seattle, WA 98115				
2. EXPEDITION, PROJECT, OR PROGRAM UNDER WHICH DATA WERE COLLECTED			3. CHECKED NUMBER FIRST USED BY ORIGINATOR TO IDENTIFY DATA IN THIS SUBMITTAL	
OCSEAP (Bureau of Land Management) Research Unit 153/155			760719	
4. PLATFORM NAME(S)	5. PLATFORM TYPE(S) (e.g., ship, buoy, etc.)	6. PLATFORM AND OPERATOR NATIONALITY(IES)	7. DATES	
DISCOVERER RP-4-DI-76B-I	Ship	USA	OPERATOR USA	FROM 7/19/76 TO 7/31/76
8. ARE DATA PROPRIETARY? <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES IF YES, WHEN CAN THEY BE RELEASED FOR GENERAL USE? YEAR 11 MONTH 07		9. PLEASE DARKEN ALL MARGEN SQUARES IN WHICH ANY DATA CONTAINED IN YOUR SUBMISSION WERE COLLECTED. Northeast Gulf of Alaska GENERAL AREA		
10. ARE DATA DECLARED NATIONAL PROGRAM (DNPI)? (I.E., SHOULD THEY BE INCLUDED IN WORLD DATA CENTERS HOLDINGS FOR INTERNATIONAL EXCHANGE?) <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> PART (SPECIFY IN LINE 11)		11. MAP		
12. PERSON TO WHOM INQUIRIES CONCERNING DATA SHOULD BE ADDRESSED WITH TELEPHONE NUMBER AND ADDRESS (IF DIFFERENT FROM LINE 11)				
Dr. Joel Cline PMEL/ERL/NOAA 442-4900 (commercial) 399-4900 (FTS)				

[illegible]

COMPLETE THIS SECTION FOR PUNCHED CARDS, TAPE, MAGNETIC TAPE, OR DISK STORAGE

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

Record Type 0 - 0 in Col 10
Record Type 1 - 1 in Col 10
Record Type 5 - 5 in Col 10
Record Type 6 - 6 in Col 10

2. GIVE BRIEF DESCRIPTION OF FILE ORGANIZATION

File is composed of data from 1 cruise.
Record type 0 is a cruise header card; record type 1 is a station description (i.e., latitude - longitude, etc.) card; record type 5 is a data listing card; record type 6 is a continuation of record type 5.

3. ATTRIBUTES AS EXPRESSED IN: ☐ PUL ☐ ASCII ☐ BINARY ☐ ALGOL ☐ FORTRAN ☐ COBOL ☐ LANGUAGE

4. RESPONSIBLE COMPUTER SPECIALIST:

NAME AND PHONE NUMBER: Dr. Joel Cline (FTS 399-4900; (206) 442-4900)
ADDRESS: PMEL, 3711 15th Ave NE, Seattle, WA 98105

COMPLETE THIS SECTION IF DATA ARE ON MAGNETIC TAPE

5. RECORDING MODE	<input type="checkbox"/> DEC <input type="checkbox"/> BINARY <input type="checkbox"/> ASCII <input checked="" type="checkbox"/> TYPEDIC	8. LENGTH OF RECORD RECORD CAR DIFFERENTIAL	<input type="checkbox"/> 1/4 INCH
6. NUMBER OF TRACKS (CHANNELS)	<input type="checkbox"/> SEVEN <input checked="" type="checkbox"/> NINE	10. END OF FILE MARK	<input type="checkbox"/> OCTAL 17
7. PARITY	<input type="checkbox"/> ODD <input type="checkbox"/> EVEN	11. PASTE ON PAPER LABEL DESCRIPTIONS (INCLUDE ORIGINATOR NAME AND SOME KEY SPECIFICATION OF DATA TYPE, VOLUME NUMBER) Data submitted to NODC on punched cards.	
9. DENSITY	<input type="checkbox"/> 255 BPI <input checked="" type="checkbox"/> 1600 BPI <input type="checkbox"/> 556 BPI <input type="checkbox"/> 625 BPI	12. PHYSICAL RECORD LENGTH IN INCHES	4000
		13. LENGTH OF DATA IN BPS	

RECORD FORMAT DESCRIPTION

RECORD NAME Hydrocarbon I Header Record -Record Type 0

16. NAME	15. POSITION FROM - 1 MEASURED IN Bytes (e.g., bits, bytes)	16. LENGTH		17. ATTRIBUTES	18. USE AND MEANING
		NUMBER	UNITS		
File Type	1	3	Bytes	A3	Always '043'
File Identifier	4	6	Bytes	I6	'YY:MMDD' or unique cruise number
Record Type	10	1	Bytes	I1	Always '0'
Vessel	11	11	Bytes	A11	Left justified
Cruise Number	22	6	Bytes	A6	
Inclusive Cruise Dates	28	17	Bytes	A17	'YY/MM/DD-YY/MM/DD'
Senior Scientist	45	19	Bytes	A19	Left justified
Investigator or Institution	64	17	Bytes	A17	Left justified

RECORD FORMAT DESCRIPTION

RECORD NAME Hydrocarbon I Station Header-Record Type 1

10. NAME	15. POSITION FROM -1 MEASURED IN Bytes (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99)	16. LENGTH		17. ATTRIBUTES	18. USE AND MEANING
		NUMBER	UNITS		
File Type	1	3	Bytes	A3	Always '043'
File Identifier	4	6	Bytes	16	'YYMMDD' or unique cruise number
Record Type	10	1	Bytes	11	Always '1'
Station Number	11	5	Bytes	A5	
Sequence Number	16	2	Bytes	12	
Latitude,					
Degrees	18	2	Bytes	12	
Minutes	20	4	Bytes	14	To hundredths
Hemisphere	24	1	Bytes	A1	'N' or 'S'
Longitude,					
Degrees	25	3	Bytes	13	
Minutes	28	4	Bytes	14	To hundredths
Hemisphere	32	1	Bytes	A1	'E' or 'W'
Year	33	2	Bytes	12	} G.M.T.
Month	35	2	Bytes	12	
Day	37	2	Bytes	12	
Hour	39	2	Bytes	12	
Minute	41	2	Bytes	12	
Depth to Bottom	43	5	Bytes	15	Whole meters
Gear Code	48	2	Bytes	A2	
Analysis Code	50	2	Bytes	A2	
Sample Type	52	2	Bytes	A2	'01' vertical profile '02' replicate study '03' time series
(54	27	Bytes	27X	

RECORD NAME Hydrocarbon I

Data 1-Record Type 5

FIELD NAME	STARTING POSITION	LENGTH	DATA TYPE	DATA ADDRESS	DATA DESCRIPTION
	1	3	Bytes	A3	Always '043'
File Identifier	4	6	Bytes	I6	'YYMMDD' or unique cruise number
Record Type	10	1	Bytes	I1	Always '5'
Station Number	11	5	Bytes	A5	
Sequence Number	16	2	Bytes	I2	
Sample Depth	18	4	Bytes	I4	Whole meters
Total Volume of Sample	22	5	Bytes	I5	Liters to hundredths
Total Dissolved Hydrocarbons	27	3	Bytes	I3	XXX. nanoliter/liter
Sign	30	1	Bytes	A1	Positive = '+' or ' ' Negative = '-'
Exponent	31	1	Bytes	I1	1-9
Methane	32	4	Bytes	I4	XXXX. nanoliter/liter
Sign	36	1	Bytes	A1	Positive = '+' or ' ' Negative = '-'
Exponent	37	1	Bytes	I1	1-9
Trace	38	1	Bytes	A1	*
Ethane	39	4	Bytes	I4	XXXX. nl/l
Sign	43	1	Bytes	A1	Positive = '+' or ' ' Negative = '-'
Exponent	44	1	Bytes	I1	1-9
Trace	45	1	Bytes	A1	*
Ethylene	46	4	Bytes	I4	XXXX. nl/l
Sign	50	1	Bytes	A1	Positive = '+' or ' ' Negative = '-'
Exponent	51	1	Bytes	I1	1-9
Trace	52	1	Bytes	A1	*

ANALYSIS REPORT

RECORD NAME Hydrocarbon I Data I (Cont'd)-Record Type 5

FIELD NAME	LOCATION FROM WHICH MEASURED (in Bytes)	NUMBER		UNIT	REMARKS
		NUMBER	UNIT		
Propane	53	4	Bytes	I4	XXXX. n1/1
Sign	57	1	Bytes	A1	Positive = '+' or ' '
Exponent	58	1	Bytes	I1	1-9
Trace	59	1	Bytes	A1	*
Propylene	60	4	Bytes	I4	XXXX. n1/1
Sign	64	1	Bytes	A1	Positive = '+' or ' '
Exponent	65	1	Bytes	I1	1-9
Trace	66	1	Bytes	A1	*
Iso-Butane	67	4	Bytes	I4	XXXX. n1/1
Sign	71	1	Bytes	A1	Positive = '+' or ' '
Exponent	72	1	Bytes	I1	1-9
Trace	73	1	Bytes	A1	*
N-Butane	74	4	Bytes	I4	XXXX. n1/1
Sign	78	1	Bytes	A1	Positive = '+' or ' '
Exponent	79	1	Bytes	I1	1-9
Trace	80	1	Bytes	A1	*
					* Trace Coding ' ' = no information '1' = Trace found - too small to measure '2' = no measurement due to instrumentation limits XXX. and XXXX. indicates the IMPLIED decimal place

RECORD NAME Hydrocarbon I Data II-Record Type 6

FIELD NAME	10-Field Type	11-Field Length	12-Field Unit	13-Field Code	14-Field Description
	10-Field Type	11-Field Length	12-Field Unit	13-Field Code	14-Field Description
	10-Field Type	11-Field Length	12-Field Unit	13-Field Code	14-Field Description
File Type	1	3	Bytes	A3	Always '043'
File Identifier	4	6	Bytes	I6	'YYMMDD' or unique cruise number
Record Type	10	1	Bytes	I1	Always '6'
Station Number	11	5	Bytes	A5	
Sequence Number	16	2	Bytes	I2	
Sample Depth	18	4	Bytes	I4	In meters
Total Volume of Sample	22	5	Bytes	I5	In liters to hundredths
Total Dissolved Hydrocarbons	27	3	Bytes	I3	XXX. nl/1
Sign	30	1	Bytes	A1	Positive = '+' or ' ' Negative = '-'
Exponent	31	1	Bytes	I1	1-9
Ethane + Ethylene	32	4	Bytes	I4	XXXX. nl/1
Sign	36	1	Bytes	A1	Positive = '+' or ' ' Negative = '-'
Exponent	37	1	Bytes	I1	1-9
Trace	38	1	Bytes	I1	*
Propane + Propylene	39	4	Bytes	I4	XXXX. nl/1
Sign	43	1	Bytes	A1	Positive = '+' or ' ' Negative = '-'
Exponent	44	1	Bytes	I1	1-9
Trace	45	1	Bytes	I1	*
Blank	46	35	Bytes	35X	

XXX. and XXXX. indicates the IMPLIED decimal place

* Trace Coding

' ' = no information

'-' = trace found - too small to measure

'2' = no measurement due to instrumentation limits

Analytical Methods and Laboratory Procedures

The low molecular weight hydrocarbons (C_1 - C_4) were stripped from solution with ultrapure helium and condensed on activated alumina (60-80 mesh) at -296°C . Subsequent to quantitative removal of all the gases, the activated alumina trap was warmed (100°C) and the components chromatographed on Poropak(R) Q (8' x 3/16"), 60-80 mesh. Analysis was carried out in a Hewlett-Packard(R) model 5711 GC with a flame ionization detector. Peak responses and areas were recorded on a Hewlett-Packard model(R) 3380 reporting integrator. Details of the procedure may be found in: Swinnerton, J.W. and R.A. Lamontagne. 1974. Oceanic distribution of low molecular weight hydrocarbons. Baseline measurements. Environ. Sci. Technol., 8: 657-663.

Data Processing Techniques with Filtering and Averaging

The concentration of each component was calculated from the corrected peak areas and compared to specially prepared Matheson Gas Products^(R) certified hydrocarbon mixtures. Each analysis represents a single measurement, except in the case where replicate analyses were performed.

Accuracy

The accuracy of the standards is quoted by Matheson to be $\pm 5\%$ (1σ) for each component.

Precision

The precision (σ total) of the method including sampling and GC analysis, based on replicate sample analysis, is estimated to be:

	σ Total	σ Std
methane	2%	0.4%
ethane	4%	0.5%
ethylene	5%	1.5%
propane	26%	0.6%
propylene	26%	2.6%
iso-butane	NA	NA
n-butane	NA	NA

The second column above reflects the precision error (σ std) determined from replicate injections of hydrocarbon standards in the ppm range.

Detection Limit

The detection limit is defined to be the concentration equal to twice the nominal noise level. By applying this definition to actual field operational conditions, we estimate the following detection limits: methane 0.13 nl/l; ethane 0.05 nl/l; ethylene 0.07 nl/l; propane 0.04; propylene 0.05 and butanes (n-, iso-) at 0.03 nl/l.

Trace Concentration

A trace concentration is recorded whenever the slope criteria of the peak was not exceeded, resulting in no valid peak integration. In all cases, a trace concentration is greater than the detection limit. To flag this situation, a numeric "1" is recorded in the last column of the individual component field (see record type 5 and 6).

Incomplete Component Separation and Invalid Analysis

In some cases, incomplete chromatography of ethane-ethylene and propane-propylene components resulted in merged peaks that were not sufficiently resolved to obtain a reliable integration. Because the response factor for components with the same carbon number are nearly the same, a single response could be recorded for the sums of the aliphatics and olefins. These results are recorded on record type 6 as ethane+ethylene, propane+propylene.

Invalid analyses are indicated by blank spaces in the individual component field in record type 5 and 6.