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Conimco Test G4

Location 60°54'00 114°45'00" C - 5 - 61 - 00 - 114 - 5
Elevation Ground 539' Completed 25 - 7 - 53
Core Descriptions by: Helen R. Belyea, 1962

Depth:	Lithology: Sulphur Point Formation
33 - 59'	Recovery 6'
0 - 3'6"	Limestone, buff, aphanitic, (possibly coarser), vague structure; possibly some coarse grains tightly cemented; <10% sparry calcite; fossil fragments; chara at 34'; irregular surfaces with grey and pale green, waxy shale, may be fine stylolites; pyrite; sharp contact
3'6" - 5'	Limestone, coarse grained, rubbly, with green shale abundant; some green waxy shale at base
5' - 6'	Limestone, buff, aphanitic, mottled pelletoid; angular leached vugs
59 - 61'	Recovery 2'
0 - 1.5'	Limestone, buff, aphanitic to coarse grained, tight; light green shale laminae and pyrite; laminae irregular; chara;
1.5 - 2'	Shale, light green, highly pyritic, possibly silty; chalky rather than waxy texture
61.5 - 67'	Recovery 9'
~~61.5 - 67'~~	Shale as above; shale, pale green; very finely crystalline limestone with high permeability, ending about 2" above the base; light green, waxy shale in bottom 3"; limestone has weathered appearance
67 - 68'	Limestone buff very fine grained, slightly chalky, possibly weathered
68 - 68'6"	Core broken; chalky, fine grained limestone in breccia of weathered, euhedral limestone fragments
68'6" - 70'	Limestone, buff, probably interbedded, fine to coarse grained, aphanitic; vugs up to 0.25 mm in bottom 6"
70 - 75'	Recovery 2'6"
~~70 - 72'~~ 0 - 2'	Limestone, buff, aphanitic, patches pelletoid; ~~lines and~~ bands with vugs up to ½" in diameter
~~72 - 72'6"~~ 2' - 2'6"	Limestone, grey to buff, chalky, porous; rotten, or weathered appearance, similar to above
75 - 79'	100% recovery
75 - 75'6"	Weathered, coarse grained limestone as above; grades to
75'6" - 79'	Limestone, buff, aphanitic; patches of light brown, porous limestone—probably coarse-grained lime sand with pelletoid ~~matrix~~ matrix; possibly weathered; ~~sand~~ same angular pores; aphanitic limestone is tight.

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79 - 82'	Recovery 21", core broken and position of fragments uncertain
0-21"	Fragments of limestone as above, grey and light buff, very fine grained; sugary dolomite; buff, aphanitic limestone veined with white anhydrite
82 - 86'	3'8" recovered
0-6"	Limestone, buff, aphanitic, slightly mottled, texture in small fragments; irregular porosity with vugs under 0.25" forming a network, some angular
6"-14"	Limestone, light yellow brown, aphanitic to very fine grained in top 6", grading down to limestone or has sharp contact with green shale
14"-20"	Limestone, buff, fine to coarse, pelletoid; some pellets spheroidal, others large with irregular edges; sparry calcite cement
20"-3'6"	Limestone, light yellow brown, aphanitic; anhydrite crystals; thin veins of anhydrite, some parallel to bedding
86 - 90'	4' recovery
0 - 4'	Dolomite, buff, very fine grained, in part chalky but mostly crystalline euhedral; very fine microcrystalline with good porosity; in part mottled appearance with argillaceous material; few inclusions of white anhydrite
90 - 92'	Recovery 6"
0 - 6"	Dolomite, buff, aphanitic, mottled with white crystalline anhydrite
92 - 93'	Recovery 6"
0-6"	Dolomite and grey crystalline anhydrite about equal
93 - 102'	Recovery 9'
93'-98.5'	Anhydrite and dolomite banded and mottled; dolomite buff, finely sugary, porous, permeable; anhydrite, grey to white, crystalline, in laminae and as patches
98.5'-102'	Dolomite, buff, very finely sugary, crystalline, tightly cemented, some finely laminated with black shale
102' - 109'	Recovery 7' =100%
102'-103'	Dolomite, as above
103'-103'2"	Anhydrite, white crystalline (possibly not in place?)
103'2"-109'	Dolomite, light grey, argillaceous, chalky, porous, permeable (good), argillaceous or anhydritic; scattered spots of white crystalline anhydrite

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109' - 114.3'	5.3" recovered ≈100%
109'-114.3'	Dolomite, light yellow brown, fine crystalline, in part slightly euhedral, sugary, but on very fine scale; scattered small anhydrite inclusions; a few small vugs in bottom 3"
114.3'- 124'	Recovery 10'
114.3'-115.5'	Dolomite, as above in top 1" grades to grey, finely sugary permeable, very finely crystalline dolomite; slightly argillaceous; grades to shale, light green, pyritic, ~~shale~~ waxy; at base is shale with black pyritized pebbles up to 0.25 inches diameter; sharp contact
b? 115.5'-117'	Limestone, light brown, aphanitic, mottled dark grey, pyritic; at contact surface is irregular and heavily pyritized; green shale rests on contact; aphanitic grades to mottled pelletoid ~~part~~ with calcite cement
Lower Member Sul Pt? Pine Point? 117'-124'	Limestone, buff, fine-grained to coarse grained, particulate, slightly porous and permeable; scattered vugs most under 0.25 inches; scattered poorly preserved fossils possibly brachiopods or ostracods; a little dark grey probably pyritic mottling
124' - 127.5'	Recovery 3'5"
124'-127.5	Limestone, same as above, buff, finely crystalline, very fine grained, porous, permeable, grades to light brown, aphanitic, tight with scattered vugs up to 0.5"; scattered dark grey streaks in granular limestone, lightly argillaceous
127.5 - 129.5	Recovery 18"
0-18"	Limestone, yellow brown, fine grained, finely crystalline; slight porosity and permeability
129.5 - 133	Recovery 2.5'
	Limestone, same as above; brown lamellae towards base; no apparent change in crystallinity
133' - 140.5'	Recovery 7'
133-140.5'	Limestone, same as above, light yellow brown, very fine grained, sugary, permeable; carbonaceous specks and streaks, band composed almost entirely of Amphipora at 138-138.6'; vugs after leached Amphipora
140.5' - 148	Recovery 7.5'
140.5-145'	Limestone, same as above, light yellow brown, mottled dark grey, pyritic, carbonaceous specks, a few vugs suggest shelly fauna, e.g. gastropods.
145'-148'	Limestone, brown, fine-grained, argillaceous, laminated and banded with black shale with brown streak, small Amphipora, Resembles Pine Pt. lithology, a few Thamnopora type corals

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148- 153'	Recovery 5'
148-150'	Limestone, brown, aphanitic to fine grained with brown shale laminae, grades at about 150'
150-153'	Dolomite, yellow-brown, finely crystalline, slightly porous, bands of Amphipora; flat or tabular stromatoporoids; possible corals
153 - 158'	Recovery 3'
0-3'	Dolomite, brown as above with abundant organisms (corals?), replaced by white dolomite; some vugs with sticky black oil
158 - 168'	Recovery 10'
158 - 168'	Limestone, composed largely of stromatoporoids up to 3"; Thamnopora?, probably rugose coral; matrix brown, fine grained with black shale laminae; black oil on fractures and in vugs
168 - 173'	Recovery 5' 1" more
168 - 173'	Limestone, as above with corals, small stromatoporoids; brachiopods; bottom 6" is gypsum grey-green, calcareous shale
	Top Buffalo River (shale) Member 172'6"
173 - 177'	Recovery 2.5'
0-25'	Shale, light grey green, fissile, broken
177 - 185'	Shale, as above
185 - 193'	Recovery 6'
0-6"	Shale, as above, but more grey than green
6"-4'	Limestone, brown, argillaceous, laminaed with shale; abundant corals (Alveolites?)
4'-6'	Shale, grey to greenish-grey, calcareous limestone, scattered corals, brachiopods, crinoids
193 - 200'	Shale, grey-green, fissile, calcareous; scattered argillaceous limestone layers
200 - 218'	Shale, as above, calcareous, but no or little limestone
218 - 228'	Shale, as above
228 - 238'	Shale, as above
238 - 268?	Shale, as above
268 - 278'	Shale, as above
278 - 288'	Shale, as above
288 - 298'	Shale, as above

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298 - 308'	Shale, as above
308 - 318'	Shale, as above
318 - 329'	Shale, as above
329 - 339'	Shale, as above
339 - 349'	Shale, as above
349 - 359'	Shale, as above, more limy in bottom 6"
359 - 361'	Limestone, grey, argillaceous, scattered carbonaceous specks; grades down to
	Bituminous limestone and shale member
361 - 362'	Limestone, brown, aphanitic, tight
362 - 367'	Recovery 3.5'
0-3.5'	Limestone, brown, aphanitic, tight, argillaceous with brown argillaceous residue about 50% -- possibly should be called massive calcareous shale
367 - 372'	Recovery 4'
0-4'	Limestone, brown, argillaceous as above; a few Atrypa? pyritized
372 - 379'	Recovery 7'
372-374'	Limestone, brown, argillaceous with abundant brachiopods (collected GSC, Ottawa)
374-379'	Limestone or shale, dark brown, massive, aphanitic, probably about 50% shale, 50% limestone
379 - 383'	Recovery 3.5'
379-383'	Shaly limestone or shale, as above, more shaly than above; carbonate streaks; chitinous shell fragments
383 - 393'	Recovery 10'
383-393'	Shale, dark brown, massive, calcite rhythmically alternates with shale, packed with spines or Tentaculites in beds up to 3" thick
393 - 401'	Recovery 8'
	Shale, calcareous, massive, dark brown as above with spine-rich beds some showing cross-bedding
401 - 403'	Recovery 1'
0-1'	Limy shale, same as above
403 - 405'	Recovery 1.5'
0-1.5'	Shale, as above with 2" limestone, brown, argillaceous at base
405 - 407.5'	Recovery 2.5'
	Shale, as above

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407.5 - 412'	Recovery 3.5'
0-3.5'	Shale, as above; spine beds (Tentaculites)
412 - 414'	Recovery 1'
0-1'	Shale, as above
414 - 420'	Recovery 6'
	Limy shale or shaly limestone as above, dark brown; spine beds (Tentacs) in part cross-bedded
420 - 424'	Recovery 2'
0-2'	As above
424 - 429'	Recovery 5'
	As above
429 - 438'	Recovery 7'
0-7'	As above; spine layers in part cross-bedded
438 - 442'	Recovery 4'
	As above; 1" breccia of brown shaly limestone or shale with calcite cement at 439-440'
442 - 446'	Recovery 3'
0-3'	As above
446 - 450'	Recovery 3'
0-3'	As above, spine beds relatively more abundant
450 - 452'	Recovery 2'
	As above
452 - 455'	Recovery 2'
	As above
455 - 458'	Recovery 3'
	As above; spines abundant
458 - 461'	Recovery 3'
	As above
461 - 462'	Recovery 1'
	Limestone, dark brown, argillaceous, aphanitic; angular fractures
462 - 464'	Recovery 1'
	Limestone, argillaceous, black as above, varies to shale

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464 - 469'	Recovery 5'
	Shale and shaly limestone, dark brown; brachiopods abundant in bands, becomes more limy in bottomm 6"
469 - 472.5'	Recovery 3'
	Limestone, dark brown, slightly argillaceous
472.5 - 475'	Recovery 1.5'
0-1.5'	Limestone, as above, mottled with shale; brachiopods abundant
	Fine-grained dolomite member
475 - 483'	Recovery 2'
0-2'	Limestone, as above; brachiopods; dolomitic at base, brown, very finely crystalline, tight; brachiopods at top
483 - 491'	Recovery 3' broken fragments mostly
0-3'	Dolomite, brown-grey, very finely crystalline, tight; a few stylolites and small vugs
491 - 496'	Recovery 2"
0-2"	Dolomite, as above
496 - 500'	Recovery 2', broken
0-2'	Dolomite, buff, finely crystalline, tight; relict structures probably corals or stromatoporoids; irregular vugs after fossils
500 - 507'	1' recovery, broken core
0-1'	Dolomite, buff, finely crystalline, tight
507 - 514'	Recovery 1', broken
0-1'	Dolomite, buff, finely crystalline, tight; irregular vugs
514 - 520'	Recovery 2'
0-2'	Dolomite, as above
520 - 530'	Recovery 2'
0-2'	Dolomite as above
530 - 532'	Recovery 3"
0-3"	Dolomite, as above
532 - 537'	Recovery 6"
0-6"	Dolomite, light yellow brown, fine to medium crystalline, ~~green~~ small vugs, probable coral replaced by dolomite, but some structure preserved

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537 - 538'	Recovery 1'
0-1'	Dolomite, brown, fine to medium crystalline, stromatoporoids
538 - 545'	Recovery 1'
0-1'	Dolomite, as above; stromatoporoids, coral
545 - 552'	Recovery 2'
0-2'	Dolomite, brown, finely crystalline, tight; scattered organisms, probably stromatoporoids, crinoids, coral -- stromatoporoids? and coral? flat, thin, and small
552 - 557'	Recovery 1'
0-1'	Dolomite, as above; Neil Campbell reports argillaceous dolomite, horsetail bedding and green clay stylolites E horizon
557 - 562'	Recovery 3'
0-3'	Dolomite, as above, fewer organic remains, vugs scattered, up to 0.25" lined with white dolomite; veinlets of white dolomite
562 - 567'	Recovery 3'
0-3'	Dolomite as above; scattered vugs, dolomite and calcite veins
567 - 571'	Recovery 4'
0-4'	As above
571 - 577'	Recovery 2.5'
0-2.5'	As above
577 - 588'	Recovery 3'
0-3'	Dolomite, brown, finely crystalline, mosaic; few dolomite veins
588 - 593'	Recovery 5'
	Dolomite as above; irregular dolomite and calcite veins
593 - 597'	Recovery 4'
	Dolomite as above
597 - 601'	Recovery 3'
0 - 3'	As above
601 - 603'	Recovery 2'
0 - 2'	As above

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603 - 607'	Recovery 2½ - 3'
0 - 2½'	Dolomite, as above; at about 600 is 4 inches fractured, brecciated dolomite, all of one type
607 - 621'	Recovery 11'
0 - 11'	Dolomite, brown, finely crystalline, banded coarse crystalline, the latter has medium-coarse crystalline matrix and abundant crinoid plates
621 - 630'	Dolomite, as above, banded fine and coarse crystalline
630 - 640'	Recovery 4'
0 - 4'	Dolomite, brown, fine to coarse crystalline; scattered small crinoids; matrix between crinoids is coarse; a few shells; scattered vugs; black shale laminae up to 0.05 in irregular veins; a few dolomite veins
640 - 644'	Recovery 3'
	Dolomite as above
644 - 648'	Recovery 4'
	Dolomite as above
648 - 655'	Recovery 4.5'
	Dolomite, as above
655 - 661'	Recovery 6'
	Dolomite, as above
661 - 670'	Dolomite, dark brown, coarse, same as above; crinoids; calcite veins
670 - 674'	Recovery 3.5'
	Dolomite, dark brown, finely crystalline with scattered coarse crystalline bands; shale laminae, irregular, black; scattered vugs
674 - 684'	Recovery 10'
	Dolomite, light brown, banded fine and coarse crystalline, more black shale laminae and fine stylolites; suggestion of cross-bedding and nodulated structure
684 - 690	Dolomite, as above
690 - 696'	100% recovery, Dolomite as above
696 - 706	Recovery 100%, Dolomite as above
706 - 709'	Dolomite as above, vugs more numerous; sharp change

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Chinchaga Formation

"basal dolo"

709 - 716'	Dolomite, light yellow brown, argillaceous, very fine grained, permeable, millimeter lamellae common; angular vugs
716 - 732'	15' Recovered
716 - 717'	Dolomite, as above; sharp change
717 - 732'	Dolomite and anhydrite banded 1/4 to 1/2 inch; dolomite is thicker and more abundant than anhydrite; dolomite, buff, very finely sugary, earthy; anhydrite, grey, massive, crystalline; a little slump structure and some beds about 830-840 show dips up to 30° but succeeding beds are flat; below 850 anhydrite beds are thicker
	Same to 947'
947 - 990'	Anhydrite and gypsum, grey, massive; interbedded but less dolomite, buff, very fine grained as above; shale, interbeds 2" to 1' thick, laminated, clayey texture
990 - 1002'	Anhydrite and shale; anhydrite beds 1 - 2' thick, shale beds 6" to 18' thick; shale is greenish grey, laminated to massive, mottled in part with gypsum; no chara noted; grades to
1002 - 1015'	Shale, grey, green, mottled with grey gypsum; beds of gypsum, mottled with shale, up to 3' thick, bottom foot is green shale, grades to
	Cold Lake equiv in red bed facies?
1015 - 1015.5	Shale, as above, mottled red
1015.5 - 1028	Anhydrite and fibrous gypsum banded; gypsum fibrous probably recrystallized, pink mottling; grades to
1028 - 1038'	Gypsum and clay mottled, grey to orange-red, some mottling and contortion of clay-gypsum mixtures; suggestion of brecciation of gypsum in shale; grades to
1038 - 1048'	Shale, orange or brick red with inclusions up to 3" thick of red-tinted argillaceous gypsum and anhydrite; fragments of hard shale in soft shale; at base is 4" of gypsum with foliation at about 50-60° -- gives impression of lenses of gypsum in red shale rather than pebbles
1048 - 1068'	Shale, brick or orange-red continuous from above; angular pebbles or intraclasts of hardened clay; gypsum; matrix red clay same as pebbles but soft
1068 - 1069'	Anhydrite and gypsum, grey; sharp contact at about 30°
	Ernestina Lake?
1069 - 1072'	Anhydrite, and grey and light grey bedded
1072 - 1080.5'	Anhydrite, white, seems to be sand grains subrounded, poorly sorted, mostly 0.1 or less, a few range up to 0.2 in matrix of creamy anhydrite; a few layers of massive anhydrite; dip 25 - 30°

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1080.5 - 1082.5	Dolomite, brown, finely crystalline, laminated with anhydrite, with dip 25 - 30°
1082.5 - 1089'	Dolomite, light brown, coarse-grained, sand, probably pelletoid, grains are about 0.5 mm; extremely porous; possible pebbles leached and matrix left ?
1089 - 1090'	Dolomite as above, interbedded in beds 1" to 2" thick with dolomite, brown, fine crystals, tight
1090 - 1098'	Recovered 2'
0 - 2'	Bedded Dolomite as above
1098 - 1104'	Recovered 2'
	Dolomite and anhydrite layered
1104 - 1124'	Recovery
	Anhydrite, light grey to cream, irregular shale laminae
1124 - 1124.5'	Breccia, angular fragments (cemented) claystone, gypsum, anhydrite; pebbles, cream, grey, buff, etc. could be basal or intraformational
1124.5 - 1125.7'	Gypsum and dolomitic claystone, grey, massive
1125.7 - 1195.5'	Claystone, brick red, massive, veined with gypsum; about 1190' apparent dip due to gypsum vein is 45° and higher, grades to
1195.5 - 1197	Shale as above mottled with gypsum
1197 - 1202'	Gypsum, grey, massive
1202 - 1202.5'	Limestone, buff, euhedral with excellent intercrystalline porosity; 1" band of gypsum (grey) in middle
1202.5 - 1203'	Dolomite, buff, argillaceous, sugary; white gypsum band, euhedral
1203 - 1208.5'	Shale, grey, massive, gypsiferous grades to
1208.5 - 1215.5'	Shale or claystone, red, bluish red; gypsiferous, grades to
1215.5 - 1218'	Gypsum, with red shale mottline -- blue red
1218 - 1228'	Recovered 3'
	Red shale and gypsum mottled
1228 - 1238'	Recovered 5'
	Shale, brick red, mottled with gypsum
1238 - 1249'	Recovered 10'
1238 - 1242'	Shale, brick red, gypsum veining; some "flow structure" with hard dark lenses of claystone in light shale matrix

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1242 - 1243'	Gypsum (selenite)
1243 - 1262	Shale, brick red, mottled, grey, possibly silty (check samples); some green shale in bottom 5 feet; sharp change
1262 - 1305'	Shale, maroon, green, orange red interbedded; dip flat
1305 - 1310	Shale, in part silty; greenish grey, dolomitic; siltstone interbeds; silty to sandy lenses, quartz grains up to 0.5mm; siltstone light grey, dolomitic, micaceous, glauconite?
1310 - 1327'	Shale, dark maroon red, a few inclusions of white gypsum
1327 - 1345.5'	Siltstone, grey, banded, maroon, calcareous; scattered coarse sand grains; grades to coarse grey and maroon sandstone in bottom foot; coarse sandstone is poorly sorted, quartz, angular to subrounded, porous; a little dolomite, brown, argillaceous
1345.5	Weathered, granodiorite - grades to granodiorite.