



## **Exploration Permit**

# **VIC/P42**

## **Quarterly Report**

**14 November 2001 – 13 February 2002**

**Bass Strait Oil Company Ltd**

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## VIC/P42

### QUARTERLY REPORT FOR THE PERIOD

**14 NOVEMBER 2001 to 13 FEBRUARY 2002**

#### 1. PARTICIPATING INTERESTS

Bass Strait Oil Company Ltd	50% (Operator, Joint Venture Partner)
Inpex Alpha Ltd	50% (Joint Venture Partner)

#### 2. GOVERNMENT RELATED MATTERS

The Designated Authority approved a variation of the Year 2 permit conditions. The Joint Venture must acquire 250km<sup>2</sup> of 3D seismic data by 13 May 2002 to complete the Year 2 work programme.

On 27<sup>th</sup> November 2001 the Victorian Department of Natural Resources and Environment (DNRE) formally responded to our request for a variation to the second year work programme obligations and timing. In their letter they grant a suspension of the Year 2 work programme for 4 months on force majeure grounds.

Year 2 will now terminate on 13 May 2001. This does not affect the end dates of years 3 to 6 which still have the anniversary on 13 January. Under the variation BSOC is required to complete 250km<sup>2</sup> of 3D acquisition by 13 May 2001. In addition, BSOC will provide written evidence to the Designated Authority that an agreement for the 3D acquisition has been reached with a seismic contractor on or before 13 January 2002.

An application to acquire 3D seismic in Vic/P42 was submitted to the DNRE on 20<sup>th</sup> December 2001. This application was made pursuant to Clause 401 of the Specific Requirements as to Offshore Petroleum Exploration and Production (1999) issued under the Petroleum (Submerged Lands) Acts.

Documentation for the application to shoot 3D seismic in Vic/P42 was requested from the DNRE and drafts of the following were forwarded on 6<sup>th</sup> February:

- Environment Management Plan.
- Emergency Response Plan
- HSE Management Plan
- Bass Strait Oil Company principal safety case bridging

The application assumed that Western Geco's M/V Geco Beta would be acquiring the survey.

The DNRE requested that the application to shoot the 3D seismic survey in Vic/P42 be resubmitted, as the original application letter assumed the *Nordic Explorer* would be used, not the *Geco Beta*. Comments were received from the DNRE on our Environment Management Plan, prepared by RBT Perth and these were being addressed at month's end. No comments were received on the submitted Emergency Response Plan, HSE Management Plan and Bass Strait Oil Company principal safety case bridging documents. The outstanding Oil Spill response Plan (now required as offshore refuelling of the *Geco Beta* is anticipated) will be produced after receipt of input materials from Western Geco. The Contract Plan required is being prepared by Western Geco, with reference to our submissions.

### 3. EXPLORATION ACTIVITIES

#### 3.1 Exploration well Melville-1

The Melville-1 well spudded on 17<sup>th</sup> October 2001 and was drilled to a depth of 3345 m. The well recorded minor fluorescence shows in sidewall samples in reservoir sandstones in the Latrobe Siliciclastics and Golden Beach sub-groups. Melville-1 was plugged and abandoned as a dry hole and the rig was released on 18<sup>th</sup> November 2001.

A preliminary review of the data indicates that the well failed due to lack of closure or intraformational seal development. The following preliminary lithostratigraphy has been determined.

##### Stratigraphy

<u>Age</u>	<u>Depth Range (mRT)</u>
Miocene-Recent	100-1525
Oligocene-Miocene	1525-2214
Eocene	2214-2232
Palaeocene-Eocene	2232-2639(approx)
Maastrichtian	2639(approx)-2847
Early Campanian	2847-3022
Turonian	3022-3345(TD)

##### Lithostratigraphy

<u>Formation Top</u>	<u>Depth (mRT)</u>	
Sea surface	25	
Seabed/Gippsland Limestone	100	
Lakes Entrance Formation	1525	
Gurnard Formation	2214	Unconformity
Latrobe Siliciclastics	2232	Unconformity
Golden Beach Sub-group	2847	Unconformity
Emperor Sub-group	3022	Unconformity
TD	3345	(in Emperor sub-group)

The objective Golden Beach Sub-group was encountered close to prognosis (62m low), however it was only 175m in thickness and consisting of fluviatile sandstones. The preliminary biostratigraphic data indicate that whilst paralic conditions existed through the Paleocene and Eocene sections, the Maastrichtian, Campanian and Turonian sections are probably non-marine. This, together with the high net to gross of the Golden Beach Sub-group suggests intra-formational sealing development within the Melville area is very poor.

The occurrence of marine dinocysts in the Palaeocene and Eocene sections and shale development suggests good intra-formational sealing potential for the intra-Latrobe Siliciclastics.

Post Melville-1 seismic interpretation shows that the volcanics (previously interpreted to occur at the top of the Emperor Sub-group) are within the Emperor Sub-group and truncated by the top Emperor Sub-group unconformity laterally. A series of northwest striking normal faults occur 3km northeast of Melville-1. These show significant displacement of the top Emperor and intra-Golden Beach seismic events and result in a significant thickness change for the Golden Beach Sub-group from 175m to over 750m beneath Gurnard-1 and Nannygai-1. The seismic character of the Golden Beach Sub-group changes from a discontinuous low-amplitude beneath Melville-1 to a higher amplitude continuous facies in the northeast of Vic/P42. This is interpreted to indicate a more marine depositional setting with laterally extensive shale deposits and better potential for intra-formational sealing.

The evaluation of the Melville-1 well results were ongoing, with biostratigraphic dating by Biostrata Pty Ltd and Laola Pty Ltd (Dr. Alan Partridge) and well petrophysical evaluation by

Schlumberger data services in Perth. The compilation of the well completion report was also in progress.

By the end of the quarter, the final composite log and petrophysical evaluation report were received from Schlumberger Data Services in Perth. The report concluded that:

The following formations and sub-groups were evaluated by the LWD and wireline logs.

Gurnard Formation (2214.0-2232.0m MD)

Latrobe Siliciclastics (2232.0-2847.0m MD)

Golden Beach Sub-group (2847.0-3022.0m MD)

Emperor Sub-Group (3022.0-3325.0m MD)

Quick-look evaluations of the 12 ¼" and 8 ½" logs, as well as a more detailed evaluation of the 8 ½" wireline logs, were done to identify any potential hydrocarbon bearing intervals.

No significant hydrocarbon bearing intervals were identified in any of the formations or sub-groups evaluated.

Significant porosity reduction was identified in the Emperor Sub-group.

Formation / Sub-group	Depth - MD		Gross Interval	Net / Gross	Average $\phi_e$	Average $S_w$
	From	To				
Gurnard Formation	2214.0	2232.0	18.0	--	--	100.0 %
Latrobe Siliciclastics	2232.0	2847.0	615.0	66.9 %	16.4 %	100.0 %
Golden Beach Sub-group	2847.0	3022.0	175.0	68.0 %	13.7 %	100.0 %
Emperor Sub-group	3022.0	3325.0	303.0	5.5 %	9.3 %	100.0 %

Final versions will be distributed as part of the well completion report. Final reports on Melville-1 were awaited from RBT, Anadrill and Baker Hughes, after final drafts had been agreed.

Side-wall samples returned from Laola in Perth (palynological sample preparation) were dispatched to Keiraville Konsultants (Dr Alan Cook) in Sydney for vitrinite reflectance determinations.

### 3.2 Seismic Reprocessing

At the end of November Australian Seismic Brokers reported that five lines from the Omeo area reprocessing project were "completed". BSOC have requested courier versions of these lines to ensure the processing parameters are acceptable before the other lines are finalised.

At the end of December Australian Seismic Brokers had submitted seven reprocessed lines (in the vicinity of Omeo East Lead) as SEG Y data on Exabyte and two further lines as paper copies. These were examined and loaded on the workstation. The quality of the reprocessing was found to be inadequate for the objective Golden Beach section and the lines have not been accepted. The reprocessing was postponed until the processing sequence was reviewed by Dr. Henry Askin.

Velocity semblance displays were received from Australian Seismic Brokers for test lines GA84-01 and GA81-23. The velocities used appeared to be too low for the target sequence below 2200msec TWT and further velocity displays were requested for Dr. Henry Askin.

### 3.3 Seismic Acquisition & Processing

Tenders for the Vic/P42 3D seismic acquisition closed at 4pm on 26<sup>th</sup> November 2001. The results were encouraging with all three companies submitting tenders. Western Geco proposed 2 separate vessels. All initial proposals are summarised below;

Veritas DGC, MV Pacific Sword  
2 Streamers  
Available 3rd week January 2002

PGS, MV Nordic Explorer  
5-6 Streamers  
Available December 2001

Western Geco, Geco Beta  
8 Streamers  
Available Early May, 2002

Western Geco, Geco Angler  
4 Streamers  
Available Early February, 2002

These tenders were evaluated in-house.

BSOC initially proposed that PGS be awarded the tender. However, given that PGS were under contract to Shell Todd Oil Services in New Zealand and there were no guarantees of their availability for the survey in the Gippsland Basin and in addition the signal noise expected by operating a second vessel into the area, it was decided to award the contract to Western Geco subject to Joint Venture approval and satisfactory agreement of the final form of contract.

Joint Venture partners approved the seismic acquisition contract, awarded to Western Geco in January.

### 3.4 Seismic Interpretation and evaluation

As part of the ongoing evaluation and in order to reach a decision on the acquisition of 3D seismic data in Vic/P42, evaluation work has been ongoing with a focus on the northeast quadrant of Vic/P42. Of significant interest is the ZaneGrey Lead between Gurnard-1 and Nannygai-1 (see figure 1).

Zane Grey is a lead originally mapped by Esso in Vic/P42 and Production Licence L7/L8 (Kingfish) and named Stargazer. It is located updip and between Nannygai-1 and Gurnard-1 and was mapped in 1991 as being an Intra-Latrobe closure with 34MMb recoverable and 30% possibility of success. In 1994 Esso downgraded that to 3MMb recoverable and only 8% POS in their final relinquishment report for the block. They also identified minor top Latrobe depth closures just north of Gurnard-1. BSOC has undertaken preliminary seismic interpretation suggesting that ZaneGrey and these minor Esso leads remain as a significant Latrobe depth closure updip and between the two wells.

The sequence above Gurnard-1 and Nannygai-1 is cut by Tertiary channels which result in significant velocity pull-ups, specifically over Gurnard and Nannygai structures themselves (see figure 2). BSOC has mapped out the two channel systems; a deeper high velocity channel system and a shallower low velocity channel system. Velocities for each of the channel fills have been determined by correlation to sonic and checkshot data in the wells. The deeper channel system strikes northwards and then eastwards over the Gurnard-1 and Nannygai-1 well locations and then to the north of the Kingfish Field. This high velocity material produces a significant velocity pull-up over Gurnard and Nannygai and over the

northern flank of Kingfish. The shallower low velocity channel strikes eastwards between Gurnard-1 and Nannygai-1. The shallower channel's effect is to partially remove the high velocity material beneath and create a "low" in time between Gurnard and Nannygai. This low is the Stargazer Lead, which depth converts to a high using a simplistic constant velocity 'layer-cake' approach for the high and low velocity channel sequences. Whilst crude, the results suggest a significant top Latrobe closure may exist between Gurnard and Nannygai which is the Stargazer Lead (Enclosure 1). However, whilst Esso saw Stargazer only as a deep Intra-Latrobe target, BSOC believe closure may exist from Top Latrobe downwards (perhaps even through the Golden Beach). Seismic data support the presence of a closure at Stargazer with a potential DHI on 2D seismic line G91A-2025, (SP 2318 ~2240msec TWT) approximately coincident with the interpreted Stargazer (even though at a deeper stratigraphic level). The oil pay in Nannygai-1 and the oil and gas shows in both Nannygai-1 and Gurnard-1 through the Latrobe Siliciclastics suggest that these wells may be close to or within oil water contacts for an accumulation in the Stargazer Lead.

The due process necessary to confirm the validity of the Stargazer Lead is to obtain the 2D and 3D seismic in the area and incorporate this into the seismic interpretation.

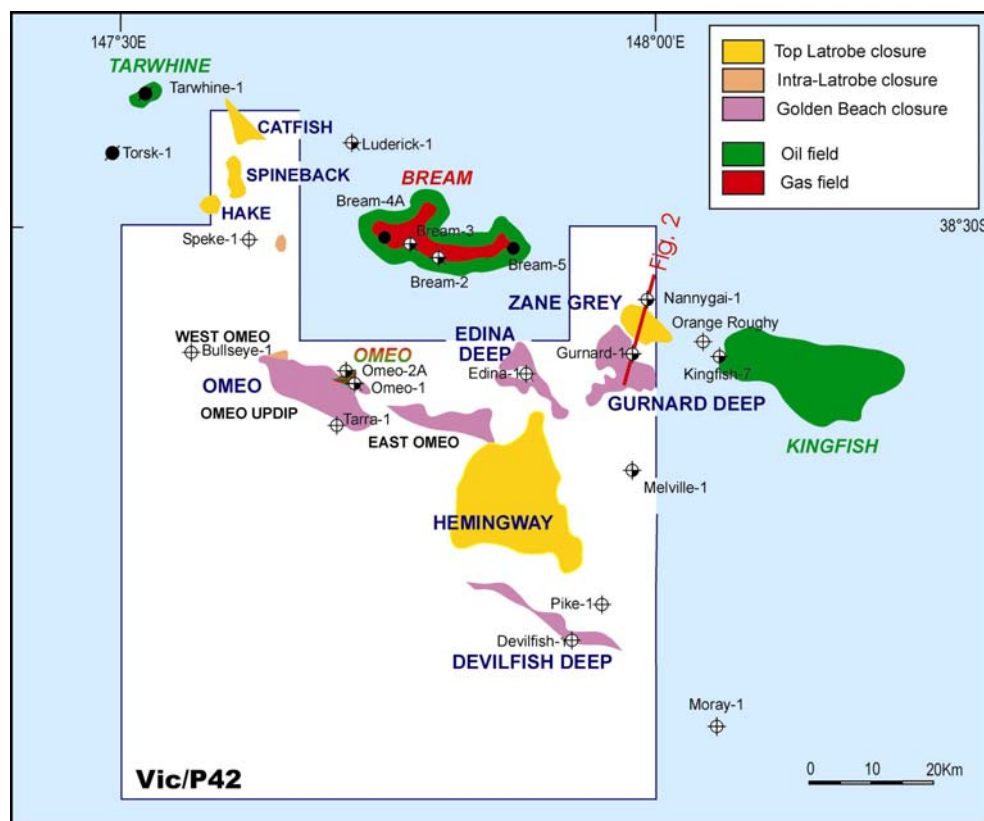


Figure 1. Vic/P42 Project and Lead Inventory



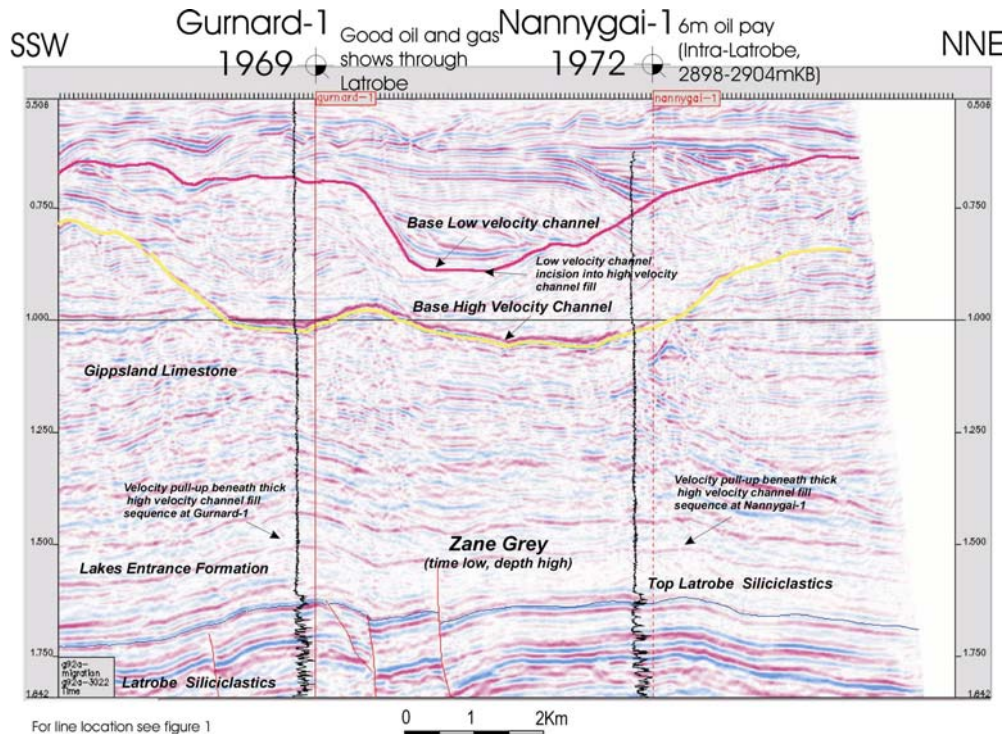


Figure 2. Seismic Line G92A-3022 through Gurnard-1, Zane Grey and Nannygai-1.

The seven re-processed seismic lines received from ASB were loaded onto the BSOC IESX workstation and the interpretation revised. As mentioned, the quality of the data at the Golden Beach level was poor and the reprocessing is still ongoing. However, the interpretation has been improved around the area of the East Omeo and Updip Omeo leads in preparation for the location of the 3D survey campaign.

The seismic interpretation of Vic/P42 was delayed by access to new data. Agreements were received from joint venturers to trade the available 2D data through Vic/P42 and the Kingfish and Bream 3D data from Esso, with Melville-1. Draft agreements for the trade of the basic and interpretive data have been provided to Esso and were being reviewed at month's end by their lawyers.

### 3.5 Data Trades

Agreements were received from joint venturers to trade the available 2D data through Vic/P42 and the Kingfish and Bream 3D data from Esso, with Melville-1. Draft agreements for the trade of the basic and interpretive data have been provided to Esso and were being reviewed at quarter's end by their lawyers.

## 4. REPORTS SUBMITTED

Other than the previous Quarterly Report, no reports were submitted during this report period.



## 5. HEALTH, SAFETY AND ENVIRONMENT

### 5.1 Incidents

There were no health, safety or environmental incidents recorded during the report period.

### 5.2 Environmental Approvals

On 15<sup>th</sup> November 2001 Environment Australia decided to revoke the original decision that BSOC's proposed seismic acquisition in Vic/P42 was not a controlled action and substituted a new decision that our proposed 3D acquisition in Q1/Q2 2002 was not a controlled action (this was related to a delay in acquisition due to Esso Australia's delayed survey prior to this). The schedule in the reconsideration of the decision states that the manner in which the proposed action is to be undertaken is:

- The proposed survey will be undertaken in accordance with the minimum cetacean interaction procedures
- Bass Strait Oil Company Ltd will apply for a cetacean permit under section 237 of the Act.

Environment Australia issued a decision to Bass Strait Oil Company Ltd that our 3D seismic acquisition in Q1/Q2 2002 would not be a controlled action, provided it is undertaken in accordance with two provisions; that the proposed survey is undertaken using the minimum cetacean interaction procedures and that BSOC will apply for a Cetacean Permit. Based on the co-ordinates and time period for the survey, Environment Australia informed BSOC that the survey is likely to interfere with Blue Whales. Hence, an application was required for a Cetacean Permit.

The permit application was prepared by BSOC together with cetacean expert Simon Mustoe of Applied Ecology Solutions (who also advised Esso Australia on their current Gippsland Basin survey). An application for a Cetacean Permit for the 3D acquisition in Vic/P42 was submitted to Environment Australia ("EA") on 21<sup>st</sup> December 2001. The application was received and was made available to registered persons under section 266A of the EPBC Act until January 16 2002.

## 6. ESTIMATED EXPENDITURE FOR THE QUARTER

Estimated expenditure for the reporting period is detailed below:

Activity	Expenditure (\$000's)
Drilling (Melville-1)	11,218
Permit Administration	330
Seismic (Reprocessing)	14
Geological & Geophysical	121
Seismic (Acquisition)	11
<b>Total</b>	<b>11,694</b>