ASTR 104889
94026

94026sei

USGS - BAMG

SEISMIC/GEOPHYSICS LOG

SHIP: AST-94-3

CRUISE: 94026

AREA: CAPE COD BAY

DATES: 6/20/94 - 6/29/94

CHIEF SCIENTIST: Rendigs

6/20/94

Display 3 channels on EPC recorder

Chans 1+2 – S. scan 100m ea. side – Klein – 100KHz
133 MSEC

" 3 – 3.5 KHz – .125 sec sweep
.25 sec fire
5 lines of scale represents a total of appx 94m (full scale)

On Klein, a transponder stopped slightly above 55 fish – there is a separate acoustic nav. receiver on the 3.5 fish for this reply freq. This transp. is occasionally interrogated (@ 23KHz) & replys to receiver at ~17KHz – this determines layback (slant range) of wire from winch. This may show up as occasional cross talk on S. scan record, so only used occasionally.

Digital fathometer also stopped on 3.5 fish + displayed on separate recorder (Echotrac).

Distance from 3.5 fish (acoustic nav receiver) and main nav. antennae – 10ft.

So, the total slant range would be the layback as recived from the acoustic nav receiver + 10'.

The layback #'s in this log and on the side scan records do not take into acct this extra 10'. ∴, an additional 3+m must be added to these values to determine the total slant range from the main navigation antennae.

ZULU Z

Line#	YrMoDy +JulDy	Time +Zone	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
1	6/20/94	17:17 Z	90	4.5	DIFF GPS	3.5 KHz - .125 s. sweep .25 FIRE	1	1		Beautiful People/Beautiful Weather
		17:49				S. SCAN - KLEIN - 100KHz 100m c. side				17:17 - 17:49 - flat, featureless muddy bottom.
		18:40	89.9	4.2						SANDWAVES, trawl marks
		18:49	89.9	4.3						Main changes to bring out features - trawl, boulders, etc.
		~~18:57~~								
		18:57								SAND WAVES
		19:00	89.9	4.4						
		19:05								thermocline features
		19:14	89.2	4.5						sandwaves across the entire s. scan scale - slight to patchy high 12m depth.
		~~19:40:25~~	~~90~~	~~4.4~~						
		19:40:25	90	4.4						HARD BTM - MULTIPLE ON 3.5KHz, SAND WAVES
		~~1946~~								
		1945								LOBSTER POT HEAVEN
		1956	90.3	4.9						DITTO - zone ~~structure~~ in 3.5KHz record.
		2000	88.8	4.8						HARD BTM - + thermocline
		2005								Patchy - sand waves - also W. low reflective areas (mud?)

Line#	YrMoDy +JulDy	Time +Zone (ZULU)	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
1	6/20/94	20:27	90	4.4						EOC 1
24		2028	303	4.5						SOL 24
		2043								Thermocline still evident even after turn.
		2045	317	4.5						subtle shades of texture in Q-mips - not evident on S. Scan analog record.
										Bandwidth enhancement v. evident on Q-mips! 255 shades vs. 16 on S. Scan
24		20:59	318	4.4						Bit o' structure in 3.5 KHz
		21:00	318	4.4						
		21:08	324	4.4						slight course change - lobster. pots - S. end of Bellingspate shoal.
24	6/20/94	21:21	314	3.9						EOC 24
	6/21/94									
2		11:20:43	96.8	4.5	DIFF GPS	3.5 KHz - .25 fire .125 sweep		2		SOL 2
						KLEIN - 100 KHz 100 M slant RANGE				
		11:35								some 3.5 data
		1200	88.7	6.8						LAYBACK 21.6 M Fish altitude off btm 9.6 m
										flat, featureless muddy btm

Line#	YrMoDy +JulDy	Time (ZULU) +Zone	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
2	6/21/94				DIFF GPS	3.5 KHz .25s FIRE, .125s SWEEP		2		
						KLEIN 100 KHz 100 m SLANT RANGE				
		12:45	49	88.6	4145.93', 7017.99'					SIDE SCAN FISH ON DECK
		1400								Back to Sandwich Marina bad fish connector? ~~Only one channel comes in~~. no trigger
		1510								Back at Marina
	6/22/94	1430								Were off from Sandwich marina -
SOL 21		1540	326	7.8	4145.02 N 7023.83	3.5KHz .25s fire .125 s sweep		2		no transponder on fish w. hand delay cable - no
						KLEIN - 100KHz 100 m SLANT RANGE				no accurate laybacks!
		1600	318	3.7	4145.97 7024.84					" " APPROX 15m LAYBACK
		1635	324	4	4147.58 7026.56					Hard slow, patchiness - E. of C. Cd Canal - W. of Dumpsite.
		1700	321	4.3	4148.87 7027.94					softer flow
EOL 21		1733	321	4.5	4150.82 7030.00					
SOL 20		1733	321	4.5	4150.82', 7030.00'					some ~~thermoclinal~~ noise
		1800	348	4.1	4152.70 7029.99					slight bathy high
EOL 20		1833	0	4.5	4155.33 7030.00					off to line 25

* measured 16m layback w. fish on deck.

Line#	YrMoDy +JulDy	Time (ZULU) +Zone	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
	6/22/94									
SOL 25		1955:43	240	7.4		KLEIN - 100 KHz, 100m RANGE 3.5 KHz - .125s sweep, .25s FIRE		2		Flat, featureless, muddy btm 28m water depth
		2005:30								Belt + paper change on EPC - Recorder off
		20:11						3		Recorder back on
		20:30	237	4.4	H150.62 7021.60					Flat, featureless, muddy btm.
		2100	236	4.9	H149.33 7024.23					Trawl marks galore
		2107:30	235	4.9	H148.96 7024.96					Dumpsite
EOL 25		2132	235	4.8	H147.87 7027.12					Back to da barn + Miller Time.
	6/23/94					KLEIN 100 KHz, 100m SLANT 3.5 KHz - .125s SWP, .25s FIRE		3		
SOL 2		1155	90	4.4	H146.00 7018.68					Data thermocline type stuff
(finish remainder from 6/21)										
		1205								belt broken on EPC - time screwed up - noted.
		1210								EPC Back on + time fixed
		1223								boulders, sand, hard btm.
		1230								Lobster boat buzzes us "Mr. Mayflower"
EOL 2		1305	4.8	93.2	H146.00 7011.47					turning starboard to LN 22
SOL 22		1323	4.4	23.4						New belt

Line#	YrMoDy +JulDy	Time (ZULU) +Zone	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
22	6/23/94	14:00	17.3	4.1	H145.76 H148.22	KLEIN - 100KHz, 100m slant 3.5 kHz - .125s sweep, .25s FIRE		3		
		1440	19.9	4.8	H150.90 7010.17	"				West of Bathymetric shoal - travel city.
EOL 22		15:22	13.9	4.7	H154.02 7008.59					
SOL 23		15:22	13.9	4.7	H154.02 7008.59					
		15:26						4		Paper change
		15:29								ON LINE
		15:49	15	4.7	4156.05 7007.87					
		1600	15	4.8	H156.90 7007.58					
EOL 23		1641	14.2	4.1	H200.02 7006.49					
SOL 3		1808	270	5.1	H148.50 7008.43					UP+DWN W. S. SCAN WIRE - BY HAND - TO FIND A HAPPY DEPTH - 14M WIRE OUT.
		1900	273	5.0	H148.49 7014.10					Water depth 23.6 m - thermocline effects on record gone as get deeper.
		1935								
										80' water at 5 knots OK w. HAND DEPLOY CABLE
		1951								
		2000	272	4.8	H148.49 7021.00					
		2006-2009								some 3.5 kHz interp possible - softer sed.
		2025 → ON								Patchiness of sed type - boulder/sand fields
		2055			H148.49 7026.37					DUMPSITE SHOWS UP ON S. SCAN RECORD - fine/coarse alternating lobes of sediment

19
5 94

(ZULU)

Line#	YrMoDy +JulDy	Time +Zone	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
3	6/23/94	21:06						4		off line to avoid barge + respond to call to look for "sunken" bouy.
		21:29								BACK ON LN 3
		21:30	3.9	276	4148.47 7027.74					
		21:36						5		Paper change - Recorder off
		21:39								Recorder on
EOL 3		2205	4.2	269	4148.50 7031.04	KLEIN 100 KHz, 100m RANGE 3.5KHz .125s SWP, .25s FIRE				
	6/24/94									
SOL 5		12:26	4.4	88	4154.00 7031.37					start west end - Fish out 16m hard, patchy btm.
		1302								Fish out another 6 m.
		13:45								Recorder adjust - record changes - like gain changes ~~may~~ cut lt + dark areas maybe trigger problem?
		13:48			4153.99 7022.00					Visual front - a "slick" - maybe tidal changes at surface - shows up as a series of horiz lines on S. bean record. Water depth 35.M SW FISH LEDGE
		1400								Boring Btm - flat, featureless, muddy - some 3.5KHz penetration ≈ 5M.

Line#	YrMoDy +JulDy	ZULU Time +Zone	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
5	6/24/94	14:18				KLEIN-100KHZ, 100m RANGE 3.5KHz-.125s SWP, .25s FIRE		5		Recorder ~~down~~ down - belt problem
		14:20:30								Back on
		14:29								Harder btm - 3.5KHz record approaches surface
										This could be part of the S/SW corridor from F. ledge of ledge/till type material - see Tuckolke map ('72)
										that results in little penetration by 3.5KHz.
		14:41								abt 10m of 3.5 penetration
		14:45								Change gain + attenuation on 3.5 KHz - not bad record!
		15:02								Change course to STBD to avoid fish weir
		15:12								Back on line
		15:16								Paper ~~change~~ adjust cut roll
		15:19								Back on
		15:41								Recorder adjust
		1604								Recorder " + Paper change
5		16:14						6		Back up + recording
EOL 5		1632	94	4	4153.99 7007.47					

	Line#	YrMoDy +JulDy	Time (UCD) +Zone	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
SOL	4	6/24/94	17:03				KLEIN - 100KHz, 100m RANGE 3.5 .125s swp, .25s FIRE		6		
			1735								
			1837								Textural change - part of SW extension of Fish Ledge?
			1843			4150.90 7020.43					Ditto?
			1900								flat, muddy, featureless bkgd
			1907			4150.99 7022.87					coarse patch
			1919								coarser patchy material
			2000			4150.99 7028.18					
			2003								S. towwire up to 12m layback
EOL	4		2024			4151.01 703053					
		6/25/94									Put on winch, retest, reconfigure, transit to Plymouth
Sat	7	6/26/94	1228	92	5.7	4159.49 7035.40			7		- Lost digital bathometer - Wind at stern
			1235								- 20m LAYBACK
			1240								- 26m LAYBACK - PATCHY COARSE SEDS
			1250								DEPTH IS BACK - 31m - LAYBACK OUT TO 30m
			1300								- COARSE PATCHES

(2000)

Line#	YrMoDy +JulDy	Time +Zone	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
7	6/26/94	13:04				KLEIN - 100KHz, 100m RANGE 3.5KHz - .125s SWP, .25s FIRE		7		MORE COARSE PATCHES - 3.5KHz SUBBOTTOM AT SEAFLOOR SURFACE. PART OF DRUMLIN FIELD FROM GURNET
		1								PT.?
		1308								MORE COARSE PATCHES SUBBOTTOM - RIGHT AT BATHY HIGH ON CHART.
		13:10			7030.03 4159.38					~~COARS~~ COURSE CHANGE TO STBD - AVOID FISH BOAT
										- 180m off COURSE
										- 29m LAYBACK
		13:15								- REPLACE BELT.
										- BACK ON LINE
		13:17								BACK ON RECORDER
		13:23								+ FISH OUT TO 42m - fresh bent line! eggs benedict!
		14:19								+ Mod subbottom 10-20m penetration
		14:05								+ 55m layback
		14:22								+ plat, features blue
		1500								+ LAYBACK 54m
		1600								More of the same
		1610								LAYBACK - 54m
		1612								subbottom plateau
		1618								Belt change

Line#	YrMoDy +JulDy	Time (20C0) +Zone	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
7	6/26/94	16:19				KLEIN - 100 KHz, 100m RANGE 3.5kHz - .125s swp, .25s FIRE		7		Bell OK - back on fish up - 30m LAYBACK
		1620								subtle backscatter changes.
		1623								Up w. Fish - 20m layback backscatter change + thermocline
		1626								
		1630								16m LAYBACK on Fish
		1638								14m LAYBACK " "
		1640								Too many lobster pots - EOL 7
EOL 7		1643	88	4		4159.49 / 70 06.24				off to LN 8
										talk to panicky lobster guys
SOL 8		1735						8		back on course
		1740								- 58m LAYBACK
		1747								- FISH 29m off btm
										- seas on port quarter rolling + tumbling
		1800								Floor featureless - seas abeam - eg still here - flat, featureless - some 3.5 data ~5m. Seas directly abeam - UGH! 3'
		1900								
										Turn to port to avoid fish weir
		1920								Harder btm - fish weirs all over the place -
		1945								fish up - 35m LAYBACK

Line#	YrMoDy +JulDy	Time +Zone	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments ?
8	6/26/94 (2060)	1952				KLEIN 100KHz, 100m RANGE 3.5 KHz .125s SWP, .25s FIRE				fish up - 26m layback - head back to line - blasting through the weeds!
		2000								BACK ON LINE
		2005						BROKEN WINDOW in wheelhouse - COURTESY OF a NICE WAVE!		Patchy data - layback returning
		2011								Fish up 33m layback
		2017								Fish up 30m "
		~~2030~~								LOTS O' POTS!
		2020						Turn to port - avoid pots		
		2022								FISH LAYBACK 20m
		2025								BACK ON LINE,
		2042								20m layback
		2049								17m layback
EOL 8		2052								HUNG UP ON POT? ~~YES~~
	6/27/94									
SOL 17		1234						9		SOL 17 60m layback
		1245								81m layback

Flat, featureless, data.

Line#	YrMoDy +JulDy	Time (2UCU) +Zone	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
17	6/27/94	1300				KLEIN-100KHz, 100m SWP 3.5KHz - .125s SWP, .25s FIRE		9		95m LAYBACK
		1305								104m LAYBACK
		13:14								116m " fish-probe yo-yo w. wraps on winch.
		?13:30								121m LAYBACK
										ftw 13:14+13:30 wire out to 121m layback
17		1352								EOL 17
16		1352								SOL 16
		1355								135m LAYBACK
										water depth 70m fish 32m off btm some 3.5KHz structure evident.
		1400								
		1406								.25 sec delay in (3.5KHz) recorder
		1413								some 3.5 structure
		1417							*	Bathy high (of sorts) hauler bottom winch wire wrap problem yo-yo - 134m layback
		1422								fish 37m off btm 78m water depth

Line#	YrMoDy +JulDy	(2020) Time +Zone	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
16	6/27/94	1430				KLEIN 100KHz, 100m RANGE 3.5KHz - .125s SWP, .25s FIRE		9		back to flat, featureless, bottom
		1440								0.5 sec delay for 3.5KHz
		1455								EOL 16
15		1455								SOL 15 - off line to avoid fish gear (port turn)?
		1457								Hard btm - fish up fish weir everywhere
		1500								- 64m layback
										- Fish 30m off btm - Back on line
		1507								back into the mud 90m water depth
		1515								- 3.5KHz 175ms SWP W. .5s delay - doesn't change overall
										scale of 94m full scale
		1530								bit o' hard btm
		1539								EOL 15
14		1539								SOL 14 - turn to port to get on LN14,
		1549								water depth 85m Fish 36m off btm
										67m layback - transponder almost out o' range.
		1557								Fish up - 50m layback 85m water depth - 35m off BTM
		1559								Harder btm - bathy high outcrops at seafloor?
		1600								Fish out 46m layback

acoustic basement

some structure in

Line#	YrMoDy +JulDy	(2010) Time +Zone	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
14	6/27/94	1603				KLEIN 100KHz, 100M RANGE 3.5KHz .175s SNP, .25s FIRE .5s DELAY		9		Hard btm - Bathy high - outcrops of till/BR?
	1610	1607								transition zone
		1613							1610	117m LAYBACK
										onlapping seds to harder btm - a brief transition in S. beam record
		1615								another outcrop at seafloor btm
		1617								EOL 14 - Turn to port
13		1617								SOL 13
		1627								Hard btm - fish in + out try to get wraps on winch - can't get layback yet
		1630								- 84m LAYBACK
										- fish 37m off BTM + 74m water depth
		1632								transition zone
		1635								Back into the softer sediments
		1639								EOL 13
12		1639								SOL 12
		1643								.5 to 1MS pulse length on 3.5 KHz
		1700								flat, featureless btm
		1703								Paper change

Line#	YrMoDy +JulDy	Time (ZULU) +Zone	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
12	6/27/94	1709				KLEIN - 100 KH, 100m RANGE. 3.5KHz - .175s SWP, .25s FIRE .5s DELAY		10		Recorder back on
		1715								3.5 KHz - signal attenuated in subbottom - gas or?
		1721								Harder Btm
		1725								GAIN ADJUST
		1730								BACK INTO SOFT BOTTOM
		1749								EOC 12
11		1749								SOL 11
		1754								- LAYBACK - 85m - 59m water depth - fish 25m off btm
		1805								Turn to stbd to avoid fish well - hard, pately btm - fish up 50m LAYBACK
		1808								Back on line
		1813								Fish back down - LAYBACK 65m - 60m water depth - fish 28m off btm
		1815								Pately btm
		1823								Pately btm
		1827								Turn to stbd to avoid tug
		1829								73m stbd of line 11

Line#	YrMoDy +JulDy	Time +Zone	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
11						KLEIN - 100kHz, 100m RANGE 3.5kHz - .175s swp, .25s FIRE 0.5s DELAY		10		
	1834									186m STBD OF LINE - turning back to line
	1836									BACK ON LN 11
	1855									textural change
	1903									Acoustic basement as surface - till - hard btm.
	1927									textural change - harder returns
	1929									EOL 11 - Transit to LN 18
18	2024					3.5kHz .125s swp .25s FIRE NO DELAY				SOL 18
	2029									wire out - - 32m LAYBACK - 26m water depth - Fish 10m off btm
	2030									- hard btm
	2040									- some 3.5 structure - patchy btm
	2047									- Fish out - 45m LAYBACK - 35m water depth - 18m off btm

Line#	YrMoDy +JulDy	Time +Zone (2060)	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
18	6/27/94					KLEIN-100KHz, 100m RANGE 3.5KHz-.125s swp, .25s FIRE		10		
		2050								Main adj. outcrop of hill at surface - up w. fish
		2057								34m layback
		2100								33m "
		2104								45m LAYBACK
		2105								transition backscatter from high
		2115								weird elongated lobe features on S. beam report water column?? Weird papers?? → probably.
		2120								53m LAYBACK
		2121								harder btm - slight
		~~2124~~								bathy high - lobsta pots
		2124								- 58m LAYBACK
										- 39m water depth
										- 18m off btm
		2126								boulder/sand field
		2133								- boulders/sand - hard returns - lobsta pots
		2135								outs of hard returns - into mud
		2135								EOL

Line#	YrMoDy +JulDy	(ZULU) Time +Zone	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
6	6/28/94	12.53				KLEIN-100KHz, 100m RANGE 3.5KHz - .125s swp., .25s FIRE		11		SOL 6.
		1301								Fish up - inspect - OK - back down
		1303								Back to work
		1308								LAYBACK 20M
		1310								LAYBACK 30M
		1312								41M LAYBACK
		1320								Patchy btm
		1322								Upw. Fish - snagged lobster pot
		1325								Fish back in + back on line
		1328								Hard btm - till? at surface
		1330								more of the same - patchy - acoustic basement at surface
		1335								Caught another pot - Have a nice day!
		1355								Back on the line from Hell - layback 30 m
		1400								Can't see btm - gain change
		1424								EOL 11 - FISH
										CRAPPED OUT - BACK TO THE BARN. FIX

FISH - BACK TO WOF.
Ohnstead's asleep

1830

Line#	YrMoDy +JulDy	(2060) Time +Zone	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
	6/29/94					KLEIN - 100KHz, 100m SWP 3.5KHz - .125S SWP., .25S FIRE		11		
6		1243								SOL 6 (REVISITED)
		1245								20M LAYBACK
		1253								Fish out - light/dik bands on recorder when let fish out - now contrast changes - now contrast up.
		1255								- 59M LAYBACK 10' offset btw antennae + acoustic nav.
		1258								Paper thing 0 - feed problem
		1300								~~[illegible] from 3.5KHz?~~
		1315								≈5m penetration w. 3.5KHz
	1325	1316				→ SLANT RANGE 62M				- 43M slant RANGE
		1342								Paper ~~[illegible]~~ feed adjust
		1346								- FISH UP - 40M SLANT RANGE
		1350								slightly harder subbottom return - abt 10m sed thickness.
		1352								- Fish up 27m s. range
		1353								harder subbottom returns N. Pt of Fish ledge -
										Patsy. fish weirs galore all in fog - loovely
										Good Q - mips resolution Blackout on S. beam record

SURLEY →

(2010) 2 ,6161

Line#	YrMoDy +JulDy	Time +Zone	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
6	6/29/94	1400				KLEIN - 100KHz, 100m S. RANGE 3.5KHz - .125s SWP, .25s FIRE		11		still on N. PT. F. ledge - boulders, hard ground
		1401								slight btm change less boulders
		1402								patchy btm - moving E of F. ledge
		1404								some slight sed thickness evident on 3.5 KHz
		1430								EOL 6
26										
		15:12								SOL 26
		15:15								- Fish slant range 40 m - Depth 30 m - 10m off btm (fish)
		15:20								Harder BTM on S. beam record - same w. 3.5 KHz
		15:25								Parolski at the wheel of the ship - OH NO!
		15:31				N → S ridges				some 3.5KHz penetration of subbottom
		15:39								abt 5m 3.5Kz penetration
		15:42								Parolski off the wheel - we're safe!
		15:43								acoustic subbottom at surface - here comes F. ledge

Line#	YrMoDy +JulDy	Time +Zone	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
26	6/29/94	15:45						11		UP W. FISH - subbottom multiples - Hard Btm
		15:47								- 3.5KHz on stnby
		15:48								- Back on lots of trawl marks from D-mips record.
		15:49								28m slant range - Fish up
		15:50								UP W. fish to avoid fish weirs - 23m slant range
		15:54								Fish UP - 16m slant range
		15:55								- trawl marks galore fish boat pulling gear directly on our port side. Ships noise in water column.
										Fish out - 38m LAYBACK
		15:57								boulders, hard btm
		15:59								subtle sedimentary transitions
		16:00								evident on D-mips
		1605								subtle textural changes moving N of F. ledge - multiples on 3.5KHz gone
										fish out / fish in - 39m S. RANGE
		16:07								- off F. ledge - some sed. thickness evident ~10m sed thickness
		16:10								
		16 25								FISH OUT - 57m slant range + paper change - END OF ROLL #11.
								11		

(ZULU)

Line#	YrMoDy +JulDy	Time +Zone	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
26	6/29/94	16:29			1	KLEIN-100KHz, 100m RANGE 3.5KHz-.125s SWP., .25s FIRE		12		Back on
		16:37								EOL 26
27		16:37								SOL 27
		1655								Flat, featureless, soft bttm ~ 8m SED thickness
		1656								up w. FISH 48m slant RANGE
		1658								46m slant RANGE
		1708								70m " "
		1724								flat featureless bttm
		A25								77m slant RANGE
		1747								EOL 27
28		1748								SOL 28
		1811								EOL 28
10		1812								SOL 10
		1815								80m slant RANGE
		1820								flat, featureless, bttm a few meters sed thickness on 3.5kHz
									Severe Thunderstorm watch	
		1845								flat featureless bttm. Few meter penetration on 3.5KHz.

We lucked out w. the weather!

$1 to D. Christopher

Line#	YrMoDy +JulDy	(EULO) Time +Zone	Crs	Spd	Navigation	Seismic System Sweep/Fire/Filters	Tape# Disk#	Roll#	Magnets Gravity	Comments
~~[illegible]~~	6/29/94					KLEIN 100KHz, 100m s. RANGE 3.5KHz - .125s SWP, .25s FIRE		12		
10		1900								flat - muddy - btm.
		1920								backscatter change - harder bottom
										trawl marks - sand ridges?
		1925								subbottom reflectors evident where backscatter
										transition takes place.
		1930								more hard bottom
		1935								outcropping of acoustic basement - till?
		1941								EOL 10
										FINI