

(200)
R 29.0

U.S. GEOLOGICAL SURVEY

OPEN-FILE REPORT 75-347

1975

Acoustic-Reflection Profiles

M/V OIL CITY June 1969

OFFSHORE SOUTHERN CALIFORNIA

Chief Scientists: G. W. Moore and D. S. McCulloch

U. S. Geological Survey

OPEN FILE REPORT 75-347

This report is preliminary and has
not been edited or reviewed for
conformity with Geological Survey
standards

INTRODUCTION

This report contains the following: a microfilm or photocopy of the subbottom acoustic-reflection single channel sparker profiles, a seismic log, and a track chart. Except where noted, (1) the power used in the sparker system was 160 kilojoules and (2) the positions on the track chart were plotted from radio navigation provided by a contractor. The scientific crew for this cruise consisted of the chief scientists and A. A. Grantz, L. Hammons, J. W. Lee, H. C. Wagner, and S. C. Wolf.

Scientific Log for H/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
	171 / 1430				DEPART PORT HUENEME.
	1441		3KT		ROUND BUOY, REDUCE SPEED TO 3KT, STREAM GEAR
	---				COURSE TOWARD BEGINNING OF LINE 1
	1522				BEGIN SPARKER TEST, 1 HYDROPHONE STREAMER
	1614		6KT		CHANGE SPEED TO 6KT. RECORDER TROUBLE. CIRCLING, NAVIGATION NOT FULLY OPERATIONAL.
	1730				NAVIGATION SYSTEM OPERATIONAL
	1745				EDO FISH LAUNCHED
	1802				RECORDER REPAIRED, FIRING
	1835		300°		HEADING TOWARD END OF LINE 1
1	1936	1			
	1940	4			
	1942	5			
	1943	6			
	1946				BRIDGE INFORMS DIVERTING COURSE FOR ABOUT 1/2 MILE, AROUND DRILLING SHIP WATAW 4
	1951	10			
	1955				SPARKER SHUT DOWN
	1957				RESUME SPARKING
	2008	21			
	2019	30			
	2034	40			
	2035				SPARKER OFF
	2036				SPARKER ON

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
1	171 2047				EDD 15 KHZ OFF
	2050	51			
	2104	60			
	2118	70			
	2133	80			
	2149	91			
	2203	100			
	2221	112			
END 1	2233	120			SPARKER RUNNING HALFPPOWER DURING LATTER PART OF 1.
	172 0015				ANTENNA ROTOR ON HYREX + 2 BANKS OF SPARKER REPAIRED AND RETURNING TO START LINE 3.
3	0116	2			
	0132	10			
	0150	20			
	0213	30			
	0226	40			
	0243	50			
	0300	60			
	0321	72			
	0333	80			
	0349	90			
	0405	100			
	0424				RADIO TRANSMISSION - LOST ONE SIGNAL

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
END 3	172 / 0431	114			CIRCLING, REPAIRING NUMBER 3 SPARK, WHICH WAS OFF MOST OF THIS LINE. TURN
4	0450				WILL START WITH ONLY 1 LINE OF SIGNALS, BRIDGE WILL RECORD WATER DEPTHS AND OCCASIONAL RADAR RANGES AND BEARINGS.
	0500				SPARKER NO. 3 REPAIRED UP TO 160 K JOULES
	0512				BEGIN SPARKING
	0525	11			
	0539	20			
	0550				ONE STATION HAS BEEN OUT ON LAST SEVERAL FIXES. WHEN RANGE IN NAVIGATION LOG HAS LOW PRECISION, IT IS RADAR RANGE.
END 4	0555	28			SPARKS OFF, TURNING,
	0602				BEGIN SPARKING ON LINE 5. ON LINE BEFORE PLOTTED END.
5	0608	1			
	0622	10			(WILL BE 143 POINTS ON LINE 5)
	0637	20			
	0638				RADIO TRANSMISSION
	0642				LINES CROSSED - RESTARTED SPARKS
	0655	30			RADIO TRANSMISSION BEFORE NEXT SHOT POINT
	0709	40			
	0710				RADIO TRANSMISSION
	0726	50			
	0742	60			
	0758	70			
	0814	80			

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
5	172 / 0829	90			
	0845	100			
	0903				LOST 1 SIGNAL ON NAVIGATION
	0914	117			REGAINED 2 SIGNALS
	0921	121			
	0927				LOST NAVIGATION AGAIN, DEPTH BY BRIDGE SOUNDER 185 FATHOMS
	0932				180 FATHOMS, LOGGING SOUNDINGS WHILE NAVIGATION IS OUT
	0935				EDO FISH TOWING AT SURFACE ON SIDE
	0943				175 FATHOMS
	0946				160 FATHOMS
	0950				155 FATHOMS
	0952				210 FATHOMS
END 5	0957	143			ACTIVE ELEMENT MISSING BECAUSE THE FOUR SCREWS HOLDING IT HA VIBRATED LOOSE. 1.5 KHZ SYSTEM SECURED. ELECTRODES CHANGED. POLARITY REVERSED.
	1036				APPROACHING BEGINNING OF LINE 6. (31 SHOT POINTS ON LINE)
6	1044			160	
	1046	2			
	1050	4			
	1108	16			
	1115	20			
	1122	25			
END 6	1131	31			
7	1140	1			(137 FIXES)

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
7	172 / 1152	10			
	1210	23			
	1219				SHIP OFF COURSE, PLOT POINT 31
	1228				NO NAVIGATION SIGNAL. 475 FATHOMS
	1233	40			SHIP IS BEING BROUGHT BACK ON COURSE
	1240			120	SHUT DOWN 1 BANK DUE TO LOSS OF OIL PRESSURE ON UNIT
	1250	51			SHIP BACK ON COURSE AFTER AUTO PILOT MALFUNCTION
	1303	60			
	1317	70			
	1331	80			
	1345	90			
	1403	102			
	1415	110			
	1431	120			
	1443	130			
END 7	1447	137			
8	1549		6KT		SPARK ON
	1553	X2			
	1556	1			
	1600				EXCURSION SEAWARD TO AVOID SHALLOW WATER
	1609	10			
	1613				LOST ONE OF THE NAVIGATION STATION SIGNALS

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
8	172 1624	21			
END 8	1645	32			BY RADAR THIS STATION WAS 1/2 MILE BEYOND END OF PLOTTED LINE
	1650				SECURE SPARKER. WAITING ON NAVIGATION
	1808				HEADING TOWARD BEGINNING OF LINE 9. FIRE OFF 2 PORT STINGERS
	1815				NAVIGATION STATION 43 FAILED AGAIN
	1827				SECURE SPARKER
	1906				FIRE OFF STARBOARD STINGERS ENROUTE TO LINE 9
9	1925				(164 SHOT POINTS)
	1927				TURN TO PORT 40°
	1932	5			
	1933				TURN 30° TO PORT
	1934				TURN 30° TO STARBOARD, STEADY ON LINE
	1940	10			
	1958	22			
	2010	30			
	2026	41			
	2034	50			
	2053	60			
	2108	70			
	2123	81			
	2136	90			
	2150	100			

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
9	172 / 2207	112			
	2218	120			
	2232	130			
	2250	142			
	2300	150			
	2315	160			
	2320	164			
END 9	2325				LOST NAVIGATION, NEW STATION ON AND OLD ONE OFF. GROUND CREW RETURNING TO OTHER STATION
	173 / 0406				SECURE RECORDER. NAVIGATION STILL OFF
	0500				STEAMING WEST? NAVIGATION SIGNAL OUT
10	0638	5			SPARK NOT ON
	0641				BEGIN FIRING. (TOTAL OF 29 STATIONS)
	0646	10			
	0701	20			
END 10	0720				PAST STATION 29 BEGIN TURN
11	0728				(105 SHOT POINTS)
	0735				ONE NAVIGATION SIGNAL OUT - NOTE: TAKE DEPTH FROM SPARKER REC
	0738		205°		5.6 MILES TO SANTA BARBARA ISLE
	0741		25° 6KT		DEAD RECKONING
	0800				ON DEAD RECKONING TIME MARK
	0813		187°30'		9 MILES TO SANTA BARBARA ISLE (ON DEAD RECKONING)
	0830				CHANGING NAVIGATION'S TRANSCEIVER (ON DEAD RECKONING)

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE TIME	SHOT POINT	COURSE SPEED	POWER Kj	REMARKS
11	173 0900				TIME MARK
	0930		27°		TIME MARK
	0943				PT. DUME - 11.1 MILES. 500 FATHOMS RADAR
	0949		33° 15'		10.9 MILES TO PT. DUME
	1002				TIME MARK. NUMBER 4 SPARK OUT
	1015				NO. 4 SPARKER ON
	1020				6.8 MILES TO PT. DUME, 465 FATHOMS.
	1030				TIME MARK - NO IMPROVEMENT WITH NEW TRANSCIVER
	1035		37° 15'		335 FATHOMS, 4.8 MILES TO PT. DUME
	1053		34° 22'		3.9 MILES TO PT. DUME CANYON 230 FATHOMS
	1100				TIME MARK (NO NAVIGATION - HYREX)
END 11	1108				22 FATHOMS (PULL PAPER).
	1109				SET UP FOR LINE 12, BEGIN TURN
12	1112		135°		PULL PAPER
	1116	1			
	1119				BREAK IN COURSE TO RIGHT TO AVOID BOAT TRAFFIC
END 12	1121				PULL PAPER. BEGIN PORT TURN TO COMPLETE 270° TURN ONTO LINE 13
13	1125				PULL PAPER - SET UP FOR LINE 13. ON COURSE LINE 13. PT. DUME BUDY ≈ 100 YDS. TO STARBOARD.
	1128		195°		
	1130				CHANGE COURSE 195°T OR 180°M
	1140	10			
	1154	20			

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
13	173 / 1210	31			
	1232	46			CUT OFF 1 SPARK DUE TO OVERHEAT
	1239	50			
	1254	66			
	1308	70			
	1322	80			
	1340	90			
	1355	100			
	1357				USE OF SHIP RADID. RECORD INTERFERENCE.
	1412	111			
	1420	120			
	1441	130			
	1456	140			
	1512	150			
	1523	157			
END 13	1525				SPARK STOPPED. CIRCLING. REPLACING NO. 4 OIL PUMP, REVERSING POLARITY. CHANGING ELECTRODES
14	1642				START FIRING
	1643	X1			(19 REGULAR POINTS)
	1705	9			
	1706	10			
	1719	19			LAST POINT ON LINE
END 14	1722				TURN TO STARBOARD

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
15	173 / 1737				BEGIN EXTENSION OF LINE 15 (169 STATIONS)
	1746	6			
	1802		26° / 6KT		NAVIGATION SIGNALS WEAK
	1811				ON DEAD RECKONING
	1830				ON DEAD RECKONING
	1837		20° /		
	1840		15° /		
	1845		10° /		
	1853		5° /		
	1855	40			NAVIGATION BACK
	1905		0° /		
	1912	50			
	1920			120	LOST BANK # 4
	1925		355° /		
	1929	60			
	1944	70			
	2000	80			NO. 4 SPARKER HAS BEEN OFF SINCE 1920
	2020	92	355° /		
	2033	100			
	2036			160	
	2041		000° /		
	2042		005° /		

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER KJ	REMARKS
5	173 / 2043		010°	160	
	2048		005°		
	2051	110			
	2110	122			
	2111		000°		
	2112		005°		
	2133	136			
	2144		010°		
	2155	150			
	2214	162			
	2222	168			
END 15	2223				TURN TO STARBOARD
16	2225		095° / GKT		(21 STATIONS)
	2226	3			
	2234		090°		
	2236	10			
	2242	14			
	2252	21			
END 16	2253				
17	2255		225°		(97 STATIONS)
	2259	4	195°		
	2305		190°		

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
17	173 2311	12	185°	160	
	2325	21	180°		
	2336	30			
	2349	41			
	174 0000	50		120	SPARK #4 OFF
	0014	60			
	0026	70			
	0038	80			
	0051	90			
	0059	97			
END 17	0104				START TURN
	0108				START SET UP FOR LINE 19
19	0120	3			
	0149	20			
	0207	32			
	0219	40			
	0233	50			
	0248	60			
	0303	70			
	0320	81			
	0334	91			
	0349	100			

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
END 19	174 / 0353	103			LAST SHOT POINT
	0433				FIRE OFF SPARKER
18	0436	1			(15 POINTS ON LINE)
	0451	11			
	0457	15			
21	0503				LINE UP
	0510	12			
	0518	20			
	0530				SLOW TO ALLOW FISHING VESSEL TO CLEAR LINE
	0537	31			
	0547			120	SECURE NO.4 BANK ON SPARKER TO COOL OFF
	0550	40			
	0551				NOISE CLEARED UP ON RECORDER. 2 ND PHONE CABLE WAS PUT IN WATER.
	0607	52			
	0616			160	NO.4 BANK BACK ON
	0620	61			
	0633	70			
	0653	84			
	0702	90			
	0717	100			
	0732	110			
	0746	120			

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
END 21	174 0749	123		160	
	0750				BEGIN TURN, SECURE SPARKER. LINE UP ON LINE 20
20	0808	1			FIRE OFF SPARKER
	0817	6			
	0825	11			
	0830	15			
END 20	0834				BEGIN TURN. LOOP TO STARBOARD
23	0902				(116 STATIONS, WORKING FROM 67 AND 68)
	0904	1			
	0910	6			
	0921	13			
	0931	20		120	NO. 4 BANK SHUT DOWN.
	0944	30			
	0951				MINOR COURSE CHANGE TO AVOID SHIP, 10° STARBOARD
	0957	40			
	0959			160	NO. 4 BANK ON
	1012	51			
	1024	60			
	1037	70			
	1049				NO. 4 BANK SHUT DOWN
	1055	83			
	1104	90			

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
23	179 1110				NO. 4 BANK ON
	1118	100			
	1131	110			
	1140	116			
END 23	1141				
22	1221	X1			
	1222	1			
	1235				MINOR COURSE CHANGE TO AVOID SHIP
END 22	1236	12			
	1237				SECURE SPARKER. TURNING ONTO LINE 25
25	1241				
	1243	5			
	1306	21			
	1320	30			
	1334	40			
	1344	50			
	1403	60			
	1410			120	#4 SPARKER OFF DUE TO HEATING
	1417	70			
	1423	74			FINAL SHOT POINT
END 25	1426				START TURN
27	1432	1			(66 STATIONS)

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
27	174 1443	10			
	1456	20			
	1509	30			
	1515				SHUT DOWN ARCER DUE TO GENERATOR COMPLICATION. CHANGE COO. GO BACK ON LINE TO POINT IT SHUT DOWN TO TIE RECORD IN AND CONTINUE
	1558	27A			THIS STARTS RERUN
	1559	28A		120	RERUN
	1602	30A			RERUN
	1615	40			
	1631	52		160	
	1644	62			ON DEAD RECKONING FROM # 61 TO END OF LINE
END 27	1649	66			
24	1655		155° 6KT		12 FATHOMS . ON DEAD RECKONING
	1701	7			?? SIGNAL ON NAVIGATION
	1702		155° 6KT		11 FATHOMS . ON DEAD RECKONING
	1707		165° 6KT		
	1710	14	75°		1/2 MILE TO RED BELL BUOY
END 24	1713				BEGIN TURN (NO MARK ON RECORD)
	1714				MIDDLE OF TURN-PAPER ADVANCE
	1717		250°		12 FATHOMS, 1 MILE TO RED BEACH BELL BUOY
	1725				TIME MARK ON RECORD
	1726		140°		(RADAR) 4 MILES, 36 FATHOMS RED BEACH BELL BUOY
END 29	1728				BEGIN 270° TURN TO PORT. 4 MILES 325° TO MALAGA COVE 40 FATHOMS

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE TIME	SHOT POINT	COURSE SPEED	POWER Kj	REMARKS
26	174 1735		310° 6KT		
	1738				(RADAR) 1.6 MILES 130° FLAT ROCK POINT, 125 FATHOMS
	1745				2.5 MILES, RED BEACH BELL BODY 7 1/2°, 100 FATHOMS
	1750		300°		
	1752	14			
	1801	20			
	1828	39			
	1844	50			
	1901	63			
END 26	1910	70			TURN TO THE STARBOARD FROM PORT
31	1921		0250		(42 SHOT POINTS)
	1927	5			
	1934	10			
	1947	22			
	2003	34			
	2012	40			
END 31	2015	42			
28	2021			120	(23 STATIONS) #4 BANK OFF
	2026				(RADAR) 2.0 MILES MALIBU POINT 355°, 8 FATHOMS
	2027	4			
	2042	15			
	2052	23			

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
END 28	174 2058				STARBOARD TURN
33	2109		170°	160	(49 STATIONS)
	2119				2.0 MILES TO SURF LINE, 355° TO HACHEME MARKS ELEVATION 1574 BETWEEN KELLER SHELTER AND SANTA MON. BELL BODY 281
	2123		175°		
	2130	21			
	2151	34			
	2204	43			
	2214	49			
END 33	2221				TURN TO STARBOARD
30	2246				(70 STATIONS)
	2247	X2			
	2249	1			
	2315	20			
	2331	31			
	2343	40			
	2356	50			
	175 0012			120	#4 BANK SHUT DOWN
	0027	70			(LAST SHOT POINT) START TURN
35	0047	2			USING STATIONS 88-264
	0059	10			
	0117	20			
	0133	31			

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
35	175 0146	40			
	0148			160	SPARK # 4 ON
	0202	50			
	0217	60			
	0233	70			
	0235				RADIO COMMUNICATION IN THE BRIDGE ..
	0303	90			
	0318	100			
	0358	120			(DEAD RECKONING ON BASIS OF TIME - SPEED - DISTANCE) SIGNAL LOST FROM BOTH TRANSPONDERS
END 35	0406				SECURE EQUIPMENT FOR TURN. 165 FATHOMS
32	0433			120	FIRE OFF 1, 2, 3
	0435	3			(ONE NAVIGATION STATION OUT)
	0454	X2			(TWO NAVIGATION SIGNALS ON)
END 32	0509	X11			
	0510				SECURE SPARKER FOR TURN
	0526			120	GETTING IN POSITION FOR LINE 37. FIRE OFF 1, 2, 3
37	0529	4			(128 STATIONS)
	0540	12			
	0556	24			
	0604	30			
	0618	40			
	0625			160	FIRE OFF NO. 4

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
37	175 0632	50		160	
	0653	65			
	0700	70			
	0715	81			
	0728	90			
	0742	100			
	0756	110			
	0810	120			
END 37	0821				TURN TO PORT
34	0827				
	0828	1			
	0835	7			
END 34	0841				PORT TURN
39	0845				(59 STATIONS)
	0847	3			
	0856	10			
	0910	20			
	0925	31			
	0938	40		120	BANK NO. 4 OFF
	0952	50			
	1004	59			
END 39	1005				CIRCLE FOR MAINTENANCE AND TO WAIT FOR TRANSPONDER SETUP ON CATALINA ISLAND.

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE TIME	SHOT POINT	COURSE SPEED	POWER Kj	REMARKS
36	175 1236			120	(EXTENDED TO NAVIGATION)
	1246	X12			
	1302				CHECKED GREEN STREAMER ABOUT 1 MINUTE
	1311	X7			
	1344	1			
	1357	10			
	1401	13			
END 36	1404				START TURN, SHUT DOWN, PULL PAPER
41	1414	1			
	1431	12			
	1442	20			
	1503	35			
	1507				RADIO TRANSMISSION
	1510	40			
	1526	51			
	1538	60			
END 41	1542	63			
	1630		130° 6KT		12 FATHOMS, NO NOTICE FROM NAVIGATION WHEN LINE STARTED
38	1640	11			
END 38	1644				
	1710			160	GETTING IN POSITION FOR LINE 43. FIRE OFF SPARKER
43	1713				ALL 4 BANKS FIRING (66 STATIONS ON LINE)

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE TIME	SHOT POINT	COURSE SPEED	POWER Kj	REMARKS
43	175 1721			160	TIME MARK ONLY
	1722	8			
	1726	10			
	1738	20			
	1753	31			
	1806	40			
	1821	51			
	1834	60			
END 43	1843	66			BEGIN TURN
	1849				MIDDLE OF TURN
45	1855				(68 SHOT POINTS)
	1857	2	040°		
	1914	13			
	1923	20			
	1938	30			
	1952	40			
	2007	50			
	2017				RADIO TRAFFIC
	2021	60			
END 45	2023			120	BEGIN TURN - NO. 4 BANK TAKEN OFF LINE
	2026				MIDDLE OF TURN, PULL PAPER
	2039				BEGIN LAST TURN OFF OF LINE 42

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
47	175 / 2042			120	
	2043	1			(104 STATIONS)
	2044			160	#4 BANK BACK ON LINE
	2056	10			
	2110	20			
	2124	30			
	2138	40			
	2152	50			
	2205	60			
	2218	70			
	---				160 K'S REPORTED BEFORE IS NOMINAL - ACTUAL IS AS FOLL
	---				#1 14,200 v = 35 K'S
	---				#2 14,500 v = 36 K'S
	---				#3 13,500 v = 32 K'S
	---				#4 12,500 v = 27 K'S
					FULL SYSTEM = 130 K'S
	2245	90			
	2255				LOST CATALINA SIGNAL
	2300	100			ONE LINE & DEPTH
	2305	104			NOT MARKED
END 47	2307				PORT TURN. TURNS AND LINE 44, DIVERT AROUND ROCK FIRST.
	2320				TIME MARK
	2325				DOUBLING BACK, PORT TURN OF 180°
	2334				BEGIN STARBOARD TURN ONTO LINE

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
49	175 2336				ONE LINE AND DEPTHS
	176 0002	19			
	0024	34			
	0031	40			
	0047	50			
	0059	60			
	0114	71			
	0129	82			
	0140	90			
	0153	100			
	0207	110			
	0220	120			(START TURN 30° TO RIGHT) ALSO, SAME POINT AS 1 ON LINE 46
46	0221	2			
	0230				TIME MARK. STILL STRAIGHT COURSE, LINE 46.
END 46	0233	11			
51	0239	1			(74 POINTS)
	0241	3			
	0253	11			
	0305	20			
	0335	40			
	0349	50			
	0403	60			

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
51	176 0419	71			
END 51	0423	74			
	0424				SECURE SPARKER BEGIN TURN
53	0434				FIRE OFF SPARKER
	0435	1			(80 SHOT POINTS)
	0451	11			
	0502	20			
	0503				NO.3 BANK PREFIRE AND MISFIRE
	0505				SECURE NO.3 BANK
	0515	30			
	0528	40			
	0541	50			
	0557	62			
	0608	70			
END 53	0621	80			
	0622				SECURE EQUIPMENT FOR TURN AND MAINTENANCE
55	0648				(85 POINTS)
	0654	1			
	0707	10			
	0729	25			
	0736	30			
	0753	41			

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
55	176 / 0807	50			
	0822	60			THERE ARE 80 LINES PER INCH ON THE RECORDER
	0837	70			
	0851	80			
	0859	85			NOT MARKED
END 55	0904				START TURN
57	0908				PAPER PULL, SPARK ON A SHORT TIME LATER
	0912	1			(87 STATIONS)
	0926	10			
	0940	20			STARTING RECORDER ON SIMRAD ABOUT NOW
	0957	33			
	1008	42			
	1020	51			
	1033	61			
	1047	72			
	1058	80			
	1107	87			
END 57	1109				REPLACED TRANSFORMER COOL PRESSURE GAUGES START TURN. WAITING FOR SHOREBOAT. CHANGED ELECTRODES., REVERSE
	~1323				START SET-UP FOR LINE 59
	1337		205°		
59	1343	15	225°		
	1351		235°		RIGHT 10°

Scientific Log for M/V OIL CITY June 1969.

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
59	176 1352	21			
	1407	30			
	1422	40			
	1437	50			
	1458	61			
	1506	70			
	1523	80			
	1535	88			
	1550	X2			
	1600	X3			
	1610	X4			
	1621	X5			
	1630	X6			
	1640	X7			
END 59	1645	X8			SECURE SPARKER
CAT	1647		1350	OFF	SPARKER FIRE OFF
	1648	1			
	1651	2			
	1655	3			
	1701	4			
	1703	-			LONG POINT ABEAM
	1706	5			

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
AT	176 / 1713	6			
	1714				SECURE ALL EQUIPMENT. HAUL IN GEAR - UNDERWAY TO AVALON.
	1725				ALL EQUIPMENT ABOARD
	1754				TIE UP AT DOCK
	2055				UNDERWAY TO RESUME SURVEY
61	2322	1		(160) ON	
	2334	10			
	2350	22			
	177 0001	31			
	0014	40			
	0028	51			
	0040	60			
	0053	70			
END 61	0104	78			WATER AS SHALLOW AS 7 FATHOMS
	0111				FIX MARK ON LINE PARALLEL TO BEACH. LINE FROM 61 → 63. RUN 3 MILE SEAWARD OF 38. RUN 38 NOT RAN DUE TO SHALLOW WATER.
	0113				START TURN. SET UP FOR LINE 63
	0114				TURN ON EQUIPMENT. BEGIN TRACK.
63	0117	10			PREVIOUS SHOT POINTS OMITTED DUE TO SHALLOW WATER
	0132	20			
	0146	30			
	0200	40			
	0214	50			

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
63	174 0229	60			
	0243	70			
	0258	80			
	0308	87			
END 63	0309				START TURN
65	0321				END TURN. ON COURSE (NO GOOD) : . .
65	0332	2			EQUIPMENT ON. END TURN. (85 POINTS ON LINE)
	0342	10			
	0355	20			
	0409	30			
	0422	40			
	0435	50			
	0449	61			
	0501	70			
END 65	0510	77			10 FATHOMS
	0511				SECURE SPARKER. BEGIN TURN
67	0519				FIRE OFF SPARKER. DRILLING PLATFORM DEAD ASTER. APPROX. 1/2
	0524	10			(136 POINTS)
	0539	20			
	0556	31			
	0618	46			
	0624	50			

Scientific Log for M/V OIL CITY June 1969.

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
67	179 0639	60			
	0654	70			
	0727	90			
	0740	100			
	0756	111			STRONG ERRATIC CURRENT - 15° VARIATION FROM BASE COURSE REQ TO STAY ON LINE
	0813	120			
	0820			120	ONE BANK SHUT DOWN
END 67	0830	136			SHUT DOWN SPARKER TO CHANGE ELECTRODE. NO RECORD SHORT LATER REPAIR SPARKER COMING TO LINE 6
69	0855	1			
	0859			160	
	0908	10			
	0921	20			
	0934	30			
	0947	40			
	1000	50			
	1014	60			
	1025	70			
	1042			120	TURNED BANK #2 OFF. MISFIRING
	1050	90			
	1105	101			
	1117	110			
	1123				TURNED OFF SPARKER

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
69	170 1125			1.60	SPARKER ON
	1130	120			
END 69	1145	131			
66	1250	1	1050		
	1257	6			
END 66	1308	13			START TURN
71	1313				END TURN, TURN ON GEAR
	1316	5			
	1328	14			
	1338	20			
	1353	30			
	1407	40			
	1423	50			
	1440	62			
	1452	70			
END 71	1508	81			START TURN
68	1511				CHANGE COURSE
	1512	2			
	1517	6			
END 68	1523	11			START TURN
73	1525				(84 POINTS)
	1527	3			

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE TIME	SHOT POINT	COURSE SPEED	POWER Kj	REMARKS
73	179 1536	10		160	
	1549	20			
	1602	30			
	1616	40			
	1631	51			
	1643	60			
	1700	72			
	1706				A BEAM (1000' TO STARBOARD) NEWPORT BEACH BUOY
END 73	1710	80			
	1711				SECURE FOR TURN
70	1713		1450 6KT		FIRE OFF SPARKER . 8 FATHOMS
	1716	3			
	1717		1050		16 FATHOMS
	1726	11			
END 70	1729	13			
	1730				SECURE SPARKER . BEGIN TURN ONTO LINE 75
75	1733				FIRE OFF SPARKER
	1734	3			(54 POINTS)
	1742	10			
	1800	23			
	1825	40			
	1840	50			

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
END 65	170 / 1846	54			
	1852				SECURE EQUIPMENT AND BEGIN TURN
62	1906				FIRE OFF EQUIPMENT
	1909	1	315° / 6KT		(108 SHOT POINTS)
	1924	11			
	1938	20			THIS POSITION AND 1 AND 11 INCLUSIVE ARE PROBABLY OFF SIC NAVIGATION
	1958				DEAD RECKONING . 6 MILES, 152° TO PLATFORM EVA., 155 FATHOMS HUNTINGTON BEACH
	2013	40			
	2030	51			
	2043	60			
	2058	70			
	2114	80			
	2132	90			
	2146	100			
END 72	2151	108			
77	2203	4	055° / 5KT		
	2205		060°		
	2207		065°		
	2210		060°		
	2212		055°		
	2214		050°		
	2215	12			

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE TIME	SHOT POINT	COURSE SPEED	POWER Kj	REMARKS
77	177 2222		045°		
	2224		050°		
	2225	20			
	2226		055°		
END 77	2231				ABEAM RED MABER AT SECTY. SPARKER OFF
74	2233		6KT		SPARKER ON
	2236	5			
	2244	11			
	2255	20			
	2309	31			
	2321	40			
	2333	50			
	2346	60			
	2358	70			
	178 0014	83			
	0019	90			
	0036	100			
	0049	110			
	0055	115			
END 74	0059	118			START TURN
79	0110	-	055°		TURN ON GEAR
	0117		045°		

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
79	178 / 0120		025°		
	0128	11			
	0142	20			
END 79	0154	24			TOD CLOSE TO BEACH AT DARK HOURS
76	0156		145°		PARALLEL TO SHORE 1 MILE FROM SHORE
END 76	0211				START TURN
81	0212				
	0214	8			
	0225	16			
	0242		220°		TIME FIX
	0257	38	235°		
	0311	50			
	0325		215°		TIME MARK
	0328		210°		
	0345				TIME MARK
	0358	84			
	0404	88			
	0406	90			
END 81	0408	91			
	0409				SECURE AND BEGIN TURN
78	0411				FIRE OFF EQUIPMENT
	0417				SECURE EQUIPMENT - NAVIGATION NOT AVAILABLE

Scientific Log for M/V OIL CITY, June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
	178 0418				(LINE 78 NOT SHOT)
83	0425				
	0427	7			
	0431	10			
	0446	20			
	0500	30			
	0515	40			
	0531	50			
	0544	60			
	0559	71			
	0618	85			
END 83	0625	90			
	0626				SECURE EQUIPMENT, BEGIN TURN
80	0628				FIRE OFF EQUIPMENT
	0629	3			
	0640	11			
END 80	0645				
85	0648				FIRE OFF SPARKER
	0649	2			
	0708	16			
	0713	20			
	0736	38			

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
85	178 / 0755	52			
	0814	67			
	0831	80			
	0846	91			
	0900	100			BANK #4 OUT
	0918	113			
	0933	122			
	0948	132			
END 85	1003	142			HAUL GEAR IN. RUN (SPEED) AT 9 Kt. BACK TOWARD END OF LINE 87, MALFIRE WHILE UNDERWAY
(SLAVE) 82	1146		135°		RUNNING TO 87
	1150				FIX 1
	1158				FIX 5
END 82	1209				FIX 11
87	1213	1			
	1226	11			
	1238	20			
	1243	24			
84	1245				APPROXIMATELY ON COURSE
	1249	5			
	1259	11			
END 84	1305	16			RUN ENDED BECAUSE OF ELECTRODE 1 ^w
	1306				#4 SPARKER MALFIRE

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
	178 / 1306				TURN TO GO BACK, TO START POINT, TO RETURN
	1352		305°		GEAR ON, BEGIN RECORD FOR LINE 84. 2 nd START
84	1358	4			
	1417	17			
	1420	20			
	1435	30			
	1451	41			
	1506	51			
	1518	60			
	1533	70			
	1548	81			
	1602	91			
	1615	100			
	1630				ONE NAVIGATION STATION OFF
	1639				TIME MARK
	1646				TIME MARK - SECURE EQUIPMENT - GO BACK TO WAIT ON NAVIGATION. RETURN TO POINT ON LINE 84 WHERE NAVIGATION WHEN
84	1751				STEADY ON
	1800	85			
	1822	100			
	1835	110			
	1850	120			
	1904	130			

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
84	178 / 1918	140			
	1933	150			
	1946	160			
	2000	170			
	2013	180			
	2022	190			
	2041	200			
	2055	210			
	2110	220			
	2124	230			
	2151		300°		RIGHT TO 285° MAG - 300° TRUE BEARING
	2215				14.973 MILES TO STATION 88, 052° TO PT. FERMIN LIGHT AT 430 FATHOMS
	2216				FIX ABOVE WITH RADAR BEARING AND ONE HYREX STATION FOR RANGE
	2235				FIX RANGE TO 16.702 TO STATION 88 AND 054° TO PT. FERMIN LIGHT. AT 459 FATHOMS. NOTE - RADAR BEARINGS ARE PROBABLY VERY OFF WILL HAVE TO LAY OUT COURSE ASSUMING LINE FROM HYREX SPREAD AT 2124-2220
	2245	280			
	2325	303			RANGE OF 21.38 TO 88 ONLY ONE STATION OPERATING
	2330		355°		COURSE TO POINT DUME 13.8 miles 500 FATHOMS (RADAR BEARING AND RANGE)
	2333	308			22.187 TO 88
	2341	313			RANGE OF 23.025 TO 88
	2347	318			23.871 TO 88
	2356	323			24.724 TO 88
	2357		000°		11.5 MILES 495 FATHOMS RADAR BEARING AND RANGE

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE TIME	SHOT POINT	COURSE SPEED	POWER Kj	REMARKS
84	179 0010	332			26.345 MILES FROM 88. 009° 11.2 MILES TO PT. DUME AT 495 FATH
	0020	339			27.502 MILES TO 88
	0023				019° 11.0 MILES TO PT. DUME, 495 FATHOMS
	0030				28.677 MILES FROM 88
	0035				29.320 MILES
	0037				045° 12.0 MILES TO PT. DUME, 495 FATHOMS
	0042				30.109 FROM 88
	0044				050° 12.0 MILES TO PT. DUME
	0050				31.2087 MILES
	0101				TIME FIX
	0105				32.973 MILES FROM 88
	0111		335°		TIME FIX. 12 MILES FROM ARROYO SEQUIT (300° MAGNETIC
	0121				
	0129				STAT. #264 16.730 MILES TIME FIX: STAT. #88 35.906 MILES 345° 10 MILES ARROYO SEQUIT 470 FATHOMS
	0135				TIME FIX: STAT. #264 16.907 STAT. #88 36.667
	0140				10 MILES 342° TO ARROYO SEQUIT 460 FATHOMS 88 = 37.331 MILES 264 = 17.105 MILES
	0145				88 RANGES 38.012 MILES 264 RANGES 17.356 MILES
	0150				88 RANGE 38.678 MILES 8 MILES TO ARROYO SEQUIT 264 RANGE 17.818 MILES 000° 430 FATHOMS
	0155				88 38.423 MILES 264 17.939 MILES
	0200				7 MILES TO ARROYO SEQUIT 012° 410 FATHOMS 88 40.099 264 18.242
	0205				88 40.122 264 18.530
	0210				88 41.399 264 18.870. 025° 6 1/2 MILES ARROYO SEQUIT 398 FA

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
	179 / 0215				88 42.063 MILES 264 19.239 MILES
	0226		265°		4 MILES FROM NAVY BUOY FPA 88 = 45.0 MILES 325 FATHOMS
	0232				88 42.003 MILES
	0246				22.092 TO 264
	0300				23.893 TO 264
	0305		260°		ANACUPE LT 24.540 MILES TO 264 END RECORD
	0410				ALL EQUIPMENT ABOARD - UNDERWAY WITH BARN COURSE
	0500				TIE UP AT PORT HUENEME DOCK
	0730				UNDERWAY TO CONTINUE SURVEY
	---				REPAIR BANK #3 START SHORT LINE PORT HUENEME TO SAN PEDRO PT
114	0929				ON COURSE
	0930				FIX 1
	0940				FIX 2
	0950				FIX 3
	1003				FIX 4
	1014				FIX 5
	1020				FIX 6
	1030				FIX 7
	1040				FIX 8
	1052				FIX 9 COURSE CHANGE TO LINE 97. LEFT TURN BETWEEN ANACUPE AND SAN PEDRO PT. GEAR NOT SHUT DOWN. NAVIGATION HAD WRONG STATION. ON LINE 97 - 50 TURN NOT WHERE ORIG. ASKED
97	1116	200			RANGE ONLY
	1130	190			RANGE ONLY

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE TIME	SHOT POINT	COURSE SPEED	POWER Kj	REMARKS
97	179 1144	180			RANGE READING ON ONE STATION ONLY
	1147				RADAR FIX 1 ALBERT POINT (COVE) 3.5 MILES AWAY 254 FATHOMS 287°
	1158	170			RANGE ONLY
	1200				TURN LEFT ON 220° FIX 2 3 MILES TO ALBERT'S ANCHORAGE BY RADAR
	1207				3.2 MILES TO ALBERT'S COVE BY RADAR
	1212	160			39.871 MILES TO #66
	1227	150			41.625 MILES TO #66
	1228				FIX 3 RADAR - 4.3 MILES AT 323°
	1243				CHANGE COURSE, RIGHT 10°, LOST 3 SHOT POINTS
	1246	137			(BOTH STATIONS)
	1252		230°		
	1257	130			
	1311	120			
	1327	110			
	1337	104			
	1347		200°		REF-4 010° ALBERT'S COVE 10 MILES RANGE TO 264 62.97
	1353				RANGE TO 264 63.529 MILES
	1401				RANGE TO 264 64.187
	1402				RF-5 014° TO ALBERT'S COVE 12 MILES
	1404				RF-6 315° EAST PT.
	1407				RANGE TO 264 64.783
	1415				RF 7 320° 13 MILES TO EAST POINT

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE TIME	SHOT POINT	COURSE SPEED	POWER Kj	REMARKS
97	179 1416				RANGE TO 264 65.319
	1426		200°		RANGE TO 264 66.320
	1450				TIME MARK
	1456				RANGE TO 264 68.941
	1501				TIME MARK
	1510				TIME MARK
	1521				TIME MARK
	1523				RANGE TO 264 71.490 MILES
	1530				TIME
	1536				72.805 TO 264
	1550				RANGE TO 264 74.166
	1558		200°		
	1610				RANGE TO 264 76.074 MILES
	1615				TIME MARK
	1625				RANGE TO 264 77.583 MILES
	1637				RANGE TO 264 78.800 MILES
	1640				79.146 MILES
END 97	1642				TIME MARK
94	1644		135°		
	1646				TIME MARK
	1651				RANGE TO 264 78.997 MILES
	1700				TIME MARK

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
94	179 / 1707				RANGE TO 264 78.485 MILES
	1720				TIME MARK
	1724				RANGE TO 264 78.202 MILES
	1730				LOST ALL 4 BANKS ON SPARKER
	1732		3kt		SPARKER BACK ON
	1733		6kt		
	1741				TIME MARK
	1758				TIME MARK
94	1759				START TURN. SPARKER OFF
	1804		005°		FIRE OFF SPARKER. ROUGH SEAS.
	1810				TIME MARK
	1841		085°		TIME MARK
	1900		130°		TIME MARK (APPROXIMATE TIME OF COURSE CHANGE)
	1916				TIME MARK
	1930				TIME MARK
	1945				TIME MARK
	1950		077°		
	2005				TIME MARK
	2015				TIME MARK
	2025				TIME MARK
	2040				TIME MARK
	2050				TIME MARK

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
94	179 / 2100		180°		TIME MARK. ON COURSE TO EAST END SAN NICOLAS ISLAND. 5.1 MILE RANGE. 435 FATHOMS. #264 65.771 #88 60.651 MILES - RAN
	2110				TIME MARK
	2120				TIME MARK
	2130				TIME MARK
	2135				TIME MARK
	2137				SPARKER SHUT DOWN FOR REPAIR
	2151				TIME MARK
	2200				TIME MARK
	2230		050°		
	2232				TIME MARK
	2245				TIME CHECK
	2257		035°		
	2315		071°		TIME CHECK
	2330				TIME CHECK
	2345				TIME CHECK
	180 / 0000				TIME CHECK
	180 / 0004				264 RANGE 38.0 MILES
	0016				TIME CHECK
	0030				TIME CHECK
	0045				TIME CHECK
	0105				TIME CHECK
	0115				TIME CHECK

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
4	180 / 0130				TIME CHECK
	0145				TIME CHECK
	0200				TIME CHECK
	0215				TIME CHECK
	0230				TIME CHECK
	0245				TIME CHECK
END 94	0300				TIME CHECK
	0301				MAINTENANCE ON EQUIPMENT
	0445				HEADING SE ON LINE 84 TO SHOT POINT WHERE SHOOTING WILL BE RESUMED TO THE NW. NAVIGATION HAD GOOD CONTROL THRU SHOT POINT 240 ON THE 1 ST RUN AND PRE-PLOTS (FOR STATIONS TO BE USED ON THE RERUN FROM SP 240 ON) BEGIN AT SP 240
	0450		3KT		NEAR POINT WHERE RERUN OF LINE 84 WILL BEGIN. SPEED REDUCED TO COMPLETE REPAIRS ON RAYTHEON RECORDER
	0730				RECORDER BACK ON - GETTING IN POSITION TO RERUN LINE 84
	0802				TIME MARK
	0833				UP TO FULL SPEED ON APPROACH TO LINE 84 STILL NEED 20° TURN
84	0835	229			
	0852	235			
	0858	240			
	0911	251			
	0930	265			
	0938	271			
	0952	280			
	1005	290			
	1018	300			

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
84	180 / 1032				LOST ONE NAVIGATION SIGNAL. WILL TRY FOR ALTERNATE
	1038				STILL LOST - RANGE TO STATION 264 = 23.553 ST. MILES
	1048				RANGE TO 264 = 23.284
	1105	322			RANGE TO 264 = 23.049 MILES (APPROXIMATELY)
	1120				RANGE TO 264 = 23.075 MILES
	1129				RIGHT TO 294° RANGE 23.186 TO 264, NOTE TURN WAS TOO AS SHOWN BY FIRST TIME 2 STATIONS AVAILABLE FOR A FIX. TURN SHAVE BEEN MADE AT STATION 371.
	1159	364			
	1203	371			
	1214	380			
	1228	391			
	1245	404			
	1302	415			
	1317	426			
	1328	433			
	1338	440			
	1352	450			
	1407	461			
	1419	470			
	1433	480			
	1449	492			
	1500	500			
	1512	509			NO TRANSPONDERS FOR LAST 2-8 SHOT POINTS (I.E. #50 DEAD RECKONING TO END OF LINE

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE TIME	SHOT POINT	COURSE SPEED	POWER Kj	REMARKS
	180 1640				TIME MARK, GETTING IN POSITION FOR LINE 89
89	1704		020°		(72 STATIONS)
	1706	1			
	1718	10			
	1732	20			
	1745	30			
	1759	40			
	1812	50			
	1815		010°		COURSE CHANGED TO AVOID RIG
	1824		040°		
	1829	60			
END 89	1844	72			
	1845				SECURE FOR TURN
90	1846	3			
	1858	12			
	1909	20			
END 90	1914	24			
	1915				CHANGE COURSE TO GET ON LINE 95
95	1917				
	1920	5			
	1942	20			
	1958	30			

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER KJ	REMARKS
95	180 / 2014	41			
	2026	50			
	2041	61			
	2048	70			
	---	71			START TURN TO 95A
95A	2056				
	2112	8			
	2116	10			
END 95A	2122	13			
97	2129	248			
	2145	260			
	2159	270			
	2214	280			
	2223	290			
	2230				SPARKER STOPPED - CIRCUIT BREAKER OUT
	2233				SPARKER ON
	2242	300			
	2255				SPARK OFF BLOWN BREAKER
	2257				SPARKER ON
	2258	311			
	2310	320			
	2325	332			START TURN .0.4 MILES RED #8 BUDY CHANNEL MARKER

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
96	180 / 2329				TURN ON GEAR
	2330				RED #8 VENTURA CHANNEL BUOY 94° 0.5 MILES 10 FATHOMS
4	2334	6	310°		47 STATION VENTURA PIER = 063°T
	2341	11			STATION 47 RANGE
	2348	13			040° 0.7 MILES 10 FATHOMS PITAS POINT AND VENTURA STAT. 47 3.864
END 96	2349	18			125° RED #8 VENTURA BUOY 3.4 MILES STAT. 47 2.806 MILES START TURN
99	2357		210°		
	181 / 0001		215°		PITAS POINT 2.3 MILES 330° 14 FATHOMS.
	0006		185°		
	0009	13			
	0018	20			
	0034	32			
	0045	40			
	0059	50			
	0112	60			
	0126	70			
	0139	80			
	0152	90			
	0206	101			
	0207				SPARKER OFF FOR TURN
	0208				SPARKER STARTED FOR LINE 98
98	0212	7			

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE / TIME	SHOT POINT	COURSE / SPEED	POWER Kj	REMARKS
98	181 / 0222	12			
	0227	16			SPARKER STOPPED
	0229				SPARKER STARTED FOR LINE 101
101	0235	5			(109 POINTS)
	0242	10			
	0245				#4 SPARKER ON
	0258	21			
	0311	30			
	0325	40			
	0338	50			
	0353	60			
	0407	70			
	0422	80			
	0434	90			
	---				LOST ONE STATION AT SHOT POINT 91 - ONE STATION TO END
	0447	100			
	0454	106			
END 101	0455				SPARKER SECURE
100	0457				FIRE OFF
	0500				RANGE TO STATION 47 2.535 MILES
	0510				LOST BOTH SIGNALS, LINE ON DEAD RECKONING
END 100	0522				SECURE SPARKER

Scientific Log for M/V OIL CITY June 1969

LINE NO.	DATE TIME	SHOT POINT	COURSE SPEED	POWER Kj	REMARKS
103	181 0524		215°		FIRE OFF
	0539				RANGE TO STATION 47 6.282 MILES
	0540				TIME MARK
	0552				RANGE TO STATION 47 7.575 MILES
	0605				RANGE TO STATION 47 9.082 MILES
	0622	50			
	0640	60			
	0656	70			
END 103	0702	74			#4 BANK SECURE 0659 (120 KJ)
	0709				FIRE OFF SPARKER TO BEGIN LINE 110
110	0714	62		120	STILL #4 BANK OUT
	0728	72			
	0750	90			
	0805	100			
	0819	110			
	0833	120			
	0836			160	#4 SPARKER BANK BACK ON
	0848	130			
	0902	140			(NOT MARKED)
	0906	142			
	0919	150			
	0932	159			

