THE PETROLEUM PROSPECTIVITY OF

EPP T/31P

STRAHAN SUB-BASIN
SORELL BASIN

TASMANIA

R A MEANEY
ROMA PETROLEUM NL

JUNE 2000

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1.0 ABSTRACT

The west coast of Tasmania is fringed by the Cretaceous - Tertiary aged Sorell Basin. This virtually undrilled basin appears, from scientific research, empirical evidence and the very limited drilling, to be highly prospective for oil generation and entrapment.

The basin is fundamentally an analogue of the prolific Gippsland Basin overlying the productive Otway Basin in that channeled Lower Tertiary section unconformably overlies tilted and rotated Cretaceous fault blocks. Some of these faults appear to have significant growth.

The Sorell Basin is essentially an extension of the Otway Basin from which it is separated by a basement high south of King Island. It is composed of four sub-basins namely, from north to south, King Island, Sandy Cape, Strahan and Port Davey. Exploration permit T/31P which is held in equal part by Roma Petroleum NL (Roma) and Guinness Peat plc (Guinness Peat) covers the near shore portion of the Strahan Sub-basin. Whilst the deeper section of the basin, a perceived hydrocarbon generating kitchen, is sited just west of T/31P it is ideally located to have charged structural and stratigraphic traps within the permit as it is connected by short, steep, direct migration pathways to the block. Mature source rocks are also likely to be present within T/31P.

The only exploration well drilled within the Strahan Sub-basin is not a valid crestal test. However it should be noted that the well penetrated more than 300 metres of very rich, early mature, marine source rocks. These source rocks would be well into the oil generating window in the basin depocentre. Of even more significance, free oil was recovered from cuttings and sidewall cores taken from this well.

Scientific research has established that the sea floor sediments in the Strahan Sub-basin have very high, by world standards, hydrocarbon anomalies. Furthermore these anomalies indicate the presence of wet gas and oil. Stranded oil of a marine and Australian origin has been recorded along Tasmania's West Coast.

All the major prerequisites for the generation and entrapment of oil, in commercial quantities, appear to be present in the Strahan Sub-basin namely:

- rich, mature marine source rocks;
- high porosity and high permeability clastic reservoirs;
- sealing units of both a regional and intraformational nature;
- large structural traps;
- a huge area of favourable stratigraphic trapping geometry; and
- short, steep, unhindered migration pathways from the hydrocarbon generative kitchens to the areas of trapping geometry.

2.0 INTRODUCTION

The Sorell Basin, a large passive margin sedimentary basin located off the west coast of Tasmania, was initiated by rifting in the Late Jurassic when the Australian and Antarctic Plates began to separate. This rifting exhibited a sinstral, trans-extensional component and resulted in the formation of a number of deep, generally fault bound, structural depocentres each of which contains a considerable thickness of Cretaceous and Tertiary section. Some of these depocentres are located beneath the Tasmanian continental shelf whilst others are located beneath and down the continental slope.

The Strahan Sub-basin, in particular, has access to a vast area of thick, mature Cretaceous-Tertiary marine source rocks. The area is virtually unexplored. There is overwhelming scientific and empirical evidence of the presence of hydrocarbon generation in the Strahan Sub-basin.

Very little systematic exploration has been conducted in the Strahan Sub-basin. The Esso Australia Limited and Broken Hill Proprietary Pty Ltd consortium (Esso-BHP) acquired regional seismic data and drilled several wells off the West Coast of Tasmania in the late 1960's following their widespread exploration programs in the sedimentary basins of south-eastern Australia. That program resulted in the major discoveries of the prolific Gippsland Basin of Victoria. The location of which is shown on Figure 1.

The most recent well, Cape Sorell 1, drilled off the West Coast of Tasmania is the only well located in the Strahan Sub-basin. It encountered an extensive interval of approximately 300m of very rich, early mature, source rocks but more importantly free oil was recovered from cuttings and sidewall cores. This well is not crestal. Recent mapping indicated that it is many kilometres from the crest of structural closure. The Cape Sorell 1 well was drilled by Amoco Australia Petroleum Company Limited (Amoco) in 1982. It is not a valid nor definitive test.

The most recent exploration conducted in the Strahan Sub-basin in the area of T/31P was that undertaken by Maxus Energy Corporation of Dallas (Maxus). They did extensive studies and reprocessed 1981 vintage seismic data previously acquired by Amoco as well acquiring a new seismic survey in 1990. Mapping of the seismic data from this survey identified three structural prospects of considerable size. The permit was then acquired by Roma and Guinness Peat in 1999, in equal part. Roma has completed a thorough and exhaustive re-evaluation of this highly prospective block.

3.0 GEOLOGY

The geology of the Strahan Sub-basin of the Sorell Basin appears to be conducive to the generation, entrapment and retention of hydrocarbons. The basin is sited at the southeast end of the Southern Break-Up Margin of Australia, a region which is productive of both oil and gas.

3.1 Geological Setting

The Strahan Sub-basin is located off the West Coast of Tasmania. The Sub-basin lies immediately west of Macquarie Harbour and the township of Strahan and its location is shown on Figure 2. The Sorell Basin is located on the passive rift margin of Southern Australia which was initiated in Late Jurassic - Early Cretaceous time when Australia and Antarctica began to separate. This rifting, which is believed to have a left sinstral trans-extensional component, resulted in the formation of four, generally fault bound, depocentres which contain thick piles of Cretaceous - Tertiary marine sediments.

3.1.1 *Structural Geology*

The Strahan Sub-basin is bound to the east by metasediments of the Tasmanian mainland, to the west by the continent - ocean boundary. The Strahan Sub-basin is separated from the neighbouring Sandy Cape sub-basin to the north by a large basement high. It is similarly separated from adjacent Port Davey Sub-basin to the south by another large basement high.

Extensive extensional faulting has resulted in many areally small but deep depocentres within these sub-basins and under the continental slope off West Tasmania. A vast area of thick Cretaceous-Tertiary section which is known to be mature for hydrocarbon generation, but remains untested, is present in the Strahan Sub-basin.

The Strahan Sub-basin was initiated by Late Jurassic - Early Cretaceous rifting which began the separation of the Australian and Antarctic Plates. This rifting exhibits a sinstral trans-extensional component and has resulted in the formation of a number of deep structural depocentres, which are generally fault bound and which contain extensive thicknesses of Cretaceous - Tertiary sedimentary rocks. The Strahan Sub-basin is a component of the Sorell Basin which is fundamentally a lateral equivalent of the Otway Basin to the north from which it is separated by a basement high south of King Island.

Further epeirogenic uplift occurred in the Middle Cretaceous which is evidenced by a prominent 'breakup' unconformity. Additional normal faulting, with a significant left lateral wrench component, continued through until the Middle Oligocene when separation of the Australian and Antarctic Plates occurred.

Additional uplift occurred in the Paleocene as evidenced by the extensive erosional channeling present, similar to the Marlin Channel of the prolific Gippsland Basin. The large scale compressive tectonics of the Middle Miocene which formed most of the productive structures in the Gippsland Basin to the north is also evident, but not as marked. Significant angular unconformities are also present in the Middle to Late Tertiary section indicating continued tectonics.

The many episodes of structuring is fortuitous as it indicates the presence of long standing traps which would be in place to capture migrating hydrocarbons throughout most of the sub-basin's history. It is believed the generation and migration of oil occurred quite late in the basin, hence the timing of trap formation is probably optimal.

As a result of the extensive rifting and episodes of normal faulting the Strahan Sub-basin has many self contained, deep structural lows and depocentres. The overall effect has been to produce, in the area of T/31P, a barred basin which probably has restricted the circulation of water and created an anoxic reducing environment. Such an environment is ideal for the preservation of rich, unoxidized marine source rocks.

3.1.2 *Stratigraphy*

The Strahan Sub-basin is essentially an analogue of the productive Lower Tertiary section of the Gippsland Basin overlying the hydrocarbon bearing Cretaceous Otway Basin section in that channeled Early Tertiary section overlies tilted Cretaceous aged rotated fault blocks. The stratigraphic nomenclature adopted for the Sorell Basin, and subsequently the Strahan Sub-basin, is that of the Otway Basin of South-west Victoria. A stratigraphic column is included as Figure 4.

The earliest sediments expected to be present are correlatives of the Early Cretaceous Otway Group. These are rift fill sediments of a fluvial-deltaic nature. This unit, which is known to have sourced the soon to be developed Minerva gas field in the offshore section of the Victorian sector of the Otway Basin, was not intersected in the proximal Cape Sorell 1 well.

This unit is unconformably overlain by Cenomanian to Maastrictian aged marginal marine clastics of the Sherbrook Group, which also hosts hydrocarbons in the onshore sector of the Otway Basin in both Victoria and South Australia, as well as the offshore Minerva gas field.

The Sherbrook Group is in turn unconformably overlain by the shallow marine clastics of the Paleocene - Early Eocene aged Wangeripp Group which is broadly equivalent to the upper portion of the productive Latrobe Group of the Gippsland Basin. The Wangeripp Group is also heavily channeled in an analogous manner to the Latrobe Group. This unit is in turn unconformably overlain by the Eocene - Oligocene Nirranda Group which is composed of marls and sandstones. The youngest group, the Heytesbury Group, which is composed of shelfal marl and temperate carbonates, unconformably overlies the Nirranda Group.

3.2 Petroleum Geology

Many detailed studies indicate that the Strahan Sub-basin of the Sorell Basin contains rich marine source rocks which have generated oil (reference Armstrong et al 1983 and Amoco 1983.). It is known that three petroleum systems are active on the Southern Margin of Australia namely:

Austral 1 — With Early Cretaceous source rocks. This system is productive in the onshore Otway Basin of South Australia in particular, as well as offshore Victoria.

Austral 2 — With Late Cretaceous source rocks. This system is productive in the onshore sector of the Victorian sector of the Otway Basin.

Austral 3 — With Early Tertiary source rocks. This system is productive and prolific in the Gippsland Basin of Victoria.

There is also much empirical evidence to support the presence of oil in the Strahan Sub-basin. The most convincing evidence is the presence of live, free oil in the Cape Sorell 1 well. This oil was encountered in cuttings and in a sidewall core. Further evidence exists in the existence of stranded bitumens along the West Coast of Tasmania. These strandings which occur along the southern coast of Australia all belong to a single family of oils.

They are aromatic - asphaltic and are rich in sulphur, indicating a marine source rock origin. The perceived origin of these oils is Late Jurassic to Cretaceous marine shales deposited in an anoxic/sulphidic restricted environment. A recent study has indicated that these oils are identical to the oils generated by the Albian age shales of the Toolebuc Formation of the Great Artesian Basin. Hence an Australian origin rather that Indonesian source is responsible for these strandings, those on the west coast of Tasmania in particular. This is a very important determination at it highgrades the Strahan Sub-basin as a potential oil province.

Further empirical evidence is the occurrence of thermogenic hydrocarbons in cores taken from the sea floor on the continental shelf west of the Tasmanian coast. The yields, high by world standards, were highest in the Strahan Sub-basin. They indicate 'wet' gas generation and presumably oil.

3.2.1 *Source Rocks And Maturity*

The Sorell Basin, of which the Strahan Sub-basin is a component, is part of the major rifting which commenced in the Late Jurassic and Early Cretaceous and resulted in the separating of Australia from Antarctica.

The resulting grabens were the sites of the accumulation a thick pile of potentially very rich, restricted marine source rocks which are known to be in the early oil window at depths of approximately 3,000m in the Cape Sorell 1 well, a marginward location. These rocks are buried on an additional couple of thousand metres in a depocentre approximately 25 kms west of the above mentioned well. Sea floor cores above this depocentre have enormously high thermogenic hydrocarbon counts which indicates that 'wet' gas and presumably oil gas has been generated.

Various studies by Robertson Research and Amoco Production Research Company indicate the presence of very rich, oil prone, source rocks which are in the early oil maturation window at the Cape Sorell 1 location, a shallow proximal position on the edge of the Strahan Sub-basin. These studies indicate Total Organic Content (TOC) values well above average, with a mean value of 4%. Vitrinite Reflectance values (V_{RO}) are all in the early mature region for oil generation and range from 0.46% to 0.54%. Thermal Alteration index (TAI) and Spore Colouration Index (SCI) values are all consistent with the source rocks being in the early mature window. Oil rich lipinitic kerogens have been identified.

These studies indicate that very rich oil prone source rocks are present. These rocks could be expected to have passed through the peak oil generative window in the basin depocentre, west of Cape Sorell 1. Hence large volumes of oil should have been generated and then oil should have migrated eastward into robust structural traps located within T/31P. Additional information on source rocks is covered in Section 4.2, Geochemical Surveys.

3.2.2 *Reservoirs*

The presence of good reservoir intervals in the Lower Tertiary and Cretaceous section has been established at Cape Sorell 1. The presence of interbedded reflectors on the seismic data and the myriad of unconformities evident of the seismic sections point to the presence of alternating reservoirs and seals in the deeper untested Early Cretaceous section.

The Eocence/Paleocene section is particularly sandy with excellent quality reservoirs and with porosities up to 30%. Most sandstone units have porosities in the range of 20-30%. The sandstones and conglomerates below 3,000m in the Upper Cretaceous section in Cape Sorell 1 have lesser porosities. However this well was sited in a very proximal location and the sediments are quite poorly sorted and quite angular and have traveled little distance from the provenance, onshore Tasmania. Reservoir quality could be expected to improve with more sediment transport distance away from the 'Tasmanian Craton' which the previously mentioned well is sited quite near to.

In general, good quality reservoirs can be expected within the section, particularly the lower Tertiary and Late Cretaceous portions.

3.2.3 *Seals*

Good seals are known from the Lower Tertiary, a major target of the basin in the Cape Sorell 1 well. Potential sealing intervals are also recognized, within the Cretaceous section. It is reasonable to expect that with basinward progression that more finer grained sealing units would be present. Not enough hard data is available to predict the presence of or absence of sealing units within the Lower Cretaceous section, although interbedded seismic reflectors indicate changing lithologies, presumably sandstones and shales.

3.2.4 *Migration Pathways*

The final requirement for a hydrocarbon accumulation is the presence of a simple, steep, unhindered migration pathway for the hydrocarbons generated in the hydrocarbon kitchen to travel to the robust traps towards the basin margin. This requirement is met in T/31P to a very high degree.

4.0 PREVIOUS EXPLORATION

Hydrocarbon exploration off the West Coast of Tasmania began in 1968 following the Esso - BHP large scale southern basin exploration program which was directed at the Gippsland Basin of Victoria, the Otway Basin of Victoria and South Australia and the Bass Basin of Tasmania. Hydrocarbons have been discovered in all three basins with a world class province being brought in the Gippsland Basin. After success in the Gippsland Basin the consortium undertook a frontier drilling program in the Tasmanian Sector of the Otway Basin and what is now known as the King Island Sub-basin of the Sorell Basin. Since then the only serious exploration in the Strahan Sub-basin was that conducted by Amoco in the early 1980's and some later work conducted by Maxus in the early 1990's.

The area covered by T/31P has been included in previous permits held by:

- Esso Exploration and Production Australia Ltd;
- Amoco Australia Oil Company; and
- Maxus Energy Corporation.

4.1 Geophysical Surveys

Several geophysical surveys utilizing different methods have been conducted in the area of T/31P. Aeromagnetic surveys as well as gravity surveys have been acquired which are useful in outlining the basin architecture. Of particular interest are seismic surveys some of which have been of a commercial nature whilst several others have been conducted by academic institutions as part of the scientific study of the rifting off of the Australian Plate from the Antarctic Plate.

Most of the academic data has been studied by the exploration companies and is incorporated in their reports. This information is quite useful in the sparsely explored Strahan Sub-basin, particularly the deep water section. It is particularly useful in a determination, however rudimentary, of basin architecture and the location of the depocentres and potential hydrocarbon generating kitchens. Details of previous seismic surveys can be found in Conolly and Galloway (1995).

4.1.1 *Seismic Surveys*

Several seismic surveys, some with associated gravity and coring and geochemical sampling have been conducted in the area of T/31P off the West Coast of Tasmania. Some were regional in nature and extend along the entire coast line. The scientific surveys were conducted by the Bureau of Mineral Resources (BMR) and the Bundesanstalt für Geowissenschaft und Rohstoffe (BGR) of Germany.

4.2 Geochemical Surveys

The previously mentioned research studies have included many geochemical surveys. Several of these indicate that the sea water column and sea floor sediments have enormously high hydrocarbon concentrations.

The geochemical studies directed toward source rock analysis all indicate that the sub-basins off the West Coast of Tasmania both have the capacity to produce, and are currently generating, hydrocarbons. The most encouraging evidence was obtained from:

1. Traces of free oil in the Cape Sorell 1. Excellent source rocks were also recorded in the last 300m of this well in the Strahan Sub-basin in Paleocene and Late Cretaceous rocks below 3,000m. This indicates the source rocks are present and have been elevated to maturation levels.

2. The Total Organic Carbon content of samples from Cape Sorell 1 are very rich. The highest TOC from a sidewall core was 18.6% with an average value of 3.45% for 12 samples. The case for cuttings samples was similar, a maximum value of 8.2% with an average value of 4.42%.

3. Surface geochemical samples from the Strahan Sub-basin indicate the presence of thermogenic hydrocarbons.

4. Surface samples collected by the R V Sonne cruise a joint BMR-BGR investigation have gas yields and molecular composition indicating the presence of wet, thermogenic hydrocarbons. The highest values were obtained on the upper continental shelf some 25 kms southwest of Cape Sorell 1 near the Tetons Prospect in T/31P. The total C_2 - C_5 readings were high by world standards, more importantly the proportion of C_2 - C_5, indicating the presence of liquids, was also high.

The above summary is modified after Conolly and Galloway (1995) from "Hydrocarbon Prospectivity of the Offshore West Coast of Tasmania" (1995).

4.3 Drilling

Little drilling of either an exploration or stratigraphic nature has been conducted off the West Tasmanian coast in general and in the Strahan Sub-basin in particular. Several DSDP holes are sited off the West Coast of Tasmania.

4.3.1 *Exploration Drilling*

Just four exploration wells have been drilled off the West Coast of Tasmania. The first three by Esso in the 1970's and the most recent, Cape Sorell 1, by Amoco in 1982. Only one well, the later, is sited in the Strahan Sub-basin.

It is important to note that the Early Cretaceous Section, thought to be present due to strong seismic evidence, is untested in the Strahan Sub-basin and the Late Cretaceous Section is barely tested as the well reached total depth in the uppermost portion of this interval. Cape Sorell 1, due to a less than optimal seismic grid did not test the crest of the Early Tertiary structure, which has an erosional genesis. In summary a valid structural test is yet to be drilled in this sub-basin, which drains a vast area of thick Tertiary and Cretaceous section known to contain rich mature source rocks beneath the continental slope.

4.3.2 *Stratigraphic Drilling*

The fully cored stratigraphic hole, DSDP location 282, is sited within the block. The results of this scientific drilling is discusses in referenced papers. However it should be noted that this well encountered rich organic Eocene shales, acknowledged source rocks.

4.4 Seismic Interpretation

Three episodes of modern, post 1980 seismic mapping have been conducted in the area of T/31P, particularly the eastern section.

4.4.1 *Previous Mapping*

The eastern portion of what is now T/31P has been mapped in detail by two previous operators. The first Amoco acquired seismic data in 1981 and drilled the Cape Sorell 1 well in 1983, on this mapping.

The second operator Maxus acquired additional seismic data, reproduced the Amoco data and mapped the area in the early 1990's. This mapping identified three prospects, Braddon Point, Sloop Point and Trial Harbour as well as two significant leads.

4.4.2 *Reinterpretation & Remapping*

Roma Petroleum conducted a re-interpretation of the most modern, post 1990 seismic data within the area of T/31P. The modern seismic coverage of T/31P is shown on Enclosure 1. This attempted reinterpretation turned out to be very time consuming and difficult. This interpretation was conducted on paper sections of the 1990 Maxus Seismic Survey and not on a work station. The reprocessed Amoco data was unusable.

The interpretation proved to be extremely difficult for the following reasons:

1 The lack of a synthetic seismogram or time depth curve.
2 The myriad of interleaved unconformities present.
3 The ubiquitous rotated Cretaceous fault blocks.
4 The severely band limited data.
5 The presence of layered volcanics, near to basement.
6 The many out of plane reflections.

Seismic calibration was rudimentary with events correlated to horizons mapped by Maxus. Calibration will remain a problem until a deep well is drilled which penetrates the full sedimentary section and reaches basement. The check shot data and sonic log were not available to have a synthetic seismogram generated.

The following seven horizons were interpreted:

1 Acoustic Basement Seismic Marker (Blue horizon)
2 Upper Cretaceous Seismic Marker (?) (Brown horizon)
3 Near Top Sherbrook Group Seismic Marker (Purple horizon)
4 Lower Tertiary Seismic Marker (Yellow horizon)
5 Upper Tertiary Seismic Marker 1 (Orange horizon)
6 Upper Tertiary Seismic Marker 2 (Pink horizon)

A detailed hand contoured two way time map of the Upper Cretaceous (?) was prepared. This map which is included as Enclosure 2 shows several robust structures of significant size to warrant evaluation. More importantly it shows a huge stratigraphic trap with basement as the probable base and lateral seal and the Tertiary section as a top seal.

The output of mapping conducted by Roma Petroleum is different in detail to that of the previous operator, Maxus. It is difficult to ascertain which is more correct given the previously mentioned difficulties. However, reassuringly, Roma's mapping has also defined structures in a similar position to Maxus' Braddon Point and Sloop Point Prospects. More importantly Roma's mapping has confirmed a huge stratigraphic prospect co-incident with Maxus' Trial Harbour Prospect, also a stratigraphic prospect. Crestal seismic lines over all the prospects identified are attached as Enclosures 3-11. Enclosure 6 shows the location of the Cape Sorell 1 well.

Our mapping has high-lighted two additional prospects Tetons and Table Head to the west of Braddon Point. They are located more basinward and are better sited to entrap hydrocarbons migrating from the basin deep. Several other small structures and leads are also delineated.

All mapping conducted in T/31P indicates some structures, some of which are co-incident. However the detail does differ. To resolve this and to more efficiently explore this prospective basin the acquisition of a modern 3D seismic grid situated over the area of the previously acquired Amoco and Maxus grids is warranted. The benefits of such a grid are:

1 Modern, higher resolution seismic recording equipment can be used.
2 The optimal acquisition parameters can be used.
3 The attendant 3D migration will remove out of plane reflections.
4 The denser, lateral sampling will solve the problem of fault correlation.
5 The high resolution data will help with unconformity recognition and correlation across faults.

4.4.3 *Prospects & Leads*

Roma's mapping has identified five prospects of significant size to warrant consideration for evaluation by test drilling. A large, well sited lead, Ahrberg Bay, has also been recognized. These five prospects are listed below along with the potential reserves they could host. Representative reservoir parameters, used in these calculations are also tabled below.

4.4.4 *Indicative Reserves*

The potential reserves, both in place and recoverable, that the above five prospects could hold, using the listed and representative reservoir parameters, are detailed below.

Reservoir Parameters

Porosity	18%
Oil Saturation	75%
Formation Volume Factor	$^1/_{1.1}$
Net Effective Hydrocarbon Column	30m
Recovery Factor	0.3
Trap Geometry Factor	0.8

In Place Oil/km²

$10^3 \times 10^3 \times 0.18 \times {}^1/_{1.1} \times 0.8 \times .75 \times 0.3\ m^3/km^2$
$= 2.9455 \times 10^6\ m^3/km^2$
$= 2.9455 \times 6.29 \times 10^6\ bbls/km^2$
$= 18.5269 \times 10^6\ bbls/km^2$
= ***18,530,000 bbls/km²***

Prospect	Aerial Extent (km^2)	Potential In Place Reserves (MMBBLS)	Potential Recoverable Reserves (MMBBLS)
Trial Harbor	56.50 km^2	1,046.95	314.08
Braddon Point	18.40 km^2	340.95	102.29
Sloop Point	15.20 km^2	281.66	84.50
Tetons	13.73 km^2	254.42	76.33
Table Head	7.54 km^2	139.72	41.92
Total Potential Recoverable Reserves			***619.12 MMBBLS***

From the above it is obvious that there exists the possibility of finding significant oil reserves in T/31P. Previous work by Maxus identified a similar total figure for Braddon Point, Trial Harbor and two levels in Sloop Point.

5.0 RECOMMENDATIONS

To more effectively explore T/31P it is recommended that a modern, high resolution 3D seismic grid over the near shore, shallow water section of the permit, essentially the area covered by the Maxus and Amoco grids be acquired. This should result in 'cleaner' data which will be more readily 'interpretable'.

Should a prospect be drilled prior to the recording of any 3D data it is recommended that the Braddon Point Prospect be selected. This is a very robust structure, controlled by major down to the basin normal faults, whilst not mapped, closure seems to persist from the Lower Tertiary through to presumed Lower Cretaceous section. This latter section is untested but correlative section in the adjacent Otway Basin is hydrocarbon productive. This section will be encountered at a similar depth as the Upper Cretaceous was in Cape Sorell 1, a more marginward well, due to gravity slumping and rotation of Cretaceous fault blocks. Erosional closure is also present in the Lower Tertiary section, the productive zones in the Gippsland Basin.

The smaller but more basinward Tetons Prospect should also be considered for evaluation as it is better sited to capture any hydrocarbons migrating out of the basin depocentre to the west. This prospect is sited on a structural nose adjacent to a steep gradient into the basin proper and the presumed hydrocarbon generating kitchens of the sub-basins located beneath the continental slope. This structure does not have as dense a seismic grid as does Braddon Point.

The huge Trial Harbor Prospect, a stratigraphic trap to the north, sits on basin's edge. This prospect is restricted to the Lower Tertiary and uppermost Upper Cretaceous. It and the more marginward Sloop Point structural prospect should be considered for drilling pending the results obtained at the Braddon Point and Tetons locations.

6.0 CONCLUSION

Roma's mapping, whilst restricted to one horizon, has confirmed Maxus' more detailed mapping with co-incident structures located at the Braddon Point, Sloop Point and Trial Harbor Prospects, of Maxus.

The Roma mapping has identified several other prospects, the Tetons and Table Head Prospects in particular. The former, in particular, is ideally located to evaluate whether a charge has come out of the basin deep.

Given the results of geochemical analysis of data from Cape Sorell 1 it would appear that the source rocks, in situ at these prospects, would be mature for oil generation.

To assess the oil prospectivity of this basin it is imperative that the Tetons and Braddon Point Prospects are evaluated by drilling. Whilst Braddon Point could be drilled now it is considered that it would be wise to acquire 3D seismic data to more accurately delineate these features to enable the optimal siting of test wells.

The Strahan Sub-basin appears to have all the requirements for oil generation and entrapment namely:

- Rich, mature, marine source rocks.
- Excellent intervals of sandstone reservoirs.
- Intervals of sealing units, both regional and intraformational.
- Direct, short, unhindered migration pathways from hydrocarbon generative kitchens to the potential traps.

7.0 BIBLIOGRAPHY

A Basic Geochemical Evaluation of Eight Sidewall Cores From The Cape Sorell 1 Well Drilled in Australia, J P Armstrong, MM Alimi, J M Ode, K H King, Robertson Research (Singapore) Private Limited, Report No 1170, January 1983, (unpublished).

A Geohistory Analysis of the Cape Sorell 1 Well Drilled Offshore West Tasmania, G W Hughes, Robertson Research, Report 1019, (unpublished).

AGSO Cruise 147 Report - Tasman Rises Geological Cruise of Rig Seismic Stratigraphy, Tectonic History and Paleoclimate of the Offshore Tasmanian Region, N F Exon, J F Marshall, D C McCorkle, M Alcock, G C H Chaproniere, R Connell, S J Dutton, M Elmes, C Findlay, L Robertson, N Roller, C Samson, S Shafik and G P Whitmore, AGSO, Record 1995/56.

Block T/24P - West Tasmania Australia An Exploration Opportunity, Maxus Energy Corporation 1993, (unpublished).

Cape Sorell No 1 Drilling Prognosis, Amoco Australia Petroleum Company, April 1982.

Cape Sorell No 1 Geological Completion Report Exploration Permit T-12-P Offshore West Tasmania Australia, Amoco Australia Petroleum, Tasmania, Australia, October 1982, (unpublished).

Cape Sorell Strahan Sub-basin West Tasmania, Maxus Energy Corporation (unpublished).

Deep Water Otway Basin: A New Assessment of the Tectonics and Hydrocarbon Prospectivity, A M G Moore, H M J Stagg and M S Novick, APPEA Journal Vol 40 2000.

Hydrocarbon Prospectivity of the Offshore West Coast of Tasmania, J Conolly and M J Galloway, Mineral Resources Tasmania, Record 1995/04.

Review of Biostratigraphic Data From Cape Sorell 1 Sorell Basin, Alan D Partridge, Report for Roma Petroleum NL, December 1999, (unpublished).

Seismic Stratigraphic Study of the T-12-P permit Area Offshore West Tasmania Australia, Amoco Australia Petroleum Company, August 1981 (unpublished).

Sorell Basin Tasmania Australia Release of Offshore Petroleum Exploration Areas in 1998 T98-1 and T98-2, C R Calver, Mineral Resources Tasmania, Record 1998/03.

T31P West Coast Tasmania An Exploration Opportunity in the South Margins of Australia - Oil Province, J Conolly, Report for Roma Petroleum Company Pty Ltd, January 2000, (unpublished).

The Biostratigraphy of the Amoco Australia Petroleum Company Cape Sorell 1 Well Offshore West Tasmania Australia, G W Hughes, W P Seymour, O Varol, Y C Chow, Robertson Research (Singapore) Private Limited, January 1983, (unpublished).

__**The West Tasmanian Margin An Underrated Petroleum Province,**__ K Hinz, J B Wilcox, M Whiticar, H R Kudrass, N F Exon and D A Feary, Second South-Eastern Australia Oil Exploration Symposium, R C Glenie Editor 1985.

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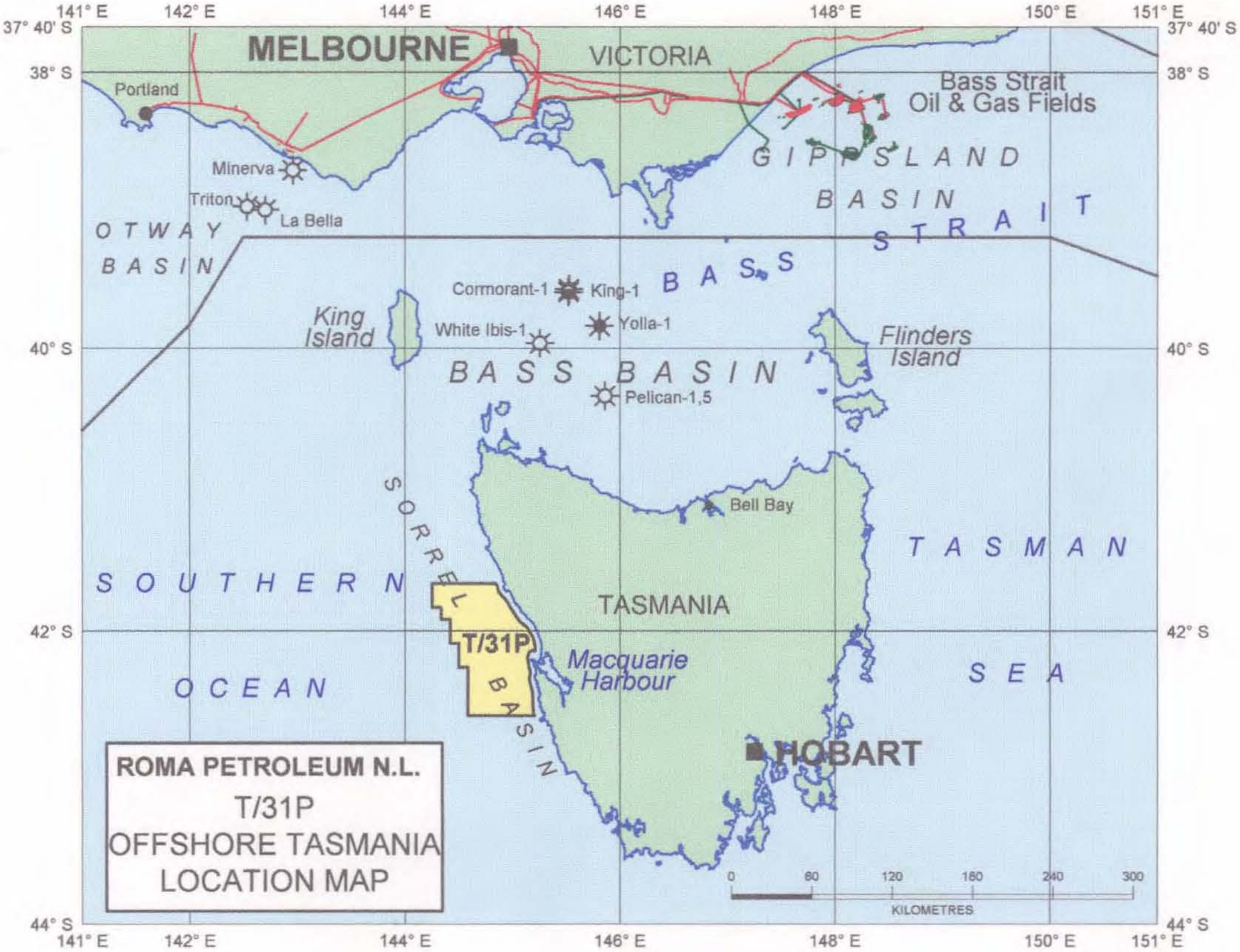


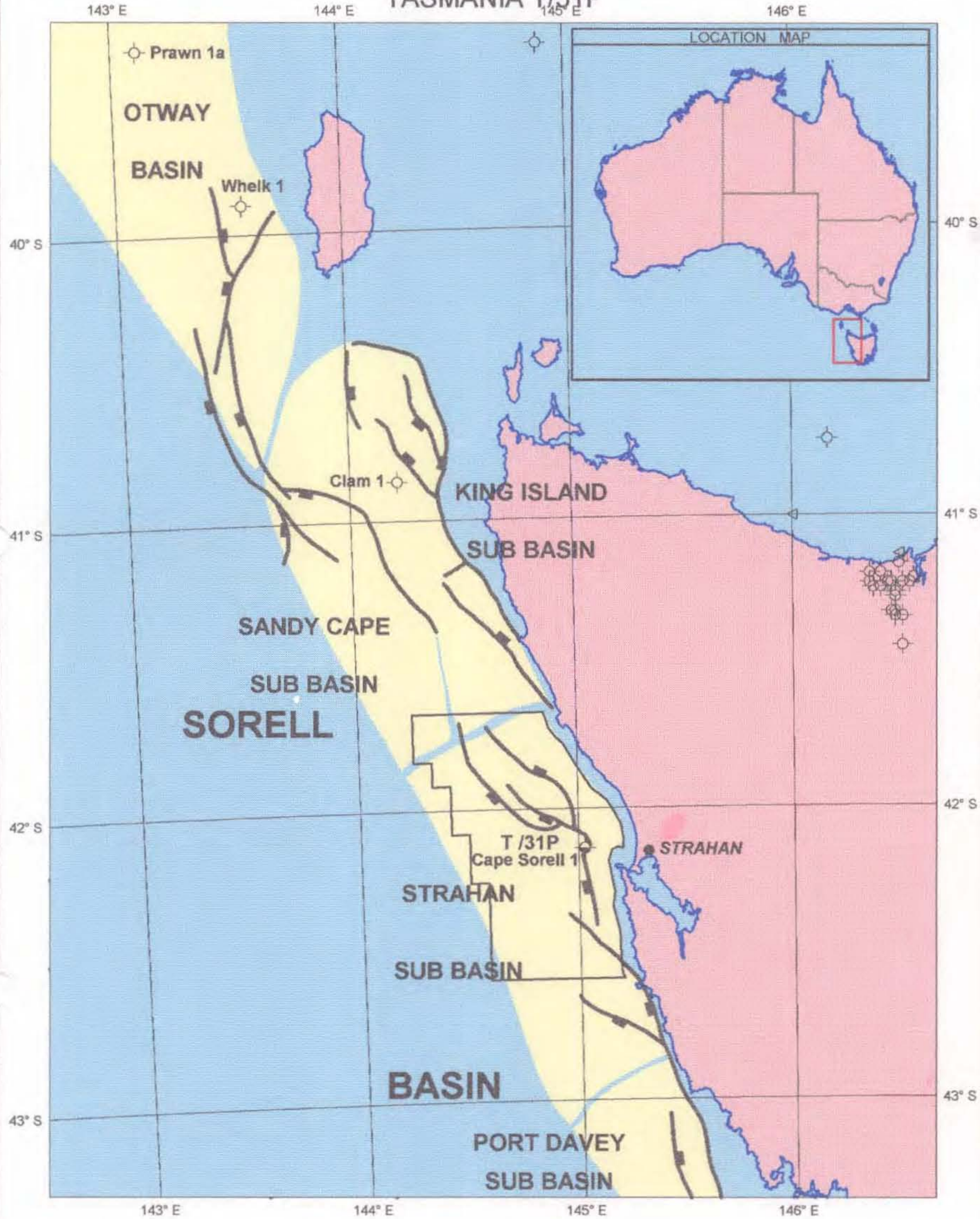
5 cm

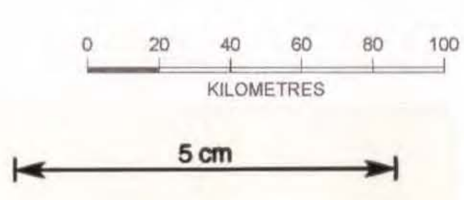
Map Sheet: Roma_Tas_5M
File: Roma_TasGen_Location.map5M

Figure 1

572018

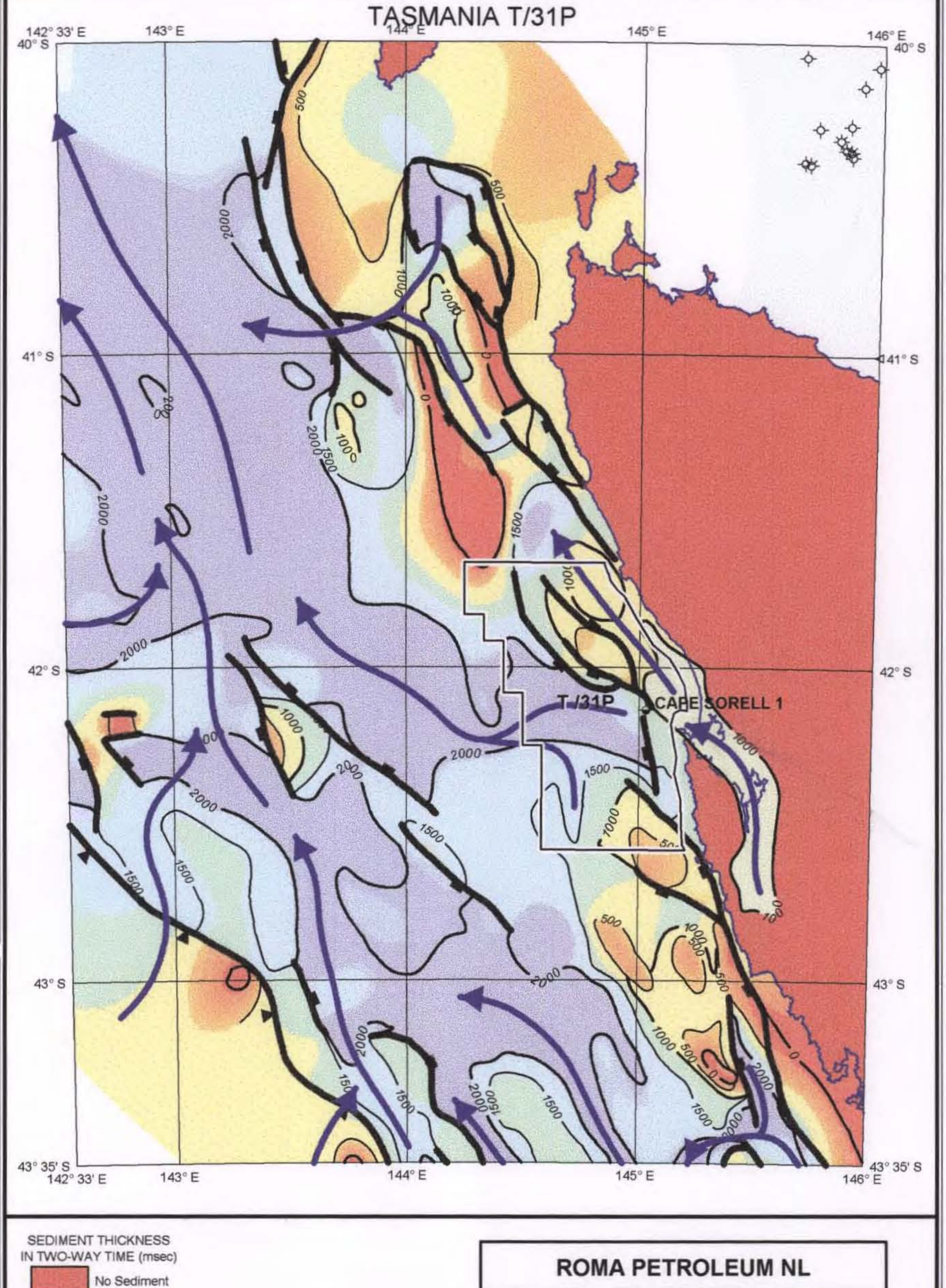
TASMANIA T/31P





ROMA PETROLEUM NL		
TASMANIA T/31P **REGIONAL SETTING** (After Conolly & Galloway)		
Author: R.A.Meaney	File: LocationMap A4	Date: June 2000
Data: OIL ON FILM	Mapsheet: Structural A4 Grid	Figure 2

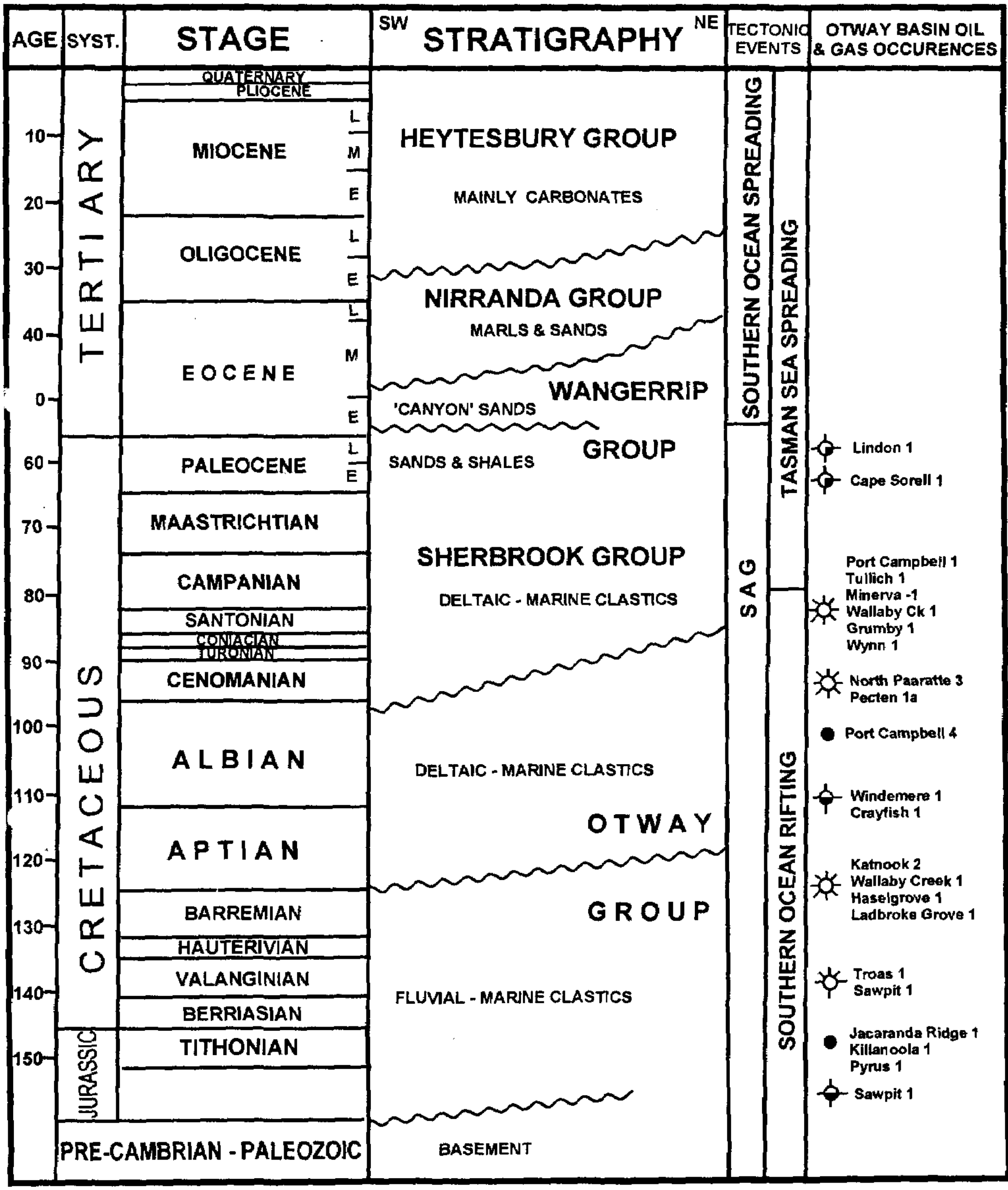
572019



ROMA PETROLEUM NL		
TASMANIA T/31P STRUCTURAL ELEMENTS AND SEDIMENT THICKNESS		
Author : J.R.Conolly	File : Sediment_thickness_A4	Date : June 2000
Data : OIL ON FILE	Map Sheet : SedThicknessA4	Figure 3

5 cm

572020



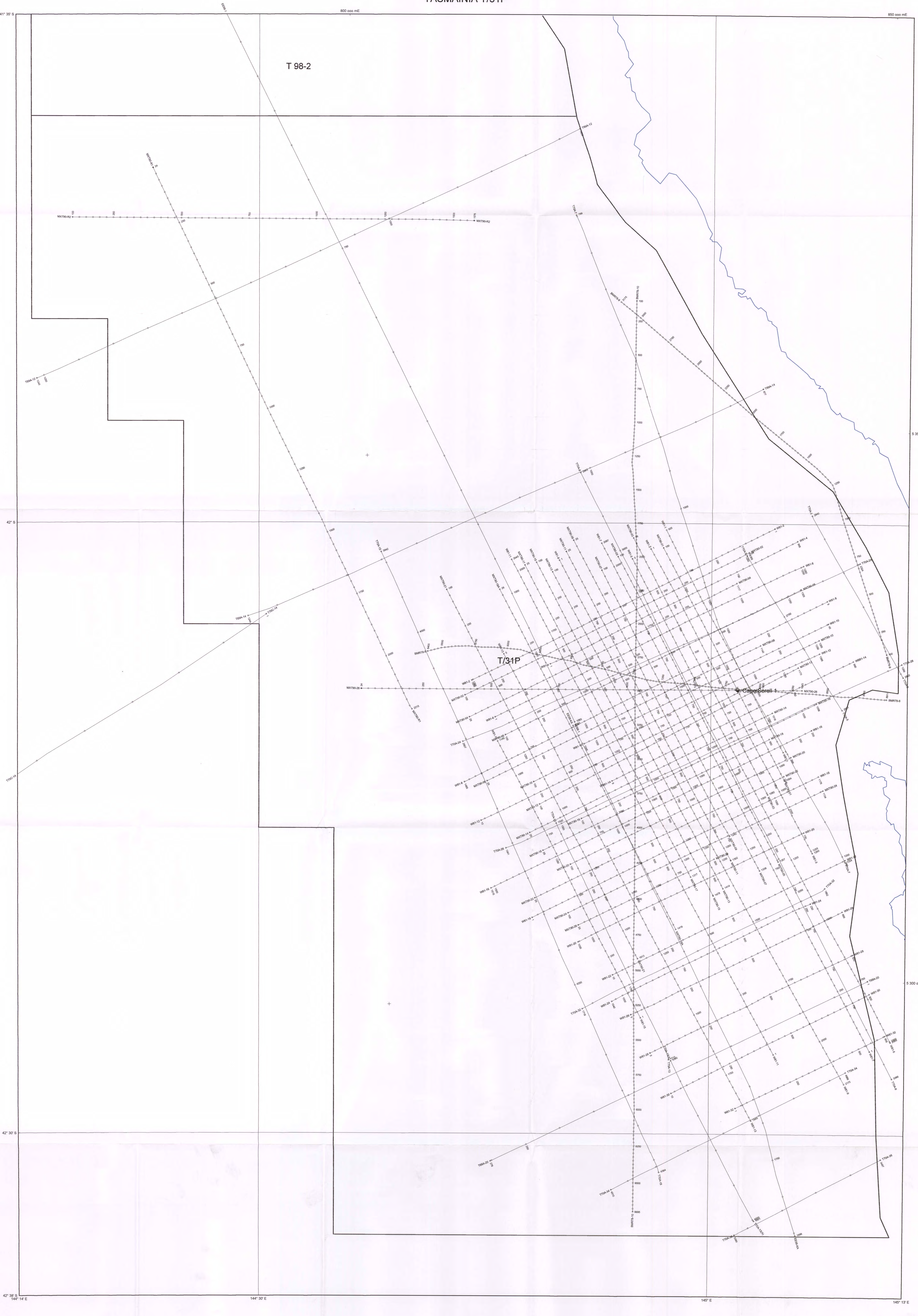
ROMA PETROLEUM NL
T/31P SORELL BASIN
STRATIGRAPHIC TABLE

(After Conolly & Galloway)

Figure 4

5 cm

TASMAINIA T/31P



572021

1:100000

0 2 4 6 8 10

KILOMETRES

UNIVERSAL TRANSVERSE MERCATOR PROJECTION
WGS 1984 SPHEROID
CENTRAL MERIDIAN 141° E
Mapsheet datum: "Unknown"

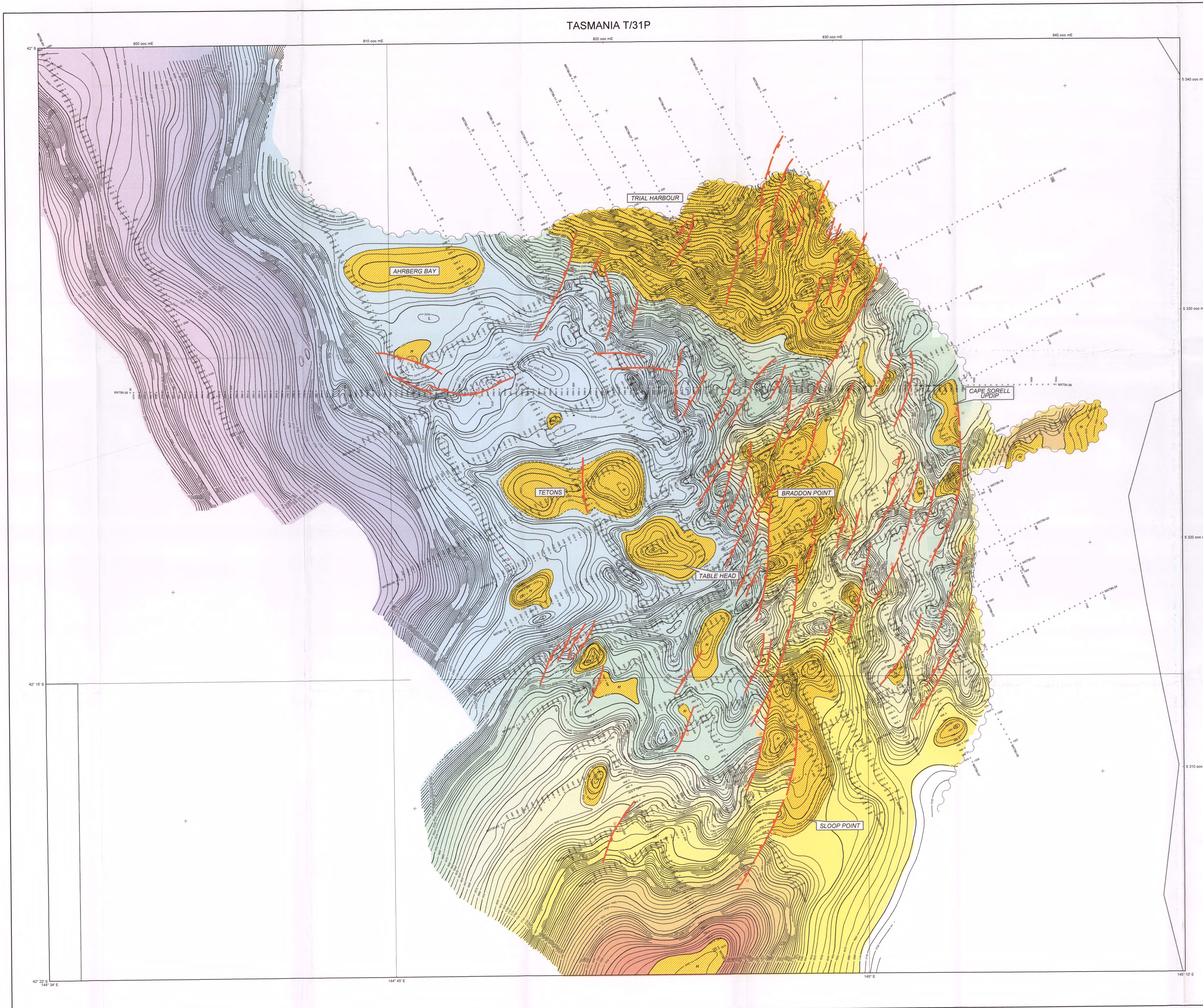
ROMA PETROLEUM NL

TASMANIA T/31P
STRAHAN SUB-BASIN
SORELL BASIN
SHOTPOINT BASEMAP

Author: R.A.Meaney	Mapsheet: T/31P_100k	Date: June 2000
Data: OIL ON FILM	File: Seimic_base_1.map	Enclosure 1

5 cm

OR-0471



1:50000

0 1 2 3 4 5

KILOMETRES

UNIVERSAL TRANSVERSE MERCATOR PROJECTION
WGS 1984 SPHEROID
CENTRAL MERIDIAN 141° E
Mapsheet datum: "Unknown"

572022

ROMA PETROLEUM NL

TASMANIA T/31P
STRAHAN SUB-BASIN
SORELL BASIN
UPPER CRETACEOUS ? TIME STRUCTURE MAP

Author: R.A.Meaney	Contour Interval 10m&20m	Date: June 2000
Drawn: OIL ON FILM	Map Sheet: MAXUS_50 File:UPPER_K_GRID_CLRFILL	Enclosure 2

5 cm

OR-0471

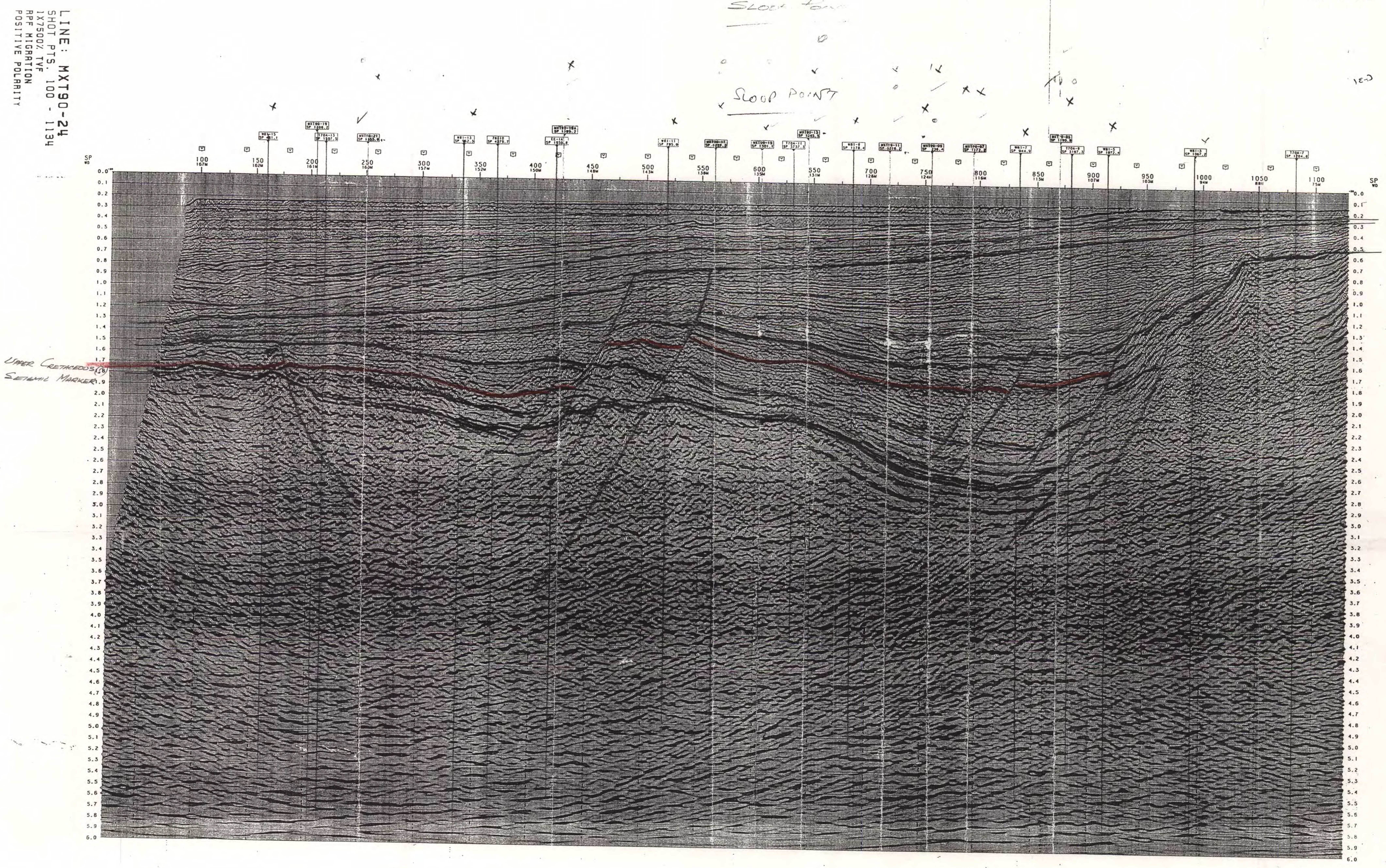
ENC 3

5 cm

572023

PSLA-90/37.

OR-0471



LINE: MXT90-24

SHOT PTS. 100 - 1134
1X7500% TVF
RPF MIGRATION
POSITIVE POLARITY

SOUTHWEST

MAXUS ENERGY CORPORATION

AREA: OFFSHORE TASMANIA
PROSPECT: T/24P

DALLAS DIGITAL CENTER:	JOB # 5382
PROCESSING DATE:	JULY 1991
DATUM PLANE:	SEA LEVEL
APPROVED BY:	DW/HH

RECORDING INFORMATION:

RECORDED FOR:	MAXUS ENERGY CORP
ACQUISITION BY:	HALLIBURTON/GSI VESSEL: MV MAGNIFICENT CREEK DATE: NOVEMBER, 1990
SOURCE:	
ENERGY SOURCE:	AIRGUN ARRAY
TOTAL GUN VOLUME:	2180 CU IN
GUN PRESSURE:	2000 PSI
GUN DEPTH:	8 M
SHOTPOINT INTERVAL:	25 M
SOURCE TO NAV POINT:	NOT AVAILABLE
INSTRUMENTS:	
SYSTEM:	TITAN 1000
FILTER:	8(18)- 180(72) HZ
SAMPLING INTERVAL:	2MS
RECORD LENGTH:	6 SECS
FORMAT:	SEG-D 316 CHANNEL
CABLE:	
TYPE OF CABLE:	STREAMER
CABLE LENGTH:	3750 M
CABLE DEPTH:	10 M
LEAD IN:	150 M
GROUP INTERVAL:	12.5 M
NO. GROUPS RECORDED:	300

WESTERN GEOPHYSICAL

Western Atlas International

PROCESSING SEQUENCE:

1. SEG-D CONVERT:
   - PROCESS SAMPLE RATE: 4 MS
   - PROCESS RECORD LENGTH: 6.144 SEC
   - NO. OF TRACES PROCESSED: 300
2. PREPROCESSING:
   - TRACE EDITING
   - GEOMETRY DESCRIPTION
   - SPHERICAL SPREADING CORRECTION
3. VELOCITY ANALYSIS: VELAN (4KM SPACING)
4. BEAM STEERING: 1-2-1 SUM, MOVE 2
5. DECONVOLUTION:
   - TYPE: SHOT/OFFSET CONSISTENT MIN PHASE INVERSE FILTER
   - PREDICTIVE DISTANCE: 4 MS
   - OPERATOR LENGTH: 240 MS
   - NUMBER OF WINDOWS: 1 (SPATIAL VARIANT)
   - PREWHITENING: 0.01%
6. VELOCITY ANALYSIS: VELAN (2KM SPACING)
7. 3800% OPTIMUM FOLD REDUCTION
   - TYPE: EQUAL MOVEOUT BINS
8. F-K DEMULTIPLE:
   - TYPE: PASS POS AND ZERO DIPS
9. DIP MOVEOUT CORRECTION
   - COMMON OFFSETS TO 3800%
10. VELOCITY ANALYSIS: VELAN (1KM SPACING)
11. 3800% MOVEOUT AND STACK
12. HIGH DIP MIGRATION:
    - RESIDUAL METHOD
    - 100% VELOCITIES
13. RADIAL PREDICTIVE FILTER
14. TIME VARIANT FILTER:

TIME ZONE SEC	LOW CUT HZ	DB/OCT	HIGH CUT HZ	DB/OCT
0.0-1.2	8	18	70	72
-2.2	6	18	50	56
-3.2	6	18	35	48

FILTER TIMES VARY WITH TIME STRUCTURE

15. GAIN: BLENDED (2 PASS) TRACE EQUALIZATION

150 M — 3750 M — ENERGY SOURCE: AIRGUN

LEGEND
- VELOCITY ANALYSIS
- INTERSECTIONS
- WD WATER DEPTHS

DISPLAY:

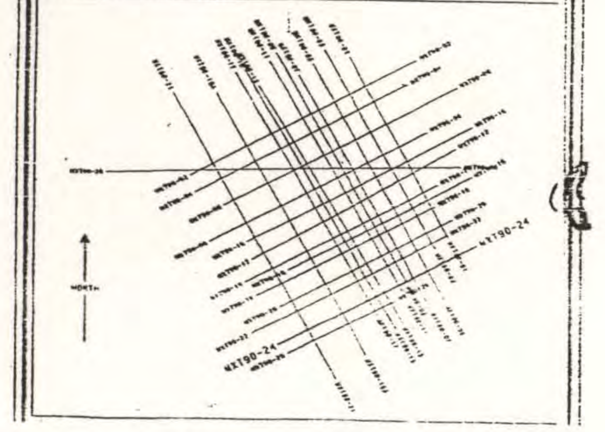
HORIZONTAL SCALE:	10 TRACES PER CENTIMETER
VERTICAL SCALE:	10 CENTIMETERS PER SECOND
PLOTTING GAIN:	+ 12 DB
PLAYBACK POLARITY:	POSITIVE NUMBER - BLACK PEAK

NOTATIONS:

FIELD POLARITY CONVENTION:
COMPRESSION PULSE IS A NEGATIVE NUMBER
SP LOCATION AT GUN POSITION
DATA CORRECTED TO SEA LEVEL (-39 MS TOTAL SHIFT)
PLOTTING EVERY OTHER TRACE

HORIZONTAL SCALE: 1 CM = 250 M
40 TRACE INTERVALS = 1 KM
2.0 KM

LINE LOCATION MAP



MXT90-24 MIGRATED.

ENC 4

572024

0357-044

LINE: MXT90-17

SHOT PTS. 1317 - 26

1X7500% TVF

RPF MIGRATION

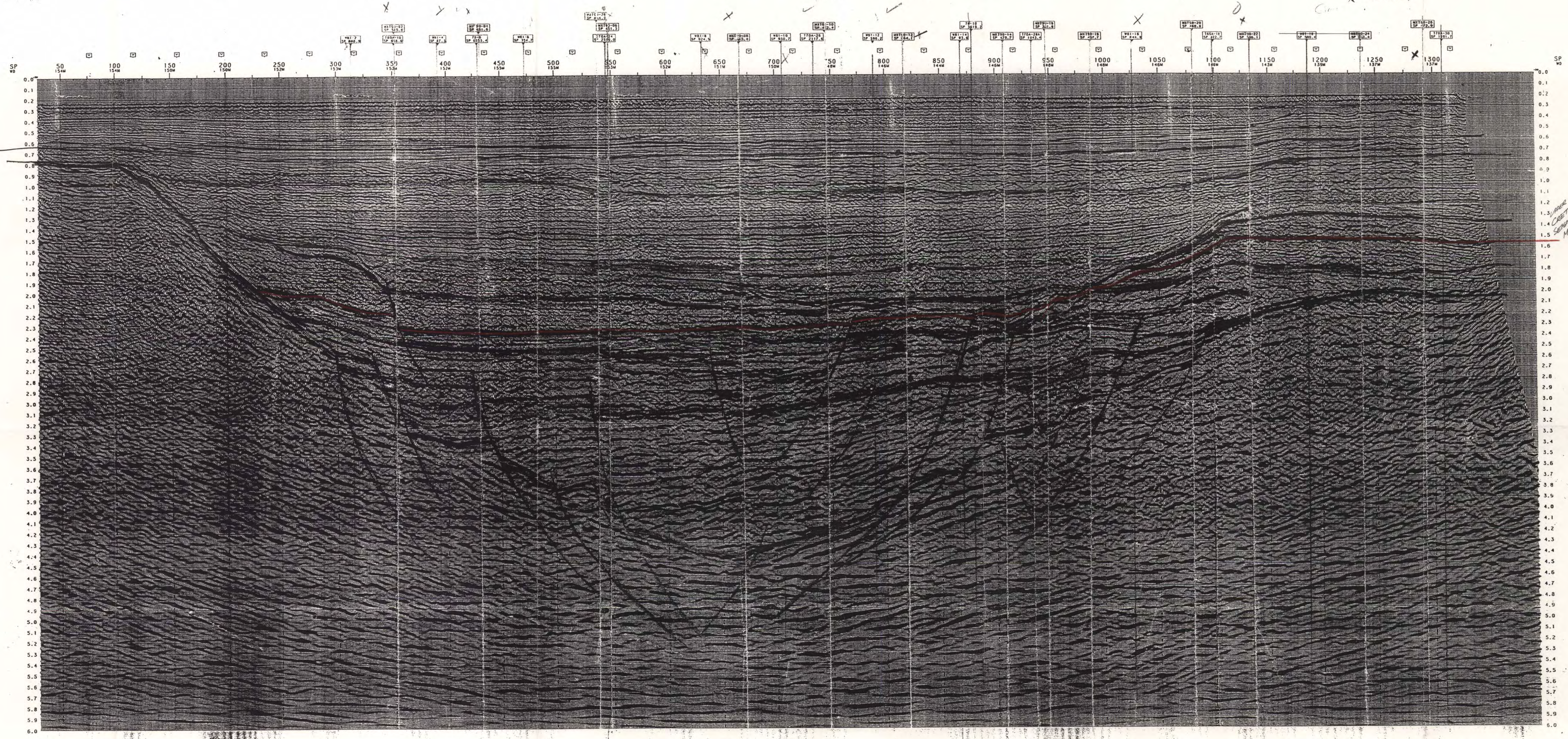
POSITIVE POLARITY

PSLA-90/37

OR-0471

NORTHWEST

Sloop Point Prospect



MAXUS ENERGY CORPORATION

AREA: OFFSHORE TASMANIA

PROSPECT: T/24P

DALLAS DIGITAL CENTER:	JOB # 5382
PROCESSING DATE:	JULY 1991
DATUM PLANE:	SEA LEVEL
APPROVED BY:	DW/HH

RECORDING INFORMATION:

RECORDED FOR:	MAXUS ENERGY CORP
ACQUISITION BY:	HALLIBURTON/GSI

SOURCE:

ENERGY SOURCE:	AIRGUN ARRAY
TOTAL GUN VOLUME:	2180 CU IN
GUN PRESSURE:	2000 PSI
SHOTPOINT INTERVAL:	25 M
SOURCE TO NAV POINT:	NOT AVAILABLE

WESTERN GEOPHYSICAL

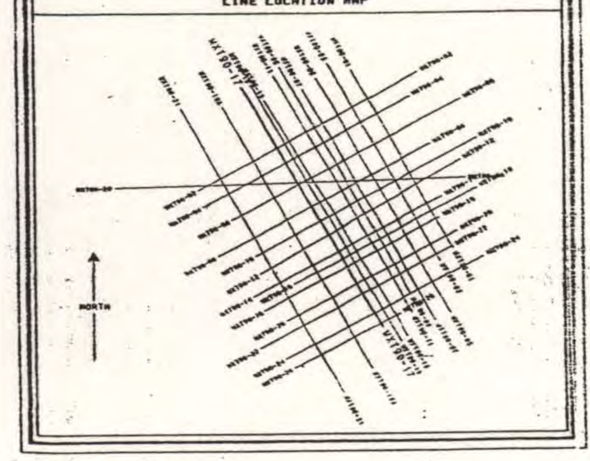
PROCESSING SEQUENCE:

DISPLAY:

NOTATIONS:

HORIZONTAL SCALE: 1 CM = 250 M

LINE LOCATION MAP



MXT90-17 MIGRATED

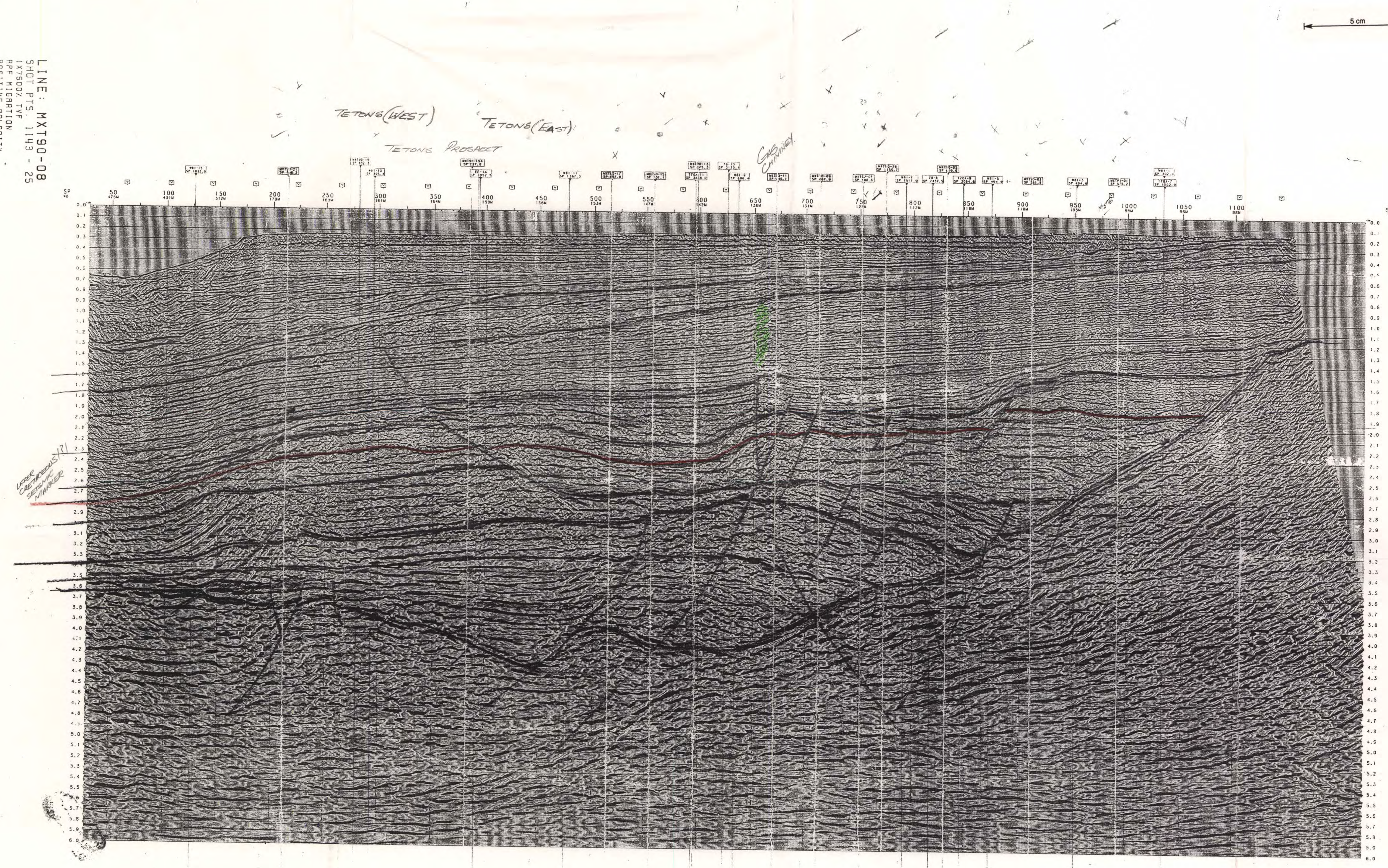
572025

PSLA- 90/37.

ENC 5

OR-0471

LINE: MXT90-08
SHOT PTS. 1143 - 25
1X7500% TVF
RPF MIGRATION
POSITIVE POLARITY



SOUTHWEST

MAXUS ENERGY CORPORATION

AREA: OFFSHORE TASMANIA
PROSPECT: T/24P

DALLAS DIGITAL CENTER:	JOB # 5382
PROCESSING DATE:	JULY 1991
DATUM PLANE:	SEA LEVEL
APPROVED BY:	DW/HH

RECORDING INFORMATION:

RECORDED FOR:	MAXUS ENERGY CORP
ACQUISITION BY:	HALLIBURTON GSI VESSEL: MV MAGNIFICENT CHEIN DATE: NOVEMBER, 1990

SOURCE:

ENERGY SOURCE:	AIRGUN ARRAY
TOTAL GUN VOLUME:	2180 CU IN
GUN PRESSURE:	2000 PSI
GUN DEPTH:	8 M

WESTERN GEOPHYSICAL

PROCESSING SEQUENCE:

LEGEND

DISPLAY:

NOTATIONS:

HORIZONTAL SCALE: 1 CM = 250 M

LINE LOCATION MAP

572026 LINE: MXT90-28
0357-652
SHOT PTS. 1643- 24
1X7500% TVF
APF MIGRATION
POSITIVE POLARITY

ENC 6

C-3. OR-0471

PSLA- 90/37.

LINE: MXT90-28
SHOT PTS. 1643- 24
1X7500% TVF
APF MIGRATION
POSITIVE POLARITY

MAXUS ENERGY CORPORATION

AREA: OFFSHORE TASMANIA
PROSPECT: T/24P

DALLAS DIGITAL CENTER:	JOB # 5251
PROCESSING DATE:	FEBRUARY 1991
DATUM PLANE:	SEA LEVEL
APPROVED BY:	DW/HH

RECORDING INFORMATION:

RECORDED FOR:	MAXUS ENERGY CORP
ACQUISITION BY:	HALLIBURTON/GSI
	VESSEL: MV MAGNIFICENT CREEK
	DATE: OCTOBER, 1990

SOURCE:

ENERGY SOURCE:	AIRGUN ARRAY
TOTAL GUN VOLUME:	2180 CU IN
GUN PRESSURE:	2000 PSI
GUN DEPTH:	10 M
SHOTPOINT INTERVAL:	25 M
SOURCE TO WAY POINT:	NOT AVAILABLE

INSTRUMENTS:

SYSTEM:	TITAN 1000
FILTER:	[illegible]
SAMPLING INTERVAL:	2MS
RECORD LENGTH:	6 SECS
FORMAT:	SEG-D [illegible] CHANNEL

CABLE:

TYPE OF CABLE:	STREAMER
CABLE LENGTH:	3750 M
CABLE DEPTH:	10 M
LEAD IN:	156 M
GROUP INTERVAL:	12.5 M
NO. GROUPS RECORDED:	300

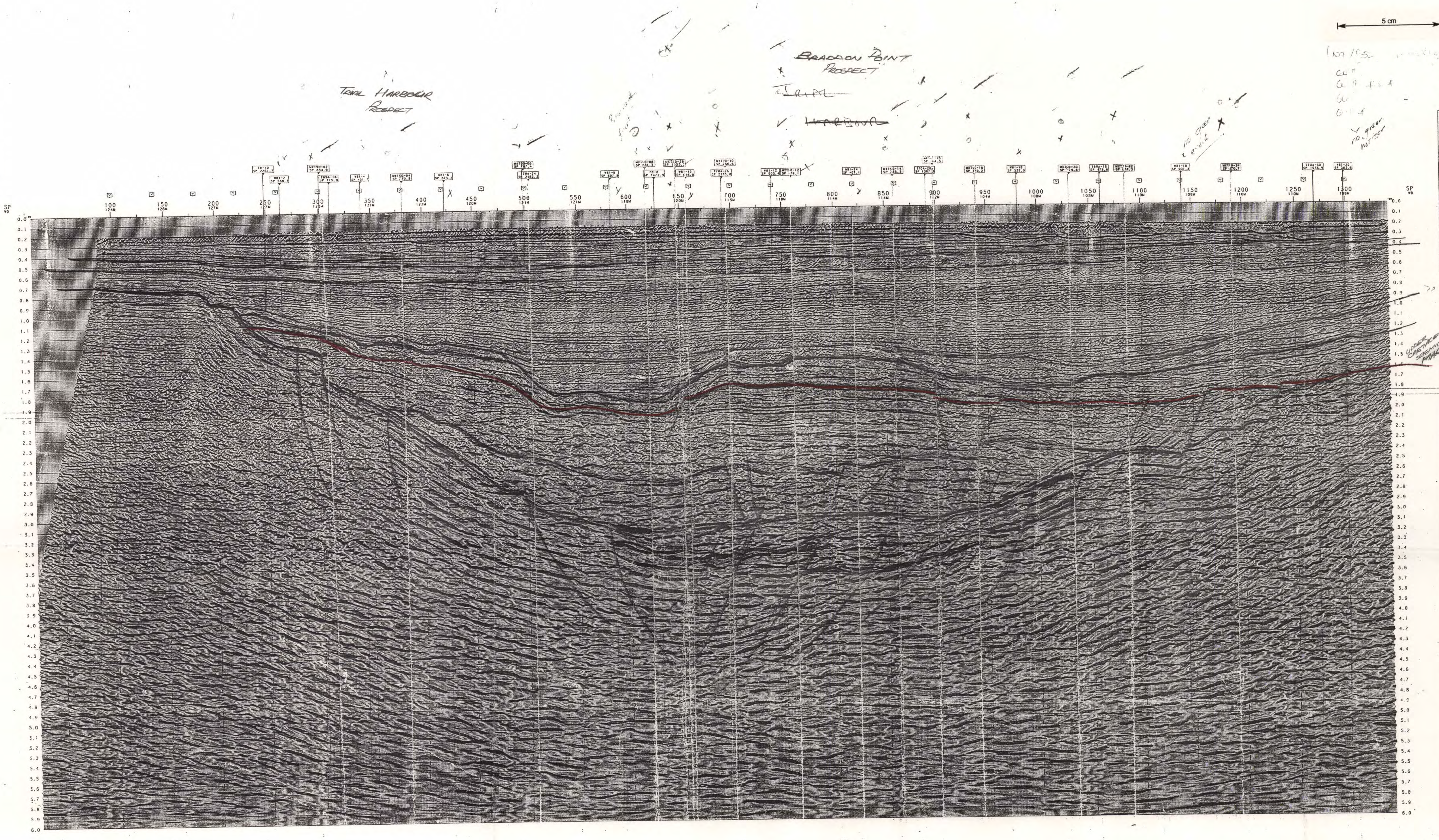
WESTERN GEOPHYSICAL

PROCESSING SEQUENCE:

1. SEG-D CONVERT:

MXT90-28 MIGRATED.

LINE: MXT90-05
SHOT PTS. 100 - 1346
1X7500% TVF
RPF MIGRATION
POSITIVE POLARITY



572027
PSLA- 90/37

ENC 7

OR-0471

LINE: MXT90-05

SHOT PTS. 100 - 1346
1 X 7500 % TVF
RPF MIGRATION
POSITIVE POLARITY

NORTHWEST

MAXUS
ENERGY CORPORATION

AREA: OFFSHORE TASMANIA
PROSPECT: T/24P

DALLAS DIGITAL CENTER:	JOB # 5382
PROCESSING DATE:	JULY 1991
DATUM PLANE:	SEA LEVEL
APPROVED BY:	DM/HH

RECORDING INFORMATION:

RECORDED FOR:	MAXUS ENERGY CORP
ACQUISITION BY:	HALLIBURTON/GSI VESSEL: MV MAGNIFICENT CREEK DATE: DECEMBER, 1990
SOURCE:	
ENERGY SOURCE:	AIRGUN ARRAY
TOTAL GUN VOLUME:	2180 CU IN
GUN PRESSURE:	2000 PSI
GUN DEPTH:	6 M
SHOTPOINT INTERVAL:	25 M
SOURCE TO NAV POINT:	NOT AVAILABLE
INSTRUMENTS:	
SYSTEM:	TITAN 1000
FILTER:	8(18)- 180(72) HZ
SAMPLING INTERVAL:	2MS
RECORD LENGTH:	6 SECS
FORMAT:	SEG-D 316 CHANNEL
CABLE:	
TYPE OF CABLE:	STREAMER
CABLE LENGTH:	3750 M
CABLE DEPTH:	10 M
LEAD IN:	150 M
GROUP INTERVAL:	12.5 M
NO. GROUPS RECORDED:	300

DALLAS DIGITAL CENTER
WESTERN GEOPHYSICAL
Western Atlas International

PROCESSING SEQUENCE:

1. SEG-D CONVERT:
   PROCESS SAMPLE RATE: 4 MS
   PROCESS RECORD LENGTH: 6.144 SEC
   NO. OF TRACES PROCESSED: 300
2. PREPROCESSING:
   TRACE EDITING
   GEOMETRY DESCRIPTION
   SPHERICAL SPREADING CORRECTION
3. VELOCITY ANALYSIS: VELAN™ (4KM SPACING)
4. BEAM STEERING: 1-2-1 SUM, MOVE 2
5. DECONVOLUTION:
   TYPE: SHOT/OFFSET CONSISTENT MIN PHASE INVERSE FILTER
   PREDICTIVE DISTANCE: 4 MS
   OPERATOR LENGTH: 240 MS
   NUMBER OF WINDOWS: 1 (SPATIAL VARIANT)
   PREWHITENING: 0.01%
6. VELOCITY ANALYSIS: VELAN™ (2KM SPACING)
7. 3800% OPTIMUM FOLD REDUCTION:
   TYPE: EQUAL MOVEOUT SUMS
8. F-K DEMULTIPLE:
   TYPE: PASS POS AND ZERO DIPS
9. DIP MOVEOUT CORRECTION
   COMMON OFFSETS TO 3800%
10. VELOCITY ANALYSIS: VELAN™ (1KM SPACING)
11. 3800% MOVEOUT AND STACK
12. HIGH DIP MIGRATION:
    RESIDUAL METHOD
    100% VELOCITIES
13. RADIAL PREDICTIVE FILTER
14. TIME VARIANT FILTER:

TIME ZONE SEC	LOW CUT HZ	DB/OCT	HIGH CUT HZ	DB/OCT
0.0-1.2	8	18	70	72
-2.2	6	18	50	36
-3.2	6	18	35	48

FILTER TIMES VARY WITH TIME STRUCTURE

15. CHIN: BLENDED (2 PASS) TRACE EQUALIZATION

3750 M
150 M
ENERGY SOURCE, AIRGUN

LEGEND
VELOCITY ANALYSIS
INTERSECTIONS
WD WATER DEPTHS

DISPLAY:

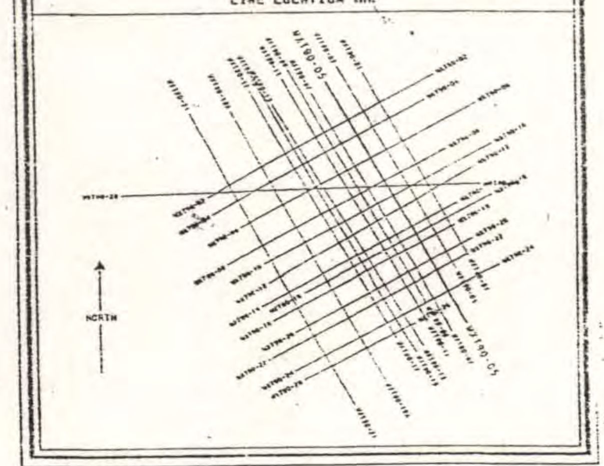
HORIZONTAL SCALE:	10 TRACES PER CENTIMETER
VERTICAL SCALE:	10 CENTIMETERS PER SECOND
PLOTTING GAIN:	+ 12 DB
PLAYBACK POLARITY:	POSITIVE NUMBER - BLACK PEAK

NOTATIONS:

FIELD POLARITY CONVENTION:
COMPRESSION PULSE IS A NEGATIVE NUMBER
SP LOCATION AT CMM POSITION
DATA CORRECTED TO SEA LEVEL (-39 MS TOTAL SHIFT)
PLOTTING EVERY OTHER TRACE

HORIZONTAL SCALE: 1 CM = 250 M
40 TRACE INTERVALS - 1 KM
2.0 KM

LINE LOCATION MAP



MXT90-05 MIGRATION

572028

LINE: MXT90-10
SHOT PTS. 100 - 1266
1X7500% TVF 6352051
RPF MIGRATION C-31
POSITIVE POLARITY

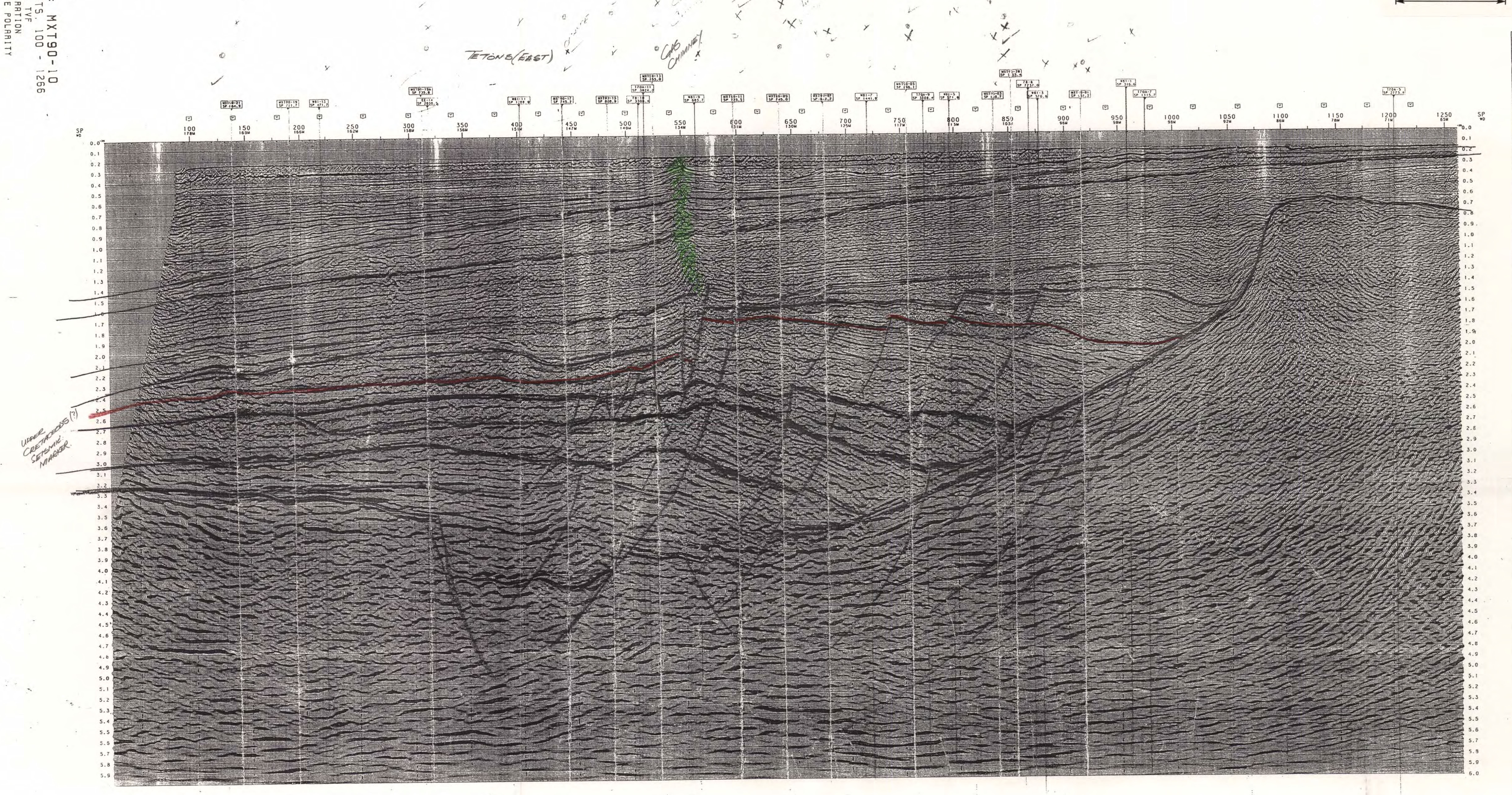
PSLA- 90/37.

ENC 8

O.K.
OR-0471

LINE: MXT90-10
SHOT PTS. 100 - 1266
1X7500% TVF
RPF MIGRATION
POSITIVE POLARITY

5 cm



SOUTHWEST

MAXUS ENERGY CORPORATION

AREA: OFFSHORE TASMANIA
PROSPECT: T/24P

DALLAS DIGITAL CENTER:	JOB # 5382
PROCESSING DATE:	JULY 1991
DATUM PLANE:	SEA LEVEL
APPROVED BY:	DW/HH

RECORDING INFORMATION:

RECORDED FOR:	MAXUS ENERGY CORP
ACQUISITION BY:	HALLIBURTON/GSI VESSEL: MV MAGNIFICENT CREEK DATE: NOVEMBER, 1990
SOURCE:	
ENERGY SOURCE:	AIRGUN ARRAY
TOTAL GUN VOLUME:	2180 CU IN
GUN PRESSURE:	2000 PSI
GUN DEPTH:	8 M
SHOTPOINT INTERVAL:	25 M
SOURCE TO NAV POINT:	NOT AVAILABLE
INSTRUMENTS:	
SYSTEM:	TITAN 1000
FILTER:	8(18)- 180(72) HZ
SAMPLING INTERVAL:	2MS
RECORD LENGTH:	6 SECS
FORMAT:	SEG-D 318 CHANNEL
CABLE:	
TYPE OF CABLE:	STREAMER
CABLE LENGTH:	3750 M
CABLE DEPTH:	10 M
LEAD IN:	150 M
GROUP INTERVAL:	12.5 M
NO. GROUPS RECORDED:	306

DALLAS DIGITAL CENTER
Western Atlas International
WESTERN GEOPHYSICAL

PROCESSING SEQUENCE:

1. SEG-D CONVERT:
   PROCESS SAMPLE RATE: 4 MS
   PROCESS RECORD LENGTH: 6.144 SEC
   NO. OF TRACES PROCESSED: 300
2. PREPROCESSING:
   TRACE EDITING
   GEOMETRY DESCRIPTION
   SPHERICAL SPREADING CORRECTION
3. VELOCITY ANALYSIS: VELAN* (4KM SPACING)
4. BEAM STEERING: 1-2-1 SUM, MOVE 2
5. DECONVOLUTION:
   TYPE: SHOT/OFFSET CONSISTENT MIN PHASE INVERSE FILTER
   PREDICTIVE DISTANCE: 4 MS
   OPERATOR LENGTH: 240 MS
   NUMBER OF WINDOWS: 1 (SPATIAL VARIANT)
   PREWHITENING: 0.01%
6. VELOCITY ANALYSIS: VELAN* (2KM SPACING)
7. 3800% OPTIMUM FOLD REDUCTION:
   TYPE: EQUAL MOVEOUT BINS
8. F-K DEMULTIPLE:
   TYPE: PASS POS AND ZERO DIPS
9. DIP MOVEOUT CORRECTION
   COMMON OFFSETS TO 3800%
10. VELOCITY ANALYSIS: VELAN* (1KM SPACING)
11. 3800% MOVEOUT AND STACK
12. HIGH DIP MIGRATION:
    RESIDUAL METHOD
    100% VELOCITIES
13. RADIAL PREDICTIVE FILTER
14. TIME VARIANT FILTER:

TIME ZONE SEC	LOW CUT HZ	LOW CUT DB/OCT	HIGH CUT HZ	HIGH CUT DB/OCT
0.0-1.2	4	18	70	72
-2.2	6	18	50	50
-3.2	6	18	35	48

FILTER TIMES VARY WITH TIME STRUCTURE

15. GAIN: BLENDED (7 PASS) TRACE EQUALIZATION

150 M — 3750 M
ENERGY SOURCE: AIRGUN

LEGEND
VELOCITY ANALYSIS
INTERSECTIONS
WATER DEPTHS

DISPLAY:

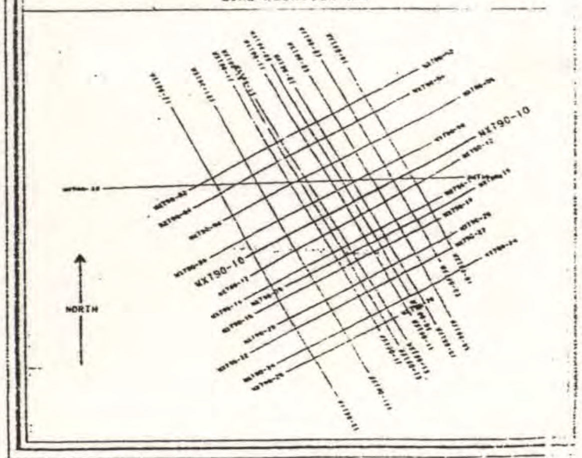
HORIZONTAL SCALE:	10 TRACES PER CENTIMETER
VERTICAL SCALE:	10 CENTIMETERS PER SECOND
PLOTTING GAIN:	- 12 DB
PLAYBACK POLARITY:	POSITIVE NUMBER - BLACK PEAK

NOTATIONS:

FIELD POLARITY CONVENTION:
COMPRESSION PULSE IS A NEGATIVE NUMBER
SP LOCATION AT GUN POSITION
DATA CORRECTED TO SEA LEVEL (-39 MS TOTAL SHIFT)
PLOTTING EVERY OTHER TRACE

HORIZONTAL SCALE: 1 CM = 250 M
40 TRACE INTERVALS - 1 KM
2.0 KM

LINE LOCATION MAP



MXT90-10 MIGRATED.

5 cm

572029

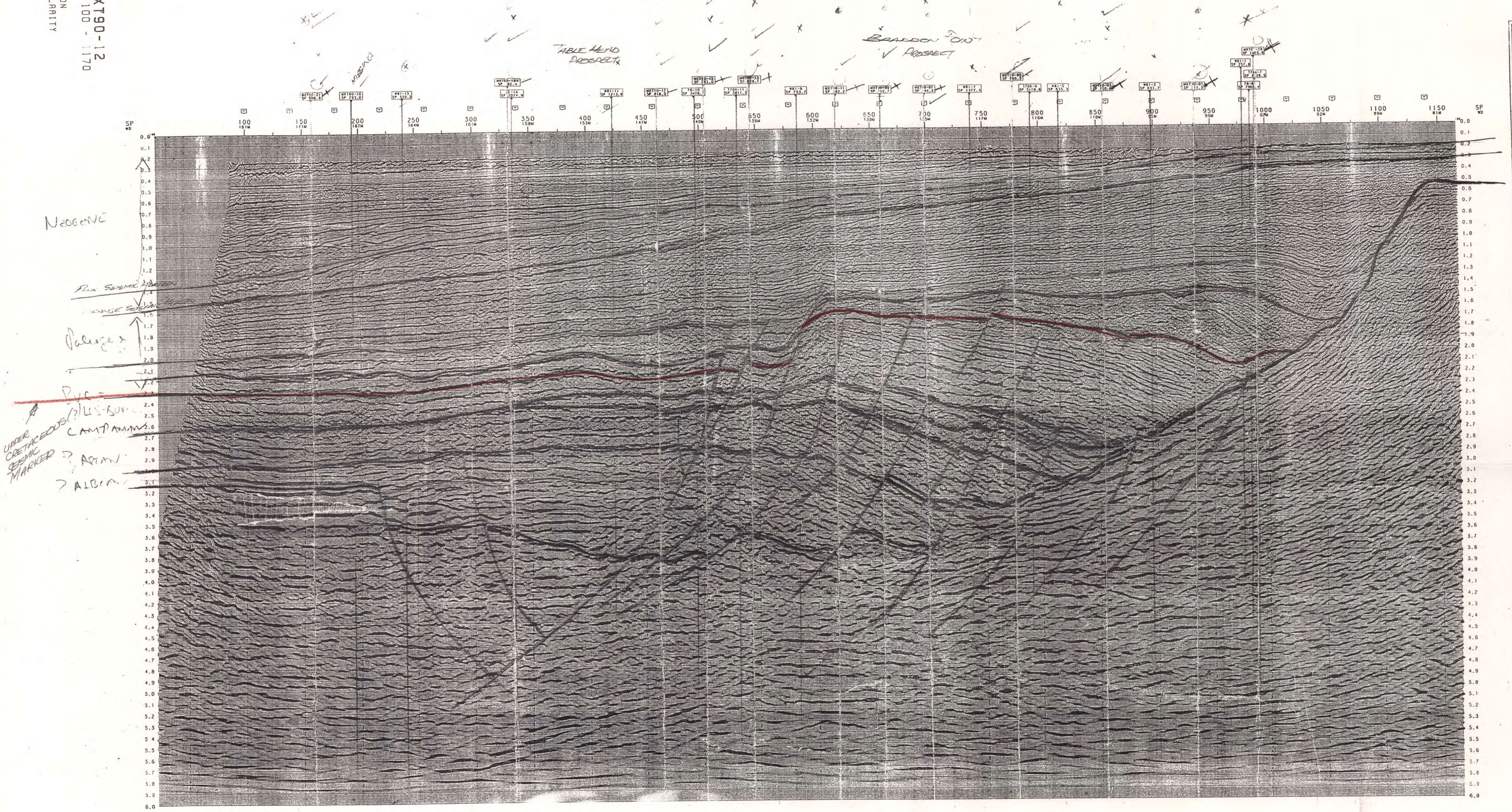
LINE: MXT90-12
SHOT PTS. 100 - 1170
1X7500% TVF
RPF MIGRATION
POSITIVE POLARITY

PSLA- 90/37.

ENC 9

OR-0471

LINE: MXT90-12
SHOT PTS. 100 - 1170
1X7500% TVF
RPF MIGRATION
POSITIVE POLARITY



SOUTHWEST

MAXUS
ENERGY CORPORATION

AREA: OFFSHORE TASMANIA
PROSPECT: T/24P

DALLAS DIGITAL CENTER:	JOB # 5382
PROCESSING DATE:	JULY 1991
DATUM PLANE:	SEA LEVEL
APPROVED BY:	DW/MH

RECORDING INFORMATION:

RECORDED FOR:	MAXUS ENERGY CORP
ACQUISITION BY:	HALLIBURTON/GSI VESSEL: MV MAGNIFICENT CREEK DATE: NOVEMBER, 1990
SOURCE:	
ENERGY SOURCE:	AIRGUN ARRAY
TOTAL GUN VOLUME:	2180 CU IN
GUN PRESSURE:	2000 PSI
GUN DEPTH:	8 M
SHOTPOINT INTERVAL:	25 M
SOURCE TO NAV POINT:	NOT AVAILABLE
INSTRUMENTS:	
SYSTEM:	TITAN 1080
FILTER:	8(18)- 180(72) HZ
SAMPLING INTERVAL:	2MS
RECORD LENGTH:	6 SECS
FORMAT:	SEG-D 316 CHANNEL
CABLE:	
TYPE OF CABLE:	STREAMER
CABLE LENGTH:	3750 M
CABLE DEPTH:	10 M
LEAD IN:	150 M
GROUP INTERVAL:	12.5 M
NO. GROUPS RECORDED:	300

DALLAS DIGITAL CENTER

WESTERN GEOPHYSICAL
Western Atlas International

PROCESSING SEQUENCE:

1. SEG-D CONVERT:
   - PROCESS SAMPLE RATE: 4 MS
   - PROCESS RECORD LENGTH: 6.144 SEC
   - NO. OF TRACES PROCESSED: 300
2. PREPROCESSING:
   - TRACE EDITING
   - GEOMETRY DESCRIPTION
   - SPHERICAL SPREADING CORRECTION
3. VELOCITY ANALYSIS: VELAN* (4KM SPACING)
4. BEAM STEERING: 1-2-1 SUM, MOVE 2
5. DECONVOLUTION:
   - TYPE: SHOT/OFFSET CONSISTENT MIN PHASE INVERSE FILTER
   - PREDICTIVE DISTANCE: 4 MS
   - OPERATOR LENGTH: 240 MS
   - NUMBER OF WINDOWS: 1 (SPATIAL VARIANT)
   - PREWHITENING: 0.01%
6. VELOCITY ANALYSIS: VELAN* (2KM SPACING)
7. 3800% OPTIMUM FOLD REDUCTION:
   - TYPE: EQUAL MOVEOUT BINS
8. F-K DEMULTIPLE:
   - TYPE: PASS POS AND ZERO DIPS
9. DIP MOVEOUT CORRECTION
   - COMMON OFFSETS TO 3800%
10. VELOCITY ANALYSIS: VELAN* (1KM SPACING)
11. 3800% MOVEOUT AND STACK
12. HIGH DIP MIGRATION:
    - RESIDUAL METHOD
    - 100% VELOCITIES
13. RADIAL PREDICTIVE FILTER
14. TIME VARIANT FILTER:

TIME ZONE SEC	LOW CUT HZ	LOW CUT DB/OCT	HIGH CUT HZ	HIGH CUT DB/OCT
0.0-1.2	8	18	70	72
-2.2	6	18	50	56
-3.2	6	18	35	48

FILTER TIMES VARY WITH TIME STRUCTURE

15. GAIN: BLENDED (2 PASS) TRACE EQUALIZATION

3750 M — 150 M — ENERGY SOURCE: AIRGUN

LEGEND
- VELOCITY ANALYSIS
- INTERSECTIONS
- WD WATER DEPTHS

DISPLAY:

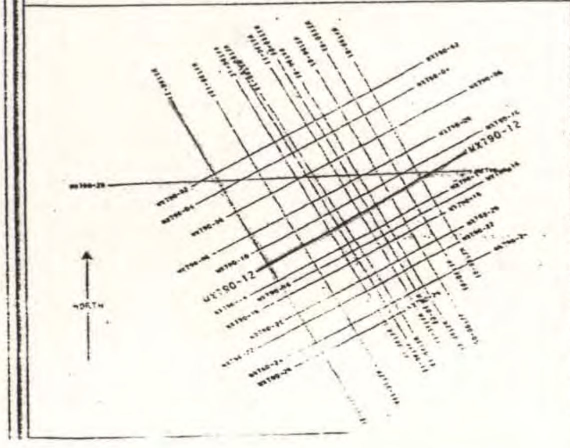
HORIZONTAL SCALE:	10 TRACES PER CENTIMETER
VERTICAL SCALE:	10 CENTIMETERS PER SECOND
PLOTTING GAIN:	+ 12 DB
PLAYBACK POLARITY:	POSITIVE NUMBER - BLACK PEAK

NOTATIONS:

FIELD POLARITY CONVENTION:
COMPRESSION PULSE IS A NEGATIVE NUMBER
SP LOCATION AT GUN POSITION
DATA CORRECTED TO SEA LEVEL (-39 MS TOTAL SHIFT)
PLOTTING EVERY OTHER TRACE

HORIZONTAL SCALE: 1 CM = 250 M
40 TRACE INTERVALS = 1 KM
2.0 KM

LINE LOCATION MAP



MXT90-12 MIGRATION

(357-042)

LINE: MXT90-02

ENC 10

SHOT PTS. 100 - 1265

1X7500% TVF

OR-0471

RPF MIGRATION

POSITIVE POLARITY

PSLA-90/37.

SOUTHWEST

5 cm

572030

TRIAL HARBOUR PROSPECT

MAXUS ENERGY CORPORATION

AREA: OFFSHORE TASMANIA

PROSPECT: T/24P

DALLAS DIGITAL CENTER:	JOB • 5382
PROCESSING DATE:	JULY 1991
DATUM PLANE:	SEA LEVEL
APPROVED BY:	DW/HH

RECORDING INFORMATION:

RECORDED FOR:	MAXUS ENERGY CORP
ACQUISITION BY:	HALLIBURTON/GSI
	VESSEL: MV MAGNIFICENT CREEK
	DATE: NOVEMBER, 1990

SOURCE:

ENERGY SOURCE:	AIRGUN ARRAY
TOTAL GUN VOLUME:	2180 CU IN

WESTERN GEOPHYSICAL

PROCESSING SEQUENCE:

DISPLAY:

NOTATIONS:

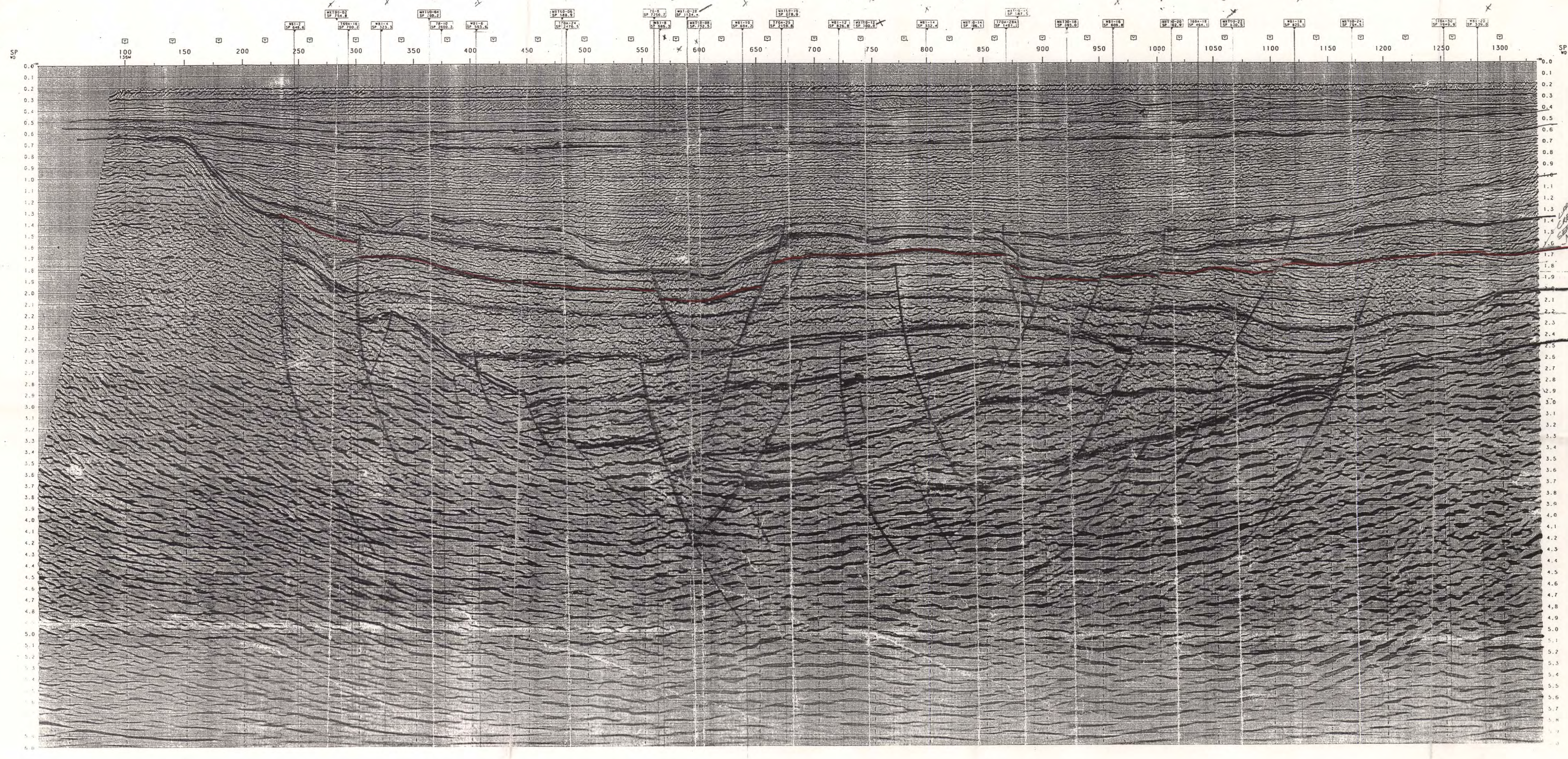
HORIZONTAL SCALE: 1 CM = 250 M

LINE LOCATION MAP

LINE: MXT90-02
SHOT PTS. 100 - 1265
1X7500% TVF
RPF MIGRATION
POSITIVE POLARITY

LINE: MXT90-07
SHOT PTS. 100 - 1338
1X7500% TVF
RPF MIGRATION
POSITIVE POLARITY

572031



LINE: MXT90-07
SHOT PTS. 100 - 1338
1X7500% TVF
RPF MIGRATION
POSITIVE POLARITY
NORTHWEST

MAXUS ENERGY CORPORATION

AREA: OFFSHORE TASMANIA
PROSPECT: T/24P

DALLAS DIGITAL CENTER:	JOB # 5382
PROCESSING DATE:	JULY 1991
DATUM PLANE:	SEA LEVEL
APPROVED BY:	DM/HH

RECORDING INFORMATION:

RECORDED FOR: MAXUS ENERGY CORP
ACQUISITION BY: HALLIBURTON/GSI
VESSEL: MV MAGNIFICENT CREEK
DATE: DECEMBER, 1990

SOURCE:
ENERGY SOURCE: AIRGUN ARRAY
TOTAL GUN VOLUME: 2180 CU IN
GUN PRESSURE: 2000 PSI
GUN DEPTH: 8 M
SHOTPOINT INTERVAL: 25 M
SOURCE TO NAV POINT: NOT AVAILABLE

INSTRUMENTS:
SYSTEM: TITAN 1000
FILTER: 8(18)- 180(72) HZ
SAMPLING INTERVAL: 2MS
RECORD LENGTH: 6 SECS
FORMAT: SEG-D 316 CHANNEL

CABLE:
TYPE OF CABLE: STREAMER
CABLE LENGTH: 3750 M
CABLE DEPTH: 10 M
LEAD IN: 150 M
GROUP INTERVAL: 12.5 M
NO. GROUPS RECORDED: 300

DALLAS DIGITAL CENTER
Western Atlas International
WESTERN GEOPHYSICAL

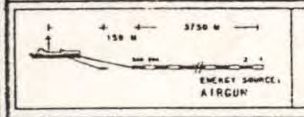
PROCESSING SEQUENCE:

1. SEG-D CONVERT:
   PROCESS SAMPLE RATE: 4 MS
   PROCESS RECORD LENGTH: 6.144 SEC
   NO. OF TRACES PROCESSED: 300
2. PREPROCESSING:
   TRACE EDITING
   GEOMETRY DESCRIPTION
   SPHERICAL SPREADING CORRECTION
3. VELOCITY ANALYSIS: VELAN* (4KM SPACING)
4. BEAM STEERING: 1-2-1 SUM, MOVE 2
5. DECONVOLUTION:
   TYPE: SHOT/OFFSET CONSISTENT MIN PHASE INVERSE FILTER
   PREDICTIVE DISTANCE: 4 MS
   OPERATOR LENGTH: 240 MS
   NUMBER OF WINDOWS: 1 (SPATIAL VARIANT)
   PREWHITENING: 0.01%
6. VELOCITY ANALYSIS: VELAN* (2KM SPACING)
7. 3800% OPTIMUM FOLD REDUCTION:
   TYPE: EQUAL MOVEOUT BINS
8. F-K DEMULTIPLE:
   TYPE: PASS POS AND ZERO DIPS
9. DIP MOVEOUT CORRECTION
   COMMON OFFSETS TO 3800%
10. VELOCITY ANALYSIS: VELAN* (1KM SPACING)
11. 3800% MOVEOUT AND STACK
12. HIGH DIP MIGRATION:
    RESIDUAL METHOD
    100% VELOCITIES
13. RADIAL PREDICTIVE FILTER
14. TIME VARIANT FILTER:

TIME ZONE SEC	LOW CUT HZ	LOW CUT DB/OCT	HIGH CUT HZ	HIGH CUT DB/OCT
0.0-1.7	8	18	70	72
-2.2	6	18	50	56
3.2	6	18	35	48

FILTER TIMES VARY WITH TIME STRUCTURE

15. GAIN: BLENDED (2 PASS) TRACE EQUALIZATION



LEGEND
VELOCITY ANALYSIS
INTERSECTIONS
WD WATER DEPTHS

DISPLAY:

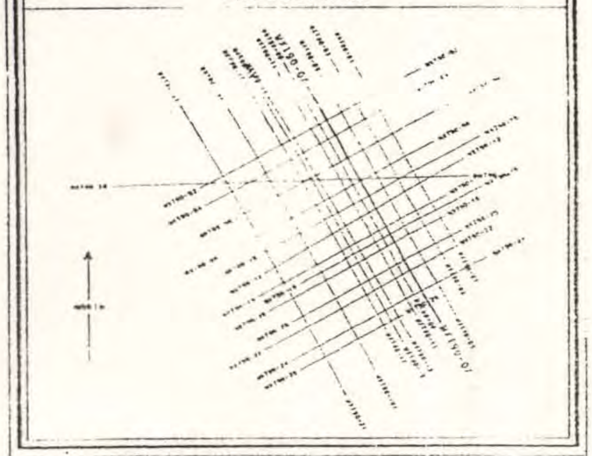
HORIZONTAL SCALE: 10 TRACES PER CENTIMETER
VERTICAL SCALE: 10 CENTIMETERS PER SECOND
PLOTTING GAIN: + 12 DB
PLAYBACK POLARITY: POSITIVE NUMBER - BLACK PEAK

NOTATIONS:

FIELD POLARITY CONVENTION:
COMPRESSION PULSE IS A NEGATIVE NUMBER
SP LOCATION AT GUN POSITION
DATA CORRECTED TO SEA LEVEL ([illegible] MS TOTAL SHIFT)
PLOTTING EVERY OTHER TRACE

HORIZONTAL SCALE 1 CM = 250 M
40 TRACE INTERVALS = 1 KM
[illegible] KM

LINE LOCATION MAP



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