Summaries of Paleontological Data for Klondike, Popcorn, Crackerjack, Burger, and Diamond Wells, U.S. Chukchi Shelf, Alaska

Attached to:
Structure and Stratigraphy of the Hanna Trough, U.S. Chukchi Shelf, Alaska
by
Kirk W. Sherwood, Peter P. Johnson, James D. Craig, Susan A. Zerwick, Richard T. Lothamer, Dennis K. Thurston, and Sally B. Hurlbert

(Full reports can be obtained for copying costs by contacting Richard D. Pomeroy, Regional Records Assistant, Minerals Management Service, 949 E. 36th Ave., Veco Bldg., Suite 300, Anchorage, Alaska 99508-4362. Telephone 907-271-6515)

Summary 1: Paleontological Results for Klondike well, OCS-Y-1482 No. 1.

Integrated Summary: Biostratigraphic units [Keu, etc.] defined by Mickey and Haga (1987, Plate 1).

560-1,640 feet (171-500 m) Age: Tertiary (Paleocene).
1,640-5,600 feet (500-1,707 m) Age: Early Cretaceous (Aptian to Albian).
5,600-8,380 feet (1,707-2,554 m) Age: Early Cretaceous (Probable Aptian).
8,380-8,590 feet (2,554-2,618 m) Age: Early Cretaceous (Barremian to Aptian); Keu.
8,590-8,800 feet (2,618-2,682 m) Age: Early Cretaceous (Hauterivian to Barremian); KEHB.
8,800-9,140 feet (2,682-2,786 m) Age: Early Cretaceous (Berriasian to Valanginian); KEVB.
9,140-9,410 feet (2,786-2,868 m) Age: Late Jurassic (Possible Oxfordian to Kimmeridgian); JL0? to JLOK.
9,410-9,650? feet (2,868-2,941 m) Age: Probable Middle to Late Triassic (Undifferentiated); T; Discussion: Shublik Fm.
9,650?-10,850 feet (2,941-3,307 m) Age: Early Triassic (Undifferentiated); PT; Discussion: Sadlerochit Group. Fire Creek Siltstone tops at 9,650? feet (2,941 m); Ivishak Sandstone tops at 9,860 feet (3,005 m), and Kavik Shale tops at 10,430 feet (3,179 m).
10,850-12,008 feet TD (total depth) (3,307-3,660 m) Age: Late Permian to Early Triassic (Undifferentiated); Discussion: Similar to interval in Tunalik No.1 15,560-16,900 feet (4,742-5,151 m), but slightly older. See detailed discussion in results section of Foraminifera Report. This interval probably represents new added section occurring between the Kavik Fm. and Echoooka Fm.

Foraminifera Summary for Klondike Well:
(Arctic foraminiferal zones [F-9, F-10, etc.] from Mickey and Haga (1987, Plate 1).

560-2,330 feet (171-710 m) Age: Indeterminate; Environment: Nonmarine to Marginal Marine.
Discussion: The following subdivision of this interval is suggested on the basis of washed lithologies: 560-1,550 feet (171-472 m), Tertiary (Undiff.); 1,550-2,330 feet (472-710 m), Paleocene? to Eocene?. This is highly tentative and the palynology would disagree with this.
2,330-5,600 feet (710-1,710 m) Age: Early Cretaceous (Aptian to Albian, Undifferentiated); Environment: Nonmarine to Marginal Marine.
Discussion: Foraminifera Summary for Klondike Well.
Inner Neritic (Turbid); 6,190-7,180 feet (1,887-2,188 m), Inner to Middle Neritic; 7,180-8,380 feet (2,188-2,554 m), Marine, (Undifferentiated).

8,380-8,590 feet (2,554-2,618 m) Age: Early Cretaceous (Undifferentiated); Environment: Distal (Starved Basin).

8,590-8,800 feet (2,618-2,682 m) Age: Early Cretaceous (Hauterivian to Barremian); Zone: F-12 to F-13; Environment: Middle Neritic to Upper Bathyal.

8,800-9,140 feet (2,682-2,786 m) Age: Early Cretaceous (Berriasian to Valanginian); Zone: F-13 to F-14; Environment: Outer Neritic to Middle Bathyal.

9,140-9,410 feet (2,786-2,868 m) Age: Possible Late Jurassic (Possible Oxfordian to Kimmeridgian); Zone: F-16; Environment: Outer Neritic to Upper Bathyal.

9,410-9,650 feet (2,868-2,941 m) Age: Probable Middle to Late Triassic (Undifferentiated); Zone: F-19; Environment: Probable Neritic; Discussion: Shublik Fm. equivalent, but somewhat finer grained and less shelly. Top of this interval could be as low as 9,440 feet (2,877 m) with very rare occurrences above 9,440 feet reworked.

9,650-10,850 feet (2,941-3,307 m) Age: Early Triassic; Zone: F-20; Environment: Marine (Undifferentiated); Discussion: Sadlerochit Group equivalent, but somewhat finer grained. Hard to separate a definite Ivishak Sandstone Fm. from washed lithology samples. Possible lithologic subdivision: 9,650-9,860 feet (2,941-3,005 m), Fire Creek Siltstone; 9,860-10,430 feet (3,005-3,179 m), Ivishak Sandstone; 10,430-10,850 feet (3,179-3,307 m), Kavik Shale.

10,850-12,008 feet TD (3,307-3,660 m) Age: Late Permian to Early Triassic; Zone: F-20 (Undifferentiated); Environment: Marine (Undifferentiated); Discussion: This interval of slightly glauconitic quartzitic siltstone is similar to an interval between 15,560 and 16,900 feet (4,742 and 5,151 m)in the Tunalik No.1 well. These strata were called Kavik Shale, by the U.S.G.S., in the Tunalik No.1 well. We postulate a new added section that is younger than the Echooka Fm. but older than the Kavik Fm. We feel that this section may be more easily correlated with the thicker, more complete Permian and Early Triassic deposition of the Canadian Sverdrup Basin. See discussion in Results section of this report. The exact correlation of this interval will probably have to wait for additional drilling and future studies correlating the Sverdrup Basin and Chukchi Sea stratigraphies.

Palynology Summary for Klondike Well:
Arctic palynological zones (P-T1A, P-M18, etc.) from Mickey and Haga (1987, Plate 1).

560-1,640 feet (171-500 m) Age: Paleogene (Paleogene); Zone: P-T10; Environment: Nonmarine. Remarks: Weak evidence seen to suggest the presence of some nonmarine Eocene age strata above 830 feet (253 m).

1,640-8,419SW (sidewall core sample) feet (500-2,566 m) Age: Early Cretaceous (Aptian to Early Albian); Zone: P-M18; Environment: Nonmarine to Marginal Marine.

8,419SW-8,890 feet (2,566-2,710 m) Age: Early Cretaceous (Barremian to Aptian); Zone: P-M18a; Environment: Marine; Remarks: Abundant amorphous organics.

8,890-8,980 feet (2,710-2,377 m) Age: Early Cretaceous (Probably Berriasian to Valanginian); Zone: P-19; Environment: Marine; Remarks: Decrease in amorphous organics. Some definite P-M19 marker species recovered down hole. These specimens presumed derived from section near this interval.

9,410-9,410 feet (2,377-2,868 m) Age: Early Cretaceous (Berrisian to Valanginian); Zone: P-M20; Environment: Marine.

9,410-9,680 feet (2,868-2,950 m) Age: Possible Middle to Late Triassic; Zone: Possible P-T15; Environment: Marine; Remarks: Sparse palynomorph recoveries. The increase in amorphous organics, as observed in this interval, is common to the Late Triassic and Early Jurassic section, but no corroborative palynologic age evidence was recorded for the presence of Early Jurassic strata.

9,680-10,940 feet (2,950-3,334 m) Age: Early Triassic; Zone: P-T16; Environment: Marine; Remarks: This Triassic section, with the abundance of acritarchs, is similar to the Triassic strata recorded between 14,700 feet and 16,930 feet (4,480-5,160 m) in the Husky Tunalik No. 1 Well.

9,940-12,008 TD (3,334-3,660 m) Age: Permian(?) to Early Triassic; Zone: P-T18(?) to P-T16; Environment: Marginal Marine to Nonmarine; Remarks: Permian evidence is very weak.

Summary 2: Paleontological Results for Popcorn Well, OCS-Y-1275 No. 1.

Integrated Summary
Foraminifera Summary for Popcorn Well

565-1,041SW feet (172-317 m) Age: Tertiary (Late Oligocene to Early Miocene or Younger(?)); Discussion: These strata may be younger with reworked older forms present. This interval is based on Foraminifera data.

1,041SW-1,620 feet (317-494 m) Age: Tertiary (Late Eocene); Discussion: This age is based on paly data only.

1,620-2,470SW feet (494-753 m) Age: Tertiary (Middle Eocene); Discussion: Based on Foraminifera and paly data.

2,470SW-3,235SW feet (753-986 m) Age: Tertiary (Early Eocene); Discussion: Age based on paly only.

3,235SW-4,995SW feet (986-1,522 m) Age: Tertiary (Paleocene); Discussion: Top based on paly. Foraminifera and paly data.

4,995SW-5,160 feet in the ditch (1,344-1,526 m) Age: Early Cretaceous (Probable Aptian); Discussion: Top based on paly. Foraminifera top at 5,006SW feet (1,526 m). Foraminifera indeterminate in sandstone below 4,410 feet (1,344 m).

5,160-5,250.1SW feet (1,522-1,573 m) Age: Early Cretaceous (Barremian to Aptian); Ke;
Discussion: Top based on paly. Foraminifera top at 5,160 feet in the ditch (drill) cuttings.

5,250.1SW-6,375.9SW feet (1,600-2,194.3 m) Age: Probable Early Cretaceous (Probable Hauterivian to Barremian); KEb(1) and KEb(2); Discussion: Hauterivian to Barremian age based primarily on paly. Forams see possible Berriasian to Valanginian in ditch samples at 5,500 feet (1,676 m) and possible Oxfordian to Kimmeridgian in ditch samples below 6,250 feet (1,905 m). These foram ages could not be substantiated in the sidewall core samples, but the palynologist saw predominantly Hauterivian to Barremian in the sidewall cores, suggesting that the older forms found in the ditch are probably reworked.

6,375.9SW-6,427.9SW feet (1,943.3-1,959.1 m) Age: Indeterminate; Discussion: Buff tan to white angular poorly sorted fine to medium grained slightly glauconitic sandstone. Contains some older reworked? forms.

6,427.9SW-7,700 feet (1,959.1-2,347 m) Age: Probable Early Permian; Discussion: The Early Permian is placed at 6,427.9SW feet (1,959.1 m) based on palynology. These strata would be equivalent to the “Unnamed A” and Belcher Channel Formations in the Sverdrup Basin and uppermost Lisburne limestone(2) in Alaska. The top of the Early Permian Foram markers is at 6,507SW feet (1,983 m).

7,700-8,330 feet (2,347-2,539 m) Age: Middle to Late Pennsylvanian (Undifferentiated); Discussion: Lisburne Group. Wahoo Fm. in Alaska. Canyon

8,330-9,410? feet (2,539-2,868? m) Age: Middle Pennsylvanian.

9,410?-9,865SW feet (2,868?-3,007 m) Age: Probable Early Pennsylvanian.

9,865SW-10,202 feet TD (3,007-3,109 m) Age: Probable Late Mississippian; Discussion: Probable Alapah Fm.

565-1,020 feet (172-311 m) Age: Tertiary (Late Oligocene to Early Miocene or Younger(?)); Zone: F-2B(2) or Younger(?); Environment: Marginal Marine to Inner Neritic; Discussion: The poor preservation and lack of complete faunal assemblages leaves open the possibility that these scattered F-2B(2) markers might be reworked into some younger age strata.

1,020-1,740 feet (311-530 m) Age: Indeterminate; Environment: Nonmarine to Marginal Marine.

1,740-2,592SW feet (530-790 m) Age: Tertiary (Middle Eocene); Zone: F-2B(1); Environment: Marginal Marine to Middle Neritic(? (Delta Plain and Interdistributary Bay).

2,592SW-3,302SW feet (790-1,006 m) Age: Tertiary (Possible Early Eocene); Zone: F-3B(4); Environment: Probable Nonmarine.

3,302SW-4,410 feet (1,006-1,344 m) Age: Tertiary (Paleocene); Zone: F-4(2); Environment: Middle Neritic to Upper Bathyal (Delta Front to Prodelta or Slope).

4,410-5,006SW feet (1,344-1,526 m) Age: Indeterminate; Environment: Indeterminate.

5,006SW-5,160 feet (1,526-1,573 m) Age: Early Cretaceous (Probable Aptian); Zone: F-11; Environment: Middle Neritic to Bathyal.

5,160-5,250.1SW feet (1,573-1,600.2 m) Age: Early Cretaceous (Undifferentiated); Environment: Bathyal (Lower Slope and Base of Slope).

5,250.1SW-6,375.9SW feet (1,600-2,194.3 m) Age: Early Cretaceous (Probable Hauterivian to Barremian); Zone: F-12 to F-13; Environment: Middle Neritic to Upper Bathyal; Discussion: The favored interpretation at this time is that this interval is Hauterivian to Barremian with reworked Berriasian to Valanginian and Oxfordian to Kimmeridgian forams present in it. However, this is primarily based on the paly sidewall core analysis and it is possible to place a top KEb at 5,500 feet (1,676 m) in the ditch as well as a top JL at 6,250 feet (1,905 m) based on ditch sample occurrence. This could not be substantiated in the sidewall cores which were generally inconclusive due to poor faunal occurrences.

Fiord Fm. in the Sverdrup Basin.

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Age: Indeterminate; Environment: Probable Marine; Discussion: Buff tan to white angular poorly sorted fine to medium grained slightly glauconitic sandstone. Contains some older (Early Permian?) forams and ostracods believed reworked due to their worn condition.

6,427.9SW-7,820 feet (1,959.1-2,383 m) Age: Probable Early Permian; Zone: F-21; Environment: Lagoonal to Bank; Discussion: These would be equivalent to the “Unnamed A” and Belcher Channel Formations in the Sverdrup Basin and uppermost Lisburne limestone(?) in Alaska.

7,820-8,330 feet (2,383-2,539 m) Age: Middle to Late Pennsylvanian (Undifferentiated); Zone: M21 to M24; Environment: Carbonate Platform (Shoaling Shelf - Bank); Discussion: Lisburne Group. Wahoo Fm. in Alaska. Canyon Fiord Fm. in the Sverdrup Basin.

8,330-9,410? feet (2,539-2,868 m) Age: Middle Pennsylvanian; Zone: M21; Environment: Carbonate Platform (Shoaling Shelf - Bank).

9,410?-9,865SW feet (2,868-3,007 m) Age: Probable Late Mississippian; Zone: Probable M18 to M19; Environment: Carbonate Platform (Shoaling Shelf - Forereef).

9,865SW-10,202 feetTD (3,007-3,109 m) Age: Probable Early Pennsylvanian; Zone: Probable M20; Environment: Carbonate Platform (Shoaling Shelf).

Summary 3: Paleontological Results for Crackerjack Well, OCS-Y-1320 No. 1.

Integrated Summary

430-610 feet (131-186 m) Age: Tertiary (Probable Pliocene).
610-880 feet (186-268 m) Age: Tertiary (Late Eocene).
880-1,210 feet (268-369 m) Age: Tertiary (Middle Eocene).
1,210-1,750 feet (369-533 m) Age: Tertiary (Early Eocene).
1,750-2,297SW feet (533-700 m) Age: Early Cretaceous (Probable Aptian).
2,297SW-4,870 feet (700-1,484 m) Age: Early Cretaceous (Aptian to Early Albian).
4,870-7,196SW feet (1,484-2,193 m) Age: Early Cretaceous (Probable Aptian).
7,196SW-7,480 feet (2,193-2,280 m) Age: Early Cretaceous (Barremian to Aptian); KEa.
7,480-7,660 feet (2,280-2,335 m) Age: Early Cretaceous (Hauterivian to Barremian); KEhb.
7,660-7,930 feet (2,335-2,417 m) Age: Early Cretaceous (Hauterivian to Barremian).
Foraminifera Summary for Crackerjack Well

430-610 feet (131-186 m) Age: Tertiary (Probable Pliocene); Zone: F-2A(1) to F-2A(2); Environment: Marginal Marine to Inner Neritic.

610-880 feet (186-268 m) Age: Indeterminate; Environment: Nonmarine to Marginal Marine.

880-1,210 feet (268-369 m) Age: Tertiary (Middle Eocene); Zone: F-3B(4); Environment: Marginal Marine to Middle Neritic (Delta Plain and Interdistributary Bay).

1,210-1,750 feet (369-533 m) Age: Tertiary (Possible Early Eocene); Zone: F-3B(4)?; Environment: Nonmarine to Marginal Marine (Alluvial Plain to Delta Plain).

1,750-2,297SW feet (533-700 m) Age: Tertiary (Probable Paleocene); Zone: F-4(2); Environment: Nonmarine to Inner Neritic (Alluvial Plain, Delta Plain and Interdistributary Bay).

2,297SW-4,870 feet (700-1,484 m) Age: Early Cretaceous (Aptian to Albanian); Zone: F-9; Environment: Nonmarine to Marginal Marine.

4,870-7,120 feet (1,484-2,170 m) Age: Early Cretaceous (Probable Aptian); Zone: F-9 to F-10; Environment: 4,870-5,840 feet (1,484-1,780 m), Inner Neritic (Turbid); 5,840-6,610 feet (1,780-2,015 m), Inner to Middle Neritic; 6,610-7,120 feet (2,015-2,170 m), Marine (Undiff.).

7,120-7,480 feet (2,170-2,280 m) Age: Early Cretaceous (Undifferentiated); Environment: Bathyal (Distal-Starved Basin).

7,480-7,660 feet (2,280-2,335 m) Age: Early Cretaceous (Hauterivian to Barremian); Zone: F-12 to F-13; Environment: Middle Neritic to Upper Bathyal.

7,660-7,930 feet (2,335-2,417 m) Age: Early Cretaceous (Berriasian to Valanginian); Zone: F-13 to F-14; Environment: Outer Neritic to Middle Bathyal.

7,930-8,115SW feet (2,417-2,473 m) Age: Probable Late Jurassic (Probable Oxfordian to Kimmeridgian); Zone: F-16; Environment: Outer Neritic to Middle Bathyal.

8,115SW-8,620 feet (2,473-2,627 m) Age: Late Permian; Zone: F-20; Environment: Marginal Marine to Inner Neritic; Discussion: Echooka Fm.; Trold Fiord Fm. equivalent in the Sverdrup Basin. Probably equivalent to 16,890-17,100 feet (5,148-5,212 m) interval in Tunalik No. 1 well.

8,620-9,040 feet (2,627-2,755 m) Age: Early to “Middle” Permian; Zone: F-20 to F-21; Environment: Shoaling Shelf (Bank); Discussion: Degerbols Fm. equivalent in the Sverdrup Basin. Probably equivalent to 17,100-17,580 feet (5,212-5,358 m) interval in Tunalik No. 1 well.

9,040-9,570 feetTD (2,627-2,755 m) Age: Early Permian; Zone: F-21; Environment: Shoaling Shelf (Lagoonal); Discussion: Uppermost Lisburne Lmst.?, “Unnamed A” Fm. or Belcher Channel Fm. equivalent in the Sverdrup Basin. Probably equivalent to 18,300-18,960 feet (5,578-5,779 m) interval (in part) in Tunalik No. 1 well.

Palynology Summary for Crackerjack Well

430-610 feet (131-186 m) Age: Tertiary to Quaternary (Pliocene to Pleistocene); Environment: Marginal Marine. Very sparse dinocysts.

610-880 feet (186-268 m) Age: Paleogene (Late Eocene); Zone: P-M11a; Environment: Marginal Marine. Sparse dinocysts.

880-1,240 feet (268-378 m) Age: Paleogene (Middle Eocene); Zone: P-M11b; Environment: Marginal Marine. Sparse dinocysts.

1,240-1,870 feet (378-570 m) Age: Paleogene (Early Eocene); Zone: P-M11c; Environment: Marginal Marine. Sparse dinocysts.

1,870-2,297SW feet (570-700 m) Age: Paleogene (Paleocene); Zone: P-T10 and marine equivalent; Environment: Marginal Marine.

2,297SW-7,196SW feet (700-2,193 m) Age: Early Cretaceous (Aptian to Early Albian); Zone: P-M11d; Environment: Marginal Marine.

7,196SW-7,796SW feet (2,193-2,280 m) Age: Early Cretaceous (Barremian to Aptian); Zone: P-M18; Environment: Marginal Marine.

7,796SW-7,840 feet (2,280-2,280 m) Age: Early Cretaceous (Hauterivian to Barremian); Zone: P-M19; Environment: Marginal Marine.
8,020-8,128 SW feet (2,444-2,477 m) Age: Early Cretaceous (Berriasian to Valanginian); Zone: P-M20; Environment: Marine.
8,128 SW-9,570 feet TD (2,477-2,917 m) Age: Permian (Undifferentiated); Zone: P-T18; Environment: Marine.

**Summary 4: Paleontological Results for Burger Well, OCS-Y-1413 No. 1.**

**Integrated Summary**

580-2,860 feet (171-872 m) Age: Early Cretaceous (Aptian to Albian).
2,860-5,030 SW feet (872-1,533 m) Age: Early Cretaceous (Probable Aptian).
5,030 SW-5,680 feet (1,533-1,872 m) Age: Early Cretaceous (Barremian to Aptian); KEIB.
5,680-6,580 feet (1,872-2,024 m) Age: Early Cretaceous (Berriasian to Valanginian); KEIB.
6,580-7,090 feet (2,024-2,161 m) Age: Early Cretaceous (Probable Late Jurassic (Tithonian (Volgian)); Zone: F-17 to F-18; Environment: Probable Middle to Lower Bathyal; Discussion: Common tar and strange lithology present in bottom sample (8,180-8,200 feet or 2,493-2,499 m). It is not known whether the strange lithology is reworked or in situ at this time. Tar may represent a “tar cap”.

**Palynology Summary for Burger Well**

580-5,082 SW feet (177-1,549 m) Age: Early Cretaceous (Aptian to Early Albian); Zone: P-M18; Environment: Nonmarine to Marginal Marine.
5,082-5,248 SW feet (1,549-1,600 m) Age: Early Cretaceous (Barremian to Aptian); KEIB.
5,248-6,010 feet (1,600-1,832 m) Age: Early Cretaceous (Hauterivian to Barremian); KEIB; Discussion: Possible KEIB1
to 5,564 feet (1,696 m) and KEIB2 below 5,564 feet.
5,710-6,580 feet (1,740-2,005 m) Age: Early Cretaceous (Berriasian to Valanginian; KEIB.
6,580-7,090 feet (2,005-2,161 m) Age: Early Cretaceous (Berriasian to Valanginian; Zone: F-17 to F-18; Environment: Probable Middle to Lower Bathyal; Discussion: Common tar and strange lithology present in bottom sample (8,180-8,200 feet or 2,493-2,499 m). It is not known whether the strange lithology is reworked or in situ at this time. Tar may represent a “tar cap”.

**Foraminifera Summary for Burger Well**

580-2,860 feet (177-872 m) Age: Early Cretaceous (Aptian to Albian, Undifferentiated); Environment: 580-2,150 SW feet (177-655 m), Nonmarine to Marginal Marine; 2,150 SW-2,860 feet (655-872 m), Marginal Marine to Inner Neritic.
2,860-5,030 SW feet (872-1,533 m) Age: Early Cretaceous (Probable Aptian); Zone: F-9 to F-10; Environment: 2,860-3,730 feet (872-1,137 m), Marginal Marine to Inner Neritic; 3,730-4,450 feet (1,137-1,356 m), Inner to Middle Neritic; 4,450-5,030 SW feet (1,356-1,533 m), Marine (Undifferentiated).
5,030 SW-5,680 SW feet (1,533-1,872 m) Age: Early Cretaceous (Undifferentiated); Environment: Bathyal (Lower Slope and Base of Slope).
5,680-6,580 feet (1,872-2,024 m) Age: Early Cretaceous (Hauterivian to Barremian); Zone: F-12 to F-13; Environment: Middle Neritic to Upper Bathyal; Discussion: A sandstone occurs at the base of this interval (5,590-5,710 feet or 1,704-1,740 m) which may be barren of indigenous fauna.
Cretaceous (Valanginian); Zone: Possible P-M22(?) To P-M20; Environment: Marine.

7,360-8,130 feet (2,243-2,478 m) Age: Possible Late Jurassic (Possible Oxfordian); Zone: Possible P-M22; Environment: Marine.

8,130-8,200 feet TD (2,478-2,499 m) Age: Indeterminate; Environment: Indeterminate; Remarks: Marked decrease in recovery. Possibly none are indigenous forms.

Summary 5: Paleontological Results for Diamond Well, OCS-Y-0996 No. 1.

Integrated Summary

**Foraminifera Summary for Diamond Well**

450-1,320 feet (137-402 m) Age: Early Cretaceous (Aptian to Early Albian); Undifferentiated; Environment: Nonmarine to Inner Neritic.

1,320-4,230 feet (402-1,289 m) Age: Early Cretaceous (Probable Aptian); Zone: F-9 to F-10; Environment: 1,320-2,040 feet (402-622 m), Inner to Middle Neritic; 2,040-4,230 feet (622-1,289 m), Marine (Undifferentiated).

4,230-4,350 feet (1,289-1,326 m) Age: Early Cretaceous (Berriasian to Valanginian); Zone: F-13 to F-14; Environment: Outer Neritic to Middle Bathyal.

4,740-5,350 feet (1,445-1,631 m) Age: Probable Early Triassic; Zone: F-21; Environment: Shoaling Shelf (Lagoonal to Inner Bank); Discussion: Uppermost Lisburne Lmst., “Unnamed A” Fm. or Belcher Channel Fm. equivalent from Sverdrup Basin. Probably equivalent to 18,300 to 18,960 feet (5,578-5,779 m) interval (in part) in Tunalik No. 1 Well.

**Palynology Summary for Diamond Well**

450-4,200 feet (137-1,280 m) Age: Early Cretaceous (Aptian to Early Albian); Zone: P-M18; Environment: Marginal Marine.
Environment: Marine; Remarks: Abundant amorphous organics.

4,590-4,739.1SW feet (1,399-1,444.4 m) Age: Early Cretaceous (Hauterivian to Barremian); Zone: P-M19; Environment: Marine.

4,739.1SW-5,359SW feet (1,444.4-1,633 m) Age: Early Triassic; Zone: P-T17 to P-T16; Environment: Marine; Remarks: The top of the P-T17 assemblage, which is characteristic of the Kavik Formation, is placed at 5,311 feet (1,619 m).

5,359SW-5,990 feet (1,633-1,826 m) Age: Permian (Undifferentiated); Zone: P-T18; Environment: Marginal Marine(?) to Nonmarine; Remarks: Permian evidence is weak.

5,990-6,750 feetTD (1,826-2,057 m) Age: Pennsylvanian to Early Permian (Undifferentiated); Zone: P-T19 to P-T18; Environment: Nonmarine to Marginal Marine(?). Essentially barren of marine palynomorphs.

References Cited