

W-10,132
Humble Oil & Refining Company
Core Test #1, Alico
±400' FWL, ±500' FSL, sec 33, T44S R30E
Hendry County, Felda SE Quad
GL: ±28' TD: 1080'

Washed & unwashed cuttings are available at the Florida Geological Survey cuttings library in Tallahassee. Brief lith log of washed & unwashed cuttings by R.S. Caughey in November 1998. No description is given for unwashed cuttings, if they are essentially the same as the washed.

Depth in feet below GL	DESCRIPTION
0-10	Ls, wh, fg, v sdy, no fos, dense, Qz grs are vf-f-few med, ang-subrnd, v rare, small, bl phos grs, rare mollusk shell frags; most cutting frags are modly to stgly FeOx stained.
10-20	Ls, as above; 5% Ls, wh, fg, sdy, fos, mollusks, echinoid spines, gastropods.
20-30	25% Loose Qz sand, vf-f, clear, ang-subang; 35% loose shell & fos frags & wh, fg, sdy, fos Ls; 40% Ls, fg, v sdy, dense, sltly moldic, a few mollusk frags & mollusk casts & molds, stgly brn & reddish FeOx stained; trace to minor small, bl phos grs.
30-40	40% Qz sand, all vf, clear, ang, the sand is laced with microfoss frags (common echinoid spines) and calcareous matter; remainder is loose large mollusk shell frags and some stgly FeOx stained, v sdy Ls as above. Unwashed: As above, with 20-30% wh, fg, poorly consolidated, calcareous, v sdy, microscopic fossiliferous "mud".
40-50	Loose Qz sand, vf, clear, ang, laced with calcareous matter & microfoss frags; 10-15% mix of large mollusk shell frags and reddish FeOx stained, v sdy Ls. Unwashed: "Mud", wh, v pale olive, poorly consolidated, v sdy(vf), microfoss, rarely phos, possibly v sltly clayey and silty.
50-60	50% Loose Qz sand, vf, clear, ang, with common coarse Qz grs (subrnd-rnd, clear & sltly cloudy, ltly frosted); 1-3% loose phos fos frags & grs; 45-50% siltstone, pale brn & yel gray, sdy, phos, clayey-v clayey, a little is dolomitic, some carries small, spiraled forams, poorly consolidated. Unwashed: Entirely siltstone as described above.
60-70	Siltstone, lt olive gray, poorly consolidated, clayey-v clayey, fg sdy, sltly phos, calc, few spiraled forams, v small echinoid spines, some mollusk shell fragments.

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Depth in feet below GL	DESCRIPTION
70-80	As above, more mollusk shell fragments.
80-90	Ss, lt olive gray, v poorly consolidated, vf Qz grs, v silty, sltly calc, v sltly phos(as minute grs).
90-100	Ss as above, 5% mollusk shell fragments.
100-110	Ss as above, few shell frags.
110-120	Ss as above, no shell frags.
120-130	Ss, grayish olive, more silty(almost a v sdy siltstone), v sltly phos, calc, v poorly consolidated.
130-140	Ss as above.
140-150	Ss as above.
150-160	Ss as above.
160-170	Siltstone, lt olive gray, v poorly consolidated, calc, sltly clayey, sdy-v sdy(fg-vfg).
170-180	As above, v sltly phos(as minute bl grs).
180-190	As above, overall more clayey, less vf sand, rare minute, spiraled forams.
190-200	As above.
200-210	10-30% Siltstone as above; 70-90% siltstone, pale olive, v clayey, calc, no sand, a few microfoss.
210-220	Loose Qz "gravel", vf-f-m-c-pebbles, the vf-f are clear, ang-subang, the m thru pebbles are subrnd-rnd, polished (a few of the larger pebbles are ltly frosted), most of the sample is coarse & pebble size; 1-2% phos as bl grs & grns; 10% wh, fg, sdy Ls; some siltstone as @ 200-210'. Unwashed: 80% siltstone as @ 200-210'; 10% wh, sdy Ls & some shell frags; 10% Qz "gravel" as above.
220-230	85% Loose Qz sand, vf-f-m-c(90-95% is vf-f, 5-10% is coarse-med & rare pebbles); 10-15% mollusk shell frags & wh, sdy Ls; some siltstone as above. Unwashed: Siltstone, lt olive, poorly consolidated, vfg sdy, calc, v sltly clayey, minor Qz sand as above.
230-240	Qz "gravel" as @ 210-220'; 1-2% phos grs/grns; minor Ls/shells. Unwashed: Qz gravel & 20-25% sdy siltstone.

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<u>Depth in feet below GL</u>	<u>DESCRIPTION</u>
240-250	<p>Qz gravel as above, now nearly all is coarse & common pebble size.</p> <p>Unwashed: As above, with 10-15% sdy siltstone (poorly consolidated).</p>
250-260	<p>Qz sand, vf-f, clear, ang-subang, a little med-coarse & a few pebbles (subrnd-rnd); 10-20% silt & clay.</p> <p>Unwashed: As above, with 30% grayish olive & pale yel brn silt & some clay, not calcareous.</p>
260-270	<p>As above (washed & unwashed), less coarse sand & v few pebbles.</p>
270-280	<p>70-75% Qz sand, vf-f, some m-c-few pebbles; 25-30% siltstone, pale yel brn, modly consolidated, v fg sdy, calc, v sltly phos, bearing numerous, large mollusk shell frags.</p> <p>Unwashed: As above, with 40-50% pale olive silt & some clay.</p>
280-290	<p>As above, now 50-60% siltstone (with mollusk shell frags) and 40-50% Qz sand.</p> <p>Unwashed: As above, with 30-40% grayish olive silt/clay.</p>
290-300	<p>Qz sand, vf thru pebble, most are med-fine, common coarse & pebble size; 10% Ls, wh, fg, fos; 5% sdy siltstone; trace Dol, vfg, sdy, wh; minor phos as fos frags & grs.</p> <p>Unwashed: Largely pale olive to grayish olive & wh silt, some clay & marl.</p>
300-310	<p>50% Loose Qz sand, vf-f, clear, subrnd-subang; 50% Ls, wh, fg, sdy to v sdy, rarely phos, v fos, moldic, numerous mollusks & encrusting bryozoa.</p> <p>Unwashed: As above, with 15-20% yel gray, calc silt.</p>
310-320	<p>50% Qz sand as above; 25% wh, sdy, fos Ls as above; 25% lt olive-grayish olive, calc, v sdy, clayey(?), poorly consolidated siltstone.</p> <p>Unwashed: Largely lt olive-grayish olive silt & clay, some marl.</p>
320-330	<p>75% Qz sand as above; 15% wh, sdy, fos Ls as above; 10% siltstone as above.</p> <p>Unwashed: Largely pale olive, calc silt & clay; common loose, coarse Qz grs.</p>
330-340	<p>As above (washed & unwashed).</p>

Depth in feet below GL	DESCRIPTION
340-350	80% Qz sand as above, with a little med & coarse, rnd-subrnd; 5% wh, sdy, fos Ls; 15% siltstone, poorly consolidated, pale olive gray-grayish olive, clayey, calc, v sdy, minor phos grs. Unwashed: Siltstone as above, and a little marl.
350-360	As above, washed & unwashed.
360-370	As above, washed & unwashed, with 2-3% modly FeOx stained, fg Ss and commonly the siltstone is dolomitic.
370-380	90-95% Qz sand, vf-f, ang-subang, a little med & coarse, subrnd-rnd; minor phos grs; 5-10% siltstone, clayey, v sdy, poorly consolidated. Unwashed: Ss, grayish olive, v sdy(vf-f), v silty, v sltly phos, sltly calc, sltly dolomitic.
380-390	As above, washed & unwashed.
390-400	As above; ½-1% phos as small grs/fos frags and the siltstone is dolomitic.
400-410	Ls, yel gray to pale olive, fg, sdy, phos, v fos, sltly dolomitic, moldic-v moldic, mollusks; phos @ 1-2% as small bl grs. Unwashed: As above, with 20-30% pale olive silt & dolosilt.
410-420	Ls/fos as above; overall more phos(1½-3% as bl grs) and less dolomitic than above. Unwashed: As above, with 5-15% med gray, v clayey dolosilt.
420-430	Dolosilt, grayish olive to pale olive, v clayey, some is silty, sltly phos, rare fos.
430-440	As above.
440-450	Claystone, grayish olive, silty, dolomitic, phos to v phos(3-7% as grs & some grns/fos frags, bl, brnish bl, brn orange, orange).
450-460	50% Loose Qz sand, vf thru rare pebble, most is fine to med; 3-6% loose phos grs, grns, fos frags; 20% mollusk shell frags & other fos frags; 20% claystone(as above) & clayey dolosilt; 5-10% Ls, wh, fg, v sdy, phos, numerous mollusks. Unwashed: As above, with more claystone & dolosilt & less loose Qz sand, phos grs & Ls/fos.

<u>Depth in feet below GL</u>	<u>DESCRIPTION</u>
460-470	Ls, wh to yel gray, fg, sdy, phos, fos, com-numerous mollusks, encrusting & cheilostome bryozoa. Unwashed: As above, with 40-50% yel gray, dolomitic, sltly phos marl.
470-480	Ls as above, sample is largely mollusk shell fragments and encrusting/cheilostome bryozoa fragments. Unwashed: As above, with minor to 5% marl.
480-490	As above; mollusks more abundant than bryozoan.
490-500	As above; more sdy, phos Ls, sltly fewer mollusks & bryozoan.
500-510	As above.
510-520	As above.
520-530	As above.
530-540	Ls/fos as above, some Ls is wkly dolomitized by vf subhedral, grayish yellow xls in matrix; 4-8% phos crust.
540-550	Ls, wh, fg, sltly sdy & phos, v fos, cheilostome bryozoa, mollusks, some echinoid spines; a little Ls is wkly dolomitic; minor phos crust.
550-560	Mollusk shell fragments.
560-570	90% Loose mollusk shell frags & encrusting bryozoa frags, a few cheilostome bryozoa & echinoid spines; 1-3% loose phos grs(minute & small, bl); 5-10% dolosilt, grayish red, pale red, grayish olive & pale olive, clayey, phos. Unwashed: As above, with 15-30% dolosilt & a little wh, sdy, phos Ls with mollusks & bryozoa.
570-580	Largely loose encrusting bryozoa frags, com-numerous mollusk shell frags; some wh, sdy, phos, fos Ls; some dolosilt as above; more loose phos as above(now 2/3 are bl grs, 1/3 are brnish bl, brnish orange grs). Unwashed: As above, with 15-30% dolosilt(clayey & phos) and dolomitic, phos marl.

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Depth in feet below GL	DESCRIPTION
580-590	<p>Ls, wh, fg, phos, sdy, fos, abundant loose mollusk shell frags; 6-12% loose phos grs, fos frags(most are bl, some brn); some dolosilt; tr-minor phos crust.</p> <p>Unwashed: As above, with 10-20% v phos to phos, dolomitic marl; some dolosilt.</p>
590-600	<p>As above.</p> <p>Unwashed: As above, little dolosilt; much phos, sltly dolomitic marl.</p>
600-610	<p>As above; more phos, especially as fos frags(9-18%).</p> <p>Unwashed: As above, with 10-20% phos, sltly dolomitic marl; some clayey dolosilt.</p>
610-620	<p>As above; less phos(5-10%).</p> <p>Unwashed: As above, with 40-50% phos, silty, clayey, dolomitic marl.</p>
620-630	<p>Largely loose mollusk shell frags, some encrusting bryozoa, minor cheilostome bryozoa; some wh, sdy, phos, fos Ls; 4-8% loose phos grs/fos frags; minor clayey dolosilt.</p> <p>Unwashed: 90% marl, silty, clayey, phos, sltly dolomitic; 10% as above.</p>
630-640	<p>Marl, yel gray, dolomitic, phos, sltly sdy, fos, numerous mollusk shell frags, some encrusting and cheilostome bryozoa.</p>
640-650	<p>Marly, yel gray & pale yel brn, silty, clayey, phos, fos, dolomitic; a little clayey dolosilt; phos @ 2-8% as minute & small, brn, brn orange, some bl grs/fos frags.</p>
650-660	<p>70-75% Loose phos matter, as grns, fos frags, grs, some crust, bl, brn bl, brn orange, reddish brn, grayish brn, fos frags are numerous; 25-30% loose mollusk shell frags; some bryozoan, some wh, phos, sdy, fos Ls; some pale yel brn clayey dolosilt.</p> <p>Unwashed: Marl, phos, silty, clayey, dolomitic, fos.</p>
660-670	<p>Entirely mollusk shell fragments, minor bryozoan, trace to no phos; some clayey dolosilt.</p> <p>Unwashed: As above, with 5-10% pale olive, clayey dolosilt.</p>
670-680	<p>Loose fos frags, about equal mix of mollusk shell frags and encrusting/cheilostome bryozoa frags; 5-10% phos fos, grs, grns, some crust.</p> <p>Unwashed: As above, with 25-40% dolosilt, pale olive, v clayey, phos, fos.</p>

Depth in feet below GL	DESCRIPTION
680-690	Almost entirely cheilostome bryozoa fos frags, a few mollusk shell frags; trace to no phos. Unwashed: As above, with 2-3% loose dolosilt particles.
690-700	As above; with minor phos grs/fos frags. Unwashed: As above, with 10-15% dolomitic, phos, sltly clayey marl.
700-710	Entirely loose cheilostome & encrusting bryozoa frags (about a 50/50 mix); trace to no phos.
710-720	As above, now common mollusk shell frags, a few echinoid spines; some bryozoa frags appear to be wkly weathered(?); trace to no phos.
720-730	As above; minor pale olive, silty claystone; minor phos. Unwashed: As above, with 20-40% yel gray, dolomitic marl.
730-740	As above, washed & unwashed.
740-750	About 50% as above; 50% Ls, wh to yel wh, "fos hash", stgly rexal, v sltly sdy, echinoid spines, mollusk shell frags, peloids, some forams(?), some coarsely xln calcite.
750-760	As above, less bryozoa, more "fos hash" Ls; minor phos grs/fos frags.
760-770	As above, 1% phos grs/fos frags; 3-6% dolosilt, v clayey. Unwashed: As above, with 40-50% dolosilt, pale olive, clayey to v clayey.
770-780	As above, with 30% claystone, some is dolomitic. Unwashed: Claystone, some dolomitic; some fos frags & Ls.
780-790	Mix of loose mollusk shell frags and cheilostome/encrusting bryozoa frags; common claystone, some is dolomitic. Unwashed: Largely dolomitic claystone & fos frags.
790-800	Ls, wh to v pale orange(vpo), fg to granular, some mollusks, some red algae frags, a few encrusting/cheilostome bryozoa, a few forams(?), little to no sand, rare bl, rnd phos grs.
800-810	Ls/fos as above, more granular than fg.
810-820	As above, most is granular, vpo color is more common, about 25-30% of cuttings have a wk, partial covering of brn FeOx(?) stain[possibly drilling or processing introduced].

<u>Depth in feet below GL</u>	<u>DESCRIPTION</u>
820-830	Dol, pale yel brn, some grayish brn, grayish orange, yel gray, most is f xln, subhedral, some is med xln, subhedral and some vf xln, subhedral, a little is med euhedral(probably vug related), all Dol is phos (as.bl & brn bl, rnd grs), most is f-m sdy; ±1% loose phos grs, grns, some fos & common crust; a little pale orange pink, vfg, phos-v phos, weathered(?) mudstone (this may be the unit being dolomitized); 5-8% Ls/fos as @ 810-820'(however none is dolomitized, so this may be cavings). Unwashed: As above, with 5-10% pale olive, clayey dolosilt & minor clayey siltstone.
830-840	Dol as above; overall sltly more phos grs, grns, fos & now more grayish brn colors, some vfg, anhedral Dol; v little dolosilt or siltstone, and some vfg, phos mudstone as above.
840-850	10% Dol as above; 90% Ls, wh to yel wh, fg, phos to to v phos, few fos, vuggy & sltly moldic. This Ls has been wkly to 100% replaced by Dol(vf-f xln, grayish yel, anhedral/subhedral).
850-860	Dol, mod brn, lt brn, pale yel brn, yel gray, grayish orange, f-m xln, subhedral/euhedral, common vf xln, anhedral, phos, vuggy-v vuggy; a little dol Ls as above.
860-870	Dol, grayish brn, med gray, vf-f xln, anhedral, some subhedral, phos, sdy(appears to be replacing Ls described at 840'-850'); Ls, wh, yel wh, moldic, large mollusks, all replaced or coated by f-m drusy, wh calcite or replaced by wh, med xln, euhedral/subhedral Dol; significant amount of cavings.
870-880	Dol, grayish brn, med gray, vf-f-m xln, anhedral/subhedral/euhedral, phos, sdy, some vuggy.
880-890	As above.
890-900	Ss, lt gray, yel gray, sltly phos, vf-f Qz grs, modly to completely dolomitized by subhedral/euhedral, clear to yel gray Dol; 15-30% Dol as above @ 880-890'.
900-910	Dolomitized Ss as above, now grayish brn color is common.
910-920	As above.

Depth in feet below GL	DESCRIPTION
920-930	Siltstone, pale yel brn, clayey to v clayey, v sltly calc & dolomitic.
930-940	As above.
940-950	As above, with 10% up hole cavings of cheilostome bryozoa frags, mollusk shell frags, phos grs, fos, shark teetn, Dol.
950-960	5-10% Siltstone as above(now about half is a pale red color); 90-95% Ls, wh, fg, sdy, phos, v fos, moldic, numerous mollusks, crab claws, a few encrusting bryozoa.
960-970	Ls, wh & v lt gray, vf-fg, sdy to v sdy, phos, fos, numerous mollusks & crab claws.
970-980	Ls/fos as above, sltly to nearly totally replaced by grayish yel to yel gray, f-m, euhedral Dol floating in matrix.
980-990	Ls, v lt gray to wh, vfg, sdy, phos, fos, moldic, common f-m drusy calcite coats fos & lines molds, mollusks; minor Ls, v pale orange(vpo), microgranular, microfoss, some vf drusy calcite, rare f-m, lt gray, euhedral Dol floating in Ls matrix.
990-1000	Ls, wh & dirty wh, fg to microgranular, few fossils, sltly sdy(vf-f, ang-subang), trace silt, no phos, about 30% of Ls is wkly to stgly dolomitized by yel gray to grayish brn, f-m euhedral xls in matrix; trace grayish brn, f-m xln, anhedral/euhedral Dol; 10-15% claystone, silty, v sltly calc, med gray.
1000-1010	Ls as above, a few crab claws, mollusks, gastropods & forams, most is wkly to stgly dolomitized(as above); 5-10% claystone as above.
1010-1020	Ls, wh, microgranular, some granular, peloids/forams, common mollusks, crab claws, stgly rexal(coarsely xln, yel gray, calcite replaces matrix & fos), v common, f drusy calcite coats fos & lines vugs; some dol Ls as above; 5-10% claystone as above.
1020-1030	Ls, wh to yel wh, stgly rexal(common calcite & drusy calcite as above), foraminiferal, some mollusks, rare <u>Sorites</u> (?), no sand, no phos.

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Depth in feet
below GL

DESCRIPTION

- 1030-1040 [RSC remarks: The entire sample may be up hole cavings] Mix of mollusk shell frags, encrusting/cheilostome bryozoa frags, phos crust, phos grs/fos, Dol(as @ 820' thru 920'), some siltstone & 20% claystone(as before); a little dirty wh, microgranular Ls & about 25% Dol, grayish orange, vf xln, anhedral, some sltly phos(this Dol has not been observed before and may be "in situ" cuttings).
- 1040-1050 As above; now 25-30% claystone(as @ 990-1020'), some has microscopic gypsum needles growing along thin laminations.
- 1050-1060 Ls, v pale orange(vpo), dirty wh, granular-microfos, modly rexal, v porous, leached & weathered(?), abundant echinoid body plates, some spines, peloids/forams; 5-15% Dol, grayish orange, vf xln(some Dol also appears to be leached & porous); 5% claystone as above.
- 1060-1070 Ls, wh, dirty wh, microgranular, some fg, some granular Ls(leached(?) as above), most is not leached and is stgly rexal, numerous Lepidocyclina(small, med, large, sltly saddle shape, a few small relatively flat), common- numerous echinoid body plates, common to numerous red algae frags, a few cheilostome(?) bryozoa; 5-10% claystone as above.
- 1070-1080(TD) Ls as above, abundant Lepidocyclina(as above), some-common red algae frags, no echinoid body plates; trace med & fine, euhedral Dol in vugs; 25-30% med gray claystone.

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