

## The Well at Beara in Devon:

When the public Mains Water Supply was installed in the little hamlet of Beara in South Devon, the Well that supplied its water since 1886 from a small lay-by became obsolete. Over the resulting years the Well Head and its lower woodwork had slowly disappeared under the compost of the surrounding fauna and leaves.



In July of 2018, I decided to “have-a-go” at restoring the Well. I began the process of uncovering the hidden parts of its wooden frame. I was amazed at the amount of soil that had built-up over the years, approximately 25 cm in depth. I soon arrived at some brickwork surrounding the base of the Well’s rather rotted oak frame.



I sat back for a few minutes over a cuppa and pondered my next step. That’s when I decided that some expertise in hand pumps was required because I had no idea what I was about to uncover. An Internet search gave-forth a lot of “stuff” but the <http://www.villagepumps.org.uk> web site stood-out above the rest. The guy that runs the webpage, Richard (Dick) Williams, provided all that I needed including old catalogue pages that gave me the correct terminologies and drawings for the various components.

After clearing-out all the old bricks, some concrete and the rotten frame I discovered the pump Head and Barrel could be rocked from side to side. I feared the worst... had the pipe had broken underground? I began to dig-out the surrounding soil and to my surprise the Barrel was joined to a 15cm long tapered extension that turned thru 90 degrees and headed-off towards the stone wall. I dug a meter long trench following the line of the pipe but it started to head into the banking so I stopped, supported the Barrel / Head in a vertical position and filled it in. My neighbours and I were perplexed as to why this particular horizontal layout and not a vertical one.



Around this time some home projects took precedence for a couple of months. During that time it was decided (by the Water Company) to install a new water main to the hamlet down from the upper road about 100 meters away. Part of this process was to dig under the lay-by's stone wall, about 3 meters deep, from inside the adjacent field. This was an added bonus for me in-that they had to clear away much of the soil build-up alongside the stone wall. During this clearing process they uncovered a very large slate slab, about 2 x 2 meters square (as far as we could determine) which returned a hollow sound when it was hit with a hammer. After a strong cuppa and in lieu of a more scientific explanation, we decided this was a natural chamber that the Well pipe was connecting into. However, why the Well was 2 meters away to its left of its supply was, and still is, a head-scratcher.



Time was used during the winter of 2018/19 to refurbish the various components that came off the wood frame and out of the Well Barrel. I had decided to reuse as many of the original components as possible as they showed some history of repair over the years which I felt should not be lost. In particular the Jack Handle to bucket rod pivot points were oval but proved to rotate well on a 16mm stainless steel pin centralized with stainless washers. The Handle pivot point was mounted to the frame on a set of "blacksmith handmade" pillow blocks with a length of copper tubing used as a sleeve bearing for an old bolt being used as a pivot pin. The copper tubing was removed and another 16mm diameter pin and washers was assembled as the new pivot.



The next step was the so-called "bucket". It took a while to extract this component as the Barrel was stuffed with years of leaves, twigs and mud. When it finally came out I discovered that the so-called "cup" was created from a piece of bicycle tire rubber (yellow stripe gave it away) instead of the leather I was expecting. The leather Clack Valve had also been replaced with a flap of heavy rubber but worked ok so was left as is. A piece of 3.5mm leather was purchased and cut to shape for the Cup and mounted using copper nails.



Next was the Spindle Valve which took a while to extract as well. I had to use a long piece of heavy gauge copper ground wire, hooked on one end, to find the “handle” of the Spindle valve. After a few choice words and a lot of fiddling I managed to get it hooked. Then I began twisting it back and forth to try and release it from the valve. It finally relented and came loose so it could be extracted. Once removed it became apparent that at some point in its life it had been converted from a “short” to a “long” version using a length of brass rod and split copper tubing.



The arrival of early spring 2019 provided the opportunity to finish the project. The first job was to bend the Head of the Well back to a 90 degree angle with the Barrel. At some point pressure had been applied to the Nose which resulted in a 10 degree drop and it had partially split away from the Barrel edge. Old cast Lead can be tricky to rejoin I looked for some advice / expertise and found it again on the Village Pumps web page.

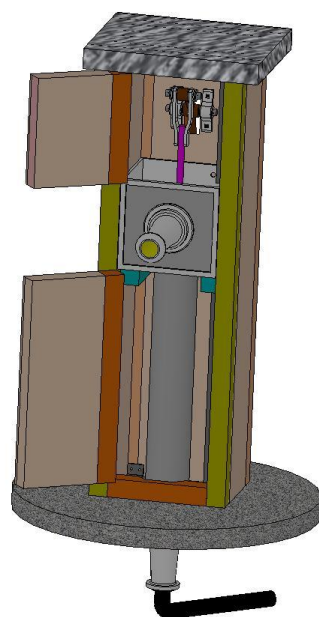
Godfrey Holter had taken it upon himself to restore the old pump in Treburley, Cornwall, which had also fallen into disuse with the coming of the water mains in 1953. It looked very similar to the our Beara Well Lead parts so advice was sought. Godfrey advised NOT to attempt a weld as the old cast Lead melting point could be quite unpredictable and I could lose the lot. I followed his advice to create a long handled levering jig from wood to put upward pressure on the lowered edge of the Head until it came perpendicular with the Barrel. All went well and some metal loaded 2 part epoxy was used to seal what remained of the crack between the Head and Barrel. This made the Head watertight.

A new plinth was created using hardcore and concrete placed in a mould circling the Pump (about 1 metre in diameter) made from galvanised steel which was left in-place. Before the concrete set, the pump was pushed down firmly onto the surface on the concrete and set-to-vertical using wood stays and left to settle in place as the concrete set.



It was about this point in time that the troops rallied around with supplies of wood, tools and lead: Messrs Ross Field provide both wood and tools, Tom Merrington provided tools and Ian Catherall wrapped the Lid with Lead: all are from Beara. John Smith from Kingsbridge also provided his carpentry expertise for the cutting of the angled rectangular aperture that provides the space and stop limits for the Handle to operate within: A great team effort.

After much work with the tape measure, component models were created on CAD then a Main Assembly to ensure correct fitments. Following that, a set of detail drawings and cutting list were created, to ease any works that may be needed in the distant future.



Treated wood was used in all cases and joined with glue and flanged timber screws set in counter-bored holes which were filled with doweling rod. The removable top was covered in Lead per the original and the Lead retained with copper nails. The upper and lower doors were mounted with hinges and closed using monkey-tail window latches.



Prior to assembly of the chassis around the Well Head and Barrel I remembered that I had not inserted the newly leathered Bucket into the Barrel to check its fit. After disassembling the Bucket and Rod from the Handle I pushed the Bucket into the Barrel and it fit well (good wiping resistance) until halfway down where it lost resistance for about 10cm then reacquired it down to the Spindle Valve. After a careful and slow extraction of the Bucket I measured the Barrel outside diameter Top... Bottom and at the release point and discovered that the Barrel had bellied-out by a centimetre in that general area. Using a 25cm long piece of 47x47 square wood and a heavy hammer the bulge was gently removed. At this point the Spindle was re-located into the Spindle Valve and the Bucket was inserted and resistance was felt from the leather all the way down the Barrel until hitting the Spindle.

However when I tried to extract the Barrel it became difficult to move and I feared the leather cup had somehow jammed. I decided to pull the Bucket with the rod at a slight angle as I pulled upwards and heard a "slurping/sucking" sound so continued to retrieve it this way until the bucket arrived at the top of the Barrel. It contained a muddy sludge which was totally surprising. I continued to insert and retrieve the Bucket by hand and to my surprise the muddy sludge started to turn clearer: we had hand pumped water for the first time since the early 1950's.

The Bucket and Rod was re-assembled to the Handle and the Frame was mounted around the Well Head and secured to the plinth with anchor bolts. Before using the pump handle the Well needed priming with a couple of litres of water being poured into the Head and the Handle was finally used to good effect. This was the icing on the cake.



It took 2 to 3 days of interval pumping (about 4 times a day) to finally arrive at clear water. After priming, the first 2 buckets ran a little hazy but from that point onwards the water ran clear, cold and sweet. While there are still issues to resolve around the need to prime the Well, its water is being used daily to water greenhouse plants only, which are thriving very nicely on it. This usage will help to evaluate the duration of the water in the Well over the next few months to see how sustainable the supply is during the dryer months of the summer. The water will be tested at some point and the handle secured to prevent its use by the curious.

In between all of this, the stone wall was rebuilt on the roadside corner. Stones for the wall and to protect the Well were donated by Tom Hext at Copper Tree Farm and copious amounts of concrete and rubble were stuffed behind the wall to withstand the occasional battering from delivery vans attempting 10 point turns!!!



Finally, I attempted to locate some information concerning the supplier and installer of the Well being "E Distin and Son". Again Richard @ villagepumps.org provided a spark of information that led me to the <http://www.totnesimagebank.org> where a picture of the E Distin & Son Ironmongers with the Owners standing outside was located that now completes this restoration package.



Well done and thanks again to all involved: Richard A Green: 08 July 2019