Table DR-1. Laser total-fusion $^{40}Ar/^{39}Ar$ analytical data for sanidine clasts (melted microcline) from the 374.8 and 470.0 m depths of the Manson M-1 core

Exp. No.	Irrad. No.	Depth ft	J	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$	$^{40}Ar^*/^{39}Ar$	$^{40}Ar^*$ %	Age Ma	Error 1 sigma
93Z0767	GLN9-5	374.8	6.21E-03	4.208E-03	2.805E-03	6.7605	89.0	74.17	0.50
93Z0808	JDO13-9	470.0	7.56E-03	1.098E-02	3.922E-03	5.5144	82.5	73.66	0.47
93Z0873B	JDO13-9	470.0	7.56E-03	9.326E-03	3.389E-03	5.5549	84.6	74.18	0.45
93Z0873C	JDO13-9	470.0	7.56E-03	1.297E-02	1.790E-03	5.4856	91.1	73.39	0.49
93Z0873D	JDO13-9	470.0	7.56E-03	4.571E-03	1.185E-03	5.6014	94.0	74.79	0.56
93Z0873E	JDO13-9	470.0	7.56E-03	1.360E-02	8.124E-04	5.5213	95.7	73.74	0.46
93Z0873F	JDO13-9	470.0	7.56E-03	1.313E-02	1.041E-03	5.5607	94.6	74.26	0.45
93Z0873H	JDO13-9	470.0	7.56E-03	7.635E-03	7.561E-04	5.5930	96.0	74.68	0.48
93Z0873I	JDO13-9	470.0	7.56E-03	3.883E-03	2.378E-03	5.5756	88.7	74.45	0.49
93Z0873J	JDO13-9	470.0	7.56E-03	5.208E-03	6.269E-03	5.5259	74.8	73.80	0.56
94Z0212	GLN12-3	*374.8*	*6.92E-03*	*2.261E-03*	*2.276E-03*	*5.9814*	*89.8*	*73.19*	*0.83*
94Z0213	GLN12-3	374.8	6.92E-03	3.616E-03	9.036E-04	6.0615	95.6	74.19	0.46
94Z0214	GLN12-3	374.8	6.92E-03	2.459E-03	8.805E-04	6.0938	95.8	74.58	0.66
94Z0215	GLN12-3	374.8	6.92E-03	4.592E-03	9.161E-04	6.0911	95.6	74.54	0.87
94Z0216	GLN12-3	374.8	6.92E-03	3.066E-03	2.033E-03	6.0766	90.9	74.36	0.61
95Z0351	GLN13-6	374.8	7.18E-03	3.920E-03	7.278E-04	5.8746	96.3	74.49	0.52
95Z0352	GLN13-6	374.8	7.18E-03	4.698E-03	8.558E-04	5.8272	95.7	73.90	0.46
95Z0353	GLN13-6	374.8	7.18E-03	4.035E-03	1.529E-03	5.8216	92.6	73.83	0.48
95Z0354	GLN13-6	374.8	7.18E-03	5.617E-03	1.232E-03	5.8411	94.0	74.07	0.44
95Z0355	GLN13-6	374.8	7.18E-03	3.403E-03	1.003E-03	5.8498	95.0	74.18	0.47
95Z0356	GLN13-6	374.8	7.18E-03	4.088E-03	8.328E-04	5.8824	95.8	74.59	0.48
95Z0624	JDO21-X	374.8	7.11E-03	4.578E-03	2.163E-03	5.8339	90.0	73.33	0.53
95Z0625	JDO21-X	374.8	7.11E-03	4.177E-03	2.564E-03	5.9356	88.6	74.58	0.59
95Z0626	JDO21-X	374.8	7.11E-03	3.622E-03	2.675E-03	5.9083	88.1	74.24	0.47
95Z0627	JDO21-X	374.8	7.11E-03	4.105E-03	2.483E-03	5.9368	88.9	74.59	0.48
95Z0628	JDO21-X	374.8	7.11E-03	4.278E-03	2.570E-03	5.8864	88.5	73.97	0.47
95Z0629	JDO21-X	374.8	7.11E-03	2.974E-03	3.508E-03	5.9042	85.0	74.19	0.45
96Z0176	JDO22-Y	374.8	7.08E-03	6.139E-03	1.839E-03	5.9319	91.5	74.16	0.65
96Z0177	JDO22-Y	374.8	7.08E-03	4.600E-03	2.290E-03	5.9560	89.7	74.46	0.51
96Z0178	JDO22-Y	374.8	7.08E-03	3.750E-03	1.310E-03	5.9342	93.8	74.19	0.66
96Z0179	JDO22-Y	374.8	7.08E-03	4.520E-03	1.910E-03	5.9072	91.2	73.86	0.55
96Z0180	JDO22-Y	374.8	7.08E-03	4.680E-03	1.400E-03	5.9088	93.3	73.88	0.52
96Z0203	JDO22-Y	374.8	7.08E-03	1.440E-02	1.720E-03	5.8936	91.9	73.70	0.48
96Z0204	JDO22-Y	*374.8*	*7.08E-03*	*4.303E-03*	*1.880E-03*	*5.9003*	*91.3*	*73.78*	*0.53*
					Weighted mean			**74.11**	**(75.17)**
					Sigma best			**0.09**	

Notes: Ages relative to a fluence-monitor age of 27.92 Ma for Taylor Creek Rhyolite based on an age for Mmhb-1 hornblende of 513.9 Ma.

* Radiogenic.

Age in parentheses relative to a fluence-monitor age for Mmhb-1 hornblende of 520.4 Ma. Analysts G.A. Izett and G.B. Dalrymple.

Table DR-2. Laser total-fusion $^{40}Ar/^{39}Ar$ analytical data for sanidine and biotite from a bentonite bed in the upper part of the Gregory Member of the Pierre Shale (zone of *Baculites scotti*) at Oacoma, South Dakota

Exp. No.	Irrad. No	J	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$	$^{40}Ar^*/^{39}Ar$	$^{40}Ar^*$ %	Age Ma	Error 1 sigma
Sanidine								
94Z0266	GLN12-2	6.92E-03	7.876E-03	7.530E-04	6.0992	96.4	74.54	0.49
94Z0267	GLN12-2	6.92E-03	7.517E-03	3.214E-05	6.0833	99.7	74.34	0.53
94Z0269	GLN12-2	6.92E-03	7.930E-03	8.599E-05	6.0678	99.4	74.16	0.51
94Z0270	GLN12-2	6.92E-03	8.119E-03	1.459E-07	6.1071	99.9	74.63	0.42
94Z0271	GLN12-2	6.92E-03	8.437E-03	3.568E-05	6.0969	99.7	74.51	0.47
94Z0247	GLN12-11	6.95E-03	1.031E-02	6.194E-05	6.0480	99.6	74.28	0.44
94Z0248	GLN12-11	6.95E-03	8.913E-03	5.634E-05	6.0394	99.6	74.17	0.44
94Z0249	GLN12-11	6.95E-03	9.070E-03	1.880E-06	6.1016	99.9	74.92	0.42
94Z0250	GLN12-11	6.95E-03	8.965E-03	6.814E-05	6.0712	99.5	74.56	0.46
95Z0321	GLN13-2	7.15E-03	6.733E-03	1.018E-04	5.9093	99.3	74.61	0.50
95Z0322	GLN13-2	7.15E-03	8.961E-03	2.725E-04	5.8988	98.5	74.48	0.50
95Z0323	GLN13-2	7.15E-03	7.355E-03	1.110E-04	5.9035	99.3	74.54	0.43
95Z0324	GLN13-2	7.15E-03	8.676E-03	7.508E-05	5.9025	99.4	74.53	0.45
				Weighted mean			**74.49**	**(75.55)**
				Sigma best			**0.13**	
Biotite								
96Z0538	JDO24-O	6.70E-03	1.340E-02	4.070E-04	6.3298	98.00	74.90	0.51
96Z0539	JDO24-O	6.70E-03	6.540E-03	4.730E-04	6.3462	97.70	75.10	0.50
96Z0561	JDO24-O	6.70E-03	9.150E-03	5.090E-04	6.3601	97.60	75.30	0.55
96Z0562	JDO24-O	6.70E-03	1.013E-02	7.750E-04	6.3346	96.40	75.00	0.56
96Z0563	JDO24-O	6.70E-03	1.890E-02	5.730E-04	6.3279	97.30	74.90	0.45
96Z0564	JDO24-O	6.70E-03	1.320E-02	4.550E-04	6.3372	97.80	75.00	0.62
				Weighted mean			**75.02**	**(76.10)**
				Sigma best			**0.06**	

Notes. Ages relative to a fluence-monitor age of 27.92 Ma for Taylor Creek Rhyolite based on an age for Mmhb-1 hornblende of 513.9 Ma.

* Radiogenic.

Ages in parentheses relative to a fluence-monitor age for Mmhb-1 hornblende of 520.4 Ma. Analyst G.A. Izett.

Table DR-3. Laser total-fusion $^{40}Ar/^{39}Ar$ analytical data for sanidine and biotite from the Lower Oacoma bentonite bed (zone of *Didymoceras nebrascense*) in the lower part of the DeGrey Member at Oacoma, South Dakota, and biotite from the Lower Agency bentonite bed in the lower part of the DeGrey Member near Rousseau,South Dakota

Exp. No.	Irrad. No.	J	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$	$^{40}Ar^*/^{39}Ar$	$^{40}Ar^*$ %	Age Ma	Error 1 sigma
Sanidine from the Lower Oacoma bentonite bed								
96Z0154	JDO22-X	7.12E-03	9.329E-03	8.577E-05	5.8573	99.4	73.72	0.56
96Z0155	JDO22-X	7.12E-03	2.560E-02	1.278E-04	5.8364	99.2	73.46	0.48
96Z0156	JDO22-X	7.12E-03	1.502E-02	7.766E-05	5.8568	99.5	73.71	0.43
96Z0157	JDO22-X	7.12E-03	1.659E-02	5.257E-05	5.8638	99.6	73.80	0.45
96Z0158	JDO22-X	7.12E-03	8.361E-03	1.205E-04	5.8412	99.3	73.52	0.47
96Z0159	JDO22-X	7.12E-03	4.081E-02	7.602E-05	5.8630	99.5	73.79	0.46
96Z0160	JDO22-X	7.12E-03	1.996E-02	2.145E-05	5.8642	99.8	73.80	0.45
96Z0161	JDO22-X	7.12E-03	4.493E-02	1.753E-05	5.8696	99.8	73.87	0.45
96Z0162	JDO22-X	7.12E-03	2.073E-02	2.816E-04	5.8363	98.5	73.46	0.48
96Z0170	JDO22-X	7.12E-03	8.104E-03	2.189E-04	5.8376	98.8	73.47	0.44
96Z0171	JDO22-X	7.12E-03	8.721E-03	1.008E-04	5.8615	99.4	73.77	0.50
96Z0172	JDO22-X	7.12E-03	8.807E-03	2.737E-04	5.8533	98.5	73.67	0.46
96Z0173	JDO22-X	7.12E-03	3.724E-02	1.195E-04	5.8368	99.3	73.47	0.47
96Z0174	JDO22-X	7.12E-03	8.290E-03	2.110E-04	5.8428	98.8	73.54	0.45
96Z0175	JDO22-X	7.12E-03	1.153E-02	4.481E-04	5.8445	97.7	73.56	0.48
				Weighted mean			**73.64**	**(74.69)**
				Sigma best			**0.12**	
Biotite from the Lower Oacoma bentonite bed								
96Z0181	JDO22-S	7.10E-03	1.025E-02	4.158E-04	5.8685	97.8	73.62	0.45
96Z0182	JDO22-S	7.10E-03	1.151E-02	2.928E-03	5.8823	87.1	73.81	0.51
96Z0183	JDO22-S	7.10E-03	1.055E-02	4.632E-04	5.8781	97.6	73.76	0.48
96Z0184	JDO22-S	7.10E-03	1.908E-02	4.783E-04	5.8358	97.5	73.24	0.45
96Z0185	JDO22-S	7.10E-03	1.435E-02	5.826E-04	5.8811	97.0	73.80	0.44
				Weighted mean			**73.64**	**(74.69)**
				Sigma best			**0.12**	
Biotite from the Lower Agency bentonite bed								
96Z0519	JDO24-L	6.70E-03	3.370E-03	4.080E-04	6.2776	98.0	74.32	0.81
96Z0520	JDO24-L	6.70E-03	2.570E-02	2.170E-04	6.3273	98.9	74.90	0.50
96Z0521	JDO24-L	6.70E-03	4.850E-03	5.880E-04	6.2436	97.2	73.93	0.59
96Z0527	JDO24-L	6.70E-03	1.240E-02	4.960E-04	6.2557	97.6	74.07	0.58
96Z0529	JDO24-L	6.70E-03	2.130E-02	4.260E-04	6.2911	97.9	74.48	0.61
				Weighted mean			**74.38**	**(75.44)**
				Sigma best			**0.27**	

Notes: Ages relative to a fluence-monitor age of 27.92 Ma for Taylor Creek Rhyolite based on an age for Mmhb-1 hornblende of 513.9 Ma.

* Radiogenic.

Ages in parentheses relative to a fluence-monitor age for Mmhb-1 hornblende of 520.4 Ma

Table DR-4. Laser total-fusion $^{40}Ar/^{39}Ar$ analytical data for sanidine and biotite from the Lower micaceous bentonite bed (zone of *Didymoceras cheyennense*) in the upper part of the DeGrey Member at Fort Pierre, South Dakota

Exp. No.	Irrad. No.	J	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$	$^{40}Ar^*/^{39}Ar$	$^{40}Ar^*$ %	Age Ma	Error 1 sigma
Sanidine								
95Z0598	JDO21-Y	7.12E-03	9.238E-02	1.725E-04	5.8604	99.10	73.77	0.44
95Z0599	JDO21-Y	7.12E-03	8.097E-02	1.450E-04	5.8586	99.23	73.74	0.45
95Z0600	JDO21-Y	7.12E-03	7.334E-02	1.049E-04	5.8916	99.42	74.15	0.61
95Z0601	JDO21-Y	7.12E-03	2.225E-01	4.608E-04	5.8496	97.86	73.63	0.54
95Z0602	JDO21-Y	7.12E-03	8.179E-02	1.868E-04	5.8799	99.03	74.01	0.45
95Z0603	JDO21-Y	7.12E-03	9.956E-02	3.497E-04	5.8801	98.25	74.01	0.51
95Z0604	JDO21-S	7.11E-03	8.723E-02	2.988E-04	5.8885	98.49	73.97	0.44
95Z0605	JDO21-S	7.11E-03	7.950E-02	2.433E-04	5.8573	98.74	73.59	0.44
95Z0606	JDO21-S	7.11E-03	1.396E-01	1.358E-04	5.8740	99.35	73.79	0.43
95Z0607	*JDO21-S*	*7.11E-03*	*3.952E-02*	*9.967E-09*	*5.9012*	*99.90*	*74.13*	*0.42*
95Z0608	JDO21-S	7.11E-03	2.173E-02	4.023E-04	5.8225	97.88	73.16	0.58
95Z0609	JDO21-S	7.11E-03	1.059E-01	1.375E-08	5.9151	99.90	74.30	0.42
95Z0618	JDO21-S	7.10E-03	8.910E-02	3.010E-04	5.8321	98.46	73.20	0.45
95Z0619	JDO21-S	7.10E-03	3.920E-02	7.870E-05	5.8866	99.51	73.87	0.46
95Z0620	JDO21-S	7.10E-03	1.737E-01	3.660E-04	5.8594	98.27	73.54	0.45
95Z0621	JDO21-S	7.10E-03	8.160E-02	3.390E-04	5.8720	98.28	73.69	0.48
95Z0622	JDO21-S	7.10E-03	1.359E-01	9.360E-05	5.8816	99.56	73.81	0.43
				Weighted mean			**73.80**	**(74.85)**
				Sigma best			**0.11**	
Biotite								
95Z0652	JDO21-R	7.10E-03	1.957E-02	1.268E-03	5.8713	93.89	73.64	0.51
95Z0653	JDO21-R	7.10E-03	6.024E-03	9.524E-04	5.8429	95.27	73.29	0.66
95Z0654	JDO21-R	7.10E-03	9.741E-03	1.297E-03	5.8934	93.77	73.91	0.57
95Z0655	JDO21-R	7.10E-03	1.528E-02	1.186E-03	5.8848	94.26	73.80	0.46
95Z0656	JDO21-R	7.10E-03	1.243E-02	8.019E-04	5.9155	96.02	74.18	0.44
95Z0657	JDO21-R	7.10E-03	1.392E-02	9.979E-04	5.8706	95.09	73.63	0.46
	–			Weighted mean			**73.79**	**(74.84)**
				Sigma best			**0.20**	

Notes: Ages relative to a fluence-monitor age of 27.92 Ma for Taylor Creek Rhyolite based on an age for Mmhb-1 hornblende of 513.9 Ma.

* Radiogenic.

Ages in parentheses relative to a fluence-monitor age for Mmhb-1 hornblende of 520.4 Ma. Analyst G.A. Izett.

Table DR-5. Laser total-fusion $^{40}Ar/^{39}Ar$ analytical data for sanidine from a bentonite bed in the zone of *Didymoceras nebrascense* north of Trinidad, Colorado, and sanidine from another bentonite bed in the lowest part of the zone of *Exiteloceras jenneyi* (Pierre Shale) south of Colorado Springs, Colorado

Exp. No.	Irrad. No.	J	$^{37}Ar/^{39}Ar$	$^{38}Ar/^{39}Ar$	$^{40}Ar^*/^{39}Ar$	$^{40}Ar^*$ %	Age Ma	Error 1 sigma
Sanidine from bentonite bed in the lowest part of the zone of *Exiteloceras jenneyi* from Colorado								
94Z0217	GLN12-4	6.94E-03	5.944E-03	1.653E-07	6.0593	99.90	74.27	0.42
94Z0218	GLN12-4	6.94E-03	6.550E-03	1.930E-07	6.0758	99.90	74.47	0.21
94Z0219	GLN12-4	6.94E-03	6.520E-03	1.900E-07	6.0929	100.00	74.56	0.50
94Z0245	GLN12-4	6.94E-03	8.063E-03	6.460E-05	6.0460	99.50	74.11	0.47
94Z0246	GLN12-4	6.94E-03	7.625E-03	4.084E-05	6.0290	99.70	73.90	0.45
94Z0272	GLN12-12	6.96E-03	5.874E-03	3.066E-07	6.0427	99.90	74.30	0.42
94Z0273	GLN12-12	6.96E-03	1.739E-02	5.907E-05	6.0189	99.60	74.01	0.44
94Z0274	GLN12-12	6.96E-03	1.777E-02	9.889E-05	6.0122	99.40	73.93	0.45
94Z0275	GLN12-12	6.96E-03	7.176E-03	1.017E-04	6.0115	99.40	73.92	0.45
94Z0276	GLN12-12	6.96E-03	8.128E-03	7.207E-05	6.0040	99.50	73.83	0.44
95Z0329	GLN13-8	7.18E-03	8.368E-03	1.019E-04	5.8562	99.30	74.30	0.48
95Z0330	GLN13-8	7.18E-03	6.690E-03	3.999E-04	5.8774	97.80	74.57	0.49
95Z0331	GLN13-8	7.18E-03	7.971E-03	3.030E-04	5.8516	98.30	74.24	0.44
95Z0332	GLN13-8	7.18E-03	2.378E-02	4.860E-05	5.8632	99.60	74.39	0.46
95Z0333	GLN13-8	7.18E-03	2.394E-03	7.040E-04	5.7461	96.30	72.93	0.52
95Z0624	JDO21-X	7.11E-03	4.580E-03	2.160E-03	5.8339	90.00	73.33	0.53
95Z0625	JDO21-X	7.11E-03	4.180E-03	2.560E-03	5.9356	88.56	74.58	0.59
95Z0626	JDO21-X	7.11E-03	3.620E-03	2.680E-03	5.9083	88.08	74.24	0.47
95Z0627	JDO21-X	7.11E-03	4.110E-03	2.480E-03	5.9368	88.88	74.59	0.48
95Z0628	JDO21-X	7.11E-03	4.280E-03	2.570E-03	5.8864	88.46	73.97	0.47
95Z0629	JDO21-X	7.11E-03	2.974E-03	3.510E-03	5.9042	84.96	74.19	0.45
				Weighted mean			**74.18**	**(75.24)**
				Sigma best			**0.09**	
Plagioclase from bentonite bed in the zone of *Didymoceras nebrascense* from Colorado								
94Z0277	GLN12-14	6.95E-03	8.972E-01	1.115E-03	6.0606	95.80	74.43	0.45
94Z0278	GLN12-14	6.95E-03	9.840E-01	7.326E-04	6.0319	97.60	74.08	0.43
94Z0279	GLN12-14	6.95E-03	9.849E-01	8.868E-04	6.0465	96.90	74.26	0.44
94Z0280	GLN12-14	6.95E-03	1.074E+00	7.546E-04	6.0238	97.60	73.99	0.45
94Z0281	GLN12-14	6.95E-03	8.967E-01	9.977E-04	6.0183	96.30	73.92	0.45
95Z0336	GLN13-3	7.16E-03	1.012E+00	1.076E-03	5.8636	95.90	74.19	0.47
95Z0337	GLN13-3	7.16E-03	9.962E-01	1.050E-03	5.8577	96.00	74.12	0.46
95Z0339	GLN13-3	7.16E-03	9.609E-01	1.124E-03	5.8570	95.60	74.11	0.47
95Z0340	GLN13-3	7.16E-03	9.133E-01	2.919E-03	5.8553	87.90	74.09	0.50
95Z0341	GLN13-3	7.16E-03	9.547E-01	9.911E-04	5.8589	96.20	74.13	0.46
				Weighted mean			**74.13**	**(75.19)**
				Sigma best			**0.14**	

Notes: Ages relative to a fluence-monitor age of 27.92 Ma for Taylor Creek Rhyolite based on an age for Mmhb-1 hornblende of 513.9 Ma.

* Radiogenic.

Ages in parentheses relative to a fluence-monitor age for Mmhb-1 hornblende of 520.4 Ma. Analyst G.A. Izett.

Table DR-6. Ammonite collections from the Pierre Shale (Upper Cretaceous) in South Dakota and Nebraska.

Loc. No.	Location in South Dakota except where noted	Collectors and years	Remarks
22181	NW 1/4 Sec. 16, T. 30 N., R. 6 W., Knox Co., Neb.	W.A. Cobban, 1941	*Jeletzkytes nebrascensis* from concretion in silty shale in Elk Butte Member
D13495	SE 1/4 Sec. 9, T. 3 S., R. 24E., Jackson Co.	G.A. Izett and W.A. Cobban, 1993	*Baculites clinolobatus* from white limestone concretions in Mobridge Member
D13496	Southline Sec. 18, T. 2 S., R. 26 E., Jones Co.	G.A. Izett and W.A. Cobban, 1993	*Baculites clinolobatus* from white limestone concretions in Mobridge Member
D13497	NE 1/4 Sec. 31, T. 45 N., R. 27 E., Jones Co.	G.A. Izett and W.A. Cobban, 1993	*Baculites clinolobatus* from white limestone concretions in Mobridge Member
D13498	NW 1/4 Sec. 32, T. 2 S., R. 27 E., Jones Co.	G.A. Izett and W.A. Cobban, 1993	*Baculites clinolobatus* from white limestone concretions in Mobridge Member
D13598	C E 1/2 W 1/2 Sec. 20, T. 44 N., R. 29 E., Jones Co.	G.A. Izett, 1994	*Baculites clinolobatus* from white limestone concretions in Mobridge Member
D13597	SW 1/4 Sec. 23, T. 42 N., R. 29 W., Mellette Co.	G.A. Izett and W.A. Cobban, 1994	*Baculites clinolobatus* from white limestone concretions in Mobridge Member
D4971	NE 1/4 Sec. 21, T. 6 N., R. 29 E., Stanley Co.	W.A. Cobban, 1965	*Baculites grandis from phosphatic nodules near* the base of the Mobridge Member
D877	NW 1/4 Sec. 11, T. 1 N., R. 24 E., Haakon Co.	W.A. Cobban, 1956; G.A. Izett and W.A. Cobban, 1996	*Baculites baculus* and *Inoceramus typicus* in limestone concretions near top of Virgin Creek Member
Black Hills Institute	SE 1/4 Sec. 13, T. 105 N., R. 77 W., Lyman Co.	L. Marken, Reliance S. Dak.	*Baculites baculus* in shale of Virgin Creek Member
D13500	NW 1/4 Sec. 32, T. 3 S., R. 29 E., Jones Co.	G.A. Izett and W.A. Cobban, 1993	*Baculites eliasi* in Virgin Creek Member
D13599	SW 1/4 Sec. 5, T. 4 S., R. 29 E., Jones Co.	G.A. Izett, 1994	*Baculites eliasi* in Virgin Creek Member
D13499	SW 1/ 4 Sec. 24, T. 44 N., R. 9 E., Mellette Co.	G.A. Izett and W.A. Cobban, 1994	*Baculites eliasi* in Virgin Creek Member
D13501	NW 1/ sec. 33, T. 3 S., R. 29 E., Jones Co.	G.A. Izett and W.A. Cobban, 1994	*Baculites eliasi* in Virgin Creek Member
D13502	SW 1/4 Sec. 17, T. 43 N., R. 28 W., Mellette Co.	G.A. Izett, 1994	*Baculites eliasi* in Virgin Creek Member
D13578	NE 1/4 Sec. 12, T. 32 N., R. 7 W., Knox Co., Neb.	G.A. Izett, 1995; L.G. Schultz, 1963	*Baculites eliasi* in Virgin Creek Member
D4965	NE 1/4 Sec. 13, T. 102 N., R. 73 W., Lyman Co.	W.A. Cobban, 1965	*Baculites reesidei* and *Jeletzkytes brevis* from middle part of Verendrye Member
D4965	NW 1/4 Sec. 5, T. 3 N., R. 20 E., Stanley Co.	G.A. Izett, 1997	*Baculites reesidei* from middle part of Verendrye Member
D882	NE 1/4 Sec. 33, T. 5 N., R. 31 E., Stanley Co.	W.A. Cobban	*Baculites cuneatus* from base of the Verendrye Member
D844	Sec. 2, T. 110 N., R. 79 W., Hughes Co.	W.A. Cobban	*Baculites cuneatus* from lower part of Verendrye Member
D13506	SW 1/4 Sec. 33, T. 104 N., R. 74 W., Lyman Co.	G.A. Izett and W.A. Cobban, 1994	*Baculites compressus* from black manganese-rich concretions at top of DeGrey Member
D13507	NE 1/4 Sec. 17, T.107 N., R. 71 W., Buffalo Co.	G.A. Izett, 1996-97	*Baculites compressus* and *Jeletzkytes brevis* from black manganese-rich concretions in upper 2-3 m of DeGrey Member)
D13508	C S 1/2 Sec. 13, T .105 N., R. 71 W., Brule Co.	G.A. Izett and W.A. Cobban, 1994	*Baculites compressus* from black manganese-rich concretions at top of DeGrey Member
D13579	NW 1/4 Sec. 8, T. 103 N., R. 73 W., Lyman Co.	G.A. Izett and W.A. Cobban, 1994	*Baculites sp.* and *Scaphites sp.* from black manganese-rich concretions in upper part of DeGrey Member (Oacoma facies)
D13507	SE 1/4 Sec. 15, T.106 N., R. 71 W., Buffalo Co.	G.A. Izett and W.A. Cobban, 1993	*Baculites compressus* from black manganese-rich concretions at top of DeGrey Member)

Table DR-6 (Contd.)

Loc. No.	Location in South Dakota except where noted	Collectors and years	Remarks
D13641	SW 1/4 Sec. 6, T. 109 N., R. 75 W., Hughes Co.	W.A. Cobban, 1995	*Didymoceras cheyennse* from black manganese-rich concretions in the upper part of the DeGrey Member (Oacoma facies)
61S50	Center Sec. 9, T. 104 N., R. 72 W., Lyman Co.	R.E. Stevenson, 1961?	*Didymoceras cheyennense* from DeGrey Member (Oacoma facies) at the Manganese Pilot Plant north of I-90 west of Oacoma
D13440 D13441 D13577 D13583	E 1/2 Sec. 34 and W 1/2 Sec. 35, T. 107 N., R. 72 W., Lyman Co.	G.A. Izett and W.A. Cobban, 1993-94	*Baculites rugosus* (late form) from black manganese-rich concretions in upper part of DeGrey Member (Oacoma facies)
D13584	N 1/2 Sec. 9, T. 104 N., R. 72 W., Lyman Co.	G.A. Izett and W.A. Cobban, 1994	*Baculites* n. sp. (Gulf migrant) from black manganese-rich concretions in upper part of the DeGrey Member (Oacoma facies)
D13692	SE 1/4 Sec. 11, T. 107 N., R. 74 W., Lyman Co.	G.A. Izett, 1995	*Baculites* n. sp. (Gulf migrant) from black manganese-rich concretions in upper part of DeGrey Member (Oacoma facies)
D13686	NW 1/4 Sec. 19, T. 108 N., R. 72 W., Buffalo Co.	G.A. Izett and W.A. Cobban, 1993	*Baculites* n. sp. (Gulf migrant), *Scaphites* sp., and pachydiscid ammonite from DeGrey Member (Oacoma facies) concretions
D13443	SW 1/4 Sec. 25, T. 103N., R. 73 W., Black Dog Township, Lyman Co.	G.A. Izett and W.A. Cobban, 1993	*Baculites* n. sp. (Gulf migrant) from manganese-rich concretions in DeGrey Member (Oacoma facies)
D13748	SE 1/4 Sec. 30, T. 140 N., R. 58 W., Barnes Co., North Dakota	G.A. Izett, 1996	*Baculites* n. sp. (Gulf migrant) from black concretions in lower part of DeGrey Member (Oacoma facies) 3 m above top of Gregory Member
D13444	SW 1/4 Sec. 25, T. 103 N., R. 73 W., Lyman Co.	G.A. Izett and W.A. Cobban, 1993	*Menuites oralensis* and *Baculites scotti* from concretions 4 m below base of Crow Creek Member
D13585 D13638 D13756	SE 1/4 Sec. 15, T. 104 N., R. 71 W., Brule Co.	G.A. Izett, 1994, 1997	Fragment of *Didymoceras puebloense?*, *Oxybeloceras* sp., *Baculites scotti*, and *Baculites* sp. from 10 cm below Crow Creek Member
	SE 1/4 Sec. 15, T. 104 N., R. 71 W., Brule Co.	G.A. Izett, 1994	*Baculites scotti* on shale slope 3 m below Crow Creek Member
D13582 D13475	SW 1/4 Sec. 6, T. 109 N., R. 75 W. Hughes Co.	G.A. Izett, 1993	*Baculites scotti* from shale 10 m below base of Crow Creek Member in bluff along Lake Sharpe
D13476	SE 1/4 Sec. 13, T. 104 N., R. 72 W., Lyman Co.	G.A. Izett and W.A. Cobban, 1993	*Baculites scotti* and *Menuites oralensis* from shale 10-15 m below base of Crow Creek Member
D13505	SE 1/4 Sec. 15, T. 104 N., R. 71 W., Brule Co.	G.A. Izett, 1993	*Baculites scotti* and *Didymoceras archiacianum* from shale near base of bluff 10 m below base of the Crow Creek Member.
D13757	SE 1/4 Sec. 14, T. 104 N., R. 72 W., Brule Co.	G.A. Izett, 1996	One small ammonite *(Menuites?)*
D13753	SE 1/4 Sec. 6 and NE 1/4 Sec. 7 T. 109 N., R. 76 W., Hughes Co.	G.A. Izett, 1996	*Baculites gregoryensis* and *Didymoceras* sp.
D13476	SE 1/4 Sec. 13, T. 104 N., R. 72 W., Lyman Co.	G.A. Izett and W.A. Cobban, 1993	*Baculites gregoryensis* from Gregory Member about 18 m below base of Crow Creek Member
D4966	SW 1/4 Sec. 3, T. 103 N., R. 73 W., Lyman Co.	W.A. Cobban, 1965	*Baculites perplexus* from lower part of the Gregory Member

Note: Fossil identifications by W.A. Cobban.