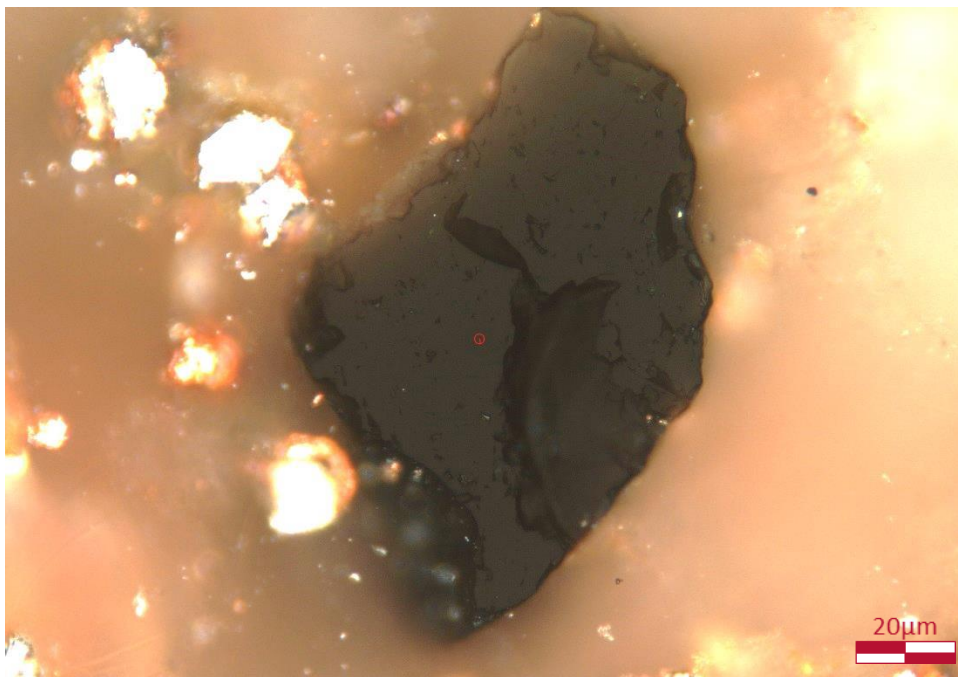




North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



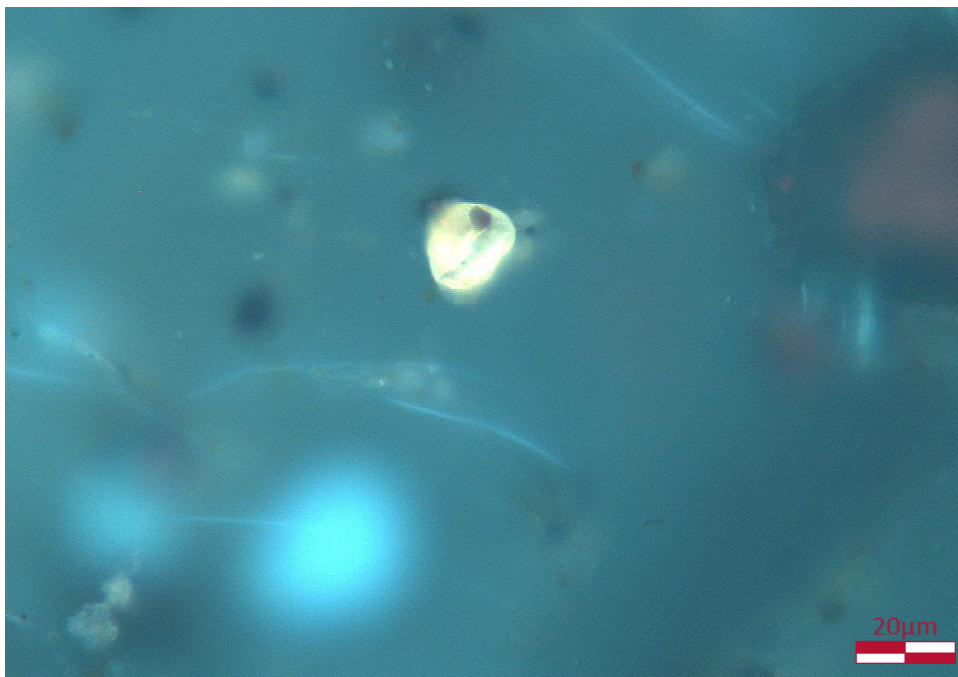
Sample 6126520960 (810'): Representative vitrinite particle with a reflectance reading of 0.29%Ro from central measuring circle.



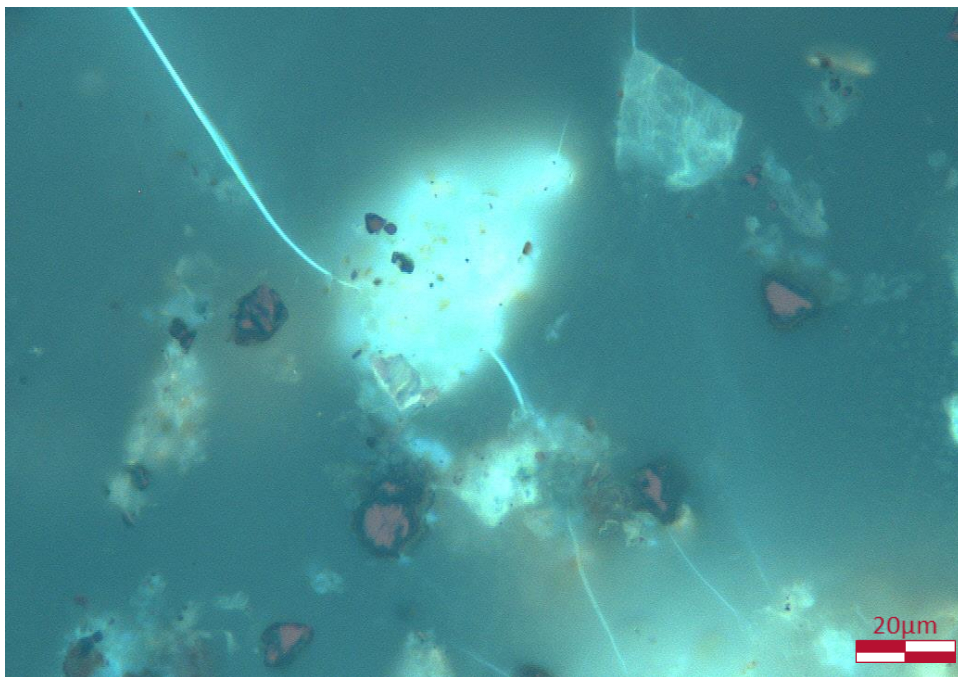
Sample 6126520960 (810'): Semifusinite exhibiting cellular structure.



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



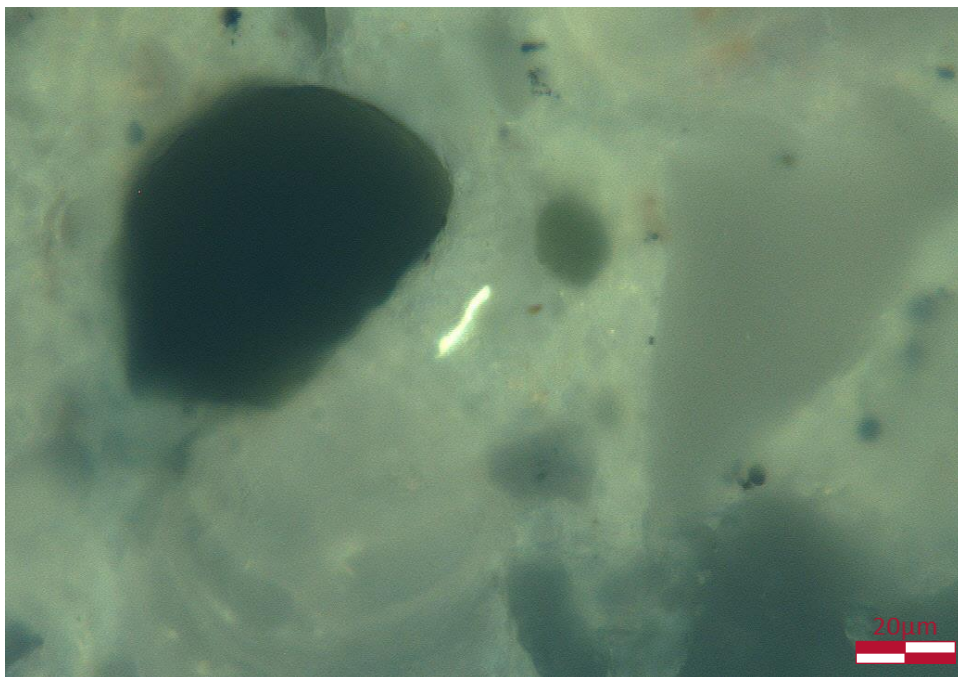
Sample 6126520960 (810'): Yellow fluorescing pollen grain suggesting a maturity estimate of 0.4-0.6% VR/e.



Sample 6126520960 (810'): Example of unusual, rare microfractures emanating from mineral matter filled with bluish-white fluorescence suggesting a possible presence of light hydrocarbons.



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



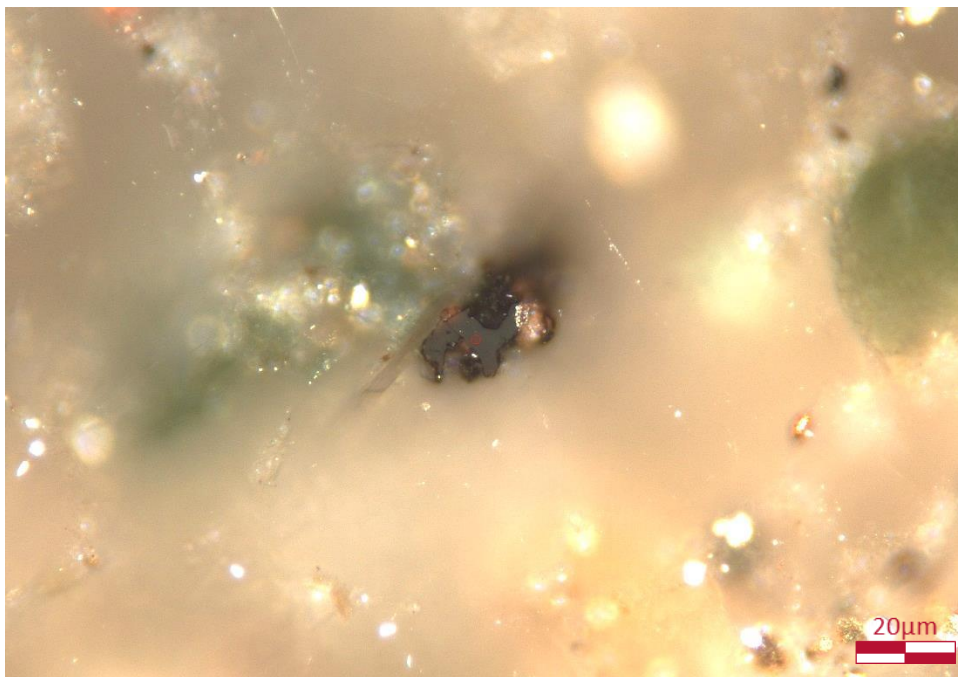
Sample 6126520962 (1740'): Example of bright yellow fluorescing microplankton suggesting a maturity estimate of 0.4-0.6% VR/e.



Sample 6126520962 (1740'): Oxidised vitrinite particle. No representative vitrinite is present in this sample.



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



Sample 6126520968 (4152'): Representative vitrinite particle with a reflectance reading of 0.41%Ro from central measuring circle.



Sample 6126520968 (4152'): Bright yellow fluorescing alga suggesting a maturity estimate of 0.4-0.6% VR/e.

**North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)**

Sample 6126527243 (4485'): Representative vitrinite particle with a reflectance reading of 0.49%Ro from central measuring circle.



Sample 6126527243 (4485'): Scattered yellow fluorescing microplankton (indicated). Rare orange fluorescing cutinite, considered reworked, is also present (bottom right).



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



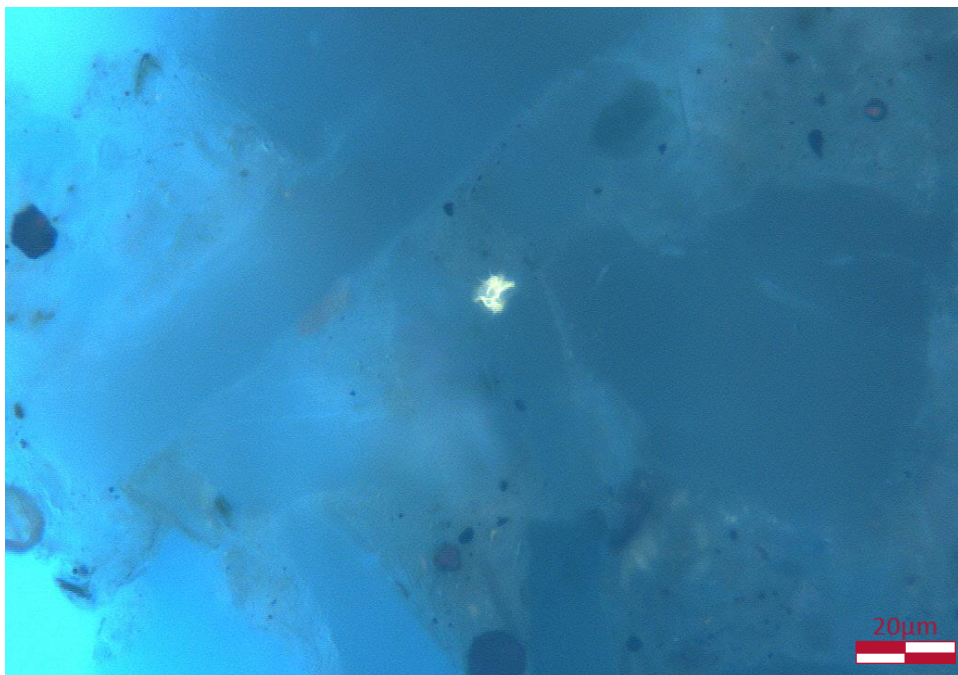
Sample 6126527245 (6132'): Isolated yellow dinoflagellate (interpreted autochthonous). Yellow colour suggests a maturity estimate of 0.4-0.6% VR/e.



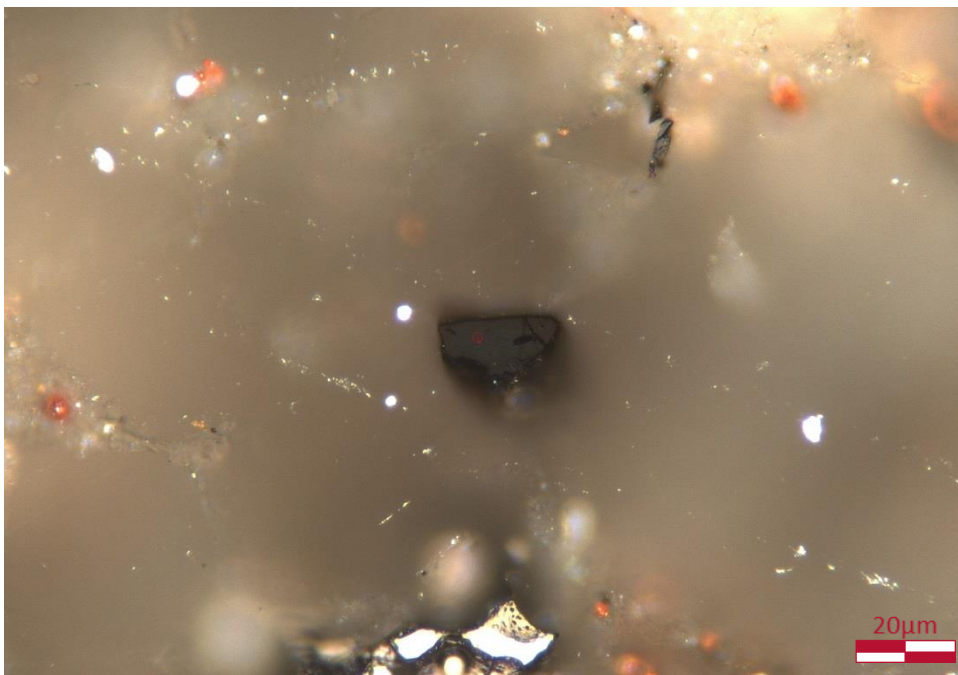
Sample 6126527245 (6132'): Orange fluorescing alga (interpreted allochthonous). Orange colour suggests a maturity estimate of 0.7-0.9% VR/e.



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



Sample 6126527247 (6309'): Example of rare yellow fluorescing alga.



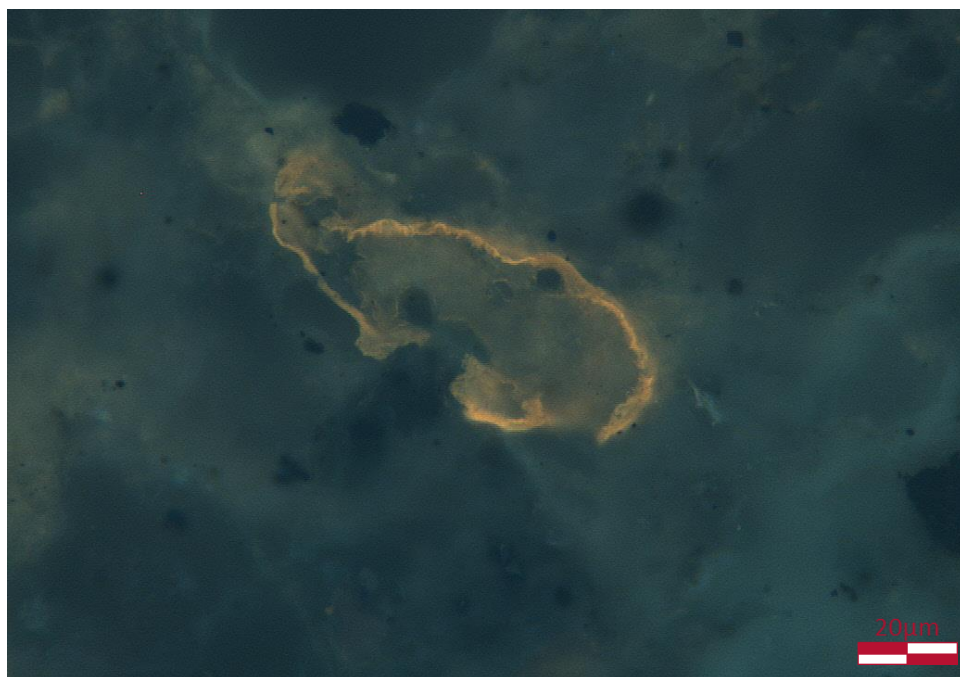
Sample 6126520978 (6734'): Collodetrinite(?) particle with a reflectance value of 0.37%Ro.



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



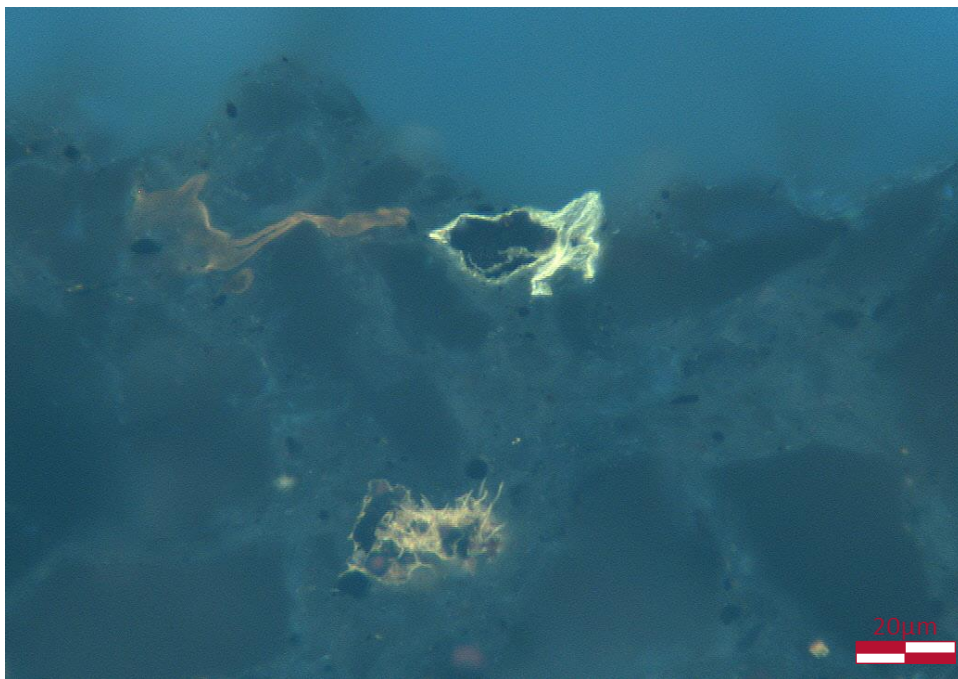
Sample 6126527249 (6908'): Representative vitrinite particle with a reflectance reading of 0.51%Ro from central measuring circle.



Sample 6126527249 (6908'): Reworked(?) orange fluorescing algal debris.



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



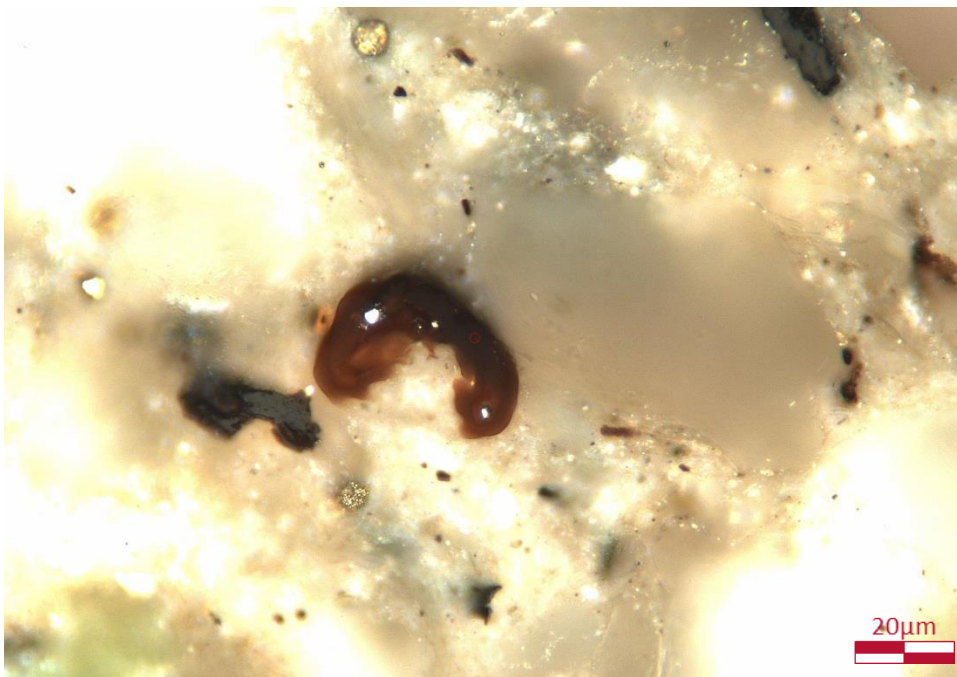
Sample 6126527251 (7503'): Varicoloured fluorescing algal debris within same rock particle ranging from yellow (autochthonous), through yellow/orange to orange (allochthonous?).



Sample 6126527251 (7503'): Deep orange fluorescing alga.



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



Sample 6126527251 (7503'): Reworked, brown spore (centre) and vitrinite particle to left with a reflectance value of 0.50%Ro.



Sample 6126527251 (7503'): Identical field of view as previous photomicrograph under UV light revealing dull orange to light brown fluorescence from spore suggesting a maturity estimate of 0.8-1.1% VR/e.



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



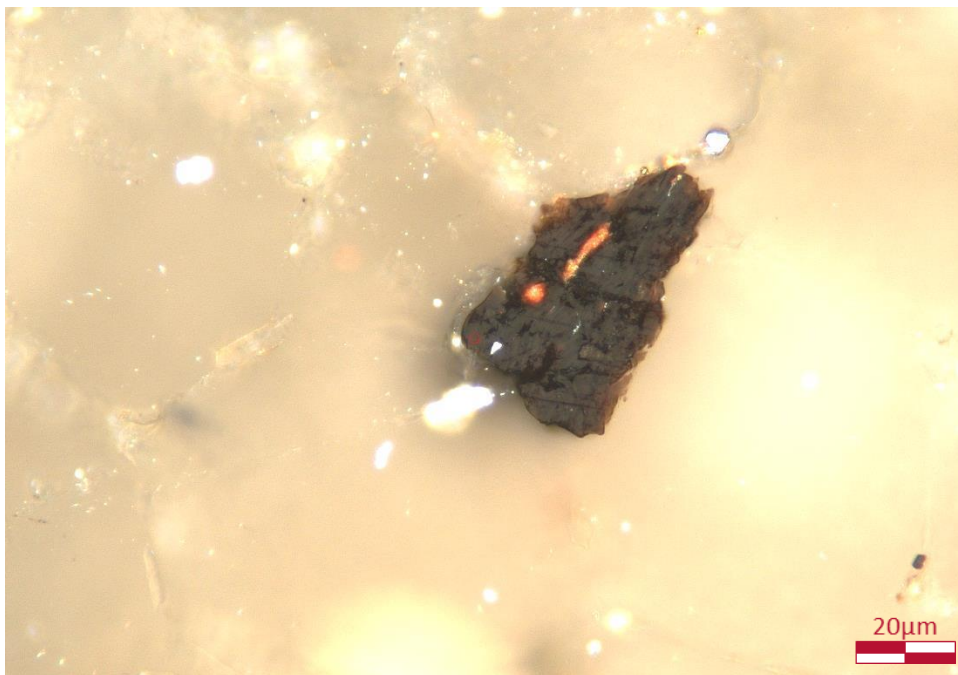
Sample 6126527253 (7705'): Large particle of solid bitumen with desiccation cracks (indicated). Reflectance from central measuring circle is 0.19% Ro.



Sample 6126527253 (7705'): Dull orange fluorescence from centre of bitumen particle with distinct reductions in intensity moving towards perimeter (effects of biodegradation???)



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



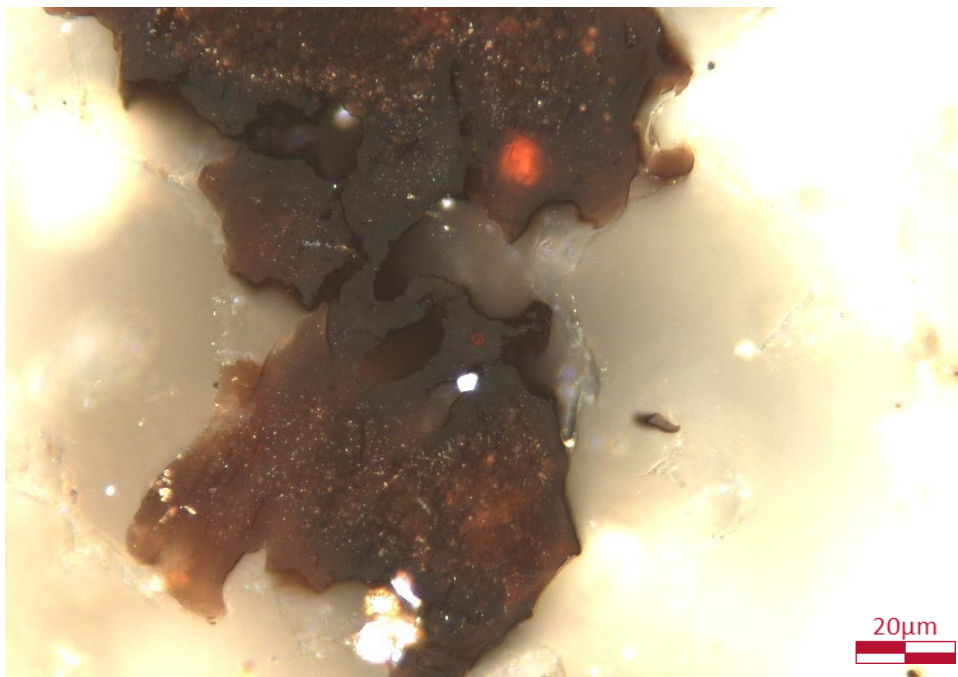
Sample 6126520986 (7766'): Representative vitrinite particle with a reflectance reading of 0.47%Ro from central measuring circle.



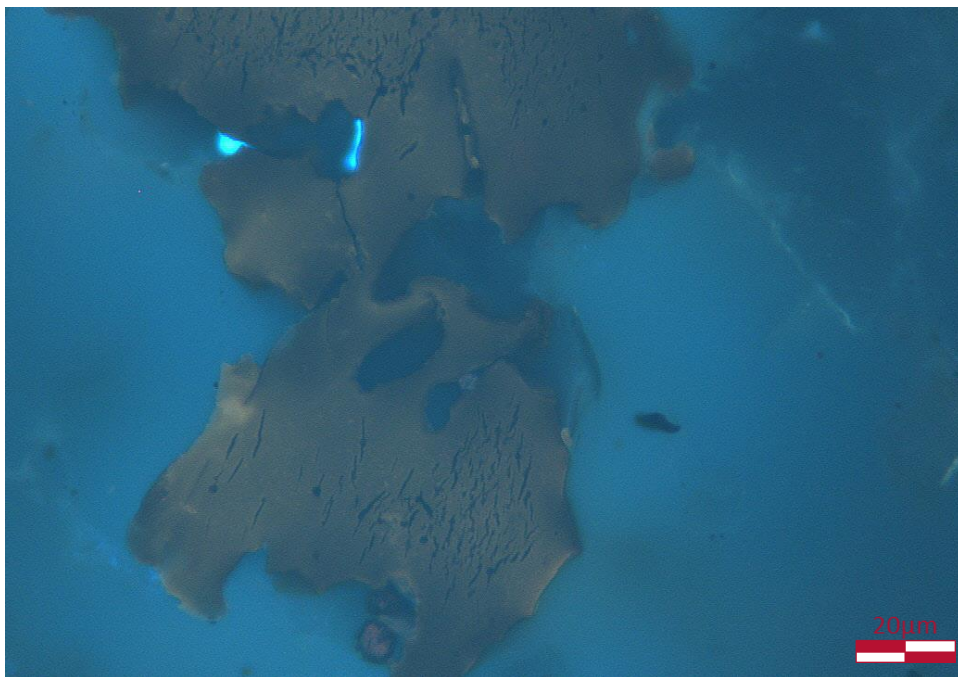
Sample 6126520986 (7766'): Yellow fluorescing herbaceous(?) debris suggesting a maturity estimate of 0.5-0.6%VR/e.



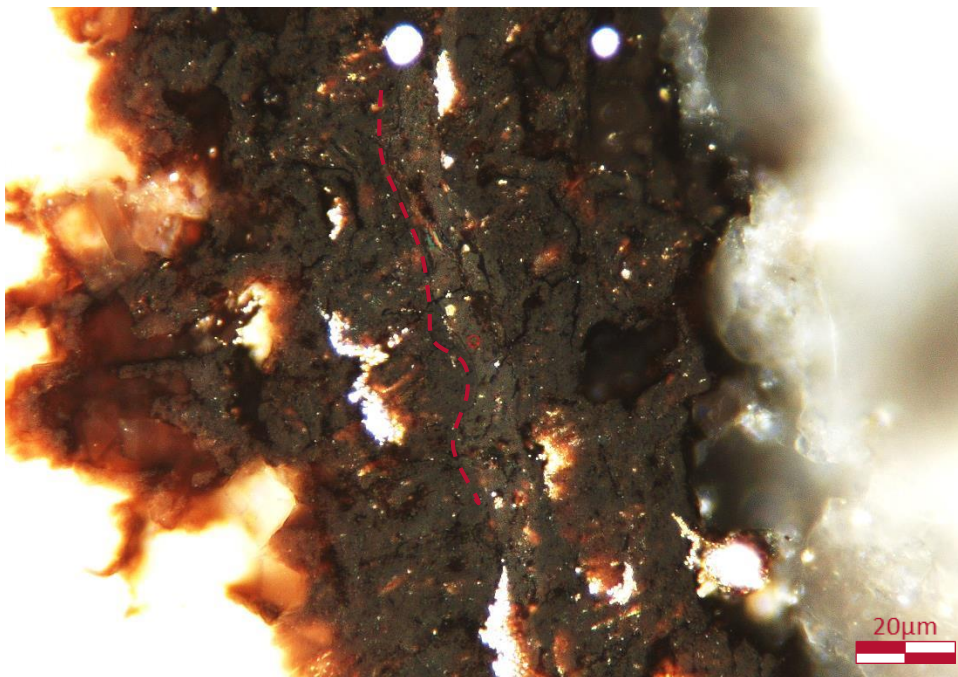
North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



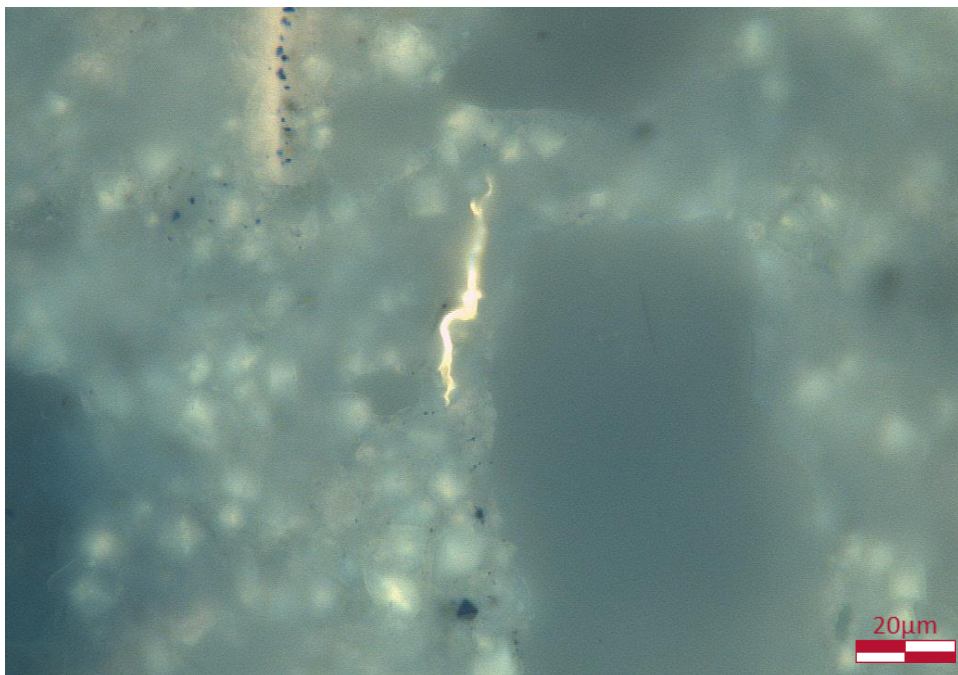
Sample 6126520986 (7766'): Solid bitumen with a reflectance reading 0.29%Ro from central measuring circle.



Sample 6126520986 (7766'): Brown fluorescence from bitumen.

**North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)**

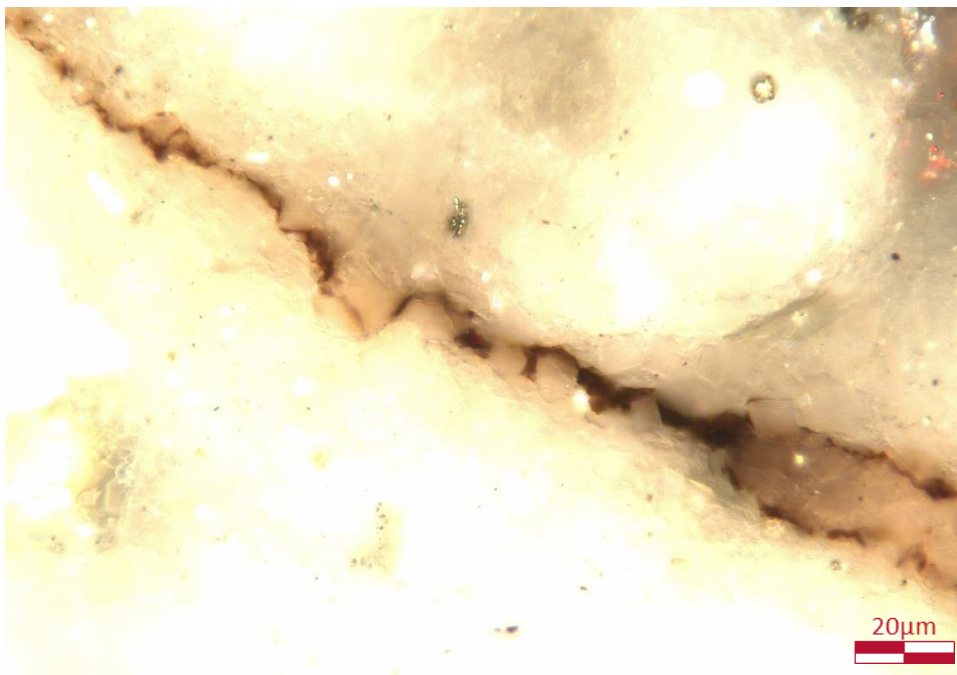
Sample 6126527257 (7949'): Collodetrinite mass with faint, light, collotelinite lens (representative vitrinite). Reflectance reading from central measuring circle is 0.52%Ro. Reading from surrounding collodetrinite typically ca. 0.42%Ro. N.B. Contrast boosted for illustrative purposes.



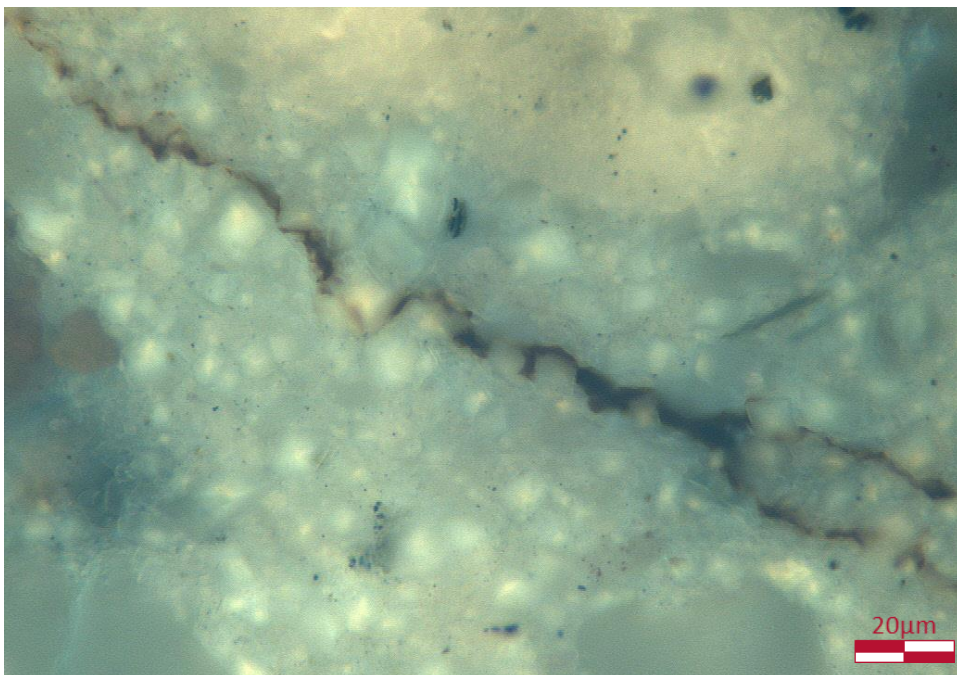
Sample 6126527257 (7949'): Bright yellow fluorescing filamentous alga suggesting a maturity estimate of 0.4-0.6% VR/e.



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



Sample 6126527257 (7949'): Migrabitumen filling mineral matrix fracture.



Sample 6126527257 (7949'): Faint brown fluorescence from migrabitumen and surrounding dull yellow to orange mineral fluorescence.



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



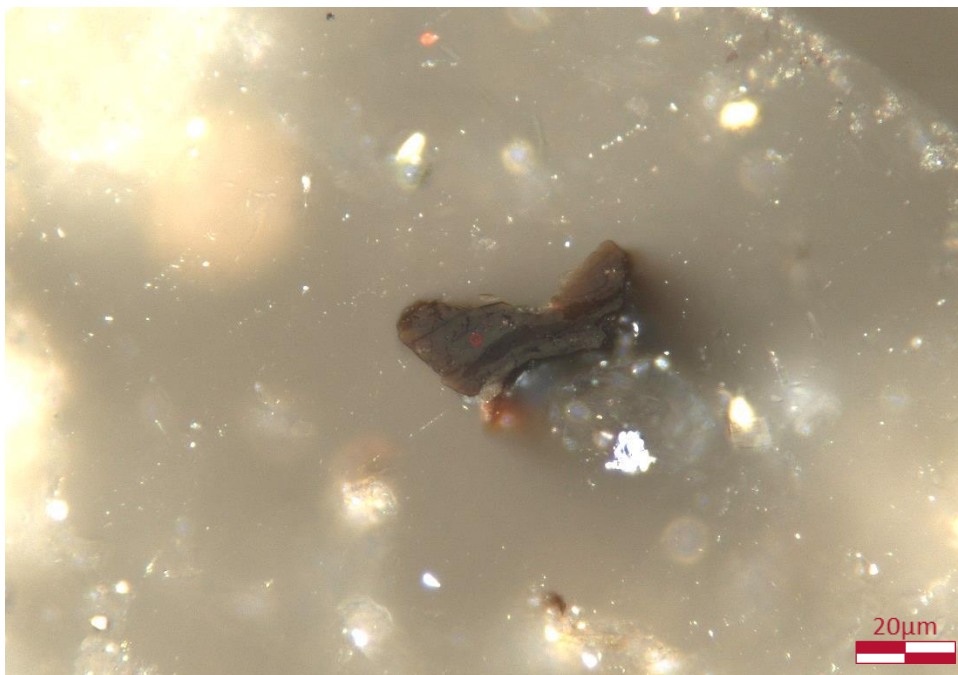
Sample 6126520988 (8280'): Small cell of collotelinite (indicated) with a reflectance reading of 0.58%Ro, within collodetrinite particle with a reflectance of 0.47%Ro.



Sample 6126520988 (8280'): Note absence of fluorescence from vitrinite.



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



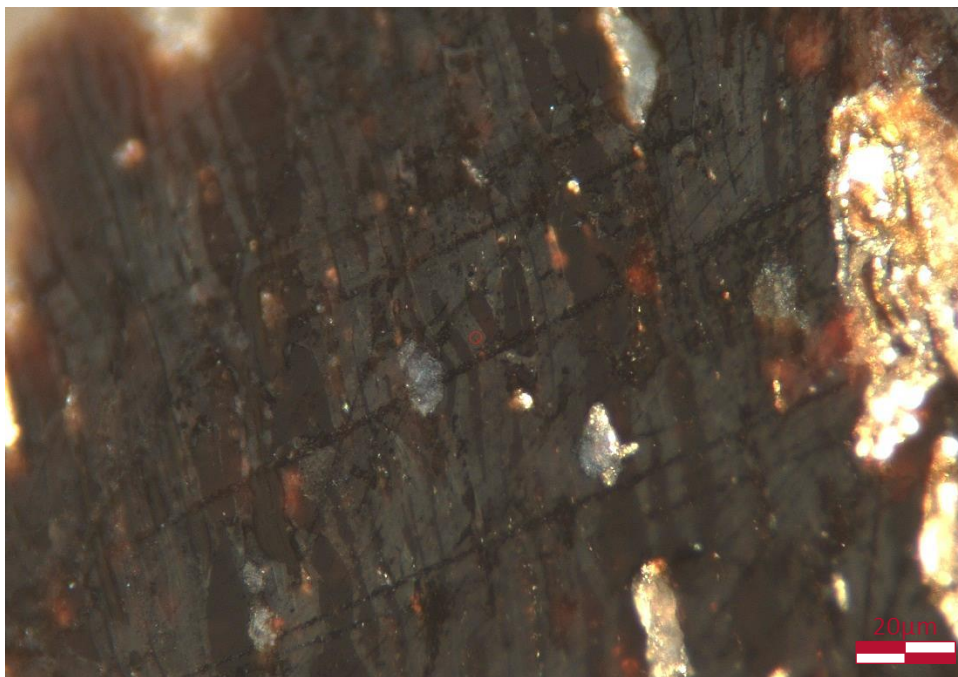
Sample 6126520988 (8280'): Liptinite-rich collodetrinite particle with a reduced reflectance reading of 0.37%Ro, probably due to suppression.



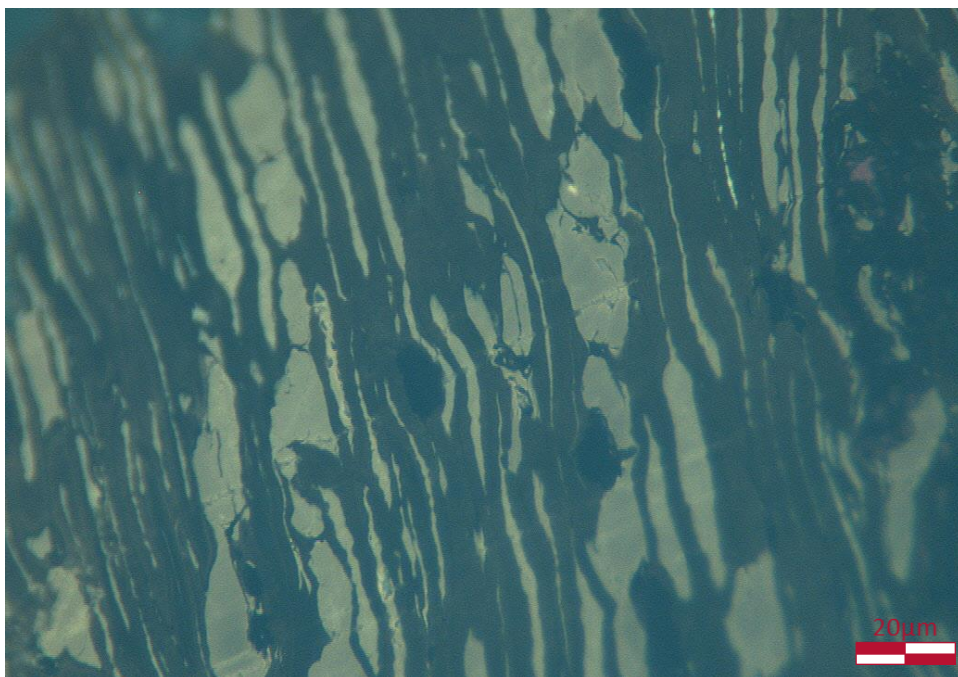
Sample 6126520988 (8280'): Note weak brown fluorescence from vitrinite associated with reflectance suppression.



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



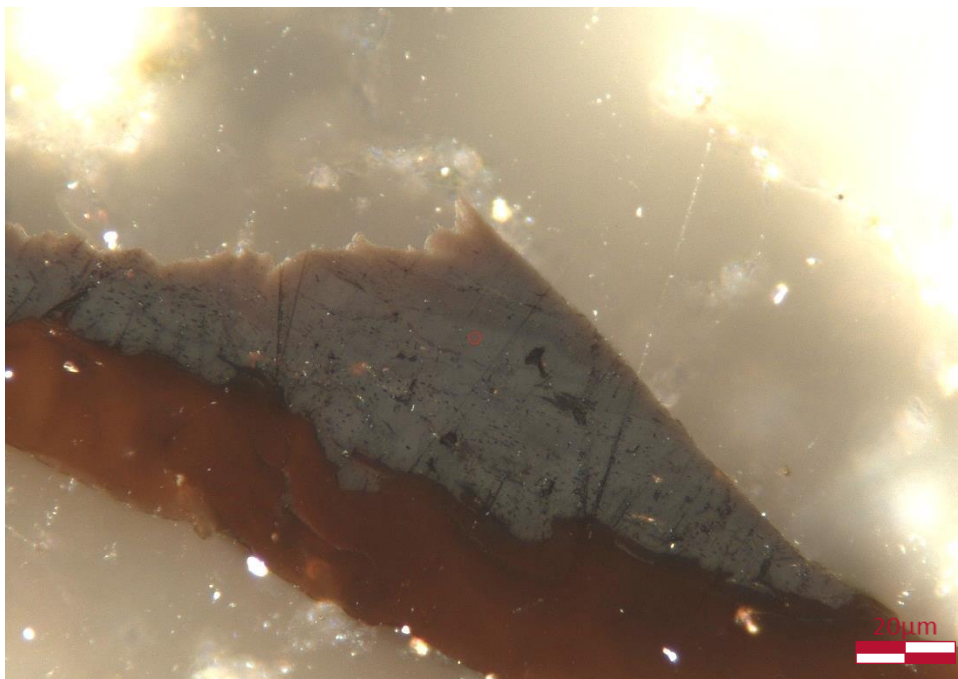
Sample 6126520988 (8280'): Massive liptinite-rich (resinite??) collodetrinite with a reflectance reading of 0.33%Ro.



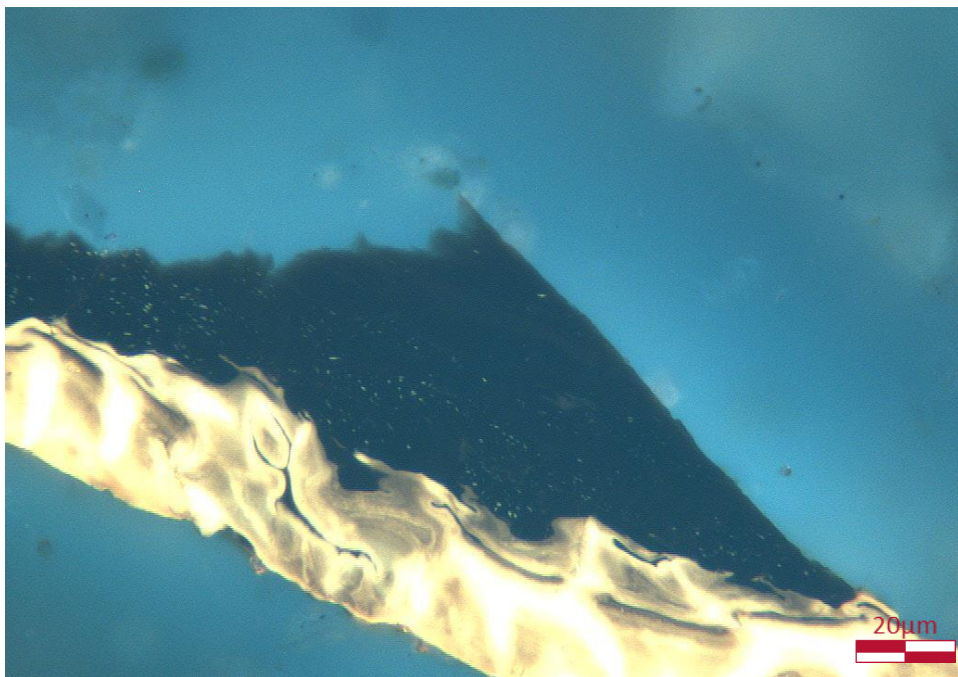
Sample 6126520988 (8280'): Under UV light the collodetrinite reveals faint brown fluorescence and the resinite(?), weak yellow/orange.



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



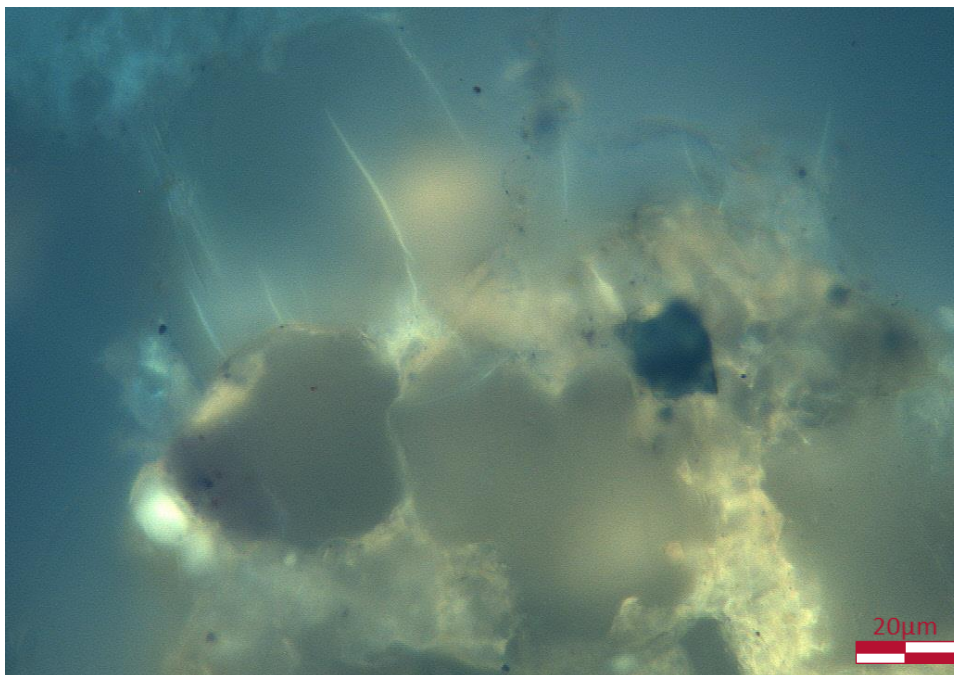
Sample 6126520988 (8280'): Collodetrinite with a reflectance reading of 0.43%Ro, with associated brown cutinite.



Sample 6126520988 (8280'): Under UV light the cutinite exhibits bright yellow fluorescence suggesting a maturity estimation of 0.5-0.6%VR/e.. Pinpoint yellow inclusions of resinite are also present in the collodetrinite.



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



Sample 6126520988 (8280'): Example of rare yellow/orange fluorescing mineral matter and surrounding yellow fluorescing microfractures possibly containing mobile hydrocarbons(?).

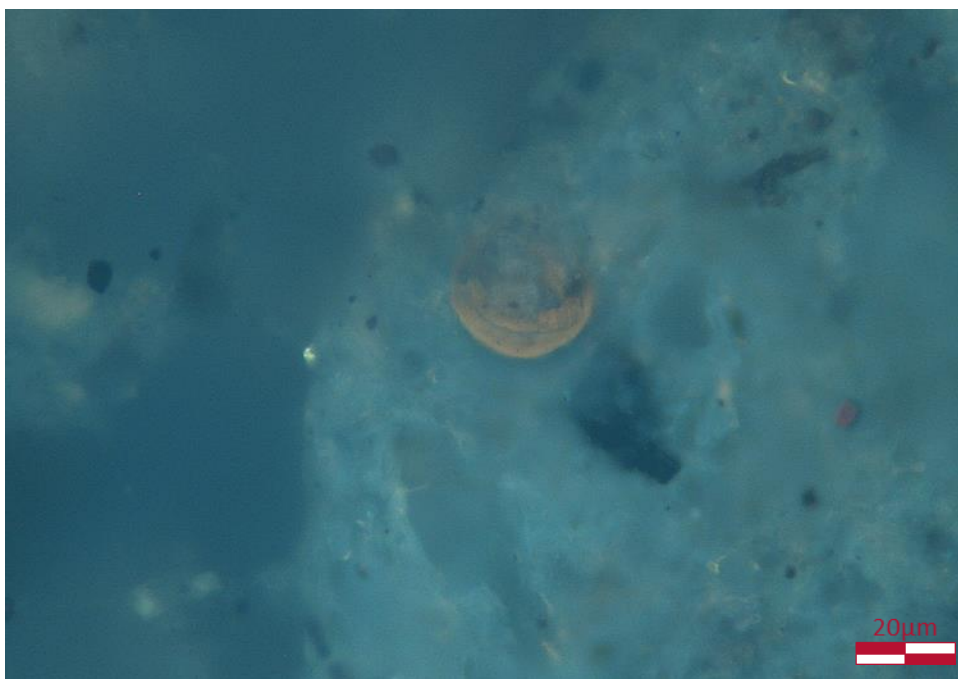
INTENTIONALLY BLANK



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



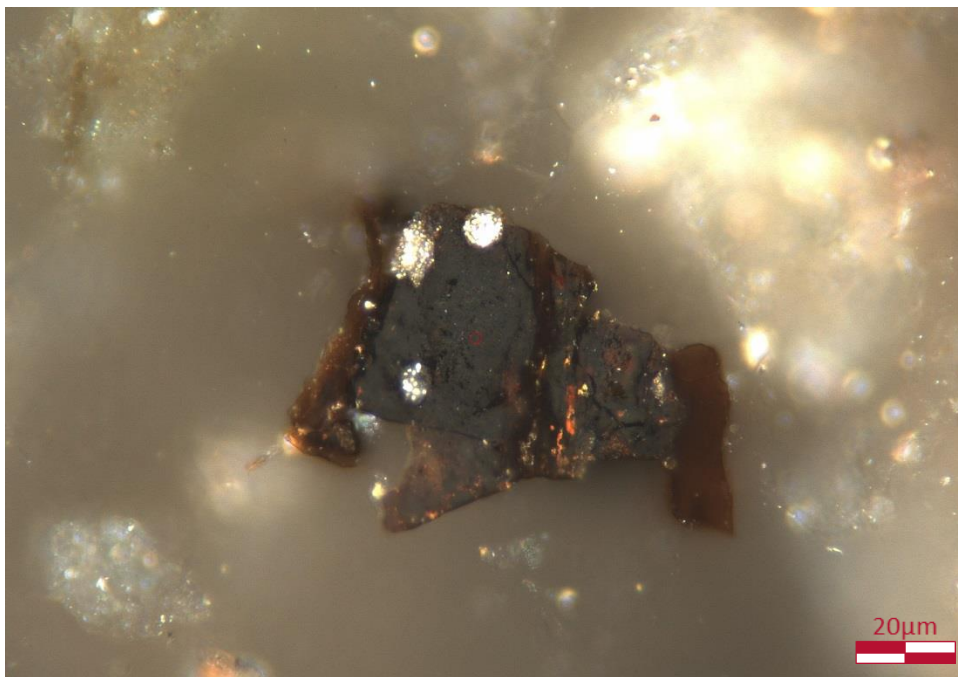
Sample 6126520990 (8410'): Yellow to yellow/orange fluorescing cutinite(?) suggesting a maturity estimate of 0.5-0.7% VR/e.



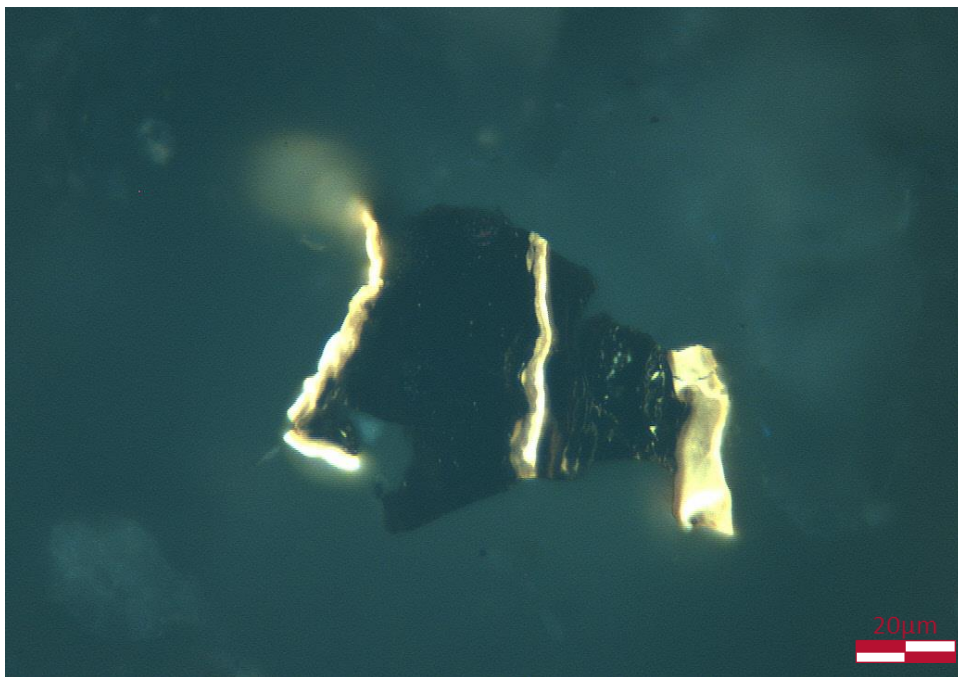
Sample 6126520990 (8410'): Dull orange fluorescing spore (poss. reworked) within the same sample suggesting a maturity estimate of 0.7-0.9%VR/e.



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



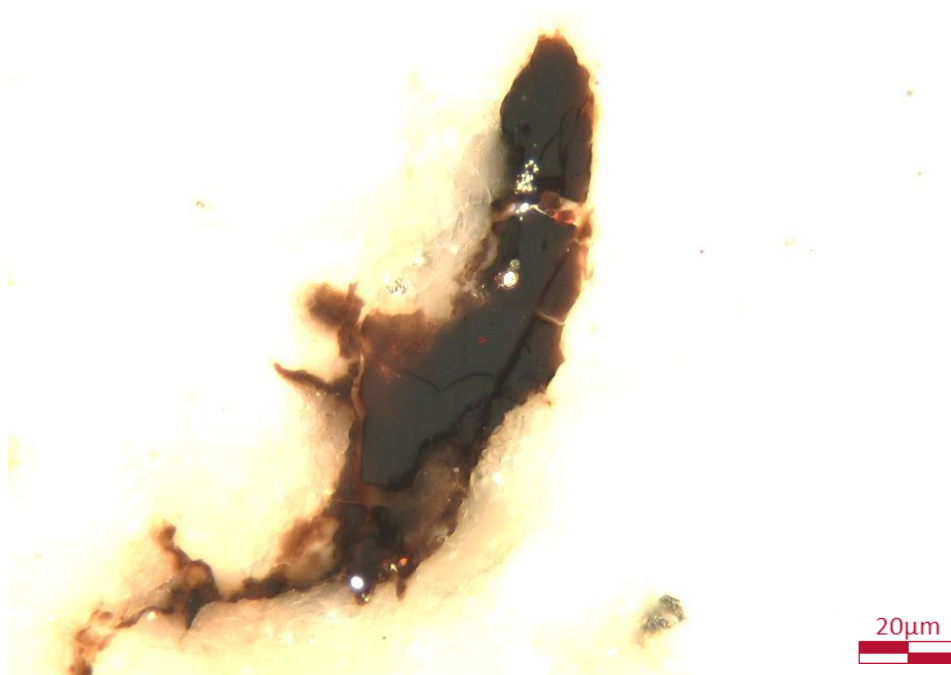
Sample 6126520992 (8500'): Collodetrinite particle with a reflectance value of 0.46%Ro and associated brown liptinite.



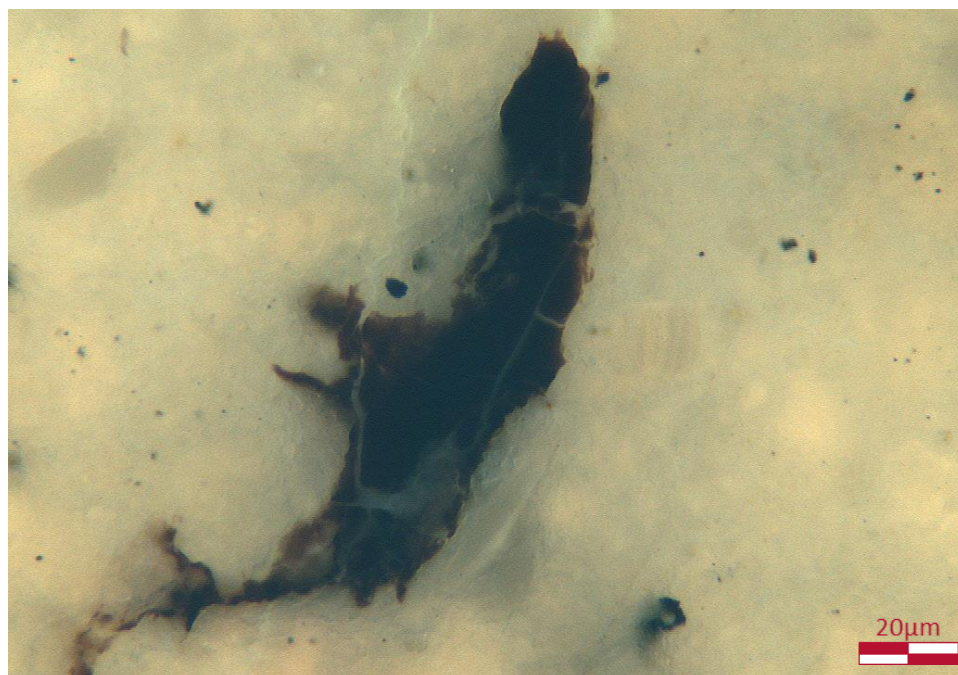
Sample 6126520992 (8500'): Bright yellow fluorescence from liptinite (cutinite).



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



Sample 6126527259 (8763'): Potential solid bitumen particle. Reflectance reading not possible due light intensity elevation from surrounding mineral matrix.



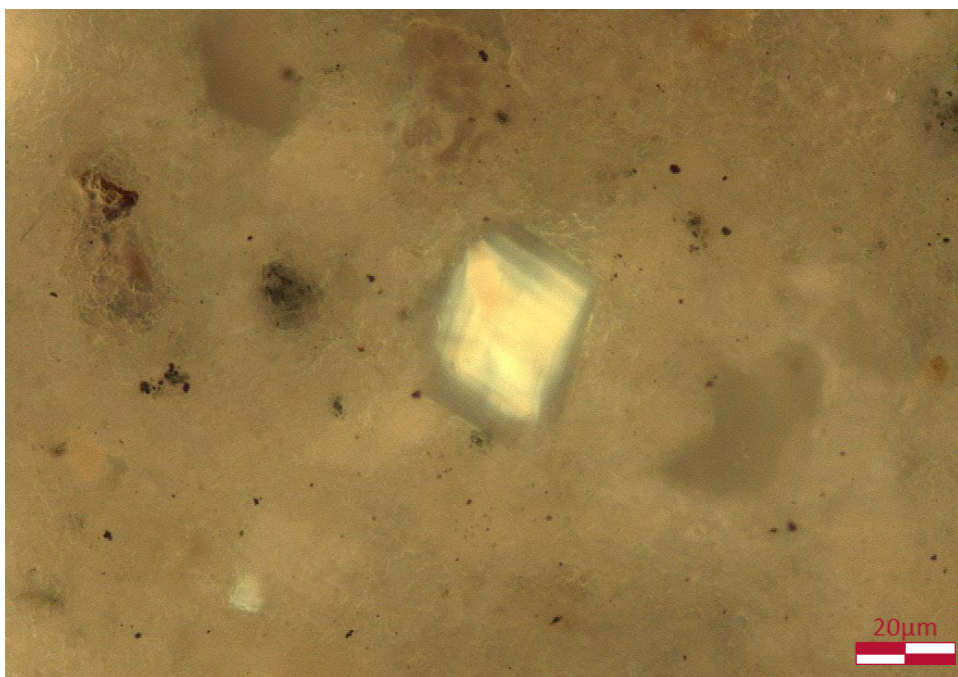
Sample 6126527259 (8763'): Weak brown fluorescence from perimeter of solid bitumen(?).



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



Sample 6126527259 (8763'): Yellow fluorescence from isolated alga.



Sample 6126527259 (8763'): Orange background mineral fluorescence and yellow fluorescence from isolated calcite(?) crystal.



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



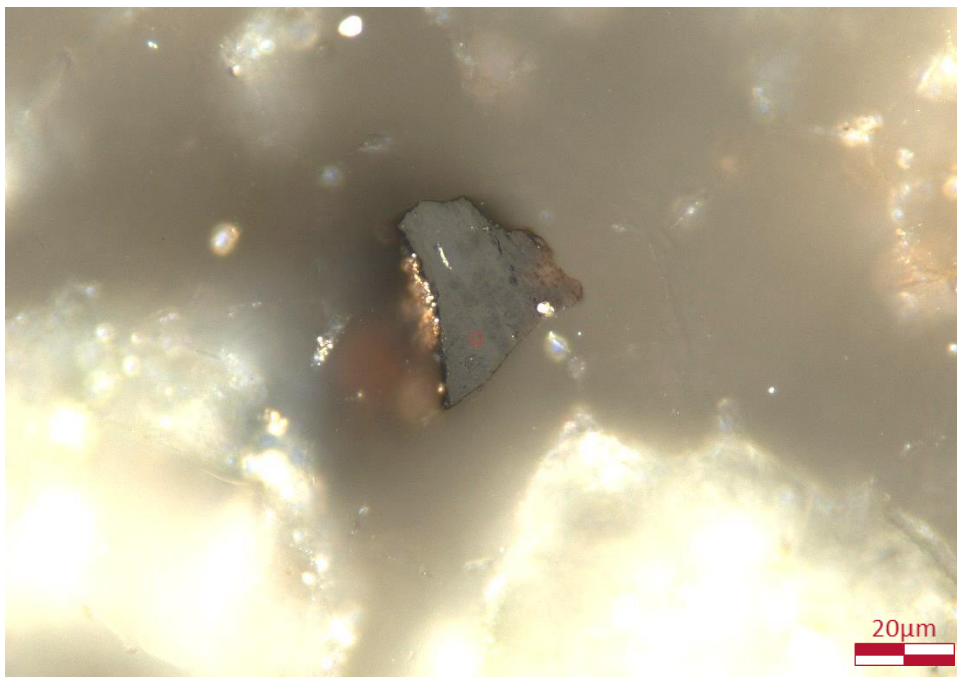
Sample 6126527261 (8917'): Yellow fluorescing dinoflagellate suggesting a maturity estimate of 0.4-0.6% VR/e



Sample 6126527261 (8917'): Orange fluorescing spore(?) (reworked) within the same sample suggesting a maturity estimate of 0.7-0.9%VR/e.



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



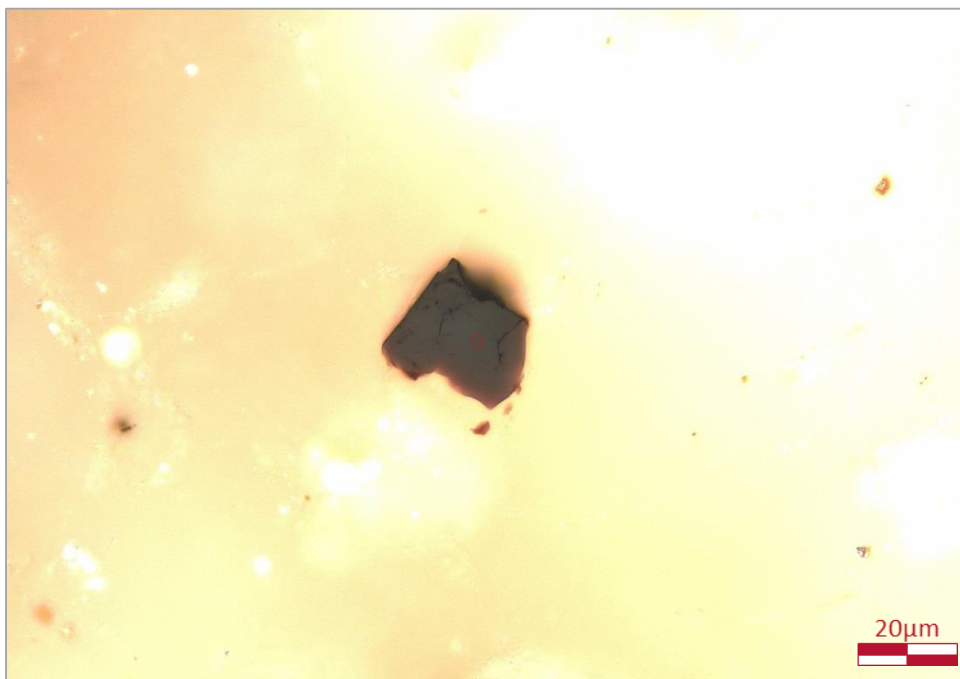
Sample 6126520998 (9180'): Representative vitrinite particle with a reflectance reading of 0.60%Ro.



Sample 6126520998 (9180'): Variation in liptinite fluorescence colours from weak greenish yellow dinoflagellate (Df), yellow algal debris (Al) and orange pollen grain (Pg).



North Carolina Geological Survey : Project BH-94252; Hatteras Light (Esso #1)



Sample 6126521992 (9750'): Representative vitrinite particle with a reflectance value of 0.67%Ro.