

ACCESSION
NUMBER

76-1849

DATA DOCUMENTATION FORM

TR0600

DDF A:2:25

NOAA FORM 24-13
(4-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
FEDERAL OCEANOGRAPHIC DATA CENTER
RECORDS SECTION
WASH. FIELD MARINE LAB. 2000

FORM 24-13
(4-72)

This form should accompany data submissions to NODC. Section V, 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, LABORATORY, OR ACTIVITY 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 NAME UNDER WHICH DATA WERE COLLECTED		3. CRUISE NUMBER(S) USED BY ORIGINATOR TO IDENTIFY DATA IN THIS SHIPMENT									
OCSEAP (Bureau of Land Management) Research Unit 153/155		760625									
4. PLATFORM NAME(S)	5. PLATFORM TYPE(S) (e.g., ship, buoy, etc.)	6. PLATFORM AND OPERATOR NATIONALITY(IES)									
Moana Wave RP-4-MW-76B-VIII	Ship	<table border="1"> <thead> <tr> <th>PLATFORM</th> <th>OPERATOR</th> <th>FROM DATE</th> <th>TO DATE</th> </tr> </thead> <tbody> <tr> <td>USA</td> <td>USA</td> <td>06/25/76</td> <td>07/08/76</td> </tr> </tbody> </table>		PLATFORM	OPERATOR	FROM DATE	TO DATE	USA	USA	06/25/76	07/08/76
PLATFORM	OPERATOR	FROM DATE	TO DATE								
USA	USA	06/25/76	07/08/76								
7. ARE DATA PROPRIETARY?		8. RELEASE DATES FOR ALL MAPS AND SQUARES IN WHICH ANY DATA CONTAINED IN YOUR SUBMISSION WERE COLLECTED									
<input checked="" type="checkbox"/> NO <input type="checkbox"/> YES IF YES, WHEN CAN THEY BE RELEASED FOR GENERAL USE? YES <u>77</u> NO <u>07</u>		Bering Sea GENERAL AREA									
9. ARE DATA DECLARED NATIONAL PROGRAM (DNP)? (I.E., SHOULD THEY BE INCLUDED IN AORLD DATA CENTERS HOLDINGS FOR INTERNATIONAL EXCHANGE?)											
<input checked="" type="checkbox"/> NO <input type="checkbox"/> YES (PARTIALLY YES)											
10. PERSON TO WHOM INQUIRIES CONCERNING DATA SHOULD BE ADDRESSED: NAME, TITLE, PHONE NUMBER, AND ADDRESS (MAILING ADDRESS ONLY)											
Dr. Joel Cline PMEL/ERL/NOAA 442-4900 (commercial) 399-4900 (FTS)											

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
Low molecular weight hydro- carbons: methane, ethane, ethylene, propane, propylene, n- butane, iso- butane, ethane + ethylene and propane + propy- lene	nanoliter per liter (STP) nl/l	Samples were taken from (R) standard 5 and 10-1 Niskin samplers vertically placed with a Rosette sampler	See attached sheet.	See attached sheet.

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 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 ☐ PL/I ☐ ALGOL ☐ COBOL
☒ FORTRAN ☐ _____ 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

<p>5. RECORDING MODE <input type="checkbox"/> BCD <input type="checkbox"/> BINARY <input type="checkbox"/> ASCII <input checked="" type="checkbox"/> EBCDIC <input type="checkbox"/> _____</p>	<p>9. LENGTH OF INTER-RECORD GAP (IF KNOWN) <input type="checkbox"/> 3/4 INCH <input type="checkbox"/> _____</p>
<p>6. NUMBER OF TRACKS (CHANNELS) <input type="checkbox"/> SEVEN <input checked="" type="checkbox"/> NINE <input type="checkbox"/> _____</p>	<p>10. END OF FILE MARK <input type="checkbox"/> OCTAL 17 <input type="checkbox"/> _____</p>
<p>7. PARITY <input type="checkbox"/> ODD <input type="checkbox"/> EVEN</p>	<p>11. PASTE-ON-PAPER LABEL DESCRIPTION (INCLUDE ORIGINATOR NAME AND SOME KEY SPECIFICATIONS OF DATA TYPE, VOLUME NUMBER) <i>Converted from punched cards to tape by NODC (Newins)</i></p>
<p>8. DENSITY <input type="checkbox"/> 200 BPI <input checked="" type="checkbox"/> 1600 BPI <input type="checkbox"/> 456 BPI <input type="checkbox"/> 800 BPI <input type="checkbox"/> _____</p>	<p>12. PHYSICAL BLOCK LENGTH IN BYTES <i>80</i> 13. LENGTH OF BYTES IN BITS <i>2400</i></p>

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

2. GIVE BRIEF DESCRIPTION OF FILE ORGANIZATION

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

4. RESPONSIBLE COMPUTER SPECIALIST:

NAME AND PHONE NUMBER _____

ADDRESS _____

COMPLETE THIS SECTION IF DATA ARE ON MAGNETIC TAPE

<p>5. RECORDING MODE</p> <p><input type="checkbox"/> BCD <input type="checkbox"/> BINARY</p> <p><input type="checkbox"/> ASCII <input checked="" type="checkbox"/> EBCDIC</p> <p><input type="checkbox"/> _____</p>	<p>9. LENGTH OF INTER-RECORD GAP (IF KNOWN) <input type="checkbox"/> 3/4 INCH</p> <p><input type="checkbox"/> _____</p>
<p>6. NUMBER OF TRACKS (CHANNELS)</p> <p><input type="checkbox"/> SEVEN</p> <p><input checked="" type="checkbox"/> NINE</p> <p><input type="checkbox"/> _____</p>	<p>10. END OF FILE MARK</p> <p><input type="checkbox"/> OCTAL 17</p> <p><input type="checkbox"/> _____</p>
<p>7. PARITY</p> <p><input checked="" type="checkbox"/> ODD</p> <p><input type="checkbox"/> EVEN</p>	<p>11. PASTE-ON-PAPER LABEL DESCRIPTION (INCLUDE ORIGINATOR NAME AND SOME KEY SPECIFICATIONS OF DATA TYPE, VOLUME NUMBER)</p> <p>13 268 (1, N L)</p>
<p>8. DENSITY</p> <p><input type="checkbox"/> 200 BPI <input checked="" type="checkbox"/> 1600 BPI</p> <p><input type="checkbox"/> 556 BPI</p> <p><input type="checkbox"/> 800 BPI</p> <p><input type="checkbox"/> _____</p>	
	<p>12. PHYSICAL BLOCK LENGTH IN BYTES</p> <p>4800</p>
	<p>13. LENGTH OF BYTES IN BITS</p> <p>80</p>

RECORD FORMAT DESCRIPTION

RECORD NAME Hydrocarbon I Header Record -Record Type 0

14. 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	'YYMMDD' 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 NAME Hydrocarbon I

Data 1-Record Type 5

FIELD NAME	POSITION FROM-1 MEASURED IN Bytes	NUMBER	BYTES	UNIT	UNIT AND MEANING
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 '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	*

RECORD FORMAT DESCRIPTION

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

ITEM NAME	POSITION FROM 1 MEASURED IN Bytes (1-255,1000)	LENGTH		DATA TYPE	REMARKS
		NUMBER	UNITS		
Propane	53	4	Bytes	I4	XXXX. n1/1
Sign	57	1	Bytes	A1	Positive = '+' or ' ' Negative = '-'
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 ' ' Negative = '-'
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 ' ' Negative = '-'
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 ' ' Negative = '-'
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 FORMAT DEFINITION

RECORD NAME Hydrocarbon I Data II-Record Type 6

FIELD NAME	POSITION FROM-1 PLACED IN Bytes	DIMENSIONS		DATA LABEL	DEFINITION
		NUMBER	UNIT		
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. n1/1
Sign	30	1	Bytes	A1	Positive = '+' or ' ' Negative = '-'
Exponent	31	1	Bytes	I1	1-9
Ethane + Ethylene	32	4	Bytes	I4	XXXX. n1/1
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. n1/1
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 ($8' \times 3/16''$), 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.

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: Header (0), Station Header (1), Data I (5),
and Data II (6), differentiated by byte 10.

2. GIVE BRIEF DESCRIPTION OF FILE ORGANIZATION

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

4. RESPONSIBLE COMPUTER SPECIALIST:

NAME AND PHONE NUMBER _____

ADDRESS _____

COMPLETE THIS SECTION IF DATA ARE ON MAGNETIC TAPE

<p>5. RECORDING MODE</p> <p><input type="checkbox"/> BCD <input type="checkbox"/> BINARY</p> <p><input type="checkbox"/> ASCII <input type="checkbox"/> EBCDIC</p> <p><input type="checkbox"/> _____</p>	<p>9. LENGTH OF INTER-RECORD GAP (IF KNOWN) <input type="checkbox"/> 3/4 INCH</p> <p><input type="checkbox"/> _____</p>
<p>6. NUMBER OF TRACKS (CHANNELS)</p> <p><input type="checkbox"/> SEVEN</p> <p><input type="checkbox"/> NINE</p> <p><input type="checkbox"/> _____</p>	<p>10. END OF FILE MARK</p> <p><input type="checkbox"/> OCTAL 17</p> <p><input type="checkbox"/> _____</p>
<p>7. PARITY</p> <p><input type="checkbox"/> ODD</p> <p><input type="checkbox"/> EVEN</p>	<p>11. PASTE-ON-PAPER LABEL DESCRIPTION (INCLUDE ORIGINATOR NAME AND SOME LAY SPECIFICATIONS OF DATA TYPE, VOLUME NUMBER)</p>
<p>8. DENSITY</p> <p><input type="checkbox"/> 200 BPI <input type="checkbox"/> 1600 BPI</p> <p><input type="checkbox"/> 556 BPI</p> <p><input type="checkbox"/> 800 BPI</p> <p><input type="checkbox"/> _____</p>	
<p>12. PHYSICAL BLOCK LENGTH IN BYTES</p> <p>_____</p>	
<p>13. LENGTH OF BYTES IN BITS</p> <p>_____</p>	

RECORD FORMAT DESCRIPTION

2-300-76

RECORD NAME Hydrocarbon I Header Record

14. FIELD 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' 043
File Identifier	4	6	Bytes	I6	'YYMMDD' or unique cruise number 7606 25
Record Type	10	1	Bytes	I1	Always '0' 1
Vessel	11	11	Bytes	A11	Left justified QP4MW76B 12
Cruise Number	22	6	Bytes	A6	LEG 8
Inclusive Cruise Dates	28	17	Bytes	A17	'YY/MM/DD-YY/MM/DD'
Senior Scientist	45	19	Bytes	A19	Left justified C:02
Investigator or Institution	64	17	Bytes	A17	Left justified

RECORD FORMAT DESCRIPTION

5-20-70

RECORD NAME Hydrocarbon I Station Header

14. FIELD NAME	15. POSITION FROM - 1 MEASURED IN Bytes <small>(e.g., bits, bytes)</small>	16. LENGTH		17. ATTRIBUTES	18. USE AND MEANING
		NUMBER	UNITS		
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 '1'
Station Number	11	5	Bytes	A5	PS 009
Sequence Number	16	2	Bytes	I2	
Latitude,					
Degrees	18	2	Bytes	I2	56
Minutes	20	4	Bytes	I4	To hundredths 730
Hemisphere	24	1	Bytes	A1	'N' or 'S' 0
Longitude,					
Degrees	25	3	Bytes	I3	
Minutes	28	4	Bytes	I4	To hundredths
Hemisphere	32	1	Bytes	A1	'E' or 'W'
Year	33	2	Bytes	I2	} G.M.T.
Month	35	2	Bytes	I2	
Day	37	2	Bytes	I2	
Hour	39	2	Bytes	I2	
Minute	41	2	Bytes	I2	
Depth to Bottom	43	5	Bytes	I5	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
Blank	54	27	Bytes	27X	

RECORD FORMAT DESCRIPTION

RECORD NAME Hydrocarbon I

Data I

14. FIELD 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	'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	*

RECORD FORMAT DESCRIPTION

C-20-70

RECORD NAME Hydrocarbon I Data I (Cont'd)

14. FIELD NAME	15. POSITION FROM -1 MEASURED IN Bytes (e.g., bits, bytes)	16. LENGTH		17. ATTRIBUTES	18. USE AND MEANING
		NUMBER	UNITS		
Propane	53	4	Bytes	I4	XXXX. n1/1
Sign	57	1	Bytes	A1	Positive = '+' or ' ' Negative = '-'
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 ' ' Negative = '-'
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 ' ' Negative = '-'
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 ' ' Negative = '-'
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 FORMAT DESCRIPTION

2-80-70

RECORD NAME Hydrocarbon I Data II

14. FIELD 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	'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/l
Sign	30	1	Bytes	A1	Positive = '+' or ' ' Negative = '-'
Exponent	31	1	Bytes	I1	1-9
Ethane + Ethylene	32	4	Bytes	I4	XXXX. nl/l
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/l
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 '1' = trace found - too small to measure '2' = no measurement due to instrumentation limits					

HYDROCARBONS I

FILE TYPE	FILE IDENTIFIER	STATION NUMBER	SE. CORNER NUMBER	SAMPLE DEPTH	TOTAL SAMPLE VOLUME	TOTAL DIS-SOLVED WOOD-CRACKING (ml)	SE. CORNER METHANE (NL/L)	SE. CORNER ETHANE (NL/L)	SE. CORNER ETHYLENE (NL/L)	SE. CORNER PROPANE (NL/L)	SE. CORNER PROPYLENE (NL/L)	SE. CORNER ISO-BUTANE (NL/L)	SE. CORNER n-BUTANE (NL/L)
(043)				(METERS)	(LITERS $\times 10^{-3}$)								

FILE TYPE	FILE IDENTIFIER	STATION NUMBER	SE. CORNER NUMBER	SAMPLE DEPTH	TOTAL SAMPLE VOLUME	TOTAL DIS-SOLVED WOOD-CRACKING (ml)	SE. CORNER ETHANE + ETHYLENE (NL/L)	SE. CORNER PROPANE + PROPYLENE (NL/L)	BLANK				
(043)				(METERS)	(LITERS $\times 10^{-3}$)								

PUNCH CARD TRANSCRIPT

HYDROCARBON I

FILE TYPE	FILE IDENTIFIER	RECORD TYPE	VESSEL	CRUISE NUMBER	INCLUSIVE CRUISE DATES	SENIOR SCIENTIST	INVESTIGATOR AND INSTITUTION
(043)	YR. MON DAY				FROM TO		
					YR. / MON / DAY - YR. / MON / DAY		

FILE TYPE	FILE IDENTIFIER	RECORD TYPE	STATION NUMBER	WAVE DIRECTION	LATITUDE	LONGITUDE	START DATE - TIME (G.M.T.)	DEPTH TO BOTTOM (M.)	SEA CODE	ADDITIONAL CODE	DATE AND TIME	BLANK
(043)	YR. MON DAY			NO	DEC MIN TO 1/2 MIN	DEC MIN TO 1/2 MIN	YR. MON DAY HR MIN					

PUNCH CARD TRANSCRIPT