

ADDING A NUGGET TRAP

BY: Gail Butler
Rock & Gem Magazine

If there were an easy, inexpensive way to increase the gold recovery potential of your sluices, dredges and drywashers, would you want to know about it? If there were a simple way to know if you're still running gold-bearing gravel--- without dismantling and cleaning your equipment --- would you want to know about it?

The good news is that a simple, inexpensive do-it-yourself installation will allow you to accomplish both of these tasks. You may have noticed that most sluices and some drywasher and dredge riffle-beds are bare metal for approximately one-third of their total recovery surface. This is especially true of manufactured sluice boxes. The recovery area in a standard 3-foot-long sluice box comprises only 2 feet. While this is usually sufficient area to recover most of the gold going into a sluice, it demands that the angle of the sluice, as well as water volume and the water's speed, are ideal. Unfortunately, we seldom encounter ideal conditions in the field.

There are, however, many things a prospector can do to alter or enhance less-than-perfect natural conditions. Building a wing dam to angle more water into or away from the sluice and/or raising or lowering the sluice head to improve its angle are a couple of ways that prospectors can affect water flow.. While these methods may help, there may still be a considerable gap between perfect gold recovery conditions and those that allow gold to pass through your sluice unhindered and unrecoverable. Merely increasing your gold recovery surface by one-third can boost your recovery substantially while offsetting those less-than-perfect field conditions.

A nugget trap will stop and hold gold nuggets in the third of your sluice for easy sighting and removal. As long as you use a pair of long-handled tweezers, you can pluck nuggets out of the nugget trap while your sluice remains in the water. A word of caution here is that if you try to pick up nuggets with your fingers while water is moving through the sluice, you will alter the flow of water enough to cause the nuggets to skip away to lower portions of the sluice. Tweezers cause very little alteration in flow.

A nugget trap consists of a piece of rubber matting glued into the bare metal portion of your sluice. You will find that this simple installation will save you time and energy and increase your gold recovery. The best rubber matting for the job is usually found at auto junkyards. Look for Volkswagen vans. Pull out the rubber matting under the carpet in back and flip it over. The underside of the matting will be covered with square 1-inch boxes. These rubber squares are perfect nugget traps! Installed into your sluice head, they will trap nuggets before they can even reach the metal riffle area. Then you will be able to pluck out any nuggets with a pair of tweezers and secure them in your vial, all without dismantling, cleaning and panning sluice concentrates.

Another advantage to installing a nugget trap is that it eliminates the necessity to take up the sluice and pan the concentrates in order to make sure that you are still running gold-bearing gravel.

For this project you will need:

- Tape measure, carpet knife
- Black rubber matting cut to fit
- 220 or courser-grade sandpaper
- Waterproof rubber silicon cement
- Rubbing alcohol for cleaning up spills

To install a nugget trap, measure and cut the matting to fit the bare metal portion of your sluice, dredge or drywasher. To secure your nugget trap to your sluice, sand the bare metal of the sluice where you intend to attach the matting just enough to rough up the surface.

Next, wash the sanded surface with hot soapy water to remove oils and the dust from sanding. Dry the surface thoroughly before attempting to glue in the mat.

To secure the matting to the sluice, you will need to use rubber silicon cement. Be sure that it states on the package that it is waterproof or suitable for marine applications. Apply the cement generously to the sluice in crisscross patterns and along all sides of matting. Be sure to place the matting in the sluice with the rubber squares facing up! Use a gloved finger to smooth the cement that squeezes up between the edge of the mat and

the sides of the sluice so that no gaps or pockets remain that will trap gold or sand. If you get any cement on your fingers or any hard surfaces, you can use a paper towel dipped in rubbing alcohol to clean the glue.

Do not allow rubbing alcohol to come in contact with any of the surfaces to be glued. Alcohol acts as an effective solvent to silicon cement and will ruin the bond of the rubber matting to the sluice bed. Wear old clothes, as the glue is not easily removed from cloth. Also, gluing is best done outside, as the glue emits somewhat toxic fumes and has a strong smell.

I installed a nugget trap in a homemade sluice almost 20 years ago. The nugget trap is still firmly installed and has never needed any re-gluing. I have also installed nugget traps in my manufactured sluices and all are still firmly attached.

In 1984, I experimented to see if the standard 3-foot-long manufactured sluices (without nugget traps) were long enough to satisfactorily recover the majority of gold from gravel run through them. I set up the test sluice with another sluice immediately below it to catch any material that might pass through the first one.

Under ideal conditions of angling and water flow, a predetermined amount of gold in black sand was run through. The test sluice recovered all the gold.

Under less-than-ideal conditions, some of the gold passed unhindered through the test sluice and ended up in the recovery sluice. The addition of a nugget trap allowed the test sluice to capture all the gold under a variety of conditions.

If you cannot locate any old Volkswagen vans with the preferred matting, you can create a satisfactory nugget trap using the ribbed rubber matting sold at hardware stores. Try to purchase matting that has the most pronounced ribbing. This will ensure that the larger nuggets are stopped in the nugget trap rather than passing over the matting to lodge unseen behind riffles and beneath concentrates.

To clean a sluice with a nugget trap installed, you merely clean it as you did prior to the installation.

- My favorite method is to take up the sluice from the water, being very careful to keep it level or tilted slightly with the tail-end upward so that the concentrates are not spilled back into the river.
- I then slop the sluice, tail-end down, into a 5-gallon bucket.
- Next, I loosen the riffles, expanded metal screening and carpet, rinsing each completely before removing them from the bucket.
- I like to scrub the carpet with a bristle brush to be sure all gold has been rinsed free into the bucket. Pouring water over the nugget trap is sufficient to rinse all material into the bucket, and a quick visual check ensures that it is free of any clinging material.
- Reassemble the sluice for another run of gravel and pan your concentrates secure in the knowledge that all the gold that went into your sluice will be recovered during the panning process.

My homemade sluice consisted of a wooden sluice bed with oak riffles. The rest of the surface of the sluice bed was entirely covered with Volkswagen matting. This sluice was the easiest and fastest to clean, as there was nothing to disassemble or scrub. After a quick rinse, the sluice was ready to go back into the water. One might want to consider the possibility of replacing the carpet and riffle-assemblies of manufactured sluices with either wood or metal riffles and rubber matting.

After years of use, the riffles become banged up and the expanded metal screening becomes mashed and misshapen. Simply replace these by cementing in the materials of choice, and you will have a sluice that is very easy to clean.

After installation of your nugget trap, you can merely glance into your sluice to see if there are any nuggets in it. You won't have to groan at the prospect of braking down your sluice and panning your concentrates just to see if you are still running gold-bearing gravel. The installation of a nugget trap will enable you to see flakes of gold against the black matting, even through running water, so that you can determine at a glance if you are still running profitable gravel. A portion of the smallest flakes will fall into the rubber squares of your nugget trap and be easily visible.

A nugget trap? It's a good thing!