Technical Service Bulletin: Anode Rods – Potential Action Required

SUMMARY

Dectra Corporation is issuing a service bulletin related to a potential quality issue with the anode rods used in GARN WHS units. **Anode rods bought and shipped during the years 2014 and 2015 may not meet Dectra's expectations for use in GARN WHS equipment because of a possible rod composition issue. All rods placed in service during late 2014 or 2015 should be assessed and, if found to have signs of excessive swelling or exhibit a chalky appearance, removed from service immediately**. Please read this bulletin for further detail and explanation.

THE PROBLEM:

Most GARN WHS units built since 1989 have been supplied with *Anode Rods*. The anode rods are made from magnesium and are installed in the top of the water storage tank in 3/4" NPT fittings. The anode rods are designed to protect against undirected current and the resulting electrolysis corrosion which can cause premature tank failure. This technique is known as *cathodic protection*.

Over the recent past Dectra has received a number of customer reports that anode rods are being consumed at an accelerated rate (sometimes as quickly as 3 to 6 months after installation). Additionally, these rods are degrading in an atypical way. See pictures below:

Figure 1: NORMAL Rod (after several years)

Figure 2: Abnormal Rod (after a few months)

Figure 1 shows an anode rod with several years of normal degradation. The rod is pockmarked, an indication it has been slowly "consumed" over time to protect the tank. **Figure 2** shows an anode rod that was removed from service after just a few months. The rod has mostly degraded and is visually much different than the normal rod. Anode rods with the quality issue swell up, may become chalky in appearance, and look like a cave stalactite. When attempting to remove a rod with the issue, the rod material may *slough off* leaving only the rod's steel core behind. Figure 3 and Figure 4 illustrate this:

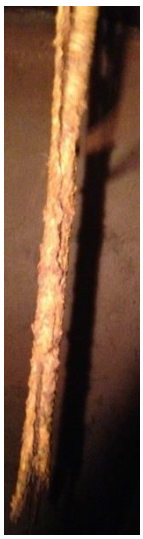

Figure 3: Before Attempting Removal

Figure 4: During Removal

The rod material then falls to the bottom of the tank:

Figure 5: *Sloughed* Rod Material on Tank Bottom

A normal rod can typically last up to 5 years and during its service life will start to appear *pitted* (Figure 1).

IMMEDIATE ACTION REQUIRED:

Dectra is requesting that customers assess the condition of the anode rod(s) in the GARN tank. If the anode rod appears to exhibit signs of this issue, remove it from the tank and temporarily plug the ¾" NPT hole to prevent moisture escaping from the tank. (See the following page for recommended removal procedures.)

Recommended removal procedures:

1. When removing the rods, please catch the *slough/debris* that falls off the rod instead of letting the rod debris fall to the bottom of the tank. A simple method for doing this is to buy a pool leaf rake with extension pole from a local retailer and have a helper hold the net underneath the anode rod as it's removed. Another method is to attach bucket to a handle/pole:

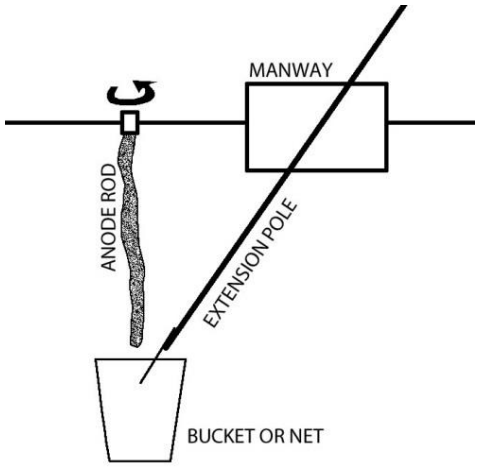

Figure 6: Place a Bucket/Net Underneath Anode Rod When Removing the Rod

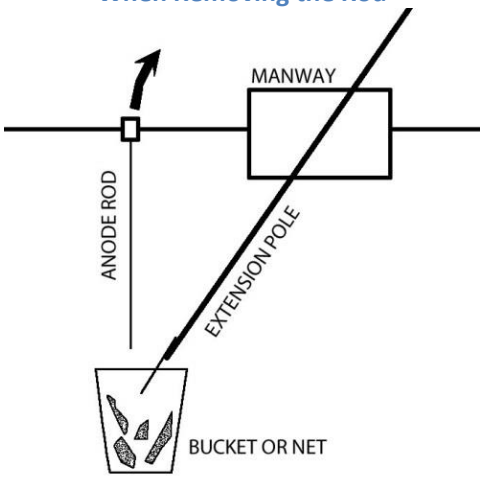

Figure 7: Catch the Anode Rod Debris and Remove the Rod

2. After the rods are removed, plug the holes with a ¾" NPT plug. If only the steel core remains on the rod, the rod can be used as the plug.
3. **Remove any and all anode rod debris on the bottom of the tank using the swimming pool leaf rake (or other method).**

Each GARN unit has the following number of anode rods:

MODEL	NUM. OF ANODE RODS
WHS-1000	1
WHS-1500	1
WHS-2000	2
WHS-3200	3

ADDRESSING WHITE FLUFF

Customers with anode rods exhibiting this issue may experience a white fluff that appears as a "cloud" on the bottom of the tank and on the heat exchanger tubing. For customers that have this condition, Dectra is recommending that the fluff be siphoned out. Use a standard garden hose and wand capable of reaching the problem areas and siphon as much of the fluff out as possible. If needed, top off the unit with filtered, clean fill water from the original fill source.

Figure 8: White Fluff on top of Reaction Chamber Tubing. Picture taken from manway access with unit filled.

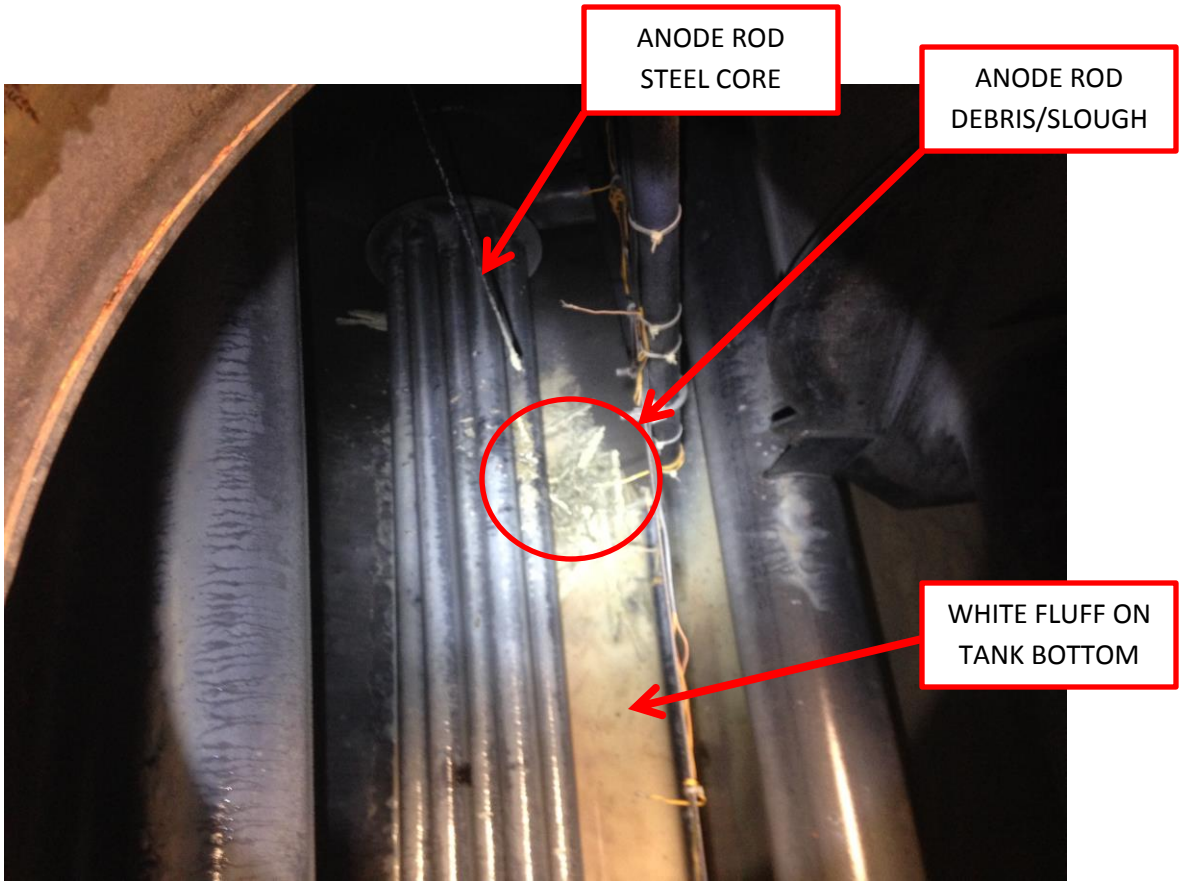

Figure 9: White Fluff and Anode Rod Debris on Tank Bottom. Picture taken from manway access after unit was drained

ADDRESSING SLUDGE

If sludge is noticed on the tank surfaces during the siphoning/cleaning process, the sludge should be cleaned in the same manner as the white fluff. Sludge can form as the result of any number of factors, but is unrelated to the anode rod issue. However, we are taking this opportunity to reinforce that sludge, if present, should also be removed to minimize the potential for under deposit corrosion.

FURTHER CORRECTIVE ACTION:

Dectra is working diligently to find a permanent solution to short anode rod life and take further corrective action if needed. It appears that the anode rod supplier switched to sourcing its rods from overseas. Therefore, Dectra is in the process of working directly with a United States magnesium rod producer, who should be able to supply rods that meet strict ASTM specifications. Anode rods have been used successfully in GARN units for nearly 30 years, and only recently has early degradation been observed.

Thank you for your understanding in this matter,

The GARN team.