BORESAVER ULTRA C

Case Study 004

Mansfield, Texas

January 23-24, 2012

Reported Well Characteristics

US Imperial

Well Diameter	4	inchs
Total Well Depth	140	feet
Standing Water Level	20	feet

BoreSaver Ultra C Recommended Dose Rate

Severe	**25.80**	**pounds**	4%	**1.0**	**BOXES**
Maintenance	**12.90**	**pounds**	2%	**1.0**	**BOXES**

We made our dosage recommendation based on this information given to us before our visit. According to the video, the actual static water level was 86 feet and the actual total depth was 122 ½ feet. There may have been a lot of debris on the bottom which would partially account for the difference, but at any rate, it looks like we could have used less product

Monday, January 23, 2012

Arrived on site, set up, and pulled the pump.

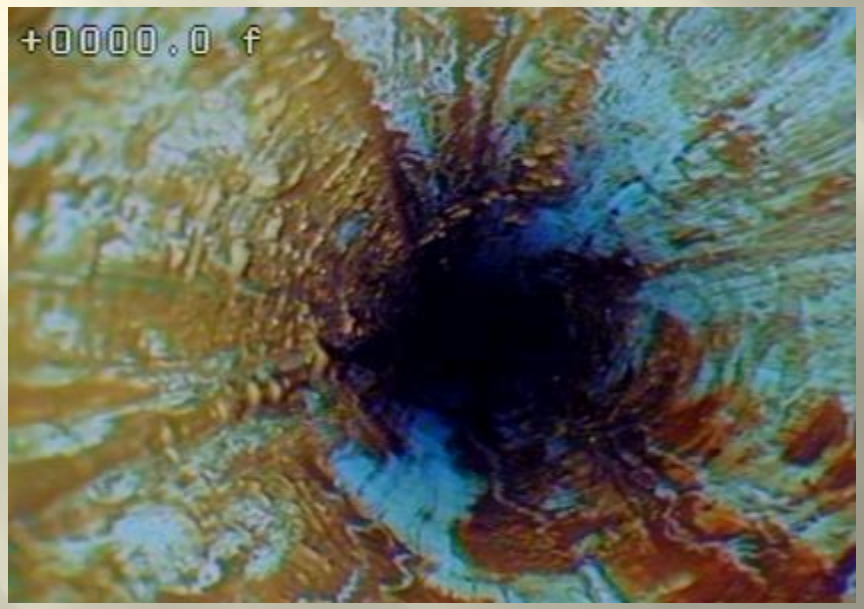
Monday, January 23, 2012

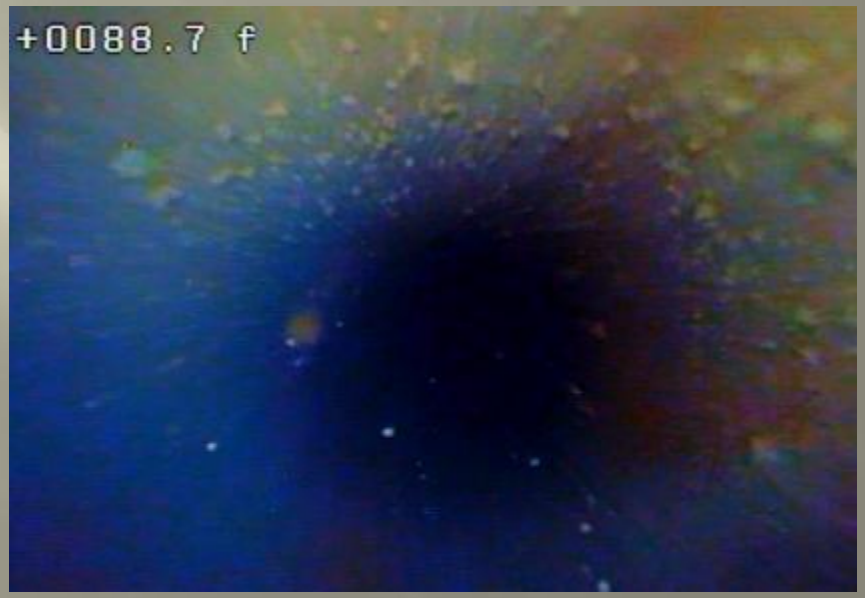
We were going to use the bailer as a block to knock off debris before we brushed, but we figured the pump already did that when we pulled it out of the 4” hole. Here you can see how bad the iron problem is on the pump and the drop pipe.

Monday, January 23, 2012

After pulling the pump, we ran a 4” brush in the hole about 30 minutes. We then set up the camera and made a visual inspection.

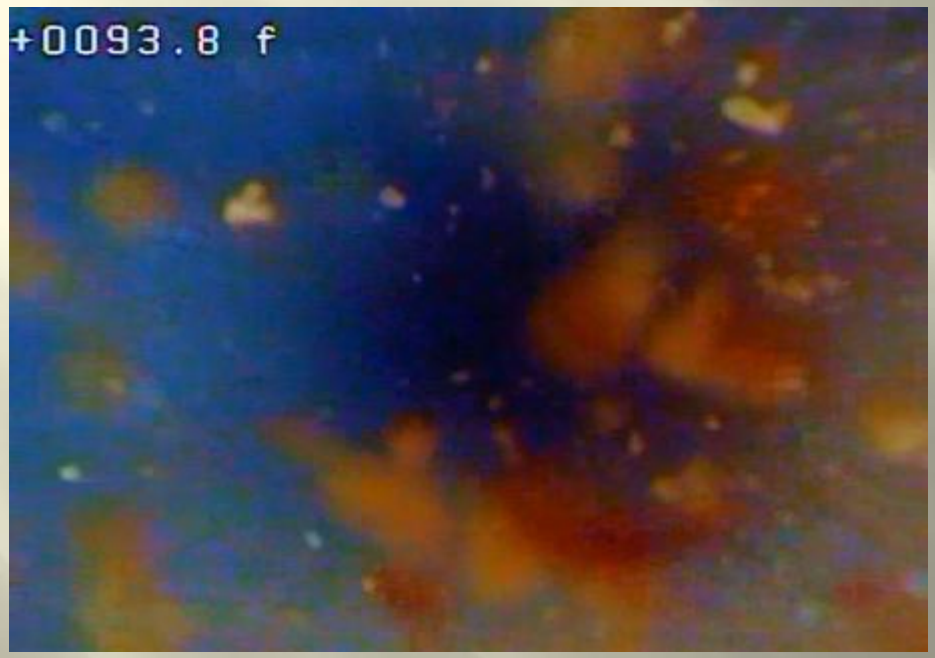
Monday, January 23, 2012





The pipe above the static water line was stained from the IRB, and as soon as the camera went under water, large globules of iron bio film were so prevalent it was hard to find a spot where a picture could represent what we were seeing.

Monday, January 23, 2012



The bio film was so thick that all we could see in the side view was iron bacteria bio-mass (debris and bio film falling past the camera), and the down view was just glob after glob of IRB all the way to the bottom.

Monday, January 23, 2012

After the video, we bailed the hole about 12 times (to remove as much of the big pieces knocked loose by pulling the pump and the brushes as we could).

Who was it who said the worst iron bacteria problems were in Australia?!

Monday, January 23, 2012

We then poured in one box of Boresaver Ultra C

Monday, January 23, 2012

We rinsed the column down real well, then sealed off the bottom of the bailer and ran it up and down the column for 30 minutes to act as a surge block to push the Ultra C through the slots and into the gravel pack.

Monday, January 23, 2012

We then packed everything up and left the hole (pump not in the hole) to sit for 24 hours.

Tuesday, January 24, 2012

We arrived the next morning and started to put the pump and drop pipe back in. We rinsed off as much of the IRB from them as possible before we put them back in the hole.

Tuesday, January 24, 2012

As we picked up the drop pipe, frozen pieces of reddish-brown ice fell out of them. We hooked up the pump so that we could pump to waste.

Tuesday, January 24, 2012

When we first started pumping out the hole, the water came out reddish-brown, but after a few minutes, it turned to a grayish-brown color. We tested the acidity at this point and it was about 6.0

Tuesday, January 24, 2012

After nearly 30 minutes of pumping, the color started staying a consistent green. We charted the change in color from time to time. By the time it reached this color, the ph level was never less than 7.0

Tuesday, January 24, 2012

We weren't sure how long we were going to be able to pump because a thunderstorm was approaching. So we decided to pump for 20 minutes, then let the hole recover for 10 minutes, and to keep this up for 2 hours. At first when we did this, we would get a charge of reddish-brown water each new time we cycled on the pump. But eventually this was lessened, and eventually we didn't get any more charges of brown color.

Tuesday, January 24, 2012

We left the pump running and went to lunch for an hour

Tuesday, January 24, 2012

After surging for over 2 hours, we let the pump run untouched for one hour. After a total of 4 ½ hours pumping, the water was clear. This well had never had clear water before. The driller was so overcome, he bent down and drank some! He said he could still taste iron in it – but no one could see iron anymore.

Tuesday, January 24, 2012

The water came out clear… and at 15 GPM

Tuesday, January 24, 2012

Before and After

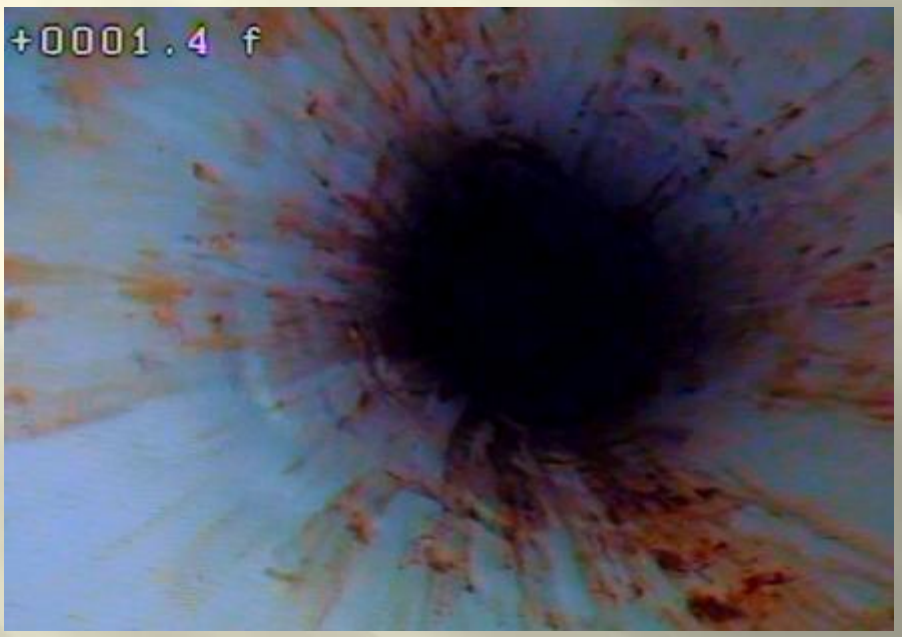
True Story: Mansfield, Texas

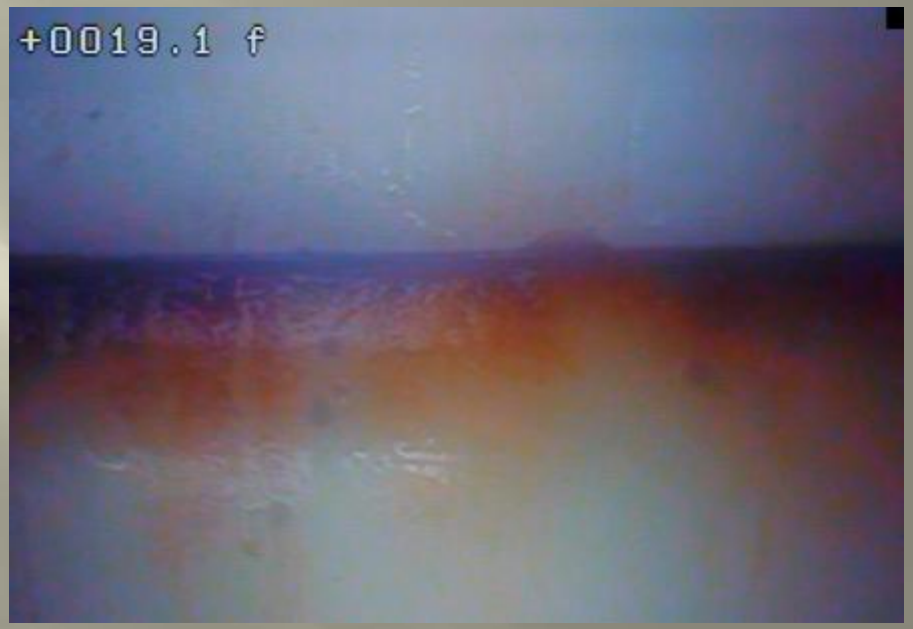
Tuesday, January 24, 2012

Some real believers were made that day.

We set up the camera for one last look down the hole to confirm that the iron was really gone.

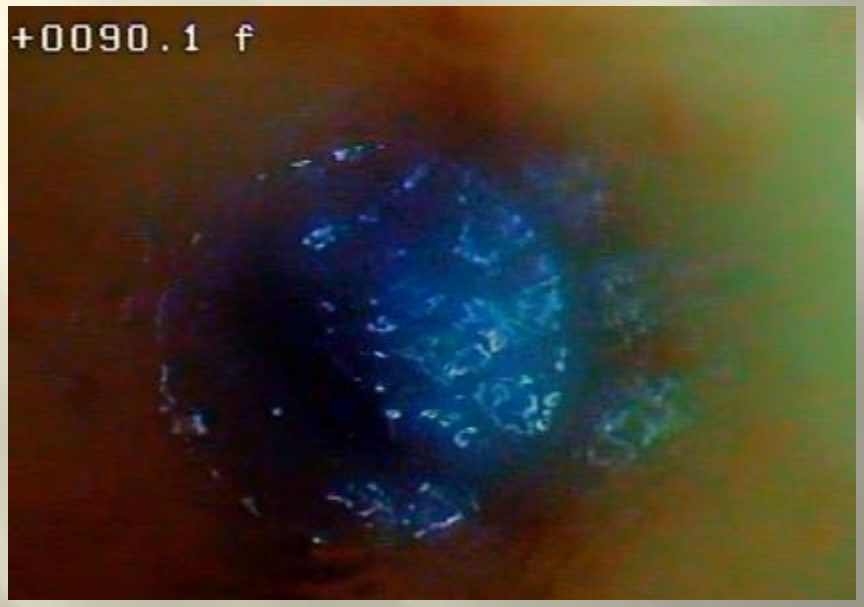
Tuesday, January 24, 2012

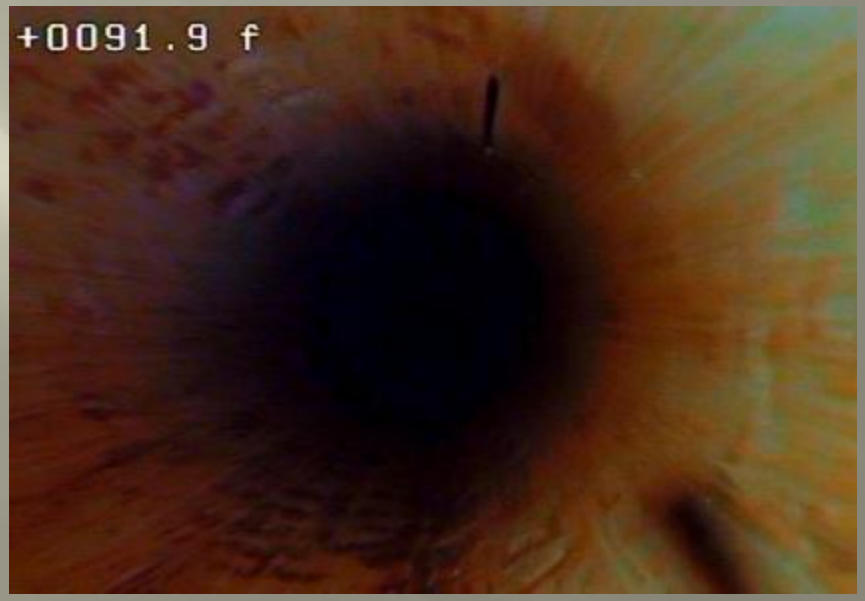




Even though we weren't under water at this point, it was obvious from the first look that things had changed down hole. Yesterday this PVC was so covered you couldn't see anything but orange stain at this point

Tuesday, January 24, 2012





Due to our pumping, the water level had dropped about 3 feet. But as soon as the camera went underwater, everyone was shocked to see how clear the water was. Immediately we noticed we could see the cut perforations in the PVC casing.

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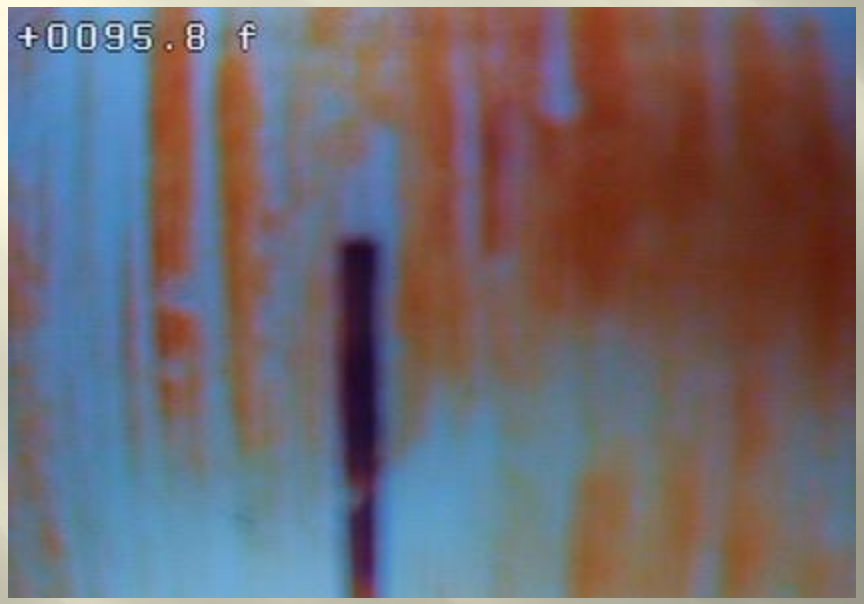

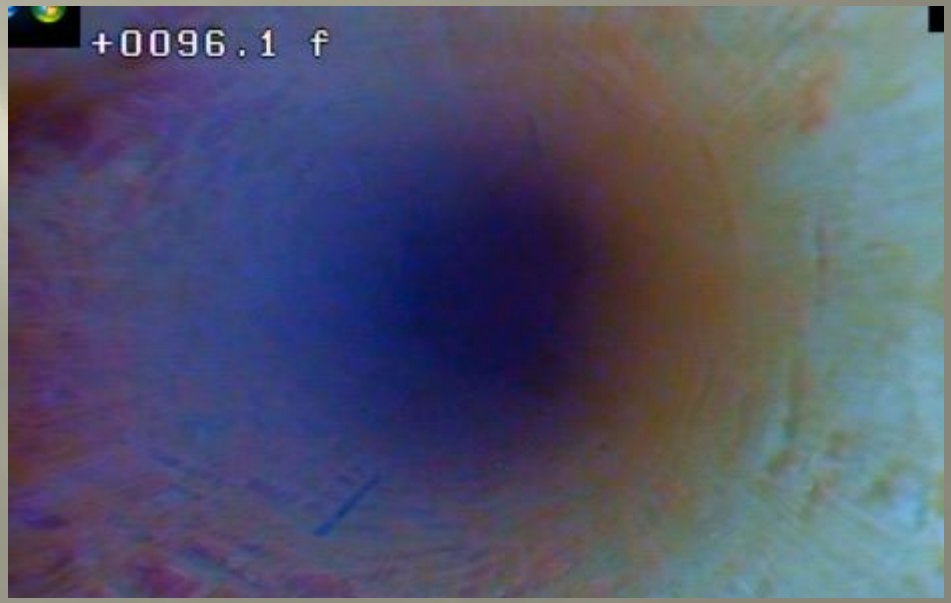

Not only could we see the slots, but we could see the slots were open.

Tuesday, January 24, 2012

Everything above where the pump was set was 100% clear. We never saw any floating bio-film in any place in the well. Once we got below where the pump was set, the water was too murky to see anything in either down view or side view. We recommended bailing this portion of the hole out later. This is a good example of what Boresaver Ultra C does. It breaks down Iron Related Bacteria and holds it in solution for you to pump it out. In this case, we pumped out everything that was above where the pump was set. But below the pump will need to be bailed out.

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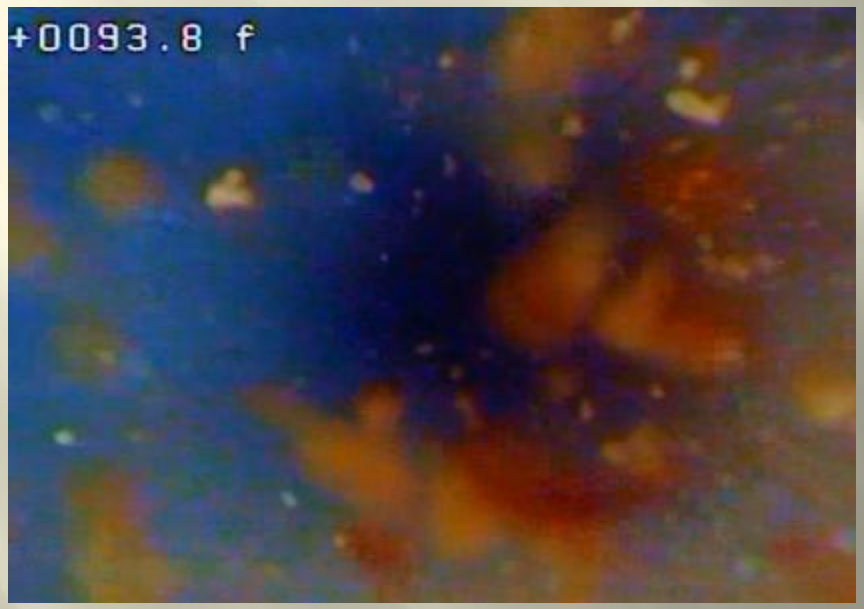

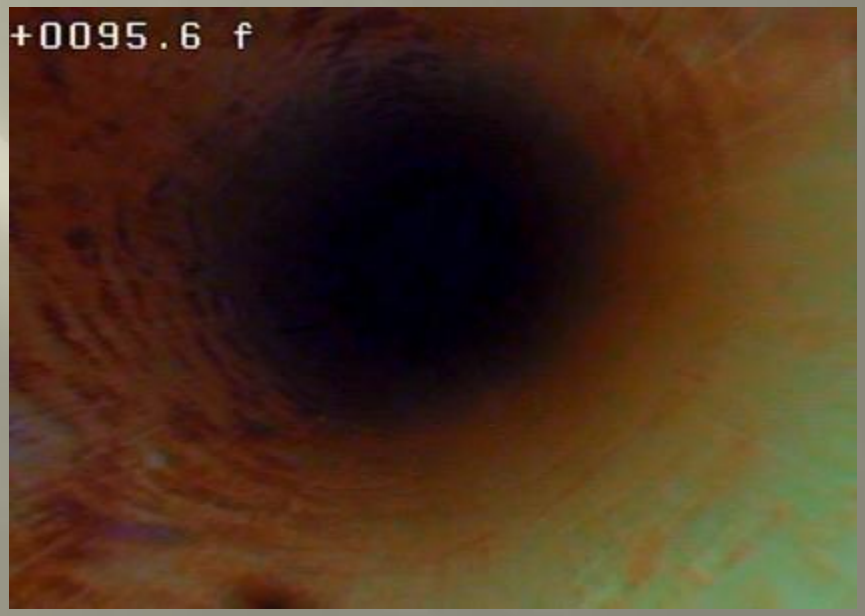

Before and After: Basically the same place in the hole one day before and one day after treatment.

Tuesday, January 24, 2012

- Original specific capacity when drilled was 15 GPM
- After standard acid treatments, specific capacity returned to only 7-8 GPM
- After Boresaver Ultra C treatment, specific capacity was again measured at 15 GPM
- Water color was clear, but some iron could be tasted in the pumped out water.