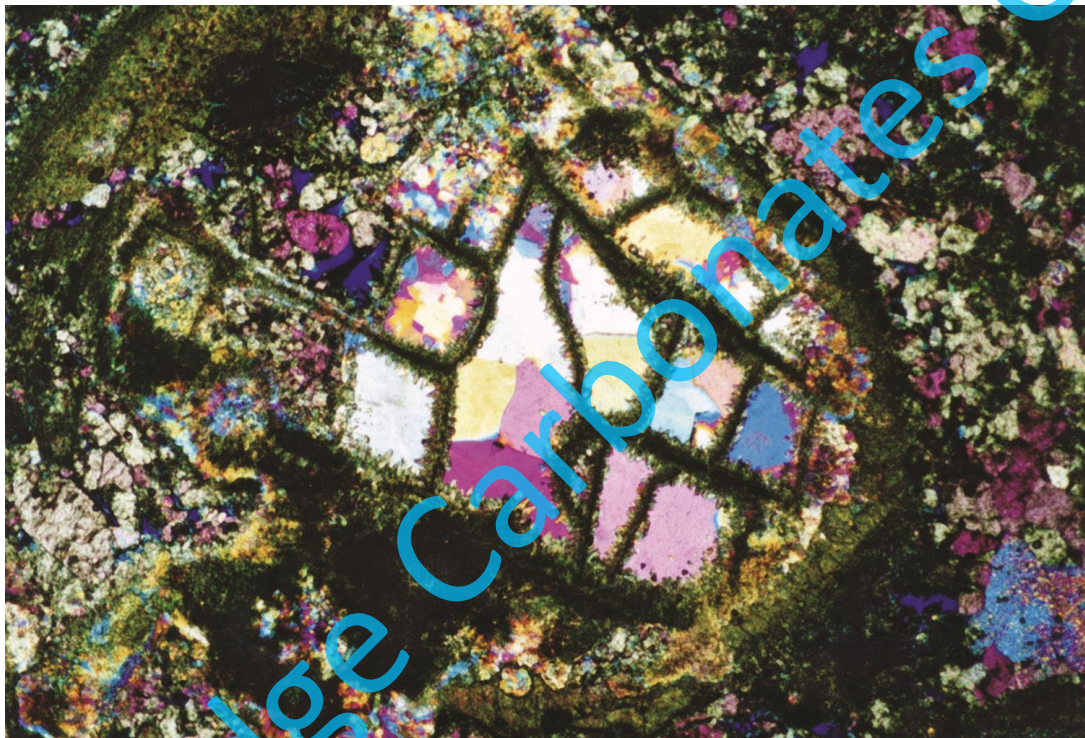


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Microfacies Atlas of Barents Shelf Wells: 7128/6-1



1. INTRODUCTION

1.1. Outline

The three Microfacies Atlases contain a total of some 700 photomicrographs that illustrate the range of microfacies, diagenetic textures and pore types from core and SWC samples from throughout the late Palaeozoic section of the key stratigraphic wells 7128/6-1, 7128/4-1 and 7229/11-1 on the Finnmark Platform.

The annotated photomicrographs presented in the Atlases below are print resolution jpegs. In addition, these images are also presented as separate files on a CD-ROM in the following formats:

- High resolution jpeg images.
- Print resolution jpeg images suitable for incorporation into reports.
- Screen resolution jpeg images suitable for incorporation into presentations.

Individual files are stored in folders according to well name and can be searched by their depth which forms part of the file name.

For each thin section, pore types are summarized and a qualitative estimation of the amount of porosity is colour coded (right). Note that this

	None
	Poor
	Moderate
	Good

refers to the porosity in the thin section as a whole and may not be specifically illustrated in the photomicrograph. Each microfacies image is accompanied by a summary diagram showing the inferred depositional setting in the relevant depositional system.

The lithostratigraphic nomenclature follows that of Larssen *et al.* (2002).

1.1. Basement

Pre-Devonian basement was cored in 7128/6-1. This consists of non-porous metasandstone that is highly compacted with sutured contacts between grains. Matrix clays have a high birefringence and appear to have undergone recrystallization under



and *in situ* sponges with minor bioclasts including brachiopods and bryozoans. These sponges may locally form bioherms.



Distribution of porosity: There is no porosity within the Black Limestone or Shale microfacies. The spiculite contains good to very good spicule mouldic and intergranular porosity.

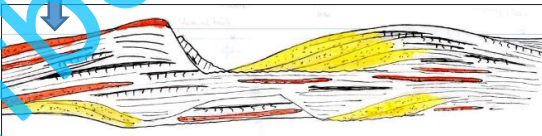
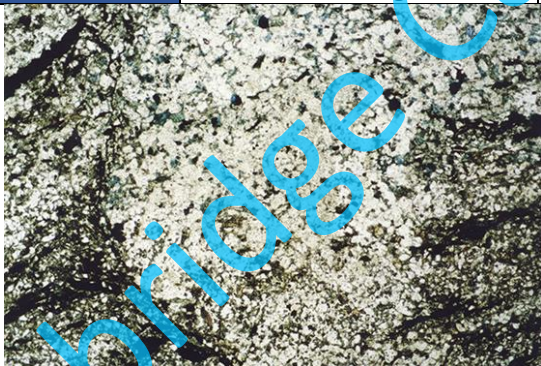
1.7. References

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- Ehrenberg, S.N., Pickard, N.A.H., Henriksen, L.B., Svånå, T.A., Gutteridge, P. and Macdonald, D.I. 2001. A depositional and sequence stratigraphic model for cold water, spiculitic strata based on the Kapp Starostin Formation (Permian) of Spisbergen and equivalent deposits from the Barents Shelf. *American Association of Petroleum Geologists Bulletin*, v.85. p.2061-2087.
- Larsen, G.B., Elvebakk, G., Henriksen, L.B., Kristensen, S-E, Nillson, I., Samuelsberg, T.J., Svånå, T.A., Stemmerik, L. and Worsley, D. 2002. Upper Palaeozoic lithostratigraphy of the southern Norwegian Barents Sea. http://www.npd.no/Global/Norsk/3-Publikasjoner/NPD-Bulletin/PalaeozoicNomenclature_17.pdf



2. MICROFACIES ATLAS

Well:	7128/6-1	Depositional system not known.
Depth MD m:	2540.45	
Formation:	Pre-Devonian BASEMENT	
		
Basement sandstone; non-porous. Metasandstone FOV: 5mm, ppl		Basement sandstone; non-porous. Metasandstone. FOV: 5mm, xpl

Well:	7128/6-1	
Depth MD m:	2249.00	
Formation:	BILLEFJORDEN GP/TETTEGRAS FM	
	Intergranular pores in medium sand filling burrows	
		
Sand-filled escape burrow. FOV: 5mm, ppl		



Well:	7128/6-1	
Depth MD m:	2114.75	
Formation:	GIPSDALEN GP/FALK FM	
	Rare hairline fracture porosity	
<p><i>Dvinella</i> packstone. FOV: 5mm, ppl</p>		

Well:	7128/6-1	
Depth MD m:	2112.75	
Formation:	GIPSDALEN GP/FALK FM	
<p>Sandstone with reworked wackestone intraclast. FOV: 5mm, ppl</p>		



Well:	7128/6-1	
Depth MD m:	2087.75	
Formation:	GIPSDALEN GP/FALK FM	
	Microintergranular porosity	
<p>Bioclastic sandstone. FOV: 5mm, ppl</p>		

Well:	7128/6-1	
Depth MD m:	2082.50	
Formation:	GIPSDALEN GP/FALK FM	
	Internal pore in bioclast reduced by internal sediment and calcite cement.	
<p>Bioclastic packstone with internal sediment and porosity in gastropod. FOV: 5mm, ppl</p>		
		<p>Foraminifera crinoid wackestone. FOV: 5mm, ppl</p>



Well:	7128/6-1		
Depth MD m:	2037.25		
Formation:	GIPSDALEN GP/ØRN FM		
	Microintergranular porosity		
Sandstone with bioclasts. FOV: 5mm, ppl		Bioclastic fine/medium grained sandstone. FOV: 5mm, ppl	

Well:	7128/6-1		
Depth MD m:	2037.00		
Formation:	GIPSDALEN GP/ØRN FM		
Bioclastic sandstone. FOV: 5mm, ppl		Sandstone with bioclasts. FOV: 5mm, ppl	

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Well:	7128/6-1	
Depth MD m:	2012.25	
Formation:	GIPSDALEN GP/ØRN FM	
	Intergranular and internal pores in <i>Palaeoaplysina</i>	
?Boundstone and late anhydrite. FOV: 5mm, ppl		

Well:	7128/6-1	
Depth MD m:	2011.00	
Formation:	GIPSDALEN GP/ØRN FM	
	Intercrystal and internal pores in tubular algae	
Intercrystal porosity and anhydrite in dolomite. FOV: 5mm, ppl		
Dolomite with intercrystal porosity and bioclastic ghosts. FOV: 5mm, ppl		



Well:	7128/6-1	
Depth MD m:	1973.75	
Formation:	GIPSDALEN GP/ØRN FM	
	Biomouldic and intercrystal pores in dolomite	
<p>Vuggy dolomite replaces ?subtidal packstone. FOV: 5mm, ppl</p>		

Well:	7128/6-1	
Depth MD m:	1972.50	
Formation:	GIPSDALEN GP/ØRN FM	
	Internal and intercrystal pores in dolomitised <i>Palaeoaplysina</i> .	
<p>Dolomite cement in internal pores in <i>Palaeoaplysina</i> plate. FOV: 5mm, ppl</p>		



Well:	7128/6-1	
Depth MD m:	1931.00	
Formation:	GIPSDALEN GP/ØRN FM	
<p>Ooid grainstone with poikilotopic anhydrite replacement. FOV: 5mm, ppl</p>		
<p>Ooid peloid grainstone/packstone replaced by anhydrite. FOV: 5mm, xpl</p>		

Well:	7128/6-1		
Depth MD m:	1929.75		
Formation:	GIPSDALEN GP/ØRN FM		
<p>Microporosity</p>			
<p>Dolomitised peloidal micrite. FOV: 5mm, ppl</p>		<p>Bioturbated siltstone with microporosity. FOV: 5mm, ppl</p>	



Well:	7128/6-1	
Depth MD m:	1896.75	
Formation:	GIPSDALEN GP/ØRN FM	
	Internal pores in fusulinids	
<p>Fusulinid internal porosity with anhydrite cement. FOV: 5mm, ppl</p>		

Well:	7128/6-1	
Depth MD m:	1895.25	
Formation:	GIPSDALEN GP/ØRN FM	
	Microporosity	
<p>Fenestrate bryozoan wackestone. FOV: 5mm, ppl</p>		
<p>Bioclastic lens in dolomitic wackestone. FOV: 5mm, ppl</p>		



Well:	7128/6-1	
Depth MD m:	1877.50	
Formation:	GIPSDALEN GP/ØRN FM	
	Internal pores in <i>Palaeoaplysina</i> , also framework and biomouldic pores	
<p><i>Tubiphytes</i> encrusting surface of <i>Palaeoaplysina</i> plate. FOV: 5mm, ppl</p>		

Well:	7128/6-1	
Depth MD m:	1877.00	
Formation:	GIPSDALEN GP/ØRN FM	
	Intergranular pores	
<p>Internal bioclastic peloidal packstone in <i>Palaeoaplysina</i> bioherm. FOV: 5mm, ppl</p>		



Well:	7128/6-1	
Depth MD m:	1843.25	
Formation:	GIPSDALEN GP/ØRN FM	
<p>Colonial coral framestone (fasciculate rugose coral). FOV: 5mm, xpl plus gypsum plate</p>		

Well:	7128/6-1	
Depth MD m:	1840.75	
Formation:	GIPSDALEN GP/ØRN FM	
<p><i>Tubiphytes</i> oncoids. FOV: 5mm, ppl</p>		

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Well:	7128/6-1		
Depth MD m:	1809.75		
Formation:	BJARMELAND GP/ISBJØRN FM		
<p>Intraclast bioclastic grainstone. FOV: 5mm, ppl</p>		<p>Bioclastic wackestone. FOV: 5mm, ppl</p>	
<p>Crinoid grainstone. FOV: 5mm, xpl plus gypsum plate</p>			

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Well:	7128/6-1	
Depth MD m:	1753.00	
Formation:	BJARMELAND GP/ISBJØRN FM	
<p>Compacted peloidal bioclastic packstone. FOV: 5mm, ppl</p>		

Well:	7128/6-1	
Depth MD m:	1752.70	
Formation:	BJARMELAND GP/ISBJØRN FM	
	Relict vuggy porosity in chert nodule	
<p>Silica nodule with vuggy porosity in bioclast wackestone. FOV: 5mm, ppl</p>		
		<p>Chert nodule in grainstone. FOV: 5mm, ppl</p>



Well:	7128/6-1	
Depth MD m:	1751.75	
Formation:	BJARMELAND GP/ISBJØRN FM	
<p>Chalcedonic silica in chert nodule. FOV: 5mm, xpl plus gypsum plate</p>		

Well:	7128/6-1	
Depth MD m:	1751.00	
Formation:	BJARMELAND GP/ISBJØRN FM	
	Fracture pore	
<p>Bioclastic grainstone with fracture partly infilled by crinoid overgrowths. FOV: 5mm, ppl</p>		
		<p>Intraclast in bioclastic grainstone. FOV: 5mm, ppl</p>

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Well:	7128/6-1	
Depth MD m:	1641.00	
Formation:	TEMPELFJORDEN GP/RØYE FM	
	Spicule moulds	
<p>Chert nodule with internal pores and spicule moulds cross cut by silica cemented fractures. FOV: 5mm, ppl</p>		

Well:	7128/6-1	
Depth MD m:	1639.55	
Formation:	TEMPELFJORDEN GP/RØYE FM	
<p>Etched brachiopod shells. FOV: 5mm, ppl</p>		



Well:	7128/6-1	
Depth MD m:	1629.00	
Formation:	TEMPELFJORDEN GP/RØYE FM	
	Dissolution porosity	
<p>Spiculite; layer of reworked fragmented brachiopod valves in spiculite. FOV: 5mm, ppl</p>	<p>Disaggregated spicules in silica matrix of grainstone/packstone. FOV: 5mm, xpl</p>	
<p>Bioturbated spiculites. FOV: 5mm, ppl</p>	<p>Spiculites with etched bioclasts. FOV: 5mm, ppl</p>	
<p>Etched brachiopod shell fragments and spicules. FOV: 1.25mm, ppl</p>		