GEOLOGICAL SURVEY OF CANADA
DEPARTMENT OF ENERGY, MINES AND RESOURCES

Figure 5. Occurrence of dinoflagellate and acritarch taxa in Aptian-Middle Albian sections along Horton River: Langton Bay and Horton River Formations

Sections CR 8A-68 and CR 9A-68:

SERIES	LOWER CRETACEOUS																																
STAGE	APTIAN																																
SUBSTAGE																																	
LITHOLOGIC UNITS	*LANGTON BAY FORMATION*																																
	GILMORE LAKE MEMBER																	*CROSSLEY LAKES MEMBER*															
SECTION	CR 8A-68																	CR 9A-68															
GSC LOCALITY NUMBER	C-8435	C-8437	C-8438	C-8440	C-8441	C-8442	C-8443	C-8444	C-8445	C-8446	C-8447	C-8448		C-8449	C-8450	C-8451	C-8452	C-8453	C-8454	C-8456	C-8457	C-8458	C-8459	C-8460	C-8461	C-8462-65	C-8466	C-8467	C-8468	C-8469	C-8470	C-8471	C-8472
PREPARATION NUMBER	6741	6742	6743	6745	6746	6747	6748	6749	6750	6751	6752	6753		6754	6755	6756	6757	6758	6759	6760	6761	6762	6763	6764	6765	6766-69	6770	6771	6772	6773	6774	6775	6776
SAMPLE FOOTAGE	0-10	15-16	16-20	30-33	33-40	40-45	45-50	50-55	55-60	60-68	70-83	83-104	NS	149.5-160	170-215	215-220.5	220.5-230	5-10	10-23.5	24-30	30-40	40-50	50-60	60-70	70-80	80-88	88-100	100-110	110-115	115-125	125-128	128-135	138-140
1 *Lunatadinium dissolutum*												×																					
2 *Batioladinium jaegeri*																	S																
3 *Cleistosphaeridium multispinosum*																	R																
4 *Cyclonephelium distinctum*																	R																
5 *Dingodinium cerviculum*																	R																
6 *Dinoflagellates* unidentified/unidentifiable																	F							F			R	F	F				
7 *Microdinium opacum*																	S																
8 *Odontochitina operculata*																	R																S
9 *Oligosphaeridium complex*																	F							×			F	F	Q		S		
10 *Oligosphaeridium*? sp. A of Brideaux, 1971b																	R																
11 *Astrocysta cretacea*																	R																
12 *Pterospermopsis australiensis*																	S																
13 *Oligosphaeridium* sp. AB																								F									
14 *Oligosphaeridium irregulare*																								S				F					
15 *Tenua hystrix*																								A				S					
16 *Oligosphaeridium anthophorum*																											R						
17 *Oligosphaeridium pulcherrimum*																												O			S		
18 *Muderongia* sp. A																												S					
19 Acanthomorph acritarchs																																	
20 *Muderongia tetracantha*																																	
21 *Oligosphaeridium totum* subsp. *totum*																																	
22 *Tenua* sp. A																																	
23 *Gardodinium eisenackii*																																	
24 *Palaeostomocystis fragilis*																																	
25 *Leiofusa jurassica*																																	
26 *Chlamydophorella nyei*																																	
27 *Dictyopyxidia imperfecta* sp. nov.																																	
28 *Micrhystridium* sp. A																																	
29 *Senoniasphaera microreticulata* sp. nov.																																	
30 *Cleistosphaeridium polypes* subsp. *polypes*																																	
31 *Tanyosphaeridium* sp. B of Brideaux, 1971b																																	
32 *Microdinium spinosum* sp. nov.																																	
33 *Apteodinium maculatum*																																	
34 *Cleistosphaeridium ancoriferum*																																	
35 *Gonyaulacysta helicoidea*																																	
36 *Gonyaulacysta hyalodermopsis*																																	
37 *Hystrichokolpoma ferox*																																	
38 *Leptodinium cancellatum* sp. nov.																																	
39 *Leptodinium delicatum*																																	
40 *Leptodinium modicum* sp. nov.																																	
41 *Oligosphaeridium asterigium*																																	
42 *Pterodinium verrucosum* sp. nov.																																	
43 *Pterodinium* sp. cf. *P. aliferum*																																	
44 *Pterodinium* sp. A																																	
45 *Luxadinium primulum* gen. et sp. nov.																																	
46 *Cleistosphaeridium polypes* subsp. *clavulum*																																	
47 *Cleistosphaeridium* sp. AE																																	
48 *Tanyosphaeridium* sp. A of Brideaux, 1971b																																	
49 *Kalyptea* sp. A of Brideaux, 1971b																																	
50 *Scriniodinium rostratum* sp. nov.																																	
51 *Microdinium*? *crinitum*																																	
52 *Tanyosphaeridium* sp. C																																	
53 *Cyclonephelium compactum*																																	
54 *Spiniferites ramosus*																																	
55 *Palaeoperidinium* sp. A of Brideaux, 1971b																																	
56 *Canningia minor*																																	
57 *Conosphaeridium* sp. A																																	
58 *Fromea amphora*																																	
59 *Polysphaeridium laminaspinosum*																																	
60 *Canningia ringnesii*																																	
61 *Kalyptea monoceras*																																	
62 *Imbatodinium* sp. A																																	
63 *Lecaniella foveata*																																	
64 *Cleistosphaeridium*? *aciculare*																																	
65 *Scriniodinium campanula*																																	
66 *Oligosphaeridium*? sp. B of Brideaux, 1971b																																	

Section CR 10A-68:

SERIES																															
STAGE						ALBIAN																									
SUBSTAGE						LOWER ALBIAN																									
LITHOLOGIC UNITS																															
SECTION	CR 10A-68																														
GSC LOCALITY NUMBER		C-8473	C-8474	C-8475	C-8476	C-8477	C-8478	C-8480	C-8481	C-8482	C-8483	C-8484	C-8485	C-8486	C-8487	C-8488	C-8489	C-8490	C-8491	C-8492	C-8493	C-8494	C-8495	C-8496	C-8497		C-8498	C-8499	C-8500	C-8501	C-8502
PREPARATION NUMBER		6777	6778	6779	6780	6781	6782	6784	6785	6786	6787	6788	6789	6790	6791	6792	6793	6794	6795	6796	6797	6798	6799	6800	6801	6802	6803	6804	6805	6806	6807
SAMPLE FOOTAGE	NS	20-30	30-40	40-50	50-60	60-70	70-75	80-90	90-94	95-100	100-110	110-120	120-130	130-140	140-150	160-170	170-180	180-190	190-200	200-210	210-215	215-220	220-230	230-240	240-250	250	250-260	260-270	270-280	280-290	290-300
1 *Lunatadinium dissolutum*						S			×	×	×			×		×	×												×		
2 *Batioladinium jaegeri*		S	S		S	F	S		×	×				×									×								
3 *Cleistosphaeridium multispinosum*																															
4 *Cyclonephelium distinctum*																															
5 *Dingodinium cerviculum*						S			×																×						
6 *Dinoflagellates* unidentified/unidentifiable			F	S		R									×		×	×	×	×	×	×	×	×	×		×			×	×
7 *Microdinium opacum*			S		S	S													×												
8 *Odontochitina operculata*		S	O	F	S	R	F	F	×		×	×	×									×		×	×				×		
9 *Oligosphaeridium complex*		S	S	S	S	R	F	F						S											×						
10 *Oligosphaeridium*? sp. A of Brideaux, 1971b			S																												
11 *Astrocysta cretacea*		S	O	F	F	F	F	F	×	×		×	×	×	×		×							×					×	×	×
12 *Pterospermopsis australiensis*						×			×	×																					
13 *Oligosphaeridium* sp. AB																															
14 *Oligosphaeridium irregulare*																															
15 *Tenua hystrix*							S	S																							
16 *Oligosphaeridium anthophorum*																															
17 *Oligosphaeridium pulcherrimum*																															
18 *Muderongia* sp. A			O	F	F		F	×	×			R	×	×	×			×		×	×		×		×				×	×	
19 Acanthomorph acritarchs			S																												
20 *Muderongia tetracantha*			S		R																										
21 *Oligosphaeridium totum* subsp. *totum*			R	S		R																			×						
22 *Tenua* sp. A			O	S	S	F						×																		×	
23 *Gardodinium eisenackii*					S																										
24 *Palaeostomocystis fragilis*						S																									
25 *Leiofusa jurassica*							S																								
26 *Chlamydophorella nyei*										×																					
27 *Dictyopyxidia imperfecta* sp. nov.														S											×						
28 *Micrhystridium* sp. A																															
29 *Senoniasphaera microreticulata* sp. nov.																															
30 *Cleistosphaeridium polypes* subsp. *polypes*																															
31 *Tanyosphaeridium* sp. B of Brideaux, 1971b																															
32 *Microdinium spinosum* sp. nov.																															
33 *Apteodinium maculatum*																															
34 *Cleistosphaeridium ancoriferum*																															
35 *Gonyaulacysta helicoidea*																															
36 *Gonyaulacysta hyalodermopsis*																															
37 *Hystrichokolpoma ferox*																															
38 *Leptodinium cancellatum* sp. nov.																															
39 *Leptodinium delicatum*																															
40 *Leptodinium modicum* sp. nov.																															
41 *Oligosphaeridium asterigium*																															
42 *Pterodinium verrucosum* sp. nov.																															
43 *Pterodinium* sp. cf. *P. aliferum*																															
44 *Pterodinium* sp. A																															
45 *Luxadinium primulum* gen. et sp. nov.																															
46 *Cleistosphaeridium polypes* subsp. *clavulum*																															
47 *Cleistosphaeridium* sp. AE																															
48 *Tanyosphaeridium* sp. A of Brideaux, 1971b																															
49 *Kalyptea* sp. A of Brideaux, 1971b																															
50 *Scriniodinium rostratum* sp. nov.																															
51 *Microdinium*? *crinitum*																															
52 *Tanyosphaeridium* sp. C																															
53 *Cyclonephelium compactum*																															
54 *Spiniferites ramosus*																															
55 *Palaeoperidinium* sp. A of Brideaux, 1971b																															
56 *Canningia minor*																															
57 *Conosphaeridium* sp. A																															
58 *Fromea amphora*																															
59 *Polysphaeridium laminaspinosum*																															
60 *Canningia ringnesii*																															
61 *Kalyptea monoceras*																															
62 *Imbatodinium* sp. A																															
63 *Lecaniella foveata*																															
64 *Cleistosphaeridium*? *aciculare*																															
65 *Scriniodinium campanula*																															
66 *Oligosphaeridium*? sp. B of Brideaux, 1971b																															

Sections CR 11A-68 and CR 12A-68:

SERIES																												
STAGE																												
SUBSTAGE										MIDDLE ALBIAN																		
LITHOLOGIC UNITS																											HORTON RIVER FORMATION	
SECTION	CR 11A-68								CR 12A-68																			
GSC LOCALITY NUMBER	C-8503	C-8504	C-8505	C-8506	C-8507	C-8508	C-8509		C-8510	C-8511	C-8512	C-8513	C-8514	C-8515	C-8516	C-8517	C-8518	C-8519	C-8520	C-8521	C-8522	C-8523	C-8524	C-8525	C-8526	C-8527	C-8528-30	C-8531
PREPARATION NUMBER	6825	6826	6827	6828	6829	6830	6831		6832	6833	6834	6835	6836	6837	6838	6839	6840	6841	6842	6843	6844	6845	6846	6847	6848	6849	6850	6851
SAMPLE FOOTAGE	5-10	10-20	20-30	30-40	40-50	50-60	60-70	NS	5-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100-110	110-120	120-130	130-140	140-150	150-160	160-170	172-180	180-195	195
1 *Lunatadinium dissolutum*																				S								
2 *Batioladinium jaegeri*	×																×					S						
3 *Cleistosphaeridium multispinosum*							S																				C	
4 *Cyclonephelium distinctum*																												
5 *Dingodinium cerviculum*																												
6 *Dinoflagellates* unidentified/unidentifiable		S	S			R			R	S	R	S	R					R			S					S	F	R
7 *Microdinium opacum*						S									×	×												
8 *Odontochitina operculata*	R	S			R	R					S						×	×					S		×		R	
9 *Oligosphaeridium complex*		S	×	R			S				×		S	S	×	×		S	×		S	×	S		R		O	O
10 *Oligosphaeridium*? sp. A of Brideaux, 1971b																												
11 *Astrocysta cretacea*	R	R	×	R	R	F	R											R	S	×	S	×	F	R	×	S		
12 *Pterospermopsis australiensis*																												R
13 *Oligosphaeridium* sp. AB																												
14 *Oligosphaeridium irregulare*																												
15 *Tenua hystrix*																												
16 *Oligosphaeridium anthophorum*																												
17 *Oligosphaeridium pulcherrimum*																												
18 *Muderongia* sp. A					R																							
19 Acanthomorph acritarchs													R					F	O	×	O	×	C	×	O	×		S
20 *Muderongia tetracantha*																												
21 *Oligosphaeridium totum* subsp. *totum*											S																	
22 *Tenua* sp. A				S	S																		S	S				
23 *Gardodinium eisenackii*						S									×	×	×		S		×	×	S		×	×		×
24 *Palaeostomocystis fragilis*																												
25 *Leiofusa jurassica*					S																							
26 *Chlamydophorella nyei*																											S	R
27 *Dictyopyxidia imperfecta* sp. nov.	×			S																							R	
28 *Micrhystridium* sp. A																			R	R	O	R	C	F	O	R		
29 *Senoniasphaera microreticulata* sp. nov.																								O			D	D
30 *Cleistosphaeridium polypes* subsp. *polypes*																											O	
31 *Tanyosphaeridium* sp. B of Brideaux, 1971b																											F	
32 *Microdinium spinosum* sp. nov.																												R
33 *Apteodinium maculatum*																												
34 *Cleistosphaeridium ancoriferum*																												
35 *Gonyaulacysta helicoidea*																												
36 *Gonyaulacysta hyalodermopsis*																												
37 *Hystrichokolpoma ferox*																												
38 *Leptodinium cancellatum* sp. nov.																												
39 *Leptodinium delicatum*																												
40 *Leptodinium modicum* sp. nov.																												
41 *Oligosphaeridium asterigium*																												
42 *Pterodinium verrucosum* sp. nov.																												
43 *Pterodinium* sp. cf. *P. aliferum*																												
44 *Pterodinium* sp. A																												
45 *Luxadinium primulum* gen. et sp. nov.																												
46 *Cleistosphaeridium polypes* subsp. *clavulum*																												
47 *Cleistosphaeridium* sp. AE																												
48 *Tanyosphaeridium* sp. A of Brideaux, 1971b																												
49 *Kalyptea* sp. A of Brideaux, 1971b																												
50 *Scriniodinium rostratum* sp. nov.																												
51 *Microdinium*? *crinitum*																												
52 *Tanyosphaeridium* sp. C																												
53 *Cyclonephelium compactum*																												
54 *Spiniferites ramosus*																												
55 *Palaeoperidinium* sp. A of Brideaux, 1971b																												
56 *Canningia minor*																												
57 *Conosphaeridium* sp. A																												
58 *Fromea amphora*																												
59 *Polysphaeridium laminaspinosum*																												
60 *Canningia ringnesii*																												
61 *Kalyptea monoceras*																												
62 *Imbatodinium* sp. A																												
63 *Lecaniella foveata*																												
64 *Cleistosphaeridium*? *aciculare*																												
65 *Scriniodinium campanula*																												
66 *Oligosphaeridium*? sp. B of Brideaux, 1971b																												

Sections CR 14A-68 and CR 15A-68:

SERIES																										
STAGE																										
SUBSTAGE																										
LITHOLOGIC UNITS																										
SECTION	CR 14A-68													CR 15A-68												
GSC LOCALITY NUMBER		C-8532	C-8533	C-8534	C-8535	C-8536	C-8537	C-8538	C-8539	C-8540	C-8541	C-8542	C-8543		C-8544	C-8545	C-8546	C-8547	C-8548-49	C-8550	C-8551	C-8552	C-8553	C-8554	C-8555	C-8556
PREPARATION NUMBER		P851-1	P851-2	P851-3	P851-4	P851-5	P851-6	P851-7	P851-8	P851-9	P851-10	P851-11	P851-12		6884	6885	6886	6887	6888	6889	6890	6891	6892	6893	6894	6895
SAMPLE FOOTAGE	NS	10-20	20-30	30-37	37-45	45-50	50-60	70-80	80-90	90-100	100-110	110-120	120-125	NS	30-37	38-50	50-60	60-70	70-80	80-90	90-100	100-110	110-120	120-130	130-140	140
1 *Lunatadinium dissolutum*							S											S								
2 *Batioladinium jaegeri*							R		S		F					R	C						S	R	×	F
3 *Cleistosphaeridium multispinosum*							×					S			C	O		R		O		F		R	F	O
4 *Cyclonephelium distinctum*																	S			S	F					R
5 *Dingodinium cerviculum*		R						S																		
6 *Dinoflagellates* unidentified/unidentifiable		O	O	O	O	×	×	×	O	O	O				F	S		F			F		S	R		F
7 *Microdinium opacum*															O	C	C	F	F		F	O	O	F	O	O
8 *Odontochitina operculata*		S				F	F	F	F	R	R	F			S	R		R		R	F	F	S		R	O
9 *Oligosphaeridium complex*		S				S		S	F	S	R				F	F	O	S	S	S	O	F	O	F	F	×
10 *Oligosphaeridium*? sp. A of Brideaux, 1971b																										
11 *Astrocysta cretacea*															R	F		F	S		F		F	F	C	O
12 *Pterospermopsis australiensis*		S														S	R	F	S		F	×		S		
13 *Oligosphaeridium* sp. AB		F				S	S	F		×	S															
14 *Oligosphaeridium irregulare*																										
15 *Tenua hystrix*																										
16 *Oligosphaeridium anthophorum*																										
17 *Oligosphaeridium pulcherrimum*																										
18 *Muderongia* sp. A																										
19 Acanthomorph acritarchs			F	F				S							S	F		F	×	S	R			S		
20 *Muderongia tetracantha*																										
21 *Oligosphaeridium totum* subsp. *totum*																										
22 *Tenua* sp. A									F							S										
23 *Gardodinium eisenackii*		F	F	O	O	O	C	O	F	O		F	S			S	×		×							
24 *Palaeostomocystis fragilis*		S		S				F	F		R	F			S	R	O	O					S	S	×	R
25 *Leiofusa jurassica*																			S							
26 *Chlamydophorella nyei*		O	F					S	S		S		S		F	F	O	S	S	S	S	R	F	F	F	
27 *Dictyopyxidia imperfecta* sp. nov.						O	F	O	O	O	R				O	F		S			S	S	R	S	C	O
28 *Micrhystridium* sp. A																R										
29 *Senoniasphaera microreticulata* sp. nov.		A	A	C	C	O	C	C	A	C	C	C	O													
30 *Cleistosphaeridium polypes* subsp. *polypes*		F	F	R			R	S	S								F									
31 *Tanyosphaeridium* sp. B of Brideaux, 1971b																									S	
32 *Microdinium spinosum* sp. nov.															O	O	O	R	×			S		S		
33 *Apteodinium maculatum*		F	F	S			F	F	R	R	R	F	S													
34 *Cleistosphaeridium ancoriferum*		F	F	F			F			S	S															
35 *Gonyaulacysta helicoidea*		S	S																						S	
36 *Gonyaulacysta hyalodermopsis*		F	F	F	O	F	F	F	F	F	F															
37 *Hystrichokolpoma ferox*		S							R																	
38 *Leptodinium cancellatum* sp. nov.		S	S	O	O	F	F	F	F		R	S														
39 *Leptodinium delicatum*		O	R	F		S		F	R																	
40 *Leptodinium modicum* sp. nov.		F	F	R	R	F	F	F	F	R	R	S			S	S	F	×	S		S	F		F	×	S
41 *Oligosphaeridium asterigium*		F			S		S																			
42 *Pterodinium verrucosum* sp. nov.		O	C	C	R	F	F	F	R	F	F	S														
43 *Pterodinium* sp. cf. *P. aliferum*		F	O	S	S	R	F		R			S														
44 *Pterodinium* sp. A		S	S	S	S			R	S	S																
45 *Luxadinium primulum* gen. et sp. nov.		F	F			S	F	C	C	O	C	O														
46 *Cleistosphaeridium polypes* subsp. *clavulum*			F		S																					
47 *Cleistosphaeridium* sp. AE			S						S																	
48 *Tanyosphaeridium* sp. A of Brideaux, 1971b			S																					S	S	
49 *Kalyptea* sp. A of Brideaux, 1971b				R	S	S	F	R																		
50 *Scriniodinium rostratum* sp. nov.				R	R	O	C	O	C	C	C	C	S													
51 *Microdinium*? *crinitum*					S			S																		
52 *Tanyosphaeridium* sp. C					S													R								
53 *Cyclonephelium compactum*						S	F										F			C	C					
54 *Spiniferites ramosus*						S					S				R	S	R		S	R		F	S		S	×
55 *Palaeoperidinium* sp. A of Brideaux, 1971b							F																			
56 *Canningia minor*								O	F	S	R	F														
57 *Conosphaeridium* sp. A								S	S																	
58 *Fromea amphora*								F		R	S										×				R	
59 *Polysphaeridium laminaspinosum*								S																		
60 *Canningia ringnesii*									F	F		S														
61 *Kalyptea monoceras*									S								S									
62 *Imbatodinium* sp. A										R							R			S			F	R		
63 *Lecaniella foveata*										S		S	S													
64 *Cleistosphaeridium*? *aciculare*																S					F					
65 *Scriniodinium campanula*																					S					
66 *Oligosphaeridium*? sp. B of Brideaux, 1971b																										S

LEGEND

Presence in sample .... ×
Single occurrence .... S
Rare .... R
Few .... F
Occasional .... O
Common C
Abundant .... A
Dominant .... D
Questionable identification ...... Q

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