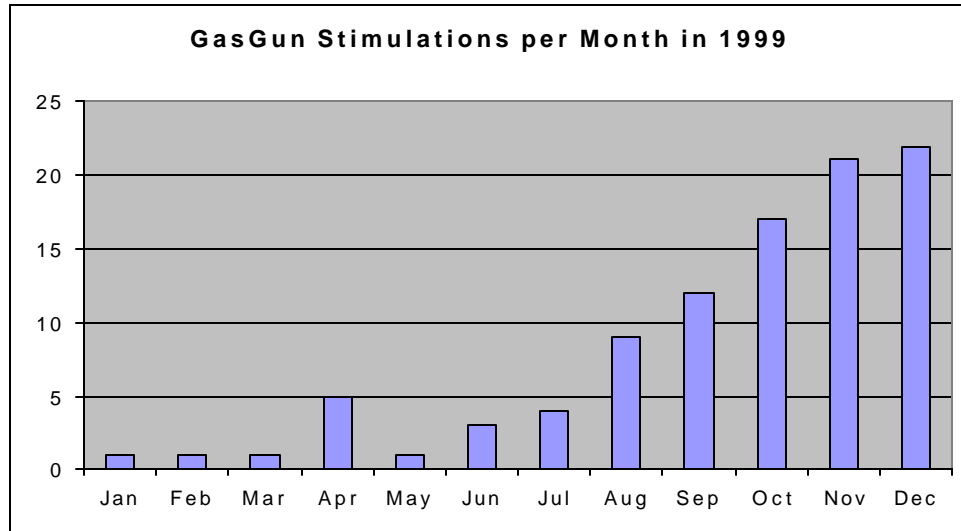


GasGun™ Newsletter

February 24, 2000

The chart shows how interest in the GasGun has been increasing steadily for the past year. We are especially gratified in the number of repeat customers who have seen for themselves how this exciting new tool can improve the production of their wells. Some owners are even buying up production with a GasGun stimulation strategy in mind.



Presentations at IOGA and SPE

A one hour talk on the GasGun will be presented by Dr. Richard Schmidt and Mr. J. R. Gain at 9am on Friday, March 10, at the annual Illinois Oil and Gas Association meeting in Evansville, IN. For more information contact IOGA at 618-242-2857.

A 45 minute presentation will be given by Dr. Richard Schmidt at 1:45pm on Wednesday, March 15, at a meeting of the Midwest Gas Storage Section of SPE in Pontiac, IL. For more information contact Mr. Mike Fugate at 815-223-8097 ext. 244.

Kentucky wireline services now fielding the GasGun

Five wireline companies in the Appalachian and Illinois Basins are now fielding the GasGun. Along with Appalachian Well Surveys and Timco, Inc., in Ohio, and Gain Wire Line Services in Illinois, the following two companies have been added and are fielding tools in Kentucky and Tennessee.

Allegheny Wireline Services, Inc.
London, KY

contact: Harold Kindle
(606) 864-9165

Norris Well Services, Inc.
Glasgow, KY

contact: Steve Norris
(270) 651-8737

Recent Results

In October and November, two old oil wells in Clark County, Illinois, were stimulated with the GasGun. These wells are open hole completions in the Trenton limestone at depths of approximately 2370 feet. Production in the first well increased from **1.5 to 22 BOPD** shortly after the stimulation. After one month, it was making **15 BOPD**, and after four months is now making **5 BOPD**. This translates to **over 1000 BBL** of added production in four months. More details on this well can be found in the following section, entitled Customer Testimonial. The second well increased from **1 to 21 BOPD**, but quickly fell to **8 BOPD**. Three months later it was making **4 BOPD**.

In October, an oil well in Vanderburgh County, Indiana, was stimulated with a 6 foot GasGun. This well was completed open hole in the Hardinsburg formation at a depth of 1766 feet and had been previously shot with nitro. Production increased from **1.5 to 8 BOPD** after the treatment and has held **steady** at that level for **four months**.

In October, an oil well in Posey County, Indiana, was stimulated with a 4 foot GasGun. This well is a cased hole completion in the Tar Springs formation at a depth of 2206 feet. There had not been any production from this well prior to the stimulation, and the well produced **40 BOPD** and **no water** after the stimulation. The lack of any water production is significant since hydraulic fracturing in this location typically results in large amounts of water. After four months, production is **5-8 BOPD**.

In January, another oil well in Posey County, Indiana, was stimulated with an 8 foot GasGun. This well is a cased hole completion in the Cypress formation at a depth of 2425 feet. Production increased from **1 to 18 BOPD**, but also made **200 BWPD**. The well was later hydraulically fractured, and since the GasGun had already broken down the formation it took only 900 psi pressure rather than the usual 1400 psi for this location.

Just last week, three oil wells in Gallatin County, Illinois, were stimulated with five GasGun tools. These wells were stimulated through perforated casing. All were completed in the Palestine formation at a depth of approximately 2030 feet, and one was also completed in the Clore and Degonia formations. Production in one well increased from **2 or 3 BOPD to 10 BOPD** and another increased from **3 or 4 BOPD to 15 BOPD**. Unfortunately, stimulation in the third well resulted in a large influx of water, possibly from a bad cement job.

For more information please contact:

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J Integral Engineering, Inc.
165 SW Tualatin Loop
West Linn, OR 97068

phone: (503) 557-1370

e-mail: raschmidt@compuserve.com

Customer Testimonial

The following is an e-mail letter we received from Mr. Moe Ashley of Ashley Oil, Inc. It gives details of the first well we stimulated for this company as mentioned previously. Mr. Ashley has kindly given us permission to share this information with you.

Richard,

November 5, 1999

I thought you should have a report on the initial results of our first GasGun treatment.

The oil reservoir that I chose to try the first experiment is the Westfield Trenton in Clark County, Illinois. The average well is completed in an open hole interval from about 2,300' to 2,450'. The producing formation is Ordovician age composed of a very tight limestone with an average porosity of 5 percent and permeability less than 1 md in the best part of the pay which is the bottom 80 feet. There are some small fractures often filled with calcite.

Almost every type of treatment has been tried in the formation including nitro shooting, river frac with large volumes, 100,000 gals fluid, acid treatments, and acid and nitrogen fracs over the years from 1920 to present. The best responses have been with the riverfracs performed in the late 1950's. Some wells responded with 200 BOPD production rates, but production declines have been rapid.

Ashley Oil Inc has about 50 old wells in the field, which is unitized, for a waterflood which was unsuccessful and since been abandoned. We are now converting the water injection wells back to producers.

For the first GasGun test I have chosen Redman #2. We shot an 8' X 3 1/4" gun because we didn't have a 10' gun prepared in the interval 2,465' to 2,373' on 10-22-99. The fluid level in the hole was @ about 1,200' before the shot and came up to about 300' within an hour after the shot. The well had been off production for about one month waiting to be pulled. Average production before the shot was about 1 1/2 BOPD with very little water.

It took us till 10-30-99 before we could get the well to pump satisfactorily. There was something bothering the valve assembly in the bottom of the hole. Finally the well started pumping and on 10-31-99 it made 17 BO. 11-1-99 it made 20 BO. 11-2-99 it made 22 BO. 11-3-99 it made 22 BO. 11-4-99 it made 18 1/2 BO. I'll keep tabs on the well and keep you posted. The job should pay for itself out of the increased production today or tomorrow. We plan to do well number two next week. Thanks for your efforts, but get us some 10 foot guns.

Moe