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Petroleum Development

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**Data Management Plan for Offshore Seismic Data Acquisition
Antares 3D Marine Seismic Survey**

VIC/P37(v), Otway Basin, Australia

May 2006

M. N. Lonergan

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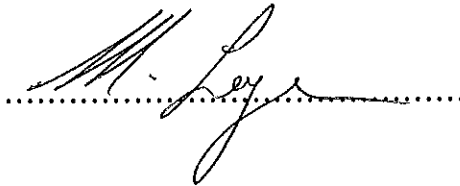
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Signed for and on behalf of
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Per:



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Designated Authority acceptance:

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1. INTRODUCTION

This data management plan relates to the acquisition of the Antares 3D Marine Seismic Survey, acquired in exploration permit VIC/P37(v) of the offshore Otway Basin. The area of operations is shown in Table 1.

Table 1: Locality of the Antares3D Marine Seismic Survey

	Longitude	Latitude
NW corner	142 33 28E	38 31 32S
N corner	142 36 04E	38 28 37S
SE corner	142 55 30E	38 39 13S
S corner	142 53 58E	38 40 58S

Datum GDA94 UTM Zone 54 south

This plan is compiled and submitted by Origin Energy Resources Ltd, as operator of VIC/P37(v), for and on behalf of the VIC/P37(v) Joint Venture Participants as shown in Table 2.

Table 2: VIC/P37(v) Joint Venture Partners

Name	Interest Holder %	Description
Origin Energy Petroleum Pty Ltd.	37.5%	JVP and Operator
Woodside Energy Ltd.	62.5%	JVP

Please note that the acquisition and processing of the Antares 3D Marine Seismic Survey was managed operationally by Woodside Energy Ltd, acting on behalf of the operator. As such, Woodside Energy Ltd is the main JV repository of data from the Antares survey.

2. REPORTING

The data to be submitted under this Data Management Plan, and the format / media it is to be submitted in, is summarised in Table 3.

2.1 Reports During Survey

Weekly operational reports of survey activities were compiled in Woodside's Perth office from daily reports on the survey progress sent from the seismic vessel. The weekly reports were distributed to the Joint Venture and Government each Monday afternoon, and pertained to the preceding week's activities. The reports contain basic statistics on survey progress, including:

- Line names, shot point ranges and Sq Km of primary 3D data recorded during the preceding week
- Sq Km of infill 3D data recorded during the preceding week
- Weather conditions
- Listing of survey progress to date

These reports were distributed in Adobe pdf via email to the following government contacts:

Victorian Department of Primary Industries, Minerals & Petroleum Division
Terry McKinley - Manager, Petroleum Operations, Safety & Environment
Kourosh Mehin - Principal Petroleum Resources Advisor

In addition to the above distribution, digital copies of the weekly reports and daily reports from the survey vessel are stored by Origin Energy Resources Ltd (OERL) on a secure company server which is backed-up every evening. Two sets of back-up tapes are created, one is stored at Recall Total Information Management (Recall) and the second tape is stored at the offices of Origin Energy (address as above). Recall provides and manages a secure climate controlled storage facility located at:

Recall Total Information Management
53 Forbes Street
WEST END QLD 4101
Ph: (07) 3846 3777

Copies of all daily reports are included as an appendix in the final report for the survey.

2.2 Antares 3D Survey Acquisition Report

All technical information pertaining to the acquisition of the Antares 3D Seismic Survey, including the Navigation Report, is included in the Acquisition Report. One copy of the Acquisition Report was lodged with the Victorian Department of Primary Industries, Minerals & Petroleum Division in Adobe pdf format on CD on 29 June 2004. One copy of the Acquisition Report was also lodged with Geoscience Australia in Adobe pdf format on CD on 29 June 2004.

Digital copies of the Acquisition Report are stored by Origin Energy Resources Ltd (OERL) within the guidelines of the Origin Energy Upstream document and data management systems. One copy on CD in Adobe pdf format has been bar-coded, catalogued and retained within the OERL Brisbane library located at:

Origin Energy Resources Ltd
John Oxley Centre, North Tower
339 Coronation Drive
MILTON QLD 4064

Digital copies of the report are stored on a secure company server which is backed-up up every evening. Two sets of back-up tapes are created, one is stored at Recall Total Information Management (Recall) and the second tape is stored at the offices of Origin Energy (see Section 2.1.1 for address). Recall provides and manages a secure climate controlled storage facility located at:

Recall Total Information Management
53 Forbes Street
WEST END QLD 4101
Ph: (07) 3846 3777

2.3 Antares 3D Survey Processing Report

All technical information pertaining to the processing of seismic data from the Antares 3D Seismic Survey is included in the Processing Report. One copy of the Processing Report was lodged with the Victorian Department of Primary Industries, Minerals & Petroleum Division in Adobe pdf format on CD on 10 May 2005. One copy of the Processing Report was also lodged with Geoscience Australia in Adobe pdf format on CD on 10 May 2005.

Digital copies of the Processing Report are stored by Origin Energy Resources Ltd (OERL) within the guidelines of the Origin Energy Upstream document and data management systems. One copy on CD in Adobe pdf format has been bar-coded, catalogued and retained within the OERL Brisbane library located at:

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Table 3: Data Submission and Reporting (blue text = items already submitted)

Data to be submitted	Copies required by		Format	Media	Data due date	Remarks
	STATE	COMMONWEALTH				
Navigation data including field processed data	YES	YES	UKOOA	CD-ROM or DVD	6 months after completion of the survey	To be provided in P1/90 including elevation and bathymetry data Submitted to DPI on 9/2/05 Submitted to Geoscience Australia on 15/3/04 Observers logs Submitted to Geoscience Australia on 15/6/06
Seismic field data	YES	YES	SEG	DVD, DLT or EXABYTE	12 months after completion of the survey	
Seismic support data	YES	YES	PDF	CD-ROM or DVD	12 months after completion of the survey	
Itemized field tape listing	YES	YES	ASCII	CD-ROM or DVD	12 months after completion of the survey	Showing tape number, survey name, line number, shotpoint range, data type Submitted to Geoscience Australia on 15/3/04
Raw stacked data – if generated as part of processing sequence	YES	YES	SEGY	DVD, DLT or EXABYTE	3 months after completion of processing of the survey	If generated as part of the processing sequence. Including a fully annotated EBCCDIC header
Raw and final migrated data	YES	YES	SEGY	DVD, DLT or EXABYTE	3 months after completion of processing of the survey	Including a fully annotated EBCCDIC header Submitted to DPI on 10/5/05
Final processed grid (bin) coordinates	YES	YES	UKOOA P6/98	CD-ROM or DVD	3 months after completion of processing of the survey	
Polygonal position data	YES	YES	ASCII	CD-ROM or DVD	3 months after completion of processing of the survey	
3D velocity data	YES	YES	ASCII	CD-ROM or DVD	3 months after completion of processing of the survey	Including bin number, time vs RMS pairs for stacking and migrated velocities Submitted to DPI on 18/1/06
Itemised process tape listing	YES	YES	ASCII	CD-ROM or DVD	3 months after completion of processing of the survey	Showing tape number, survey name, line number, data type
Final report – Operations and Navigation	YES	NO	PDF	CD-ROM or DVD	6 months after completion of the survey	Submitted to DPI and Geoscience Australia on 29/6/04

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Final processing report	YES	NO	PDF	CD-ROM or DVD	3 months after completion of processing of the survey	The processing report will include a full tape listing and an example hardcopy printout of the SEG-Y headers Submitted to DPI and Geoscience Australia on 10/5/05 Submitted to DPI on 14/2/06
Final interpretation report	YES	NO	PDF	CD-ROM or DVD	18 months after completion of processing of the survey	Submitted to DPI on 14/2/06
Digital images of interpretation maps.	YES	NO	PDF	CD-ROM or DVD	18 months after completion of processing of the survey	These include TWT structure maps at key horizons and representative sections showing seismic horizon picks, and prospects and leads maps Submitted to DPI on 14/2/06

3. DATA MANAGEMENT

3.1 Collection and Distribution of Seismic Field Data

Raw field data was recorded directly onto new magnetic tape (3590 cartridge) onboard the seismic vessel. It was recorded in industry standard SEG-D format, and one copy was made onboard. Each set of tapes was stored onboard until such time as it was possible to transfer one set to shore, and courier it directly to a seismic processing centre. The 2nd copy was transferred to shore after completion of the survey. Each set of tapes was accompanied by a digital copy of the observer's logs, and a digital copy of the navigation data, copies of which were also made onboard.

Data from the original set of tapes was copied onto the processing centre computers for processing and generation of final processed volumes.

A Transfer Proposal in relation to the seismic field data was sent to DPI on 15 March 2004.

A complete set of tape copies of the seismic field data was forwarded to Geoscience Australia on 15 March 2004 along with a diskette listing all tape numbers and details and a hard copy of the listing for verification purposes.

A CD copy of all Observers Logs for the survey was submitted to Geoscience Australia on 15 May 2006.

3.2 Storage and Distribution of Processed Seismic Data

Two copies of all processed seismic data were received from the seismic processing centre, in SEG-Y format, on 3590 and DLT tape cartridges. Digital seismic data from DLT was copied to OERL's master seismic database which is stored on-line using Schlumberger's Geoframe software.

One set of tapes were transferred to a secure climate controlled storage facility managed by Recall Total Information Management located at:

Recall Total Information Management
53 Forbes Street
WEST END QLD 4101
Ph: (07) 3846 3777

At the Recall storage facility each DVD or tape is bar-coded and entered into a tracking database as described in 3.1 above.

A copy of the final migrated stack data on 3590 tape was submitted to DPI on 10 May 2005.

A copy of the final velocity data from the survey was submitted to DPI on 18 January 2006.

3.3 Storage and Distribution of Navigation Data

A magnetic tape containing final navigation data for the Antares 3D survey in UKOOA format was submitted to the Victorian Department of Primary Industries, Minerals & Petroleum Division, on 9 February 2005.

4. OPERATOR ACKNOWLEDGMENTS

Origin Energy Resources Ltd (OERL), as operator of VIC/P37(v), acknowledges that OERL is responsible for the collection, storage and submission of all seismic field data and final migrated volumes obtained during the recording of the Antares 3D Marine Seismic Survey, until the data are submitted to the Department of Primary Industries, Victoria (DPI).

OERL undertakes to allow reasonable access to any data that is made publicly available under the Petroleum (Submerged Lands) Act 1967 or the Petroleum (Submerged Lands) (Data Management) Regulations 2004. Access to this data will be arranged by OERL once a formal request for data access is received.

OERL has forwarded all data pertaining to the Antares 3D Marine Seismic Survey to the DPI in accordance with the standard timetable set out in Part 2 of Schedule 1 of the Petroleum (Submerged Lands) (Data Management) Regulations 2004.

OERL undertakes to meet all data management performance objectives. These objectives are:

1. To store and preserve all data obtained during the Antares 3D Marine Seismic Survey according to good archival practise in a way that makes retrieval of the document or tape reasonably practicable.
2. To submit all data obtained during the Antares 3D Marine Seismic Survey to the DPI in accordance to the standard timetable as set out in Part 2 of Schedule 1 of the Petroleum (Submerged Lands) (Data Management) Regulations 2004.

The measurement criteria that define these objectives are:

Weekly Reports will be given to the DPI not later than 5pm on the Monday following the preceding week's survey activities.

Seismic data will be given to the DPI not later than 18 months from the date on which the seismic acquisition programme finishes.

A final survey report for the Antares 3D Marine Seismic Survey will be submitted to the DPI not later than 18 months after the seismic acquisition programme finishes.

Woodside Energy Ltd has used an internal document and data on-line tracking system to confirm whether the data management performance objectives have been met.

5. APENDICES

Appendix 1: Descriptions of standard industry digital seismic formats

SEG-D and SEG-Y seismic data formats are industry standard digital binary formats for the storage of seismic field data, and processed seismic data, respectively. The specific details of each format may be found at:

<http://seg.org/publications/tech-stand/>