

Rio 96 shelf 15<sup>3</sup>in H<sub>2</sub>O  
09/4/96

John Anderson's (Rice U.) Gulf of Mexico project.  
From RIO '95, '96 binder

Lines:

31A	30A	38A
31B	31C	37A
34A	32B	40A
34B	33A	39A
35A	33B	39B
32A	36A	70A
	41A	

Starting date: 1996-09-03

Starting latitude, longitude: 26° 35.08' -96° 48.98

Ending date: 1996-09-06

Ending latitude, longitude: 26° 44.95' -96° 46.97'

Firing Rate: 3

Filter: 65-1700 Hz

Source: 15<sup>3</sup>in water gun

Sample Frequency: 400 Hz

Record length: 1024 ms

Shooting: 3000 ms

GPC 27 + 20 Db gain

Shelf data

4000 Hz - samp. f  
1024 ms - rec. l  
3000 ms - shooting  
REC 27+20dB gain p. 7

Line name: 31A  
Energy: J/PSI  
Tape #:           
Descr: Rio 96 shelf 15 in<sup>3</sup> H<sub>2</sub>O  
Firing Rate: 3C  
Filter: 65-1700 Hz  
Date: 9/11/96  
Geophones: little  
Source: 15 Hz ci

Time	SP/Fix	LAT.	LONG.	WD (m)	Ship spd/dir	Nav. system	Notes
1451	0/0	26° 35.08	96° 48.98	46 m	4.7/77	SOL 31A	@WP1 + going to WP2
15	0/0						- stop line at 1500 - need to fix buoy set up - shackles dragging it under
1517	0/0	26° 35.11	96° 49.01	46	4.7/78	SOL 31B	- shooting gun at 2500 psi
1533	01/310	26° 35.47	96° 47.55	45	6.1/57	- to WP2	
1551	02/677	26° 36.13	96° 45.78	53	5.8/76	"	
1607	03/095	26° 36.53	96° 44.15	57		@WP2	
1629	01/425	26° 34.96	96° 42.85	53	5.1/140	- to WP3	EOL 31B + SOL 34A
1647	02/791	26° 33.59	96° 41.91	53	6.2/140	"	
1702	03/090	26° 32.67	96° 41.09	53	4.6/122	"	Brant moving in - slightly choppy
1718	04/1402	26° 31.71	96° 40.29	53	4.7/136	"	- sea still rough - large swell
1733	05/1698	26° 30.87	96° 39.67	53	4.9/135	"	
1735	06/1738	26° 30.70	96° 39.51	53		@WP3	
1749	07/2032	26° 30.02	96° 38.67	53	4.1/140	- to WP4	
1804	08/2337	26° 29.31	96° 37.75	53	5.1/124	"	
1820	09/2643	26° 28.50	96° 36.66	53	4.3/124	- "	
1832	10/2869	26° 27.90	96° 35.87	"	5.2/149	@WP4 -	
1847	11/3188	26° 26.83	96° 35.14	53	5.4/150	- to WP5	- seas calmed down - loose heavy swell
1902	12/3496	26° 25.59	96° 34.50	based on map ~53	6.0/154	"	→ Furrow stylus die + power out
1917	13/3801	26° 24.32	96° 33.82	~53	5.8/149	"	
1922	14/3887	26° 23.80	96° 33.58	~53	6.0/154	EOL 34A + SOL 34B	
1939	01/336	26° 22.44	96° 32.65	~53	5.9/135	- to WP5	
1945	02/453	26° 21.94	96° 32.35		5.8/160	@WP5	
1959	03/747	26° 20.64	96° 32.25		6.3/168	- to WP6	
2000	04/1049	26° 19.13	96° 32.15	~53	5.6/169	"	
2030	05/1354	26° 17.71	96° 32.06	~53	5.4/159	"	
2045	06/1654	26° 16.31	96° 31.97	~53m	6.0/168	"	
2100	07/1954	26° 14.92	96° 31.89	~53	6.2/167°	"	
2115	08/2254	26° 13.48	96° 31.78	~53m	5.6/150°	"	
2130	09/2554	26° 12.09	96° 31.64	~53m	5.0/173°	"	
2145	10/2853	26° 10.73	96° 31.54	~53m	6.0/181°	"	
2200	11/3154	26° 09.35	96° 31.47	~53m	6.2/159°	"	
2211	12/3389	26° 08.33	96° 31.47	"	5.2/179°	@WP6	
2229	13/3740	26° 06.71	96° 31.34	~	5.4/179°	- to WP7	hand off to WP7
2245	14/4067	26° 05.26	96° 31.32		5.4/180°		
2259	15/4336	26° 04.00	96° 31.25			EOL 34B - @WP7	
2301	0/0	26° 03.95	96° 31.33		6.8/275°	SOL 35A - to WP8	



53-322

Line name: <u>35A</u>	Energy: <u>J/PSI</u>	Tape #: <u>        </u>
Descr: <u>Rio 96 shelf 15 in<sup>3</sup> H<sub>2</sub>O</u>	Firing Rate: <u>3c</u>	Filter: <u>65-1700 Hz</u>
Date: <u>9/4/96</u>	Geophones: <u>little battery</u>	Source: <u>15 ci</u>

Time	SP/Fix	LAT.	LONG.	WD	Ship spd/dir	Nav. system	Notes
2315	01/302	26° 03.97	96° 33.12	2~53m	6.5/251°	to WP 8	
2331	02/624	26° 03.94	96° 34.78	2~53m	5.6/252°	" "	slowing
2343	03/481	26° 03.92	96° 35.94		5.2/268°	"	
2358	04/173	26° 03.94	96° 37.43		5.4/261°	"	
0013	05/1463	26° 03.92	96° 38.93		5.5/260°	"	
0027	06/1746	26° 03.99	96° 40.32		5.5/272°	"	
0043	07/2032	26° 04.02	96° 41.72		5.4/265°	"	
0050	08/2190	26° 03.94	96° 42.50	~45	5.4/265°	"	
0051	2/0	26° 03.90	96° 42.69	~45		EOL 35A	⊙ WP 8
0106	01/318	26° 05.07	96° 42.67	~45		SOL 32A	- large swell
0120	02/600	26° 06.36	96° 42.55	~45	5.6/344°	- to WP 9	NW 32B @ 0451
0134	03/887	26° 07.58	96° 42.35	~45	6.1/08.7°	"	
0148	04/1169	26° 08.76	96° 42.29		5.1/356°	"	
0202	05/1453	26° 10.01	96° 42.21		6.4/10.9°	"	
0217	06/1744	26° 11.36	96° 42.15		5.6/13.6°	"	
0231	07/2027	26° 12.64	96° 42.09		5.2/345°	"	
0246	08/2325	26° 13.95	96° 41.95		4.6/350°	"	
0304	09/2685	26° 15.61	96° 41.71		5.1/05.5°	"	
0319	10/2992	26° 17.02	96° 41.67		5.9/355°	"	
0334	11/3285	26° 18.42	96° 41.55		6.1/352°	"	
0341	12/3421	26° 19.08	96° 41.49		5.1/0.8°	"	
0358	13/3780	26° 20.57	96° 42.04		5.2/335°	⊙ WP 9	
0415	14/4113	26° 22.10	96° 42.62	~100ms	5.6/344°	- to WP 10	
0430	15/4407	26° 23.46	96° 42.99		5.0/333°	" "	
0440	16/4607	26° 24.36	96° 43.36		6.3/333°	" "	
0500	17/5010	26° 26.01	96° 44.39		5.3/322°	@ WP 10	to WP 11
0515	18/5313	26° 27.20	96° 45.20		5.0/314°	to WP 11	
0530	19/5616	26° 28.37	96° 46.19		5.6/329°	"	
0541	20/5839	26° 29.35	96° 46.77		5.7/321°	"	
0600	01/369	26° 28.66	96° 48.49	~100ms	5.4/238°	@ WP 11	1nm away
0615	02/672	26° 28.06	96° 49.93		6.1/238°	to WP 12	EOL 32A SOL 33A
0630	03/975	26° 27.47	96° 51.49		5.3/239°	"	
0640	04/1166	26° 27.12	96° 52.33		5.8/241°	"	
0700	05/1563	26° 26.58	96° 54.32		5.3/251°	@ WP 12	to WP 13
0715	06/1869	26° 26.28	96° 55.83		5.6/243°	to WP 13	NW line 30A
0730	07/2163	26° 25.89	96° 57.35		5.4/247°	"	
0745	08/2472	26° 25.49	96° 58.84	~100ms	5.9/258°	"	



Line name: <u>Rio shelf / 33A</u>	Energy: <u>J/PSI</u>	Tape #: <u></u>
Descr: <u>H<sub>2</sub>O gun shelf 96</u>	Firing Rate: <u>3s</u>	Filter: <u>65-1700Hz</u>
Date: <u>09/06/96</u>	Geophones: <u>little leather</u>	Source: <u>15 H<sub>2</sub>O ci</u>

Time	SP/Fix	LAT.	LONG.	WD	Ship spd/dir	Nav. system	Notes
0800	09/2770	26° 25.221	97° 00.40	~100ms	5.6 / 254°	to wp13	cont. line 33A
0815	10/3072	26° 24.89	97° 01.84	~100ms	5.5 / 240°	~ 3/4 nm out	
0825	11/3269	26° 24.63	97° 02.76	~150ms	5.7 / 337°	<del>20133A</del> SOL 30A	@ wp13 head to wp14 (line 31B)
0845	01/392	26° 26.39	97° 03.23	~50ms	5.6 / 335°	to wp14	
0900	02/691	26° 27.76	97° 03.57	~50ms	6.8 / 330°	"	
0915	03/989	26° 29.14	97° 03.95	~50ms	5.8 / 348°	"	
0929	04/1286	26° 30.40	97° 04.26	~50ms	5.0 / 067°	<del>20130A</del> SOL 31C	@ wp14
0945	01/303	26° 30.94	97° 03.01	~50ms	4.5 / 062°	to wp15	
1000	02/613	26° 31.36	97° 01.59	deeper	5.1 / 061°	" "	
1015	03/907	26° 31.77	97° 00.35	" "	5.3 / 076°	" "	
1030	04/1203	26° 32.18	96° 58.96	" "	5.2 / 080°	" "	
1045	05/1502	26° 32.63	96° 57.52	" "	5.4 / 066°	" "	
1100	06/1798	26° 32.98	96° 55.94	" "	6.3 / 067°	" "	
1115	07/2102	26° 33.54	96° 54.53	" "	5.6 / 060°	" "	
1130	08/2403	26° 33.97	96° 52.15	" "	5.1 / 067°	" "	
1145	09/2706	26° 34.41	96° 51.76	" "	4.7 / 080°	" "	
1200	10/3007	26° 34.81	96° 50.34	" "	5.4 / 060°	" "	
1211	11/?	26° 35.13	96° 49.32	" "	turning	<del>20131C</del>	beginning turn
1226	01/318	26° 33.76	96° 46.74	~45m	5.5 / 157°	<del>20132B</del>	
1243	02/620	26° 32.49	96° 48.07	"	5.4 / 144°	to wp16	
1259	03/941	26° 31.03	96° 47.52	"	5.1 / 150°	"	
1315	04/1253	26° 29.76	96° 46.91	"	4.9 / 154°	"	
1316	05/1289	26° 29.53	96° 46.82	"	turning	<del>20132B</del> @ wp16	
1317	06/6	26° 29.37	96° 46.71	"	"	<del>20133B</del> - to wp17	
1329	01/238	26° 29.86	96° 45.78	"	5.0 / 52°	to wp17	
1344	02/536	26° 30.62	96° 44.60	"	4.7 / 55°	"	
1359	03/838	26° 31.40	96° 43.52	"	4.3 / 82°	"	
1415	04/1151	26° 32.09	96° 42.33	50m	7.7 / 63°	"	
1429	05/1445	26° 32.63	96° 41.28	50m	4.3 / 64°	"	
1444	06/1747	26° 33.25	96° 40.25	~60m	3.9 / 39°	"	
1500	07/2056	26° 34.00	96° 39.03	"	5.8 / 57°	"	
1514	08/2338	26° 34.75	96° 37.80	~70m	5.7 / 41°	"	
1524	09/2539	26° 35.21	96° 36.88	"	"	"	
1526	01/0	26° 35.24	96° 36.69	"	4.8 / 139°	<del>20133B</del> @ wp17	
1541	01/325	26° 34.27	96° 35.79	~75	<del>20136A</del>		
1556	02/630	26° 33.12	96° 35.02	"	5.7 / 150°	to wp18	
1612	03/940	26° 31.96	96° 34.08	"	4.9 / 144°	"	
1627	04/1242	26° 30.91	96° 33.20	"	4.6 / 135°	"	
					4.9 / 139°	"	



Line name: <u>Rio shelf / 36A</u>	Energy: <u>J/PSI</u>	Tape #: <u>        </u>
Descr: <u>H<sub>2</sub>O gun shelf '96</u>	Firing Rate: <u>3 s</u>	Filter: <u>65-1200 Hz</u>
Date: <u>09/06/96</u>	Geophones: <u>little</u>	Source: <u>15</u> ci

Time	SP/Fix	LAT.	LONG.	WD	Ship spd/dir	Nav. system	Notes
1644	05/1582	26° 29.81	96° 32.25	75m	5.2/135°	do WP18	
1659	06/1890	26° 28.75	96° 31.37	"	6.1/135°	"	
1714	07/2195	26° 27.69	96° 30.45	"	4.8/134°	"	
1730	08/2501	26° 26.458	96° 29.48	"	6.1/135°	"	
1745	09/2812	26° 25.57	96° 28.58	"	6.0/134°	"	
1759	10/3088	26° 24.69	96° 27.86	"	4.6/138°	@ WP18	
1814	11/3394	26° 23.52	96° 27.51	"	5.6/157°	-to WP19	
1829	12/3692	26° 22.35	96° 27.11	"	5.2/160°	"	
1844	13/3998	26° 21.20	96° 26.82	"	6.4/167°	"	
1859	14/4296	26° 19.98	96° 26.43	"	4.6/161°	"	
1914	15/4599	26° 18.93	96° 26.08	"	5.4/164°	"	
1929	16/4884	26° 17.67	96° 25.70	"	4.2/161°	"	
1941	17/5137	26° 16.74	96° 25.44	"	4.9/156°	EOL 36A	
1957	01/313	26° 15.51	96° 25.05	"	4.9/151	50L 36B	
2005	02/476	26° 14.88	96° 24.88	"	"	to WP19	
2015	03/660	26° 14.07	96° 24.87	~150ms	5.3/166°	@ WP19	
2030	04/901	26° 12.84	96° 24.74	~150ms	5.2/170°	-to WP20	
2045	05/1262	26° 11.59	96° 24.75	~150ms	4.8/178°	to WP20	
2106	06/1560	26° 10.35	96° 24.71	~150ms	4.2/172°	"	
2115	07/1865	26° 09.13	96° 24.65	120ms	5.6/165°	"	
2128	08/2138	26° 08.11	96° 24.58	125ms	5.1/171°	@ WP20	
2145	09/2466	26° 06.74	96° 24.62	120ms	5.2/165°	to WP21	to WP21
2156	10/?	26° 05.82	96° 24.681	123ms	turning	to WP21	(new line 41A)
2215	01/366	26° 05.84	96° 26.61	~115	6.4/272°	@ WP21	gun psi to 2400 from 2500
2230	02/668	26° 05.96	96° 28.25	~115ms	5.8/272°	to WP22	201 36B sup 41A
2245	03/970	26° 06.01	96° 29.90	~110ms	6.3/263°	"	2400 psi 3200 psi
2306	04/1271	26° 06.16	96° 31.46	~100ms	5.5/259°	"	
2315	05/1568	26° 06.15	96° 33.00	~100ms	5.2/267°	"	2400 3200
2330	06/1862	26° 06.25	96° 34.51	~90ms	5.8/276°	"	
2345	07/2161	26° 06.31	96° 35.99	~85ms	6.0/265°	"	
0000	08/2450	26° 06.40	96° 37.44	~85ms	5.9/260°	"	
0014	09/2742	26° 06.50	96° 38.97	~90ms	5.4/273°	"	
0029	10/3045	26° 06.58	96° 40.53	~85ms	5.5/270°	"	
0041	11/3343	26° 06.62	96° 42.07	"	5.9/265°	"	
0059	12/3652	26° 06.69	96° 43.60	"	5.8/275°	"	
0114	13/3947	26° 06.78	96° 45.10	"	5.8/251°	"	
0129	14/4250	26° 06.92	96° 46.58	"	5.4/266°	"	
0134	15/4338	26° 06.94	96° 46.98	turning	"	EOL 41A @ WP22	



Line name: <u>Rio shelf / 38A</u>	Energy: <u>J/PSI</u>	Tape #: <u>        </u>
Descr: <u>Hze gun shelf - 196</u>	Firing Rate: <u>3s</u>	Filter: <u>GS-1700Hz</u>
Date: <u>09/05/96</u>	Geophones: <u>little Benthos</u>	Source: <u>15 ci</u>

Time	SP/Fix	LAT.	LONG.	WD	Ship spd/dir	Nav. system	Notes
0135	0/0	26° 06.91	96° 47.17	~90	turning	SOL 38A	
0152	01/358	26° 08.42	96° 47.06	~90	4.7/345°	- to WP 23	
0207	02/656	26° 09.76	96° 47.00	"	4.3/0.5°	"	
0222	03/956	26° 11.15	96° 46.87	"	4.5/0.5°	"	
0237	04/1255	26° 12.47	96° 46.84	"	4.5/335°	"	
0252	05/1558	26° 13.70	96° 46.48	"	6.2/356°	"	
0307	06/1859	26° 15.05	96° 46.42	"	5.2/350°	"	
0321	07/2146	26° 16.29	96° 46.36	"	5.3/4.6°	"	
0336	08/2446	26° 17.62	96° 46.17	"	5.6/349°	"	
0348	09/2684	26° 18.74	96° 46.02	80ms	turning	@ WP 23	
0405	10/3034	26° 20.34	96° 46.26	80ms	6.7/345°	to WP 24	(37A)
0420	11/3330	26° 21.66	96° 46.49	80ms	5.8/351°	"	
0430	12/3532	26° 22.61	96° 46.49	80ms	6.0/339°	"	
0448	13/3891	26° 24.28	96° 46.89	80ms	5.9/338°	1/2nm	
0454	14/4004	26° 24.85	96° 46.98	80ms	5.8/247°	turning	
0515	01/407	26° 24.39	96° 48.90	80ms	4.9/245°	to WP 25	SOL 38A SOL 37A @ WP 25
0530	2/710	26° 24.00	96° 50.40	80ms	5.8/245°	"	swell o' rolling
0545	03/1007	26° 23.57	96° 51.94	80ms	5.0/231°	"	
0600	04/1306	26° 23.17	96° 53.45	80ms	5.7/249°	"	
0615	05/1614	26° 22.84	96° 55.02	80ms	5.0/235°	"	
0630	06/1909	26° 22.43	96° 56.47	80ms	5.6/237°	"	
0645	07/2218	26° 21.81	96° 57.73	80ms	4.9/208°		shrimp boat avoidance
0700	08/?	26° 21.77	96° 58.99	80ms		@ WP 25	
0715	01/293	26° 20.58	96° 58.72	~70ms	5.1/150°	to WP 26	SOL 37A SOL 40A
0730	02/581	26° 19.31	96° 58.42	~70ms	5.6/163°	"	new 40A
0745	03/883	26° 17.99	96° 58.06	~70ms		"	
0800	04/1184	26° 16.70	96° 57.67	~65ms	4.7/161°	"	
0815	05/1484	26° 15.46	96° 57.28	~70ms	5.7/166°		2300psi 3400psi
0819	06/1568	26° 15.15	96° 57.19	~70ms	5.0/133°	@ WP 26	@ WP 27 → 30
0825	07/1701	26° 14.68	96° 56.90	~70ms	6.2/072°	to WP 27 1/2nm	
0845	01/375	26° 14.88	96° 54.99	~80ms	6.1/090°	SOL 40A SOL 39A	DP 100 @ 2400
0900	02/1675	26° 15.07	96° 53.50	~80ms	3.8/077°	to WP 28	
0915	03/1982	26° 15.29	96° 52.08	80ms	5.4/071°	"	2400 6/10 3300 3400
0930	04/1284	26° 15.57	96° 50.61	80ms	4.9/074°	"	
0945	05/1592	26° 15.76	96° 49.13	~80ms	5.7/067°	"	
1000	06/1899	26° 15.99	96° 47.51	80ms	4.2/091°	"	
1015	07/2202	26° 16.21	96° 46.08	~80ms	5.1/071°	"	



Line name: <u>39A Rio shelf</u>	Energy: <u>J/PSI</u>	Tape #: <u></u>
Descr: <u></u>	Firing Rate: <u>35</u>	Filter: <u>65-1700 Hz</u>
Date: <u>9/2/94</u>	Geophones: <u>benthos</u>	Source: <u>15</u> ci

Time	SP/Fix	LAT.	LONG.	WD	Ship spd/dir	Nav. system	Notes
1030	08/2486	26° 16.41	96° 44.69	~80ms	4.8/073°	to wp 28	cont. 39A
1102	09/3114	26° 16.87	96° 41.45	80ms	5.9/071°	"	
1115	10/3382	26° 17.10	96° 40.16	80ms	5.4/060°	"	
1130	11/3684	26° 17.34	96° 36.62	80ms	6.2/070°	"	
1145	12/3994	26° 17.51	96° 36.98	"	6.0/070°	"	
1200	13/4288	26° 17.78	96° 35.35	"	6.1/074°	"	
1216	14/4599	26° 18.03	96° 33.63	~90	6.1/070°	"	
1230	15/4894	26° 18.27	96° 32.14	~100	6.5/068°	EOL 39A + SOL 39B	
1246	01/300	26° 18.53	96° 30.40	~100	6.5/088°	to wp 28	
1301	02/611	26° 18.73	96° 28.81	"	5.9/073°	"	
1316	03/916	26° 18.96	96° 27.19	420ms	5.5/065°	"	
1331	04/1216	26° 19.15	96° 25.68	"	6.3/072°	"	
1346	05/1551	26° 19.47	96° 23.98	"	4.4/070°	"	-bad weather - choppy + whitecaps
1401	06/1813	26° 19.64	96° 22.66	720ms	5.9/072°	"	"
1416	07/2117	26° 19.88	96° 21.22	"	4.7/083°	"	"
1436	08/2506	26° 20.06	96° 19.57	"	4.6/083°	"	
1452	09/2797	26° 20.35	96° 20.92	~150ms		EOL 39B + SOL 70A	
1453	0/0	26° 20.45	96° 21.23	120ms	6.2/090°	to wp 29	red marking end - should see
1509	01/341	26° 20.93	96° 22.78	"	5.8/295°		up on data - SE starts/canoe
1524	02/653	26° 21.06	96° 24.20	"	5.7/259°		up (~10 min. of 70A on 39B)
1540	03/976	26° 21.27	96° 25.74	"	6.2/261°	"	
1556	04/1294	26° 21.50	96° 27.42	"	5.2/295°	"	
1612	05/1614	26° 21.86	96° 29.12	100	5.7/249°	"	-seas calming down - still large swell
1628	06/1927	26° 22.19	96° 30.78	"	5.6/279°	"	
1643	07/2229	26° 22.47	96° 32.33	"	5.9/274°	"	
1658	08/2530	26° 22.76	96° 33.91	"	5.5/277°	"	
1714	09/2850	26° 23.03	96° 35.58	90ms	5.7/275°	"	
1729	10/3150	26° 23.30	96° 37.18	"	6.4/264°	"	
1745	11/3466	26° 23.53	96° 38.91	"	6.3/264°	"	
1800	12/3780	26° 23.78	96° 40.57	"	6.4/275°	"	
1815	13/4080	26° 24.11	96° 42.20	"	5.1/266°	"	
1830	14/4394	26° 24.42	96° 43.78	~80ms	6.3/270°	"	
1845	15/4669	26° 24.64	96° 45.46	"	6.2/269°	"	
1859	16/4949	26° 24.95	96° 46.97	"			EOL 70A
Rio shelf backup:				31A, 31B, 34A, 34B, 35A, 32A, 33A, 30A, 39B, 70A			
				31C, 32B, 33B, 36A, 36B, 41A, 38A, 37A, 40A, 39A			