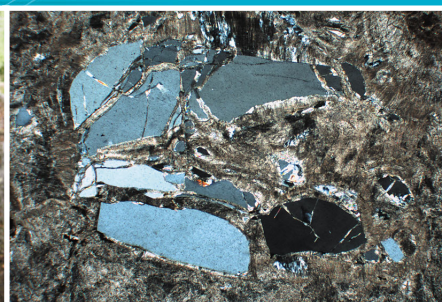




Government of **Western Australia**
Department of **Mines and Petroleum**

PROCESSING PETROLEUM DRILLCORE INTO TRAYS: PERTH CORE LIBRARY GUIDELINES

by
A Leighton and P Stenhouse



Geological Survey of Western Australia



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Perth 2012



**Geological Survey of
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Processing petroleum drillcore into trays: Perth Core Library guidelines

Introduction

The Perth Core Library has been receiving submission and donation drillcore from the petroleum industry since 2003, and throughout that period there have been no written guidelines for its processing.

This document records a standard process that will help those involved in the handling and viewing of drillcore, and ensures that the core will be archived in the best way for future generations.

The items covered are:

- best practices for processing drillcore into trays
- common mistakes when processing drillcore into trays
- ordering core trays.

Best practices for processing petroleum drillcore into trays

Processing notes

- All core trays — core gets deeper from top of tray to bottom of tray (see Fig. 1)

- All core trays — core gets deeper from right to left in tray sequence (see Fig. 1)
- All core trays — all tray numbers are in sequence from right to left (see Fig. 1)
- All core trays — a new core number starts in a new tray (tray numbering sequence continues) (see Fig. 1)
- All core trays — write well name, total tray depth range, core number, tray and total tray numbers (see Fig. 1)
- All core trays — core depths are written on the top and bottom of each core tray section (see Fig. 1)
- All core trays — a directional arrow is drawn at the start (highest) end of each tray (see Fig. 1)
- All core trays — all information must be written clearly in black indelible ink (permanent markers)
- For metal trays — for high core, leave a 25 mm empty space at section ends for fingers to lift trays (see Figs 1, 9 and 10)
- For corrugated plastic trays — well/ tray information is written on both tray and lid (see Figs 2 and 3)
- For corrugated plastic trays — repeat each tray's last section depth (see Fig. 2).

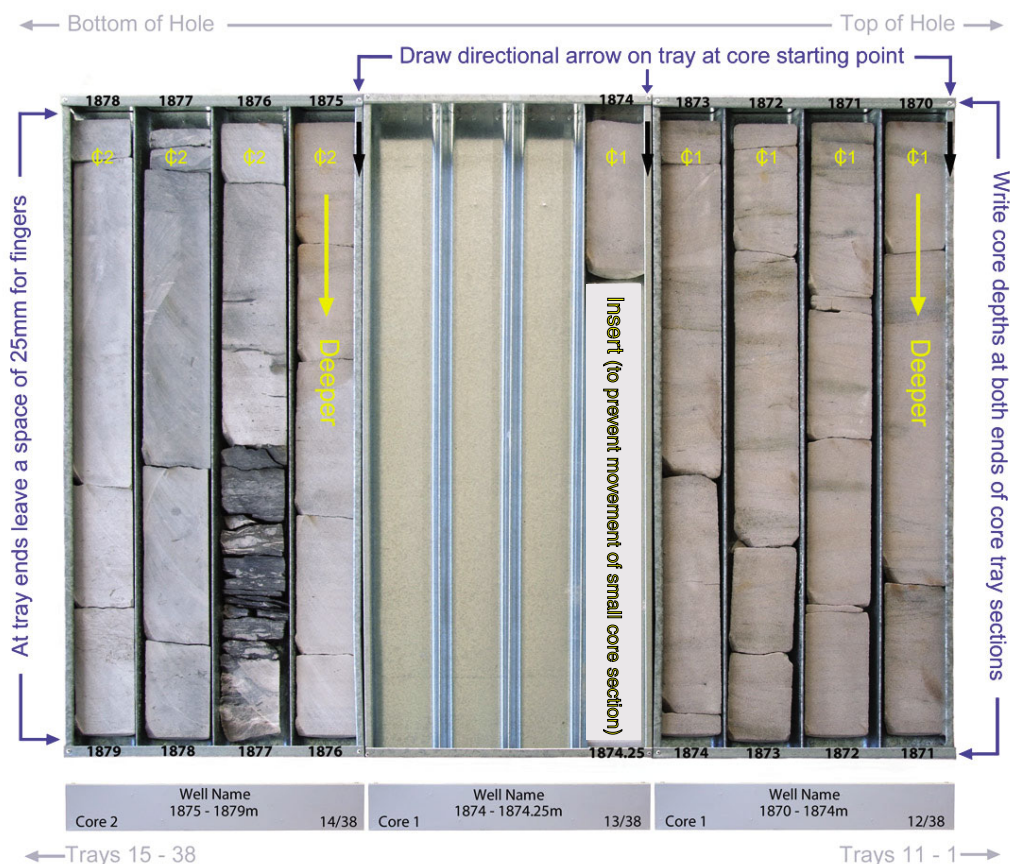


Figure 1. Correct core direction and layout in metal core trays

Correct core direction and layout in corrugated plastic trays

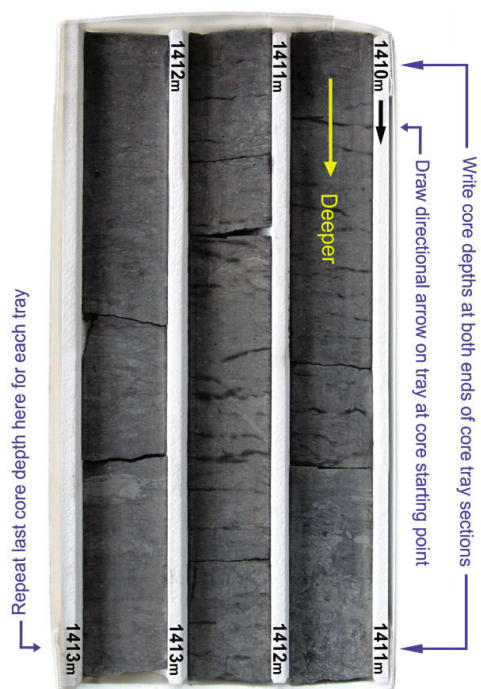


Figure 2. On the bottom of the left tray edge, write the last depth twice to avoid any depth confusion.



Figure 3. Write the well/tray information on both tray and lid.

Use of drillcore end caps

If the core is slabbed in its barrel, plastic or rubber end caps should be secured at both ends to prevent core loss. The cap should be cut as the core is slabbed and should sit flush with the slabbed core surface.



Figure 4. Core breaking away from main slab due to no end cap



Figure 5. Tight fitting plastic end cap with cap cut to fit core barrel

Common mistakes made when processing petroleum drillcore into trays

Common mistakes are:

- not using drillcore end caps
- extra heavy trays
- not leaving a finger space, for lifting metal trays
- not marking preserved, missing, and sample core sections
- not using section inserts for small sections of core
- poor matching of core and tray sizes
- core sitting too low in metal trays.

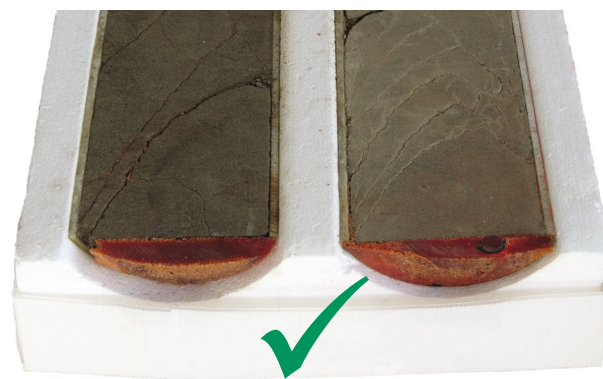


Figure 6. Rubber end caps

Heavy trays

Two-third cores of four-inch and five-inch core diameters should be processed in two-row trays to help reduce manual handling issues. Individual core tray weights should not exceed 45 kilograms where practical. Where two-row trays will be above this weight, core should be processed in single-row trays.



Figure 7. Heavy three-row four-inch and five-inch three-quarter core

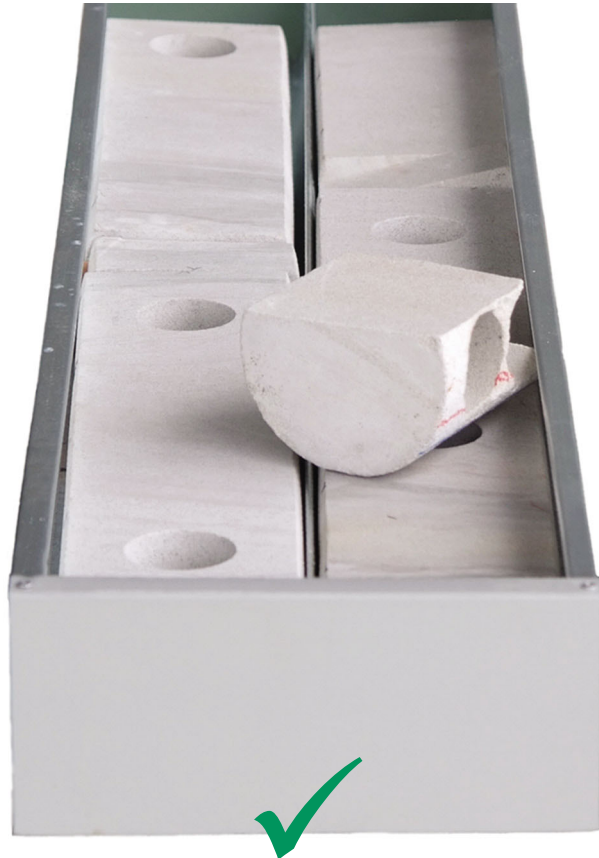


Figure 8. Two-row four-inch and five-inch three-quarter core

Space for fingers in metal trays

For metal trays where the core height is close to the tray lip, a 25 mm space should be left at each section end of core to allow for finger room when lifting trays.

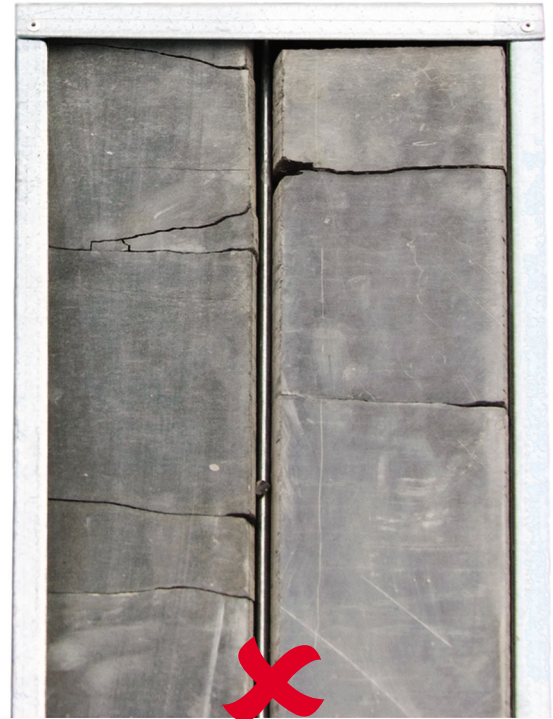


Figure 9. No finger space



Figure 10. With good finger space

Preserved, missing, and sampled core sections

Any preserved, sampled, or missing core must have markers in place at the location of the missing core. The marker must note the core as preserved, sampled, or missing, as well as including the depth ranges for that core.

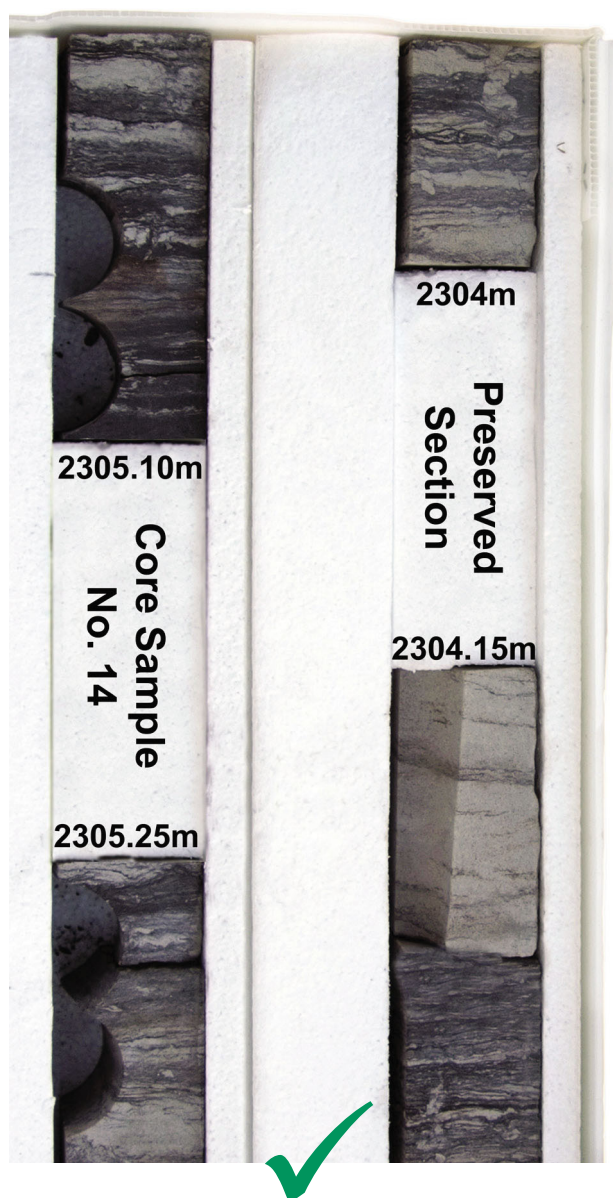


Figure 11. Core markers

The use of section inserts in trays

The use of section inserts in trays is recommended to prevent the movement of smaller lengths of core within the tray sections when handling, and during the transport of core.

Styrofoam inserts are preferred, but if not available, bubble wrap or rolled newspaper can be used to stop the movement of smaller core sections.



Figure 12. Section inserts

Poor matching of core and tray sizes

Metal and corrugated plastic core trays must be the correct dimensions to house the core. The core and barrel (if applicable) must sit securely within each individual tray section/divider. The slabbed surface of core must be clearly visible; it should not sit too low in tray (Fig. 15) or have areas of core obscured by tray edges or lips. The core height must not be above the lip of the tray top, nor be able to rock from side to side excessively in tray sections.

The core height in the tray ideally should be close to the level of the tray lip.

The sides of the metal tray are considerably higher than the core height, making viewing by geologists difficult, plus requiring extra storage space when archived (see Fig. 15).



Figure 15. Core sitting too low in tray



Figure 13. Undersize core for tray sections

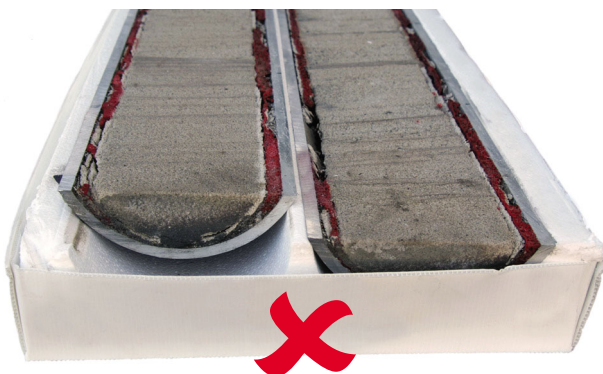


Figure 14. Oversize core for tray sections

Ordering core trays

Core trays

- When sitting correctly in the tray, the core height must not be above the tray height.
- The core should fit into the sections with ease, but not so loose to get sideways movement (see Figs 13 and 14).
- The tray lip height above the core should not be excessive (this blocks the geologist's view) (see Fig. 15).
- For three-quarter four-inch and five-inch core, use only two-section trays (to stop excessive weight) (see Figs 7 and 8).

Cardboard boxes

We don't recommend the use of cardboard boxes for processing because:

- For long-term storage, cardboard is susceptible to damage from oil and insects.
- Cardboard boxes are more susceptible to crushing when stacked.
- Regular handling of cardboard boxes eventually leads to box deterioration.
- Hand-written well information on a cardboard box is more likely to be lost with regular handling.
- Cardboard boxes are not made to fit the core; often the core is either packed too tightly or too loosely.
- Viewing core in cardboard boxes can be difficult for geologists; often the core has to be removed from the box, and this can lead to increased core damage.

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