

## What is range and ordnance residue?

Range and ordnance residue is any material that comes from the ranges and training areas and is not reused. Range residue includes concertina wire, ammo cans, trash and target debris. Ordnance residue includes all types of munitions items that were discharged on the range. Some munitions may not detonate or function properly and for this reason, range recycling works closely with Explosive Ordnance Disposal (EOD) to ensure that ordnance recycling is conducted safely.



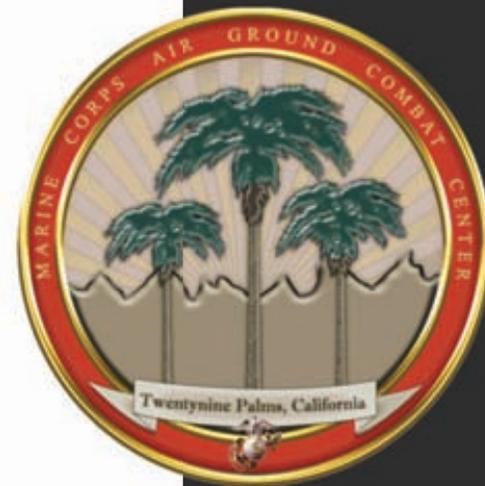
A Marine unloads a box of expended brass casings at the Range Sustainment Branch.

In one year, MCAGCC will recycle as much as...

- 1.1 million pounds of hazardous materials
- 2.2 million pounds of metal
- 1.3 million pounds of paper and cardboard



This brochure was printed on 100% Recycled paper.



## Range and Ordnance Residue Recycling

Did you know recycling one ton of paper can save 17 trees, 6,953 gallons of water, 463 gallons of oil, and 4,077 kilowatt hours of energy? The Marine Corps Air Ground Combat Center (MCAGCC) works hard to recycle as much as possible. Not only does it have a program which recycles everyday waste, MCAGCC is the only Marine Corps base which has its own Range Residue Recycling facility.

# Turning trash into treasure...

Even with its comprehensive sustainability program to minimize waste, MCAGCC training generates millions of pounds of range and ordnance residue, and its industrial and facilities management operations generate additional waste. Marine Corps operations produce significant volumes of expended projectiles, spent munitions casings, target remnants, and tires, which inevitably become range waste. MCAGCC's Total Waste Innovation (TWI) department has responded to this large amount of range waste with a new solution: converting much of the range residue into commercial scrap for sale or reuse.

All residue is taken to the Range



Sustainment Branch (RSB), where it is sorted by type and then processed. Items unsuitable for recycling are properly disposed of by the RSB. During processing, the remaining residue is broken or melted down, a process known as "de-militarizing." After processing, the residue is sorted by metal type, thoroughly inspected, and sold commercially to be reused.

**Above:** Thousands of spent brass rounds await the machine which will demilitarize them

**Left:** Liquid aluminum pours from the furnace into a mold which forms the molten metal into bricks. When it cools, it will be ready for resale.

## *Did you know?*

- The range recycling program at MCAGCC is the only self-sustained recycling program in the Marine Corps.
- All income generated from the sale of recycled scrap is used to support MCAGCC and the range recycling program.
- The sweep teams which pick up the range residue can bring back as much as 900,000 pounds of range residue yearly.
- Prior to processing, potentially explosive materials are separated, and the remaining range residue is then sorted by type.
- After initial processing, metal residue is sorted into seven different categories: aluminum, brass, light steel, heavy steel (miscellaneous), heavy steel (projectile), cast steel and target steel.
- Other bases in the West, including Camp Pendleton, Edwards AFB, and MCAS Yuma utilize the MCAGCC recycling facility to process their range residue.

## *Recycling Range Residue*