

Guidelines for Northern Territory Onshore Petroleum Reporting and Data Submission

This document should be used in conjunction with the

Schedule of Onshore Petroleum Exploration and Production Requirements, 1 June 2019
(As directed under section 71 of the NT Petroleum Act)

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1. Introduction

The purpose of these guidelines is to assist petroleum titleholders preparing reports, data and geological samples for submission to government under the Northern Territory [Petroleum Act](#) and [Petroleum \(Submerged Lands\) Act](#).

Petroleum titleholders are directed to comply with the [Schedule of Onshore Petroleum Exploration and Production Requirements, 1 June 2019 \("Schedule"\)](#) under Sections 71 and 72 of the *Petroleum Act*, and Sections 101 and 102 of the *Petroleum (Submerged Lands) Act*.

The guidelines provide details about reporting standards, templates, media and formats required for submission which are not covered in the *Schedule*. Details related to the following reports, data and samples are included:

- geological samples (Schedule 307)
- geological sample analysis reports (Schedule 308)
- fluid samples (Schedule 309)
- well completion reports and data (Schedule 314)
- geophysical survey data (Schedule 508)
- geophysical survey acquisition, processing and interpretation reports (Schedule 509)
- annual, final and reduction reports for Exploration Permits (Schedule 601)
- annual reports for Retention Licences (Schedule 602).

Reports NOT included in these guidelines are:

- safety and system integrity reports (Schedule Part II, Division 3)
- well barrier integrity validation reports and notices of well activities (Schedule 302a-e)
- well evaluation logs (Schedule 310)
- discovery and resource estimate reports (Schedule 312)
- daily operations report of well activities (Schedule 313)
- production operations reports (Schedule Part IV, Division 2)
- weekly geophysical and geological survey reports (Schedule 507)
- annual reports for Production Licences (Schedule 603)

These guidelines will be updated as required in accordance with prevailing legislation and changes in technology. It is the responsibility of the titleholder to ensure they use the latest version when submitting reports or data. In the event of contradiction between legislation or directions and the guidelines, the former will prevail.

2. General Submission Requirements

2.1 Media

The department will accept the following media (non-returnable) for delivery of reports and data:

- e-mail attachments (total file size not to exceed 10 MB)
- optical disc (CD/DVD) – full size, no multisession, read only
- portable hard drive
- USB flash drive
- industry standard tape cartridges – (eg 3590, 3592, LTO - for seismic field data)

All media must be individually labelled with the company name; title number(s), report type and date, and disc or drive number, for example 1/5 on both the disk/tape/CD as well as the cover. A list of all files must be included with the report submission (eg *Appendix 05*).

The media used must be appropriate to the volume of the data being submitted. Companies must use their discretion as to minimise the number of items submitted and demands on storage requirements.

The titleholder or operator should keep a digital back-up copy of the report and data submitted to the department for at least a year to cover the possibility of physical damage, data loss or corruption.

2.2 Metadata

Metadata should be included in data files, either in a file header at the top of the file of related tabular data (preferred), or as a separate file (eg *Appendix 4, 6, 08–10*).

2.3 Operating System

All reports/files and/or data must be compatible with the Windows operating system.

2.4 File Compression

Files may be submitted in compressed form (ZIP format). However, they must be self-extracting and should include a full file listing.

2.5 Security

All submitted digital files (eg Microsoft Excel, Word, PDFs, data, etc) must not be password protected.

2.6 Naming of Files

Files to be submitted should not contain spaces, full stops, quotes or non-alphanumeric characters in the file names.

Survey file names should preferably conform to the following naming convention:

Name or 'Area/Location of Survey'_'Type of Survey'_'Year'_'Type of Report'. 'File Type'
eg McArthur_Basin_2D_SS_1991_Interp_Report.pdf

Area/Location of Survey: Usually basin name.

Type of Survey: 2D or 3D Seismic Survey (SS), Airborne Gravity Survey (AGS), Airborne Magnetic Survey (AMS), Ground Gravity Survey (GGS), Airborne Gravity and Magnetic Survey (AGMS) etc

Year: Year Survey was completed

Type of Report: Acquisition, Processing, or Interpretation, or others

File Type: .doc or .pdf

Image files submitted separately with the reports must be named in the same manner as above but reflect their number and title as mentioned in the report.

eg McArthur_Basin_2D_SS_Fig2_DepthtoBasement.jpg

2.7 Submission, Receipt and Quality Control

A transmittal document must accompany all reports and data submissions. Use of transmittal [forms](#) is preferred. NTGS will date and sign the transmittal and return it to confirm that we have received the data.

The Petroleum Data Manager will follow up confirming compliance and quality control after the submission has been checked. If compliance or quality control issues are identified, re-submission may be required.

2.8 Resubmissions

If data are resubmitted, the resubmissions must be accompanied by a summary of how the new data differs from the previous submission.

2.9 Cores and Cuttings Sample Submission

Refer to Section 307 of the *Schedule* for core and cutting sample submission requirements. Additional guidelines and submission procedures are on the [website](#).

Prior approval is required before sending any samples overseas for analysis. Submit requests for approval to NTGS through the Petroleum Data Manager.

Fluid, gas samples and any other petroleum samples should be offered to the department (Section 309 of the *Schedule*).

3. Format Specifications

All reports and data must be submitted in digital format.

3.1 Reports

Reports must be provided as Portable Document Format (PDF) documents. This includes the title page, summary, list of contents (with hyperlinks to the headings in the document), references, and any figures and tables that are interleaved with the text, appendices and plans. The entire report can be submitted as a single PDF file if the file size is less than 100 MB and data types permit. PDF files consisting of scanned pages of the report are not acceptable.

3.2 Maps, plans and images

All graphics should be provided in PDF, JPG or TIF format. They must be readable and of good print quality; the colour and spatial data of the original plan or image should be maintained. Resolution should be 300 dpi or better. If available, georeferenced images of maps must be submitted.

Small to medium size graphics can be accommodated in the main report PDF file. If separate files are submitted, they must conform to the naming convention in section 2.6 and be listed in the report.

3.3 Tables

All tables must be included in the relevant report in PDF format. They must also be provided as separate files suitable for import into data processing applications.

3.4 Tabular data

All tabular data are to be supplied as delimited ASCII (TAB delimited preferred) or Excel spreadsheets (xlsx) for analytical data. Files should include column headings, units and explanations of any abbreviations. Acceptable ASCII formats are: TXT, text based DAT, LAS and CSV.

Well, seismic and other geophysical data must be submitted in the formats specified in **Tables 9.1-9.5**.

3.5 GIS data

GIS data formats accepted are ESRI shape files (SHP) and MapInfo tab files (TAB). Where practical, the symbology of the GIS displayed data should be provided, eg an ESRI layer file (LYR) or legend file (AVI) or MapInfo workspace file (WOR).

4. Confidentiality and Information Release

Section 61 of the *Petroleum Act* (the Act) specifies the timing for release of information for reports and data.

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The release of reports and data, relating to specific activities, depends on the type of the report and data:

Basic

Basic data is data that is obtained at the time of an acquisition activity. Basic reports are reports on the acquisition and processing of basic data. All contractor and/or acquisition contractor derived data and results are defined as basic data. All basic data should be included in the relevant completion reports on activities (eg seismic survey acquisition report). Core and cuttings, fluid and gas samples are classified as basic.

Interpretative

Interpretative (final) reports and data include any data and conclusions drawn from that data that are considered an interpretation of acquired data. All interpretative reports and data should be lodged separately to basic data.

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The following table summarizes the release dates of petroleum reports and data to the public in compliance with the Section 61 of the Act.

REPORT / DATA	RELEASED TO PUBLIC?	RELEASE DATE	REMARKS
Annual Reports	No	Not made available to public	<ul style="list-style-type: none"> Details of technical capacity and finances are not released as per Section 61 (2d) of the Act.
Appendices to Annual Reports	Yes	6 years from due date of submission	<ul style="list-style-type: none"> Sections containing geological and office studies and other geoscientific information, see (Schedule 601(1)(f) and 602(1)(f)). Notification of this release will be published in the NT Government Gazette (Section 61 (8)).
Basic Well Completion Reports and Data	Yes	2 years 28 days from the date of rig release	<ul style="list-style-type: none"> As per Sections of the Act: <ul style="list-style-type: none"> - Section 61 (16a) - Deemed receipt is 28 days after completion. + - Section 61 (5) - Release 2 years after (deemed) receipt.
Interpretative Well Completion Reports and Data	Yes	6 years from the date of rig release	<ul style="list-style-type: none"> As per Sections of the Act: <ul style="list-style-type: none"> - Section 61 (16b) - 1 year for submission + - Section 61 (7) - Release 5 years from submission. Notification of release will be published in the NT Government Gazette (Section 61 (8)).
Geophysical Acquisition and Processing Reports and Data	Yes	3 years from the date of completion of acquisition	<ul style="list-style-type: none"> As per Sections of the Act: <ul style="list-style-type: none"> - Section 61 (16b) - Deemed receipt is 1 year + - Section 61 (5) - Release 2 years after receipt.
Interpretative Geophysical Reports and Data	Yes	6 years from the date of completion of acquisition	<ul style="list-style-type: none"> As for Interpretative WCR
Geological Samples (Cores and Cuttings)	Yes	2 years 28 days from the date of rig release	<ul style="list-style-type: none"> As for Basic WCR

Notes:

Non-exclusive or speculative surveys are not addressed in the Act.

Rig release is considered “completion” for the purposes of calculating data submission due dates and open filing dates.

If there is more than one rig release date because multiple rigs were used or a well is re-entered or suspended then dates depend on the original approved drilling proposal.

If multiple drilling phases are required to meet the objective in the approved drilling proposal then rig release date is the end of the last phase.

If the well is finalised as per the original drilling proposal but subsequently the objective is changed and the well is re-entered, then reports, data and samples should be submitted for both activities. Open filing of the first activity will be based on the first rig release date. Open filing of additional information from the second activity will be based on the date of the second rig release.

When a title ceases, basic data is released on the day of cessation. Interpretative data is released as per the above table.

5. Reporting Type and Frequency

5.1 Annual, Final and Reduction Reports

Annual Reports are to be submitted no later than 28 days after the completion of that work program year (Section 59, *Petroleum Act* and *Schedule 601*).

A Retention Licensee (RL) is required to submit annual reports (Section 62 *Petroleum Act* and *Schedule 602*) and may be requested to provide a project report if necessary.

When an Exploration Permit (EP) or Retention Licence (RL) has ceased (surrendered, cancelled or expired) a final report with equivalent content to an annual report should be submitted within three months of the date the permit or licence ceased (Section 75, *Petroleum Act*).

When an Exploration Permit (EP) or Retention Licence (RL) has been partially surrendered, a report on the relinquished area with equivalent content to an annual report should be submitted within three months of the date of surrender (Section 75, *Petroleum Act*).

5.2 Well Completion Reports, Data and Samples

Basic

A basic (initial) well completion report must be submitted to the department within three months after the rig release date.

Interpretative

An interpretative (final) well completion report must be submitted to the department within 12 months of the rig release date.

Cores and Cutting Samples

Submit samples within six months of rig release as per *Schedule 307(4)*.

Offer fluid or gas samples to the department as soon as possible if collected as per *Schedule 309*. Notification will be given if the samples are required by the department.

Slides and residues and other laboratory materials should be submitted to the Petroleum Data Manager prior to cessation of the permit or licence as per *Schedule 308(2)*.

Geological Samples Analysis

Submit geological sample analysis reports and data with the interpretative (final) well report as per *Schedule 308(1)*. If core analysis reports are not completed by the due date for the interpreted well report, then submit it as an appendix to the following annual or final report.

Submit progress reports on geological samples sent overseas for analysis as an appendix to the annual report as per *Schedule 307(6)*.

Tables 9.1 and 9.2 provide a summary of well reports and core/cuttings sample submission dates

5.3 Geophysical Survey Reports and Data

Acquisition, processing and interpretative reports and data must not be combined; they should be submitted as separate files and in separate folder directories.

Acquisition, Processing and Interpretative

2D, 3D seismic and all other geophysical survey acquisition, processing and interpretative reports and data should be submitted within 12 months of completion of data acquisition.

Tables 9.3 to 9.5 provide a summary of geophysical survey reports and data submission dates.

6. Report Contents

When submitting reports required under the Act, the author acknowledges that the department may publish electronic copies through the department's website or other media.

Reports must not include any material that is protected by copyright or prohibited from release by other laws (eg some aerial photos, some satellite imagery, data from technology embargoed by US International Traffic in Arms Regulations).

Reports must not include any information, language, names or images that may be culturally sensitive, offensive or in confidence to traditional owners (eg Aboriginal Area Protection Authority reports, locations or images of sacred sites).

A list of all the abbreviations used in the report and their full forms must be included with the report after the 'Table of Contents' page.

6.1 Annual Reports

The content requirements for Annual Reports are listed in *Sections 601-603 of the Schedule*.

6.2 Well Completion Reports

Both the basic and interpretative reports should include all the items listed in the relevant section of the Schedule. Additional relevant information may be accepted after review.

Basic

The list of requirements for a basic well report is in *Section 314(3) of the Schedule*.

Interpretative

The list of requirements for an interpretative (final) well report is in *Section 314(4) of the Schedule*.

Tables 9.1 and 9.2 provide a summary of well reports and data classification, format, media and submission notes.

The preferred template for the well index sheet (*Schedule 314(3) Appendices (b) and 314(4)(a)*) is in **Appendix 01**;

6.3 Geophysical Survey Reports

Basic and interpretative reports and data must be submitted in separate folders / file directories.

Seismic Data (2D and 3D)

Acquisition

The list of requirements for an acquisition report is in *Sections 508(3) and 509(2) of the Schedule*.

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Processing

The list of requirements for a processing report is in *Sections 508(3) and 509(3) of the Schedule*.

Interpretative

The list of requirements for an interpretative report is in *Sections 508(3) and 509(4) of the Schedule*.

Tables 9.3-9.5 provide a summary of geophysical survey reports and data classification, format, media and submission notes.

7. Delivery Address

The following table provides the contact details and addresses for the submission of reports, data and samples.

REPORT/ DATA	ATTENTION	ADDRESS	EMAIL & PHONE
Annual Reports	Petroleum Registrar	Energy Division Northern Territory Department of Primary Industry and Resources Level 4 Paspalis Centrepoint Building 48-50 Smith Street Mall DARWIN NT 0800	<ul style="list-style-type: none"> • energy.permits@nt.gov.au • Ph: +61 8 8999 7112
Cores and cuttings	Core Facility Manager	38 Farrell Crescent (behind Discovery Holiday Park) WINNELLIE NT 0820	<ul style="list-style-type: none"> • geoscience.info@nt.gov.au • Ph: +61 8 8984 3036
Fluid sample offers Well Completion Reports and data Geophysical Survey reports and data	Petroleum Data Manager	<p>Via courier or hand deliveries: Minerals & Energy InfoCentre Northern Territory Geological Survey Department of Primary Industry and Resources Level 3 Paspalis Centrepoint Building 48-50 Smith Street Mall DARWIN NT 0800</p> <p>Via postal deliveries: Minerals & Energy InfoCentre Northern Territory Geological Survey Department of Primary Industry and Resources GPO Box 4450 DARWIN NT 0801</p>	<ul style="list-style-type: none"> • geoscience.info@nt.gov.au (for files under 10MB) • Ph: +61 8 8999 6443
All other reports	Petroleum Operations Team	Energy Division Northern Territory Department of Primary Industry and Resources Level 4 Paspalis Centrepoint Building 48-50 Smith Street Mall DARWIN NT 0800	<ul style="list-style-type: none"> • petroleum.operations@nt.gov.au • Ph: +61 8 8999 6350

8. Disclaimer

Whilst these guidelines have been provided to assist titleholders in their compliance with the *Petroleum Act* and *Petroleum (Submerged Lands) Act*, it is incumbent on the titleholder to acquaint themselves with the provisions of the *Petroleum Act*, *Petroleum (Submerged Lands) Act*, and all other laws of the Northern Territory as are applicable.

These guidelines are here to assist titleholders, however *the legislation prevails in all cases*.

9. Reports and Data Submission Tables

Table 9.1. Well Reports and Data

This table defines the approved well reporting and data formats as stated in the *Schedule of Onshore Petroleum Exploration and Production Requirements, 1 June 2019*.

REPORT / DATA	DATA CLASSIFICATION	APPROVED DATA FORMAT	MEDIA	SUBMISSION DUE DATE	SCHEDULE 2019	REMARKS
<i>WELL REPORTS</i>						
Basic (Initial) Well Completion Report	Basic	PDF	CD/DVD or portable hard drive	3 months after rig release	Due Date 314(1) Contents 314(3)	<ul style="list-style-type: none"> • Include daily drilling reports in separate folder. • Submit Image files and logs in separate folders and list in reports
Interpretative (Final) Well Completion Report	Interpretative	PDF	CD/DVD or portable hard drive	12 months after rig release	Due Date 314(2) Contents 314(4)	<ul style="list-style-type: none"> • Submit Image files and logs in separate folders and list in reports
<i>WELL DATA</i>						
Raw, edited field data and processed data for all wireline logs, MWD or LWD tools. Includes well test raw data.	Basic	LIS, DLIS, or LAS	CD/DVD or portable hard drive	3 months after rig release	Due Date 314(1) Contents 314(3)	<ul style="list-style-type: none"> • Format supplied as originally recorded with verification listing of the data supplied. • Include full header information. • Include raw well data for all tests conducted.
Log displays	Basic	PDF or TIF	CD/DVD or portable hard drive	3 months after rig release	Due Date 314(1) Contents 314(3)	<ul style="list-style-type: none"> • Continuous page at a readable scale (1:500 and 1:200). • Minimum resolution 200 dpi.
Edited field and processed data for borehole deviation surveys.	Basic	LIS, DLIS, ASCII, LAS, or XLSX	CD/DVD or portable hard drive	3 months after rig release	Due Date 314(1) Contents 314(3)	<ul style="list-style-type: none"> • Format supplied as originally recorded with verification listing of the data supplied. • Include full header information. • For borehole deviation surveys, azimuth reference must state whether it is true, magnetic or grid north.
Mudlogging data	Basic	ASCII or LAS	CD/DVD or portable hard drive	3 months after rig release	As above	<ul style="list-style-type: none"> • With a header giving field names, curve names and units of measure.

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REPORT / DATA	DATA CLASSIFICATION	APPROVED DATA FORMAT	MEDIA	SUBMISSION DUE DATE	SCHEDULE 2019	REMARKS
Mudlog display	Basic	TIF or PDF	CD/DVD or portable hard drive	3 months after rig release	As above	<ul style="list-style-type: none"> Continuous page at a readable scale. Minimum resolution 200 dpi.
Velocity surveys a. raw b. processed c. checkshot d. time/depth analysis (If generated)	Basic	DLIS, SEG-Y or ASCII	CD/DVD or portable hard drive	3 months after rig release	As above	<ul style="list-style-type: none"> Include verification header file. SEG-Y Standard Version of SEG-Y must be stated (eg. revision 1.0 or revision 2.0)
Velocity survey displays	Basic	TIF, JPEG or PDF	CD/DVD or portable hard drive	3 months after rig release	As above	<ul style="list-style-type: none"> Minimum resolution 200 dpi.
Core, side wall core in natural and UV light photography	Basic	JPEG, PNG or TIF	CD/DVD or portable hard drive	3 months after rig release	As above	<ul style="list-style-type: none"> UV light to be in fluorescent sections High-resolution images able to be magnified without pixelation Provide minimum 300dpi image in 64K colours. Provide as separate files to allow preservation of original image quality.
Interpretative log analysis	Interpretative	LIS, DLIS, ASCII, LAS, XLSX	CD/DVD or portable hard drive	12 months after rig release	Due Date 314(2) Contents 314(4)	<ul style="list-style-type: none"> Include full header information.
Composite well log	Interpretative	TIF, JPEG or PDF	CD/DVD or portable hard drive	12 months after rig release	Due Date 314(2) Contents 314(4)	<ul style="list-style-type: none"> Include full header information as per the Australian Requirements for Submission of Digital Exploration Data. As part of the Interpretative Well Completion Report (WCR). Minimum resolution 200 dpi.
Petrophysical, geochemical and other sample analyses results	Interpretative	ASCII (Tab delimited), or XLSX	CD/DVD or portable hard drive	12 months after rig release	Due Date 314(2) Contents 314(4)	<ul style="list-style-type: none"> Include metadata about logs and samples Include methodology followed, equipment and software used.

Table 9.2. Geological Samples and Analysis Reports

REPORT / SAMPLES	DATA CLASSIFICATION	APPROVED DATA FORMAT / QUANTITY	SUBMISSION DUE DATE	SCHEDULE 2019	REMARKS
<i>REPORTS and ANALYSIS</i>					
Progress report of the analysis on exported core or cutting	Basic	PDF	End of each subsequent 12 month period from authorisation date	Due Date 307(6)	<ul style="list-style-type: none"> Analysis report and data is to be submitted as part of the final well completion report (where available); or as part of the annual report if final well completion report has already been submitted. Progress report not routinely released to the public.
Reports on investigation, analysis, conclusions etc of cuttings/cores	Interpretative	PDF (CD/DVD or portable hard drive)	With Interpretative Well Completion Report or Annual Report	308(1)	<ul style="list-style-type: none"> Clearly identify well names and type of analysis. Report to include the final results of interpretation of the raw data and methods.
Data from investigation, analysis, etc of cuttings/cores, fluid samples.	Interpretative	ASCII, XLSX (CD/DVD or portable hard drive)	With Interpretative Well Completion Report or Annual Report	308(1)	<ul style="list-style-type: none"> As a tab delimited ASCII file with metadata included and attached to the analysis report.
<i>SAMPLES</i>					
Core and cuttings from any drilling activities	Basic	Selected core and cuttings must be lodged in standard modular core boxes/chip trays.	6 months of rig release	Due Date 307(4) Submission Procedure 307(1)	<ul style="list-style-type: none"> Core and Cuttings should not be sent out of Australia unless otherwise approved. Core submission instructions and submission forms are in the Core Facility web page
Sidewall core material	Basic	All material collected	6 months of rig release	Due Date 307(4) Submission Procedure 307(1)	<ul style="list-style-type: none"> If recovered. Sidewall cores should not be sent out of Australia unless otherwise approved.
Full conventional cores	Basic	½ of the core	6 months of rig release	Due Date 307(4) Submission Procedure 307(2)	<ul style="list-style-type: none"> If cut - fresh core slabbed vertically. Shall be placed in suitable labelled core tray. Full diameter core samples may be retained with an approval as per Schedule 307(3).

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REPORT / SAMPLES	DATA CLASSIFICATION	APPROVED DATA FORMAT / QUANTITY	SUBMISSION DUE DATE	SCHEDULE 2019	REMARKS
Liquid hydrocarbon samples	Basic	1 litre	If collected, offer as soon as practicable after completion of the test during which the sample is collected.	309(3)	<ul style="list-style-type: none"> • Consultation with the department (1ltr if available) • Submit in an API approved safety container.
Gaseous hydrocarbon samples	Basic	300 cm ³	Offer as soon as practicable after completion of the test during which the sample is collected.	309(3)	<ul style="list-style-type: none"> • Consultation with the department (1ltr if available) • Submit in an API approved safety container.
Palynological slides and residues, Palaeontological material and Petrological slides	Interpretative	All material collected	Prior to cessation of title.	308(2)	<ul style="list-style-type: none"> • If prepared.

Table 9.3. 2D/3D Seismic Survey Reports and Data

This table defines the approved seismic reporting and data formats as stated in the *Schedule of Onshore Petroleum Exploration and Production Requirements, 1 June 2019 (Section 508 and 509)*. If data in the latest standard is not available, previous standards will be accepted, provided they are correctly formatted and version is clearly stated.

REPORT / DATA	SURVEY TYPE	DATA CLASSIFICATION	APPROVED DATA FORMAT	MEDIA	SUBMISSION DUE DATE	SCHEDULE 2019	REMARKS
<i>SEISMIC SURVEY REPORTS</i>							
Acquisition Report	2D / 3D	Basic	PDF	CD/DVD or portable hard drive	12 months after completion of data acquisition	509(2)	<ul style="list-style-type: none"> • Include weekly survey reports as an appendix in separate folder. • Clearly identify the seismic line prefix and line numbers.
Processing Report	2D / 3D	Basic	PDF	CD/DVD or portable hard drive	12 months after completion of data acquisition	509(3)	<ul style="list-style-type: none"> • Include sample print out of SEGY/EBCDIC header. • Must define 3D grid definitions for loading into interpretation work stations.
Interpretation Report	2D / 3D	Interpretative	PDF	CD/DVD or portable hard drive	12 months after completion of data acquisition	509(4)	<ul style="list-style-type: none"> • Not required for non-exclusive surveys.
<i>ACQUISITION DATA</i>							
Raw navigation data	2D / 3D	Basic	IOGP (P2/11 or later) and SPS (if generated)	CD/DVD, portable hard drive	12 months after completion of data acquisition	508(3)	<ul style="list-style-type: none"> • IOGP P2/11 or subsequent format with all associated data sufficient to reprocess seismic data. • Examples of Shell Processing Support (SPS- s, r, x) for 3D surveys are in Appendix 02, 03 and 04.
Seismic field data	2D / 3D	Basic	SEG Standard	portable hard drive or 3592 cartridge	12 months after completion of data acquisition	508(3)	<ul style="list-style-type: none"> • Include version and revision number of SEG format
Seismic support data	2D / 3D	Basic	PDF/XLSX	CD/DVD or portable hard drive	12 months after completion of data acquisition	508(3)	<ul style="list-style-type: none"> • See Appendix 06 for an example of observer logs.
Uphole data	2D / 3D	Basic	ASCII	CD/DVD or portable hard drive	12 months after completion of data acquisition	508(3)	<ul style="list-style-type: none"> • Include line name, shotpoint numbers, date, elevation, total drill depth and coordinate details plus time depth pairs for each uphole. • See Appendix 07 for an example of uphole data.

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REPORT / DATA	SURVEY TYPE	DATA CLASSIFICATION	APPROVED DATA FORMAT	MEDIA	SUBMISSION DUE DATE	SCHEDULE 2019	REMARKS
Itemised field tape listing including : a. Tape number b. Survey name c. Line number d. Shotpoint range e. Data type	2D / 3D	Basic	ASCII/XLSX	CD/DVD or portable hard drive	12 months after completion of data acquisition	508(3)	<ul style="list-style-type: none"> See Appendix 05 for an example of field data listing.
<i>PROCESSED DATA</i>							
Raw and final stacked data including near/mid and far stacks if generated.	2D / 3D	Basic	SEG-Y Standard	CD/DVD or portable hard drive	12 months after completion of data acquisition	508(3)	<ul style="list-style-type: none"> Provide sample print of SEG-Y header with survey processing report (PDF) and include 3D grid definition details used for loading SEG-Y into interpretation work stations, including the CRS. Include fully annotated EBCDIC header. See Appendix 08 for an example of a SEG-Y EBCDIC header Version of SEG-Y must be stated (eg. revision 1.0 or revision 2.0)
Raw and final migrated data including: a. Pre-stack time migration (PSTM) b. Pre-stack depth migration (PSDM) c. Near/mid/far sub-stacks	2D / 3D	Basic	SEG-Y Standard	CD/DVD or portable hard drive	12 months after completion of data acquisition	508(3)	<ul style="list-style-type: none"> Include fully annotated EBCDIC header with information on CDP Easting and Northing and CRS. See Appendix 08 for an example of a SEG-Y EBCDIC header Version of SEG-Y must be stated (eg. revision 1.0 or revision 2.0)
2D data subset	3D	Basic	SEG-Y Standard	CD/DVD or portable hard drive	12 months after completion of data acquisition	508(3)	<ul style="list-style-type: none"> Final migrated data. At least 5km x 5km grid for validation of data. Version of SEG-Y must be stated (eg. revision 1.0 or revision 2.0)
Final processed navigation, elevation and bathymetry data	2D / 3D	Basic	IOGP (P1/11 or later)	CD/DVD or portable hard drive	12 months after completion of data acquisition	508(3)	<ul style="list-style-type: none"> 2D header information of navigation /shotpoint location data including elevations or bathymetry (if applicable). Header data must include geodetic datum, spheroid, projection and transformation parameters. For 3D: Include all data sufficient to re-process seismic data including shot and receiver coordinates.

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REPORT / DATA	SURVEY TYPE	DATA CLASSIFICATION	APPROVED DATA FORMAT	MEDIA	SUBMISSION DUE DATE	SCHEDULE 2019	REMARKS
Final navigation data in the form of a. Final processed (grid) bin coordinates b. Polygonal position data (outline of the full fold area)	3D	Basic	IOGP (P6/11 or later)	CD/DVD or portable hard drive	12 months after completion of data acquisition	508(3)	<ul style="list-style-type: none"> IOGP 3D binning grids Listing major inflection points of a polygon describing the location of the survey providing survey name, polygon point, inline/crossline nomenclature, latitude and longitude. In (a), 'grid' coordinates refer to bin centre coordinates.
Shotpoint to common depth point (CDP) relationship	2D	Basic	ASCII (tab delimited)	CD/DVD or portable hard drive	12 months after completion of data acquisition	508(3)	<ul style="list-style-type: none"> Provide sufficient SP/CDP data for input into workstation interpretation. At least SOL and EOL relationships for each line and a listing of equivalent CDP/SP pairs of each line.
Data for stacking and migration velocities including: a. Line number b. Shotpoint c. Time versus RMS pairs	2D	Basic	ASCII (tab delimited)	CD/DVD or portable hard drive	12 months after completion of data acquisition	508(3)	<ul style="list-style-type: none"> RMS = Root Mean Square See Appendix 09 and 10 for examples of interval and RMS velocities.
Data for stacking and migration velocities including: a. Bin number b. Time versus RMS pairs	3D	Basic	ASCII (tab delimited)	CD/DVD or portable hard drive	12 months after completion of data acquisition	508(3)	<ul style="list-style-type: none"> In (a), inline/xline or bin/track and x/y navigation values are required. In (b), PSTM and PSDM should include INT, Epsilon or DELTA values where appropriate.
Itemised process tape listing showing: a. Tape number b. Survey name c. Line number d. Shotpoint Range e. Common depth points (CDPs) f. Data type	2D	Basic	ASCII (tab delimited)	CD/DVD or portable hard drive	12 months after completion of data acquisition	508(3)	
Itemised process tape listing showing: a. Tape number b. Survey name c. In-lines and cross-lines d. Common depth points e. Data type	3D	Basic	ASCII (tab delimited)	CD/DVD or portable hard drive	12 months after completion of data acquisition	508(3)	

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REPORT / DATA	SURVEY TYPE	DATA CLASSIFICATION	APPROVED DATA FORMAT	MEDIA	SUBMISSION DUE DATE	SCHEDULE 2019	REMARKS
<i>INTERPRETATIVE DATA</i>							
Digital images of interpretation maps	2D / 3D	Interpretative	Geo-referenced TIF or PDF	CD/DVD or portable hard drive	12 months after completion of data acquisition	509(4)	<ul style="list-style-type: none"> These include TWT and depth structure maps at key horizons and representative sections showing seismic horizon picks as georeferenced TIF or PDF images.
Interpreted horizons and faults	2D / 3D	Interpretative	ASCII	CD/DVD or portable hard drive	12 months after completion of data acquisition	509(4)	<ul style="list-style-type: none"> Provide x, y, z values along with information on CRS

For further details on SEG-Y standard, visit <http://seg.org/Publications/SEG-Technical-Standards> and for IOGP standard, visit <http://www.iogp.org/blog/2015/05/20/iogp-releases-version-1-1-of-geophysical-position-data-exchange-formats/>

Table 9.4. Reprocessed Seismic Survey Reports and Data

REPORT / DATA	SURVEY TYPE	DATA CLASSIFICATION	APPROVED DATA FORMAT	MEDIA	SUBMISSION DUE DATE	SCHEDULE 2019	REMARKS
<i>REPROCESSED REPORTS</i>							
Final Reprocessing Report	Reprocessed	Basic	PDF	CD/DVD or portable hard drive	12 months after completion of reprocessing of data	509(3)	<ul style="list-style-type: none"> Report contents as per Schedule 509(3). Original survey names and lines are to be clearly defined. Clearly identify the reprocessing project name, using the same project name for all submissions.
Final Interpretative (Reprocessing) Report	Reprocessed	Interpretative	PDF	CD/DVD or portable hard drive	12 months after completion of reprocessing of data	509(4)	<ul style="list-style-type: none"> Report contents as per Schedule 509(4). Georeferenced TIF to include TWT and depth structure maps at key horizons and representative sections showing seismic horizon picks.
<i>REPROCESSED DATA (If requested as per Schedule 508(6))</i>							
Raw and final stacked data including near/mid/far stacks, if generated. (2D and 3D)	Reprocessed	Basic	SEG-Y Standard	CD/DVD or portable hard drive	12 months after completion of reprocessing of data	509(3)	<ul style="list-style-type: none"> EBCDIC header to be fully annotated. Clearly identify original survey name and line prefixes. Clearly identify the reprocessing project name and use the same project name for all submissions. Version of SEG-Y must be stated (eg. revision 1.0 or revision 2.0)

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REPORT / DATA	SURVEY TYPE	DATA CLASSIFICATION	APPROVED DATA FORMAT	MEDIA	SUBMISSION DUE DATE	SCHEDULE 2019	REMARKS
Raw and final migrated data including: a. Pre-stack time migration (PSTM) b. Pre-stack depth migration (PSDM) c. Near/mid/far sub-stacks	Reprocessed	Basic	SEG-Y Standard	CD/DVD or portable hard drive	12 months after completion of reprocessing of data	508(3)	<ul style="list-style-type: none"> Includes fully annotated EBCDIC header. Version of SEG-Y must be stated (eg. revision 1.0 or revision 2.0)
2D data subset	Reprocessed	Basic	SEG-Y Standard	CD/DVD or portable hard drive	12 months after completion of reprocessing of data	508(3)	<ul style="list-style-type: none"> Related to non-exclusive surveys. Final migrated data. At least 5km x 5km grid for validation of data.
Shotpoint to CDP relationship (for 2D)	Reprocessed	Basic	ASCII (tab delimited)	CD/DVD or portable hard drive	12 months after completion of reprocessing of data	508(3)	<ul style="list-style-type: none"> Provide sufficient SP/CDP data for workstation loading and interpretation.
Final processed (grid) bin coordinates for 3D seismic survey	Reprocessed	Basic	IOGP (P6/11 or later)	CD/DVD or portable hard drive	12 months after completion of reprocessing of data	508(3)	<ul style="list-style-type: none"> IOGP 3D binning grids
Polygonal position data (outline of the full fold area)	Reprocessed	Basic	IOGP (P6/11 or later)	CD/DVD or portable hard drive	12 months after completion of reprocessing of data	508(3)	<ul style="list-style-type: none"> Listing major inflection points of a polygon describing the location of the survey providing survey name, polygon point, inline/crossline nomenclature, latitude and longitude.
Velocity Data	Reprocessed	Basic	ASCII (tab delimited)	CD/DVD or portable hard drive	12 months after completion of reprocessing of data	508(3)	<ul style="list-style-type: none"> Including bin number and time versus RMS velocity pair for both stacked and migrated velocities. Reprocessed PSTM and PSDM should include INT, Epsilon or DELTA values where appropriate.
Itemised process tape listing (2D and 3D)	Reprocessed	Basic	ASCII (tab delimited)	CD/DVD or portable hard drive	12 months after completion of reprocessing of data	508(3)	<ul style="list-style-type: none"> Reprocessed data showing tape number, survey name, line number, shotpoint range and data type.
<i>INTERPRETATIVE DATA</i>							
Digital images of interpretation maps	Reprocessed	Interpretative	Geo-referenced TIF or PDF	CD/DVD or portable hard drive	12 months after completion of reprocessing of data	509(4)	<ul style="list-style-type: none"> These include TWT and depth structure maps at key horizons and representative sections showing seismic horizon picks as georeferenced TIF or PDF images.

Table 9.5. Gravity, Magnetic and other Geophysical or Geological Survey Reports and Data

This table defines the approved geophysical reporting and data formats as stated in the *Schedule of Onshore Petroleum Exploration and Production Requirements, 1 June 2019 (Section 508 and 509)*.

REPORT / DATA	DATA CLASSIFICATION	APPROVED DATA FORMAT	MEDIA	SUBMISSION DUE DATE	SCHEDULE 2019	REMARKS
Acquisition and Processing Reports	Basic	PDF	CD/DVD or portable hard drive	12 months of completion of data acquisition	509(2) and 509(3)	Acquisition and processing reports may be combined together or can be submitted as separate reports.
Interpretation Report	Interpretative	PDF	CD/DVD or portable hard drive	12 months of completion of data acquisition	509(4)	Conclusions drawn from the interpretation and a detailed list of final products must be given.
Field data	Basic	ASCII (tab delimited)	CD/DVD or portable hard drive	12 months of completion of data acquisition	508(3)	For details and examples of acceptable geophysical survey data submission refer to: Approved Guideline 7 under the NT Mineral Titles Act and the Australian Requirements for Submission of Digital Exploration Data
Field support and navigation data	Basic	ASCII (tab delimited)	CD/DVD or portable hard drive	12 months of completion of data acquisition	508(3)	
Final processed data	Basic	ASEG-GDF2, Gridded data in ASEG GXF or ER mapper gridded format	CD/DVD or portable hard drive	12 months of completion of data acquisition	508(3)	
Final processed images	Basic	GEOTIFF, JPEG, PDF, PNG	CD/DVD or portable hard drive	12 months of completion of data acquisition	508(3)	
Images of interpretation maps	Interpretative	GEOTIFF, JPEG, PDF	CD/DVD or portable hard drive	12 months of completion of data acquisition	508(3)	

10. Appendices

Appendix 01. Well Data Card Template

Well Name		Petroleum Title		Basin			
Well Purpose		Status		Parent Well Name, if any			
Spud Date		TD Date		Rig Release Date			
Primary Objective				Rig(s) Name			
Secondary Objective				100K Map Sheet			
Total Depth	Driller	MD	TVD	Side-Track Kick-off Depth, if applicable			
	Logger			Drill Datum <input type="checkbox"/> DF <input type="checkbox"/> RT <input type="checkbox"/> KB	Elevation Datum: GL Elevation: Drill Datum Elevation:		
Location <i>(GDA94 Datum with GRS80 Ellipsoid using MGA94 Grid)</i>	Coordinates	Surface	Bottom Hole	Seismic Station, if applicable	Survey	Inline	Xline
	Latitude						
Zone	Longitude						
	Easting						
	Northing				Shot point		
Well Summary							
Hole and Casing Design (Drillers Depths)						Drilling Fluid	
Type	Hole Size	Depth (mMD)	Casing Size	Shoe mMD	Shoe mTVD	Hole Size	Type
Stratigraphy – Formation Tops (Loggers Depths)				Formation Evaluation			
Formation	Depth			Run	Measurement	Depth Interval	
	mMD	mTVD	mTVDGL			From (mMD)	To (mMD)
Mud Logging			Formation Testing (DST)			DFIT	<input type="checkbox"/> Yes <input type="checkbox"/> No
						HF	<input type="checkbox"/> Yes <input type="checkbox"/> No
Coring				Hydrocarbon Shows			
Completion							

WELL DATA CARD FIELDS - DESCRIPTION

No.	Field Name	Field Description
1	Well Name	Name of Well
2	Petroleum Title	The Petroleum Title / Tenement in which the well was drilled, e.g., EP100
3	Basin	The basin and / or sub-basin
4	Well Purpose	Appraisal, Development, Exploration, Extension / Appraisal, Stratigraphic
5	Status	Operational status of the well (Abandoned, Completed, Production, Suspended)
6	Parent Well Name	Well Name of original Well that has had a side-track, e.g., Challis 11 is the parent to side-track Challis 11 ST1
7	Spud Date	Date drilling commenced
8	TD Date	Date drilling reached total depth
9	Rig Release Date	Date rig released
10	Primary Objective	Primary reason for drilling the Well, e.g., to test a primary reservoir formation.
11	Secondary Objective	Secondary reason for drilling the well, e.g., to penetrate a secondary stratigraphic target.
12	Rig Name	Name of the Rig(s)
13	100K Map Sheet	Name and index number of 1:100 000 scale map sheet of well at ground level
14	Total Depth (TD)	Maximum depth reached for the Well, as measured in metres from the Drill Datum.
15	Side-Track Kick-off Depth	Measured depth of Well that a side-track kicked-off.
16	Location	General geographical location. Indicate Surface and Bottom Hole Coordinates in Latitude-Longitude and Easting-Northing.
17	Zone	Map projection Zone, e.g., Zone 53
18	Drill Datum	The drilling datum used as the baseline or reference point to measure drilling depths, e.g., Derrick Floor (DF), Rotary Table (RT) or Kelly Bushing (KB)
19	Elevation Datum	Height datum; MSL (Mean Sea Level) or AHD (Australian Height Datum)
20	GL Elevation	Elevation of Ground Level in metres above the Elevation Datum
21	Drill Datum Elevation	Elevation of the reference point (Drill Datum) in metres above the Elevation Datum
22	Seismic Station	Location of the well with reference to 2D and/or 3D seismic surveys and shot points.
23	Well Summary	A brief summary of the well, narrating the aim and objectives and the achieved results, findings and status.
24	Hole and Casing Design	Details of casings and casing shoes for different hole sizes
25	Drilling Fluid	Details of drilling fluid used for different hole sizes
26	Stratigraphy – Formation Tops	Description of the major formations encountered and their depths
27	Formation Evaluation	Details of measurement and analysis of formation and fluid properties while drilling.
28	Mud Logging	Details of cuttings examined and their intervals and depths
29	Formation Testing (DST)	Details of Drill Stem Tests (DST) performed and their depth intervals
30	DFIT	Diagnostic Fracture Injection Testing
31	HF	Hydraulic Fracturing
32	Coring	Details of conventional and / or side wall cores and their depth intervals
33	Hydrocarbon Shows	Indications of the presence of hydrocarbons, zones and their depth and thickness.
34	Completion	Brief description of the well completion, casings and perforations and depths.

Appendix 02. Example of SPS (S) data format file

```

H00 SPS format version number SPS 2.1
H26
H26 Point Record Specification
H26
H26 Item Definition of field Cols Format Min to Max Default Units
H26 ----
H26 1 Record identification 1-1 A1 'R' or 'S' None -
H26 2 Line name 2-11 F10.2 -999999.99 to None -
H26 99999999.99 None -
H26 3 Point number 12-21 F10.2 -999999.99 to None -
H26 99999999.99 None -
H26 + 22-23 Blank Blank
H26 4 Point index 24-24 I1 1-9 1 -
H26 5 Point code (1 adj) 25-26 A2 see below None -
H26 6 Static correction 27-30 I4 -999 to 999 Blank Msec
H26 7 Point depth 31-34 F4.1 0-99.9 0 Header
H26 defined
H26 8 Seismic datum 35-38 I4 -999 to 9999 0 Header
H26 defined
H26 9 Uphole time 39-40 I2 0-99 Blank Msec
H26 10 Water depth 41-46 F6.1 0 to 9999.9 Blank Header
H26 defined
H26 11 Map grid easting 47-55 F9.1 None None -
H26 12 Map grid northing 56-65 F10.1 None None -
H26 13 Surface elevation 66-71 F6.1 -999.9 9999.9 None Header
H26 defined
H26 14 Day of year 72-74 I3 1-999 None -
H26 15 Time hhmss 75-80 3I2 000000-235959 None -
H26
H26 Samples of Point code :
H26 'PM' permanent marker
H26 'KL' kill or omit point
H26 'G1'..'G9' 'H1'..'H9' 'R1'..'R9' receiver codes
H26 'V1'..'V9' 'E1'..'E9' 'A1'..'A9' 'W1'..'W9'
H26 'G1'..'G9' source codes
H26
H26 Note:
H26 Alphanumeric (A) fields are to be left justified and
H26 Numeric (I and F) fields are to be right justified unless specified
H26 otherwise.
H26
H26
H26 1 2 3 4 5 6 7 8
H26 567890123456789012345678901234567890123456789012345678901234567890
H26
S 221.00 3031.00 1 0 410675.3 8132965.4 266.1278 85603
S 221.00 3031.00 2 0 410675.6 8132965.7 265.4278 85717
S 221.00 3055.00 3 0 410560.6 8133307.6 265.5278 91838
S 221.00 3054.00 3 0 410565.6 8133293.0 266.2278 91944
S 221.00 3053.00 2 0 410570.4 8133279.1 267.2278 92038
S 221.00 3052.00 2 0 410575.8 8133264.2 267.6278 92141
S 221.00 3051.00 2 0 410581.0 8133250.2 267.5278 92213
S 221.00 3050.00 2 0 410585.3 8133236.2 268.5278 92248
S 221.00 3049.00 2 0 410589.5 8133222.3 267.7278 92319
S 221.00 3048.00 2 0 410594.6 8133207.7 268.3278 92352
S 221.00 3047.00 2 0 410598.4 8133193.0 266.6278 92423
S 221.00 3046.00 2 0 410603.6 8133178.9 266.8278 92456
S 221.00 3045.00 2 0 410608.1 8133165.0 267.5278 92528
S 221.00 3044.00 2 0 410613.4 8133151.3 266.3278 92610
S 221.00 3043.00 2 0 410618.1 8133137.3 267.0278 92641
S 221.00 3042.00 2 0 410623.0 8133122.8 264.8278 92712

```

Appendix 03. Example of SPS (R) data format file

```

H00 SPS format version number SPS 2.1
H26
H26 Point Record Specification
H26
H26 Item      Definition of field      Cols      Format      Min to Max      Default      Units
H26 ----      -
H26 1         Record identification      1-1       A1          'R' or 'S'      None         -
H26 2         Line name                    2-11      F10.2       -999999.99 to   None         -
H26           9999999.99          None         -
H26 3         Point number                 12-21     F10.2       -999999.99 to   None         -
H26           9999999.99          None         -
H26 +         22-23                       Blank      Blank
H26 4         Point index                  24-24     I1          1-9             1           -
H26 5         Point code (1 adj)          25-26     A2          see below       None         -
H26 6         Static correction           27-30     I4          -999 to 999     Blank      Msec
H26 7         Point depth                  31-34     F4.1       0-99.9         0           Header
H26           Header defined
H26 8         Seismic datum              35-38     I4          -999 to 9999    0           Header
H26           Header defined
H26 9         Uphole time                  39-40     I2          0-99           Blank      Msec
H26 10        Water depth                 41-46     F6.1       0 to 9999.9    Blank      Header
H26           Header defined
H26 11        Map grid easting            47-55     F9.1       None           None         -
H26 12        Map grid northing           56-65     F10.1      None           None         -
H26 13        Surface elevation           66-71     F6.1       -999.9 9999.9  None         Header
H26           Header defined
H26 14        Day of year                  72-74     I3          1-999          None         -
H26 15        Time hhmss                  75-80     3I2        000000-235959 None         -
H26
H26 Samples of Point code :
H26           'PM' permanent marker
H26           'KL' kill or omit point
H26           'G1'..'G9' 'H1'..'H9' 'R1'..'R9' receiver codes
H26           'V1'..'V9' 'E1'..'E9' 'A1'..'A9' 'W1'..'W9'
H26           'G1'..'G9' source codes
H26
H26 Note:
H26 Alphanumeric (A) fields are to be left justified and
H26 Numeric (I and F) fields are to be right justified unless specified
H26 otherwise.
H26
H26
H26           1           2           3           4           5           6           7           8
H26 5678901234567890123456789012345678901234567890123456789012345678901234567890
H26
H26 R      221.00    2231.00    1p1                414479.5  8121577.2  235.5278141928
H26 R      221.00    2232.00    1p1                414474.7  8121591.5  235.5278141900
H26 R      221.00    2233.00    1p1                414470.1  8121606.1  235.6278141833
H26 R      221.00    2234.00    1p1                414465.4  8121620.3  235.7278141804
H26 R      221.00    2235.00    1p1                414461.1  8121634.3  235.7278141736
H26 R      221.00    2236.00    1p1                414456.4  8121648.7  235.8278141704
H26 R      221.00    2237.00    1p1                414451.5  8121662.9  235.8278141631
H26 R      221.00    2238.00    1p1                414446.4  8121677.1  235.9278141559
H26 R      221.00    2239.00    1p1                414441.1  8121691.4  235.9278141531
H26 R      221.00    2240.00    1p1                414435.9  8121705.3  236.0278141459
H26 R      221.00    2241.00    1p1                414430.8  8121719.5  235.9278141426
H26 R      221.00    2242.00    1p1                414425.7  8121733.5  236.0278141353
H26 R      221.00    2243.00    1p1                414421.8  8121748.3  236.1278141321
H26 R      221.00    2244.00    1p1                414419.4  8121762.9  236.1278141248
H26 R      221.00    2245.00    1p1                414416.1  8121777.4  236.2278141215
H26 R      221.00    2246.00    1p1                414412.7  8121791.8  236.2278141142

```

Guidelines for NT Onshore Petroleum Reporting and Data Submission

Appendix 04. Example of SPS (X) data format file

```

H00 SPS format version number SPS 2.1
H26
H26 Relation Record Specification
H26
H26 Item      Definition of field      Cols      Format      Min to Max      Default      Units
H26 ----      -
H26 1         Record identification           1-1       A1          'X'             None         -
H26 2         Field tape number (r adj)       2-7       3A2         Free            None         -
H26 3         Field record number             8-15      I8          0-16777216     None         -
H26 4         Field record increment          16-16     I1          1-9             1            -
H26 5         Instrument code                 17-17     A1          1-9             1            -
H26 6         Line name (l adj)              18-27     F10.2       -999999.99 to 999999.99  None         -
H26 7         Point number (r adj)           28-37     F10.2       -999999.99 to 999999.99  None         -
H26 8         Point index                    38-38     I1          1-9             1            -
H26 9         From channel                   39-43     I5          1-99999         None         -
H26 10        To channel                     44-48     I5          1-99999         None         -
H26 11        Channel increment              49-49     I1          1-9             None         -
H26 12        Line name (r adj)              50-59     F10.2       -999999.99 to 999999.99  None         -
H26 13        From receiver (r adj)          60-69     F10.2       -999999.99 to 999999.99  None         -
H26 14        To receiver (r adj)            70-79     F10.2       no default      None         -
H26 15        Receiver Index                 80-80     I1          1-9             1            -
H26
H26 Note :
H26     Alphanumeric (A) fields are to be left justified and
H26     Numeric (I and F) field are to be right justified unless
H26     specified otherwise.
H26
H26      1          2          3          4          5          6          7          8
H26 5678901234567890123456789012345678901234567890123456789012345678901234567890
H26
X  18  1443610  221.00  3031.001  1  5601  221.00  2752.00  3311.001
X  18  1443810  221.00  3031.002  1  5601  221.00  2752.00  3311.001
X  18  1444010  221.00  3055.003  1  5601  221.00  2776.00  3335.001
X  18  1444210  221.00  3054.003  1  5601  221.00  2775.00  3334.001
X  18  1444410  221.00  3053.002  1  5601  221.00  2774.00  3333.001
X  18  1444610  221.00  3052.002  1  5601  221.00  2773.00  3332.001
X  18  1444810  221.00  3051.002  1  5601  221.00  2772.00  3331.001
X  18  1445010  221.00  3050.002  1  5601  221.00  2771.00  3330.001
X  18  1445210  221.00  3049.002  1  5601  221.00  2770.00  3329.001
X  18  1445410  221.00  3048.002  1  5601  221.00  2769.00  3328.001
X  18  1445610  221.00  3047.002  1  5601  221.00  2768.00  3327.001
X  18  1445810  221.00  3046.002  1  5601  221.00  2767.00  3326.001
X  18  1446010  221.00  3045.002  1  5601  221.00  2766.00  3325.001
X  18  1446210  221.00  3044.002  1  5601  221.00  2765.00  3324.001
X  18  1446410  221.00  3043.002  1  5601  221.00  2764.00  3323.001
X  18  1446610  221.00  3042.002  1  5601  221.00  2763.00  3322.001
X  18  1446810  221.00  3041.002  1  5601  221.00  2762.00  3321.001
X  18  1447010  221.00  3040.002  1  5601  221.00  2761.00  3320.001
X  18  1447210  221.00  3039.002  1  5601  221.00  2760.00  3319.001
X  18  1447410  221.00  3038.001  1  5601  221.00  2759.00  3318.001
X  18  1447610  221.00  3037.001  1  5601  221.00  2758.00  3317.001
X  18  1447810  221.00  3036.001  1  5601  221.00  2757.00  3316.001
X  18  1448010  221.00  3035.001  1  5601  221.00  2756.00  3315.001
X  18  1448210  221.00  3034.001  1  5601  221.00  2755.00  3314.001
X  18  1448410  221.00  3033.001  1  5601  221.00  2754.00  3313.001
X  18  1448610  221.00  3032.002  1  5601  221.00  2753.00  3312.001
X  18  1448810  221.00  3031.003  1  5601  221.00  2752.00  3311.001

```

Appendix 05. Example of Seismic Data Listings

Survey Data Field and Processed Tape Listing

Box Number	Field Tape Number	Sequence (Optional)	Line Number	First SP	Last SP	FF	LF	Date Recorded	Format	Media	Comments

Survey Support Data Listing

Box Number	Report	Item	Description	Data Type	Format	Media	Comments

Guidelines for NT Onshore Petroleum Reporting and Data Submission

Appendix 06. Example of Observer Logs

Observer_Report_Results : [

```
----- TERREX SEISMIC CREW 403-----
CLIENT:CENTRAL PETROLEUM LTD
PROSPECT:2008 BLAMORE TRACK 2D SEISMIC SURVEY - EP-93 - PEDIRKA BASIN N.T.
FIELD FILTER:0.8 NQ LIN PHASE SAMPLE RATE:2ms. RECORD LENGTH:6 SECONDS
PRE-AMP GAIN:24db. SWEEP FREQUENCY: 5-70Hz SWEEP LENGTH:12 SECONDS
VIB ARRAY: 3 VIBES IN LINE , 1 SWEEPS PER VP,12.5 MTR PAD TO PAD.
PHONE ARRAY: 12 PHONES OVER 25.0m CENTERED ON PEG. GEOPHONE FREQUENCY:10Hz.
STATION INTERVAL:25.0m. SOURCE INTERVAL:25.0m
```

DATE: Apr 6 2008

PAGE 1

```
-----
TIME FILE TAPE LINE SHOT POINT LIVE CHANNELS
08:58:10 9000 6 CB08-01 0.0 1=1922-2349 (1-428)
08:58:38 9001 6 CB08-01 0.0 1=1922-2349 (1-428)
08:58:58 9002 6 CB08-01 0.0 1=1922-2349 (1-428)
08:59:11 9003 6 CB08-01 0.0 1=1922-2349 (1-428)
08:59:23 9004 6 CB08-01 0.0 1=1922-2349 (1-428)
08:59:58 9005 6 CB08-01 0.0 1=1922-2349 (1-428)
09:00:29 9006 6 CB08-01 0.0 1=1922-2349 (1-428)
```

```
*****
Instrument and Spread tests.
*****
```

```
Field Noise. FILE 9000
Field Impulse. FILE 9001
Field Leakage FILE 9002
Internal Impulse. FILE 9003
Distortion. FILE 9004
RMS. FILE 9005
Crosstalk. FILE 9006
```

```
TIME FILE TAPE LINE SHOT POINT SPREAD
09:03:12 712 6 CB08-01 2199.5 1=2050-2349 (1-300)
09:03:50 713 6 CB08-01 2198.5 1=2049-2348 (1-300)
09:04:27 714 6 CB08-01 2197.5 1=2048-2347 (1-300)
09:05:01 715 6 CB08-01 2196.5 1=2047-2346 (1-300)
09:05:35 716 6 CB08-01 2195.5 1=2046-2345 (1-300)
09:06:09 717 6 CB08-01 2194.5 1=2045-2344 (1-300)
09:06:44 718 6 CB08-01 2193.5 1=2044-2343 (1-300)
09:07:20 719 6 CB08-01 2192.5 1=2043-2342 (1-300)
09:07:52 720 6 CB08-01 2191.5 1=2042-2341 (1-300)
09:08:27 721 6 CB08-01 2190.5 1=2041-2340 (1-300)
09:09:01 722 6 CB08-01 2189.5 1=2040-2339 (1-300)
09:09:35 723 6 CB08-01 2188.5 1=2039-2338 (1-300)
09:10:10 724 6 CB08-01 2187.5 1=2038-2337 (1-300)
09:10:44 725 6 CB08-01 2186.5 1=2037-2336 (1-300)
09:11:17 726 6 CB08-01 2185.5 1=2036-2335 (1-300)
09:11:52 727 6 CB08-01 2184.5 1=2035-2334 (1-300)
09:12:26 728 6 CB08-01 2183.5 1=2034-2333 (1-300)
09:13:00 729 6 CB08-01 2182.5 1=2033-2332 (1-300)
09:13:35 730 6 CB08-01 2181.5 1=2032-2331 (1-300)
09:14:10 731 6 CB08-01 2180.5 1=2031-2330 (1-300)
09:14:50 732 6 CB08-01 2179.5 1=2030-2329 (1-300)
09:15:24 733 6 CB08-01 2178.5 1=2029-2328 (1-300)
09:15:58 734 6 CB08-01 2177.5 1=2028-2327 (1-300)
09:16:33 735 6 CB08-01 2176.5 1=2027-2326 (1-300)
09:17:06 736 6 CB08-01 2175.5 1=2026-2325 (1-300)
09:17:39 737 6 CB08-01 2174.5 1=2025-2324 (1-300)
09:18:13 738 6 CB08-01 2173.5 1=2024-2323 (1-300)
```

Appendix 07. Example of data listing for uphole data

UPHOLES DATA BASE

UPHOLE	DATE	LINE	STATION	EAST	SOUTH	ELEV	INTERSECTION	STATION	DEPTH LOGGED (m)	LAYER 1			LAYER 2		
										Bot Layer Depth (m)	Layer Thick (m)	Layer Veloc (m/sec)	Bot Layer Depth (m)	Layer Thick (m)	Layer Veloc (m/sec)
		Seismic Survey Name													
96	22-Oct-11	HAL-2011-202	3702	428821.00	8186996.0	266.0	HAL-2011-211	2698	80.0	2.0	2.0	409.0	60.0	58.0	1431.0
101	20-Oct-11	HAL-2011-204	3978	434117.00	8180681.0	297.0			132.0	2.0	2.0	364.0	15.0	13.0	929.0
104	19-Oct-11	HAL-2011-204	2545	412705.00	8182658.0	303.0	HAL-2011-205		124.0	32.0	32.0	800.0	96.0	64.0	1760.0
120	15-Oct-11	HAL-2011-211	2005	427876.00	8176885.0	312.0			107.0	2.0	2.0	426.0	14.0	12.0	2045.0
121	21-Oct-11	HAL-2011-204	3559	427863.00	8181249.0	279.0	HAL-2011-211	2300	100.0	2.0	2.0	239.0	12.0	10.0	2582.0
132	30-Oct-11	HAL-2011-108E	2285	379619.00	8201710.0	227.0			59.0	6.0	6.0	751.0	42.0	36.0	1416.0
133	27-Oct-11	HAL-2011-108E	1618	369856.00	8203853.0	232.0			59.0	2.0	2.0	510.0	12.0	10.0	1232.0

Appendix 08. Presentation of data in SEG Y EBCDIC header for processed seismic data

```

C 1 CLIENT: CENTRAL PETROLEUM 2008 BALMORE TRACK 2D SEISMIC SURVEY
C 2 LINE CB08-01 FINAL STACK
C 3 RECORDED BY TERREX SEISMIC CREW 402 FEB 2008
C 4 SOURCE: 3 VIB IN LINE 1 SWEEP PER VP 12.5M PAD-PAD
C 5 VP INT : 25M GROUP INT : 25M
C 6 RECORD LENGTH : 6S SWEEP LENGTH 12S
C 7 GEOPHONE ARRAY: 12 PHONES OVER 25M CENTRED ON STATION
C 8 SPLIT SPREAD 300 CHANNELS TAPE FORMAT: SEG D
C 9 2MS SAMPLE RATE 150 NOMINAL FOLD COVERAGE
C10 PROJECTION : MGA94 Zone 53
C11 SURVEY DATUM : GEOCENTRIC DATUM OF AUSTRALIA 1994 (GDA94)
C12 **** PROCESSING SEQUENCE ****
C13 TRANSCRIPTION FROM SEG D TO FUGRO INTERNAL FORMAT.
C14 ZERO TO MINIMUM PHASE CONVERSION
C15 AMPLITUDE RECOVERY : SPHERICAL DIVERGENCE CORRECTION
C16 FK VELOCITY FILTER 1800 M/S
C17 STATICS : FLOATING DATUM CORRECTION. GMG REFRACTION STATICS
C18 CDP SORT + SURFACE CONSISTENT DECONVOLUTION 12MS GAP
C19 1ST PASS VELOCITY ANALYSIS : 2 KM INTERVAL
C20 1ST PASS RESIDUAL STATICS
C21 2ND PASS VELOCITY ANALYSIS : 1 KM INTERVAL
C22 2ND PASS RESIDUAL STATICS
C23
C24
C25 NMO - MUTE - SCALING
C26 FLOATING DATUM CORRECTION : NEW TIME ORIGIN OF -200MS
C27 CDP TRIM STATIC
C28 STACK SHELL WEIGHTED
C29 BANDPASS FILTER + SCALING
C30
C31
C32 BYTE DESCRIPTION BYTE DESCRIPTION
C33 -----
C34 17-20 (32-BIT) SP NUMBER 91-92 (16-BIT) WEATHERING VEL
C35 21-24 (32-BIT) CDP NUMBER 93-94 (16-BIT) REFRACTOR VEL
C36 41-44 (32-BIT) ELEVATION 101-102 (16-BIT) RECEIVER STATIC
C37 193-196 (32-BIT) CDP EASTING 103-104 (16-BIT) DATUM STATIC
C38 197-200 (32-BIT) CDP NORTHING 109-110 (16-BIT) TIME OF FIRST SAMPLE
C39 TAPE POLARITY: NORMAL
C40 CDP - SP RELATIONSHIP CONV,3,2909,-2
C41 CDPS 3 TO 5425 VPS 176 TO 2910
    
```

Appendix 09. Example of INT Velocity File (Interval Velocity in Time)

Client: Central Petroleum
 Project: supegyPr_002
 Contractor: DownUnder GeoSolutions
 Date: October 2012

Velocity type: Interval Velocity in Time

Datum: GDA94, UTM Zone: UTM53, Central Meridian : 135
 Statics: Two way time corrected to mean sea level: No
 Gun and Cable statics applied: No
 Tidal statics applied: No

3D Grid details:
 inline crossline X Y
 1000 5000 599413.78 7382223.37
 1000 5309 595633.30 7375486.63
 1448 5000 609180.96 7376742.28
 1448 5309 605400.48 7370005.55

Internal X bin size (m)= 25.0
 Internal Y bin size (m)= 25.0
 Azimuth (internal Y East of North) degrees = 209.09 degrees

Velocity Format Column details:

LINE=INLINE
 cols 11-22 line number (left justified, before first SPNT of each and every new line only)
 SPNT=XLINE
 cols 11-25 3D cross line number (right justified)
 cols 30-38 bin centre x coordinates (right justified)
 cols 42-51 bin centre y coordinates (right justified)
 cols 54-65 3D inline number (right justified)
 VELF
 cols 21-25 time in msec (right justified)
 cols 26-31 velocity m/sec (right justified)
 cols 32-37 time in msec (right justified)
 cols 38-43 velocity m/sec (right justified)
 cols 44-49 time in msec (right justified)
 cols 50-55 velocity m/sec (right justified)
 cols 56-61 time in msec (right justified)
 cols 62-67 velocity m/sec (right justified)
 cols 68-73 time in msec (right justified)
 cols 74-79 velocity m/sec (right justified)

	1	2	3	4	5	6	7	8
1234567890123456789012345678901234567890123456789012345678901234567890								
LINE	1000							
SPNT		5080	598435.01	7380479.23		1000		
VELF		0	3223 295	4165 598	5253	738	4975	1152 4912
VELF		1920	6604 6000	7999				
SPNT		5120	597945.63	7379607.16		1000		
VELF		0	3224 315	4151 472	4901	680	5067	980 4351
VELF		1086	4664 1276	5221 1966	6519	6000	8170	
SPNT		5160	597456.25	7378735.09		1000		
VELF		0	3221 370	4285 514	4826	758	5221	952 4352
VELF		1126	4622 1188	4764 1380	5523	1736	6224	2046 6430
VELF		6000	7960					

Appendix 10. Example of RMS Velocity File (Root Mean Square in Time)

Client: Central Petroleum
 Project: supegyPr_002
 Contractor: DownUnder GeoSolutions
 Date: October 2012

Velocity type: RMS Velocity in Time

Datum: GDA94, UTM Zone: UTM53, Central Meridian : 135
 Statics: Two way time corrected to mean sea level: No
 Gun and Cable statics applied: No
 Tidal statics applied: No

3D Grid details:
 inline crossline X Y
 1000 5000 599413.78 7382223.37
 1000 5309 595633.30 7375486.63
 1448 5000 609180.96 7376742.28
 1448 5309 605400.48 7370005.55

Internal X bin size (m)= 25.0
 Internal Y bin size (m)= 25.0
 Azimuth (internal Y East of North) degrees = 209.09 degrees

Velocity Format Column details:

LINE=INLINE
 cols 11-22 line number (left justified, before first SPNT of each and every new line only)
 SPNT=XLINE
 cols 11-25 3D cross line number (right justified)
 cols 30-38 bin centre x coordinates (right justified)
 cols 42-51 bin centre y coordinates (right justified)
 cols 54-65 3D inline number (right justified)
 VELF
 cols 21-25 time in msec (right justified)
 cols 26-31 velocity m/sec (right justified)
 cols 32-37 time in msec (right justified)
 cols 38-43 velocity m/sec (right justified)
 cols 44-49 time in msec (right justified)
 cols 50-55 velocity m/sec (right justified)
 cols 56-61 time in msec (right justified)
 cols 62-67 velocity m/sec (right justified)
 cols 68-73 time in msec (right justified)
 cols 74-79 velocity m/sec (right justified)

	1	2	3	4	5	6	7	8
12345678901234567890123456789012345678901234567890123456789012345678901234567890								
VELF			0	0				
LINE	1000							
SPNT		5080	598435.00	7380479.00		1000		
VELF		0	3200 295	3300 598	4137	738 4537	1152	4500
VELF		1920	5200 6000	7000				
SPNT		5120	597945.00	7379607.00		1000		
VELF		0	3200 315	3300 472	3725	680 4350	980	4425
VELF		1086	4425 1276	4575 1966	5062	6000 7000		
SPNT		5160	597456.00	7378735.00		1000		
VELF		0	3200 370	3175 514	3512	758 4362	952	4512
VELF		1126	4575 1188	4425 1380	4625	1736 4900	2046	5175