**Supplementary data 1. Macrofossil identifications from the Toll House shaft**

## Notes: Depths below ordnance datum (OD); Numbers refer to JHP samples numbers.

**-1.5 m OD**

Oxford Clay Formation

27. *Peltoceras* sp. fragment

28. Slender pyritized trails + ammonite fragments including cardioceratid

29. ?*Peltoceras* fragment

Hackness Rock Member

18. ?*Peltoceras* whorl fragment

19. *Chlamys* and indeterminate ammonite

20. *Cylindroteuthis*

21. *Quenstedtoceras* fragment cf. *lamberti* (J. Sowerby)

22. *Quenstedtoceras sp.* and fragment

25. Wood fragment + ? *Quenstedtoceras* [M] body chamber fragment

**-3.0 m OD**

Oxford Clay Formation

9. Ammonite fragment (?*Hecticoceras*)

Hackness Rock Member

10. *Quenstedtoceras* cf. *lamberti* (J. Sowerby)

11. *Gryphaea lituola* (Lamarck), ?*Cylindroteuthis*, ? pectinid juv., perisphinctid ammonite,  
(?*Grossouvria* sensu Page 1991).

12. *Gryphaea lituola* (Lamarck)

13. Shell fragments, clusters of rhynchonellids, wood fragment

14. Bivalves and shell fragments including *Gryphaea*, rhynchonellids, belemnite

Langdale Member

15. Wood fragment + indeterminate shell fragments including bivalves

**-14 m OD**

Oxford Clay Formation: 5 specimens including *Peltoceras* [M] sp. fragment

Osgodby Formation (fault downthrow): 6 specimens including burrows and wood fragment

**-17 m OD**

Osgodby Formation: 2 specimens with burrows

Hackness Rock Member (fault downthrow): 15 specimens including *Kosmoceras* [M] fragment, bivalve and rhynchonellid fragments, *Gryphaea*, burrows, pyrite nuggets, calcite crystals (fault)

**-20 m OD**

Osgodby Formation: 5 specimens with extensive burrows and burrow-mottling, belemnite fragment.