Alternative Assessment with Lead and Elemental Analysis Conducted for Triad Recycling and Energy

Triad Recycling and Energy (Triad), located in Tonawanda, New York, is a waste management firm that specializes in recycling materials from new construction and demolition applications. Triad serves Western New York from Niagara Falls to Jamestown, including the Rochester area.

One of the materials Triad currently recycles is unpainted drywall for use as a raw material in three key products: animal bedding, soil amendment, and the Gyp Dry™ Eco-Friendly Absorbent product. The current supply of unpainted drywall feedstock comes as scrap from new building construction sites.

Challenge
Triad has recognized an opportunity to strengthen its supply chain by expanding the types of drywall that can be reused or recycled to include materials that have been painted or otherwise coated. Developing the capacity to handle these materials would mean that Triad could accept end-of-life drywall materials from post-use and post-deconstruction sources. As a result, they could offer a greater supply stream and increase waste diversion while potentially lowering the cost of feedstock for their recycled products.

Triad was interested in investigating whether the possibility of lead paint contamination in end-of-life demolition drywall scrap would affect the suitability of that material, for use in recycled products, in light of existing regulations on lead concentrations in those products themselves.

Solution
The New York State Pollution Prevention Institute (NYSP2I) worked with Triad to research beneficial and alternative uses for painted gypsum drywall. In support of this effort, NYSP2I performed analyses of drywall samples, and identified and assessed potential pathways for beneficial reuse of painted gypsum drywall based on the balance of physical, economic, and regulatory limits of its constituent materials.

The samples collected, provided NYSP2I with the knowledge to understand how paint and coatings applied during use may affect the material’s capacity for recycling and how coating materials may affect human and environmental health once processed and reused. Additionally, NYSP2I identified alternative uses for gypsum drywall approved by relevant regulatory authorities, as well as element-specific regulations associated with those uses.

Results
NYSP2I identified some key results based on the assessment conducted:

- Based on the average lead concentration of the samples tested, Triad may extend its use of drywall waste of recycled gypsum products to include end-of-life painted drywall
• There are four market opportunities beyond Triad’s current activities for which painted gypsum drywall is viable feedstock

• Triad may contribute significantly to the extension of product life and the circularization of its local industrial economy in both economically valuable and socio-ecologically meaningful ways