

FACIES INTERPRETATION AND DIAGENESIS OF THE COSSIGNY MEMBER, BEAGLE SUB-BASIN NORTH WEST SHELF, WESTERN AUSTRALIA

Thesis submitted to the Faculty of Science, University of Adelaide

In Partial fulfilment of the Requirement for

the M. Sc. Degree

in

Petroleum Geology and Geophysics,

The University of Adelaide

by Aslam Chapri 1994

Awarded 1994



| -,00 | DEPTH 20 MM | 2000.00 140.00 St | | Lithological Descriptions from Well Completion Reports, (Cossigny Member Description is Author's own) |
|--|--|-------------------|--|---|
| | 2000 6561.7 2250 7381.9 | | The state of the s | 1758 meters Sandstone; fine grained, quartz, clear or occasionally orange-brown translucent grains, subangular to subrounded grains, very argillaceous, with argillaceous cement, moderate to high visible porosity 1844 meters Mudstone; medium to dark grey, moderately calcareous, slightly micromicaceous, strongly mottled by glauconite, firm to hard 1876.5 meters Sandstone; quartzos, very fine to medium grained, occasionally very coarse grained, argillaceous, slightly calcareous, very poorly consolidated, high visible porosity 1965.5 meters Mudstone; medium grey, slightly silty non-calcareous, carbonaceous 2011 meters Mudstone; medium grey to grey/brown, silty, micromicaceous, non-calcareous 2145 meters Mudstone; medium grey to grey/brown, slightly silty, non-calcareous, blocky, occasional carbonaceous debris |
| | ICH FORMATION RES (TOARCIAN - BATHONIAN) RES (TOARCIAN - BATHONIAN) | | MANNAMENTAL STATE OF THE PROPERTY OF THE PROPE | 2393.5 meters Sandstone; very fine to fine grained, very argillaceous, light grey, subangular to subrounded grains, calcareous, slightly carbonaceous, moderate visible porosity. 2426 meters Mudstone; light grey/green, sandy and silty very fine grained, carbonaceous, calcareous, pyrite replacing fossils 2534.5 meters Mudstone; brown/black, occasionally silty, moderately well laminated, with laminae of fine-grained sandstone, poor visible porosity |
| | (RHAETIAN?) W9888 | | The state of the s | with siltstone, argillaceous, occasionally sandy 2724.5 meters Siltstone; off white, argillaceous, grading to sandstone, quartzos, very fine grained, micromicaceous, carbonaceous, cross bedded 2768 meters Siltstone; brick-red, with minor grey laminae, argillaceous, micaceous, soft to firm 2860 meters Sandstone; quartz, white to colourless, fine to medium grained, occasionally coarse grained, subangular to subrounded grains, poor to moderate sorting, silica and kaolinite cement, moderately cemented, poor visible porosity, minor pyrite, mica and carbonaceous debris |
| Millian Market Comment of the Commen | NON (IAN?) BEDOUT FORMATION (SEE STANDARD) 10005. | | | 3009.5 meters Sandstone; quartzos, grey/green, very fine grained, moderately sorted, moderately cemented, with calcareous cement, micaceous, pyritic, poor visible porosity 3139 meters Mudstone; grey to grey/green, massive, occasionally poorly laminated 3223 - 3575 Upper Keraudren Fm 3224 meters Sandstone; quartz, white to colourless, fine to medium grained, subangular to subrounded, poor to moderate sorting, poor visible porosity, locally feldspathic, micaceous, carbonaceous 3274 meters Mudstone; light to medium grey, massive minor micromicaceous and carbonaceous material, trace pyrite 3311 meters Sandstone; quartz, white to colourless fine grained, well cemented by kaolinite, carbonaceous, micaceous, feldspathic |
| | FORMATION Z UPPER E C KERAUDREN FORMATION (CARNI | | | 3369.5 meters Mudstone; black grey, poorly laminated, massive with occasionally laminae of sandstone, white to light grey, fine grained, very well cemented, subrounded to subangular, micaceous, carbonaceous, low visible porosity 3465.5 meters Siltstone; light to medium grey, argillaceous withth in sandy laminae, minor micas, carbonaceous material, traces feldspare, 3495.5 meters Sandstone; quartzos, white to colourless, fine to coarse grained, poorly sorted, well cemented, traces feldspare, carbonaceous material, poor visible porosity Cossigny Member; colitic grainstone, dominantly well sorted, well rounded, medium to coarse grained colites, coids show radial concentric fabric. Mixed-coid-peloid facies consists of pellets & peloids, peloids are spherical, 0-15% shelly fragments, bioturbated. Muddy wackestone facies, dominantly consists of pellets & peloids, grains largely |
| | 3750 (NITHIAN - ANISIAN) (NEISINA - NAITHIANS) 4000 13153.1 | | Marie of supervision of the supe | 3701-4379 meters Lower Keraudren Formation 3701 meters Mudstone; dark grey, moderately laminated, micromicaceous, trace disseminated pyrite, soft to firm 3764.5 meters Siltstone; light to dark grey, argillaceous, occasionally sandy, pyritic, with minor feldspare, micas, carbonaceous material, well laminated 3825 meters Mudstone; light grey, micaceous, moderately silty, non-calcareous, rare trace carbonaceous material, massive, firm 3885 meters Mudstone; light grey, silty, micaceous, carbonaceous material disseminated throughout, blocky, firm to moderately hard 3913 meters Sandstone; medium grey, quartz, |
| | MERKER SE AUDREN FORMATION WALL MALL MALL MALL TO THAT WAS AND THE SERVICE OF TH | | And Market and the state of the | dominantly fine grained, subrounded moderately sorted 3939 meters Mudstone; grey/brown, micaceous, carbonaceous, silty, slightly calcareous, blocky, soft to firm 4060.6 meters siltstone; light grey, carbonaceous particles disseminated throughout, occasionally sandy, very argillaceous, blocky, firm 4092 meters Mudstone; medium grey, very calcareous, micaceous, silty, soft to moderately firm 4178.4 meters Sandstone; white, quartzos, dominantly medium to fine grained, moderately well sorted, subangular to subrounded, moderately micaceous, traces carbonaceous material 4338.8 meters Mudstone; medium to dark grey, firm to soft |
| | 4500 (NETRIAN - NAISTAN) 4500 (NETRIAN) 4750 (NETRIAN) 4750 (NETRIAN) 4750 (NETRIAN) 4750 (NETRIAN) (NETRI | | My 2 - 1/1/WW marker of the Minder of the Mi | Locker Shale Formation Mudstone and interbedded Sandstone; mudstone; light to medium grey, and grey brown, very silty, micaceous and often highly carbonaceous Sandstone; silty, argillaceous, very fine to fine grained, very well cemented by silica and dolomitic cements Angular and the same argument of |

LOCKER SHALE

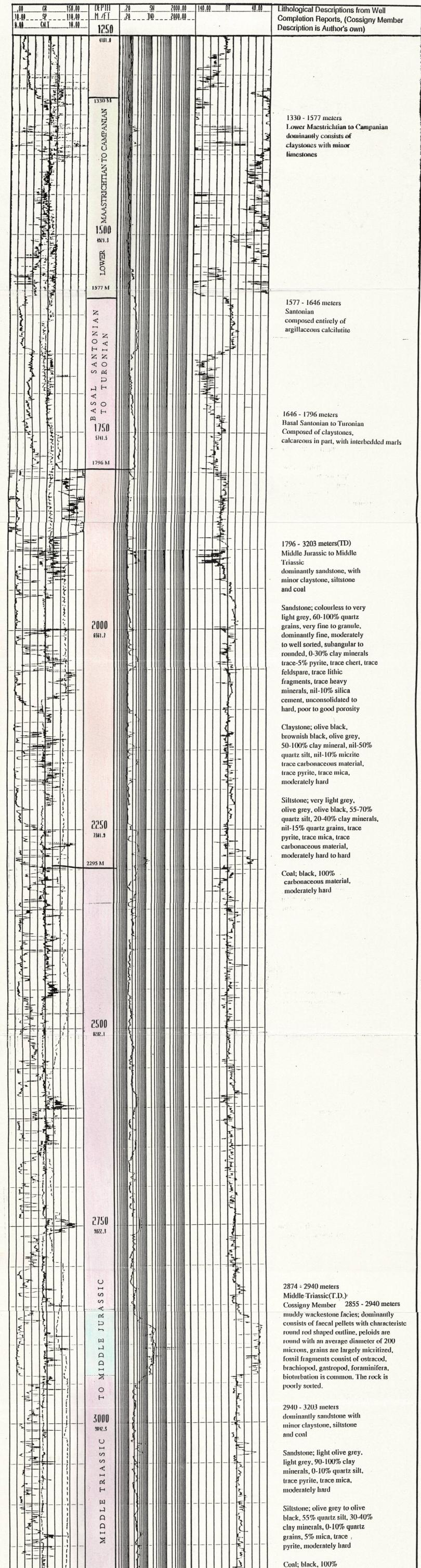
DEP III M /FT 140.00

.00 -80.00 5.00

CALI

150.00 20.00 16.00





carbonaceous material, moderately hard

150.00

10.00 9 110.00

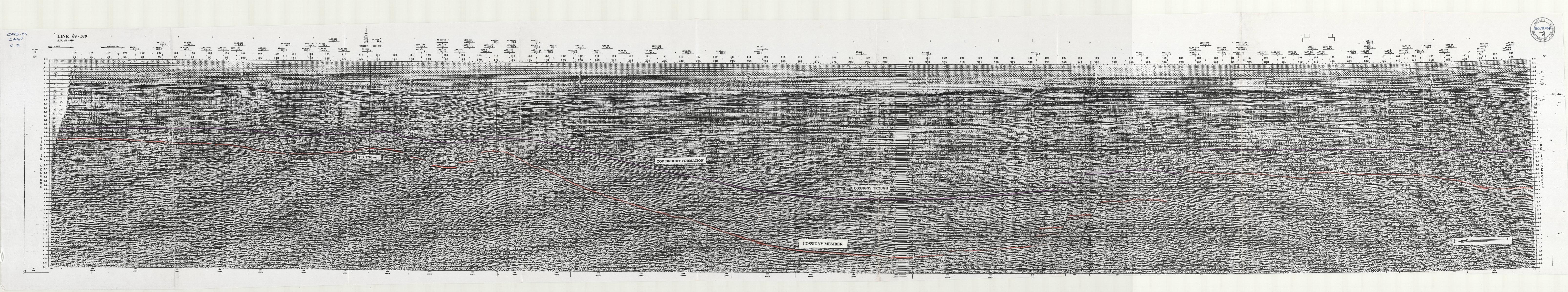
CAL

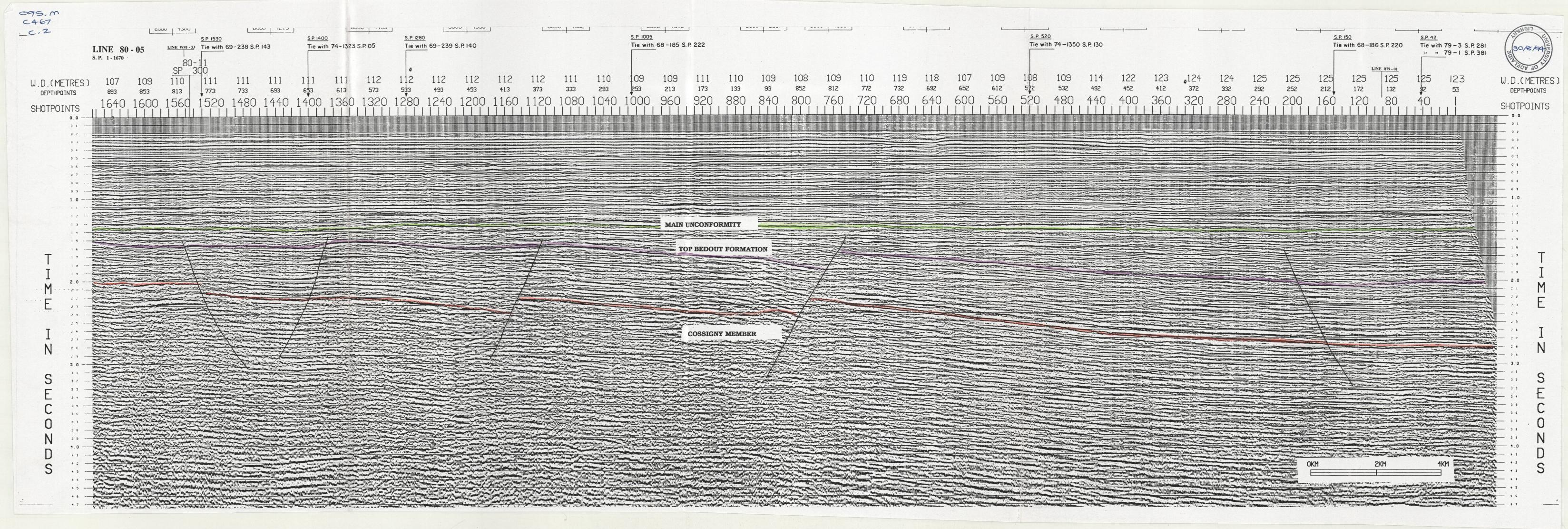
DEPTH

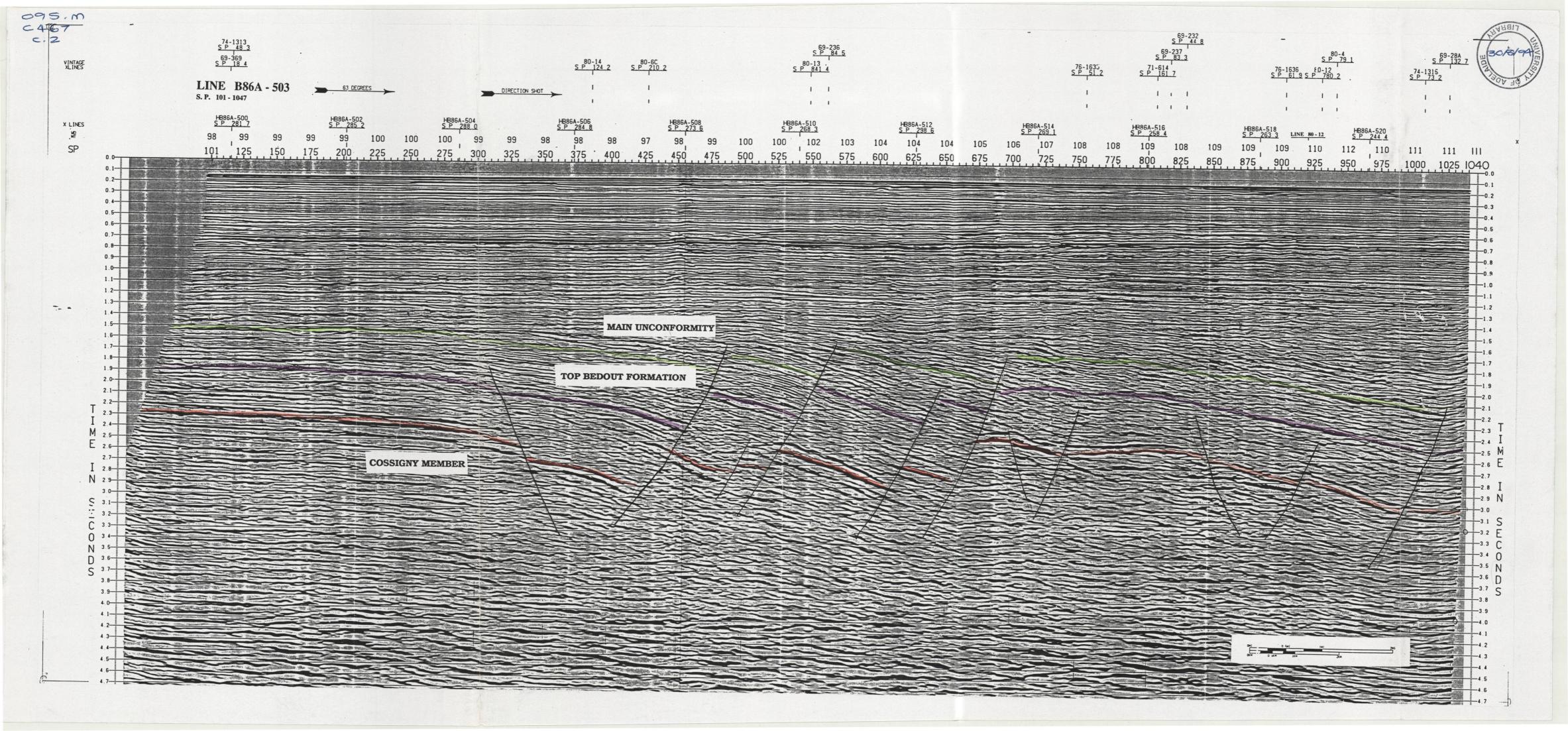
M /FT

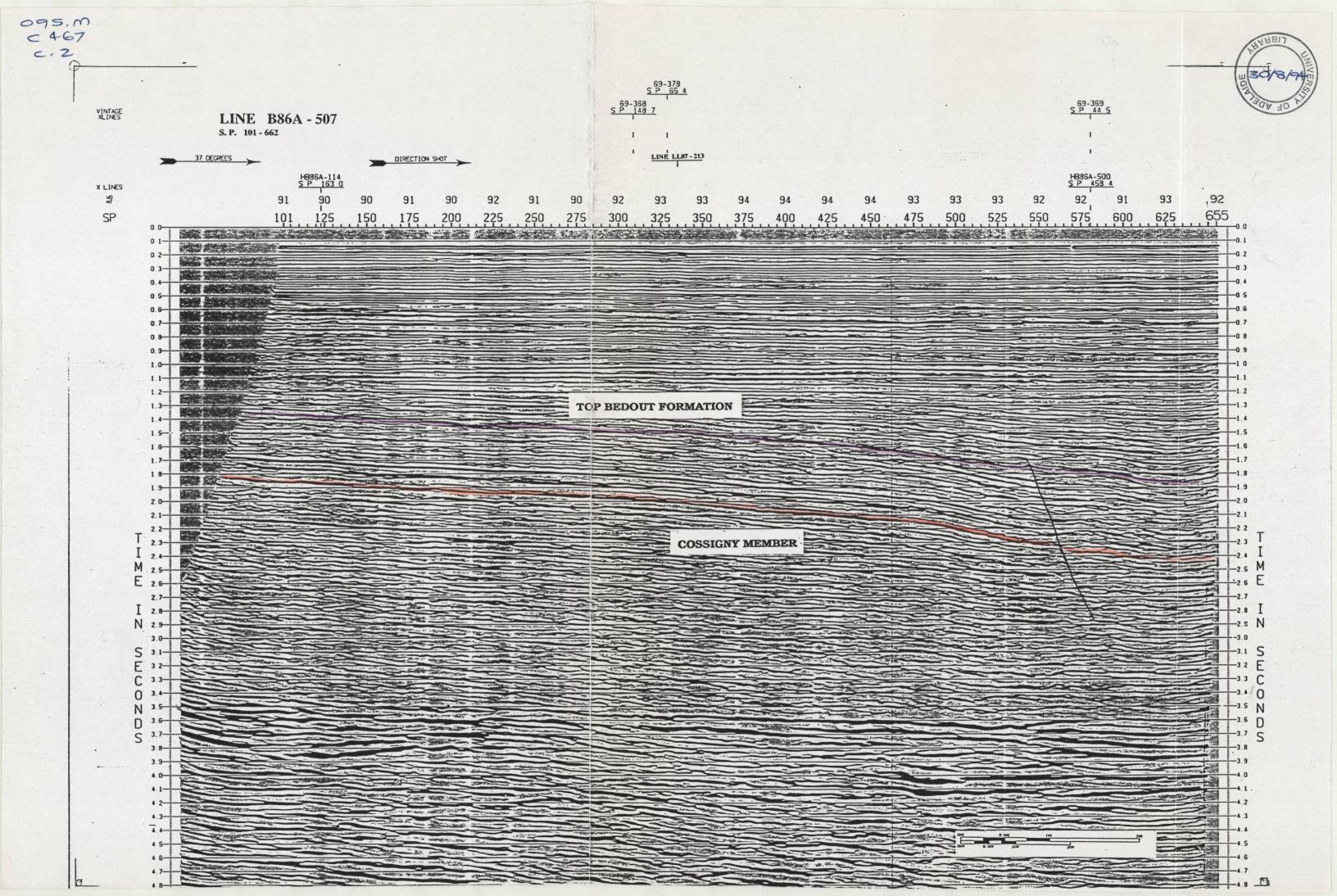
140.00

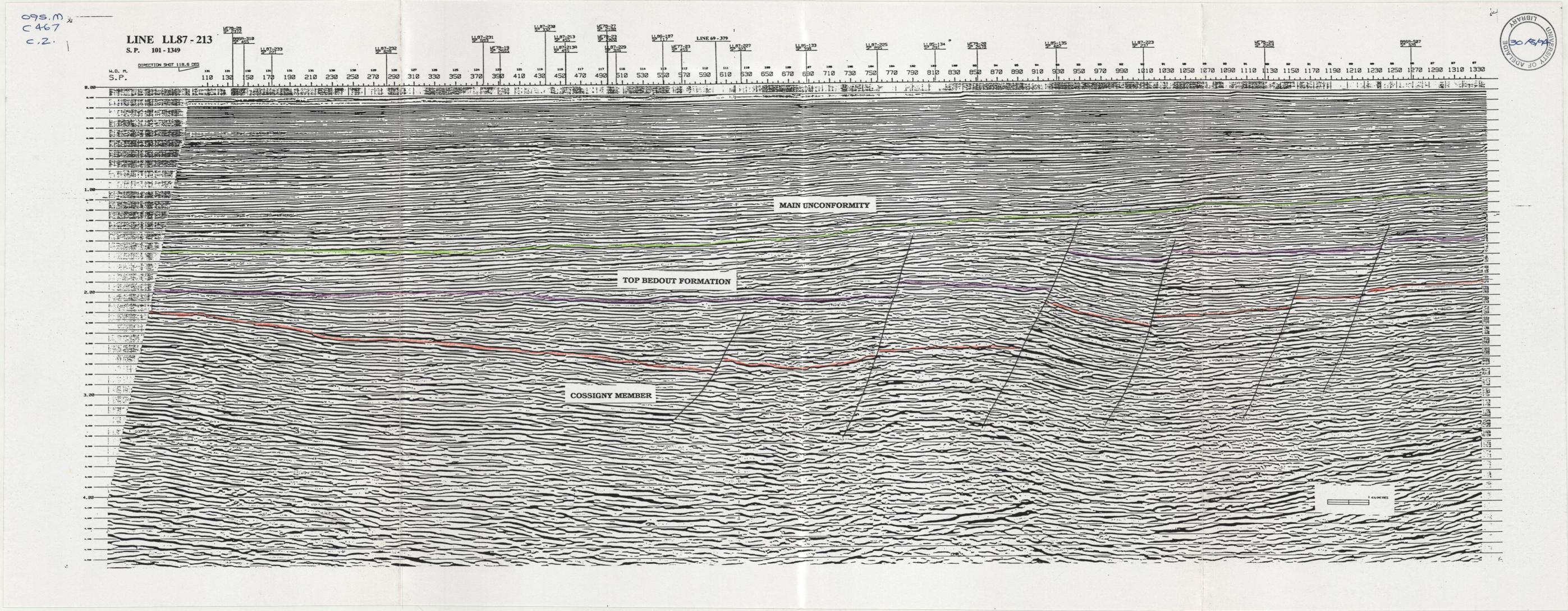
DI











LINE R79 - 01 PHOENIX NO. 2 PHOENIX NO. 1 S. P. 337 - 2323





