


**“Measurement of Properties for Proppants
Used In Hydraulic Fracturing and Gravel-Packing
Operations” Evaluations on Core Sample
Labeled 35 56 9.6 -91 35 12.5 35 93 60 -91 58 68 Elevation
629 Hole #3 ST 14-03 (0.0ft - 69.0ft)
For Select Sands Corp Submitted February 5, 2015**

Prepared For:

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March 10, 2015

Rasool Mohammad
Select Sands Corp
Suite 310, 850 W. Hastings
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Dear Mr. Mohammad:

STIM-LAB, Inc. has completed the ISO 13503-2:2006/API RP19C:2008 evaluations requested on the submitted sand sample labeled 35 56 9.6 -91 35 12.5 35 93 60 -91 58 68 Elevation 629 Hole #3 ST 14-03 (0.0ft - 69.0ft). The sample will be referred to as ST 14-03 (0.0ft - 69.0ft), throughout the report. The sample was received at Stim-Lab Inc. on February 5, 2015.

Upon arrival, the sample was disassociated, dried, weighed, and washed through a 200 mesh sieve. The sample retained on the sieve was then dried and reweighed. The percent loss was calculated from the material that washed through the sieve. The "Pre" and "Post" wash weights as well as the calculated loss for the sample are provided in Table 1.

The x-ray diffraction analysis results for the sample are provided in Table 2. The composite sieve analysis results for the sample are provided in Table 3. As instructed, the 30/50, 40/70 and 70/140 size fractions, of the sample, were isolated for further analysis.

The sieve analysis results for the 30/50, 40/70 and 70/140 samples are provided in Table 4. The sphericity and roundness (Krumbein Shape Factor), acid solubility, turbidity, bulk density, apparent density and crush with K-Value results for the samples are provided in Tables 5 through 7. Pictures of the samples are provided following Table 7, for you to review. The procedures followed are as stated in ISO 13503-2:2006/API RP19C:2008.

Thank you for choosing Stim-Lab Inc. to perform these analyses. We hope you will consider us for your future testing needs. If you have any questions regarding the testing or results, please do not hesitate to give me a call.

Sincerely,

Lisa O'Connell
Laboratory Supervisor
Conductivity Laboratory



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Table 1				
Select Sands Corp February 5, 2015				
Loss From Washing				
Sample ID	Dry Prewash Wt (g)	Dry Postwash Wt(g)	Grams Lost	% Loss
ST 14-03 (0.0ft - 69.0ft)	5227.23	5080.27	146.96	2.81

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Table 2							
Select Sands Corp February 5, 2015							
XRD TABLE OF RESULTS							
Sample Name	Quartz %	Plagioclase %	K-feldspar %	Calcite %	Total Clays %	Illite %	Chlorite %
ST 14-03 (0.0ft - 69.0ft)	99	trace	trace	trace	1	1	trace

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Table 3

**Sieve Analysis of Submitted Proppant Samples
Select Sands Corp**

ISO 13503-2:2006/API RP19C:2008, Section 6, "Sieve Analysis"

Sample I.D.	ST 14-03 (0.0ft - 69.0ft)	
US Standard Sieve No.	Weight %	
	Retained	Cumulative
6	-	0.0
8	-	0.0
10	0.0	0.0
12	0.0	0.0
14	0.0	0.0
16	0.0	0.0
18	0.0	0.0
20	0.0	0.0
25	0.0	0.0
30	0.0	0.0
35	0.2	0.2
40	0.9	1.1
45	3.4	4.5
50	6.7	11.2
60	9.9	21.1
70	12.8	33.9
80	18.7	52.6
100	15.8	68.4
120	15.0	83.4
140	9.1	92.5
170	4.7	97.2
200	2.0	99.3
230	0.6	99.9
pan	0.1	100.0
total	100.0	
in-size	0.0	= as 6/12
in-size	0.0	= as 8/16
in-size	0.0	= as 12/20
in-size	0.0	= as 16/30
in-size	1.1	= as 20/40
in-size	11.1	= as 30/50
in-size	32.8	= as 40/70
in-size	58.6	= as 70/140
in-size	81.3	= as 50/140
ISO Mean Dia. (mm)	0.198	
Median Dia. (mm)	0.183	

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Table 4

**Sieve Analysis of Submitted Proppant Samples
Select Sands Corp**

ISO 13503-2:2006/API RP19C:2008, Section 6, "Sieve Analysis"

Sample I.D.	ST 14-03 (0.0ft - 69.0ft) 3050		ST 14-03 (0.0ft - 69.0ft) 4070		ST 14-03 (0.0ft - 69.0ft) 70140	
	Weight %		Weight %		Weight %	
US Standard Sieve No.	Retained	Cumulative	Retained	Cumulative	Retained	Cumulative
6	-	0.0	-	0.0	-	0.0
8	-	0.0	-	0.0	-	0.0
10	-	0.0	-	0.0	-	0.0
12	-	0.0	-	0.0	-	0.0
14	-	0.0	-	0.0	-	0.0
16	-	0.0	-	0.0	-	0.0
18	-	0.0	-	0.0	-	0.0
20	-	0.0	-	0.0	-	0.0
25	0.0	0.0	-	0.0	-	0.0
30	0.0	0.0	0.0	0.0	-	0.0
35	5.4	5.4	0.0	0.0	-	0.0
40	14.8	20.2	0.0	0.0	-	0.0
45	31.2	51.4	12.3	12.3	-	0.0
50	47.9	99.3	21.2	33.5	0.0	0.0
60	0.6	99.9	33.4	66.9	0.0	0.0
70	0.0	99.9	32.6	99.5	0.3	0.3
80	0.0	99.9	0.4	99.9	28.0	28.3
100	0.0	99.9	0.0	99.9	27.5	55.9
120	-	99.9	0.0	99.9	28.2	84.1
140	-	99.9	0.0	99.9	15.8	99.9
170	-	99.9	0.0	99.9	0.1	100.0
200	-	99.9	0.0	99.9	0.0	100.0
230	-	99.9	-	99.9	-	100.0
pan	0.1	100.0	0.0	100.0	0.0	100.0
total	100.0		100.0		100.0	
in-size	99.3	= as 30/50	99.5	= as 40/70	99.6	= as 70/140
ISO Mean Dia. (mm)	0.379		0.286		0.158	
Median Dia. (mm)	0.372		0.280		0.155	

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Table 5

Sample ID: ST 14-03 (0.0ft - 69.0ft) 3050
 Select Sands Corp
 February 5, 2015

Measurement of Properties of Proppants
 Used In Hydraulic Fracturing and Gravel-Packing Operations

ISO 13503-2:2006/API RP19C:2008, Section 7, "Proppant Sphericity and Roundness"

* mean of a 21 count

Sphericity = 0.7
Roundness = 0.7
Clusters = None Observed in Field of Count

Recommended Sphericity and Roundness for proppants = 0.6 or greater (ISO/DIS 13503-2/Amd.1:2009)

ISO 13503-2:2006/API RP19C:2008, Section 8, "Acid Solubility"

* mean of 3 analyses

Acid Sol. Percent = 0.7%

Recommended Maximum Acid Solubility for proppants 6/12 thru 30/50 = 2.0% (ISO/DIS 13503-2/Amd.1:2009)

Tested as per ISO 13503-2:2006/API RP19C:2008, 100ml of 12:3 HCl:HF* with 5 grams of sand or proppant at 150°F for 30 minutes,
 *Other acids may be specified, depending on desired application

ISO 13503-2:2006/API RP19C:2008, Section 9, "Turbidity Test"

Turbidity = 7 NTU

Method 1: Turbidity, suggested maximum proppant turbidity = equal or less than 250 NTU (ISO/DIS 13503-2/Amd.1:2009)

ISO 13503-2:2006/API RP19C:2008, Section 10,
 "Procedures for Determining Proppant Bulk Density, Apparent Density"

Bulk Density = 1.49 g/cm³
Bulk Density = 93.0 lb/ft³
Apparent Density = (Oil) 2.63 g/cm³

ISO 13503-2:2006/API RP19C:2008, Section 11, "Proppant Crush-Resistance Test"

<u>Stresses Tested (psi)</u>	<u>% Fines</u> <u>-30+50 crush prep</u>
4000	2.0%
7000	8.5%
8000	10.5%
<u>K-Value</u> =	<u>7K</u>

The highest stress level which proppant generates no more than 10% crushed material, rounded down to the nearest 1000psi = K-Value

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Table 6

Sample ID: ST 14-03 (0.0ft - 69.0ft) 4070
 Select Sands Corp
 February 5, 2015

Measurement of Properties of Proppants
 Used In Hydraulic Fracturing and Gravel-Packing Operations

ISO 13503-2:2006/API RP19C:2008, Section 7, "Proppant Sphericity and Roundness"

* mean of a 21 count

Sphericity = 0.7
Roundness = 0.7
Clusters = Approx. 1 of Every 200 Grains Contained Clusters

Recommended Sphericity and Roundness for proppants = 0.6 or greater (ISO/DIS 13503-2/Amd.1:2009)

ISO 13503-2:2006/API RP19C:2008, Section 8, "Acid Solubility"

* mean of 3 analyses

Acid Sol. Percent = 0.7%

Recommended Maximum Acid Solubility for proppants 40/70 to 70/140 = 3.0% (ISO/DIS 13503-2/Amd.1:2009)

Tested as per ISO 13503-2:2006/API RP19C:2008, 100ml of 12:3 HCl:HF* with 5 grams of sand or proppant at 150°F for 30 minutes, *Other acids may be specified, depending on desired application

ISO 13503-2:2006/API RP19C:2008, Section 9, "Turbidity Test"

Turbidity = 6 NTU

Method 1: Turbidity, suggested maximum proppant turbidity = equal or less than 250 NTU (ISO/DIS 13503-2/Amd.1:2009)

ISO 13503-2:2006/API RP19C:2008, Section 10,
 "Procedures for Determining Proppant Bulk Density, Apparent Density"

Bulk Density = 1.47 g/cm³
Bulk Density = 91.7 lb/ft³
Apparent Density = (Oil) 2.64 g/cm³

ISO 13503-2:2006/API RP19C:2008, Section 11, "Proppant Crush-Resistance Test"

<u>Stresses Tested (psi)</u>	<u>% Fines</u> <u>-40+70 crush prep</u>
5000	2.3%
9000	7.9%
10000	10.4%
<u>K-Value</u> =	<u>9K</u>

The highest stress level which proppant generates no more than 10% crushed material, rounded down to the nearest 1000psi = K-Value

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Table 7

Sample ID: ST 14-03 (0.0ft - 69.0ft) 70140
 Select Sands Corp
 February 5, 2015

Measurement of Properties of Proppants
 Used In Hydraulic Fracturing and Gravel-Packing Operations

ISO 13503-2:2006/API RP19C:2008, Section 7, "Proppant Sphericity and Roundness"

* mean of a 21 count

Sphericity = 0.7
Roundness = 0.7
Clusters = None Observed in Field of Count

Recommended Sphericity and Roundness for proppants = 0.6 or greater (ISO/DIS 13503-2/Amd.1:2009)

ISO 13503-2:2006/API RP19C:2008, Section 8, "Acid Solubility"

* mean of 3 analyses

Acid Sol. Percent = 0.9%

Recommended Maximum Acid Solubility for proppants 40/70 to 70/140 = 3.0% (ISO/DIS 13503-2/Amd.1:2009)

Tested as per ISO 13503-2:2006/API RP19C:2008, 100ml of 12:3 HCl:HF* with 5 grams of sand or proppant at 150°F for 30 minutes,
 *Other acids may be specified, depending on desired application

ISO 13503-2:2006/API RP19C:2008, Section 9, "Turbidity Test"

Turbidity = 4 NTU

Method 1: Turbidity, suggested maximum proppant turbidity = equal or less than 250 NTU (ISO/DIS 13503-2/Amd.1:2009)

ISO 13503-2:2006/API RP19C:2008, Section 10,
 "Procedures for Determining Proppant Bulk Density, Apparent Density"

Bulk Density = 1.42 g/cm³
Bulk Density = 88.6 lb/ft³
Apparent Density (Oil) = 2.64 g/cm³

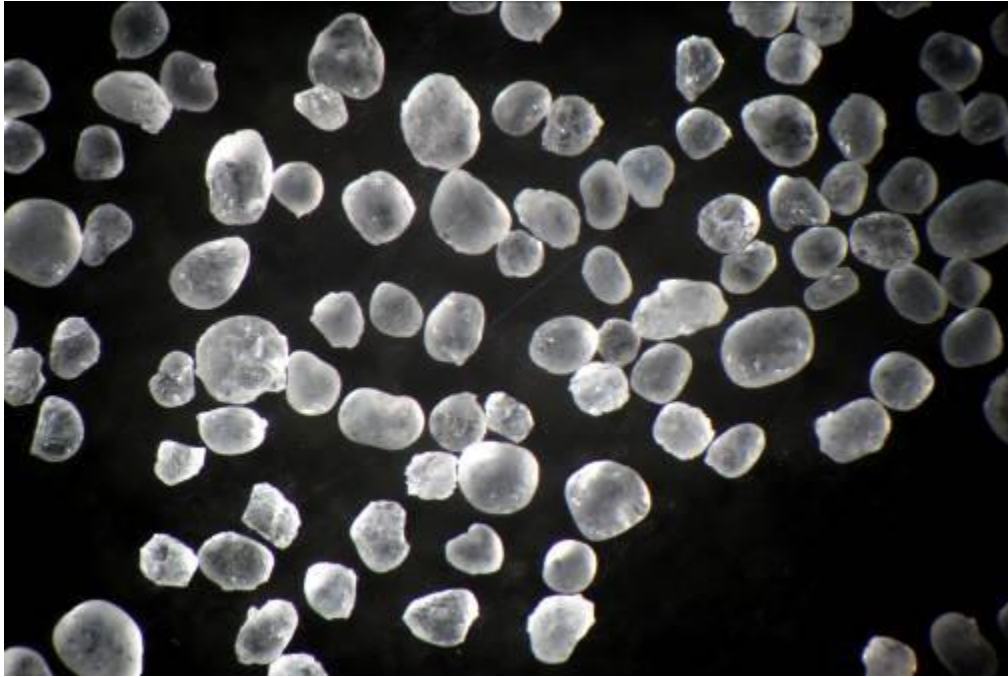
ISO 13503-2:2006/API RP19C:2008, Section 11, "Proppant Crush-Resistance Test"

<u>Stresses Tested (psi)</u>	<u>% Fines</u> <u>-70+140 crush prep</u>
5000	1.7%
10000	7.7%
11000	10.1%
K-Value =	<u>10K</u>

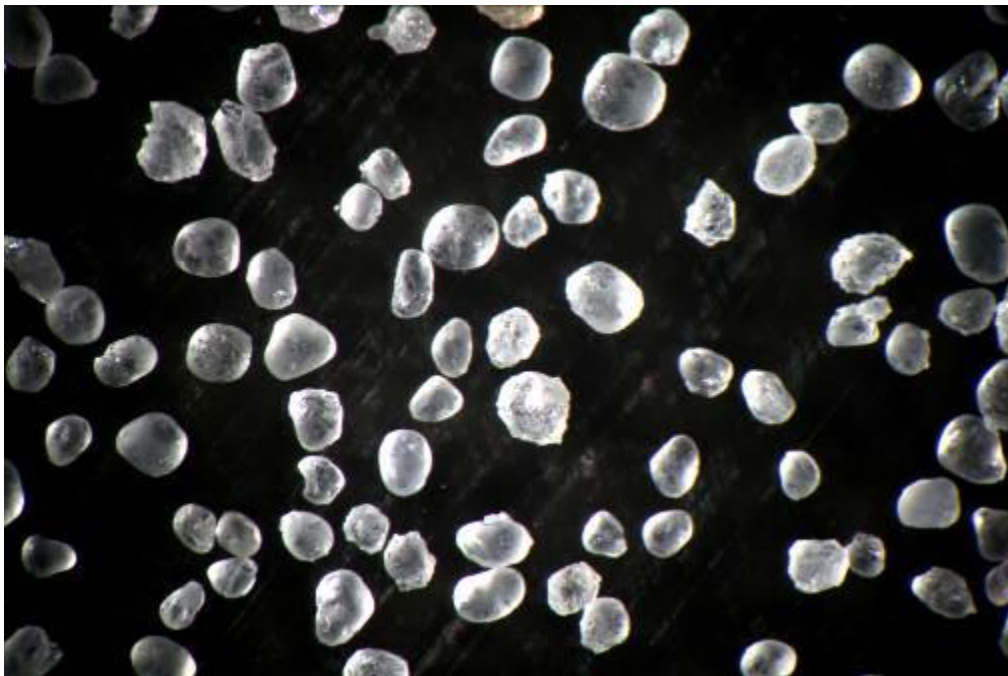
The highest stress level which proppant generates no more than 10% crushed material, rounded down to the nearest 1000psi = K-Value

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ST 14-03 (0.0ft – 69.0ft) 30/50



ST 14-03 (0.0ft – 69.0ft) 40/70



ST 14-03 (0.0ft – 69.0ft) 70/140

