

**“Measurement of Properties of Proppants Used in
Hydraulic Fracturing and Gravel-Packing Operations”
Modified API RP-56 as ISO 13503-2/API RP19C,
Evaluation of Sand Sample Disassociated
From Core for AAFFG**

Prepared For:

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P.O. Number: VISA 3843

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September 30, 2008

Mr. C.D. Rowsell
AAFFG / Bosonda International LTD
101-A Hickey Blvd. Suite 328
S. San Francisco, CA 94080

Dear Mr. Rowsell:

STIM-LAB, Inc. has completed the API RP-56 evaluations modified to ISO 13503-2/API RP19C requested on the submitted core sample. The sample was received at Stim-Lab Inc. on September 18, 2008., at which time the sample was disassociated, washed and dried prior to testing. The results of the composite sieve analysis are provided in Table 1. The crush, sphericity and roundness (Krumbein Shape Factor) and acid solubility results are provided in Table 2. A picture of the sample is provided at the end of this report. The procedures followed are as stated in the old API RP-56 and modified to the ISO 13503-2/API RP19C. The core sample was very well cemented and as a result, some fracturing of the sand grains may have occurred during disassociation, which may result in higher crush.

Thank you for having 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
Assistant Laboratory Supervisor
Conductivity Laboratory



SL 8183

Table 1
Sieve Analysis of Submitted Core Sample
From AAFFG

Sample I.D. US Standard Sieve No.	Silica Testing	
	Weight %	
	Retained	Cumulative
6	0.0	0.0
8	0.0	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	0.0	0.0
40	0.4	0.4
45	8.3	8.7
50	12.9	21.6
60	25.3	46.9
70	16.7	63.6
80	12.2	75.8
100	7.3	83.1
120	5.3	88.4
140	2.8	91.2
170	2.3	93.5
200	2.0	95.5
230	0.0	95.5
pan	4.5	100.0
total	100.0	
in-size	21.6	= as 30/50
in-size	63.2	= as 40/70
in-size	27.6	= as 70/140
Median Dia. (mm)	0.204	

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Table 2
40/70 Frac Sand Sample
Labeled Silica Sand Sample Fro AAFFG
Arriving 09/18/08

Recommended Practices for Testing Frac Sand
Used in Hydraulic Fracturing Operations

API RP-56, Section 8, "Recommended Frac Sand Crush Resistance Test"

<u>PSI</u>	<u>% Fines</u> <u>-40+70 Crush Prep</u>
5000	6.2

Suggested maximum fines for 40/70 Frac Sand per API RP-56 = 8% @ 5000psi

API RP-56, Section 5, "Frac Sand Sphericity and Roundness"

* mean of a 40 count (non-clustered grains)

<u>Sphericity =</u>	<u>0.7</u>
<u>Roundness =</u>	<u>0.6</u>

Clusters = Approx. 1 of Every 100 Grains Contained Clusters

Recommended Sphericity and Roundness for high strength proppants = 0.6 or greater for API RP-56

API RP-56, Section 6, "Evaluation of Sand Solubility in Acid"

* mean of 3 analysis

<u>Acid Sol. Percent =</u>	<u>1.3</u>	%
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Recommended Maximum Acid Solubility for frac sand 40/70 thru 70/140 = 3.0%

Tested as per API RP-56, 100ml of 12:3 HCl:HF with 5 grams of sand or proppant at 150°F +/- 5°F for 30 minutes

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40/70 Sample Silica Sand