Fossil Fusulinid Evaluation Results from the Provo and Nephi 30' x 60' Quadrangles, Utah

by

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INTRODUCTION

This Open-File Report makes available reports from fossil fusulinid evaluations completed to determine the age of rock samples collected during geologic investigations funded or partially supported by the Utah Geological Survey (UGS) and the U.S. Geological Survey National Cooperative Geologic Mapping Program (STATEMAP). Table 1 provides the sample numbers and locations for the fossil data. The references listed in table 1 generally provide additional information such as sample location, geologic setting, and significance or interpretation of the samples in the context of the area where they were collected. The fossil fusulinid reports were prepared by A.J. Wells, independent paleontologist, Parker, Colorado, under contract to the UGS (see appendix). Wells prepared and evaluated thin sections from rock samples submitted by the UGS. The UGS did not receive thin section slides from Wells. In rare cases, Wells evaluated fossils directly in rock slabs. These data are technical in nature and interpretation requires considerable training and experience in applicable paleontologic techniques and systematics, as well as an understanding of stratigraphic paleontology.

DISCLAIMER

This open-file release is intended as a data repository for information gathered in support of various UGS projects. The data are presented as received from A.J. Wells and do not necessarily conform to UGS technical, editorial, or policy standards; this should be considered by an individual or group planning to take action based on the contents of this report. The Utah Department of Natural Resources, Utah Geological Survey, makes no warranty, expressed or implied, regarding the suitability of this product for a particular use. The Utah Department of Natural Resources, Utah Geological Survey, shall not be liable under any circumstances for any direct, indirect, special, incidental, or consequential damages with respect to claims by users of this product.

The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Government.

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REFERENCES

Biek, R.F., 2005, Geologic map of the Jordan Narrows quadrangle, Salt Lake and Utah Counties, Utah: Utah Geological Survey Map 208, 2 plates, scale 1:24,000, https://doi.org/10.34191/M-208.

Clark, D.L., 2009, Geologic map of the West Mountain quadrangle, Utah County, Utah: Utah Geological Survey Map 234, 3 plates, scale 1:24,000, https://doi.org/10.34191/M-234.

Constenius, K.N., Clark, D.L., King, J.K., and Ehler, J.B., 2011, Interim geologic map of the Provo 30' x 60' quadrangle, Utah, Wasatch, and Salt Lake Counties, Utah: Utah Geological Survey Open-File Report 586DM, 42 p., 2 plates, scale 1:62,500, contains GIS data, DVD, https://doi.org/10.34191/OFR-586DM.

Constenius, K.N., Coogan, J.K., Clark, D.L., and King, J.K., in preparation, Geologic map of the Provo 30' x 60' quadrangle, Utah, Wasatch, and Salt Lake Counties, Utah: Utah Geological Survey Map, scale 1:62,500.

Solomon, B.J., Clark, D.L., and Machette, M.N., 2007, Geologic map of the Spanish Fork quadrangle, Utah County, Utah: Utah Geological Survey Map 227, 3 plates, scale 1:24,000, https://doi.org/10.34191/M-227.

Table 1. *Sample numbers and locations for fossil fusulinid samples and evaluation reports from the Provo and Nephi 30' x 60' quadrangles, Utah.*

Sample Number	30' x 60' Quadrangle	7.5' Quadrangle		UTM easting NAD27-12	UTM northing NAD27-12	Latitude (°N) WGS84	Longitude (°W) WGS84	Collector	Reference
JN120502-2	Provo	Jordan Narrows		415792	4480249	40.47050	111.99410	Biek	Biek, 2005; Constenius and others, in prep.
KNC050204-4	Provo	Spanish Fork Peak		454536	4433308	40.05063	111.53374	Constenius	Constenius and others, in prep.
KNC050204-4 (2)	Provo	Spanish Fork Peak		454536	4433308	40.05063	111.53374	Constenius	Constenius and others, in prep.
KNC100704-7	Provo	Twin Peaks		474691	4466949	40.35457	111.29876	Constenius	Constenius and others, in prep.
KNC050204-1	Provo	Spanish Fork Peak		453095	4433758	40.05461	111.55067	Constenius	Constenius and others, in prep.
KNC050204-2	Provo	Spanish Fork Peak		452441	4433903	40.05588	111.55834	Constenius	Constenius and others, in prep.
KNC050304-7^	Provo	Spanish Fork Peak		447678	4431470	40.03368	111.61400	Constenius	Constenius and others, in prep.
KNC050304-9	Provo	Spanish Fork Peak		447961	4431295	40.03212	111.61067	Constenius	Constenius and others, in prep.
KNC050304-10	Provo	Spanish Fork Peak		448382	4431141	40.03076	111.60572	Constenius	Constenius and others, in prep.
KNC101005-2	Provo	Wallsburg Ridge		462592	4461849	40.30817	111.44095	Constenius	Constenius and others, in prep.
KNC101005-4	Provo	Wallsburg Ridge		460745	4461940	40.30891	111.46269	Constenius	Constenius and others, in prep.
KNC101005-6	Provo	Wallsburg Ridge		460157	4461253	40.30269	111.46958	Constenius	Constenius and others, in prep.
KNC101005-6 (2)	Provo	Wallsburg Ridge		460157	4461253	40.30269	111.46958	Constenius	Constenius and others, in prep.
KNC101005-7	Provo	Wallsburg Ridge		460265	4461299	40.30311	111.46831	Constenius	Constenius and others, in prep.
KNC101305-10	Provo	Wallsburg Ridge		463563	4459828	40.29001	111.42941	Constenius	Constenius and others, in prep.
KNC101505-13^	Provo	Aspen Grove		453708	4469754	40.37894	111.54608	Constenius	Constenius and others, in prep.
KNC051905-3	Provo	Bridal Veil Falls		455721	4465161	40.33767	111.52205	Constenius	Constenius and others, in prep.
KNC060105-4	Provo	Bridal Veil Falls		457385	4466769	40.35224	111.50256	Constenius	Constenius and others, in prep.
KNC052906-9	Provo	Orem		444277	4466980	40.35337	111.65694	Constenius	Constenius and others, in prep.
KNC060106-14	Provo	Co-op Creek		480809	4460424	40.29595	111.22652	Constenius	Constenius and others, in prep.
KNC53107-2	Provo	Springville	*	456509	4452384	40.22261	111.51189	Constenius	Constenius and others, in prep.
KNC060707-1	Provo	Orem	*	442851	4468692	40.36869	111.67388	Constenius	Constenius and others, in prep.
KNC060707-1 (2)	Provo	Orem	*	442851	4468692	40.36869	111.67388	Constenius	Constenius and others, in prep.
KNC060807-3	Provo	Granger Mountain	*	463734	4450715	40.20796	111.42614	Constenius	Constenius and others, in prep.
KNC060108-4	Provo	Co-op Creek		481646	4461548	40.30609	111.21671	Constenius	Constenius and others, in prep.
KNC061609-7	Provo	Spanish Fork Peak		448880	4429496	40.01597	111.59976	Constenius	Constenius and others, in prep.
KNC061609-12	Provo	Spanish Fork Peak		447513	4430433	40.02432	111.61584	Constenius	Constenius and others, in prep.
KNC061609-18	Provo	Spanish Fork Peak		446921	4431486	40.03377	111.62287	Constenius	Constenius and others, in prep.
KNC051310-1	Provo	Lehi	*	426269	4477487	40.44662	111.87020	Constenius	Constenius and others, in prep.
MLC051410-1	Provo	Springville	*	453440	4444802	40.15431	111.54473	Constenius	Constenius and others, in prep.
MLC051410-2^	Provo	Springville	*	453298	4445954	40.16450	111.54917	Constenius	Constenius and others, in prep.
MLC051410-6	Provo	Springville	*	453730	4444823	40.15433	111.54402	Constenius	Constenius and others, in prep.
MLC051510-19	Provo	Granger Mountain	*	460072	4448329	40.18625	111.46977	Constenius	Constenius and others, in prep.
MLC051610-3^	Provo	Co-op Creek	*	480659	4466964	40.35487	111.22848	Constenius	Constenius and others, in prep.
KNC070815-2	Provo	Orem		444345	4466986	40.35343	111.65613	Constenius	Constenius and others, in prep.
SF-3	Provo	Spanish Fork		446381	4429679	40.01746	111.62905	Clark	Solomon and others, 2007; Constenius and others, in prep.

Table 1. *Continued.*

Sample Number	30' x 60' Quadrangle	7.5' Quadrangle	UTM easting NAD27-12	UTM northing NAD27-12	Latitude (°N) WGS84	Longitude (°W) WGS84	Collector	Reference
W-2	Provo	West Mountain	430643	4436846	40.08088	111.81423	Clark	Clark, 2009; Constenius and others, in prep.
W-9	Provo	West Mountain	430384	4434251	40.05748	111.81699	Clark	Clark, 2009; Constenius and others, in prep.
W-10	Provo	West Mountain	429906	4434518	40.05985	111.82262	Clark	Clark, 2009; Constenius and others, in prep.
W-13	Provo	West Mountain	430751	4437302	40.08496	111.81298	Clark	Clark, 2009; Constenius and others, in prep.
W-15	Provo	West Mountain	429019	4433660	40.05204	111.83292	Clark	Clark, 2009; Constenius and others, in prep.
W-19	Provo	West Mountain	428874	4432559	40.04211	111.83451	Clark	Clark, 2009; Constenius and others, in prep.
W-20	Provo	West Mountain	429535	4432569	40.04226	111.82676	Clark	Clark, 2009; Constenius and others, in prep.
W-21	Provo	West Mountain	429467	4432052	40.03760	111.82749	Clark	Clark, 2009; Constenius and others, in prep.
W-23	Provo	West Mountain	428852	4431777	40.03506	111.83467	Clark	Clark, 2009; Constenius and others, in prep.
W-24	Provo	West Mountain	431178	4437312	40.08512	111.80800	Clark	Clark, 2009; Constenius and others, in prep.
W-25	Provo	West Mountain	430913	4436809	40.08057	111.81106	Clark	Clark, 2009; Constenius and others, in prep.
W-26	Provo	West Mountain	429204	4431731	40.03468	111.83054	Clark	Clark, 2009; Constenius and others, in prep.
W-29	Provo	West Mountain	429021	4431868	40.03590	111.83270	Clark	Clark, 2009; Constenius and others, in prep.
W-30	Provo	West Mountain	429435	4432246	40.03934	111.82789	Clark	Clark, 2009; Constenius and others, in prep.
KNC062809-9	Nephi	Birdseye	447098	4424739	39.97300	111.62025	Constenius	Constenius, unpublished data
KNC102111-1	Nephi	Nebo Basin	437063	4404983	39.79432	111.73586	Constenius	Constenius, unpublished data
KNC102111-3	Nephi	Nebo Basin	436986	4405056	39.79497	111.73676	Constenius	Constenius, unpublished data

Notes:
* = Approximate location
^ = Barren sample
Also refer to preliminary map by Constenius and others (2011).

APPENDIX

Utah Geological Survey Rock Samples
Sample No. JN 120502-2

FUSULINID TAXA

Triticites cullomensis

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION
Good Fair **Poor** abraded fossil debris

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Conglomerate: gray, crinoid, fusulinid, bryozoan fossil debris with chert pebbles, silicified, fine – coarse grained quartz sandstone – congolomerate.

COMMENTS:

Age date without thin sections
Age date with thin sections

A. J. Wells
12-22-04

Utah Geological Survey Rock Samples
Sample No. KNC 050204-4
LOCATION: Sterling Canyon
40° 03.034', 111° 31.992'

FUSULINID TAXA
Dunbarinella cf. D. obesa
Schwagerina providens

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair **Poor**

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Reddish Gray, abraded fossil debris of crinoids, fusulinids in quartz and feldspar, silicified, very fine – coarse Sandstone.

COMMENTS:

Age date with thin sections

A. J. Wells
03/22/05

Utah Geological Survey Rock Samples
Sample No. KNC 050204-4 (2)
LOCATION: Sterling Canyon
40° 03.034', 111° 31.992'

FUSULINID TAXA

Schwagerina

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair **Poor**

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Gray, abraded fossil debris of fusulinids, crinoids in quartz and feldspar, silicified, very fine – coarse Sandstone

COMMENTS:

Age date with thin sections

A. J. Wells
03/22/05

Utah Geological Survey Rock Samples
Sample No. KNC 10704-7
LOCATION: Cabin Hollow (Twin Peaks Quadrangle), Basal Limestone
Granger Mountain Formation
40°21.277', 111° 17.882'

FUSULINID TAXA

Triticites cullomensis

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Vigilian lower

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair Poor

CALCAREOUS ALGAE PRESENT
Yes

ROCK DESCRIPTION: Fusulinid, pelcypod, crinoid, algae in a slightly silicified biomicrite: Wackestone.

COMMENTS:

Age date with thin sections

A. J. Wells
09-26-05

Utah Geological Survey Rock Samples
Sample No. KNC 050204-1

FUSULINID TAXA

Schwagerina

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good **Fair** Poor

CALCAREOUS ALGAE PRESENT
Yes

ROCK DESCRIPTION: Packstone (Biosparite): dark gray, algal, fusulinid, brachiopod, crinoid, bryozoan, horn coral and silicified.

COMMENTS:

Age date without thin sections
Age date with thin sections

A. J. Wells
12-22-04

Utah Geological Survey Rock Samples
Sample No. KNC 050204-2

FUSULINID TAXA

Triticites

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower

PENNSYLVANIAN
Virgilian upper

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION
Good Fair Poor

CALCAREOUS ALGAE PRESENT
Yes

ROCK DESCRIPTION: Packstone (Biosparite): dark gray fusulinid, bryozoan, crinoid, brachiopod, algal, quartz and chert pebbles and silicified.

COMMENTS: Advanced Triticites. No Wolfcampian Schwagerina nor Pseudoschwagerina fusulinids found. I believe this species ranges from upper Pennsylvanian into lower Permian.

Age date without thin sections
Age date with thin sections

A. J. Wells
12-22-04

Utah Geological Survey Rock Samples
Sample No. KNC 050304-7

FUSULINID TAXA

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair Poor

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Reddish gray, brachiopod, bryozoan fossil debris in a silicified feldspar and quartz, very fine – coarse Sandstone.

COMMENTS: Three thin sections were made on what I thought were highly abraded fusulinids. There were no fusulinids present in the thin sections. All of the rock in this sample was cut into thin rock slabs and no fusulinids were found. Large elongate bryozoans are present.

Age date without thin sections
Age date with thin sections

A.J. Wells
04/05/05

Utah Geological Survey Rock Samples
Sample No. KNC 050304-9

FUSULINID TAXA

Triticites cellamagnes
Triticites creekensis

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower-most

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair Poor

CALCAREOUS ALGAE PRESENT
Traces

ROCK DESCRIPTION: Packstone (Biosparite): dark gray, fusulinid, crinoid, bryozoan, brachiopod and silicified.

COMMENTS: Several fusulinids with very large proloculus. Pre-Schwagerina lower most Wolfcampian.

Age date without thin sections
Age date with thin sections

A. J. Wells
12-22-04

Utah Geological Survey Rock Samples
Sample No. KNC 050304-10

FUSULINID TAXA

Schwagerina campensis
Schwagerina andresensis
Pseudoschwagerina

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian middle

PENNSYLVANIAN
Vigilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION
Good **Fair** abraded Poor

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Packstone (Biosparite): dark gray, crinoid, bryozoan, fusulinid, brachiopod and silicified.

COMMENTS:

Age date without thin sections
Age date with thin sections

A. J. Wells
12-22-04

Utah Geological Survey Rock Samples
Sample No. KNC 101005-2
LOCATION:
40°18.490', 111° 25.457'

FUSULINID TAXA

Schwagerina sp. A1

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good **Fair** Poor

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Sandstone, light gray. Fine-medium grained quartz, calcareous, silicified with abraded fusulinid fossil debris.

COMMENTS: Due to abrasion of fusulinids, it is difficult to identify species, but no doubt about Wolfcampian age.

Age date with thin sections

A. J. Wells

12/21/05

Utah Geological Survey Rock Samples
Sample No. KNC 101005-4
LOCATION:
40°18.537', 111° 27.717'

FUSULINID TAXA

Triticites cf. T. cellamagnus

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair Poor

CALCAREOUS ALGAE PRESENT
Yes

ROCK DESCRIPTION: Biosparite: Packstone. Light gray, fusulinid, crinoid, brachiopod, algal, with fine – medium grained quartz grains present.

COMMENTS: Fusulinids are in good shape and the calcareous algae are abundant.

Age date with thin sections

A. J. Wells

12/21/05

Utah Geological Survey Rock Samples
Sample No. KNC 101005-6
LOCATION: Bald Mountain
40°18.164', 111° 28.130'

FUSULINID TAXA

Pseudofusulinella cf. P. fergusonensis

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Virgilian lower

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair **Poor**

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Sandstone, gray. Fusulinid, brachiopod, bryozoan, fossil debris are poorly abraded in a calcareous very fine grained quartz.

COMMENTS: The outer walls are eroded off, however I am confident it is lower Virgilian in age.

Age date with thin sections

A. J. Wells
12/21/05

Utah Geological Survey Rock Samples
Sample No. KNC 101005-6 (2)
LOCATION: Bald Mountain
40°18.164', 111° 28.130'

FUSULINID TAXA

Pseudofusulinella cf. P. fergusonensis

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower most

PENNSYLVANIAN
Virgilian

Missourian upper most

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair **Poor**

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Sandstone, gray. Fusulinid, brachiopod, bryozoan, fossil debris are poorly abraded in a calcareous very fine grained quartz sandstone.

COMMENTS: The outer walls are eroded off.

Age date with thin sections

A. J. Wells
11/28/07

Utah Geological Survey Rock Samples
Sample No. KNC 101005-7
LOCATION: Bald Mountain
40°18.189', 111° 28.054'

FUSULINID TAXA

Kansanella cf. K. winterensis

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Virgilian

Missourian upper

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair Poor

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Sandstone, gray. Very fine grained, silicified, calcareous, with fusulinids.

COMMENTS: The fusulinids are in excellent shape despite being in a sandstone detrital.

Age date with thin sections

A. J. Wells
12/21/05

Utah Geological Survey Rock Samples
Sample No. KNC 101305-10
LOCATION: Rattlesnake Mountain
40°17.403', 111° 25.720'

FUSULINID TAXA

Dunbarinella cf. D. hughesensis

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair **Poor**

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Sandstone, light gray. Bryozoan, crinoid, fusulinid, highly abraded fossil debris in a very fine – fine grained quartz.

COMMENTS: No Schwagerina present to call Wolfcampian, however, Dunbarinalla calls for lower Wolfcampian age. Most of the outer volutions are eroded off, a few are fairly well preserved.

Age date with thin sections

A. J. Wells
12/21/05

Utah Geological Survey Rock Samples
Sample No. KNC 101505-13
LOCATION: Provo – Bear Canyon
40°22.739', 111° 32.720'

FUSULINID TAXA

FUSULINID AGE

PERMAIN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair **Poor**

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Sandstone, dark to light gray. Bryozoan, crinoid, small fusulinid fragments in very fine – fine grained quartz.

COMMENTS: The few fusulinid fragments are to abraded for proper identification. Need more rock.

A.J. Wells
12/21/05

Utah Geological Survey Rock Samples
Sample No. KNC 051905-3
LOCATION: South Fork Provo River – East side of Canyon
Bear Canyon Formation
40°20.263', 111° 31.278'

FUSULINID TAXA

Fusulinella devexa

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan) upper

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair Poor

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Sandstone. Fusulinid, crinoid, pelcypod, in a calcareous, silicified very fine - fine grained quartz Sandstone.

COMMENTS: Very good preservation of fusulinids.

Age date with thin sections

A. J. Wells
09-26-05

Utah Geological Survey Rock Samples
Sample No. KNC 060105-4
LOCATION: South Fork Provo River – East side of Canyon
Wallsburg Ridge Formation
40°21.137', 111° 30.109'

FUSULINID TAXA

Pseudofusulinella Cf. P. utahensis
Pseudofusulinella sp. B

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Vigilian lower

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair **Poor**

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Sandstone. Calcareous, silicified, with highly abraded fusulinids in very fine - fine grained quartz Sandstone.

COMMENTS:

Age date with thin sections

A. J. Wells
09-26-05

Utah Geological Survey Rock Samples
Sample No. KNC 052906-9
LOCATION: West side of Mount Timpanogos
N 40 21.205' 111 39.371'

FUSULINID TAXA

Pseudofusulinella sp.C

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower most

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good **Fair** Poor

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Biomicrite:Wackestone.. Brownish gray, fusulinid, crinoid, fine quartz sand in Wackestone.

COMMENTS: Due to the advanced stage of Pseudofusulinella I think this new species is lower Wolfcampian in age rather than uppermost Virgilian age. No Schwagerina or advanced Tricites were present for positive proof of Wolfcampian age.

Age date with thin sections

A. J. Wells

08/16/06

Utah Geological Survey Rock Samples
Sample No. KNC 060106-14
LOCATION: Strawberry Quarry
N 40 17.749' W 111 13.574'

FUSULINID TAXA

Triticites
Triticites cf. T. ventricosus

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower most

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair **Poor**

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Light gray-tan Sandstone. Fusulinid, bryozoan, very fine-fine grained calcareous Sandstone.

COMMENTS: Most of the fusulinids and bryozoans are a highly abraded detrital in the Sandstone. The fusulinids are fairly abundant. It should be pointed out that no Schwagerina were present in the large rock for positive proof of Wolfcampian age. The Triticites cf. T. ventricosus indicates lower Wolfcampian. The porosity is about 8 %.

Age date with thin sections

A. J. Wells
08/11/06

Utah Geological Survey Rock Samples
Sample No. KNC 53107-2
LOCATION: Bartholomew Canyon
40° 13.359', 111° 30.669'

FUSULINID TAXA

Wedekindellina cf.ecentrica

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian lower

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair Poor

CALCAREOUS ALGAE PRESENT
NONE

ROCK DESCRIPTION: Light gray Biomicrite: Wackestone. Fusulinid, crinoid, brachiopod, argillaceous Wackestone.

COMMENTS:

Age date with thin sections

A. J. Wells
07/30/07

Utah Geological Survey Rock Samples
Sample No. KNC 060707-1
LOCATION: Big Baldy
40° 22.114', 111° 40.456'

FUSULINID TAXA

Schwagerina

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower to lower middle

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair **Poor**

CALCAREOUS ALGAE PRESENT
NONE

ROCK DESCRIPTION: Light gray, crinoid, bryozoan, fusulinid, slightly calcareous Quartz Sandstone.

COMMENTS: The exterior of the fusulinid has been eroded away. The Schwagerina looks like the Schwagerina from N. Flank Big Baldy Second sample.

Age date with thin sections

A. J. Wells
07/30/07

Utah Geological Survey Rock Samples
Sample No. KNC 060707-1 (2)
LOCATION: N. Flank Big Baldy **Second Sample**
40° 22.114', 111° 40.456' ? Location not on sample bag

FUSULINID TAXA

Schwagerina

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower to lower middle

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair Fair

CALCAREOUS ALGAE PRESENT
NONE

ROCK DESCRIPTION: Light gray Biosparite: Grainstone. Crinoid, bryozoan, fusulinid Grainstone.

COMMENTS: Sample has a few medium size quartz grains. This Schwagerina looks like the Schwagerina from Big Baldy.

Age date with thin sections

A. J. Wells
07/30/07

Utah Geological Survey Rock Samples
Sample No. KNC 060807-3
LOCATION: Granger Mountain
40° 12.477', 111° 25.569'

FUSULINID TAXA

Schwagerina

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian upper lower

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good **Fair** Poor

CALCAREOUS ALGAE PRESENT
NONE

ROCK DESCRIPTION: Light gray Biosparite: Packstone. Crinoid, fusulinid, bryozoan, brachiopod, medium size quartz grains in Packstone.

COMMENTS: The medium size quartz grains are fairly abundant.

Age date with thin sections

A. J. Wells
07/30/07

Utah Geological Survey Rock Samples
Sample No. KNC 060108-4
LOCATION: Willow Creek, Coop Creek 7.5' quadrangle
Wallsburg Ridge Member? of the Oquirrh Formation
N 40° 18.368' W 111° 12.959' Lat/Long NAD27

FUSULINID TAXA

Triticites

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Virgilian

Missourian middle

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair Poor

CALCAREOUS ALGAE PRESENT

Ivanovia: Green Codiacean Phylloid Algae.

ROCK DESCRIPTION: Light gray Biomicrite: Mudstone. Scattered very fine grained quartz sand in fusulinid, algal Mudstone.
COMMENTS: Look around for phylloid algal mounds.

Age date with thin sections

A. J. Wells
06/30/08

Utah Geological Survey Rock Samples
Sample No. KNC 061609-7
LOCATION: Permian Granger Mountain Formation
Water Canyon
40° 00.968' 111° 35.940'

FUSULINID TAXA

Schwagerina

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair Poor

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Gray, fusulinid, bryozoan, crinoid, scattered very fine quartz grains in Packstone.

COMMENTS:

Age date with thin sections

A. J. Wells
07/07/09

Utah Geological Survey Rock Samples
Sample No. KNC 061609-12
LOCATION: Permian Granger Mountain Formation
Water Canyon
40° 01.468', 111° 36.912'

FUSULINID TAXA

Triticites

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Virgilian lower

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair Poor

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Gray, fusulinid, bryozoan, very fine grained quartz sand in Mudstone.

COMMENTS:

Age date with thin sections

A. J. Wells
07/07/09

Utah Geological Survey Rock Samples
Sample No. KNC 061609-18
LOCATION: Pennsylvanian Wallburg Ridge Formation
Water Canyon
40° 02.024', 111° 37.321'

FUSULINID TAXA

Pseudofusulinella

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Virgilian lower

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair **Poor**

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Dark gray, fusulinid, crinoid, bryozoan Mudstone.

COMMENTS: The Pseudofusulinella is Pennsylvanian in age. Very few fusulinids were found in this rock. A poor oblique section of one fusulinid was used to determine the Missourian to lower Virgilian age.

Age date with thin sections

A. J. Wells
07/07/09

Utah Geological Survey Rock Samples
Sample No. KNC 051310-1
LOCATION: 40° 26.797', 111° 52.212'

FUSULINID TAXA

Profusulinella

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan lower

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair **Poor**

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Gray fusulinid, fine grained quartz in Wackestone.

COMMENTS:

Age date with thin sections

A. J. Wells
06/14/2010

Utah Geological Survey Rock Samples
Sample No. MLC 051410-1
LOCATION: 40° 09.248', 111° 32.845'

FUSULINID TAXA

Kansanella cf. T. plicatula

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Virgilian

Missourian upper

Desmoinesian

Atokan

Morrowan

FUSULINID PRESERVATION & ABRASION

Good **Fair** **Poor**

CALCAREOUS ALGAE PRESENT

NONE

ROCK DESCRIPTION: Gray fusulinid, calcareous, very fine grained quartz Sandstone.

COMMENTS:

A. J. Wells
06/14/2010

Utah Geological Survey Rock Samples
Sample No. MLC 051410-2
LOCATION: 40° 09.870', 111° 32.950'

FUSULINID TAXA

No fusulinids present

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair Poor

CALCAREOUS ALGAE PRESENT

NONE

ROCK DESCRIPTION: Dark gray, crinoid, calcareous silicified fine - medium grained quartz Sandstone.

COMMENTS: Numerous thin slabs of the rock were cut. No fusulinids were found.

A. J. Wells
06/14/2010

Utah Geological Survey Rock Samples
Sample No. MLC 051410-6
LOCATION: 40° 09.260', 111° 32.641'

FUSULINID TAXA

Triticites

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair **Poor**

CALCAREOUS ALGAE PRESENT

NONE

ROCK DESCRIPTION: Dark gray, fusulinid, crinoid, bryozoan, fine grain quartz sand in black shale.

COMMENTS: The fusulinids are narrow, elongate and appear to be stretched in the black shale. The outer volutions are eroded away.

A. J. Wells
06/14/2010

Utah Geological Survey Rock Samples
Sample No. MLC 051510-19
LOCATION: 40° 11.175', 111° 28.186'

FUSULINID TAXA
Triticites creekensis
Triticites
Triticites cf. T. cellamagnus

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan

Morrowan

FUSULINID PRESERVATION & ABRASION

Good **Fair** Poor

CALCAREOUS ALGAE PRESENT

NONE

ROCK DESCRIPTION: Gray, fusulinid, crinoid, bryozoan, fine grained quartz sand in Packstone.

COMMENTS: No *Schwagerina* were present for positive Wolfcampian age.

A. J. Wells
06/14/2010

Utah Geological Survey Rock Samples
Sample No. MLC 051610-3
LOCATION: 40° 21.292', 111° 13.709'

FUSULINID TAXA

No fusulinids were present

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair Poor

CALCAREOUS ALGAE PRESENT

ROCK DESCRIPTION: Light Gray, crinoid, bryozoan, calcareous, silicified, very fine - coarse grained quartz Sandstone.

COMMENTS: Numerous thin slices were cut from the rock and no fusulinids were found.

A. J. Wells
06/14/2010

Utah Geological Survey Rock Samples
Sample No. **KNC070815-2**
LOCATION**: Little Baldy**
Orem Quadrangle
40.353430° -111.656130°

FUSULINID TAXA

Fusulina

FUSULINID AGE

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian
middle

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION
Fair-Poor

CALCAREOUS ALGAE PRESENT

None

ROCK DESCRIPTION: Grey, Wackestone. Fusulinid, Crinoid, Bryozoan.

COMMENTS: The Fusulina are more advanced than lower Desmoinesian Beedina.

May 24, 2016 phone conversation w/ Doc – he stated that there are NO upper Desmoinesian fusulinids in Utah (or Arizona and New Mexico exclusive of the Permian Basin). The fusulinid characteristic of this time interval is a highly advanced and large type of Fusulina. –K.N. Constenius

Age date with thin sections

Wells April 29, 2016

Utah Geological Survey Rock Samples
Sample No. SF-3
LOCATION: Maple Canyon – Spanish Fork Quadrangle
N 40 01'4.5" W 111 37' 40.5"

FUSULINID TAXA

Triticites

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good **Fair** Poor

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Biomicrite:Wackestone. Dark gray, fusulinid, small foraminifera Wackestone.

COMMENTS: Due to the more primitive characteristics of the wall structure I believe these Triticites are Missourian in age. A few very fine quartz grains are present.

Age date with thin sections

A. J. Wells
08/11/06

Utah Geological Survey Rock Samples
Sample No. W -2
LOCATION: West Mountain
N40 04'51.6" W111 48'49.9", 5435'

FUSULINID TAXA

Triticites cf. T. creekenssis

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good **Fair** Poor

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Biomicrite:Wackestone. Gray, crinoid, bryozoan, fusulinid, pelecypod with scattered fine quartz grains.

COMMENTS: No Schwagerina present. The Triticites T. cf. creekensis is Wolfcampian in age.

Age date with thin sections

A. J. Wells
12/21/05

Utah Geological Survey Rock Samples
Sample No. W-9
LOCATION: West Mountain
N40 03'27.7" W111 48'58.2", 5610'

FUSULINID TAXA

Triticites
Schwagerina

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good **Fair** & **Poor**

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Sandstone, tan. Abundant crinoids, fusulinids, bryosoan detrital in fine – medium grained calcareous quartz sandstone.

COMMENTS: These Triticites are well advanced and are Wolfcampian in age. Also there is a highly eroded fragment of Schwagerina.

Age date with thin sections

A. J. Wells
12/22/05

Utah Geological Survey Rock Samples
Sample No. W-10
LOCATION: West Mountain
N40 03'35.8" W111 49'18.9", 6340'

FUSULINID TAXA

Triticites cullomensis

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Vigilian lower

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good **Fair** Poor

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Biomicrite:Wackestone. Gray, fusulinid, crinoid, with scattered quartz grains in Wackestone.

COMMENTS:

Age date with thin sections

A. J. Wells
12/22/05

Utah Geological Survey Rock Samples
Sample No. W-13
LOCATION: West Mountain
N40 05'22.8" W111 48'42.2", 5620'

FUSULINID TAXA

Triticites cf. T. creekensis
Dunbarinella sp. D1

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good **Fair** Poor

CALCAREOUS ALGAE PRESENT
Traces

ROCK DESCRIPTION: Biomicrite: Wackestone – Packstone. Gray, bryozoan, fusulinid, pelecypod. Wackstone-Packstone.

COMMENTS:

Age date with thin sections

A. J. Wells
12/22/05

Utah Geological Survey Rock Samples
Sample No. W-15
LOCATION: West Mountain
N40 03'09.5" W111 49'55.5", 6633'

FUSULINID TAXA

Triticites cf. T. cellamagnus

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good **Fair** Poor

CALCAREOUS ALGAE PRESENT
Yes

ROCK DESCRIPTION: Biomicrite: Wackestone – Packstone. Gray, crinoid, fusulinid, algal, pelecypod. Wackestone – Packstone.

COMMENTS:

Age date with thin sections

A. J. Wells

12/22/05

Utah Geological Survey Rock Samples
Sample No. W-19
LOCATION: West Mountain
N40 02'32.5" W111 50'01.5", 5431'

FUSULINID TAXA

Schwagerina cf. S. neolata
Pseudoschwagerina ?

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian middle

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair Poor

CALCAREOUS ALGAE PRESENT
YES

ROCK DESCRIPTION: Biomicrite:Packstone. Fusulinid, crinoid, bryozoan, algal, pelecypod. Packstone.

COMMENTS: There is a fragment of Pseudoschwagerina with Schwagerina..

Age date with thin sections

A. J. Wells

12/22/05

Utah Geological Survey Rock Samples
Sample No. W-20
LOCATION: West Mountain
N40 02'32.8" W111 49'34.8", 5924'

FUSULINID TAXA

Parafusulina
Schwagerina

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian lower

Wolfcampian

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good **Fair** Poor

CALCAREOUS ALGAE PRESENT
YES

ROCK DESCRIPTION: Biosparite:Packstone. Gray, crinoid, fusulinid, bryozoan, algal, silicified Packstone.

COMMENTS: Half of the fusulinids are silicified. The algae is Epimistopora.

Age date with thin sections

A. J. Wells

12/22/05

Utah Geological Survey Rock Samples
Sample No. W-21
LOCATION: West Mountain
N40 02'15.5" W111 49'35.8", 5560'

FUSULINID TAXA

Schwagerina

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian middle to upper middle

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good **Fair** Poor

CALCAREOUS ALGAE PRESENT
Yes

ROCK DESCRIPTION: Biomicrite:Wackestone. Tan – gray, fusulinid, crinoid, pelecypod, algal, Wackestone.

COMMENTS: The fusulinids are Schwagerina, silicified and very large. They are middle to upper middle Wolfcampian.

Age date with thin sections

A. J. Wells

12/22/05

Utah Geological Survey Rock Samples
Sample No. W-23
LOCATION: West Mountain 7.5' Quadrangle
N40 02'07.3" W111 50'02.3", elev.5202'

FUSULINID TAXA

Schwagerina

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good **Fair** Poor

CALCAREOUS ALGAE PRESENT

ROCK DESCRIPTION: Light brownish gray, Biomicrite:Packstone. Fusulinid, crinoid, bryozoan Packstone.

COMMENTS:

Age date with thin sections

A. J. Wells
05/17/2006

Utah Geological Survey Rock Samples
Sample No. W-24
LOCATION: West Mountain 7.5' Quadrangle
N40 05'07.5" W111 48'25.8", elev. 5140'

FUSULINID TAXA

Schwagerina

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good **Fair** **Poor**

CALCAREOUS ALGAE PRESENT
YES

ROCK DESCRIPTION: Gray Biosparite: Packstone. Bryozoan, fusulinid, algal, partially silicified Packstone.

COMMENTS: Thin section was impregnated with blue epoxy and shows about 4-6 percent porosity.

Age date with thin sections

A. J. Wells
05/17/2006

Utah Geological Survey Rock Samples
Sample No. W-25
LOCATION: West Mountain 7.5' Quadrangle
N40 04'50.6" W111 48'37.9", elev. 5598'

FUSULINID TAXA

Schwagerina

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair **Poor**

CALCAREOUS ALGAE PRESENT

ROCK DESCRIPTION: Dark gray, Biomicrite: Wackestone. Fusulinid, bryozoan, silicified Wackestone.

COMMENTS: Most of the fossil detritus is small and highly abraded.

Age date with thin sections

A. J. Wells
05/17/2006

Utah Geological Survey Rock Samples
Sample No. W-26
LOCATION: West Mountain 7.5' Quadrangle
N 40 02' 05.0" W 111 49'46.7"

FUSULINID TAXA

Schwagerina

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian middle

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good **Fair** Poor

CALCAREOUS ALGAE PRESENT
No

ROCK DESCRIPTION: Light brown, Biomicrite: Wackestone. Fusulinid, crinoid, bryozoan Wackestone.

COMMENTS:

Age date with thin sections

A. J. Wells
05/31/2006

Utah Geological Survey Rock Samples
Sample No. W-29
LOCATION: West Mountain 7.5' Quadrangle
N 40 02' 10.1" W 111 49'55.1"

FUSULINID TAXA

Schwagerina

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian upper lower

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good **Fair** Poor

CALCAREOUS ALGAE PRESENT
No

ROCK DESCRIPTION: Light gray-brown, Biomicrite: Wackestone-Packstone.
Fusulinid, bryozoan, pelecypod, Wackestone-Packstone.

COMMENTS:

Age date with thin sections

A. J. Wells
05/31/2006

Utah Geological Survey Rock Samples
Sample No. W-30
LOCATION: West Mountain 7.5' Quadrangle
N 40 02' 23.3" W 111 49'38.4"

FUSULINID TAXA

Schwagerina
Pseudoschwagerina

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian middle

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good **Fair** Poor

CALCAREOUS ALGAE PRESENT
No

ROCK DESCRIPTION: Light gray, Biosparite: Packstone. Fusulinid, crinoid, bryozoan, Packstone.

COMMENTS: Thin section is impregnated with blue epoxy cement. The porosity is estimated at 5 – 7 percent.

Age date with thin sections

A. J. Wells
05/31/2006

Utah Geological Survey Rock Samples
Sample No. KNC 062809-9
LOCATION: Loafer Mountain
39° 58.380', 111° 37.215'

FUSULINID TAXA

Triticites

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian

PENNSYLVANIAN
Virgilian

Missourian lower

Desmoinesian

Atokan (Derryan)

Morrowan

FUSULINID PRESERVATION & ABRASION

Good **Fair** Poor

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Light brown fusulinid, very fine grain quartz sand in Mudstone.

COMMENTS:

Age date with thin sections

A. J. Wells
07/27/09

Utah Geological Survey Rock Samples
Sample No. KNC 102111-1
LOCATION: Salt Creek
39.79432°, 111.73586° (WGS84)

FUSULINID TAXA

Schwagerina (Very similar to *Schwagerina eolata* Thompson)

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair Poor

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Light brown, crinoid, fusulinid, small foraminifera, pelecypod, Packstone.

COMMENTS:

Age date with thin sections

A. J. Wells
12/01/11

Utah Geological Survey Rock Samples
Sample No. KNC 102111-3
LOCATION: Salt Creek
39.79497°, 111.73676° (WGS84)

FUSULINID TAXA

Schwagerina (Very similar to *Schwagerina eolata* Thompson)

FUSULINID AGE

PERMIAN
Guadalupian

Leonardian

Wolfcampian lower

PENNSYLVANIAN
Virgilian

Missourian

Desmoinesian

Atokan

Morrowan

FUSULINID PRESERVATION & ABRASION

Good Fair Poor

CALCAREOUS ALGAE PRESENT
None

ROCK DESCRIPTION: Light brown, crinoid, pelecypod, bryozoan, small foraminifera, fusulinid Packstone.

COMMENTS:

Age date with thin sections

A. J. Wells
12/01/11