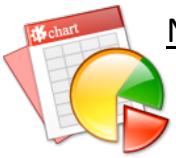
STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES

Alaska Geologic Materials Center *Data Report No. 363*



No. 363: Petrographic Analysis of Samples from 9 NPRA Wells, North Slope, Alaska: ***East Simpson #2***, ***West Dease #1***, ***J.W. Dalton #1***, ***East Simpson #1***, ***Seabee #1***, ***Drew Pt. #1***, ***Topagoruk Test #1***, ***South Meade #1***, ***Ikpikpuk #1***

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COPY

PETROGRAPHIC ANALYSIS OF SAMPLES FROM NINE NPRA WELLS, NORTH SLOPE, ALASKA

by Michael D. Wilson *November, 2008*

East Simpson #2

West Dease #1

J. W. Dalton #1

East Simpson #1

Seebee #1

Drew Pt. #1

Topagoruk #1

South Meade #1

Ikpikpuk #1

GRAIN SIZE SUMMARY – Talisman NPRA Wells - 2008

	East Simpson #2	East Simpson #2	East Simpson #2	East Simpson #2	East Simpson #2	East Simpson #2	West Dease #1
Depth (ft)	**2388**	**2395.5**	**2405**	**6066.5**	**6073**	**6076**	**1917.5**
Mean (phi)	3.191	3.852	3.692	3.751	3.269	2.916	4.503
Mean (mm)	0.109	0.069	0.077	0.074	0.104	0.132	0.044
Mean (Sieve Equivalent) (phi)	3.357	3.974	3.825	3.880	3.430	3.100	4.583
Mean (Sieve Equivalent) (mm)	0.098	0.064	0.071	0.068	0.093	0.117	0.042
Std. Dev. (phi)	0.708	0.947	0.736	2.013	1.704	1.002	2.307
Std. Dev. (mm)	0.056	0.049	0.041	0.141	0.153	0.100	0.105
Std.Dev. (Sieve Equivalent) (phi)	0.745	0.956	0.771	1.895	1.622	1.005	2.154
Std.Dev. (Sieve Equivalent) (mm)	0.053	0.045	0.040	0.117	0.128	0.088	0.088
Mean of Framework Fract. (>30µm) (phi)	3.130	3.712	3.626	3.224	2.891	2.817	3.590
Mean of Framework Fract. (>30µm) (mm)	0.114	0.076	0.081	0.107	0.135	0.142	0.083
Std. Dev. of Framework Fract. (>30µm) (phi)	0.333	0.290	0.304	0.473	0.509	0.567	0.373
Std. Dev. of Framework Fract. (>30µm) (mm)	0.027	0.015	0.017	0.036	0.049	0.057	0.022
Minimum Size Value (phi)	10.397	11.075	11.397	12.397	12.397	11.397	12.397
Minimum Size Value (mm)	0.0007	0.0005	0.0004	0.0002	0.0002	0.0004	0.0002
Maxiumum Size Value (phi)	1.766	2.730	2.648	1.687	1.524	1.515	2.198
Maxiumum Size Value (mm)	0.294	0.151	0.159	0.311	0.348	0.350	0.218

	J. W. Dalton #1	J. W. Dalton #1	East Simpson #1	Seebee #1	Drew Pt. #1	Topagoruk #1	South Meade #1	Ikpikpuk #1
Depth (ft)	**4693.5**	**6588.5**	**5129**	**5394**	**5905**	**5974**	**5993**	**7142.5**
Mean (phi)	3.970	4.388	3.341	3.891	3.890	3.704	5.829	3.782
Mean (mm)	0.064	0.048	0.099	0.067	0.067	0.077	0.018	0.073
Mean (Sieve Equivalent) (phi)	4.084	4.475	3.497	4.011	4.010	3.836	5.821	3.909
Mean (Sieve Equivalent) (mm)	0.059	0.045	0.089	0.062	0.062	0.070	0.018	0.067
Std. Dev. (phi)	1.975	2.278	1.408	2.103	1.868	2.087	3.665	2.123
Std. Dev. (mm)	0.117	0.111	0.112	0.137	0.114	0.154	0.111	0.150
Std.Dev. (Sieve Equivalent) (phi)	1.862	2.128	1.362	1.974	1.767	1.960	3.349	1.992
Std.Dev. (Sieve Equivalent) (mm)	0.099	0.093	0.097	0.114	0.097	0.127	0.089	0.124
Mean of Framework Fract. (>30µm) (phi)	3.359	3.558	3.056	3.257	3.327	3.091	2.929	3.135
Mean of Framework Fract. (>30µm) (mm)	0.097	0.085	0.120	0.105	0.100	0.117	0.131	0.114
Std. Dev. of Framework Fract. (>30µm) (phi)	0.430	0.341	0.427	0.403	0.380	0.567	0.585	0.430
Std. Dev. of Framework Fract. (>30µm) (mm)	0.029	0.020	0.036	0.030	0.027	0.047	0.055	0.034
Minimum Size Value (phi)	12.397	12.397	11.397	12.397	12.397	12.397	12.397	12.397
Minimum Size Value (mm)	0.0002	0.0002	0.0004	0.0002	0.0002	0.0002	0.0002	0.0002
Maxiumum Size Value (phi)	2.241	2.612	1.771	2.265	1.969	1.475	1.486	1.986
Maxiumum Size Value (mm)	0.212	0.164	0.293	0.208	0.255	0.360	0.357	0.252

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: East Simpson #2
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 2388
Mean size = 0.114mm (3.13 Phi) Sorting = .33 Phi
Porosity = 0.0 Permeability (md) = 0 Total Counts = 300
Lithology: Very fine-grained very well sorted lithic sandstone cemented by plastic deformation and suturing
Special Comment: Size and sorting data are measured values and apply to the framework fraction only.
Filename: 2388 .PCT Date: 03-04-2009 Formula Filename.ext: GEORGIA.WK1

COMPONENT	COUNTS (#)	PRESENT COMPOSITION (% total cnts)	PRESENT COMPOSITION (% fraction)	RECONSTRUCTED COMPOSITION (% total cnts)	RECONSTRUCTED COMPOSITION (% fraction)
FRAMEWORK COMPONENT					
Monocrystalline Quartz	67	22.3	28.2	22.3	27.9
Polycryst. Quartz (2-5 subunits)	14	4.7	5.9	4.7	5.8
Polycryst. Quartz (>5 subunits)	3	1.0	1.3	1.0	1.3
Polyxln. Quartz w/ Tr. Aligned Mica	19	6.3	8.0	6.3	7.9
Dense Nondescript Chert	30	10.0	12.6	10.0	12.5
Argillaceous Chert	1	0.3	0.4	0.3	0.4
Micaceous Quartzite(<8%micas/chlorite)	9	3.0	3.8	3.0	3.8
Quartzose Sandstone/Siltstone Frag.	1	0.3	0.4	0.3	0.4
Argil. or Chlor. Quartzose Ss/Sltst	2	0.7	0.8	0.7	0.8
Stable Heavy Minerals (Zircon etc.)	1	0.3	0.4	0.3	0.4
Plagioclase	26	8.7	10.9	9.0	11.3
Potassium Feldspar	4	1.3	1.7	1.7	2.1
Granitic Fragment (>40% Feldspars)	1	0.3	0.4	0.3	0.4
Feldspathic Siltstone/Mudstone	1	0.3	0.4	0.3	0.4
Feldspathic Sandstone Fragment	1	0.3	0.4	0.3	0.4
Dolomite Rock Fragments	2	0.7	0.8	0.7	0.8
Organic Fragment	1	0.3	0.4	0.3	0.4
Clay/Mud Clasts	8	2.7	3.4	2.7	3.3
Shale/Mudstone Fragments	2	0.7	0.8	0.7	0.8
Indeterminate Argil.Frag./Ductile	1	0.3	0.4	0.3	0.4
Clay Peloid	1	0.3	0.4	0.3	0.4
Argillite Fragment	3	1.0	1.3	1.0	1.3
Phyllite Fragment	14	4.7	5.9	4.7	5.8
Muscovite	2	0.7	0.8	0.7	0.8
Chlorite	1	0.3	0.4	0.3	0.4
Indeterminate/Altered Mica	2	0.7	0.8	0.7	0.8
Metasiltstone/Metamudstone	13	4.3	5.5	4.3	5.4
Unknown Rigid Framework Grain	8	2.7	3.4	2.7	3.3
REPLACEMENT COMPONENTS					
Macropore in Plagioclase	1	0.3	50.0	0.0	0.0
Macropore in Potassium Feldspar	1	0.3	50.0	0.0	0.0
PORES					
Intergranular Pore (2-20um)	13	4.3	24.1	4.3	24.1
Intergranular Pore (>20um)	41	13.7	75.9	13.7	75.9
PORE-FILLING COMPONENTS					
Kaolinite	2	0.7	33.3	0.7	33.3
Siderite	1	0.3	16.7	0.3	16.7
Clay and Mud Matrix	3	1.0	50.0	1.0	50.0
LAMINA/BURROW FILLS & FRACTURE FILLS					

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Q Quartzose Components (% Framwrk)(Non-Folk)	147.00	63.91	63.36
F FeldspathicComponents (%Frmwrk)(Non-Folk)	33.00	14.35	15.09
L Lithic Components (% Framework)(Non-Folk)	50.00	21.74	21.55
Qt-Quartzose Comp.(pseudo-Dickin.)(%Tot.QtFL)	145.30	68.86	68.22
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QtFL)	31.20	14.79	15.59
L-Lithic Comp. (pseudo-Dickinson)(%Tot.QtFL)	34.50	16.35	16.20
Qm-Monoxln.Quartz(pseudo-Dickin.)(%Tot.QmFLt)	78.30	37.11	36.76
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QmFLt)	31.20	14.79	15.59
Lt-Tot.Lithic Comp.(pseudo-Dick.)(%Tot.QmFLt)	101.50	48.10	47.65
Q Quartzose Components-Folk (% Framework)	113.00	52.80	52.31
F FeldspathicComponents-Folk.(% Framework)	31.00	14.49	15.28
L Lithic Components-Folk (%Framework)	70.00	32.71	32.41
Total Quartz (%Framework Fraction)	103.00	43.28	42.92
Total Chert (% Framework Fraction)	31.00	13.03	12.92
Tot. Quartzose Sstone & Sltstone(%Fmwrk Frac)	3.00	0.01	0.01
Tot.Mica.Qtzite& Qtzose Microsch.(%Fmwk Frac)	9.00	3.78	3.75
Total Plagioclase (%FrameworkFraction)	26.00	10.92	11.25
Tot. Potassium Feld. (% Framework Fraction)	4.00	1.68	2.08

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: East Simpson #2
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 2388

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Tot. Granitic &Gneissic Frags.(% Frmwrk Frac)	1.00	0.42	0.42
Tot. Feldspath.Sandst.& Sltst.(% Frmwrk Frac)	2.00	0.84	0.83
Total Silic.Volcanics (% Framework Fraction)	0.00	0.00	0.00
Tot.Basic & Intmed.Volcanics (% Frmwrk Frac.)	0.00	0.00	0.00
Total Volc. Glass & Tuff Frags(% Frmwrk Frac)	0.00	0.00	0.00
Tot. Ductile Metamorph.Frags.(% Frmwrk Frac.)	30.00	12.61	12.50
Tot. Carbonate Fragments (% Framework Frac.)	2.00	0.84	0.83
Tot.Unstable Heavy Min. & Diore (%Frmwk Frac)	0.00	0.00	0.00
Tot. Lithic Sandst.& Sltst (% Frmwrk Frac.)	0.00	0.00	0.00
Tot. Argil. Sedimentary Frags.(%Frmwrk Frac.)	12.00	5.04	5.00
Total Micas & Chlorite (% Framework Fraction)	5.00	2.10	2.08
Total Organic Fragments (%Framework Fraction)	1.00	0.42	0.42
Total Rigid Framework Grains (% Frmwrk Frac.)	190.00	79.83	80.00
Tot.Ductile Framework Grains (% Frmwrk Frac.)	48.00	20.17	20.00
Tot. Cts (adjusted to excl.Artific.Por.& Lam)	300.00	300.00	300.00
Tot. Intergrn.Carbonate Cement(% Adj.Tot.Cts)	1.00	0.33	0.33
Tot. Intergran.Zeolite Cement(% Adj.Tot.Cts)	0.00	0.00	0.00
Tot. Intergran.Auth.Clay Cement(%Adj.Tot.Cts)	2.00	0.67	0.67
Tot.Intergrn.Indetrm.Pore Fill(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Limonite/Hematite(%Adj.Tot.Cts)	0.00	0.00	0.00
Total Intergranular Cements (%Adj.Tot.Cts)	3.00	1.00	1.00
Total Detrital Matrix (% Adj.Tot.Cts.)	3.00	1.00	1.00
Tot. Calc.Dissolved Frmwrk(%Tot.Frame.Fract.)	2.00	0.84	0.00
Total Intergranular Porosity (%Adj.Tot.Cts.)	54.00	18.00	18.00
Calc.Secondary Porosity (% Adj.Tot.Cts.)	2.00	0.67	0.00
Tot. Calc. Visible Porosity (%Adj. Tot. Cts.)	56.00	18.67	18.00
Calc.Secondary Porosity (% Tot.Vis. Porosity)	2.00	3.57	0.00
Total Intergranular Volume (% Adj.Tot. Cts.)	60.00	20.00	20.00
Compaction Loss(% Adj. Tot. Cts)		18.90	
Bulk Volume Corrected Compaction Loss		23.63	
Calculated Initial Porosity		38.90	

********** COMMENTS **********

The thin section was prepared from a 1inch long core chip and is stained for potassium feldspar and dual carbo
nates.
The stable heavy mineral is an apatite.
The clay pellet is a glauconite pellet.
It is difficult to separate matrix from deformed argillaceous fragments.
The matrix material probably contains large amounts of microporosity.

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: East Simpson #2
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 2395.5
Mean size = 0.076mm (3.72 Phi) Sorting = .29 Phi
Porosity = 0.0 Permeability (md) = 0 Total Counts = 300
Lithology: Very fine-grained very well sorted lithic sandstone cemented by plastic deformation and suturing
Special Comment: Size and sorting data are measured values and apply to the framework fraction only.
Filename: 2395 .PCT Date: 03-04-2009 Formula Filename.ext: GEORGIA.WK1

COMPONENT	COUNTS (#)	PRESENT COMPOSITION (% total cnts)	PRESENT COMPOSITION (% fraction)	RECONSTRUCTED COMPOSITION (% total cnts)	RECONSTRUCTED COMPOSITION (% fraction)
FRAMEWORK COMPONENT					
Monocrystalline Quartz	41	13.7	19.5	13.7	19.4
Polycryst. Quartz (2-5 subunits)	2	0.7	1.0	0.7	0.9
Polycryst. Quartz (>5 subunits)	2	0.7	1.0	0.7	0.9
Polyxln. Quartz w/ Tr. Aligned Mica	24	8.0	11.4	8.0	11.4
Dense Nondescript Chert	15	5.0	7.1	5.0	7.1
Extensively Fractured Chert	1	0.3	0.5	0.3	0.5
Micaceous Quartzite(<8%micas/chlorite)	7	2.3	3.3	2.3	3.3
Quartzose Mica.Microschist/Metachrt	3	1.0	1.4	1.0	1.4
Argil. or Chlor. Quartzose Ss/Sltst	1	0.3	0.5	0.3	0.5
Plagioclase	27	9.0	12.9	9.3	13.3
Potassium Feldspar	3	1.0	1.4	1.0	1.4
Granitic Fragment (>40% Feldspars)	1	0.3	0.5	0.3	0.5
Silicic Volcanic Fragment	1	0.3	0.5	0.3	0.5
Basic Volcanic Fragment	1	0.3	0.5	0.3	0.5
Unstable Heavy Minerals (Epidote etc.)	1	0.3	0.5	0.3	0.5
Dolomite Rock Fragments	23	7.7	11.0	7.7	10.9
Organic Fragment	4	1.3	1.9	1.3	1.9
Clay/Mud Clasts	17	5.7	8.1	5.7	8.1
Shale/Mudstone Fragments	1	0.3	0.5	0.3	0.5
Indeterminate Argil.Frag./Ductile	3	1.0	1.4	1.0	1.4
Argillite Fragment	2	0.7	1.0	0.7	0.9
Phyllite Fragment	15	5.0	7.1	5.0	7.1
Muscovite	1	0.3	0.5	0.3	0.5
Chlorite	4	1.3	1.9	1.3	1.9
Indeterminate/Altered Mica	1	0.3	0.5	0.3	0.5
Metasiltstone/Metamudstone	4	1.3	1.9	1.3	1.9
Unknown Rigid Framework Grain	5	1.7	2.4	1.7	2.4
REPLACEMENT COMPONENTS					
Macropore in Plagioclase	1	0.3	100.0	0.0	0.0
PORES					
Intergranular Pore (2-20um)	27	9.0	33.8	9.0	33.8
Intergranular Pore (>20um)	53	17.7	66.3	17.7	66.3
PORE-FILLING COMPONENTS					
Siderite	4	1.3	44.4	1.3	44.4
Clay and Mud Matrix	5	1.7	55.6	1.7	55.6
LAMINA/BURROW FILLS & FRACTURE FILLS					

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Q Quartzose Components (% Framwrk)(Non-Folk)	96.00	46.83	46.60
F FeldspathicComponents (%Frmwrk)(Non-Folk)	31.00	15.12	15.53
L Lithic Components (% Framework)(Non-Folk)	78.00	38.05	37.86
Qt-Quartzose Comp.(pseudo-Dickin.)(%Tot.QtFL)	92.80	61.46	61.05
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QtFL)	30.70	20.33	20.86
L-Lithic Comp. (pseudo-Dickinson)(%Tot.QtFL)	27.50	18.21	18.09
Qm-Monoxln.Quartz(pseudo-Dickin.)(%Tot.QmFLt)	48.80	32.32	32.11
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QmFLt)	30.70	20.33	20.86
Lt-Tot.Lithic Comp.(pseudo-Dick.)(%Tot.QmFLt)	71.50	47.35	47.04
Q Quartzose Components-Folk (% Framework)	76.00	42.94	42.70
F FeldspathicComponents-Folk.(% Framework)	31.00	17.51	17.98
L Lithic Components-Folk (%Framework)	70.00	39.55	39.33
Total Quartz (%Framework Fraction)	69.00	32.86	32.70
Total Chert (% Framework Fraction)	16.00	7.62	7.58
Tot. Quartzose Sstone & Sltstone(%Fmwrk Frac)	1.00	0.00	0.00
Tot.Mica.Qtzite& Qtzose Microsch.(%Fmwk Frac)	10.00	4.76	4.74
Total Plagioclase (%FrameworkFraction)	27.00	12.86	13.27
Tot. Potassium Feld. (% Framework Fraction)	3.00	1.43	1.42
Tot. Granitic &Gneissic Frags.(% Frmwrk Frac)	1.00	0.48	0.47
Tot. Feldspath.Sandst.& Sltst.(% Frmwrk Frac)	0.00	0.00	0.00
Total Silic.Volcanics (% Framework Fraction)	1.00	0.48	0.47

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: East Simpson #2
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 2395.5

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Tot.Basic & Intmed.Volcanics (% Frmwrk Frac.)	1.00	0.48	0.47
Total Volc. Glass & Tuff Frags(% Frmwrk Frac)	0.00	0.00	0.00
Tot. Ductile Metamorph.Frags.(% Frmwrk Frac.)	21.00	10.00	9.95
Tot. Carbonate Fragments (% Framework Frac.)	23.00	10.95	10.90
Tot.Unstable Heavy Min. & Diore (%Frmwk Frac)	1.00	0.48	0.47
Tot. Lithic Sandst.& Sltst (% Frmwrk Frac.)	0.00	0.00	0.00
Tot. Argil. Sedimentary Frags.(%Frmwrk Frac.)	21.00	10.00	9.95
Total Micas & Chlorite (% Framework Fraction)	6.00	2.86	2.84
Total Organic Fragments (%Framework Fraction)	4.00	1.90	1.90
Total Rigid Framework Grains (% Frmwrk Frac.)	158.00	75.24	75.36
Tot.Ductile Framework Grains (% Frmwrk Frac.)	52.00	24.76	24.64
Tot. Cts (adjusted to excl.Artific.Por.& Lam)	300.00	300.00	300.00
Tot. Intergrn.Carbonate Cement(% Adj.Tot.Cts)	4.00	1.33	1.33
Tot. Intergran.Zeolite Cement(% Adj.Tot.Cts)	0.00	0.00	0.00
Tot. Intergran.Auth.Clay Cement(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Indetrm.Pore Fill(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Limonite/Hematite(%Adj.Tot.Cts)	0.00	0.00	0.00
Total Intergranular Cements (%Adj.Tot.Cts)	4.00	1.33	1.33
Total Detrital Matrix (% Adj.Tot.Cts.)	5.00	1.67	1.67
Tot. Calc.Dissolved Frmwrk(%Tot.Frame.Fract.)	1.00	0.48	0.00
Total Intergranular Porosity (%Adj.Tot.Cts.)	80.00	26.67	26.67
Calc.Secondary Porosity (% Adj.Tot.Cts.)	1.00	0.33	0.00
Tot. Calc. Visible Porosity (%Adj. Tot. Cts.)	81.00	27.00	26.67
Calc.Secondary Porosity (% Tot.Vis. Porosity)	1.00	1.23	0.00
Total Intergranular Volume (% Adj.Tot. Cts.)	89.00	29.67	29.67
Compaction Loss(% Adj. Tot. Cts)		9.46	
Bulk Volume Corrected Compaction Loss		13.45	
Calculated Initial Porosity		39.13	

********** COMMENTS **********

The thin section was prepared from a 1inch long core chip and is stained for potassium feldspar and dual carbo
nates.
The silicic volcanic count is questionable.
The basic volcanic count is questionable.
It is difficult to separate matrix from deformed argillaceous fragments.
The matrix material probably contains large amounts of microporosity.
The unstable heavy mineral is an altered opaque heavy mineral.
One of the siderite counts represents an overgrowth on a detrital dolomite.

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: East Simpson #2
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 2405
Mean size = 0.081mm (3.63 Phi) Sorting = .309 Phi
Porosity = 0.0 Permeability (md) = 0 Total Counts = 300
Lithology: Very fine-grained very well sorted lithic sandstone cemented by plastic deformation and suturing
Special Comment: Size and sorting data are measured values and apply to the framework fraction only.
Filename: 2405 .PCT Date: 03-04-2009 Formula Filename.ext: GEORGIA.WK1

COMPONENT	COUNTS (#)	PRESENT COMPOSITION (% total cnts)	PRESENT COMPOSITION (% fraction)	RECONSTRUCTED COMPOSITION (% total cnts)	RECONSTRUCTED COMPOSITION (% fraction)
FRAMEWORK COMPONENT					
Monocrystalline Quartz	61	20.3	24.6	20.3	24.6
Polycryst. Quartz (2-5 subunits)	9	3.0	3.6	3.0	3.6
Polycryst. Quartz (>5 subunits)	7	2.3	2.8	2.3	2.8
Polyxln. Quartz w/ Tr. Aligned Mica	33	11.0	13.3	11.0	13.3
Dense Nondescript Chert	17	5.7	6.9	5.7	6.9
Micaceous Quartzite(<8%micas/chlorite)	10	3.3	4.0	3.3	4.0
Quartzose Mica.Microschist/Metachrt	3	1.0	1.2	1.0	1.2
Stable Heavy Minerals (Zircon etc.)	1	0.3	0.4	0.3	0.4
Plagioclase	18	6.0	7.3	6.0	7.3
Potassium Feldspar	3	1.0	1.2	1.0	1.2
Granitic Fragment (>40% Feldspars)	1	0.3	0.4	0.3	0.4
Microporous Silicic Volcanic Frag.	1	0.3	0.4	0.3	0.4
Dolomite Rock Fragments	14	4.7	5.6	4.7	5.6
Organic Fragment	4	1.3	1.6	1.3	1.6
Clay/Mud Clasts	16	5.3	6.5	5.3	6.5
Shale/Mudstone Fragments	5	1.7	2.0	1.7	2.0
Indeterminate Argil.Frag./Ductile	7	2.3	2.8	2.3	2.8
Argillite Fragment	1	0.3	0.4	0.3	0.4
Phyllite Fragment	20	6.7	8.1	6.7	8.1
Muscovite	1	0.3	0.4	0.3	0.4
Biotite	1	0.3	0.4	0.3	0.4
Chlorite	3	1.0	1.2	1.0	1.2
Indeterminate/Altered Mica	3	1.0	1.2	1.0	1.2
Metasiltstone/Metamudstone	1	0.3	0.4	0.3	0.4
Unknown Rigid Framework Grain	8	2.7	3.2	2.7	3.2
REPLACEMENT COMPONENTS					
PORES					
Intergranular Pore (2-20um)	24	8.0	50.0	8.0	50.0
Intergranular Pore (>20um)	24	8.0	50.0	8.0	50.0
PORE-FILLING COMPONENTS					
Kaolinite	1	0.3	25.0	0.3	25.0
Clay and Mud Matrix	3	1.0	75.0	1.0	75.0
LAMINA/BURROW FILLS & FRACTURE FILLS					

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Q Quartzose Components (% Framwrk)(Non-Folk)	141.00	58.75	58.75
F FeldspathicComponents (%Frmwrk)(Non-Folk)	22.00	9.17	9.17
L Lithic Components (% Framework)(Non-Folk)	77.00	32.08	32.08
Qt-Quartzose Comp.(pseudo-Dickin.)(%Tot.QtFL)	137.30	72.26	72.26
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QtFL)	21.70	11.42	11.42
L-Lithic Comp. (pseudo-Dickinson)(%Tot.QtFL)	31.00	16.32	16.32
Qm-Monoxln.Quartz(pseudo-Dickin.)(%Tot.QmFLt)	71.30	37.53	37.53
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QmFLt)	21.70	11.42	11.42
Lt-Tot.Lithic Comp.(pseudo-Dick.)(%Tot.QmFLt)	97.00	51.05	51.05
Q Quartzose Components-Folk (% Framework)	120.00	56.87	56.87
F FeldspathicComponents-Folk.(% Framework)	22.00	10.43	10.43
L Lithic Components-Folk (%Framework)	69.00	32.70	32.70
Total Quartz (%Framework Fraction)	110.00	44.35	44.35
Total Chert (% Framework Fraction)	17.00	6.85	6.85
Tot. Quartzose Sstone & Sltstone(%Fmwrk Frac)	0.00	0.00	0.00
Tot.Mica.Qtzite& Qtzose Microsch.(%Fmwk Frac)	13.00	5.24	5.24
Total Plagioclase (%FrameworkFraction)	18.00	7.26	7.26
Tot. Potassium Feld. (% Framework Fraction)	3.00	1.21	1.21
Tot. Granitic &Gneissic Frags.(% Frmwrk Frac)	1.00	0.40	0.40
Tot. Feldspath.Sandst.& Sltst.(% Frmwrk Frac)	0.00	0.00	0.00
Total Silic.Volcanics (% Framework Fraction)	1.00	0.40	0.40
Tot.Basic & Intmed.Volcanics (% Frmwrk Frac.)	0.00	0.00	0.00
Total Volc. Glass & Tuff Frags(% Frmwrk Frac)	0.00	0.00	0.00
Tot. Ductile Metamorph.Frags.(% Frmwrk Frac.)	22.00	8.87	8.87

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: East Simpson #2
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 2405

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Tot. Carbonate Fragments (% Framework Frac.)	14.00	5.65	5.65
Tot.Unstable Heavy Min. & Diore (%Frmwk Frac)	0.00	0.00	0.00
Tot. Lithic Sandst.& Sltst (% Frmwrk Frac.)	0.00	0.00	0.00
Tot. Argil. Sedimentary Frags.(%Frmwrk Frac.)	28.00	11.29	11.29
Total Micas & Chlorite (% Framework Fraction)	8.00	3.23	3.23
Total Organic Fragments (%Framework Fraction)	4.00	1.61	1.61
Total Rigid Framework Grains (% Frmwrk Frac.)	186.00	75.00	75.00
Tot.Ductile Framework Grains (% Frmwrk Frac.)	62.00	25.00	25.00
Tot. Cts (adjusted to excl.Artific.Por.& Lam)	300.00	300.00	300.00
Tot. Intergrn.Carbonate Cement(% Adj.Tot.Cts)	0.00	0.00	0.00
Tot. Intergran.Zeolite Cement(% Adj.Tot.Cts)	0.00	0.00	0.00
Tot. Intergran.Auth.Clay Cement(%Adj.Tot.Cts)	1.00	0.33	0.33
Tot.Intergrn.Indetrm.Pore Fill(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Limonite/Hematite(%Adj.Tot.Cts)	0.00	0.00	0.00
Total Intergranular Cements (%Adj.Tot.Cts)	1.00	0.33	0.33
Total Detrital Matrix (% Adj.Tot.Cts.)	3.00	1.00	1.00
Tot. Calc.Dissolved Frmwrk(%Tot.Frame.Fract.)	0.40	0.16	0.16
Total Intergranular Porosity (%Adj.Tot.Cts.)	48.00	16.00	16.00
Calc.Secondary Porosity (% Adj.Tot.Cts.)	0.40	0.13	0.13
Tot. Calc. Visible Porosity (%Adj. Tot. Cts.)	48.40	16.13	16.13
Calc.Secondary Porosity (% Tot.Vis. Porosity)	0.40	0.83	0.83
Total Intergranular Volume (% Adj.Tot. Cts.)	52.00	17.33	17.33
Compaction Loss(% Adj. Tot. Cts)		21.68	
Bulk Volume Corrected Compaction Loss		26.23	
Calculated Initial Porosity		39.01	

********** COMMENTS **********

The thin section was prepared from a 1inch long core chip and is stained for potassium feldspar and dual carbo
nates.
The stable heavy mineral is a tourmaline.
The muscovite count is questionable.
It is difficult to separate matrix from deformed argillaceous fragments.
The matrix material probably contains large amounts of microporosity.

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: East Simpson #2
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 6066.5
Mean size = 0.107mm (3.22 Phi) Sorting = .473 Phi
Porosity = 0.0 Permeability (md) = 0 Total Counts = 300
Lithology: Very fine-grained well sorted slightly argillaceous feldspathic and lithic sandstone cemented by plastic deformation and suturing
Special Comment: Size and sorting data are measured values and apply to the framework fraction only.
Filename: 6066 .PCT Date: 03-04-2009 Formula Filename.ext: GEORGIA.WK1

COMPONENT	COUNTS (#)	PRESENT COMPOSITION (% total cnts)	PRESENT COMPOSITION (% fraction)	RECONSTRUCTED COMPOSITION (% total cnts)	RECONSTRUCTED COMPOSITION (% fraction)
FRAMEWORK COMPONENT					
Monocrystalline Quartz	90	30.0	34.7	30.0	34.5
Polycryst. Quartz (2-5 subunits)	6	2.0	2.3	2.0	2.3
Polycryst. Quartz (>5 subunits)	1	0.3	0.4	0.3	0.4
Polyxln. Quartz w/ Tr. Aligned Mica	27	9.0	10.4	9.0	10.3
Dense Nondescript Chert	35	11.7	13.5	11.7	13.4
Argillaceous Chert	1	0.3	0.4	0.3	0.4
Micaceous Quartzite(<8%micas/chlorite)	5	1.7	1.9	1.7	1.9
Stable Heavy Minerals (Zircon etc.)	2	0.7	0.8	0.7	0.8
Plagioclase	39	13.0	15.1	13.3	15.3
Potassium Feldspar	4	1.3	1.5	1.7	1.9
Granitic Fragment (>40% Feldspars)	7	2.3	2.7	2.3	2.7
Basic Volcanic Fragment	1	0.3	0.4	0.3	0.4
Unstable Heavy Minerals (Epidote etc.)	1	0.3	0.4	0.3	0.4
Dolomite Rock Fragments	6	2.0	2.3	2.0	2.3
Organic Fragment	4	1.3	1.5	1.3	1.5
Clay/Mud Clasts	9	3.0	3.5	3.0	3.4
Shale/Mudstone Fragments	3	1.0	1.2	1.0	1.1
Indeterminate Argil.Frag./Ductile	1	0.3	0.4	0.3	0.4
Argillite Fragment	2	0.7	0.8	0.7	0.8
Phyllite Fragment	8	2.7	3.1	2.7	3.1
Muscovite	1	0.3	0.4	0.3	0.4
Chlorite	2	0.7	0.8	0.7	0.8
Indeterminate/Altered Mica	1	0.3	0.4	0.3	0.4
Unknown Rigid Framework Grain	3	1.0	1.2	1.0	1.1
REPLACEMENT COMPONENTS					
Macropore in Plagioclase	1	0.3	50.0	0.0	0.0
Macropore in Potassium Feldspar	1	0.3	50.0	0.0	0.0
PORES					
Intergranular Pore (2-20um)	7	2.3	63.6	2.3	63.6
Intergranular Pore (>20um)	4	1.3	36.4	1.3	36.4
PORE-FILLING COMPONENTS					
Kaolinite	1	0.3	3.6	0.3	3.6
Siderite	4	1.3	14.3	1.3	14.3
Quartz Overgrowths	5	1.7	17.9	1.7	17.9
Clay and Mud Matrix	18	6.0	64.3	6.0	64.3
LAMINA/BURROW FILLS & FRACTURE FILLS					

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Q Quartzose Components (% Framwrk)(Non-Folk)	167.00	65.23	64.73
F FeldspathicComponents (%Frmwrk)(Non-Folk)	50.00	19.53	20.16
L Lithic Components (% Framework)(Non-Folk)	39.00	15.23	15.12
Qt-Quartzose Comp.(pseudo-Dickin.)(%Tot.QtFL)	167.10	72.97	72.34
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QtFL)	47.90	20.92	21.60
L-Lithic Comp. (pseudo-Dickinson)(%Tot.QtFL)	14.00	6.11	6.06
Qm-Monoxln.Quartz(pseudo-Dickin.)(%Tot.QmFLt)	97.10	42.40	42.03
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QmFLt)	47.90	20.92	21.60
Lt-Tot.Lithic Comp.(pseudo-Dick.)(%Tot.QmFLt)	84.00	36.68	36.36
Q Quartzose Components-Folk (% Framework)	129.00	54.66	54.20
F FeldspathicComponents-Folk.(% Framework)	50.00	21.19	21.85
L Lithic Components-Folk (%Framework)	57.00	24.15	23.95
Total Quartz (%Framework Fraction)	124.00	47.88	47.51
Total Chert (% Framework Fraction)	36.00	13.90	13.79
Tot. Quartzose Sstone & Sltstone(%Fmwrk Frac)	0.00	0.00	0.00
Tot.Mica.Qtzite& Qtzose Microsch.(%Fmwk Frac)	5.00	1.93	1.92
Total Plagioclase (%FrameworkFraction)	39.00	15.06	15.33
Tot. Potassium Feld. (% Framework Fraction)	4.00	1.54	1.92
Tot. Granitic &Gneissic Frags.(% Frmwrk Frac)	7.00	2.70	2.68
Tot. Feldspath.Sandst.& Sltst.(% Frmwrk Frac)	0.00	0.00	0.00
Total Silic.Volcanics (% Framework Fraction)	0.00	0.00	0.00

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: East Simpson #2
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 6066.5

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Tot.Basic & Intmed.Volcanics (% Frmwrk Frac.)	1.00	0.39	0.38
Total Volc. Glass & Tuff Frags(% Frmwrk Frac)	0.00	0.00	0.00
Tot. Ductile Metamorph.Frags.(% Frmwrk Frac.)	10.00	3.86	3.83
Tot. Carbonate Fragments (% Framework Frac.)	6.00	2.32	2.30
Tot.Unstable Heavy Min. & Diore (%Frmwk Frac)	1.00	0.39	0.38
Tot. Lithic Sandst.& Sltst (% Frmwrk Frac.)	0.00	0.00	0.00
Tot. Argil. Sedimentary Frags.(%Frmwrk Frac.)	13.00	5.02	4.98
Total Micas & Chlorite (% Framework Fraction)	4.00	1.54	1.53
Total Organic Fragments (%Framework Fraction)	4.00	1.54	1.53
Total Rigid Framework Grains (% Frmwrk Frac.)	228.00	88.03	88.12
Tot.Ductile Framework Grains (% Frmwrk Frac.)	31.00	11.97	11.88
Tot. Cts (adjusted to excl.Artific.Por.& Lam)	300.00	300.00	300.00
Tot. Intergrn.Carbonate Cement(% Adj.Tot.Cts)	4.00	1.33	1.33
Tot. Intergran.Zeolite Cement(% Adj.Tot.Cts)	0.00	0.00	0.00
Tot. Intergran.Auth.Clay Cement(%Adj.Tot.Cts)	1.00	0.33	0.33
Tot.Intergrn.Indetrm.Pore Fill(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Limonite/Hematite(%Adj.Tot.Cts)	0.00	0.00	0.00
Total Intergranular Cements (%Adj.Tot.Cts)	10.00	3.33	3.33
Total Detrital Matrix (% Adj.Tot.Cts.)	18.00	6.00	6.00
Tot. Calc.Dissolved Frmwrk(%Tot.Frame.Fract.)	2.00	0.77	0.00
Total Intergranular Porosity (%Adj.Tot.Cts.)	11.00	3.67	3.67
Calc.Secondary Porosity (% Adj.Tot.Cts.)	2.00	0.67	0.00
Tot. Calc. Visible Porosity (%Adj. Tot. Cts.)	13.00	4.33	3.67
Calc.Secondary Porosity (% Tot.Vis. Porosity)	2.00	15.38	0.00
Total Intergranular Volume (% Adj.Tot. Cts.)	39.00	13.00	13.00
Compaction Loss(% Adj. Tot. Cts)		25.01	
Bulk Volume Corrected Compaction Loss		28.75	
Calculated Initial Porosity		38.01	

********** COMMENTS **********

The thin section was prepared from a 1inch long core chip and is stained for potassium feldspar and dual carbo
nates.
The stable heavy minerals are a zircon and an apatite.
The unstable heavy mineral is an altered opaque heavy mineral.
It is difficult to separate matrix from deformed argillaceous fragments.
The matrix material probably contains large amounts of microporosity.
Two of the granitic fragments are quartz grains with minor feldspar.
The basic volcanic fragment is questionable.

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: East Simpson #2
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 6073
Mean size = 0.135mm (2.89 Phi) Sorting = .509 Phi
Porosity = 0.0 Permeability (md) = 0 Total Counts = 300
Lithology: Fine-grained well sorted feldspathic and lithic sandstone cemented by plastic deformation and s
uturing
Special Comment: Size and sorting data are measured values and apply to the framework fraction only.
Filename: 6073 .PCT Date: 03-04-2009 Formula Filename.ext: GEORGIA.WK1

COMPONENT	COUNTS (#)	PRESENT COMPOSITION (% total cnts)	PRESENT COMPOSITION (% fraction)	RECONSTRUCTED COMPOSITION (% total cnts)	RECONSTRUCTED COMPOSITION (% fraction)
FRAMEWORK COMPONENT					
Monocrystalline Quartz	98	32.7	37.3	32.7	37.3
Polycryst. Quartz (2-5 subunits)	13	4.3	4.9	4.3	4.9
Polycryst. Quartz (>5 subunits)	1	0.3	0.4	0.3	0.4
Polyxln. Quartz w/ Tr. Aligned Mica	18	6.0	6.8	6.0	6.8
Dense Nondescript Chert	28	9.3	10.6	9.3	10.6
Micaceous Quartzite(<8%micas/chlorite)	2	0.7	0.8	0.7	0.8
Quartzose Mica.Microschist/Metachrt	3	1.0	1.1	1.0	1.1
Stable Heavy Minerals (Zircon etc.)	1	0.3	0.4	0.3	0.4
Plagioclase	37	12.3	14.1	12.3	14.1
Extensively Fractured Plagioclase	1	0.3	0.4	0.3	0.4
Potassium Feldspar	4	1.3	1.5	1.3	1.5
Granitic Fragment (>40% Feldspars)	2	0.7	0.8	0.7	0.8
Silicic Volcanic Fragment	2	0.7	0.8	0.7	0.8
Dolomite Rock Fragments	10	3.3	3.8	3.3	3.8
Organic Fragment	5	1.7	1.9	1.7	1.9
Clay/Mud Clasts	8	2.7	3.0	2.7	3.0
Shale/Mudstone Fragments	3	1.0	1.1	1.0	1.1
Indeterminate Argil.Frag./Ductile	1	0.3	0.4	0.3	0.4
Argillite Fragment	4	1.3	1.5	1.3	1.5
Phyllite Fragment	4	1.3	1.5	1.3	1.5
Muscovite	1	0.3	0.4	0.3	0.4
Chlorite	3	1.0	1.1	1.0	1.1
Indeterminate/Altered Mica	3	1.0	1.1	1.0	1.1
Metasiltstone/Metamudstone	6	2.0	2.3	2.0	2.3
Unknown Rigid Framework Grain	5	1.7	1.9	1.7	1.9
REPLACEMENT COMPONENTS					
PORES					
Intergranular Pore (2-20um)	11	3.7	84.6	3.7	84.6
Intergranular Pore (>20um)	2	0.7	15.4	0.7	15.4
PORE-FILLING COMPONENTS					
Siderite	6	2.0	25.0	2.0	25.0
Ferroan Calcite	2	0.7	8.3	0.7	8.3
Quartz Overgrowths	4	1.3	16.7	1.3	16.7
Clay and Mud Matrix	12	4.0	50.0	4.0	50.0
LAMINA/BURROW FILLS & FRACTURE FILLS					

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Q Quartzose Components (% Framwrk)(Non-Folk)	164.00	63.57	63.57
F FeldspathicComponents (%Frmwrk)(Non-Folk)	44.00	17.05	17.05
L Lithic Components (% Framework)(Non-Folk)	50.00	19.38	19.38
Qt-Quartzose Comp.(pseudo-Dickin.)(%Tot.QtFL)	160.60	71.06	71.06
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QtFL)	43.40	19.20	19.20
L-Lithic Comp. (pseudo-Dickinson)(%Tot.QtFL)	22.00	9.73	9.73
Qm-Monoxln.Quartz(pseudo-Dickin.)(%Tot.QmFLt)	100.60	44.51	44.51
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QmFLt)	43.40	19.20	19.20
Lt-Tot.Lithic Comp.(pseudo-Dick.)(%Tot.QmFLt)	82.00	36.28	36.28
Q Quartzose Components-Folk (% Framework)	132.00	55.70	55.70
F FeldspathicComponents-Folk.(% Framework)	44.00	18.57	18.57
L Lithic Components-Folk (%Framework)	61.00	25.74	25.74
Total Quartz (%Framework Fraction)	130.00	49.43	49.43
Total Chert (% Framework Fraction)	28.00	10.65	10.65
Tot. Quartzose Sstone & Sltstone(%Fmwrk Frac)	0.00	0.00	0.00
Tot.Mica.Qtzite& Qtzose Microsch.(%Fmwk Frac)	5.00	1.90	1.90
Total Plagioclase (%FrameworkFraction)	38.00	14.45	14.45
Tot. Potassium Feld. (% Framework Fraction)	4.00	1.52	1.52
Tot. Granitic &Gneissic Frags.(% Frmwrk Frac)	2.00	0.76	0.76
Tot. Feldspath.Sandst.& Sltst.(% Frmwrk Frac)	0.00	0.00	0.00
Total Silic.Volcanics (% Framework Fraction)	2.00	0.76	0.76
Tot.Basic & Intmed.Volcanics (% Frmwrk Frac.)	0.00	0.00	0.00

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: East Simpson #2
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 6073

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Total Volc. Glass & Tuff Frags(% Frmwrk Frac)	0.00	0.00	0.00
Tot. Ductile Metamorph.Frags.(% Frmwrk Frac.)	14.00	5.32	5.32
Tot. Carbonate Fragments (% Framework Frac.)	10.00	3.80	3.80
Tot.Unstable Heavy Min. & Diore (%Frmwk Frac)	0.00	0.00	0.00
Tot. Lithic Sandst.& Sltst (% Frmwrk Frac.)	0.00	0.00	0.00
Tot. Argil. Sedimentary Frags.(%Frmwrk Frac.)	12.00	4.56	4.56
Total Micas & Chlorite (% Framework Fraction)	7.00	2.66	2.66
Total Organic Fragments (%Framework Fraction)	5.00	1.90	1.90
Total Rigid Framework Grains (% Frmwrk Frac.)	225.00	85.55	85.55
Tot.Ductile Framework Grains (% Frmwrk Frac.)	38.00	14.45	14.45
Tot. Cts (adjusted to excl.Artific.Por.& Lam)	300.00	300.00	300.00
Tot. Intergrn.Carbonate Cement(% Adj.Tot.Cts)	8.00	2.67	2.67
Tot. Intergran.Zeolite Cement(% Adj.Tot.Cts)	0.00	0.00	0.00
Tot. Intergran.Auth.Clay Cement(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Indetrm.Pore Fill(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Limonite/Hematite(%Adj.Tot.Cts)	0.00	0.00	0.00
Total Intergranular Cements (%Adj.Tot.Cts)	12.00	4.00	4.00
Total Detrital Matrix (% Adj.Tot.Cts.)	12.00	4.00	4.00
Tot. Calc.Dissolved Frmwrk(%Tot.Frame.Fract.)	0.00	0.00	0.00
Total Intergranular Porosity (%Adj.Tot.Cts.)	13.00	4.33	4.33
Calc.Secondary Porosity (% Adj.Tot.Cts.)	0.00	0.00	0.00
Tot. Calc. Visible Porosity (%Adj. Tot. Cts.)	13.00	4.33	4.33
Calc.Secondary Porosity (% Tot.Vis. Porosity)	0.00	0.00	0.00
Total Intergranular Volume (% Adj.Tot. Cts.)	37.00	12.33	12.33
Compaction Loss(% Adj. Tot. Cts)		25.47	
Bulk Volume Corrected Compaction Loss		29.06	
Calculated Initial Porosity		37.81	

********** COMMENTS **********

The thin section was prepared from a 1inch long core chip and is stained for potassium feldspar and dual carbo
nates.
The stable heavy mineral is an apatite that may have some quartz or plagioclase attached.
One of the quartzose micaceous microschist fragments is questionable.
It is difficult to separate matrix from deformed argillaceous fragments.
The matrix material probably contains large amounts of microporosity.

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: East Simpson #2
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 6076
Mean size = 0.142mm (2.82 Phi) Sorting = .567 Phi
Porosity = 0.0 Permeability (md) = 0 Total Counts = 300
Lithology: Fine-grained well sorted feldspathic and lithic sandstone cemented by plastic deformation and s
uturing
Special Comment: Size and sorting data are measured values and apply to the framework fraction only.
Filename: 6076 .PCT Date: 03-04-2009 Formula Filename.ext: GEORGIA.WK1

COMPONENT	COUNTS (#)	PRESENT COMPOSITION (% total cnts)	PRESENT COMPOSITION (% fraction)	RECONSTRUCTED COMPOSITION (% total cnts)	RECONSTRUCTED COMPOSITION (% fraction)
FRAMEWORK COMPONENT					
Monocrystalline Quartz	88	29.3	35.2	29.3	34.5
Polycryst. Quartz (2-5 subunits)	15	5.0	6.0	5.0	5.9
Polycryst. Quartz (>5 subunits)	3	1.0	1.2	1.0	1.2
Polyxln. Quartz w/ Tr. Aligned Mica	12	4.0	4.8	4.0	4.7
Dense Nondescript Chert	30	10.0	12.0	10.0	11.8
Argillaceous Chert	2	0.7	0.8	0.7	0.8
Micaceous Quartzite(<8%micas/chlorite)	5	1.7	2.0	1.7	2.0
Quartzose Mica.Microschist/Metachrt	1	0.3	0.4	0.3	0.4
Quartzose Sandstone/Siltstone Frag.	2	0.7	0.8	0.7	0.8
Argil. or Chlor. Quartzose Ss/Sltst	1	0.3	0.4	0.3	0.4
Stable Heavy Minerals (Zircon etc.)	2	0.7	0.8	0.7	0.8
Plagioclase	38	12.7	15.2	13.7	16.1
Potassium Feldspar	0	0.0	0.0	0.7	0.8
Granitic Fragment (>40% Feldspars)	6	2.0	2.4	2.0	2.4
Feldspathic Siltstone/Mudstone	1	0.3	0.4	0.3	0.4
Silicic Volcanic Fragment	1	0.3	0.4	0.3	0.4
Dolomite Rock Fragments	4	1.3	1.6	1.3	1.6
Organic Fragment	2	0.7	0.8	0.7	0.8
Clay/Mud Clasts	6	2.0	2.4	2.0	2.4
Shale/Mudstone Fragments	5	1.7	2.0	1.7	2.0
Indeterminate Argil.Frag./Ductile	1	0.3	0.4	0.3	0.4
Argillite Fragment	1	0.3	0.4	0.3	0.4
Phyllite Fragment	1	0.3	0.4	0.3	0.4
Chlorite	3	1.0	1.2	1.0	1.2
Indeterminate/Altered Mica	2	0.7	0.8	0.7	0.8
Metasiltstone/Metamudstone	14	4.7	5.6	4.7	5.5
Unknown Rigid Framework Grain	4	1.3	1.6	1.3	1.6
REPLACEMENT COMPONENTS					
Macropore in Plagioclase	3	1.0	60.0	0.0	0.0
Macropore in Potassium Feldspar	2	0.7	40.0	0.0	0.0
PORES					
Intergranular Pore (2-20um)	14	4.7	60.9	4.7	60.9
Intergranular Pore (>20um)	9	3.0	39.1	3.0	39.1
PORE-FILLING COMPONENTS					
Kaolinite	1	0.3	4.5	0.3	4.5
Siderite	5	1.7	22.7	1.7	22.7
Quartz Overgrowths	8	2.7	36.4	2.7	36.4
Inherited Clay Rims	1	0.3	4.5	0.3	4.5
Plagioclase Ovegrowths	2	0.7	9.1	0.7	9.1
Clay and Mud Matrix	5	1.7	22.7	1.7	22.7
LAMINA/BURROW FILLS & FRACTURE FILLS					

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Q Quartzose Components (% Framwrk)(Non-Folk)	161.00	65.45	64.14
F FeldspathicComponents (%Frmwrk)(Non-Folk)	45.00	18.29	19.92
L Lithic Components (% Framework)(Non-Folk)	40.00	16.26	15.94
Qt-Quartzose Comp.(pseudo-Dickin.)(%Tot.QtFL)	158.30	70.04	68.53
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QtFL)	42.20	18.67	20.43
L-Lithic Comp. (pseudo-Dickinson)(%Tot.QtFL)	25.50	11.28	11.04
Qm-Monoxln.Quartz(pseudo-Dickin.)(%Tot.QmFLt)	96.30	42.61	41.69
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QmFLt)	42.20	18.67	20.43
Lt-Tot.Lithic Comp.(pseudo-Dick.)(%Tot.QmFLt)	87.50	38.72	37.88
Q Quartzose Components-Folk (% Framework)	125.00	54.11	52.97
F FeldspathicComponents-Folk.(% Framework)	44.00	19.05	20.76
L Lithic Components-Folk (%Framework)	62.00	26.84	26.27
Total Quartz (%Framework Fraction)	118.00	47.20	46.27
Total Chert (% Framework Fraction)	32.00	12.80	12.55
Tot. Quartzose Sstone & Sltstone(%Fmwrk Frac)	3.00	0.01	0.01
Tot.Mica.Qtzite& Qtzose Microsch.(%Fmwk Frac)	6.00	2.40	2.35

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: East Simpson #2
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 6076

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Total Plagioclase (%FrameworkFraction)	38.00	15.20	16.08
Tot. Potassium Feld. (% Framework Fraction)	0.00	0.00	0.78
Tot. Granitic &Gneissic Frags.(% Frmwrk Frac)	6.00	2.40	2.35
Tot. Feldspath.Sandst.& Sltst.(% Frmwrk Frac)	1.00	0.40	0.39
Total Silic.Volcanics (% Framework Fraction)	1.00	0.40	0.39
Tot.Basic & Intmed.Volcanics (% Frmwrk Frac.)	0.00	0.00	0.00
Total Volc. Glass & Tuff Frags(% Frmwrk Frac)	0.00	0.00	0.00
Tot. Ductile Metamorph.Frags.(% Frmwrk Frac.)	16.00	6.40	6.27
Tot. Carbonate Fragments (% Framework Frac.)	4.00	1.60	1.57
Tot.Unstable Heavy Min. & Diore (%Frmwk Frac)	0.00	0.00	0.00
Tot. Lithic Sandst.& Sltst (% Frmwrk Frac.)	0.00	0.00	0.00
Tot. Argil. Sedimentary Frags.(%Frmwrk Frac.)	12.00	4.80	4.71
Total Micas & Chlorite (% Framework Fraction)	5.00	2.00	1.96
Total Organic Fragments (%Framework Fraction)	2.00	0.80	0.78
Total Rigid Framework Grains (% Frmwrk Frac.)	215.00	86.00	86.27
Tot.Ductile Framework Grains (% Frmwrk Frac.)	35.00	14.00	13.73
Tot. Cts (adjusted to excl.Artific.Por.& Lam)	300.00	300.00	300.00
Tot. Intergrn.Carbonate Cement(% Adj.Tot.Cts)	5.00	1.67	1.67
Tot. Intergran.Zeolite Cement(% Adj.Tot.Cts)	0.00	0.00	0.00
Tot. Intergran.Auth.Clay Cement(%Adj.Tot.Cts)	1.00	0.33	0.33
Tot.Intergrn.Indetrm.Pore Fill(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Limonite/Hematite(%Adj.Tot.Cts)	0.00	0.00	0.00
Total Intergranular Cements (%Adj.Tot.Cts)	17.00	5.67	5.67
Total Detrital Matrix (% Adj.Tot.Cts.)	5.00	1.67	1.67
Tot. Calc.Dissolved Frmwrk(%Tot.Frame.Fract.)	5.00	2.00	0.00
Total Intergranular Porosity (%Adj.Tot.Cts.)	23.00	7.67	7.67
Calc.Secondary Porosity (% Adj.Tot.Cts.)	5.00	1.67	0.00
Tot. Calc. Visible Porosity (%Adj. Tot. Cts.)	28.00	9.33	7.67
Calc.Secondary Porosity (% Tot.Vis. Porosity)	5.00	17.86	0.00
Total Intergranular Volume (% Adj.Tot. Cts.)	45.00	15.00	15.00
Compaction Loss(% Adj. Tot. Cts)		22.45	
Bulk Volume Corrected Compaction Loss		26.41	
Calculated Initial Porosity		37.45	

********** COMMENTS **********

The thin section was prepared from a 1inch long core chip and is stained for potassium feldspar and dual carbo
nates.
The stable heavy minerals are an apatite and a zircon.
The feldspathic siltstone fragment is questionable.
It is difficult to separate matrix from deformed argillaceous fragments.
The matrix material probably contains large amounts of microporosity.

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: West Dease #1
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 1917.5
Mean size = 0.083mm (3.59 Phi) Sorting = .376 Phi
Porosity = 0.0 Permeability (md) = 0 Total Counts = 300
Lithology: Very fine-grained very well sorted argillaceous lithic sandstone cemented by suturing and plastic deformation
Special Comment: Size and sorting data are measured values and apply to the framework fraction only.
Filename: 1917 .PCT Date: 03-04-2009 Formula Filename.ext: GEORGIA.WK1

COMPONENT	COUNTS (#)	PRESENT COMPOSITION (% total cnts)	PRESENT COMPOSITION (% fraction)	RECONSTRUCTED COMPOSITION (% total cnts)	RECONSTRUCTED COMPOSITION (% fraction)
FRAMEWORK COMPONENT					
Monocrystalline Quartz	108	36.0	45.0	36.0	45.0
Polycryst. Quartz (2-5 subunits)	8	2.7	3.3	2.7	3.3
Polyxln. Quartz w/ Tr. Aligned Mica	18	6.0	7.5	6.0	7.5
Dense Nondescript Chert	21	7.0	8.8	7.0	8.8
Micaceous Quartzite(<8%micas/chlorite)	4	1.3	1.7	1.3	1.7
Quartzose Sandstone/Siltstone Frag.	2	0.7	0.8	0.7	0.8
Plagioclase	20	6.7	8.3	6.7	8.3
Potassium Feldspar	13	4.3	5.4	4.3	5.4
Granitic Fragment (>40% Feldspars)	2	0.7	0.8	0.7	0.8
Dolomite Rock Fragments	9	3.0	3.8	3.0	3.8
Organic Fragment	8	2.7	3.3	2.7	3.3
Shale/Mudstone Fragments	2	0.7	0.8	0.7	0.8
Indeterminate Argil.Frag./Ductile	2	0.7	0.8	0.7	0.8
Argillite Fragment	2	0.7	0.8	0.7	0.8
Phyllite Fragment	2	0.7	0.8	0.7	0.8
Muscovite	2	0.7	0.8	0.7	0.8
Biotite	1	0.3	0.4	0.3	0.4
Chlorite	4	1.3	1.7	1.3	1.7
Metasiltstone/Metamudstone	7	2.3	2.9	2.3	2.9
Unknown Rigid Framework Grain	5	1.7	2.1	1.7	2.1
REPLACEMENT COMPONENTS					
PORES					
Intergranular Pore (2-20um)	8	2.7	80.0	2.7	80.0
Intergranular Pore (>20um)	2	0.7	20.0	0.7	20.0
PORE-FILLING COMPONENTS					
Siderite	4	1.3	8.0	1.3	8.0
Ankerite	1	0.3	2.0	0.3	2.0
Clay and Mud Matrix	45	15.0	90.0	15.0	90.0
LAMINA/BURROW FILLS & FRACTURE FILLS					

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Q Quartzose Components (% Framwrk)(Non-Folk)	161.00	68.51	68.51
F FeldspathicComponents (%Frmwrk)(Non-Folk)	35.00	14.89	14.89
L Lithic Components (% Framework)(Non-Folk)	39.00	16.60	16.60
Qt-Quartzose Comp.(pseudo-Dickin.)(%Tot.QtFL)	160.60	76.84	76.84
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QtFL)	34.40	16.46	16.46
L-Lithic Comp. (pseudo-Dickinson)(%Tot.QtFL)	14.00	6.70	6.70
Qm-Monoxln.Quartz(pseudo-Dickin.)(%Tot.QmFLt)	113.60	54.35	54.35
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QmFLt)	34.40	16.46	16.46
Lt-Tot.Lithic Comp.(pseudo-Dick.)(%Tot.QmFLt)	61.00	29.19	29.19
Q Quartzose Components-Folk (% Framework)	140.00	63.64	63.64
F FeldspathicComponents-Folk.(% Framework)	35.00	15.91	15.91
L Lithic Components-Folk (%Framework)	45.00	20.45	20.45
Total Quartz (%Framework Fraction)	134.00	55.83	55.83
Total Chert (% Framework Fraction)	21.00	8.75	8.75
Tot. Quartzose Sstone & Sltstone(%Fmwrk Frac)	2.00	0.01	0.01
Tot.Mica.Qtzite& Qtzose Microsch.(%Fmwk Frac)	4.00	1.67	1.67
Total Plagioclase (%FrameworkFraction)	20.00	8.33	8.33
Tot. Potassium Feld. (% Framework Fraction)	13.00	5.42	5.42
Tot. Granitic &Gneissic Frags.(% Frmwrk Frac)	2.00	0.83	0.83
Tot. Feldspath.Sandst.& Sltst.(% Frmwrk Frac)	0.00	0.00	0.00
Total Silic.Volcanics (% Framework Fraction)	0.00	0.00	0.00
Tot.Basic & Intmed.Volcanics (% Frmwrk Frac.)	0.00	0.00	0.00
Total Volc. Glass & Tuff Frags(% Frmwrk Frac)	0.00	0.00	0.00
Tot. Ductile Metamorph.Frags.(% Frmwrk Frac.)	11.00	4.58	4.58
Tot. Carbonate Fragments (% Framework Frac.)	9.00	3.75	3.75
Tot.Unstable Heavy Min. & Diore (%Frmwk Frac)	0.00	0.00	0.00
Tot. Lithic Sandst.& Sltst (% Frmwrk Frac.)	0.00	0.00	0.00
Tot. Argil. Sedimentary Frags.(%Frmwrk Frac.)	4.00	1.67	1.67

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: West Dease #1
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 1917.5

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Total Micas & Chlorite (% Framework Fraction)	7.00	2.92	2.92
Total Organic Fragments (%Framework Fraction)	8.00	3.33	3.33
Total Rigid Framework Grains (% Frmwrk Frac.)	210.00	87.50	87.50
Tot.Ductile Framework Grains (% Frmwrk Frac.)	30.00	12.50	12.50
Tot. Cts (adjusted to excl.Artific.Por.& Lam)	300.00	300.00	300.00
Tot. Intergrn.Carbonate Cement(% Adj.Tot.Cts)	5.00	1.67	1.67
Tot. Intergran.Zeolite Cement(% Adj.Tot.Cts)	0.00	0.00	0.00
Tot. Intergran.Auth.Clay Cement(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Indetrm.Pore Fill(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Limonite/Hematite(%Adj.Tot.Cts)	0.00	0.00	0.00
Total Intergranular Cements (%Adj.Tot.Cts)	5.00	1.67	1.67
Total Detrital Matrix (% Adj.Tot.Cts.)	45.00	15.00	15.00
Tot. Calc.Dissolved Frmwrk(%Tot.Frame.Fract.)	0.00	0.00	0.00
Total Intergranular Porosity (%Adj.Tot.Cts.)	10.00	3.33	3.33
Calc.Secondary Porosity (% Adj.Tot.Cts.)	0.00	0.00	0.00
Tot. Calc. Visible Porosity (%Adj. Tot. Cts.)	10.00	3.33	3.33
Calc.Secondary Porosity (% Tot.Vis. Porosity)	0.00	0.00	0.00
Total Intergranular Volume (% Adj.Tot. Cts.)	60.00	20.00	20.00
Compaction Loss(% Adj. Tot. Cts)		18.60	
Bulk Volume Corrected Compaction Loss		23.25	
Calculated Initial Porosity		38.60	

********** COMMENTS **********

The thin section was prepared from a 1inch long core chip and is stained for potassium feldspar and dual carbo
nates.
It is locally difficult to differentiate between matrix and deformed argillaceous fragments.
The matrix material probably contains significant amounts of microporosity.
The granitic fragments are questionable and could be potassium feldspar grains.

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: J. W. Dalton #1
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 4693.5
Mean size = 0.097mm (3.37 Phi) Sorting = .43 Phi
Porosity = 0.0 Permeability (md) = 0 Total Counts = 300
Lithology: Very fine-grained well sorted argillaceous lithic sandstone cemented by suturing and plastic de formation
Special Comment: Size and sorting data are measured values and apply to the framework fraction only.
Filename: 4693 .PCT Date: 03-04-2009 Formula Filename.ext: GEORGIA.WK1

COMPONENT	COUNTS (#)	PRESENT COMPOSITION (% total cnts)	PRESENT COMPOSITION (% fraction)	RECONSTRUCTED COMPOSITION (% total cnts)	RECONSTRUCTED COMPOSITION (% fraction)
FRAMEWORK COMPONENT					
Monocrystalline Quartz	61	20.3	24.8	20.3	24.8
Polycryst. Quartz (2-5 subunits)	17	5.7	6.9	5.7	6.9
Polycryst. Quartz (>5 subunits)	6	2.0	2.4	2.0	2.4
Polyxln. Quartz w/ Tr. Aligned Mica	26	8.7	10.6	8.7	10.6
Dense Nondescript Chert	22	7.3	8.9	7.3	8.9
Micaceous Quartzite(<8%micas/chlorite)	5	1.7	2.0	1.7	2.0
Quartzose Mica.Microschist/Metachrt	5	1.7	2.0	1.7	2.0
Plagioclase	23	7.7	9.3	7.7	9.3
Potassium Feldspar	3	1.0	1.2	1.0	1.2
Granitic Fragment (>40% Feldspars)	1	0.3	0.4	0.3	0.4
Silicic Volcanic Fragment	1	0.3	0.4	0.3	0.4
Dolomite Rock Fragments	6	2.0	2.4	2.0	2.4
Organic Fragment	5	1.7	2.0	1.7	2.0
Clay/Mud Clasts	11	3.7	4.5	3.7	4.5
Shale/Mudstone Fragments	5	1.7	2.0	1.7	2.0
Indeterminate Argil.Frag./Ductile	2	0.7	0.8	0.7	0.8
Argillite Fragment	6	2.0	2.4	2.0	2.4
Phyllite Fragment	19	6.3	7.7	6.3	7.7
Muscovite	3	1.0	1.2	1.0	1.2
Chlorite	6	2.0	2.4	2.0	2.4
Indeterminate/Altered Mica	3	1.0	1.2	1.0	1.2
Metasiltstone/Metamudstone	5	1.7	2.0	1.7	2.0
Unknown Rigid Framework Grain	5	1.7	2.0	1.7	2.0
REPLACEMENT COMPONENTS					
PORES					
Intergranular Pore (2-20um)	19	6.3	79.2	6.3	79.2
Intergranular Pore (>20um)	5	1.7	20.8	1.7	20.8
PORE-FILLING COMPONENTS					
Kaolinite	1	0.3	3.3	0.3	3.3
Siderite	3	1.0	10.0	1.0	10.0
Quartz Overgrowths	1	0.3	3.3	0.3	3.3
Clay and Mud Matrix	25	8.3	83.3	8.3	83.3
LAMINA/BURROW FILLS & FRACTURE FILLS					

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Q Quartzose Components (% Framwrk)(Non-Folk)	142.00	58.92	58.92
F FeldspathicComponents (%Frmwrk)(Non-Folk)	27.00	11.20	11.20
L Lithic Components (% Framework)(Non-Folk)	72.00	29.88	29.88
Qt-Quartzose Comp.(pseudo-Dickin.)(%Tot.QtFL)	137.30	66.98	66.98
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QtFL)	26.70	13.02	13.02
L-Lithic Comp. (pseudo-Dickinson)(%Tot.QtFL)	41.00	20.00	20.00
Qm-Monoxln.Quartz(pseudo-Dickin.)(%Tot.QmFLt)	66.30	32.34	32.34
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QmFLt)	26.70	13.02	13.02
Lt-Tot.Lithic Comp.(pseudo-Dick.)(%Tot.QmFLt)	112.00	54.63	54.63
Q Quartzose Components-Folk (% Framework)	115.00	53.99	53.99
F FeldspathicComponents-Folk.(% Framework)	27.00	12.68	12.68
L Lithic Components-Folk (%Framework)	71.00	33.33	33.33
Total Quartz (%Framework Fraction)	110.00	44.72	44.72
Total Chert (% Framework Fraction)	22.00	8.94	8.94
Tot. Quartzose Sstone & Sltstone(%Fmwrk Frac)	0.00	0.00	0.00
Tot.Mica.Qtzite& Qtzose Microsch.(%Fmwk Frac)	10.00	4.07	4.07
Total Plagioclase (%FrameworkFraction)	23.00	9.35	9.35
Tot. Potassium Feld. (% Framework Fraction)	3.00	1.22	1.22
Tot. Granitic &Gneissic Frags.(% Frmwrk Frac)	1.00	0.41	0.41
Tot. Feldspath.Sandst.& Sltst.(% Frmwrk Frac)	0.00	0.00	0.00
Total Silic.Volcanics (% Framework Fraction)	1.00	0.41	0.41
Tot.Basic & Intmed.Volcanics (% Frmwrk Frac.)	0.00	0.00	0.00
Total Volc. Glass & Tuff Frags(% Frmwrk Frac)	0.00	0.00	0.00
Tot. Ductile Metamorph.Frags.(% Frmwrk Frac.)	30.00	12.20	12.20

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: J. W. Dalton #1
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 4693.5

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Tot. Carbonate Fragments (% Framework Frac.)	6.00	2.44	2.44
Tot.Unstable Heavy Min. & Diore (%Frmwk Frac)	0.00	0.00	0.00
Tot. Lithic Sandst.& Sltst (% Frmwrk Frac.)	0.00	0.00	0.00
Tot. Argil. Sedimentary Frags.(%Frmwrk Frac.)	18.00	7.32	7.32
Total Micas & Chlorite (% Framework Fraction)	12.00	4.88	4.88
Total Organic Fragments (%Framework Fraction)	5.00	2.03	2.03
Total Rigid Framework Grains (% Frmwrk Frac.)	181.00	73.58	73.58
Tot.Ductile Framework Grains (% Frmwrk Frac.)	65.00	26.42	26.42
Tot. Cts (adjusted to excl.Artific.Por.& Lam)	300.00	300.00	300.00
Tot. Intergrn.Carbonate Cement(% Adj.Tot.Cts)	3.00	1.00	1.00
Tot. Intergran.Zeolite Cement(% Adj.Tot.Cts)	0.00	0.00	0.00
Tot. Intergran.Auth.Clay Cement(%Adj.Tot.Cts)	1.00	0.33	0.33
Tot.Intergrn.Indetrm.Pore Fill(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Limonite/Hematite(%Adj.Tot.Cts)	0.00	0.00	0.00
Total Intergranular Cements (%Adj.Tot.Cts)	5.00	1.67	1.67
Total Detrital Matrix (% Adj.Tot.Cts.)	25.00	8.33	8.33
Tot. Calc.Dissolved Frmwrk(%Tot.Frame.Fract.)	0.00	0.00	0.00
Total Intergranular Porosity (%Adj.Tot.Cts.)	24.00	8.00	8.00
Calc.Secondary Porosity (% Adj.Tot.Cts.)	0.00	0.00	0.00
Tot. Calc. Visible Porosity (%Adj. Tot. Cts.)	24.00	8.00	8.00
Calc.Secondary Porosity (% Tot.Vis. Porosity)	0.00	0.00	0.00
Total Intergranular Volume (% Adj.Tot. Cts.)	54.00	18.00	18.00
Compaction Loss(% Adj. Tot. Cts)		20.27	
Bulk Volume Corrected Compaction Loss		24.72	
Calculated Initial Porosity		38.27	

********** COMMENTS **********

The thin section was prepared from a 1inch long core chip and is stained for potassium feldspar and dual carbo
nates.
The silicic volcanic fragment count is questionable.
The carbonaceous material is concentrated in a thin lamina.
It is difficult to separate matrix from deformed argillaceous fragments.
The matrix material probably contains large amounts of microporosity.

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: J. W. Dalton #1
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 6588.5
Mean size = 0.085mm (3.56 Phi) Sorting = .341 Phi
Porosity = 0.0 Permeability (md) = 0 Total Counts = 300
Lithology: Very fine-grained very well sorted argillaceous lithic sandstone cemented by suturing and plastic deformation
Special Comment: Size and sorting data are measured values and apply to the framework fraction only.
Filename: 6588 .PCT Date: 03-04-2009 Formula Filename.ext: GEORGIA.WK1

COMPONENT	COUNTS (#)	PRESENT COMPOSITION (% total cnts)	PRESENT COMPOSITION (% fraction)	RECONSTRUCTED COMPOSITION (% total cnts)	RECONSTRUCTED COMPOSITION (% fraction)
FRAMEWORK COMPONENT					
Monocrystalline Quartz	73	24.3	30.3	24.3	30.3
Polycryst. Quartz (2-5 subunits)	18	6.0	7.5	6.0	7.5
Polycryst. Quartz (>5 subunits)	2	0.7	0.8	0.7	0.8
Polyxln. Quartz w/ Tr. Aligned Mica	26	8.7	10.8	8.7	10.8
Dense Nondescript Chert	27	9.0	11.2	9.0	11.2
Argillaceous Chert	1	0.3	0.4	0.3	0.4
Micaceous Quartzite(<8%micas/chlorite)	1	0.3	0.4	0.3	0.4
Quartzose Mica.Microschist/Metachrt	1	0.3	0.4	0.3	0.4
Stable Heavy Minerals (Zircon etc.)	1	0.3	0.4	0.3	0.4
Plagioclase	24	8.0	10.0	8.0	10.0
Potassium Feldspar	2	0.7	0.8	0.7	0.8
Granitic Fragment (>40% Feldspars)	1	0.3	0.4	0.3	0.4
Basic Volcanic Fragment	1	0.3	0.4	0.3	0.4
Dolomite Rock Fragments	15	5.0	6.2	5.0	6.2
Clay/Mud Clasts	13	4.3	5.4	4.3	5.4
Shale/Mudstone Fragments	2	0.7	0.8	0.7	0.8
Indeterminate Argil.Frag./Ductile	6	2.0	2.5	2.0	2.5
Argillite Fragment	3	1.0	1.2	1.0	1.2
Phyllite Fragment	3	1.0	1.2	1.0	1.2
Muscovite	1	0.3	0.4	0.3	0.4
Chlorite	2	0.7	0.8	0.7	0.8
Indeterminate/Altered Mica	3	1.0	1.2	1.0	1.2
Metasiltstone/Metamudstone	10	3.3	4.1	3.3	4.1
Unknown Rigid Framework Grain	5	1.7	2.1	1.7	2.1
REPLACEMENT COMPONENTS					
PORES					
PORE-FILLING COMPONENTS					
Siderite	6	2.0	10.5	2.0	10.5
Ferroan Calcite	12	4.0	21.1	4.0	21.1
Quartz Overgrowths	2	0.7	3.5	0.7	3.5
Clay and Mud Matrix	37	12.3	64.9	12.3	64.9
LAMINA/BURROW FILLS & FRACTURE FILLS					
Clay/Mud Laminae and Burrow Fills	2	0.7	100.0	0.7	100.0

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Q Quartzose Components (% Framwrk)(Non-Folk)	150.00	63.56	63.56
F FeldspathicComponents (%Frmwrk)(Non-Folk)	27.00	11.44	11.44
L Lithic Components (% Framework)(Non-Folk)	59.00	25.00	25.00
Qt-Quartzose Comp.(pseudo-Dickin.)(%Tot.QtFL)	148.30	76.05	76.05
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QtFL)	26.70	13.69	13.69
L-Lithic Comp. (pseudo-Dickinson)(%Tot.QtFL)	20.00	10.26	10.26
Qm-Monoxln.Quartz(pseudo-Dickin.)(%Tot.QmFLt)	74.30	38.10	38.10
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QmFLt)	26.70	13.69	13.69
Lt-Tot.Lithic Comp.(pseudo-Dick.)(%Tot.QmFLt)	94.00	48.21	48.21
Q Quartzose Components-Folk (% Framework)	120.00	55.56	55.56
F FeldspathicComponents-Folk.(% Framework)	27.00	12.50	12.50
L Lithic Components-Folk (%Framework)	69.00	31.94	31.94
Total Quartz (%Framework Fraction)	119.00	49.38	49.38
Total Chert (% Framework Fraction)	28.00	11.62	11.62
Tot. Quartzose Sstone & Sltstone(%Fmwrk Frac)	0.00	0.00	0.00
Tot.Mica.Qtzite& Qtzose Microsch.(%Fmwk Frac)	2.00	0.83	0.83
Total Plagioclase (%FrameworkFraction)	24.00	9.96	9.96
Tot. Potassium Feld. (% Framework Fraction)	2.00	0.83	0.83
Tot. Granitic &Gneissic Frags.(% Frmwrk Frac)	1.00	0.41	0.41
Tot. Feldspath.Sandst.& Sltst.(% Frmwrk Frac)	0.00	0.00	0.00
Total Silic.Volcanics (% Framework Fraction)	0.00	0.00	0.00
Tot.Basic & Intmed.Volcanics (% Frmwrk Frac.)	1.00	0.41	0.41
Total Volc. Glass & Tuff Frags(% Frmwrk Frac)	0.00	0.00	0.00
Tot. Ductile Metamorph.Frags.(% Frmwrk Frac.)	16.00	6.64	6.64

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: J. W. Dalton #1
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 6588.5

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Tot. Carbonate Fragments (% Framework Frac.)	15.00	6.22	6.22
Tot.Unstable Heavy Min. & Diore (%Frmwk Frac)	0.00	0.00	0.00
Tot. Lithic Sandst.& Sltst (% Frmwrk Frac.)	0.00	0.00	0.00
Tot. Argil. Sedimentary Frags.(%Frmwrk Frac.)	21.00	8.71	8.71
Total Micas & Chlorite (% Framework Fraction)	6.00	2.49	2.49
Total Organic Fragments (%Framework Fraction)	0.00	0.00	0.00
Total Rigid Framework Grains (% Frmwrk Frac.)	198.00	82.16	82.16
Tot.Ductile Framework Grains (% Frmwrk Frac.)	43.00	17.84	17.84
Tot. Cts (adjusted to excl.Artific.Por.& Lam)	298.00	298.00	298.00
Tot. Intergrn.Carbonate Cement(% Adj.Tot.Cts)	18.00	6.04	6.04
Tot. Intergran.Zeolite Cement(% Adj.Tot.Cts)	0.00	0.00	0.00
Tot. Intergran.Auth.Clay Cement(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Indetrm.Pore Fill(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Limonite/Hematite(%Adj.Tot.Cts)	0.00	0.00	0.00
Total Intergranular Cements (%Adj.Tot.Cts)	20.00	6.71	6.71
Total Detrital Matrix (% Adj.Tot.Cts.)	39.00	13.09	13.09
Tot. Calc.Dissolved Frmwrk(%Tot.Frame.Fract.)	0.00	0.00	0.00
Total Intergranular Porosity (%Adj.Tot.Cts.)	0.00	0.00	0.00
Calc.Secondary Porosity (% Adj.Tot.Cts.)	0.00	0.00	0.00
Tot. Calc. Visible Porosity (%Adj. Tot. Cts.)	0.00	0.00	0.00
Calc.Secondary Porosity (% Tot.Vis. Porosity)	0.00	0.00	0.00
Total Intergranular Volume (% Adj.Tot. Cts.)	57.00	19.13	19.13
Compaction Loss(% Adj. Tot. Cts)		19.69	
Bulk Volume Corrected Compaction Loss		24.35	
Calculated Initial Porosity		38.82	

********** COMMENTS **********

The thin section was prepared from a 1inch long core chip and is stained for potassium feldspar and dual carbo
nates.
The stable heavy mineral is a rutile.
The ferroan calcite occurs above both plagioclase and quartz overgrowths.
It is difficult to separate matrix from deformed argillaceous fragments.
The matrix material probably contains large amounts of microporosity.
The basic volcanic fragment count is questionable.

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: East Simpson #1
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 5129
Mean size = 0.120mm (3.06 Phi) Sorting = .427 Phi
Porosity = 0.0 Permeability (md) = 0 Total Counts = 300
Lithology: Very fine-grained well sorted lithic sandstone cemented by plastic deformation and suturing and ferroan calcite
Special Comment: Size and sorting data are measured values and apply to the framework fraction only.
Filename: 5129 .PCT Date: 03-04-2009 Formula Filename.ext: GEORGIA.WK1

COMPONENT	COUNTS (#)	PRESENT COMPOSITION (% total cnts)	PRESENT COMPOSITION (% fraction)	RECONSTRUCTED COMPOSITION (% total cnts)	RECONSTRUCTED COMPOSITION (% fraction)
FRAMEWORK COMPONENT					
Monocrystalline Quartz	37	12.3	15.7	12.3	15.7
Polycryst. Quartz (2-5 subunits)	15	5.0	6.4	5.0	6.4
Polycryst. Quartz (>5 subunits)	2	0.7	0.8	0.7	0.8
Polyxln. Quartz w/ Tr. Aligned Mica	23	7.7	9.7	7.7	9.7
Exten. Fractured Monoxln. Quartz	1	0.3	0.4	0.3	0.4
Dense Nondescript Chert	39	13.0	16.5	13.0	16.5
Argillaceous Chert	2	0.7	0.8	0.7	0.8
Micaceous Quartzite(<8%micas/chlorite)	2	0.7	0.8	0.7	0.8
Quartzose Mica.Microschist/Metachrt	1	0.3	0.4	0.3	0.4
Plagioclase	24	8.0	10.2	8.0	10.2
Potassium Feldspar	5	1.7	2.1	1.7	2.1
Granitic Fragment (>40% Feldspars)	3	1.0	1.3	1.0	1.3
Carbonate Allochems (not bioclasts)	2	0.7	0.8	0.7	0.8
Dolomite Rock Fragments	30	10.0	12.7	10.0	12.7
Organic Fragment	3	1.0	1.3	1.0	1.3
Clay/Mud Clasts	7	2.3	3.0	2.3	3.0
Shale/Mudstone Fragments	2	0.7	0.8	0.7	0.8
Indeterminate Argil.Frag./Ductile	4	1.3	1.7	1.3	1.7
Argillite Fragment	6	2.0	2.5	2.0	2.5
Phyllite Fragment	2	0.7	0.8	0.7	0.8
Chlorite	5	1.7	2.1	1.7	2.1
Indeterminate/Altered Mica	2	0.7	0.8	0.7	0.8
Metasiltstone/Metamudstone	10	3.3	4.2	3.3	4.2
Unknown Rigid Framework Grain	9	3.0	3.8	3.0	3.8
REPLACEMENT COMPONENTS					
PORES					
Intergranular Pore (2-20um)	2	0.7	66.7	0.7	66.7
Intergranular Pore (>20um)	1	0.3	33.3	0.3	33.3
PORE-FILLING COMPONENTS					
Kaolinite	9	3.0	14.8	3.0	14.8
Siderite	9	3.0	14.8	3.0	14.8
Ferroan Calcite	26	8.7	42.6	8.7	42.6
Quartz Overgrowths	5	1.7	8.2	1.7	8.2
Limonite/hematite	1	0.3	1.6	0.3	1.6
Clay and Mud Matrix	11	3.7	18.0	3.7	18.0
LAMINA/BURROW FILLS & FRACTURE FILLS					

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Q Quartzose Components (% Framwrk)(Non-Folk)	122.00	53.74	53.74
F FeldspathicComponents (%Frmwrk)(Non-Folk)	32.00	14.10	14.10
L Lithic Components (% Framework)(Non-Folk)	73.00	32.16	32.16
Qt-Quartzose Comp.(pseudo-Dickin.)(%Tot.QtFL)	121.90	70.06	70.06
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QtFL)	31.10	17.87	17.87
L-Lithic Comp. (pseudo-Dickinson)(%Tot.QtFL)	21.00	12.07	12.07
Qm-Monoxln.Quartz(pseudo-Dickin.)(%Tot.QmFLt)	40.90	23.51	23.51
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QmFLt)	31.10	17.87	17.87
Lt-Tot.Lithic Comp.(pseudo-Dick.)(%Tot.QmFLt)	102.00	58.62	58.62
Q Quartzose Components-Folk (% Framework)	80.00	38.46	38.46
F FeldspathicComponents-Folk.(% Framework)	32.00	15.38	15.38
L Lithic Components-Folk (%Framework)	96.00	46.15	46.15
Total Quartz (%Framework Fraction)	78.00	33.05	33.05
Total Chert (% Framework Fraction)	41.00	17.37	17.37
Tot. Quartzose Sstone & Sltstone(%Fmwrk Frac)	0.00	0.00	0.00
Tot.Mica.Qtzite& Qtzose Microsch.(%Fmwk Frac)	3.00	1.27	1.27
Total Plagioclase (%FrameworkFraction)	24.00	10.17	10.17
Tot. Potassium Feld. (% Framework Fraction)	5.00	2.12	2.12
Tot. Granitic &Gneissic Frags.(% Frmwrk Frac)	3.00	1.27	1.27
Tot. Feldspath.Sandst.& Sltst.(% Frmwrk Frac)	0.00	0.00	0.00
Total Silic.Volcanics (% Framework Fraction)	0.00	0.00	0.00

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: East Simpson #1
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 5129

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Tot.Basic & Intmed.Volcanics (% Frmwrk Frac.)	0.00	0.00	0.00
Total Volc. Glass & Tuff Frags(% Frmwrk Frac)	0.00	0.00	0.00
Tot. Ductile Metamorph.Frags.(% Frmwrk Frac.)	18.00	7.63	7.63
Tot. Carbonate Fragments (% Framework Frac.)	32.00	13.56	13.56
Tot.Unstable Heavy Min. & Diore (%Frmwk Frac)	0.00	0.00	0.00
Tot. Lithic Sandst.& Sltst (% Frmwrk Frac.)	0.00	0.00	0.00
Tot. Argil. Sedimentary Frags.(%Frmwrk Frac.)	13.00	5.51	5.51
Total Micas & Chlorite (% Framework Fraction)	7.00	2.97	2.97
Total Organic Fragments (%Framework Fraction)	3.00	1.27	1.27
Total Rigid Framework Grains (% Frmwrk Frac.)	195.00	82.63	82.63
Tot.Ductile Framework Grains (% Frmwrk Frac.)	41.00	17.37	17.37
Tot. Cts (adjusted to excl.Artific.Por.& Lam)	300.00	300.00	300.00
Tot. Intergrn.Carbonate Cement(% Adj.Tot.Cts)	35.00	11.67	11.67
Tot. Intergran.Zeolite Cement(% Adj.Tot.Cts)	0.00	0.00	0.00
Tot. Intergran.Auth.Clay Cement(%Adj.Tot.Cts)	9.00	3.00	3.00
Tot.Intergrn.Indetrm.Pore Fill(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Limonite/Hematite(%Adj.Tot.Cts)	1.00	0.33	0.33
Total Intergranular Cements (%Adj.Tot.Cts)	50.00	16.67	16.67
Total Detrital Matrix (% Adj.Tot.Cts.)	11.00	3.67	3.67
Tot. Calc.Dissolved Frmwrk(%Tot.Frame.Fract.)	0.00	0.00	0.00
Total Intergranular Porosity (%Adj.Tot.Cts.)	3.00	1.00	1.00
Calc.Secondary Porosity (% Adj.Tot.Cts.)	0.00	0.00	0.00
Tot. Calc. Visible Porosity (%Adj. Tot. Cts.)	3.00	1.00	1.00
Calc.Secondary Porosity (% Tot.Vis. Porosity)	0.00	0.00	0.00
Total Intergranular Volume (% Adj.Tot. Cts.)	64.00	21.33	21.33
Compaction Loss(% Adj. Tot. Cts)		16.97	
Bulk Volume Corrected Compaction Loss		21.58	
Calculated Initial Porosity		38.31	

********** COMMENTS **********

The thin section was prepared from a 1inch long core chip and is stained for potassium feldspar and dual carbonates.
The kaolinite probably contains significant microporosity.
The ferroan calcite occurs above quartz overgrowths.
It is difficult to separate matrix from deformed argillaceous fragments.
The matrix material probably contains large amounts of microporosity.
Two of the granitic fragments are quartz grains with minor feldspar.

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: Seebee #1
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 5394
Mean size = 0.105mm (3.25 Phi) Sorting = .403 Phi
Porosity = 0.0 Permeability (md) = 0 Total Counts = 300
Lithology: Very fine-grained well sorted argillaceous lithic sandstone cemented by suturing and plastic de formation
Special Comment: Size and sorting data are measured values and apply to the framework fraction only.
Filename: 5394 .PCT Date: 03-04-2009 Formula Filename.ext: GEORGIA.WK1

COMPONENT	COUNTS (#)	PRESENT COMPOSITION (% total cnts)	PRESENT COMPOSITION (% fraction)	RECONSTRUCTED COMPOSITION (% total cnts)	RECONSTRUCTED COMPOSITION (% fraction)
FRAMEWORK COMPONENT					
Monocrystalline Quartz	82	27.3	32.4	27.3	32.3
Polycryst. Quartz (2-5 subunits)	18	6.0	7.1	6.0	7.1
Polycryst. Quartz (>5 subunits)	3	1.0	1.2	1.0	1.2
Polyxln. Quartz w/ Tr. Aligned Mica	32	10.7	12.6	10.7	12.6
Exten. Fractured Monoxln. Quartz	1	0.3	0.4	0.3	0.4
Dense Nondescript Chert	32	10.7	12.6	10.7	12.6
Porous Chert(>33% visible porosity)	1	0.3	0.4	0.3	0.4
Micaceous Quartzite(<8%micas/chlorite)	13	4.3	5.1	4.3	5.1
Quartzose Mica.Microschist/Metachrt	2	0.7	0.8	0.7	0.8
Quartzose Sandstone/Siltstone Frag.	1	0.3	0.4	0.3	0.4
Plagioclase	15	5.0	5.9	5.3	6.3
Extensively Fractured Plagioclase	1	0.3	0.4	0.3	0.4
Granitic Fragment (>40% Feldspars)	1	0.3	0.4	0.3	0.4
Feldspathic Siltstone/Mudstone	1	0.3	0.4	0.3	0.4
Silicic Volcanic Fragment	1	0.3	0.4	0.3	0.4
Dolomite Rock Fragments	14	4.7	5.5	4.7	5.5
Organic Fragment	4	1.3	1.6	1.3	1.6
Clay/Mud Clasts	10	3.3	4.0	3.3	3.9
Shale/Mudstone Fragments	1	0.3	0.4	0.3	0.4
Argillite Fragment	2	0.7	0.8	0.7	0.8
Phyllite Fragment	6	2.0	2.4	2.0	2.4
Chlorite	2	0.7	0.8	0.7	0.8
Metasiltstone/Metamudstone	7	2.3	2.8	2.3	2.8
Unknown Rigid Framework Grain	3	1.0	1.2	1.0	1.2
REPLACEMENT COMPONENTS					
Macropore in Plagioclase	1	0.3	100.0	0.0	0.0
PORES					
Intergranular Pore (2-20um)	4	1.3	66.7	1.3	66.7
Intergranular Pore (>20um)	2	0.7	33.3	0.7	33.3
PORE-FILLING COMPONENTS					
Siderite	11	3.7	27.5	3.7	27.5
Ankerite	2	0.7	5.0	0.7	5.0
Quartz Overgrowths	3	1.0	7.5	1.0	7.5
Clay and Mud Matrix	24	8.0	60.0	8.0	60.0
LAMINA/BURROW FILLS & FRACTURE FILLS					

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Q Quartzose Components (% Framwrk)(Non-Folk)	185.00	74.00	73.71
F FeldspathicComponents (%Frmwrk)(Non-Folk)	18.00	7.20	7.57
L Lithic Components (% Framework)(Non-Folk)	47.00	18.80	18.73
Qt-Quartzose Comp.(pseudo-Dickin.)(%Tot.QtFL)	182.80	83.09	82.71
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QtFL)	16.70	7.59	8.01
L-Lithic Comp. (pseudo-Dickinson)(%Tot.QtFL)	20.50	9.32	9.28
Qm-Monoxln.Quartz(pseudo-Dickin.)(%Tot.QmFLt)	96.80	44.00	43.80
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QmFLt)	16.70	7.59	8.01
Lt-Tot.Lithic Comp.(pseudo-Dick.)(%Tot.QmFLt)	106.50	48.41	48.19
Q Quartzose Components-Folk (% Framework)	150.00	64.10	63.83
F FeldspathicComponents-Folk.(% Framework)	17.00	7.26	7.66
L Lithic Components-Folk (%Framework)	67.00	28.63	28.51
Total Quartz (%Framework Fraction)	136.00	53.75	53.54
Total Chert (% Framework Fraction)	33.00	13.04	12.99
Tot. Quartzose Sstone & Sltstone(%Fmwrk Frac)	1.00	0.00	0.00
Tot.Mica.Qtzite& Qtzose Microsch.(%Fmwk Frac)	15.00	5.93	5.91
Total Plagioclase (%FrameworkFraction)	16.00	6.32	6.69
Tot. Potassium Feld. (% Framework Fraction)	0.00	0.00	0.00
Tot. Granitic &Gneissic Frags.(% Frmwrk Frac)	1.00	0.40	0.39
Tot. Feldspath.Sandst.& Sltst.(% Frmwrk Frac)	1.00	0.40	0.39
Total Silic.Volcanics (% Framework Fraction)	1.00	0.40	0.39
Tot.Basic & Intmed.Volcanics (% Frmwrk Frac.)	0.00	0.00	0.00

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: Seebee #1
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 5394

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Total Volc. Glass & Tuff Frags(% Frmwrk Frac)	0.00	0.00	0.00
Tot. Ductile Metamorph.Frags.(% Frmwrk Frac.)	15.00	5.93	5.91
Tot. Carbonate Fragments (% Framework Frac.)	14.00	5.53	5.51
Tot.Unstable Heavy Min. & Diore (%Frmwk Frac)	0.00	0.00	0.00
Tot. Lithic Sandst.& Sltst (% Frmwrk Frac.)	0.00	0.00	0.00
Tot. Argil. Sedimentary Frags.(%Frmwrk Frac.)	11.00	4.35	4.33
Total Micas & Chlorite (% Framework Fraction)	2.00	0.79	0.79
Total Organic Fragments (%Framework Fraction)	4.00	1.58	1.57
Total Rigid Framework Grains (% Frmwrk Frac.)	221.00	87.35	87.40
Tot.Ductile Framework Grains (% Frmwrk Frac.)	32.00	12.65	12.60
Tot. Cts (adjusted to excl.Artific.Por.& Lam)	300.00	300.00	300.00
Tot. Intergrn.Carbonate Cement(% Adj.Tot.Cts)	13.00	4.33	4.33
Tot. Intergran.Zeolite Cement(% Adj.Tot.Cts)	0.00	0.00	0.00
Tot. Intergran.Auth.Clay Cement(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Indetrm.Pore Fill(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Limonite/Hematite(%Adj.Tot.Cts)	0.00	0.00	0.00
Total Intergranular Cements (%Adj.Tot.Cts)	16.00	5.33	5.33
Total Detrital Matrix (% Adj.Tot.Cts.)	24.00	8.00	8.00
Tot. Calc.Dissolved Frmwrk(%Tot.Frame.Fract.)	1.40	0.55	0.16
Total Intergranular Porosity (%Adj.Tot.Cts.)	6.00	2.00	2.00
Calc.Secondary Porosity (% Adj.Tot.Cts.)	1.40	0.47	0.13
Tot. Calc. Visible Porosity (%Adj. Tot. Cts.)	7.40	2.47	2.13
Calc.Secondary Porosity (% Tot.Vis. Porosity)	1.40	18.92	6.25
Total Intergranular Volume (% Adj.Tot. Cts.)	46.00	15.33	15.33
Compaction Loss(% Adj. Tot. Cts)		23.11	
Bulk Volume Corrected Compaction Loss		27.30	
Calculated Initial Porosity		38.45	

********** COMMENTS **********

The thin section was prepared from a 1inch long core chip and is stained for potassium feldspar and dual carbo
nates.
The matrix probably contains significant amounts of microporosity.
The feldspathic siltstone count is questionable.
It is difficult to separate matrix from deformed argillaceous fragments.

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: Drew Pt. #1
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 5905
Mean size = 0.100mm (3.32 Phi) Sorting = .38 Phi
Porosity = 0.0 Permeability (md) = 0 Total Counts = 300
Lithology: Very fine-grained well sorted argillaceous lithic sandstone cemented by suturing and plastic de formation and ferroan calcite
Special Comment: Size and sorting data are measured values and apply to the framework fraction only.
Filename: 5905 .PCT Date: 03-04-2009 Formula Filename.ext: GEORGIA.WK1

COMPONENT	COUNTS (#)	PRESENT COMPOSITION (% total cnts)	PRESENT COMPOSITION (% fraction)	RECONSTRUCTED COMPOSITION (% total cnts)	RECONSTRUCTED COMPOSITION (% fraction)
FRAMEWORK COMPONENT					
Monocrystalline Quartz	69	23.0	29.2	23.0	29.1
Polycryst. Quartz (2-5 subunits)	18	6.0	7.6	6.0	7.6
Polycryst. Quartz (>5 subunits)	4	1.3	1.7	1.3	1.7
Polyxln. Quartz w/ Tr. Aligned Mica	28	9.3	11.9	9.3	11.8
Dense Nondescript Chert	21	7.0	8.9	7.0	8.9
Micaceous Quartzite(<8%micas/chlorite)	7	2.3	3.0	2.3	3.0
Quartzose Mica.Microschist/Metachrt	1	0.3	0.4	0.3	0.4
Argil. or Chlor. Quartzose Ss/Sltst	1	0.3	0.4	0.3	0.4
Plagioclase	12	4.0	5.1	4.0	5.1
Potassium Feldspar	4	1.3	1.7	1.3	1.7
Carbonate Allochems (not bioclasts)	3	1.0	1.3	1.0	1.3
Dolomite Rock Fragments	27	9.0	11.4	9.0	11.4
Organic Fragment	3	1.0	1.3	1.0	1.3
Clay/Mud Clasts	3	1.0	1.3	1.0	1.3
Shale/Mudstone Fragments	1	0.3	0.4	0.3	0.4
Indeterminate Argil.Frag./Ductile	2	0.7	0.8	0.7	0.8
Phyllite Fragment	14	4.7	5.9	4.7	5.9
Muscovite	1	0.3	0.4	0.3	0.4
Biotite	1	0.3	0.4	0.3	0.4
Chlorite	5	1.7	2.1	1.7	2.1
Metasiltstone/Metamudstone	7	2.3	3.0	2.3	3.0
Unknown Rigid Framework Grain	4	1.3	1.7	1.7	2.1
REPLACEMENT COMPONENTS					
Unknown Replaced by Ferroan Calcite	1	0.3	100.0	0.0	0.0
PORES					
Transparticulate pore (2-20um)	1	0.3	100.0	0.3	100.0
PORE-FILLING COMPONENTS					
Siderite	12	4.0	19.4	4.0	19.4
Ankerite	3	1.0	4.8	1.0	4.8
Ferroan Calcite	21	7.0	33.9	7.0	33.9
Clay and Mud Matrix	26	8.7	41.9	8.7	41.9
LAMINA/BURROW FILLS & FRACTURE FILLS					

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Q Quartzose Components (% Framwrk)(Non-Folk)	149.00	64.22	64.22
F FeldspathicComponents (%Frmwrk)(Non-Folk)	16.00	6.90	6.90
L Lithic Components (% Framework)(Non-Folk)	67.00	28.88	28.88
Qt-Quartzose Comp.(pseudo-Dickin.)(%Tot.QtFL)	147.50	78.88	78.88
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QtFL)	16.00	8.56	8.56
L-Lithic Comp. (pseudo-Dickinson)(%Tot.QtFL)	23.50	12.57	12.57
Qm-Monoxln.Quartz(pseudo-Dickin.)(%Tot.QmFLt)	76.50	40.91	40.91
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QmFLt)	16.00	8.56	8.56
Lt-Tot.Lithic Comp.(pseudo-Dick.)(%Tot.QmFLt)	94.50	50.53	50.53
Q Quartzose Components-Folk (% Framework)	126.00	58.33	58.33
F FeldspathicComponents-Folk.(% Framework)	16.00	7.41	7.41
L Lithic Components-Folk (%Framework)	74.00	34.26	34.26
Total Quartz (%Framework Fraction)	119.00	50.42	50.21
Total Chert (% Framework Fraction)	21.00	8.90	8.86
Tot. Quartzose Sstone & Sltstone(%Fmwrk Frac)	1.00	0.00	0.00
Tot.Mica.Qtzite& Qtzose Microsch.(%Fmwk Frac)	8.00	3.39	3.38
Total Plagioclase (%FrameworkFraction)	12.00	5.08	5.06
Tot. Potassium Feld. (% Framework Fraction)	4.00	1.69	1.69
Tot. Granitic &Gneissic Frags.(% Frmwrk Frac)	0.00	0.00	0.00
Tot. Feldspath.Sandst.& Sltst.(% Frmwrk Frac)	0.00	0.00	0.00
Total Silic.Volcanics (% Framework Fraction)	0.00	0.00	0.00
Tot.Basic & Intmed.Volcanics (% Frmwrk Frac.)	0.00	0.00	0.00
Total Volc. Glass & Tuff Frags(% Frmwrk Frac)	0.00	0.00	0.00
Tot. Ductile Metamorph.Frags.(% Frmwrk Frac.)	21.00	8.90	8.86
Tot. Carbonate Fragments (% Framework Frac.)	30.00	12.71	12.66

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: Drew Pt. #1
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 5905

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Tot.Unstable Heavy Min. & Diore (%Frmwk Frac)	0.00	0.00	0.00
Tot. Lithic Sandst.& Sltst (% Frmwrk Frac.)	0.00	0.00	0.00
Tot. Argil. Sedimentary Frags.(%Frmwrk Frac.)	6.00	2.54	2.53
Total Micas & Chlorite (% Framework Fraction)	7.00	2.97	2.95
Total Organic Fragments (%Framework Fraction)	3.00	1.27	1.27
Total Rigid Framework Grains (% Frmwrk Frac.)	199.00	84.32	84.39
Tot.Ductile Framework Grains (% Frmwrk Frac.)	37.00	15.68	15.61
Tot. Cts (adjusted to excl.Artific.Por.& Lam)	300.00	300.00	300.00
Tot. Intergrn.Carbonate Cement(% Adj.Tot.Cts)	36.00	12.00	12.00
Tot. Intergran.Zeolite Cement(% Adj.Tot.Cts)	0.00	0.00	0.00
Tot. Intergran.Auth.Clay Cement(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Indetrm.Pore Fill(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Limonite/Hematite(%Adj.Tot.Cts)	0.00	0.00	0.00
Total Intergranular Cements (%Adj.Tot.Cts)	36.00	12.00	12.00
Total Detrital Matrix (% Adj.Tot.Cts.)	26.00	8.67	8.67
Tot. Calc.Dissolved Frmwrk(%Tot.Frame.Fract.)	0.00	0.00	0.00
Total Intergranular Porosity (%Adj.Tot.Cts.)	1.00	0.33	0.33
Calc.Secondary Porosity (% Adj.Tot.Cts.)	0.00	0.00	0.00
Tot. Calc. Visible Porosity (%Adj. Tot. Cts.)	1.00	0.33	0.33
Calc.Secondary Porosity (% Tot.Vis. Porosity)	0.00	0.00	0.00
Total Intergranular Volume (% Adj.Tot. Cts.)	63.00	21.00	21.00
Compaction Loss(% Adj. Tot. Cts)		17.58	
Bulk Volume Corrected Compaction Loss		22.26	
Calculated Initial Porosity		38.58	

********** COMMENTS **********

The thin section was prepared from a 1inch long core chip and is stained for potassium feldspar and dual carbo
nates.
The biotite count is questionable.
The ferroan calcite occurs above quartz overgrowths.
It is difficult to separate matrix from deformed argillaceous fragments.
Two of the ankerite counts probably represent overgrowths on detrital dolomite.
The unknown framework grain replaced by ferroan calcite may be a potassium feldspar.

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: Topagoruk #1
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 5974
Mean size = 0.117mm (3.10 Phi) Sorting = .567 Phi
Porosity = 0.0 Permeability (md) = 0 Total Counts = 300
Lithology: Very fine-grained well sorted argillaceous lithic and feldspathic sandstone cemented by plastic deformation and suturing
Special Comment: Size and sorting data are measured values and apply to the framework fraction only.
Filename: 5974 .PCT Date: 03-04-2009 Formula Filename.ext: GEORGIA.WK1

COMPONENT	COUNTS (#)	PRESENT COMPOSITION (% total cnts)	PRESENT COMPOSITION (% fraction)	RECONSTRUCTED COMPOSITION (% total cnts)	RECONSTRUCTED COMPOSITION (% fraction)
FRAMEWORK COMPONENT					
Monocrystalline Quartz	97	32.3	38.2	32.3	38.2
Polycryst. Quartz (2-5 subunits)	17	5.7	6.7	5.7	6.7
Polycryst. Quartz (>5 subunits)	1	0.3	0.4	0.3	0.4
Polyxln. Quartz w/ Tr. Aligned Mica	21	7.0	8.3	7.0	8.3
Dense Nondescript Chert	26	8.7	10.2	8.7	10.2
Micaceous Quartzite(<8%micas/chlorite)	1	0.3	0.4	0.3	0.4
Plagioclase	36	12.0	14.2	12.0	14.2
Granitic Fragment (>40% Feldspars)	2	0.7	0.8	0.7	0.8
Dolomite Rock Fragments	14	4.7	5.5	4.7	5.5
Organic Fragment	6	2.0	2.4	2.0	2.4
Clay/Mud Clasts	10	3.3	3.9	3.3	3.9
Shale/Mudstone Fragments	3	1.0	1.2	1.0	1.2
Argillite Fragment	3	1.0	1.2	1.0	1.2
Muscovite	2	0.7	0.8	0.7	0.8
Biotite	1	0.3	0.4	0.3	0.4
Chlorite	1	0.3	0.4	0.3	0.4
Metasiltstone/Metamudstone	2	0.7	0.8	0.7	0.8
Unknown Rigid Framework Grain	11	3.7	4.3	3.7	4.3
REPLACEMENT COMPONENTS					
PORES					
Intergranular Pore (2-20um)	6	2.0	85.7	2.0	85.7
Intergranular Pore (>20um)	1	0.3	14.3	0.3	14.3
PORE-FILLING COMPONENTS					
Kaolinite	1	0.3	2.6	0.3	2.6
Siderite	4	1.3	10.3	1.3	10.3
Quartz Overgrowths	7	2.3	17.9	2.3	17.9
Pyrite/Marcasite	1	0.3	2.6	0.3	2.6
Clay and Mud Matrix	26	8.7	66.7	8.7	66.7
LAMINA/BURROW FILLS & FRACTURE FILLS					

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Q Quartzose Components (% Framwrk)(Non-Folk)	163.00	67.08	67.08
F FeldspathicComponents (%Frmwrk)(Non-Folk)	38.00	15.64	15.64
L Lithic Components (% Framework)(Non-Folk)	42.00	17.28	17.28
Qt-Quartzose Comp.(pseudo-Dickin.)(%Tot.QtFL)	163.60	78.28	78.28
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QtFL)	37.40	17.89	17.89
L-Lithic Comp. (pseudo-Dickinson)(%Tot.QtFL)	8.00	3.83	3.83
Qm-Monoxln.Quartz(pseudo-Dickin.)(%Tot.QmFLt)	98.60	47.18	47.18
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QmFLt)	37.40	17.89	17.89
Lt-Tot.Lithic Comp.(pseudo-Dick.)(%Tot.QmFLt)	73.00	34.93	34.93
Q Quartzose Components-Folk (% Framework)	137.00	61.43	61.43
F FeldspathicComponents-Folk.(% Framework)	38.00	17.04	17.04
L Lithic Components-Folk (%Framework)	48.00	21.52	21.52
Total Quartz (%Framework Fraction)	136.00	53.54	53.54
Total Chert (% Framework Fraction)	26.00	10.24	10.24
Tot. Quartzose Sstone & Sltstone(%Fmwrk Frac)	0.00	0.00	0.00
Tot.Mica.Qtzite& Qtzose Microsch.(%Fmwk Frac)	1.00	0.39	0.39
Total Plagioclase (%FrameworkFraction)	36.00	14.17	14.17
Tot. Potassium Feld. (% Framework Fraction)	0.00	0.00	0.00
Tot. Granitic &Gneissic Frags.(% Frmwrk Frac)	2.00	0.79	0.79
Tot. Feldspath.Sandst.& Sltst.(% Frmwrk Frac)	0.00	0.00	0.00
Total Silic.Volcanics (% Framework Fraction)	0.00	0.00	0.00
Tot.Basic & Intmed.Volcanics (% Frmwrk Frac.)	0.00	0.00	0.00
Total Volc. Glass & Tuff Frags(% Frmwrk Frac)	0.00	0.00	0.00
Tot. Ductile Metamorph.Frags.(% Frmwrk Frac.)	5.00	1.97	1.97
Tot. Carbonate Fragments (% Framework Frac.)	14.00	5.51	5.51
Tot.Unstable Heavy Min. & Diore (%Frmwk Frac)	0.00	0.00	0.00
Tot. Lithic Sandst.& Sltst (% Frmwrk Frac.)	0.00	0.00	0.00
Tot. Argil. Sedimentary Frags.(%Frmwrk Frac.)	13.00	5.12	5.12

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: Topagoruk #1
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 5974

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Total Micas & Chlorite (% Framework Fraction)	4.00	1.57	1.57
Total Organic Fragments (%Framework Fraction)	6.00	2.36	2.36
Total Rigid Framework Grains (% Frmwrk Frac.)	226.00	88.98	88.98
Tot.Ductile Framework Grains (% Frmwrk Frac.)	28.00	11.02	11.02
Tot. Cts (adjusted to excl.Artific.Por.& Lam)	300.00	300.00	300.00
Tot. Intergrn.Carbonate Cement(% Adj.Tot.Cts)	4.00	1.33	1.33
Tot. Intergran.Zeolite Cement(% Adj.Tot.Cts)	0.00	0.00	0.00
Tot. Intergran.Auth.Clay Cement(%Adj.Tot.Cts)	1.00	0.33	0.33
Tot.Intergrn.Indetrm.Pore Fill(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Limonite/Hematite(%Adj.Tot.Cts)	0.00	0.00	0.00
Total Intergranular Cements (%Adj.Tot.Cts)	13.00	4.33	4.33
Total Detrital Matrix (% Adj.Tot.Cts.)	26.00	8.67	8.67
Tot. Calc.Dissolved Frmwrk(%Tot.Frame.Fract.)	0.00	0.00	0.00
Total Intergranular Porosity (%Adj.Tot.Cts.)	7.00	2.33	2.33
Calc.Secondary Porosity (% Adj.Tot.Cts.)	0.00	0.00	0.00
Tot. Calc. Visible Porosity (%Adj. Tot. Cts.)	7.00	2.33	2.33
Calc.Secondary Porosity (% Tot.Vis. Porosity)	0.00	0.00	0.00
Total Intergranular Volume (% Adj.Tot. Cts.)	46.00	15.33	15.33
Compaction Loss(% Adj. Tot. Cts)		22.10	
Bulk Volume Corrected Compaction Loss		26.11	
Calculated Initial Porosity		37.44	

********** COMMENTS **********

The thin section was prepared from a 1inch long core chip and is stained for potassium feldspar and dual carbo
nates.
The kaolinite probably contains significant microporosity.
The micaceous quartzite count is questionable.
It is difficult to separate matrix from deformed argillaceous fragments.
The matrix material probably contains large amounts of microporosity.

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: South Meade #1
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 5993
Mean size = 0.131mm (2.93 Phi) Sorting = .585 Phi
Porosity = 0.0 Permeability (md) = 0 Total Counts = 300
Lithology: Fine-grained well sorted very argillaceous lithic sandstone cemented by suturing and plastic de formation
Special Comment: Size and sorting data are measured values and apply to the framework fraction only.
Filename: 5993 .PCT Date: 03-04-2009 Formula Filename.ext: GEORGIA.WK1

COMPONENT	COUNTS (#)	PRESENT COMPOSITION (% total cnts)	PRESENT COMPOSITION (% fraction)	RECONSTRUCTED COMPOSITION (% total cnts)	RECONSTRUCTED COMPOSITION (% fraction)
FRAMEWORK COMPONENT					
Monocrystalline Quartz	60	20.0	35.3	20.0	35.3
Polycryst. Quartz (2-5 subunits)	14	4.7	8.2	4.7	8.2
Polycryst. Quartz (>5 subunits)	3	1.0	1.8	1.0	1.8
Polyxln. Quartz w/ Tr. Aligned Mica	15	5.0	8.8	5.0	8.8
Dense Nondescript Chert	11	3.7	6.5	3.7	6.5
Argillaceous Chert	2	0.7	1.2	0.7	1.2
Micaceous Quartzite(<8%micas/chlorite)	5	1.7	2.9	1.7	2.9
Quartzose Mica.Microschist/Metachrt	2	0.7	1.2	0.7	1.2
Quartzose Sandstone/Siltstone Frag.	1	0.3	0.6	0.3	0.6
Stable Heavy Minerals (Zircon etc.)	2	0.7	1.2	0.7	1.2
Plagioclase	11	3.7	6.5	3.7	6.5
Dolomite Rock Fragments	14	4.7	8.2	4.7	8.2
Organic Fragment	5	1.7	2.9	1.7	2.9
Shale/Mudstone Fragments	2	0.7	1.2	0.7	1.2
Argillite Fragment	4	1.3	2.4	1.3	2.4
Phyllite Fragment	8	2.7	4.7	2.7	4.7
Biotite	1	0.3	0.6	0.3	0.6
Chlorite	3	1.0	1.8	1.0	1.8
Indeterminate/Aldered Mica	1	0.3	0.6	0.3	0.6
Metasiltstone/Metamudstone	5	1.7	2.9	1.7	2.9
Unknown Rigid Framework Grain	1	0.3	0.6	0.3	0.6
REPLACEMENT COMPONENTS					
PORES					
PORE-FILLING COMPONENTS					
Siderite	5	1.7	4.1	1.7	4.1
Ankerite	3	1.0	2.4	1.0	2.4
Pyrite/Marcasite	1	0.3	0.8	0.3	0.8
Clay and Mud Matrix	114	38.0	92.7	38.0	92.7
LAMINA/BURROW FILLS & FRACTURE FILLS					
Clay/Mud Laminae and Burrow Fills	7	2.3	100.0	2.3	100.0

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Q Quartzose Components (% Framwrk)(Non-Folk)	115.00	68.05	68.05
F FeldspathicComponents (%Frmwrk)(Non-Folk)	11.00	6.51	6.51
L Lithic Components (% Framework)(Non-Folk)	43.00	25.44	25.44
Qt-Quartzose Comp.(pseudo-Dickin.)(%Tot.QtFL)	110.50	77.27	77.27
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QtFL)	11.00	7.69	7.69
L-Lithic Comp. (pseudo-Dickinson)(%Tot.QtFL)	21.50	15.03	15.03
Qm-Monoxln.Quartz(pseudo-Dickin.)(%Tot.QmFLt)	65.50	45.80	45.80
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QmFLt)	11.00	7.69	7.69
Lt-Tot.Lithic Comp.(pseudo-Dick.)(%Tot.QmFLt)	66.50	46.50	46.50
Q Quartzose Components-Folk (% Framework)	98.00	62.42	62.42
F FeldspathicComponents-Folk.(% Framework)	11.00	7.01	7.01
L Lithic Components-Folk (%Framework)	48.00	30.57	30.57
Total Quartz (%Framework Fraction)	92.00	54.12	54.12
Total Chert (% Framework Fraction)	13.00	7.65	7.65
Tot. Quartzose Sstone & Sltstone(%Fmwrk Frac)	1.00	0.01	0.01
Tot.Mica.Qtzite& Qtzose Microsch.(%Fmwk Frac)	7.00	4.12	4.12
Total Plagioclase (%FrameworkFraction)	11.00	6.47	6.47
Tot. Potassium Feld. (% Framework Fraction)	0.00	0.00	0.00
Tot. Granitic &Gneissic Frags.(% Frmwrk Frac)	0.00	0.00	0.00
Tot. Feldspath.Sandst.& Sltst.(% Frmwrk Frac)	0.00	0.00	0.00
Total Silic.Volcanics (% Framework Fraction)	0.00	0.00	0.00
Tot.Basic & Intmed.Volcanics (% Frmwrk Frac.)	0.00	0.00	0.00
Total Volc. Glass & Tuff Frags(% Frmwrk Frac)	0.00	0.00	0.00
Tot. Ductile Metamorph.Frags.(% Frmwrk Frac.)	17.00	10.00	10.00
Tot. Carbonate Fragments (% Framework Frac.)	14.00	8.24	8.24
Tot.Unstable Heavy Min. & Diore (%Frmwk Frac)	0.00	0.00	0.00
Tot. Lithic Sandst.& Sltst (% Frmwrk Frac.)	0.00	0.00	0.00

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: South Meade #1
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 5993

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Tot. Argil. Sedimentary Frags.(%Frmwrk Frac.)	2.00	1.18	1.18
Total Micas & Chlorite (% Framework Fraction)	5.00	2.94	2.94
Total Organic Fragments (%Framework Fraction)	5.00	2.94	2.94
Total Rigid Framework Grains (% Frmwrk Frac.)	141.00	82.94	82.94
Tot.Ductile Framework Grains (% Frmwrk Frac.)	29.00	17.06	17.06
Tot. Cts (adjusted to excl.Artific.Por.& Lam)	293.00	293.00	293.00
Tot. Intergrn.Carbonate Cement(% Adj.Tot.Cts)	8.00	2.73	2.73
Tot. Intergran.Zeolite Cement(% Adj.Tot.Cts)	0.00	0.00	0.00
Tot. Intergran.Auth.Clay Cement(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Indetrm.Pore Fill(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Limonite/Hematite(%Adj.Tot.Cts)	0.00	0.00	0.00
Total Intergranular Cements (%Adj.Tot.Cts)	9.00	3.07	3.07
Total Detrital Matrix (% Adj.Tot.Cts.)	121.00	41.30	41.30
Tot. Calc.Dissolved Frmwrk(%Tot.Frame.Fract.)	0.00	0.00	0.00
Total Intergranular Porosity (%Adj.Tot.Cts.)	0.00	0.00	0.00
Calc.Secondary Porosity (% Adj.Tot.Cts.)	0.00	0.00	0.00
Tot. Calc. Visible Porosity (%Adj. Tot. Cts.)	0.00	0.00	0.00
Calc.Secondary Porosity (% Tot.Vis. Porosity)	0.00	0.00	0.00
Total Intergranular Volume (% Adj.Tot. Cts.)	123.00	41.98	41.98
Compaction Loss(% Adj. Tot. Cts)		-4.65	
Bulk Volume Corrected Compaction Loss		-8.01	
Calculated Initial Porosity		37.33	

********** COMMENTS **********

The thin section was prepared from a 1inch long core chip and is stained for potassium feldspar and dual carbo
nates.
The stable heavy minerals are an apatite and a rutile.
Two of the ankerite counts probably represent overgrowths on detrital dolomite.
Elongate framework grains are relatively well aligned.
The matrix material probably contains large amounts of microporosity.

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: Ikpikpuk #1
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 7142.5
Mean size = 0.114mm (3.13 Phi) Sorting = .43 Phi
Porosity = 0.0 Permeability (md) = 0 Total Counts = 300
Lithology: Very fine-grained well sorted argillaceous lithic sandstone cemented by suturing and plastic de formation
Special Comment: Size and sorting data are measured values and apply to the framework fraction only.
Filename: 7142 .PCT Date: 03-04-2009 Formula Filename.ext: GEORGIA.WK1

COMPONENT	COUNTS (#)	PRESENT COMPOSITION (% total cnts)	PRESENT COMPOSITION (% fraction)	RECONSTRUCTED COMPOSITION (% total cnts)	RECONSTRUCTED COMPOSITION (% fraction)
FRAMEWORK COMPONENT					
Monocrystalline Quartz	98	32.7	39.4	32.7	39.4
Polycryst. Quartz (2-5 subunits)	11	3.7	4.4	3.7	4.4
Polycryst. Quartz (>5 subunits)	3	1.0	1.2	1.0	1.2
Polyxln. Quartz w/ Tr. Aligned Mica	21	7.0	8.4	7.0	8.4
Dense Nondescript Chert	28	9.3	11.2	9.3	11.2
Micaceous Quartzite(<8%micas/chlorite)	6	2.0	2.4	2.0	2.4
Quartzose Sandstone/Siltstone Frag.	1	0.3	0.4	0.3	0.4
Plagioclase	27	9.0	10.8	9.0	10.8
Silicic Volcanic Fragment	1	0.3	0.4	0.3	0.4
Dolomite Rock Fragments	16	5.3	6.4	5.3	6.4
Organic Fragment	2	0.7	0.8	0.7	0.8
Clay/Mud Clasts	6	2.0	2.4	2.0	2.4
Shale/Mudstone Fragments	4	1.3	1.6	1.3	1.6
Indeterminate Argil.Frag./Ductile	2	0.7	0.8	0.7	0.8
Argillite Fragment	5	1.7	2.0	1.7	2.0
Muscovite	1	0.3	0.4	0.3	0.4
Chlorite	4	1.3	1.6	1.3	1.6
Metasiltstone/Metamudstone	8	2.7	3.2	2.7	3.2
Unknown Rigid Framework Grain	5	1.7	2.0	1.7	2.0
REPLACEMENT COMPONENTS					
PORES					
Intergranular Pore (2-20um)	6	2.0	66.7	2.0	66.7
Intergranular Pore (>20um)	3	1.0	33.3	1.0	33.3
PORE-FILLING COMPONENTS					
Siderite	9	3.0	21.4	3.0	21.4
Ankerite	1	0.3	2.4	0.3	2.4
Quartz Overgrowths	4	1.3	9.5	1.3	9.5
Clay and Mud Matrix	28	9.3	66.7	9.3	66.7
LAMINA/BURROW FILLS & FRACTURE FILLS					

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Q Quartzose Components (% Framwrk)(Non-Folk)	168.00	68.85	68.85
F FeldspathicComponents (%Frmwrk)(Non-Folk)	27.00	11.07	11.07
L Lithic Components (% Framework)(Non-Folk)	49.00	20.08	20.08
Qt-Quartzose Comp.(pseudo-Dickin.)(%Tot.QtFL)	167.50	78.64	78.64
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QtFL)	27.00	12.68	12.68
L-Lithic Comp. (pseudo-Dickinson)(%Tot.QtFL)	18.50	8.69	8.69
Qm-Monoxln.Quartz(pseudo-Dickin.)(%Tot.QmFLt)	104.50	49.06	49.06
F-Feldspath.Comp.(pseudo-Dickin.)(%Tot.QmFLt)	27.00	12.68	12.68
Lt-Tot.Lithic Comp.(pseudo-Dick.)(%Tot.QmFLt)	81.50	38.26	38.26
Q Quartzose Components-Folk (% Framework)	140.00	60.61	60.61
F FeldspathicComponents-Folk.(% Framework)	27.00	11.69	11.69
L Lithic Components-Folk (%Framework)	64.00	27.71	27.71
Total Quartz (%Framework Fraction)	133.00	53.41	53.41
Total Chert (% Framework Fraction)	28.00	11.24	11.24
Tot. Quartzose Sstone & Sltstone(%Fmwrk Frac)	1.00	0.00	0.00
Tot.Mica.Qtzite& Qtzose Microsch.(%Fmwk Frac)	6.00	2.41	2.41
Total Plagioclase (%FrameworkFraction)	27.00	10.84	10.84
Tot. Potassium Feld. (% Framework Fraction)	0.00	0.00	0.00
Tot. Granitic &Gneissic Frags.(% Frmwrk Frac)	0.00	0.00	0.00
Tot. Feldspath.Sandst.& Sltst.(% Frmwrk Frac)	0.00	0.00	0.00
Total Silic.Volcanics (% Framework Fraction)	1.00	0.40	0.40
Tot.Basic & Intmed.Volcanics (% Frmwrk Frac.)	0.00	0.00	0.00
Total Volc. Glass & Tuff Frags(% Frmwrk Frac)	0.00	0.00	0.00
Tot. Ductile Metamorph.Frags.(% Frmwrk Frac.)	13.00	5.22	5.22
Tot. Carbonate Fragments (% Framework Frac.)	16.00	6.43	6.43
Tot.Unstable Heavy Min. & Diore (%Frmwk Frac)	0.00	0.00	0.00
Tot. Lithic Sandst.& Sltst (% Frmwrk Frac.)	0.00	0.00	0.00
Tot. Argil. Sedimentary Frags.(%Frmwrk Frac.)	12.00	4.82	4.82

POINT COUNT ANALYSIS

Region I.D.: North Slope Alaska
Well/Outcrop I.D.: Ikpikpuk #1
Age/Strat. Unit Designation: Unknown
Depth/Sample I.D.: 7142.5

SUMMARY CALCULATIONS DESCRIPTIONS	COUNTS (#)	PRESENT COMPOSITION	RECONSTRUCTED COMPOSITION
Total Micas & Chlorite (% Framework Fraction)	5.00	2.01	2.01
Total Organic Fragments (%Framework Fraction)	2.00	0.80	0.80
Total Rigid Framework Grains (% Frmwrk Frac.)	217.00	87.15	87.15
Tot.Ductile Framework Grains (% Frmwrk Frac.)	32.00	12.85	12.85
Tot. Cts (adjusted to excl.Artific.Por.& Lam)	300.00	300.00	300.00
Tot. Intergrn.Carbonate Cement(% Adj.Tot.Cts)	10.00	3.33	3.33
Tot. Intergran.Zeolite Cement(% Adj.Tot.Cts)	0.00	0.00	0.00
Tot. Intergran.Auth.Clay Cement(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Indetrm.Pore Fill(%Adj.Tot.Cts)	0.00	0.00	0.00
Tot.Intergrn.Limonite/Hematite(%Adj.Tot.Cts)	0.00	0.00	0.00
Total Intergranular Cements (%Adj.Tot.Cts)	14.00	4.67	4.67
Total Detrital Matrix (% Adj.Tot.Cts.)	28.00	9.33	9.33
Tot. Calc.Dissolved Frmwrk(%Tot.Frame.Fract.)	0.00	0.00	0.00
Total Intergranular Porosity (%Adj.Tot.Cts.)	9.00	3.00	3.00
Calc.Secondary Porosity (% Adj.Tot.Cts.)	0.00	0.00	0.00
Tot. Calc. Visible Porosity (%Adj. Tot. Cts.)	9.00	3.00	3.00
Calc.Secondary Porosity (% Tot.Vis. Porosity)	0.00	0.00	0.00
Total Intergranular Volume (% Adj.Tot. Cts.)	51.00	17.00	17.00
Compaction Loss(% Adj. Tot. Cts)		21.28	
Bulk Volume Corrected Compaction Loss		25.64	
Calculated Initial Porosity		38.28	

********** COMMENTS **********

The thin section was prepared from a 1inch long core chip and is stained for potassium feldspar and dual carbo
nates.
The matrix probably contains significant amounts of microporosity.
The ankerite count may represent an overgrowth on a detrital dolomite.
It is difficult to separate matrix from deformed argillaceous fragments.