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**ATP692P, SURAT BASIN, QUEENSLAND  
OS01 SEISMIC SURVEY PROPOSAL  
TALINGA AREA**

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Oil Company of Australia Limited  
ABN 68 001 646 331  
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A Rek & A. Falkner, December 2001  
692\EXPL\SEISMIC\OS01 SEISMIC PROPOSAL



692:4  
OS01

## Seismic Survey Acquisition Proposal

### Summary

Survey Name:	OS01 Seismic Survey		
Permit:	ATP 692P		
Participants:		%	\$K
	Oil Company of Australia	50.0	183.1
	Sunoco Inc of Australia	50.0	183.1
Program:	Acquisition: 5 seismic lines (46.5km), 1 reshoot (3 km), and 19 Upholes. Reprocessing: 1 seismic line (30km) PR81-12		
Cost Estimate:	Acquisition: 49.5 km @ \$7,237/km. Reprocessing: 30 km @ \$265/km. Total cost: \$366,166.		
Parameters:	Vibroseis, 160 channel, 80 fold, 12.5m group int. 2 sweeps per VP, 30 - 180 Hz 2 sec sweep, 2 sec listen Dynamite, 160 channel, 20 fold, 12.5m group int. 50m stn int., 30 - 180 Hz 2 sec sweep, 2 sec listen		
Timing:	early January (dependent upon seismic crew availability)		

The proposed OS01 seismic survey is part of an exploration and appraisal program of the Talinga Prospect in ATP 692P (Figure 1). The survey is designed to delineate the distribution of thick coals within the Walloon Subgroup to aid in optimising the location of future well locations away from areas of thinner coal development. The acquisition parameters have been chosen to target the Juandah and Taroom coal measures from a depth of 50 m below ground level. The recoverable reserves in the area covered by the proposed seismic program in the Talinga Prospect are estimated to be 350 Bcf. The survey programme is scheduled to start in early January 2002 to provide data in time for the April 2002 drilling development and exploration program.

This project is a trial to determine whether seismic is a valid tool for identifying coal development. To ensure that the data is of sufficient resolution a partial reshoot of one line with a higher resolution dynamite source is proposed as a quality check. Should this trial prove valid, it is anticipated that additional seismic data will be required elsewhere in the permit.

### Project Rationale

The Talinga Prospect is located 30 km SE of the township of Miles in southern ATP 692P Subarea D. The primary CSG targets in the Talinga area are the Macalister and Kogan seams of the upper Juandah Coal Measures and the Taroom Coal Measures. The opportunity was tested in early 2001 by the Talinga-1 cored slimhole which showed encouraging coal



thickness and permeability and higher than anticipated gas contents. This was followed up later in the year by four production test wells which are currently being set up for a six month production test. Given encouraging results from this testing, field development is planned for late 2002.

Although it is too early to determine whether these wells are commercially viable, the results have reinforced the concern that coal thickness shows significant lateral variability. As an example, the aggregate net coal in Talinga-2 was 15.1 m whereas it had thinned to 12.7 m in Talinga-5. Exploration drilling elsewhere in the permit in early 2001 has also shown coal seam continuity and thickness to be highly variable with one well, Dalwogan-1, intersecting a channel sandstone belt through which the coals were particularly thin and probably non-commercial. Thick coal seams are anticipated to have areal extents of 2-10 kms due to the restriction of deposition to flood basins between the channel belts. This suggests that there is a risk that there may be large areas of insufficient coal development in the Talinga area which could dramatically impact on the economics of the early stages of development.

The Talinga Seismic Survey is proposed to investigate coal development and to assist in optimising the location of any subsequent wells in areas where thicker coal development exists. The program incorporates four seismic lines, totalling 46.5 km, to assist in appraising the southern Talinga area where the initial development is likely to occur, and one field extension line to the north to assess the areal extent of coal development. An existing 30 km seismic line at the northern end of this line will also be reprocessed. It is believed that vibroseis data will provide sufficient resolution of the coal sequence, however it is proposed to reshoot a small 3 km length of one seismic line to compare these data with the higher resolution source to ensure that the data is of sufficient resolution.

### **Prospect Description**

The Talinga Prospect is located on a broad, flat major structural anticline plunging southwest into the basin. The targeted Walloon Subgroup is subdivided into the Juandah and Taroom coal measures, with the Juandah CM further subdivided informally into upper and lower units. The coals were deposited in thick peats accumulated in floodplain hosted mires in alluvial plain depositional environments. This gave rise to thick coals that are relatively restricted in areal extent. The successful development of the Walloon coals as a CSG project may require accurate delineation of these thick coal areas prior to drilling.

In the Talinga Prospect the Macalister Seam provides the principal target in the upper Juandah CM. The lateral extent of thick coals within the Macalister seam interval is laterally restricted as demonstrated by the significant thinning from Talinga-1 to Talinga-5. The aggregate net coal accessed by individual wells may need the addition of the deeper coals within the Taroom CM to be viable where thinning of the upper sequence occurs. The lateral continuity within this section is unknown. The areal extent of the Talinga Prospect have not been delineated to date due to the lack of information.

No seismic data exists over the initial test area. It is uncertain whether structural controls such as depth of burial, or proximity to the spine of anticlinal features will be important in defining prospect areas. Given the relatively high tested permeabilities in the four cored slimholes to date it is not expected that the latter criteria will be significant for flow rates, however there may be an association between structural anticlines and elevated gas contents due to biogenic gas or migrated gas from deeper more mature areas. Within the Talinga area depth of burial is relatively low, but may play some part in reducing permeability to the southwest. The most likely control on the areal extent of the viable portions of Talinga is expected to be coal thickness distribution.



Geological assessment indicates a resource concentration of over 5 Bcf/km<sup>2</sup> in Talinga, with 3.2 Bcf/km<sup>2</sup> recoverable. Over the 109.km<sup>2</sup> area addressed by the seismic program this equates to recoverable sales gas reserve of 350 Bcf.

## **Acquisition Details**

The proposed seismic survey comprises 5 seismic lines (46.5 km) with 19 uphole surveys, one line of reprocessing (30 km) and one 3 km reshoot using a dynamite source (Enclosure 1). Line orientations have been designed across the interpreted palaeo-dip as far as possible to assist in identifying sandstone channel locations. Coal development is expected to be greater in the floodplains between these locations. Tie lines are designed to maximise coverage of the area and allow correlation between dip lines.

Three strike lines (OS01-1 to 3) and one dip line (OS01-04) in the southern Talinga area are designed to highgrade the thicker coal development areas such as in Talinga-1 and to identify areas where the coals are thinner such as the area near Talinga-5. OS01-4 (6.75 km) is the key line tying to Talinga-1. Lines OS01-1 (3.5 km) and -2 (9.25 km) are designed to pass through potential well locations for the first round of follow-up drilling. Line OS01-3 (8 km) is designed to provide locations for step-out appraisal wells and second round development wells. It is believed that vibroseis data will provide sufficient resolution of the coal sequence, however it is proposed to reshoot a small 3 km length of seismic line OS01-1 to compare these data with the higher resolution source to ensure that the data is of sufficient resolution.

One regional assessment line, OS01-5 (19 km), is proposed to delineate the regional trends within the area likely to be covered by any future Talinga PL application. This line ties to PR81-12 (30 km), which will be reprocessed as part of this project. These lines are designed to provide the confidence that a sufficiently large area of thick coal development exists to provide a commercial development.

The recording parameters, particularly the source frequency content, recording sampling rate, and spacing of shot points and group intervals, have been designed to identify and map coal seams from as shallow as 50m below surface (Table 1).

Following assessment of contractors' quotations for technical competence and appraisal of the comparative costs, it is proposed to acquire the survey using Trace Energy Services and a Vibroseis source. In addition, it is proposed for Trace Energy Services to acquire the dynamite-sourced 3 km reshoot of seismic line OS01-1. Refer to Table 2 for acquisition parameters.

**Table 1: VIBROSEIS PROPOSED RECORDING PARAMETERS**

<u>Survey:</u>	Talinga, OS01	<u>Block:</u>	ATP692P
<u>Date:</u>		:	January 2002
<u>Lines:</u>	OS01 1-5	:	Area: Miles/Chinchilla
<u>Line Kms:</u>		:	46.2 km
<u>Upholes:</u>		:	19, 55 m avg. depth
<u>No. channels</u>		:	160
<u>Filters</u>		:	Hi-cut 160Hz (out) Lo-cut 30Hz
<u>Sample Rate</u>		:	1 ms
<u>Record Length</u>		:	4 sec (2 sec sweep*, 2 sec listen)
<u>Source Data</u>			Varisource Vibroseis
Sweep Frequency		:	30-180 Hz
Sweep Length		:	2 - 3.0 sec*
Sweep / VP		:	2
No. Vibrators		:	2, 12.5m pad to pad
<u>Receiver Data</u>			
No./String		:	6 phones
<u>Field Parameters</u>			
Receiver Group Interval		:	12.5 m
Receiver Array		:	6 phones, in-line (no overlap)
VP Interval		:	12.5 m, no moveup
VP Location		:	Symmetrical between stations
Spread Geometry		:	993.75 - 6.25 - 0 - 6.25 - 993.75 1 80 81 160
Multiplicity		:	80 Fold

- To be determined in the field

**Table 2: DYNAMITE TEST LINE PROPOSED RECORDING PARAMETERS**

<u>Survey:</u>	Talinga, OS01	<u>Blocks:</u>	ATP692P
<u>Date:</u>		:	January 2002
<u>Lines:</u>	OS01-1	:	Area: Miles/Chinchilla
<u>Line Kms:</u>		:	3 km
<u>No. channels</u>		:	160
<u>Filters</u>		:	Hi-cut 160Hz (out) Lo-cut 30Hz
<u>Sample Rate</u>		:	1 ms
<u>Record Length</u>		:	4 sec (2 sec sweep*, 2 sec listen)
<u>Source Data</u>		:	Explosives
Shothole Interval		:	50 m
Sweep Frequency		:	30-180 Hz
Sweep Length		:	2 - 3.0 sec*
Av. Shothole Depth		:	30 m
Charge Size		:	0.4kg
<u>Receiver Data</u>			
No./String		:	6 phones
<u>Field Parameters</u>			
Receiver Group Interval		:	12.5 m
Receiver Array		:	6 phones, in-line, (no overlap)
Location		:	Symmetrical between stations
Spread Geometry		:	795 - 5 - 0 - 5 - 795 1 80 81 160
Multiplicity		:	20 Fold

\* To be determined in the field



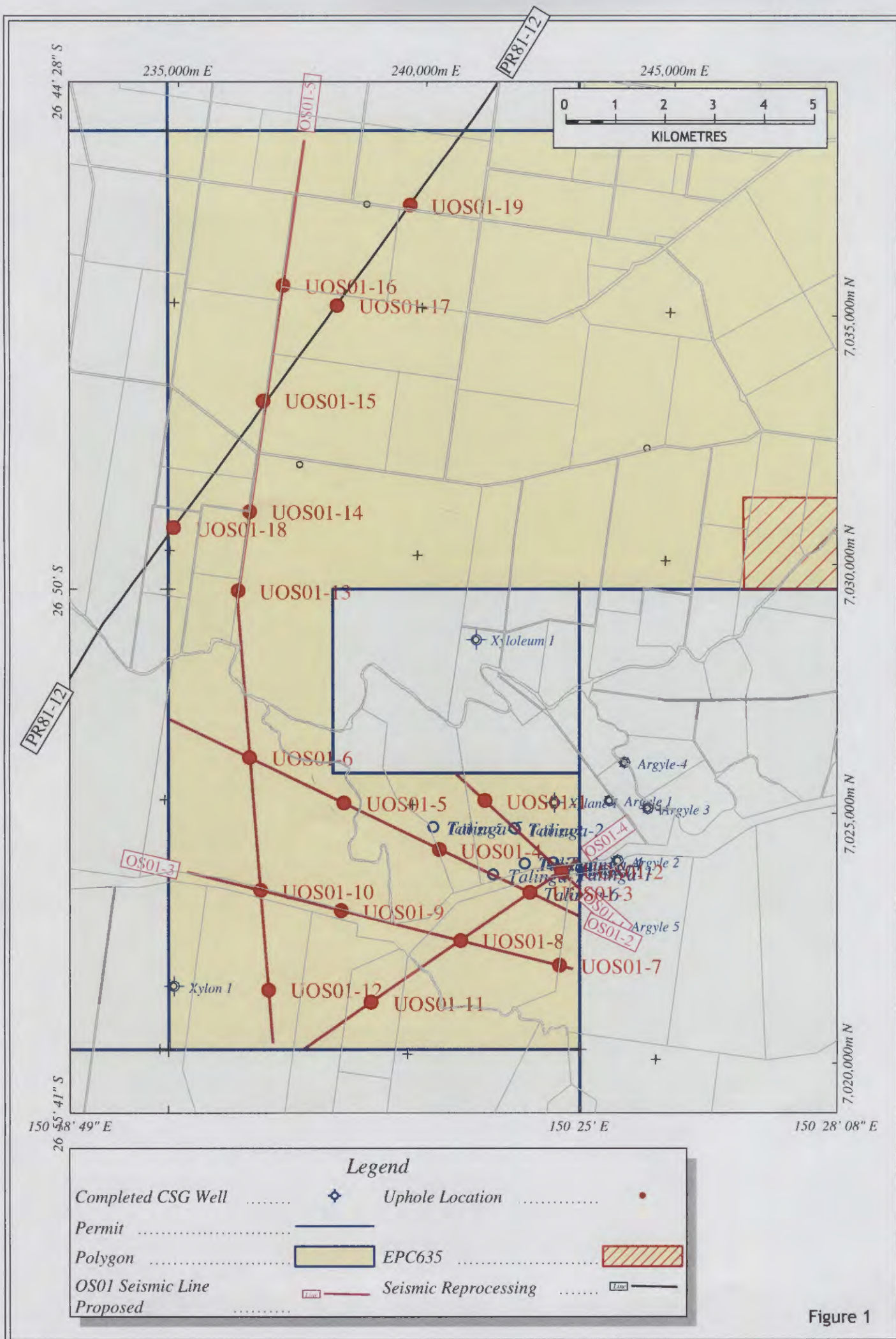


Figure 1