

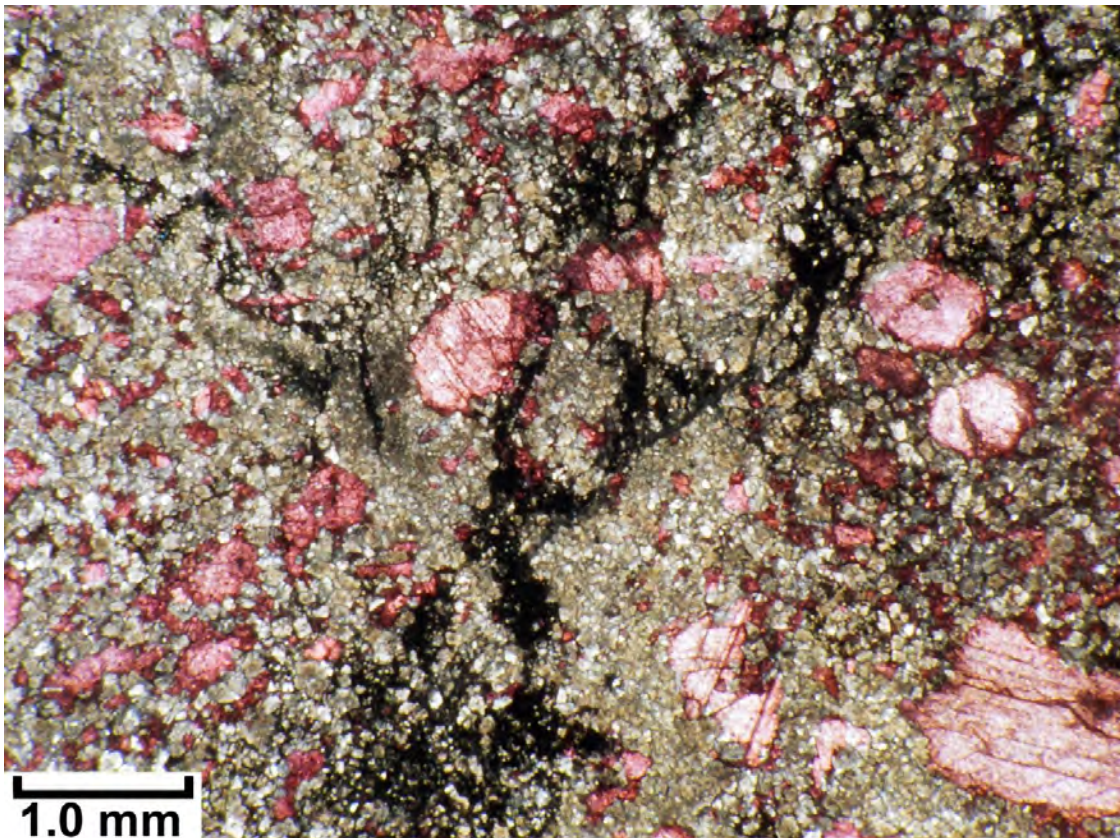
APPENDIX D:

**CATALOG OF LEADVILLE POROSITY TYPES AND
DIAGENESIS, LISBON FIELD,
SAN JUAN COUNTY, UTAH**

LISBON NO. D-816
NE1/4 SE1/4, Section 16, T. 30 S., R. 24 E.

8419 ft.

Plug	oriented; Ø 1.9%, K< 0.1 mD
Description:	calcareous dolomite, originally crinoidal/peloidal grainstone/ packstone; calcite (30%) dolomite (70%) with undolomitized remnants of crinoids, bryozoans, and peloids. Dolomite is very fine to medium crystalline, fractures with pyrobitumen plugging; no BC; poorly sorted dolomite crystals from finely sorted to euhedral rhombs; no saddle dolomite; open marine.
Diagenetic Events:	1) deposition; 2) carbonate cement as syntaxial overgrowths; 3) replacement dolomite not under burial conditions (replacing crinoid ossicles and large skeletal grains); 4) fracturing; 5) pyrobitumen. No bleaching.
Pore Types:	tight, none



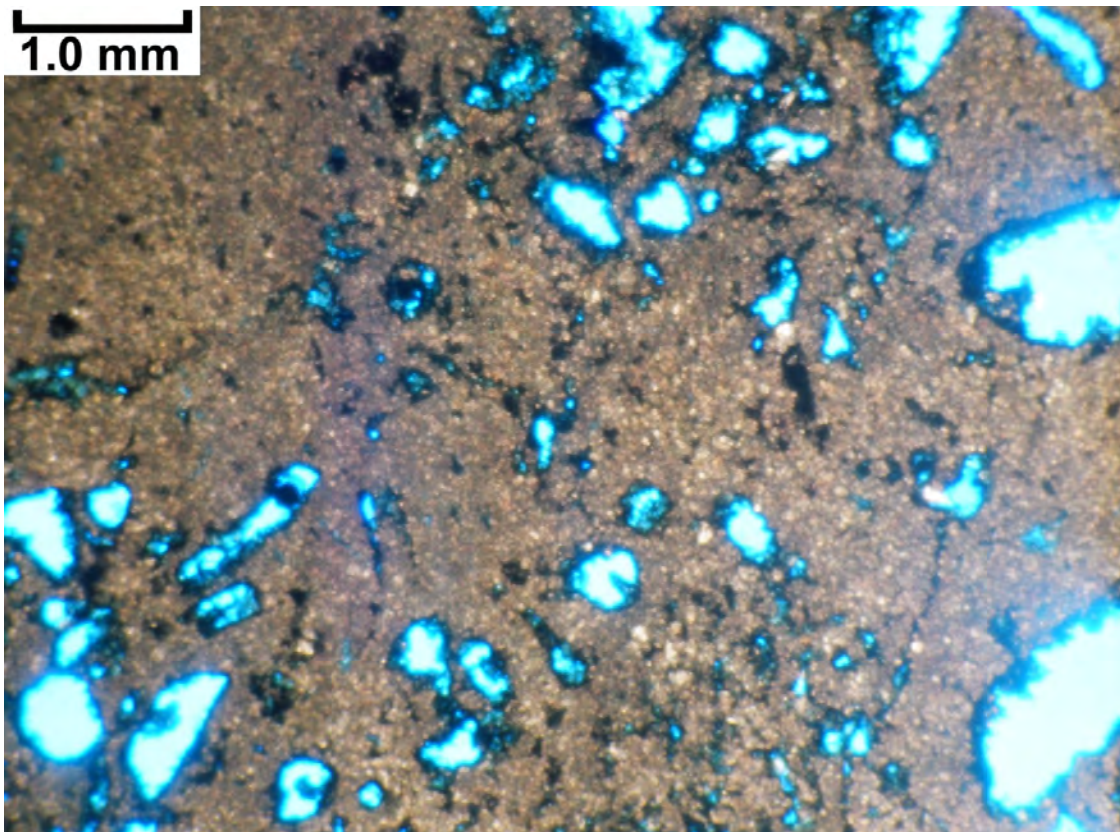
8421 ft.

Plug: no orientation; \varnothing 8.3%, K = 34 mD

Description: dolomite (100%), crinoidal/(soft) peloidal wackestone; uniform massive type dolomitic matrix with molds and some BC; crinoids leached; ghost of peloids; micro-fractures; no bitumen.

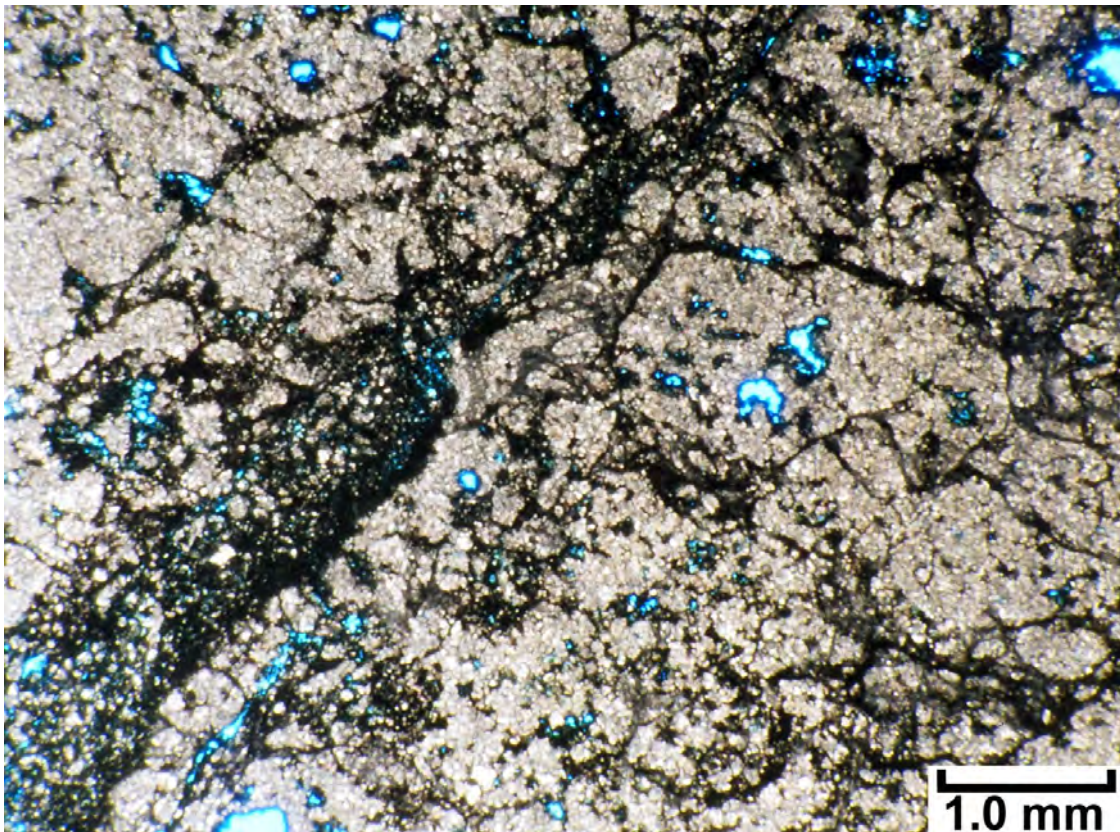
Diagenetic Events: 1) complete replacement of matrix by uniformly anhedral, finely crystalline dolomite, some burial overprint on finely crystalline dolomite; 2) leaching of undolomitized fossils and matrix; 3) some late saddle dolomites cement filling molds (not enough to effect reservoir quality); 4) micro-fractures; 5) trace of bitumen.

Pore Types: Mo, BC, and FR



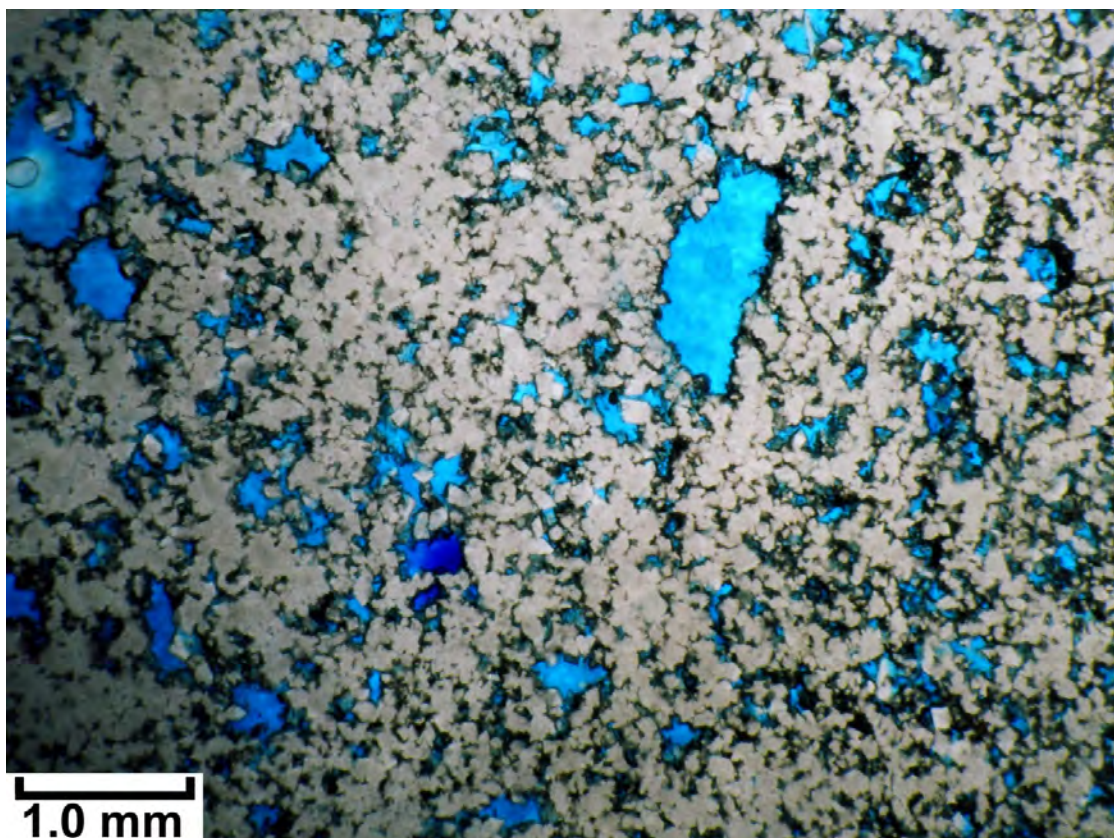
8423 ft.

Plug:	no orientation; \varnothing 10.5%, K = 47 mD
Description:	dolomite (100%), peloidal/crinoidal wackestone; completely dolomitized; leached out undolomitized grains and matrix with hydro fracture overprint; intense bitumen-filled fractures (fracture breccia) but in place, not solution collapse breccia (in-place clasts).
Diagenetic Events:	1) complete replacement of matrix by dolomite; 2) leaching of dolomitized grains and matrix; 3) recrystallization and saddle dolomite (coarsely crystalline dolomite = hydrothermal overprint resulting in increased permeability and porosity); 4) concurrent or later in-place, intense fracturing with bitumen.
Pore Types:	early BC, Mo, late BC, FR



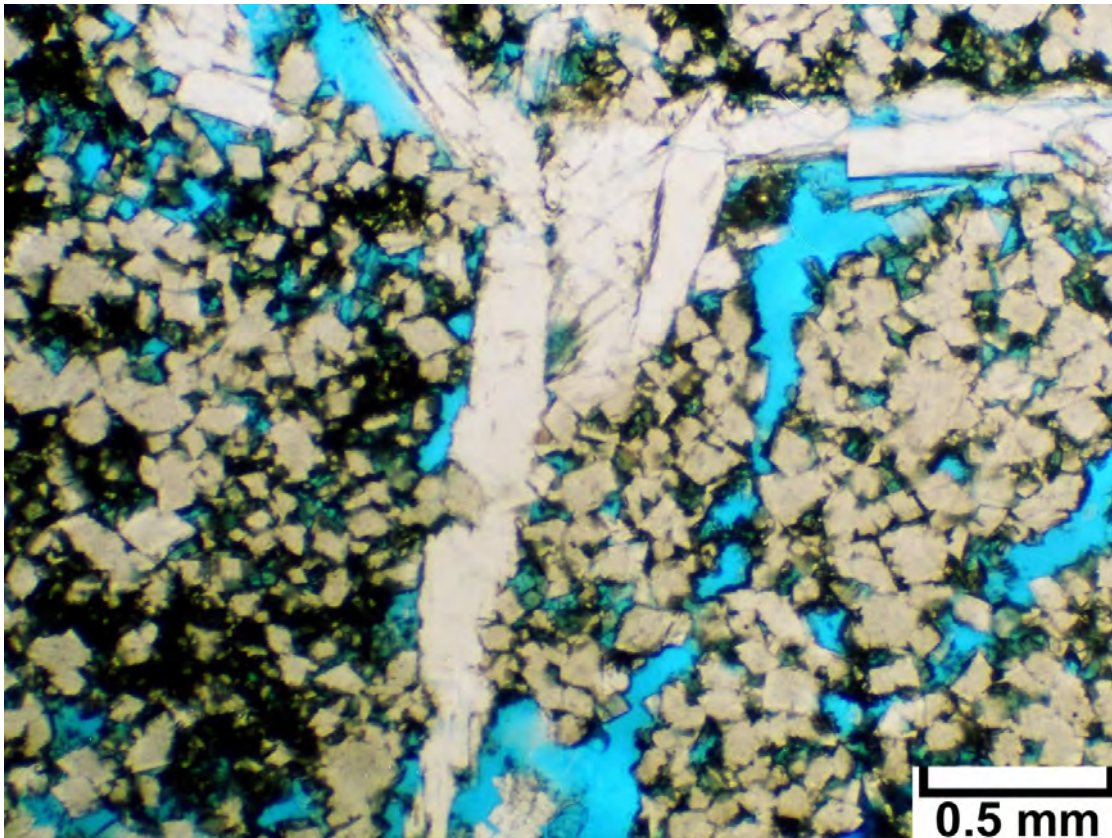
8426-8431? ft.

Plug:	no orientation; \varnothing 11.1%, K = 15 mD
Description:	dolomite (100%), crinoidal/peloidal wackestone; relict crinoid molds, relict pellets; higher BC; coarsely crystalline; bitumen bearing; dark syngenetic dolomite preserving original fabrics; light crystals, curved crystals increase BC, some microfractures.
Diagenetic Events:	1) complete replacement of pellet muds; 2) leaching of undolomitized carbonate grains; 3) replacement by coarse dolomite crystals (saddle); 4) fracturing concurrent with breccia; 5) some anhydrite in molds; 6) bitumen emplacement in the BC and Mo.
Pore Types:	Mo, BC (greater in percent and larger in size)



8433 ft.

- Plug: oriented; \emptyset 2%, $K = <0.1$ mD; note – permeability and porosity not representative of core
- Description: dolomite (100%), crinoidal/peloidal wackestone; type; early aphanitic dark crystal matrix; probable crinoid molds with some anhydrite lathes in molds; and later coarsely crystalline dolomite with good porosity but with anhydrite and bitumen in Mo and BC (bitumen lining porosity). Photos show cross-cutting dolomite porosity within early (low permeability and porosity) versus late (high permeability and porosity) dolomite.
- Diagenetic Events: same as the 8426-31 foot sample but more cross-cutting of fabrics and bitumen in coarse BC. Possibly anhydrite pre-dates dolomite where dolomite is observed growing into anhydrite.
- Pore Types: BC, Mo



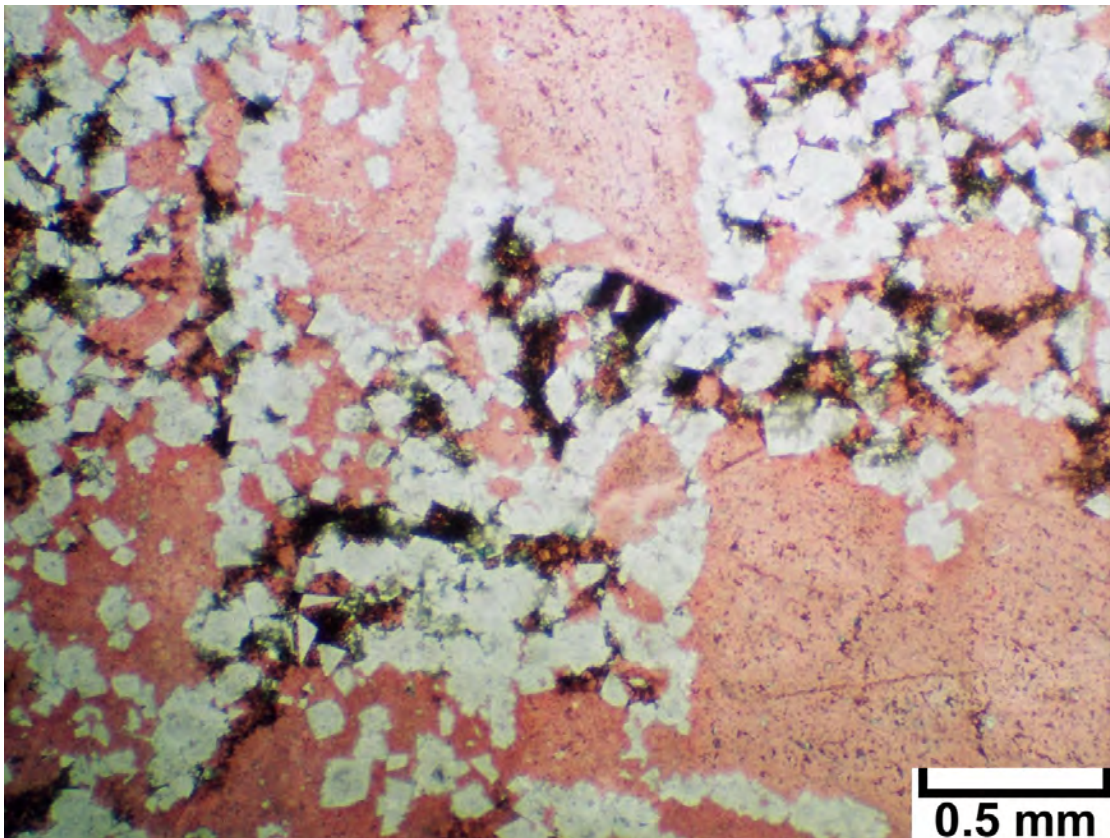
8435 ft.

Plug: oriented; \varnothing 7.5%, K = 0.03 mD

Description: partially dolomitized limestone; crinoidal grainstone/packstone; syntaxial cement overgrowths on crinoids floating in cement (no compaction); through-going cleavage; some fine-grained crystalline dolomites; crinoids are cloudy due to inclusions of organic matter.

Diagenetic Events: 1) syntaxial cement; 2) minor dolomitization; 3) minor saddle dolomite; 4) minor bitumen.

Pore Types: no visual porosity



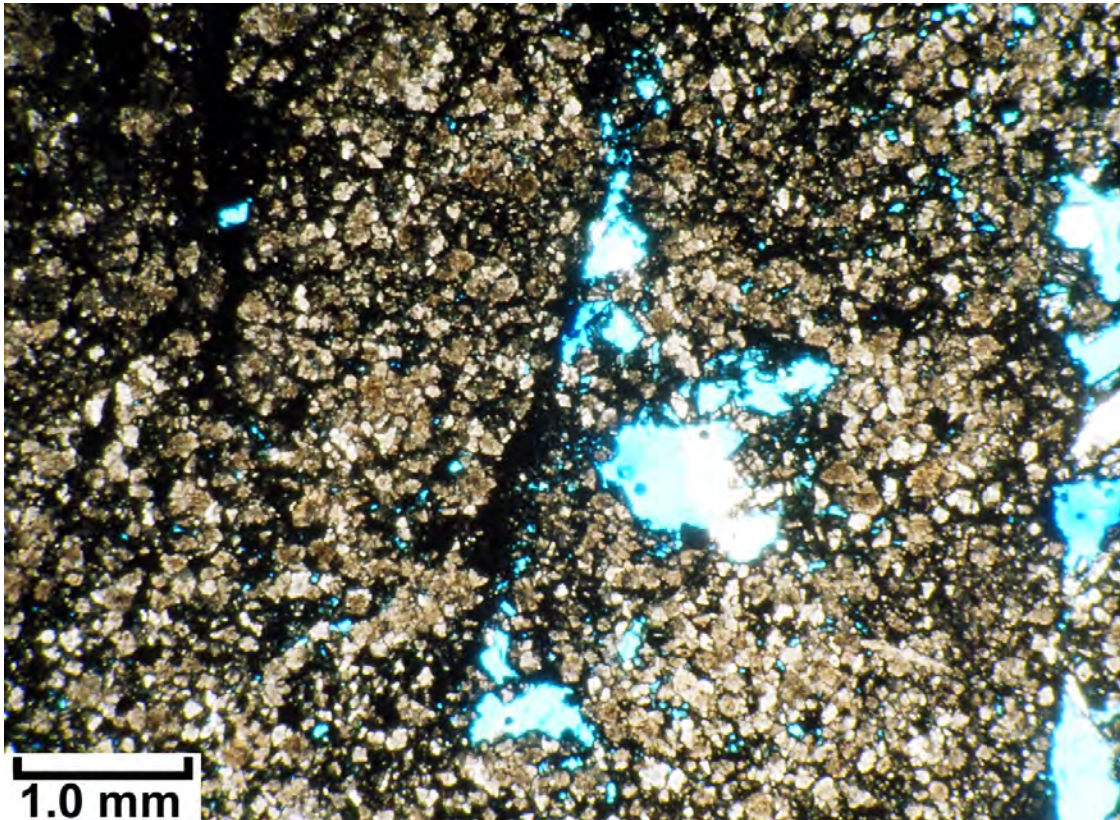
8435.8 ft.

Plug: oriented; \varnothing 7.5%, K = 0.03 mD

Description: dolomite (100%), peloidal crinoidal packstone/wackestone; solution-enlarged molds; some fracturing lined with bitumen (linear solution enlarged pores possibly representing a second later stage of dissolution); hard pellets or coated grains.

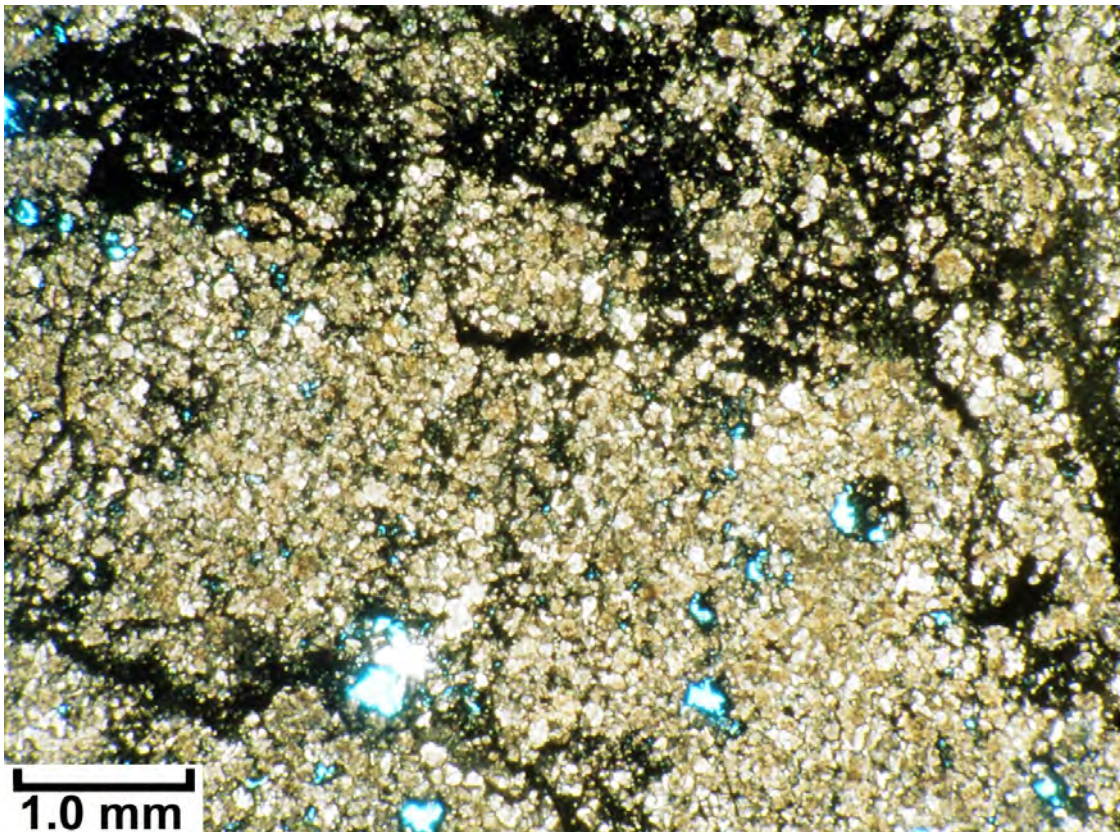
Diagenetic Events: 1) early dolomitization; 2) leaching of undolomitized skeletal grains (crinoids); 3) late coarse crystalline dolomite; 4) fracturing; 5) late stage dissolution; 6) bitumen and minor sulfides.

Pore Types: Mo, CH, BC, FR



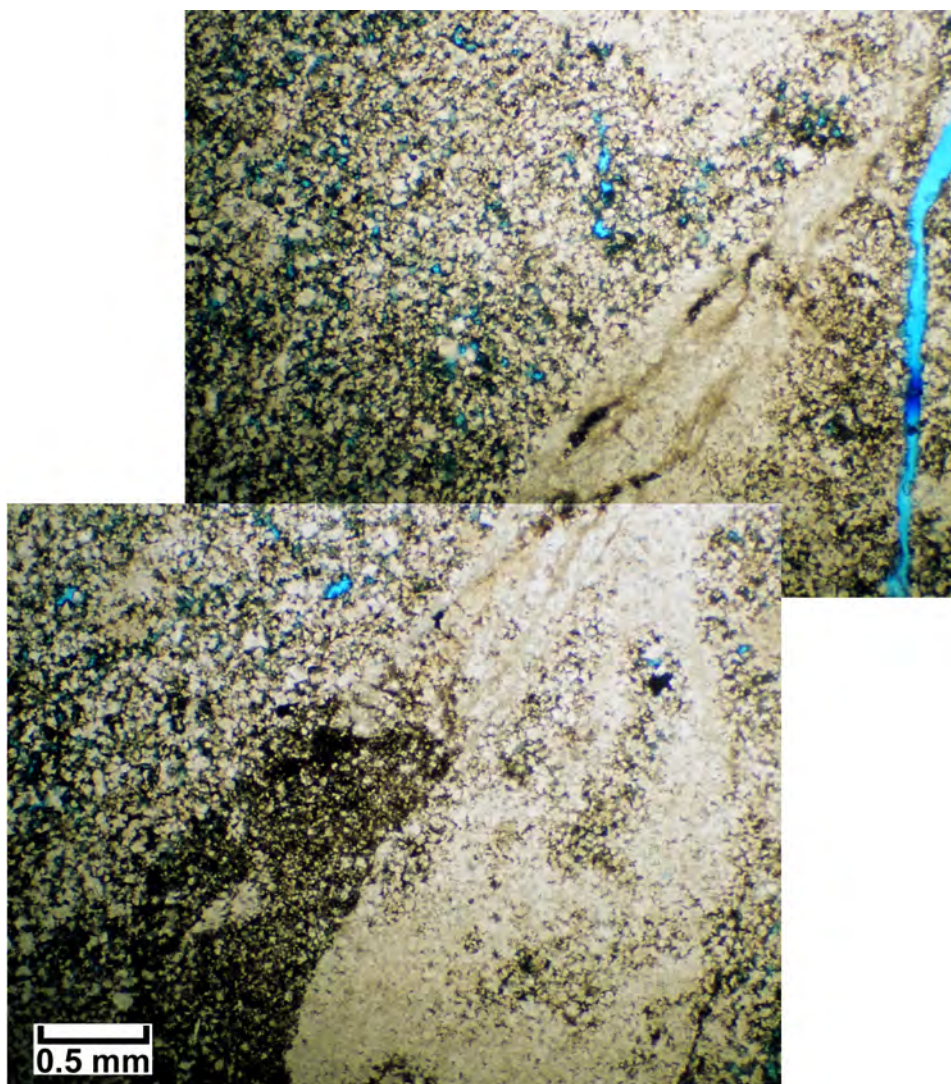
8438.6 ft.

Plug:	oriented; Ø 11%, K = 5 mD
Description:	same as sample 8435.8 feet but highly fractured/deformed/ brecciated with pyro-bitumen lining; in-place “islands” in breccia that is hydrofracturing – explosive-looking, pulverized rock; bitumen-filled fractures contain large dolomite rhombs; tight matrix outside of fracturing.
Diagenetic Events:	same as sample 8435.8 feet with intense fracturing and brecciation after first-stage dolomitization; later-stage dolomitization associated with fracturing.
Pore Types:	BC, Mo, CH, FR



8439-40 ft.

- Plug: oriented; \emptyset 11.1%, K = 5 mD
- Description: dolomite (100%), peloidal? wackestone/mudstone with BC (replacement saddle dolomite leads to BC); rare molds; some fractures; “Reike” or stair step fractures – reflection of explosive fluid expulsion (build up of pore pressure); bitumen; zebra dolomite; curvi-linear, tight finely crystalline areas (tight aphanitic dolomite with no bitumen) surrounded by coarser saddle dolomite.
- Diagenetic Events: 1) early dolomitization; 2) coarser rhombic dolomite with good BC; 3) fracturing; 4) bitumen plugging.
- Pore Types: BC, Mo, CH



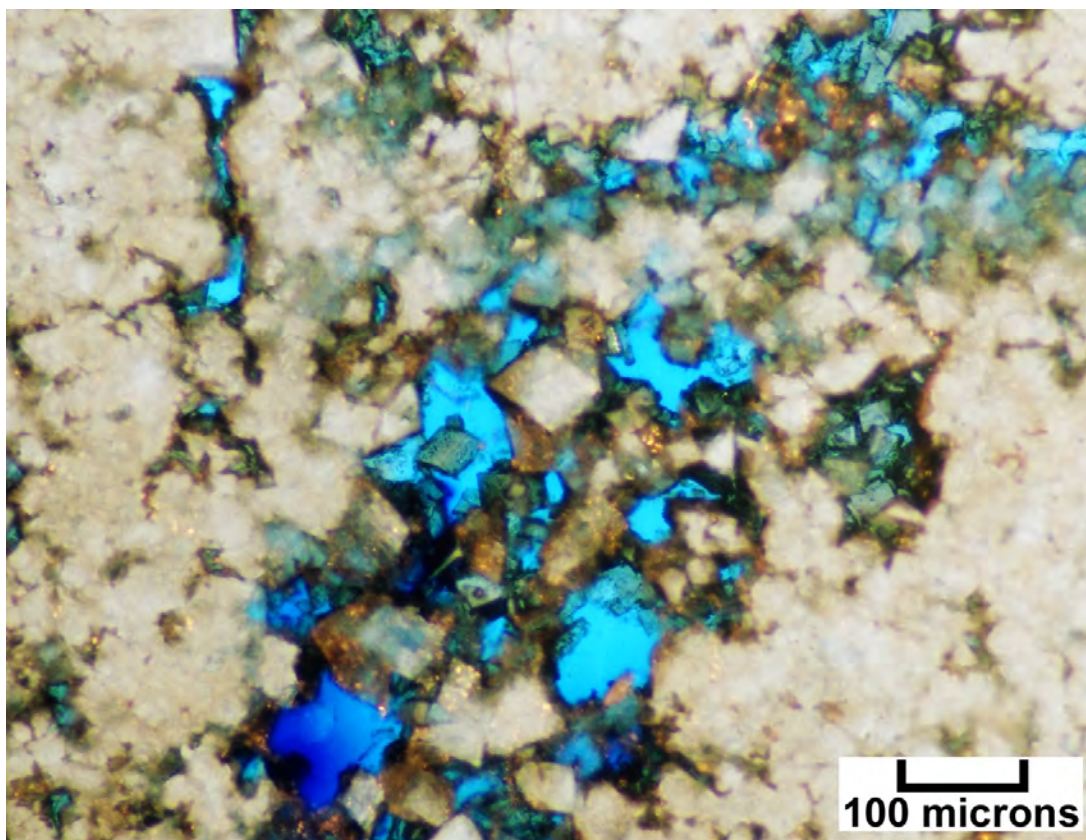
8442-43 ft.

Plug: oriented; \varnothing 8.6%, K = 1 mD

Description: dolomite (100%), peloidal sparse crinoidal packstone; late dolomite replaced by sulfides (pyrite or chalcopyrite); a few microfractures and solution molds; all pore types are lined with bitumen and possible sulfide minerals.

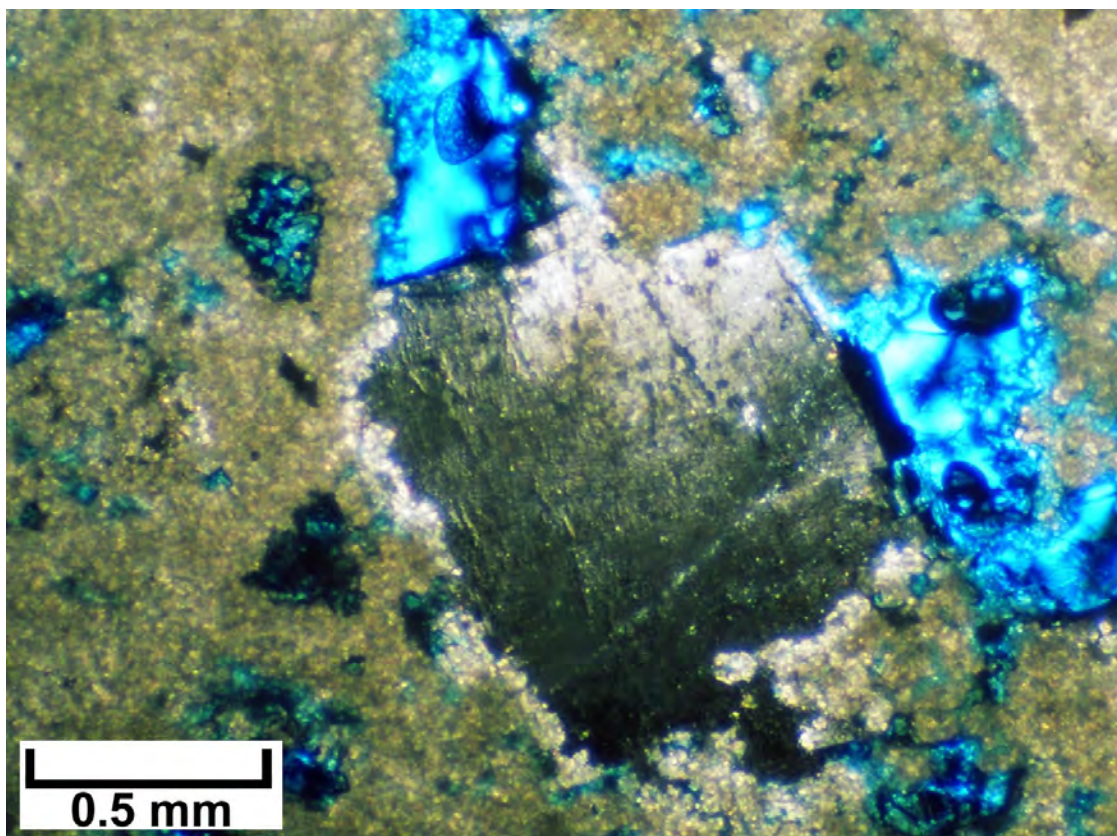
Diagenetic Events: 1) some early dolomitization; 2) leaching; 3) second dolomite overprint; 4) sulfides; 5) bitumen.

Pore Types: BC, rare Mo, some FR



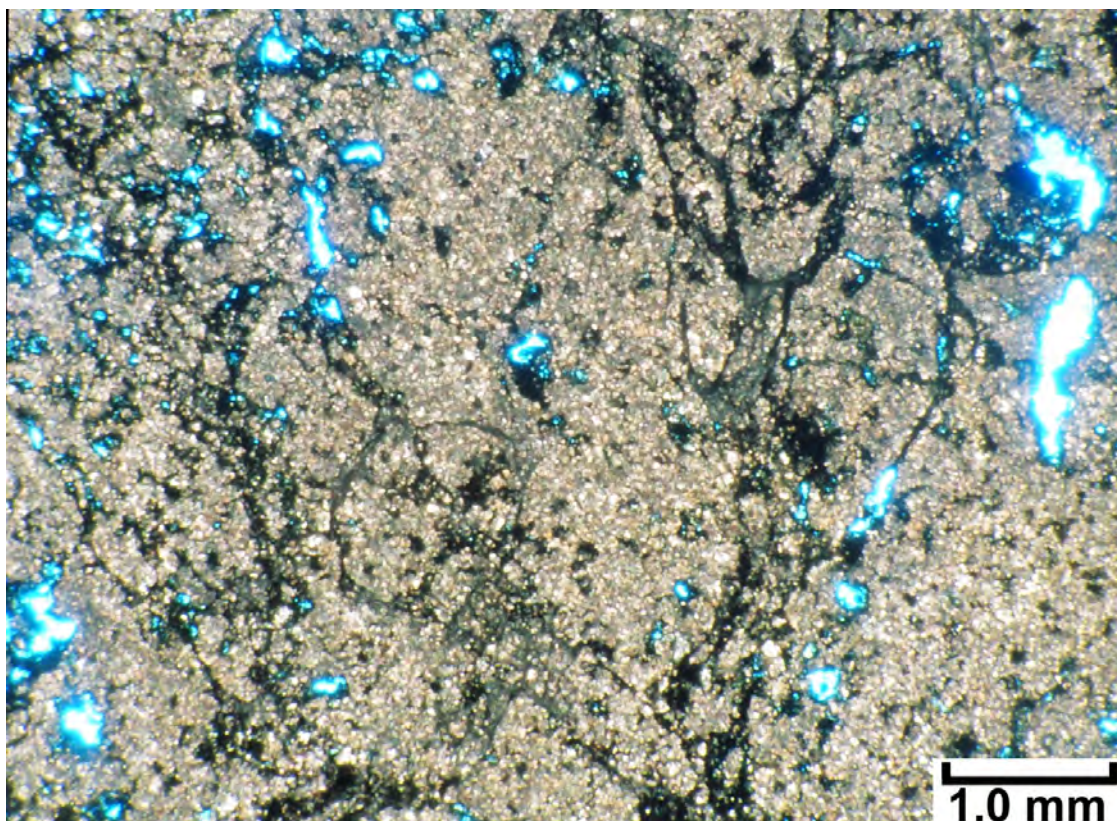
8444-45 ft.

Plug:	oriented; \varnothing 6.6%, K = 7 mD
Description:	dolomite (100%), preserved peloids and crinoids packstone/wackestone; mostly grains; moldic porosity from medium-sized crinoids; very little BC; tight, finely crystalline dolomite; saddle dolomites with sulfides and bitumen ? (opaque in some molds); no mini-saddle dolomites; trace of bitumen.
Diagenetic Events:	1) early dolomitization; 2) leaching; 3) minor late pore filling saddle dolomites (large), also called pearlspar; 4) sulfide filling.
Pore Types:	Mo only



8446-47 ft.

Plug:	oriented; Ø 13%, K = 29 mD
Description:	dolomite (100%), crinoidal/peloidal packstone wackestone; mixture of early tight dolomite and late coarse dolomite associated with BC; abundant bitumen with BC; extensive microfracturing (some open, some closed by bitumen); associated brecciation of tight, early dolomite and some pulverized rock matrix (explosive, shattered tight matrix dolomite); that is, autobrecciation.
Diagenetic Events:	1) early dolomitization; 2) leaching of skeletal grains; 3) late small saddle/replacement dolomite; 4) fracturing/brecciation; 5) bitumen.
Pore Types:	BC, some occasional Mo, FR, CH



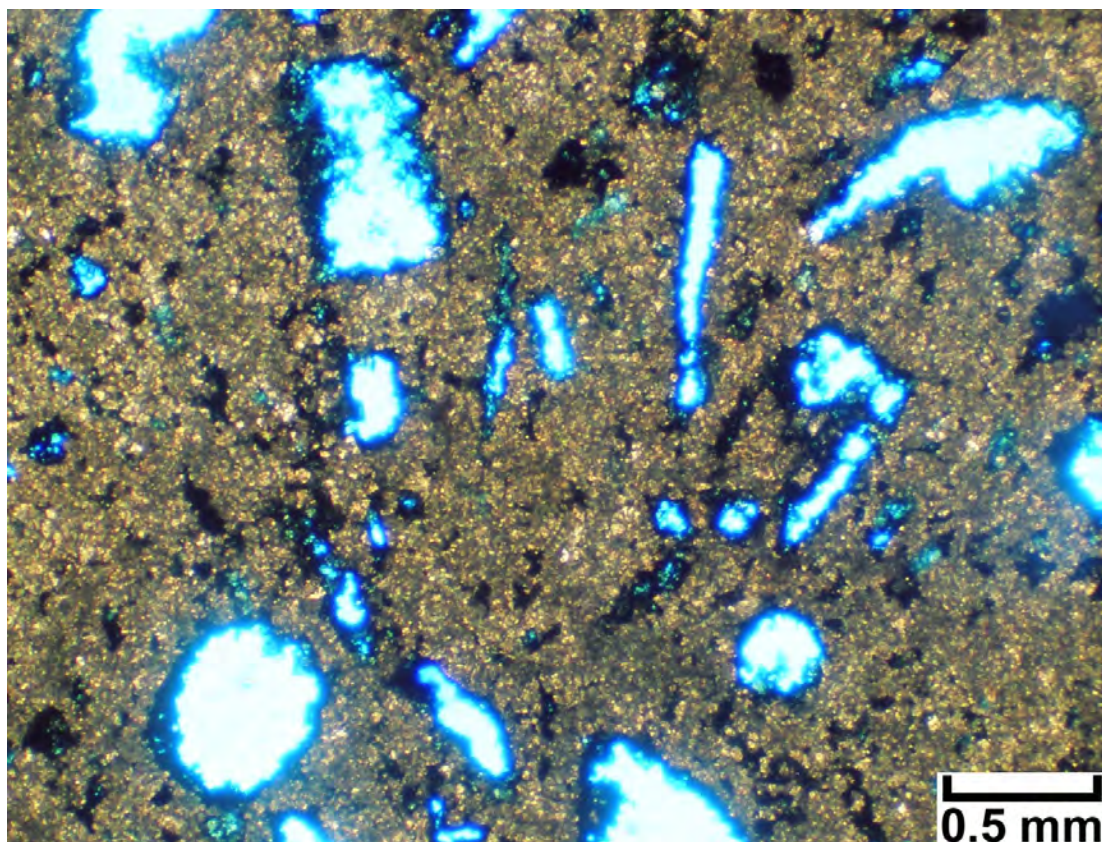
8447-48 ft.

Plug: no orientation; \varnothing 9.9%, K = 6.6 mD

Description: dolomite (100%), fossiliferous; peloidal wackestone with Mo and relatively little BC; traces of bitumen lining molds; molds poorly sorted ranging from small dissolved microfossils to large crinoids and rugose corals; dominated by early fine-grained, tight dolomite matrix.

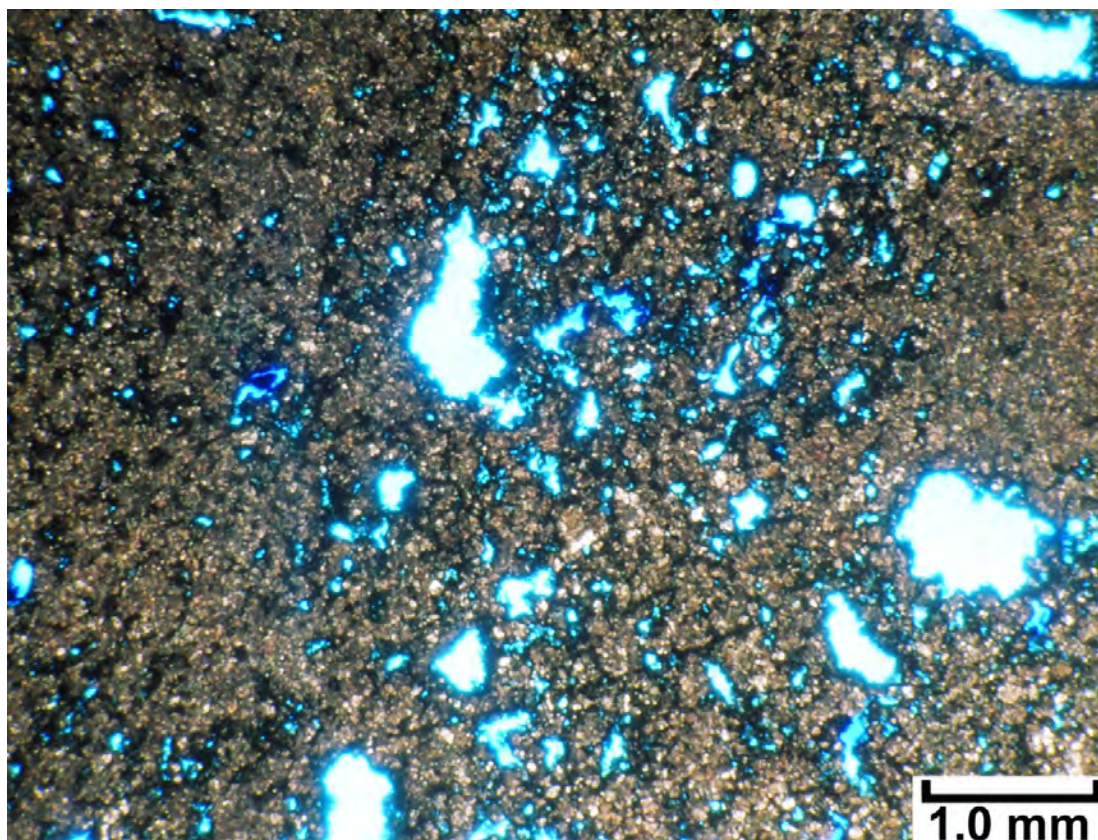
Diagenetic Events: 1) early dolomitization; 2) leaching; 3) minor bitumen.

Pore Types: Mo, minor BC



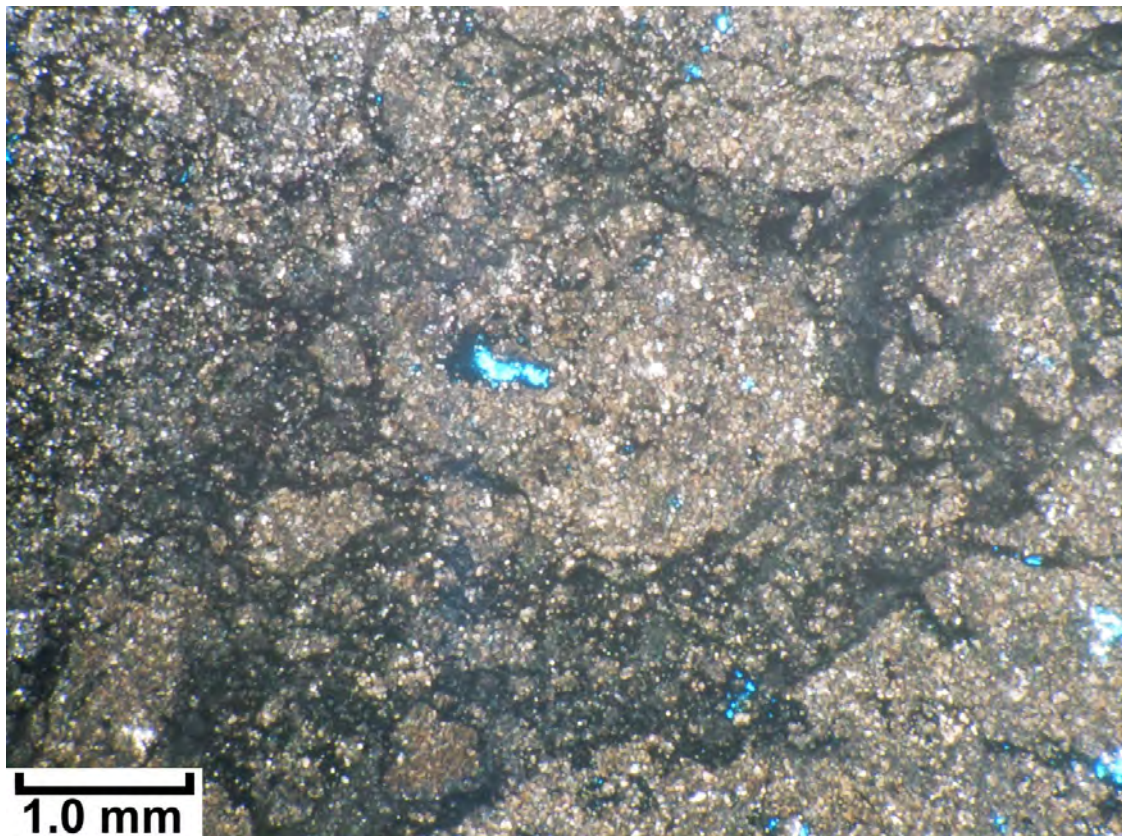
8448-49 ft.

- Plug: oriented; \varnothing 7%, K = 6.1 mD
- Description: dolomite (100%), peloidal/skeletal wackestone; most visual porosity is poorly sorted molds; microfossils to medium-grained crinoids and rugose corals; tight, early dolomite matrix; some fractures and smaller molds have bitumen; minor late dolomite starting incipient BC (opens up to give permeability).
- Diagenetic Events: 1) early dolomitization; 2) leaching; 3) minor late dolomitization; 4) saddle dolomite cement; 5) fracturing; 6) bitumen.
- Pore Types: Mo, incipient BC, FR



8449-50 ft.

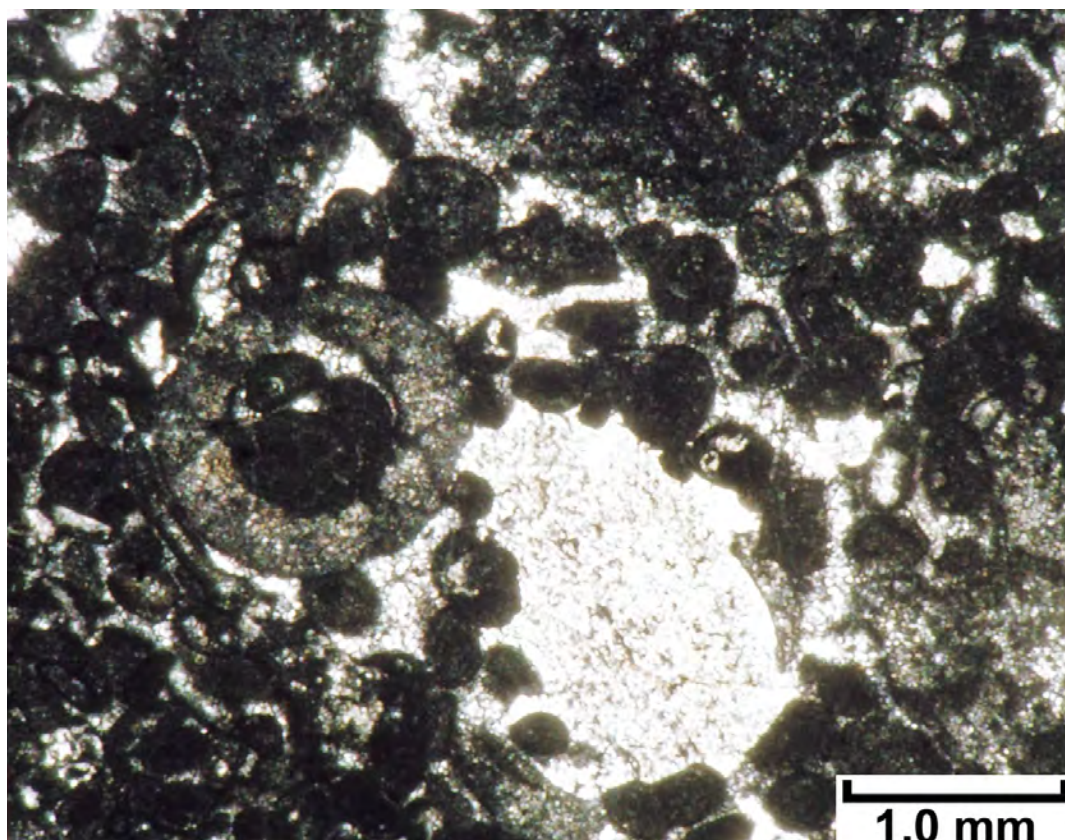
Plug:	no orientation; \varnothing 7.3%, K = 0.41 mD
Description:	dolomite (100%), peloidal/skeletal wackestone; highly fractured and brecciated auto brecciation (clasts in-place or slightly rotated).
Diagenetic Events:	1) early dolomitization; 2) leaching; 3) fracturing; 4) secondary dissolution; 5) bitumen.
Pore Types:	Mo, CH, FR – no permeability



LISBON NO. D-616
C NE1/4 NE1/4, Section 16, T. 30 S., R. 24 E.

8308-09 ft.

- Plug: Ø 1.2%, K = 11.1 mD
- Description: limestone (100%), oolitic, peloidal, skeletal grainstone; fossils include crinoids, brachiopod fragments, and forams (indothyroid); coated grains and hard pellets showing pressure solution against grains = compaction; filled opening – filled with transported material, that is karst filling with a sharp contact between a pipe of fine crystalline, tight dolomite containing poorly sorted detrital quartz grains, chert fragments, and transported carbonate clasts exhibiting crude layering. The filling shows early dolomitization but after lithification of the grainstone matrix; solution pits along wall filled with sediment.
- Diagenetic Events: 1) early marine fibrous isopachous cement; 2) compaction; 3) syntaxial cement and lithification of grainstone; 4) fracturing; 5) solution enlargement of fractures; 6) filling fractures with sediments; 7) dolomitization of the sediment fill without dolomitizing the rock matrix.
- Pore Types: FR



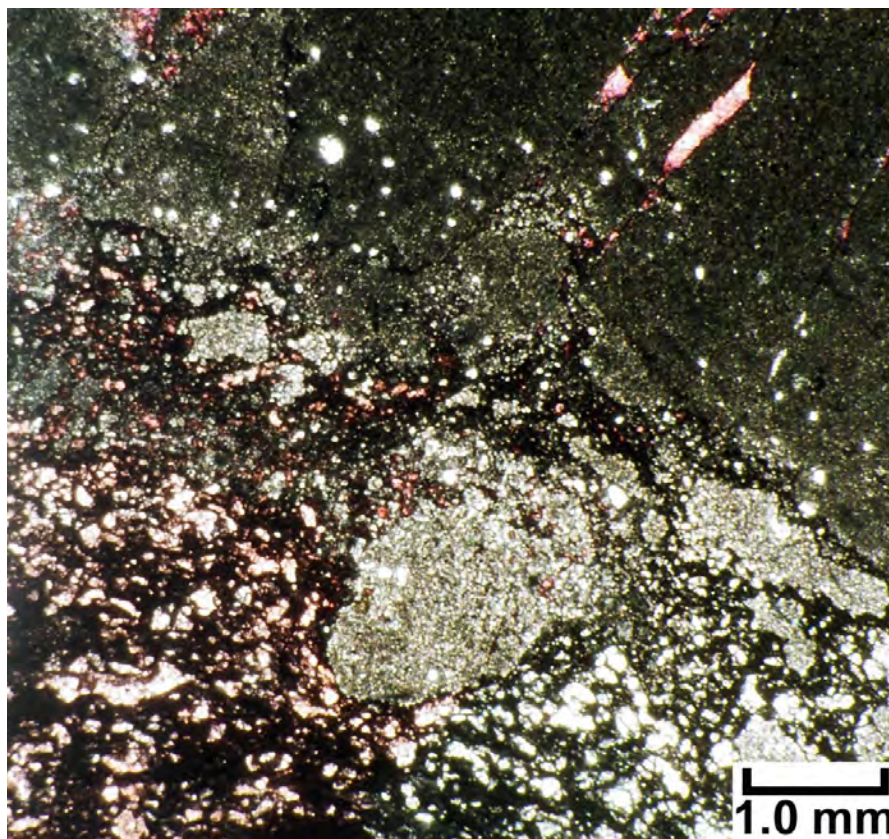
8316-17 ft.

Plug: Ø 2.8%, K = 2.1 mD

Description: country rock – limestone (100%), recrystallized (calcite spar) fossils including forams and brachiopods in a peloid (soft pellet) mud; wackestone; infilling – mostly dolomite with detrital quartz; clasts of mud balls (desiccated and cracked); poorly sorted; brecciated; transported material; contact with country rock is irregular, sharp, and corroded; filled fractures and some disseminated pyrite.

Diagenetic Events: 1) compaction; 2) recrystallization of fossils into spar; 3) stylolites; 4) solution cavities; 5) filling of cavity with sediment; 6) dolomitization of filling; 7) fractures filled with calcite spar; 8) minor fracture-filling with ferroan calcite; 9) late pyrite.

Pore Types: none



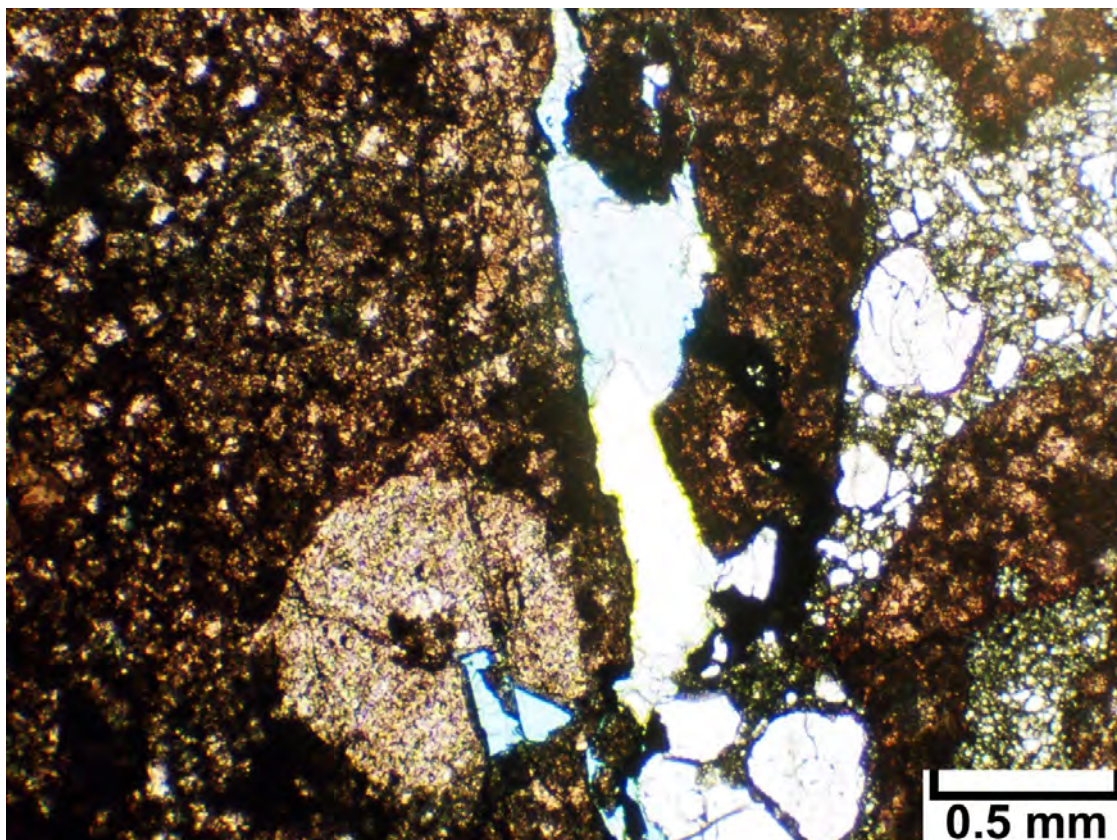
8322-23 ft.

Plug: Ø 2.7-2.5%, K = 2.5-80.6 (fracture) mD

Description: limestone (100%) with disseminated pyrite throughout, hard pellet, skeletal (brachiopods and crinoids) packstone/wackestone; neomorphic spar (calcite; dolomite filled karst crack, detrital quartz from the Pennsylvanian Molas Fm.; stylolites).

Diagenetic Events: 1) compaction; 2) stylolitization; 3) neomorphism; 4) crack; 5) infilling; 6) dolomitization; 7) pyrite.

Pore Types: none



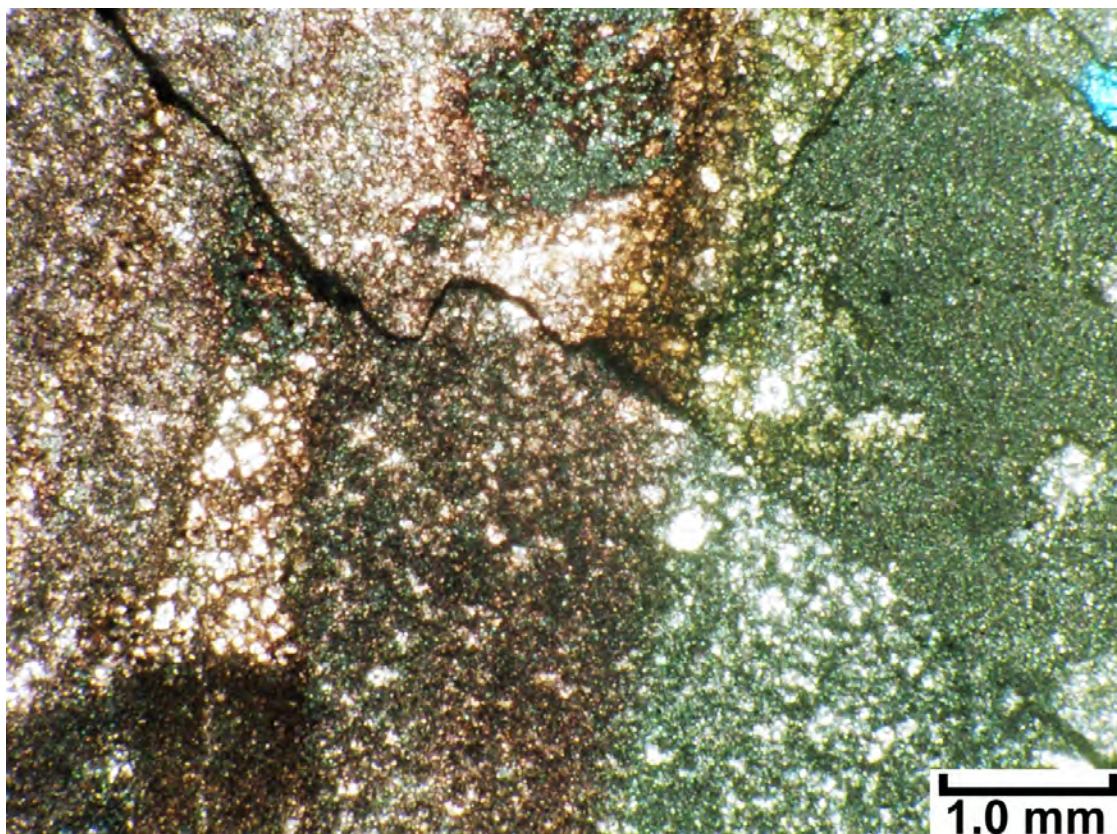
8328-29 ft.

Plug: Ø 0.4%, K = 0.86 mD

Description: limestone, skeletal/peloidal wackestone; massive, encrusting, low-relief spongeheads (finger sponges or colonies) surrounded by detrital carbonate sediment; abundant high to medium relief stylolites; some early dolomitization (1%); some disseminated pyrite.

Diagenetic Events: 1) compaction; 2) cementation; 3) minor finely crystalline dolomitization for stylolitization.

Pore Types: none



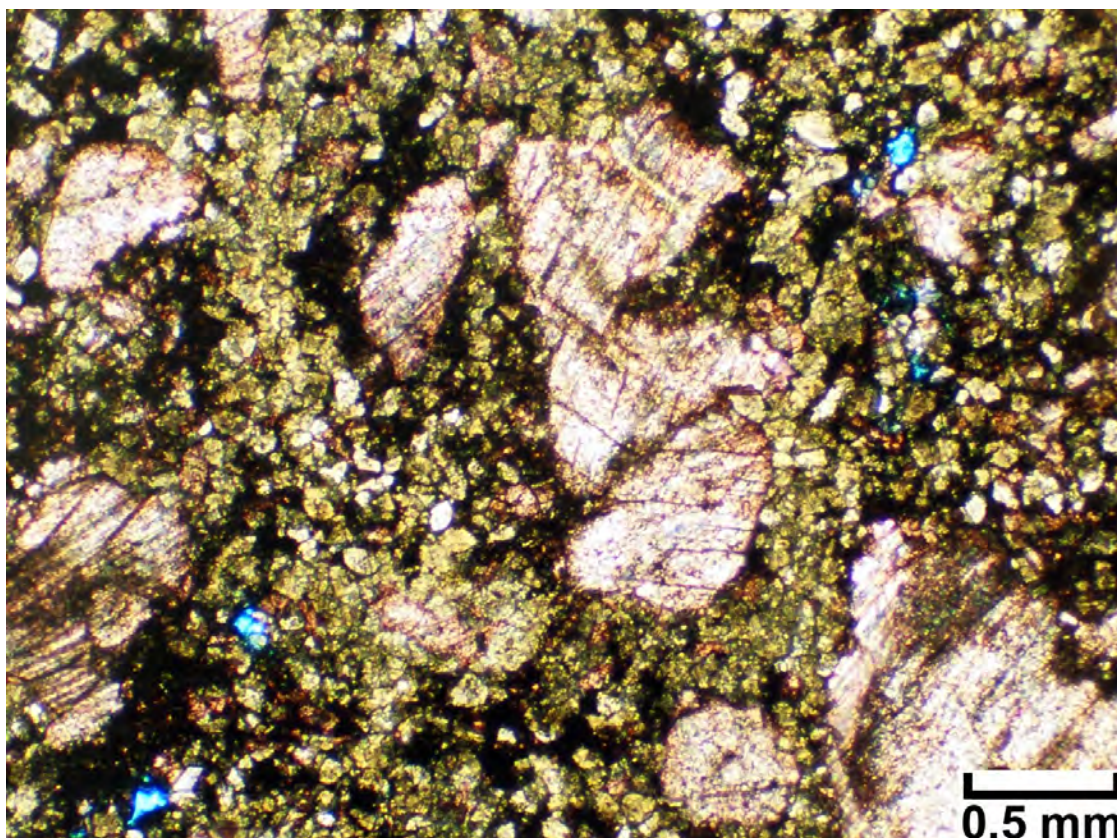
8356-57 ft.

- Plug: no permeability and porosity
- Description: country rock – slightly dolomitic limestone in undisturbed rock, fossiliferous, open-marine packstone/wackestone; very diverse fauna – crinoids, brachiopods, and trilobite trash; minor dolomite replacement with trace of bitumen; karst filling – (cavity in fill) – clasts, quartz, mud, clays, root hair (evidence of soil zone) – sinuous or crack filled with dolomitized mud; clay coating on clasts is a soil-zone feature, that is pickup of quartz grains which is evidence of transport and karst; on core appears as dense clay mud; karsting has not yielded reservoir rock.
- Diagenetic Events: 1) lithification; 2) exposure and fill; 3) dolomitization of fill; 4) late fractures; 5) dolomite filling in fractures.
- Pore Types: only minor FR



8372-73 ft.

- Plug: no permeability and porosity
- Description: dolomite (50-60%), limestone (40-50%), crinoidal grainstone; crinoids have some syntaxial cement overgrowths; bitumen plugging porosity; dolomite is medium crystalline, euhedral, burial to hydrothermal dolomite (plain to saddle dolomite) yielding BC which was later plugged with bitumen; no Mo, karst filling, or fractures.
- Diagenetic Events: 1) compaction; 2) syntaxial cement; 3) burial dolomite; 4) bitumen plugging.
- Pore Types: trace of BC



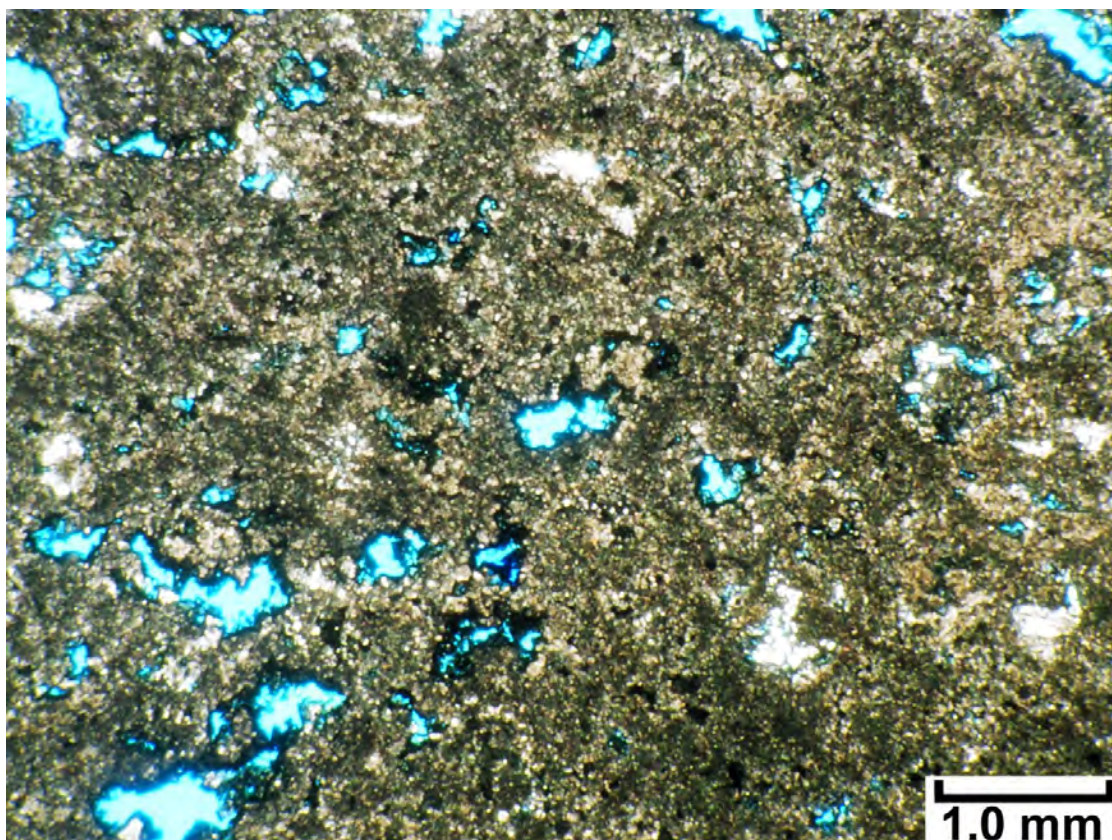
8380-81 ft.

Plug: no permeability and porosity

Description: dolomite (100%), skeletal/crinoidal, coated grain/oolitic grainstone/packstone; frequent Mo, occasional bitumen lining molds; a few intraclasts (rip ups) and brachiopods; dolomite appears to be syngenetic, tight, and aphanitic; some early isopachous cement.

Diagenetic Events: 1) early isopachous cement; 2) early dolomite; 3) leaching of crinoids; 4) bitumen.

Pore Types: Mo



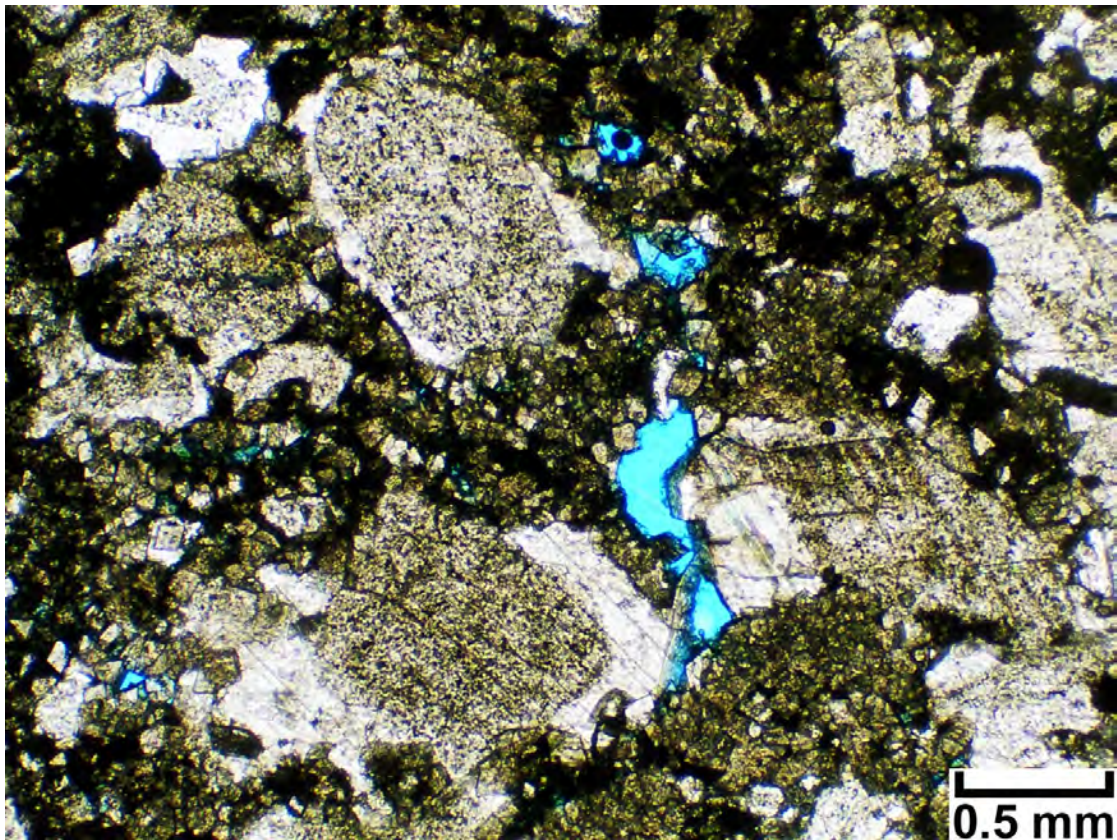
8441 ft.

Plug: no permeability and porosity

Description: partially dolomitized (60-85%) limestone, fossiliferous/crinoidal grainstone/packstone; well-formed dolomite crystals with incipient BC and bitumen impregnation; contains remnants of fenestrate bryozoan and brachiopods; shows dolomitization fronts.

Diagenetic Events: 1) syntaxial cement; 2) late dolomitization; 3) bitumen.

Pore Types: BC (bitumen plugged)



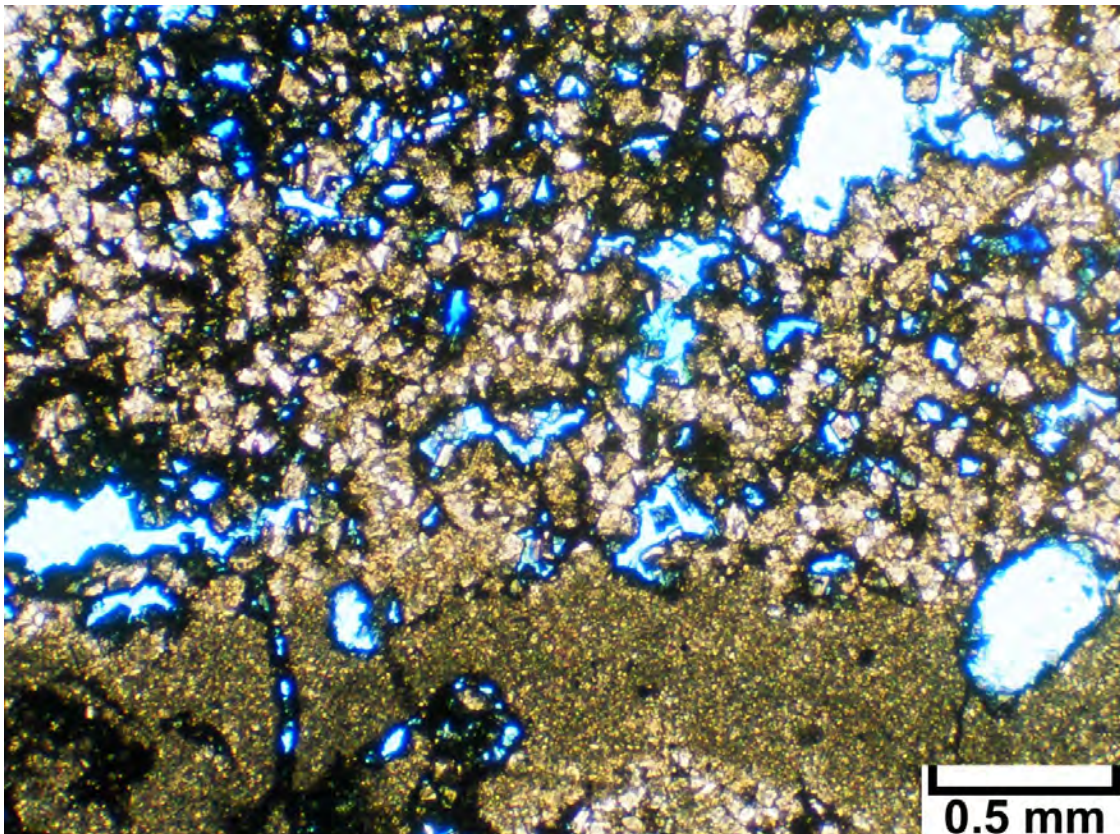
8559 ft.

Plug: no permeability and porosity

Description: reservoir – dolomite (100%), crinoidal packstone/wackestone; with moldic porosity; aphanitic tight early dolomite but mostly late slightly hydrothermal medium crystalline, euhedral dolomite; well formed BC, relic molds, fractures, bitumen, and some sulfides.

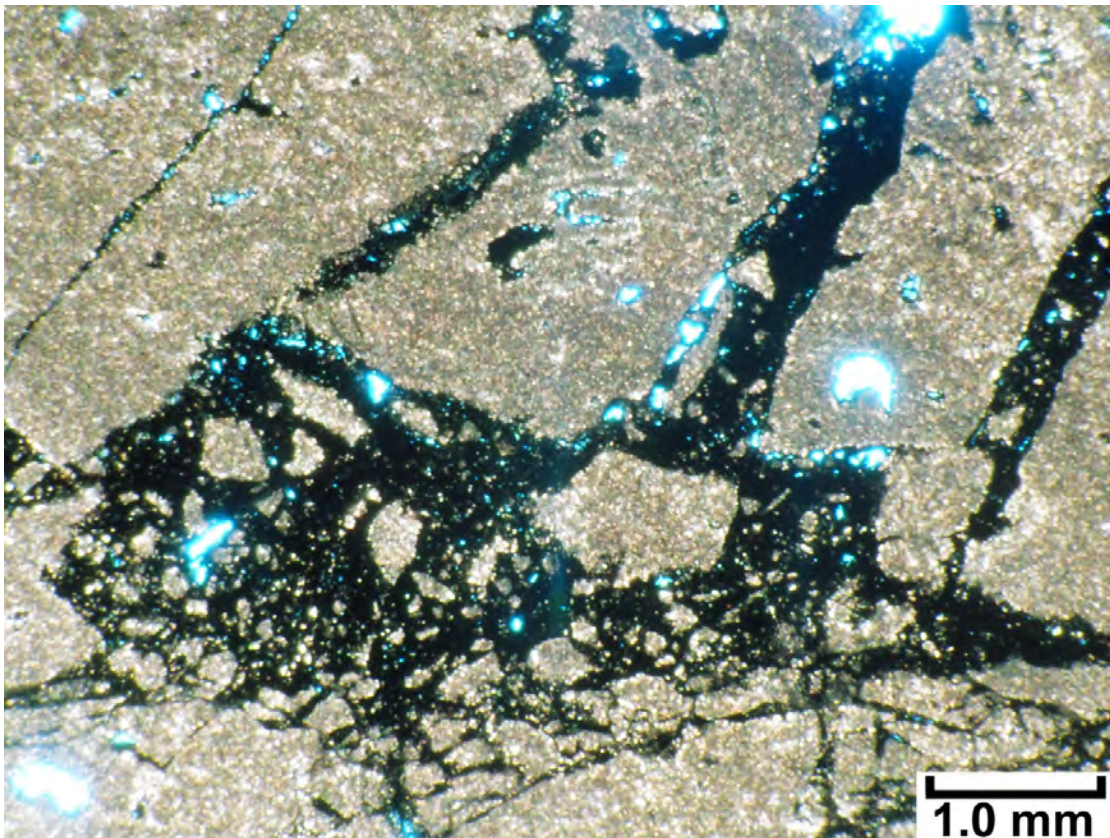
Diagenetic Events: 1) early dolomitization; 2) leaching; 3) late dolomitization; 4) bitumen and sulfides.

Pore Types: BC, relic Mo, FR



8579 ft.

Plug:	no permeability and porosity
Description:	dolomite (100%), peletal/skeletal wackestone; all early, anhedral dolomite (no porosity); early Mo; highly fractured with some fractures lined with bitumen, brecciation with rotated clasts, quartz lining fractures containing overgrowths (silica diagenesis); minor anhydrite needles in pores.
Diagenetic Events:	1) early dolomitization; 2) leaching of undolomitized fossils; 3) fracturing; 4) solution enlargement of fractures; 5) silica lining of fracture margins and replacement of clasts; 6) bitumen.
Pore Types:	Mo, CH, FR



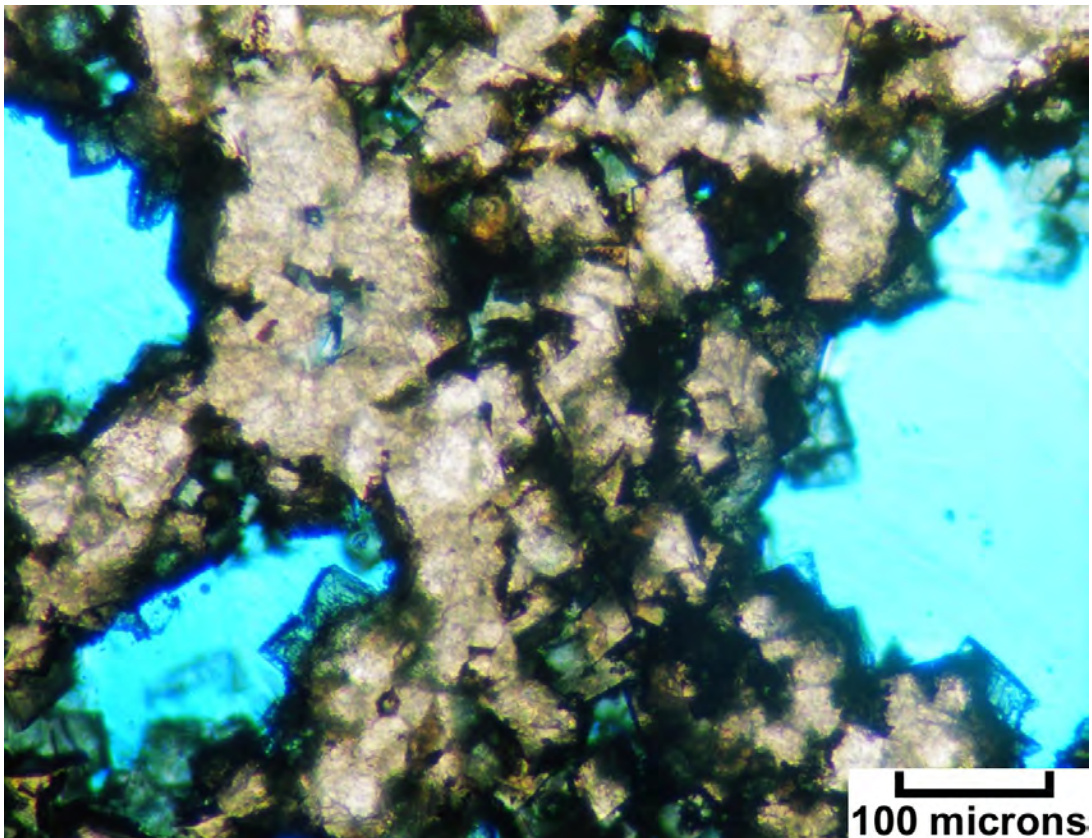
8584 ft.

Plug: no permeability and porosity

Description: dolomite (100%), peloidal/skeletal packstone/wackestone; contains skeletal moldic porosity; early syngenetic dolomite but some incipient late dolomite and BC around molds – just starting transition from early to late dolomitization; some bitumen in newly opened BC and lining molds; no fractures or brecciation in matrix; some sulfides.

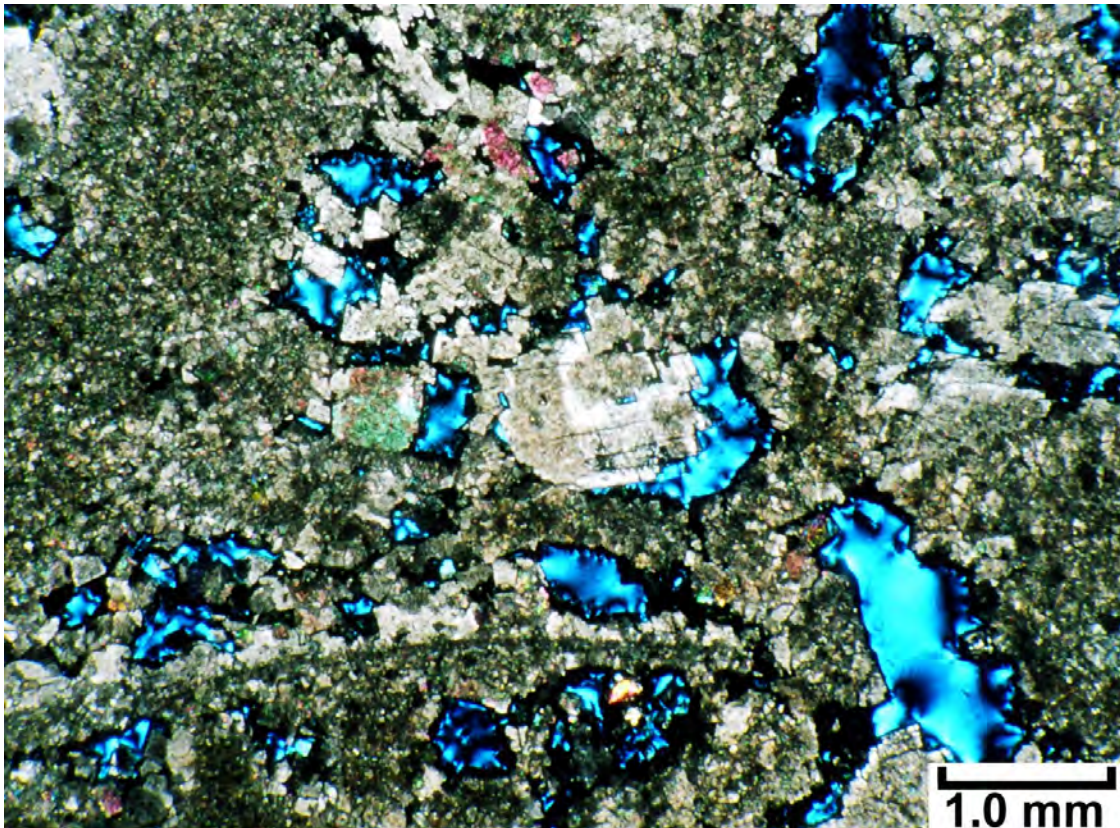
Diagenetic Events: 1) early dolomitization; 2) leaching; 3) some late dolomitization; 4) bitumen.

Pore Types: Mo, some BC



8619 ft.

- Plug: no permeability and porosity
- Description: reservoir – dolomite (100%), crinoidal/hard pellet/fossiliferous grainstone/packstone; some brachiopods; good Mo, some BC, most diagnostic hydrothermal dolomite; very coarse dolomite – saddle dolomite with ghosts of original aphanitic dolomite crystals; late molds (dissolution) of saddle dolomite crystals (mega samples).
- Diagenetic Events: 1) early aphanitic type dolomite; 2) leaching of skeletal grains; 3) hydrothermal dolomite; 4) secondary leaching; 5) bitumen.
- Pore Types: Mo, BC, FR



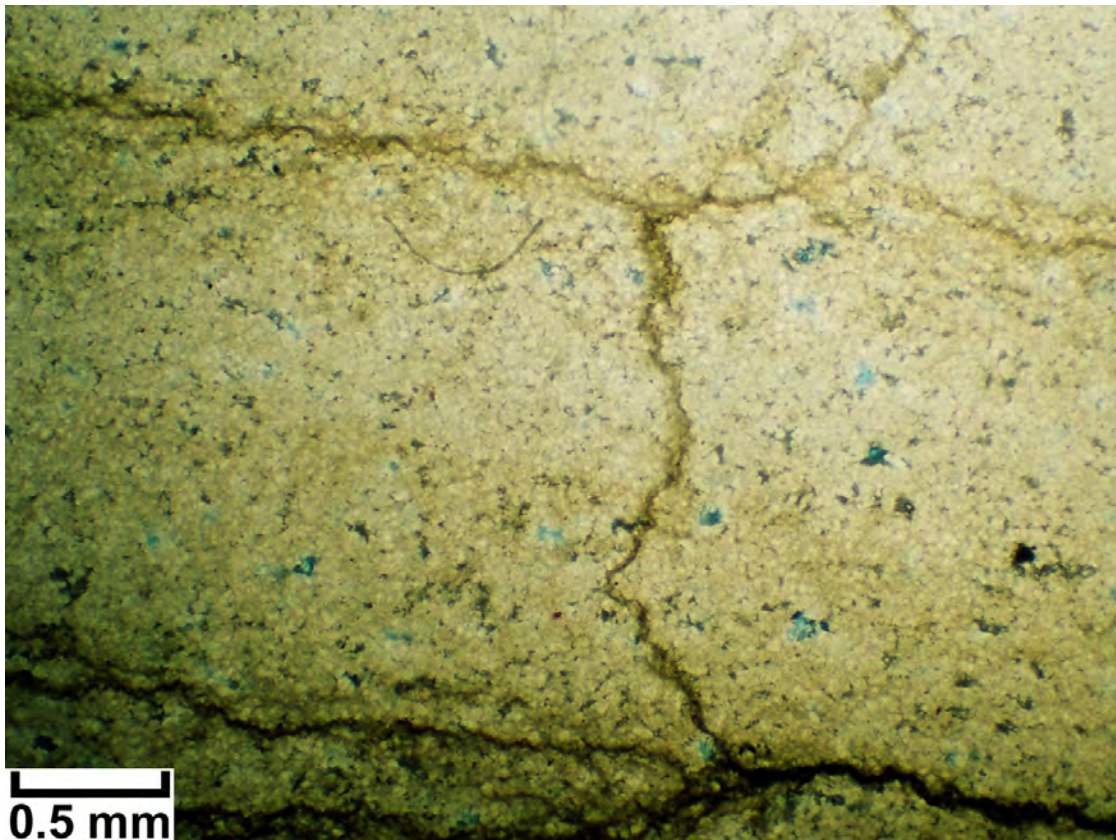
8682 ft.

Plug: no permeability and porosity

Description: dolomite (100%), soft pellet, muddy, cryptalgal packstone; laminated; aphanitic, syngenetic dolomite – fine BC/small BC yielding false porosity; wispy seam stylolites; flattened pellets due to compaction; a few silt-sized quartz grains (eolian) and trace of fine evaporitic anhydrite; only early dolomitization.

Diagenetic Events: 1) compaction ; 2) syngenetic dolomitization; 3) stylolites.

Pore Types: micro BC



LISBON PURE NO. C-2 (B-63)
NE1/4 NW1/4, Section 3, T. 30 S., R. 24 E.

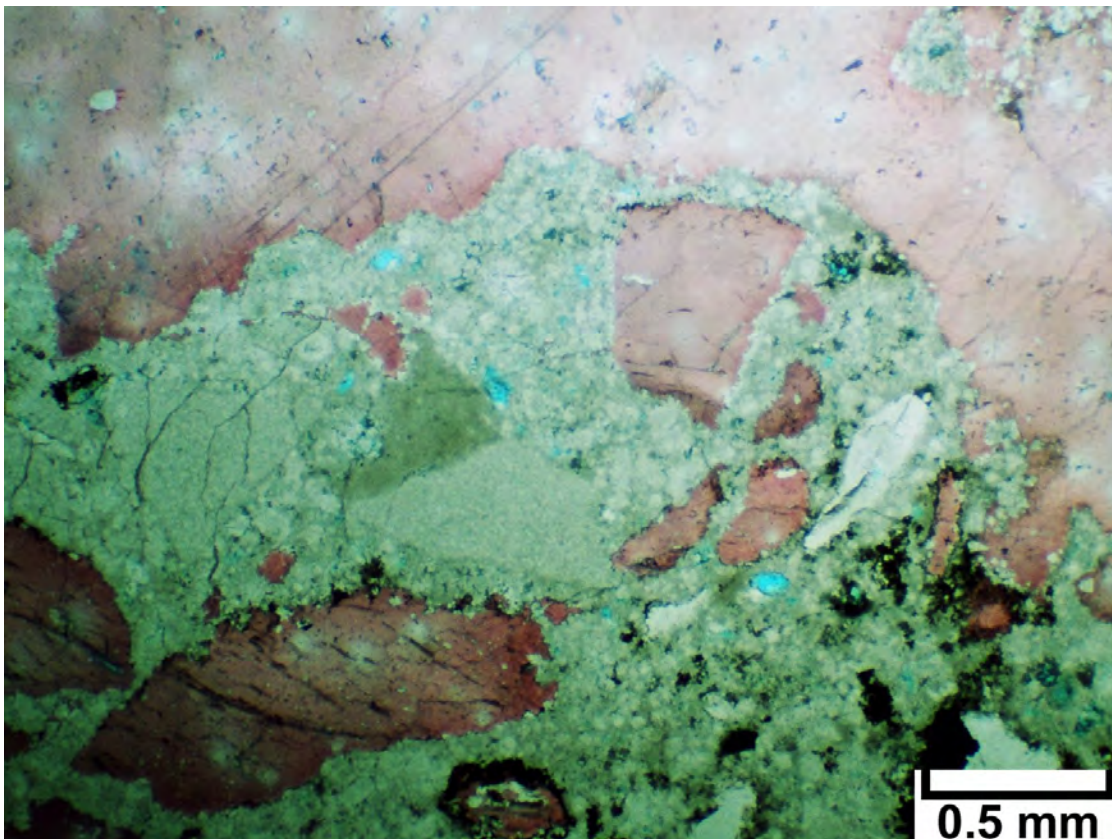
9960.6 ft.

Plug: Ø 4%, K = none

Description: calcite (60-65%), dolomite (35-40%); brecciated with in-place clast (autobreccia) that retains small amounts of early, finely crystalline (tight) dolomite replaced by mini saddles (euhedral) of medium crystalline dolomite that once had BC, followed by coarsely crystalline saddle dolomite and associated dissolution pores, followed by bitumen plugging of most of the BC and some of the solution-enlarged pores. The remainder of the solution-enlarged pores are largely occluded by coarse, late, slow-growing poikilotopic (big, slow-growing crystals) calcite.

Diagenetic Events: 1) dolomitization; 2) leaching; 3) brecciation; 4) saddle dolomites; 5) poikilotopic late calcite; 6) bitumen plugging.

Pore Types: Mo, some BC



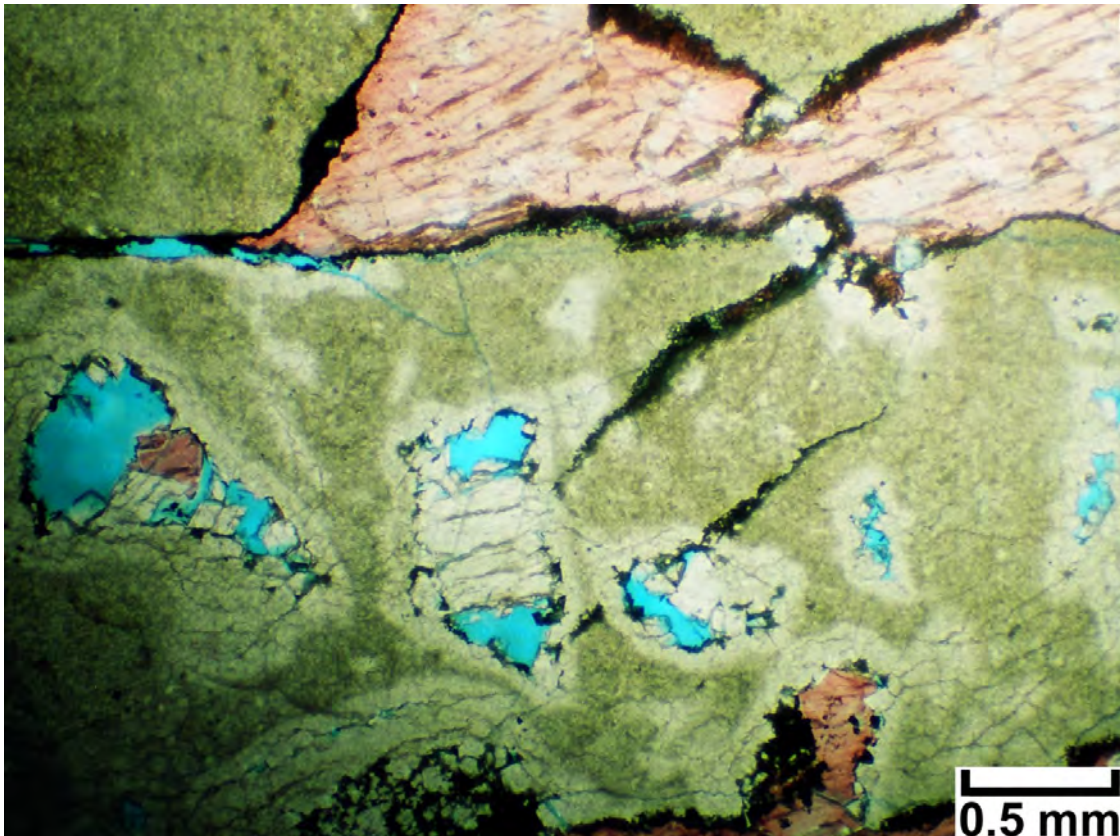
9991.8 ft.

Plug: Ø 6.2%, K = 0.3 mD

Description: dolomite (60%), calcite (40%); brecciated, with in-place clast (autobreccia) that retains small amounts of early, finely crystalline (tight) dolomite replaced by mini saddles (euhedral) of medium crystalline dolomite that once had BC, followed by coarsely crystalline saddle dolomite and associated dissolution pores, followed by bitumen plugging of most of the BC and some of the solution-enlarged pores. The remainder of the solution-enlarged pores are largely occluded by coarse, late, slow-growing poikilotopic calcite.

Diagenetic Events: 1) dolomitization; 2) leaching; 3) brecciation; 4) saddle dolomites; 5) poikilotopic late calcite; 6) bitumen plugging.

Pore Types: Mo, some BC



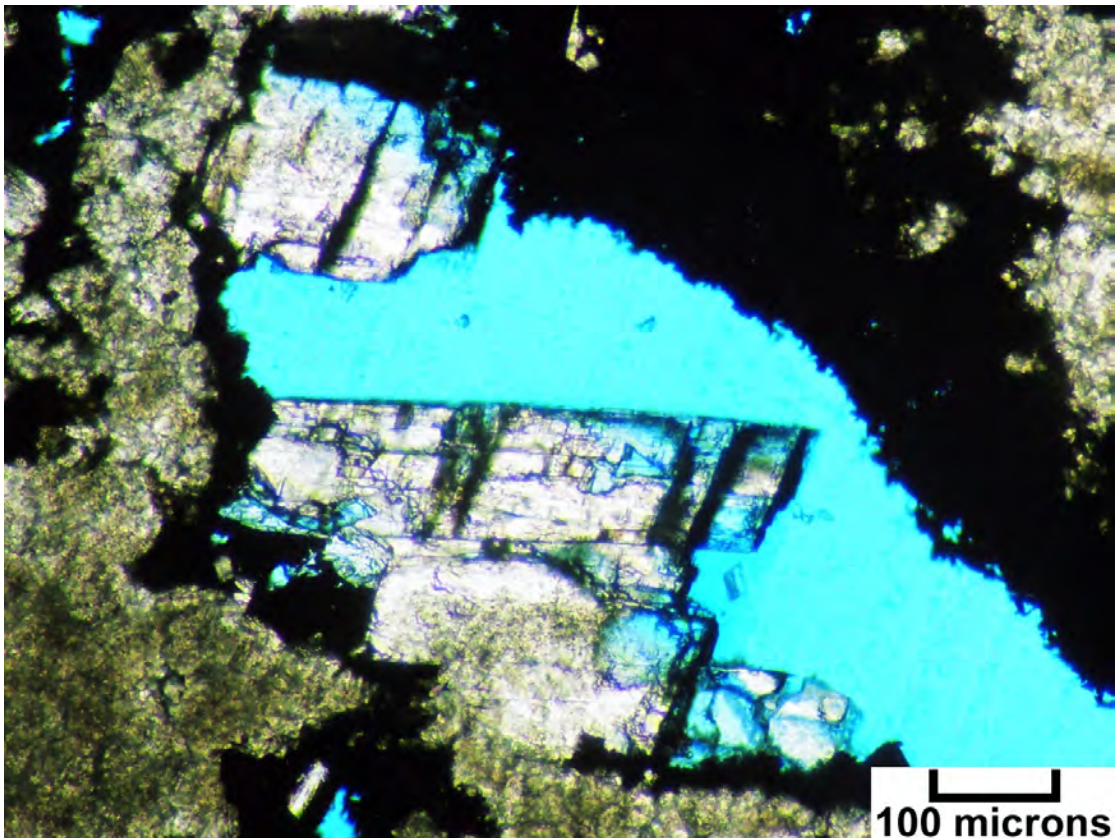
10,001.5 ft.

Plug: Ø 8.5%, K = 0.7 mD

Description: dolomite (100%), peloidal/skeletal wackestone; finely to medium crystalline dolomite (tight syngenetic dolomite), containing Mo; molds and modest BC are lined with bitumen, minor saddle dolomite but no late calcite or brecciation.

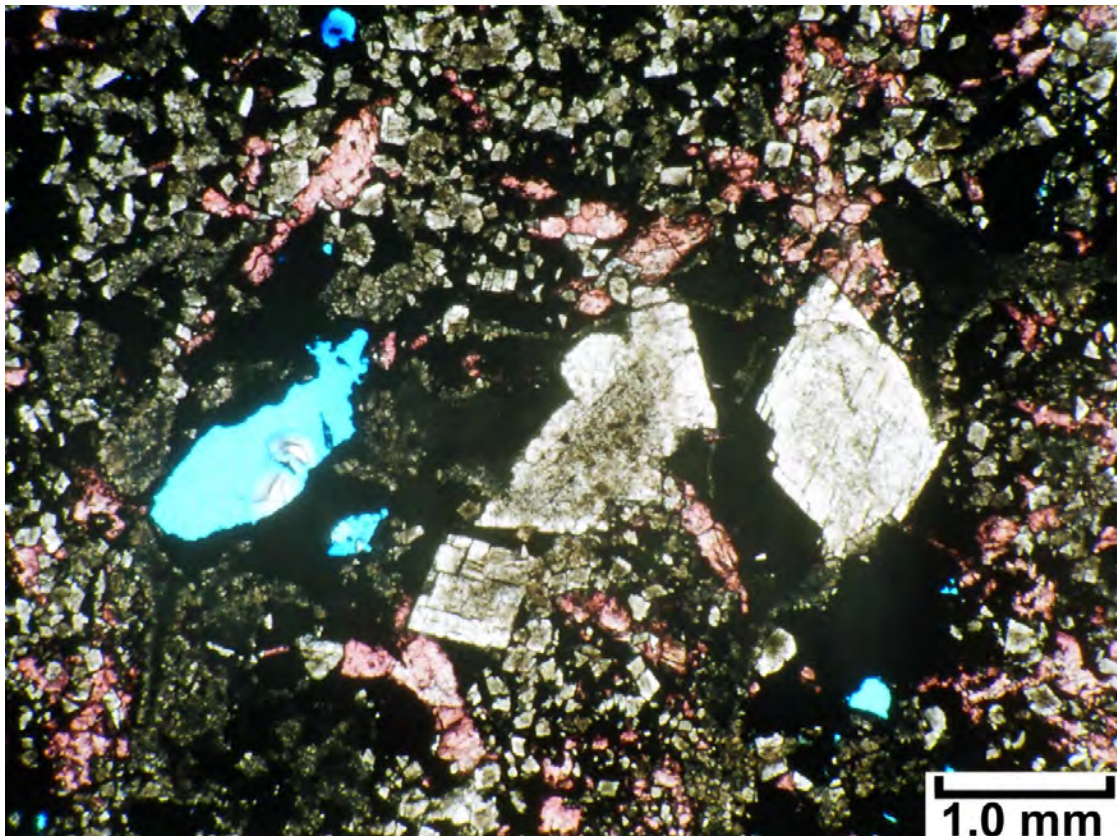
Diagenetic Events: 1) dolomitization; 2) leaching; 3) brecciation; 4) saddle dolomites; 5) bitumen plugging.

Pore Types: Mo, some BC



10,004-05 ft.

- Plug: Ø 14.4%, K = 1.9 mD (fractures)
- Description: dolomite (60%), calcite (40%); brecciated, with in-place clast (autobreccia) that retains small amounts of early, finely crystalline (tight) dolomite replaced by mini saddles (euhedral) of medium crystalline dolomite that once had BC, followed by coarsely crystalline saddle dolomite and associated dissolution pores, followed by bitumen plugging of most of the BC and some of the solution-enlarged pores. The remainder of the solution-enlarged pores are largely occluded by coarse, late, slow-growing poikilotopic calcite. Similar to late-stage pores seen in the D-616 well at 8619 feet, but then filled with late calcite. Note: oil field water rose following the gas/condensate cap and deposited the calcite. The shape of the pores appears like late-stage dissolution.
- Diagenetic Events: 1) dolomitization; 2) leaching; 3) brecciation; 4) saddle dolomites; 5) poikilotopic late calcite; 6) bitumen plugging.
- Pore Types: Mo, some BC



LISBON NO. B-816
NE1/4 SW1/4, Section 16, T. 30 S., R. 24 E.

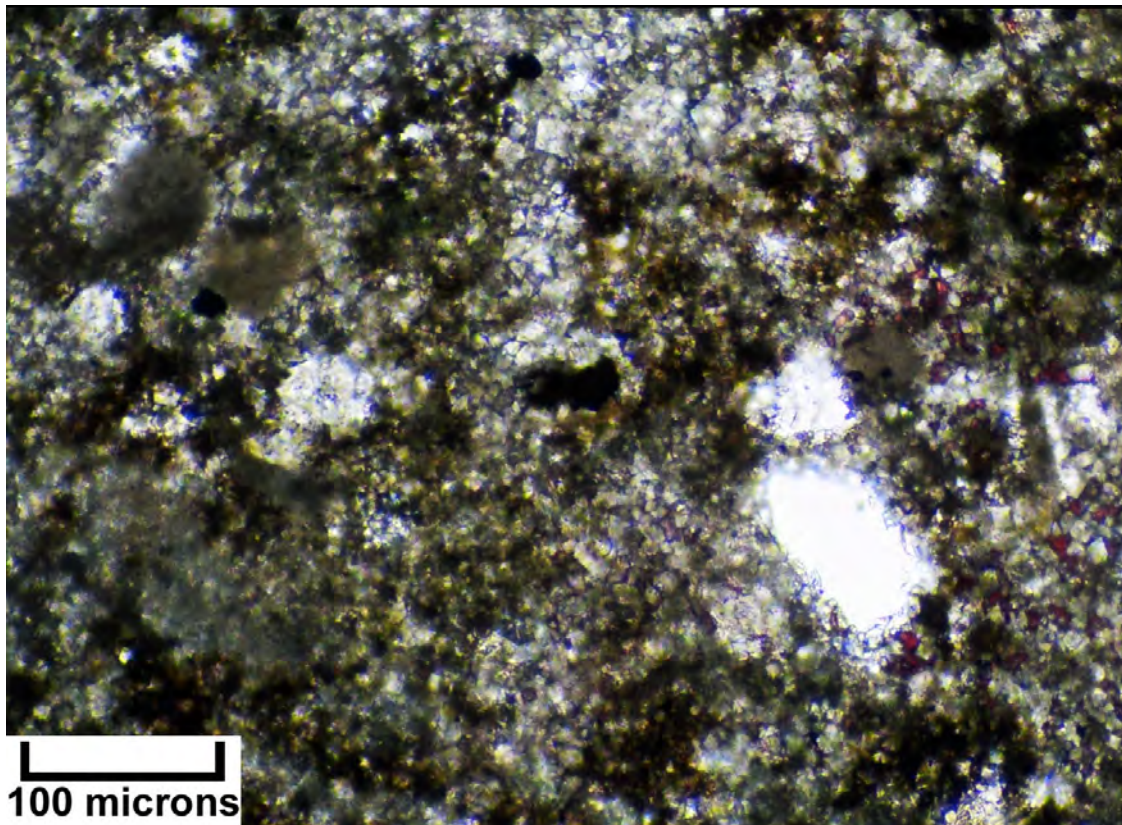
8463.5 ft.

Plug: Ø 7.9%, K = na

Description: black dolomite, peloidal packstone/wackestone; finely crystalline, with open microfractures, a few detrital quartz grains (windblown floating with peloids), forams (indothyrids).

Diagenetic Events: 1) early replacement dolomite; 2) minor fracturing; 3) bitumen.

Pore Types: micro BC



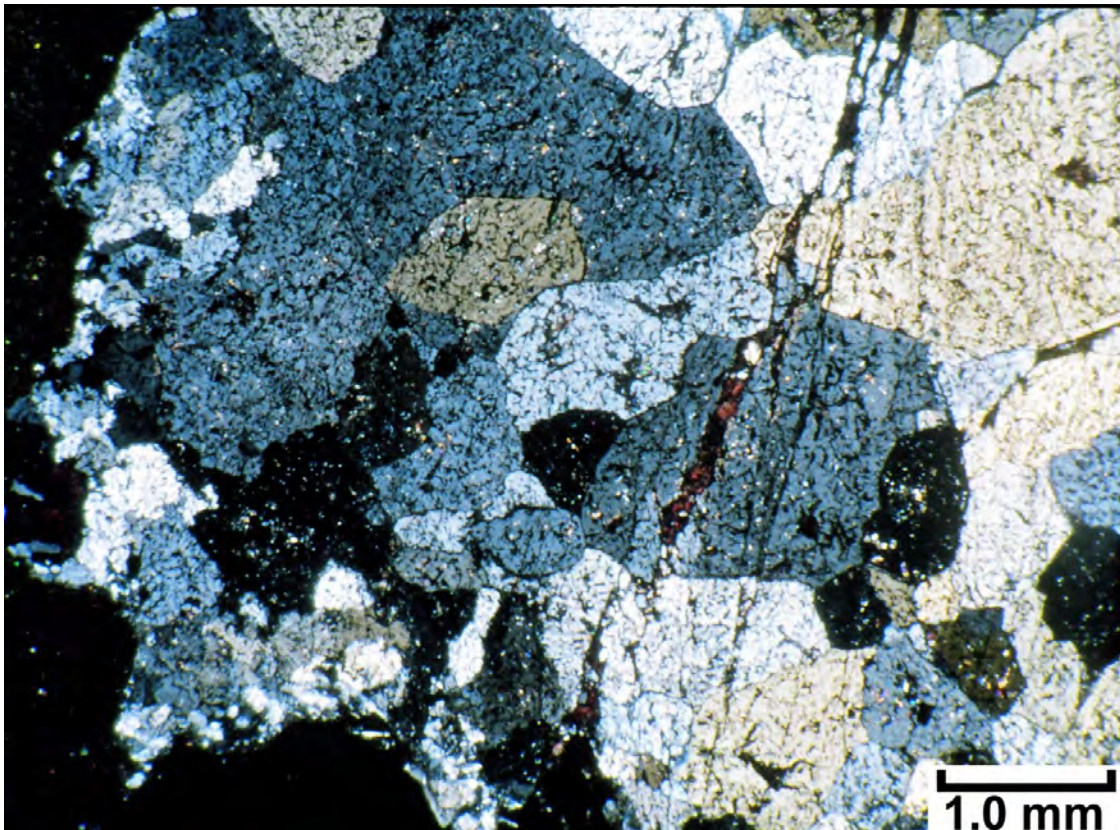
8468 ft.

Plug: Ø 8.4%, K = 3.2 mD

Description: dolomite, pellet/foram packstone/wackestone.

Diagenetic Events: 1) matrix replaced by early syngenetic dolomite preserving the original fabric; 2) late anhedral replacement of finely crystalline dolomite destroying fabric; 3) replacement silica and calcite of dolomite; 4) euhedral etched dolomite and formation of coarse dolomite and associated bitumen and fine sulfides; 5) hydrothermal dolomite (rhombs with curved crystal faces) replacing ground mass; 6) mega quartz and mega calcite of unknown origin.

Pore Types: Mo, BC



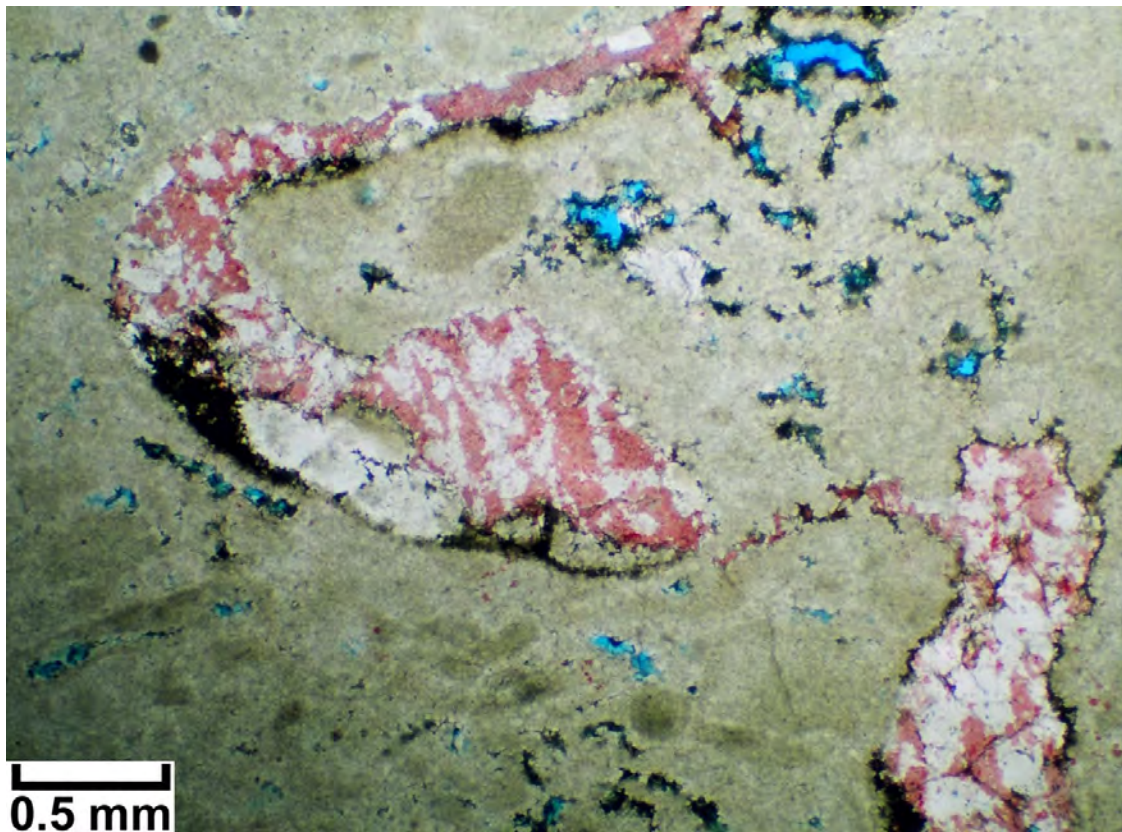
8473.5 ft.

Plug: Ø 2.3%, K = 17 mD

Description: dolomite, peloidal wackestone/packstone; indothyroid forams; some open fractures; early anhedral dolomite; etching and leaching; late calcite pore filling; some bitumen in fractures.

Diagenetic Events: 1) matrix diagenesis same as 8468 feet; 2) patch dissolution/leaching yielding porosity that post dates dolomitization and sycolites; 3) fracturing; 4) bitumen lining and fractures; 5) partial filling of fractures by calcite; 6) replacement by late silica.

Pore Types: Mo, BC



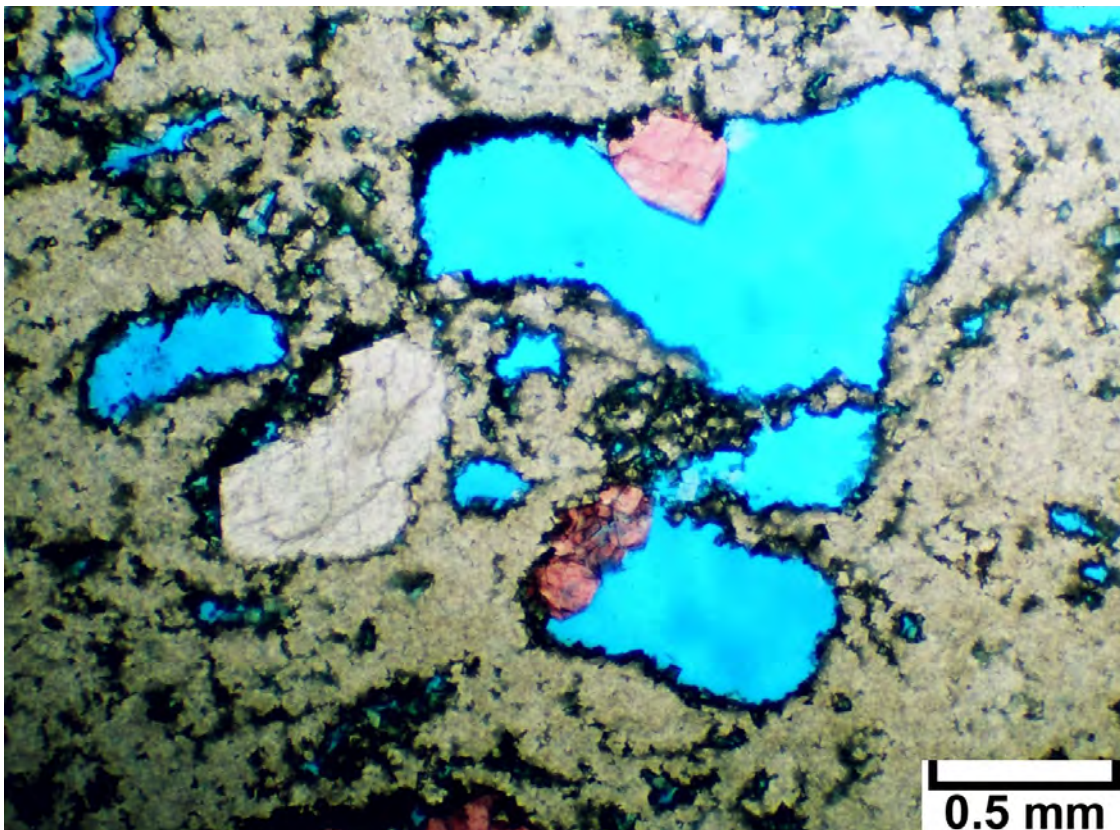
8486 ft.

Plug: Ø 5.9%, K = 0.2 mD

Description: dolomite (100%), peloidal/skeletal/ crinoidal grainstone/
packstone; well developed baroque dolomite filling in molds;
leached grains; late calcite; bitumen lining.

Diagenetic Events: 1) dolomitization; 2) leaching; 3) saddle dolomite; 4) bitumen; 5)
late calcite.

Pore Types: Mo, BC



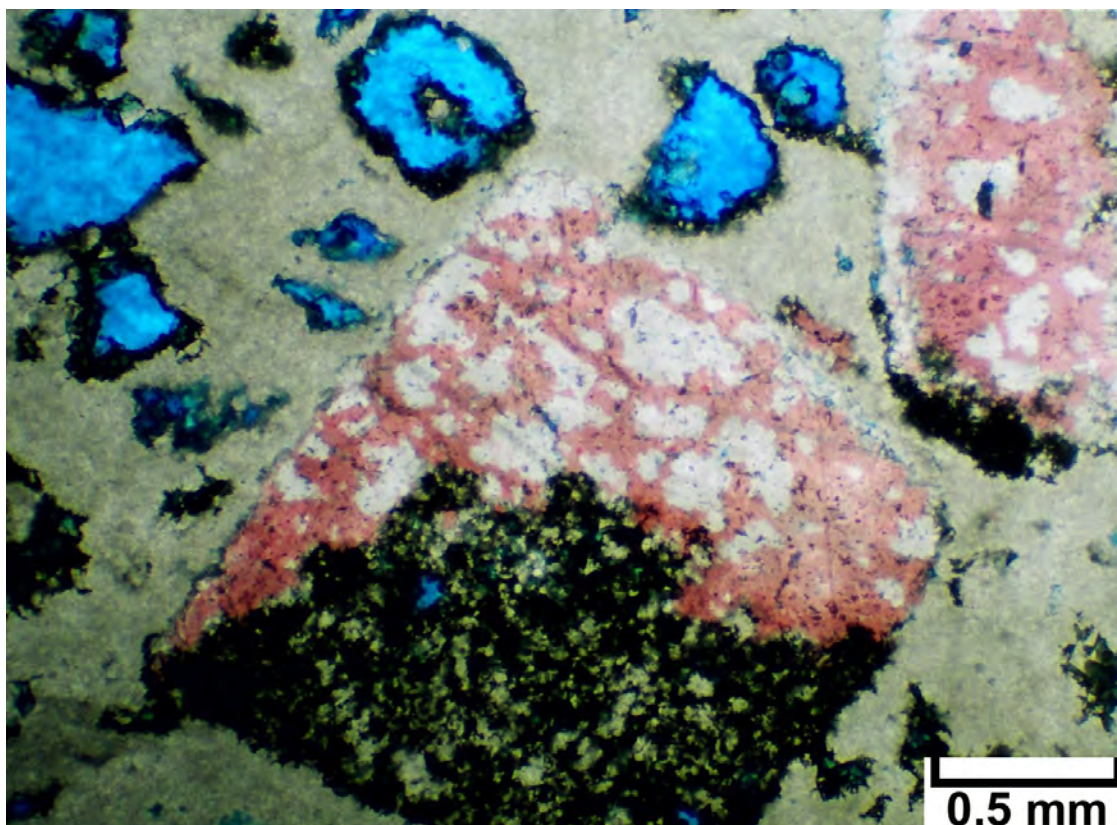
8488 ft.

Plug: Ø 1.5%, K = 0.5 mD

Description: same as 8486 feet but no saddle dolomite; some silicification of calcite.

Diagenetic Events: 1) dolomitization; 2) leaching; 3) bitumen; 4) late calcite; 5) silicification.

Pore Types: Mo, BC



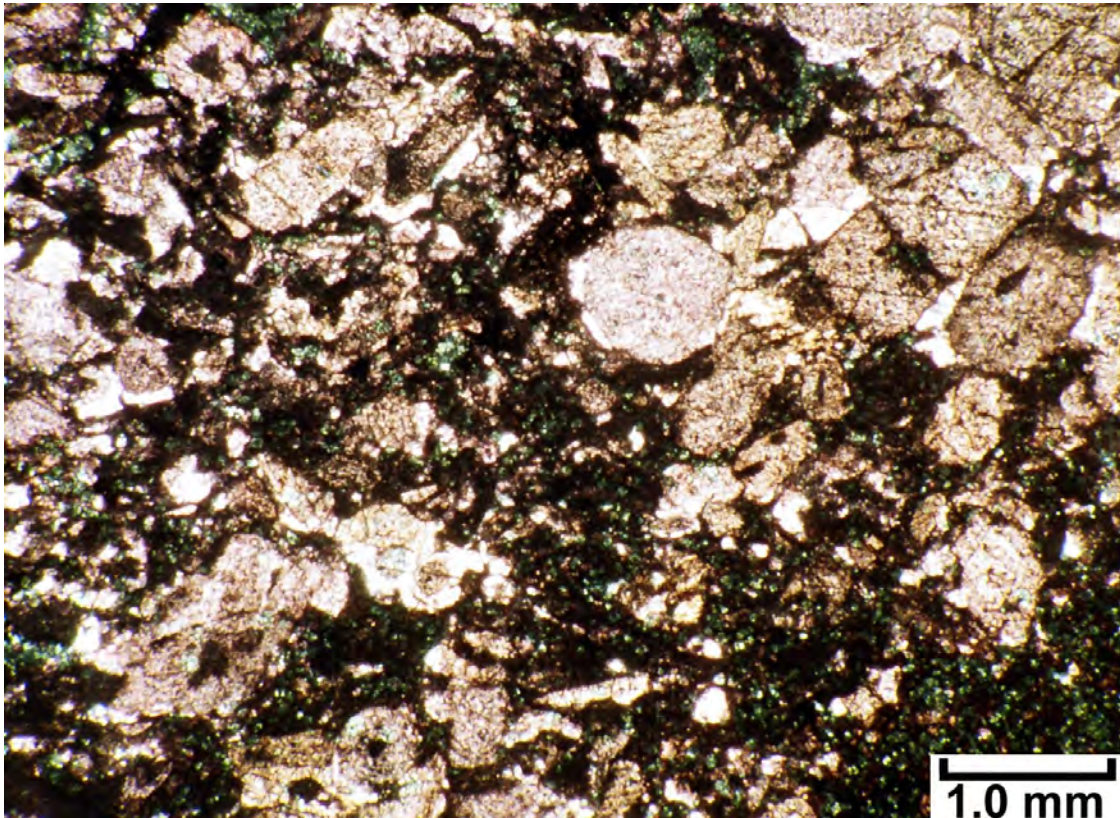
8490.3 ft.

Plug: Ø 1.7%, K = nd

Description: limestone (70%), dolomite (30%), crinoidal/skeletal grainstone;
good example of a grainstone turned to finely crystalline dolomite
or “black shale” or dolomitic mudstone.

Diagenetic Events: 1) compaction; 2) early dolomitization; 3) leaching; 4) late
dolomite cement, fracturing, and replacement dolomite; 5)
bitumen.

Pore Types: Mo, FR



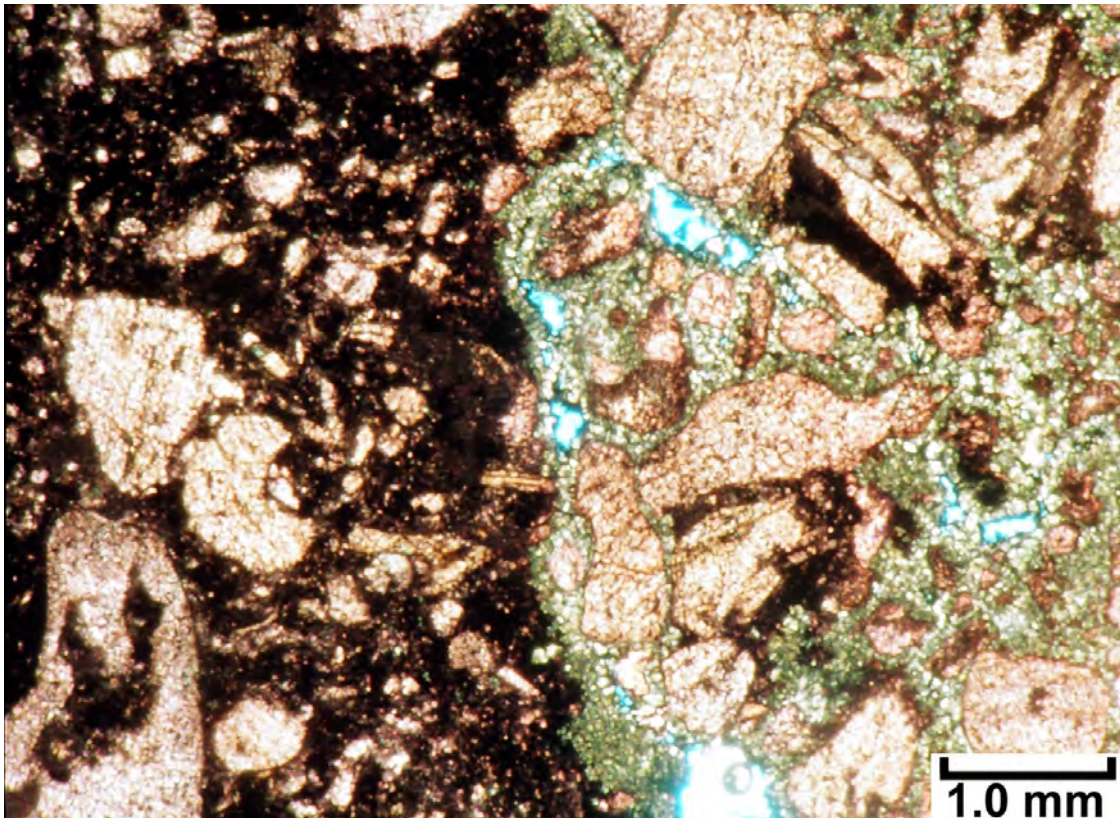
8509 ft.

Plug: oriented; \emptyset 3%, K = nd

Description: limestone, fossiliferous wackestone; crinoids brachiopods; contact between limestone and dolomite fractures lined with coarse dolomite; leached pores filled with dolomite.

Diagenetic Events: 1) compaction; 2) early dolomitization; 3) leaching; 4) late dolomite cement, fracturing, and replacement dolomite; 5) bitumen.

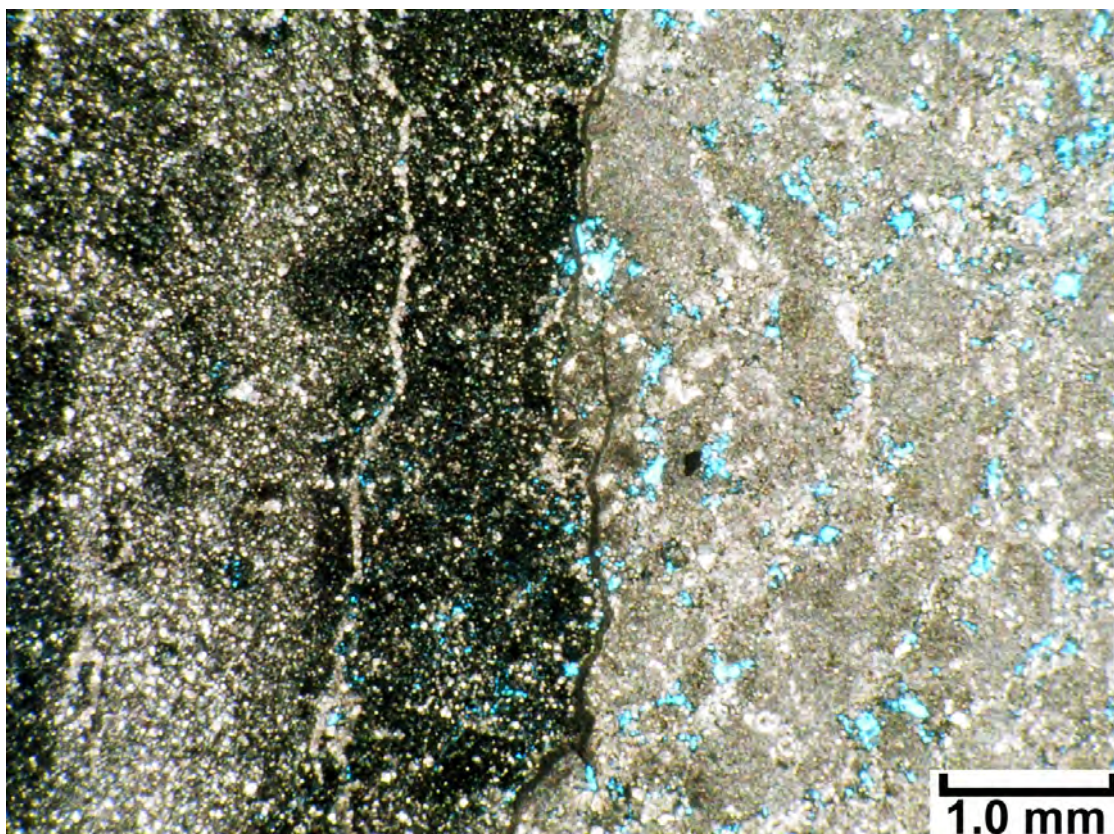
Pore Types: Mo, FR



LISBON NO. B-610
NE1/4 NW1/4, Section 10, T. 30 N., R. 24 E.

7897 ft.

- Plug: oriented; \varnothing 6.3%, K = 83 mD
- Description: 1) light dolomite – peloidal/oolitic? grainstone; early dolomite associated with Mo (not effective permeability and porosity); pores contain some late saddle dolomite, no bitumen; this is a stratigraphic dolomite – correlates from well to well. 2) black dolomite – cross-cutting of black dolomite and well preserved syngenetic dolomite (high permeability and porosity – reservoir); fractures lined with bitumen; micro BC; sharp front; series of cross-cutting fractures with late dolomite replacing early dolomite, relic grains, no infilling of detrital sediment, fractures filled with late dolomite cement.
- Diagenetic Events: 1) compaction; 2) early dolomitization; 3) leaching; 4) late dolomite cement, fracturing, and replacement dolomite; 5) bitumen.
- Pore Types: Mo, micro BC, some WP



7886 ft.

- Plug: no orientation; \varnothing 13.8%, K = 114 mD
- Description: dolomite (100%), peloidal/skeletal grainstone/packstone; sample experienced early fabric-preserving dolomitization (syngenetic), followed by leaching of undolomitized grains; problematical brecciation (auto-brecciation) surrounded by micro fractures; dissolution along micro fractures of early dolomite matrix formed solution-enlarged fractures as well as CH and small vugs; major cross-cutting dissolution event resulted in micro BC; bitumen lining yielded a black dolomite; finely patchy replacement by coarser saddle? dolomite with cloudy cores and clear overgrowths.
- Diagenetic Events: 1) compaction; 2) early dolomitization; 3) leaching; 4) brecciation and fracturing; 5) secondary dissolution; 6) saddle dolomite; 7) bitumen.
- Pore Types: Mo, CH, vugs, micro BC, FR (solution enlarged)

