



# Beneficial Use of Solid Waste Determination Evaluation Form

Applicant: Urban Gypsum, LLC	
BUD#: 20180514	
Solid Waste: Gypsum wallboard	
Summary of Proposed Beneficial Use: Recovered gypsum to be used in agriculture, production of concrete and production of new wallboard. Recovered paper to be used as animal bedding.	
Reviewer: Jeremy Fleming	Date: 10/17/2018
Tier: <input type="checkbox"/> One <input checked="" type="checkbox"/> Two <input type="checkbox"/> Three	

### Beneficial Use of Solid Waste

Beneficial use of solid waste is a sustainability practice that may involve using an industrial waste in a manufacturing process to make another product or using a waste as a substitute for construction materials.

The environmental benefits of substituting industrial waste materials for virgin materials includes conserving energy, reducing the need to extract natural resources and reducing demand for disposal facilities.

Oregon Administrative Rules (OAR) 340-093-0280 - 0290 establish standing beneficial uses and a process for DEQ review of case-specific beneficial use proposals. Under these rules, DEQ may issue a beneficial use determination as an alternative to a disposal permit for proposals that meet the rule criteria. If approved, once a beneficial use determination is issued, DEQ no longer regulates the waste as a solid waste as long as the waste is used in accordance with the approved beneficial use determination.

### Beneficial Use Determination Evaluation Summary

- Yes, the Beneficial Use of this solid waste meets all the case-specific performance criteria listed below and is approved.
- No, the Beneficial Use of this solid waste does not meet all the case-specific performance criteria listed below and is not approved.

Notes: The applicant met the Case-Specific Beneficial Use Performance Criteria.

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**Case-Specific Beneficial Use Performance Criteria:**

DEQ may approve an application for a case-specific beneficial use of solid waste only if all the following performance criteria are addressed: 1) Characterization of the Solid Waste; 2) Productive Beneficial Use of the Solid Waste; and, 3) The affect of the Proposed Beneficial Use on Public Health, Safety, Welfare and/or the Environment.

**1) Characterization of the Solid Waste**

Did the applicant characterize the solid waste and proposed beneficial use sufficiently to demonstrate compliance with the rules for case-specific beneficial use determinations (OAR 340-093-0280) by submitting required information for the appropriate tier? (See tier sections below for detailed characterization information.)

Yes  No

Was the following information submitted for DEQ review and how adequate was it?

**Tier 1**  Applicable  Not applicable

- Did the applicant provide an adequate description of the material proposed for beneficial use, the manner of generation and the estimated quantity to be used beneficially each year?  Yes  No

Notes: The proposed material is new wallboard scraps and used wallboard recovered from building demolition. Urban Gypsum will only accept used wallboard from their sister companies, Laneco and Willamette Construction Services. New wallboard scrap will be delivered to the facility by wallboard scrap recyclers and permitted solid waste facilities. The facility will not be open to the public. The maximum total quantity of wallboard material to be processed at the facility annually is estimated to be 150,000 tons.

- Did the applicant provide an adequate description of the proposed beneficial use and justify how the proposed use is beneficial?  Yes  No

Notes: The recovered gypsum material will be used primarily as a soil amendment in the commercial agriculture industry. Gypsum has been shown in studies to improve soil porosity, improve sodic soils and provide plant nutrients (S and Ca). Recovered gypsum can potentially also be used in the production of new wallboard and in the manufacture of cement. The Washington Department of Ecology has recognized the applications described above as an environmentally beneficial way to keep excess wallboard waste outside of landfills.

Recovered paper will be used as animal bedding or disposed of as solid waste.

- Did the applicant provide a sufficient comparison of the chemical and physical characteristics of the material proposed for beneficial use with the material it will replace?  Yes  No

Notes: Urban Gypsum provided laboratory analysis of recovered gypsum that shows the same chemical and physical characteristics as virgin gypsum used in agriculture applications, wallboard manufacture and cement curing. Chemical differences between gypsum/paper and new construction drywall waste can come from minor concentrations

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of various additives in the manufacture of wallboard. Used wallboard scrap generated from building demolition can contain other building materials such as joint compound, texture, nails, paint and other materials that are not present in new wallboard scrap.

- Did the applicant successfully demonstrate compliance of the proposed beneficial use with the performance criteria in OAR 340-093-0280 based on knowledge of the process that generated the material, properties of the finished product, or testing?  Yes  No

Notes: The waste product satisfies all conditions in OAR 340-093-0280. The use of the gypsum is productive with demonstrated benefits for customers as an effective substitute for soil amendments, to make new wallboard or as an additive in concrete and the use of the wallboard paper backing is productive when used for animal bedding. The materials are not hazardous waste under ORS 466.005. The additives in the wallboard are in low enough concentrations such that the risk levels for persistence or bioaccumulation is minimal. There is not any foreseeable unsightliness or nuisance conditions that would come from using wallboard paper backing as animal bedding or the gypsum as a soil amendment, to make new wallboard or as an additive in concrete.

- If required, did the applicant provide any other DEQ required information to evaluate the proposal?  Yes  No

Notes: NA

**Tier 2**  Applicable  Not applicable

- Did the applicant submit all the information required for a Tier 1 application?  Yes  No

Notes: See Tier 1 summary above.

- Did the applicant submit adequate sampling and analysis to make a determination of suitability for beneficial use? (Note: The analysis must provide chemical, physical, and biological characterization of the material proposed for beneficial use and identify potential contaminants in the material or the end product, as applicable.)  Yes  No

Notes: Urban Gypsum provided a chemical analysis of the recycled wallboard content. Physical characteristics would be identical to that of a commercially available gypsum and paper products.

- When applicable, did the applicant provide a risk screening comparing the concentration of hazardous substances in the material to existing, DEQ approved, risk-based screening level values, and demonstrate compliance with acceptable risk levels?  Yes  No

Notes: Trace metal concentrations are below clean fill screening criteria.

- When applicable, did the applicant supply the location or type of land use where the material will be applied, consistent with the risk scenarios used to evaluate risk?  Yes  No

Notes: Current land use target would be livestock operations requiring bedding material and agricultural lands needing gypsum soil amendments in Oregon, Washington, Idaho and California.

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- When applicable, did the applicant supply contact information of property owner(s) if this is a site-specific land application proposal, including name, address, phone number, e-mail, site address and site coordinates (latitude and longitude)?  Yes  No

*Notes: NA. Urban Gypsum proposes to sell recovered gypsum to agriculture supply distributors. Urban Gypsum provided several letters from agriculture distributors that described interest in the recovered gypsum product.*

- Did the applicant supply an adequate description of how the material will be managed to minimize potential adverse impacts to public health, safety, welfare, or the environment?  Yes  No

*Notes: Used wallboard material will only be accepted from sister companies of Urban Gypsum. This will allow stringent screening of used wallboard material for contaminants and asbestos. This should ensure that no foreign contaminants are present in the product above acceptable levels. When used in the same manner as commercially available virgin gypsum soil amendments, the risk of potential adverse effects from applying Urban Gypsum's recovered gypsum product to soil would be minimal. Product will be bagged and kept dry during storage and transportation, minimizing any potential runoff or dust issues.*

Tier 3  Applicable  Not applicable

**2) Productive Beneficial Use of the Solid Waste**

Has the applicant demonstrated that the proposed beneficial use is a productive use of the material by providing information substantiating the criteria listed below?

Yes  No

Notes:

- Did the applicant successfully identify or demonstrate a reasonably likely proposed beneficial use for the material that is not speculative?  Yes  No

This criterion consists of three parts.

1. Identified Use:

Has the applicant clearly stated what the waste is going to be used for, that the waste is compatible with that use and the proposed quantity is necessary?

Yes  No

2. Reasonably Likely Use:

Has the applicant identified, with supporting documentation, the timeframe within which this use is likely to occur (e.g., zoning info, master plan for development, letters from local jurisdictions, etc)?

Yes  No

3. Not Speculative:

For Land application - has this material been used at other sites for the same purpose, is the material feasible for use at this site for this purpose, or has the applicant identified a known potential for this use at this site?

Yes  No  N/A

For uses other than land application - has the material been used in a product before, is the material feasible for use in a product, or has the applicant identified a known potential for use in this product?

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Yes  No  N/A

Notes:

- Is the use a valuable part of a manufacturing process, an effective substitute for a valuable raw material or commercial product, or otherwise authorized by the Department and does not constitute disposal?  
 Yes  No

Notes: The use is an effective substitute for virgin gypsum used as a soil amendment, in the production of wall board and in the production of cement. Used or scrap wallboard paper is an effective substitute for wood shaving and other animal bedding products.

- Is the use in accordance with applicable engineering standards, commercial standards, and agricultural or horticultural practices?  
 Yes  No

Notes: Wallboard has been shown in studies to improve soil porosity, treat sodic soils and provide important nutrients.

**3) Effect of Proposed Beneficial Use on Public Health, Safety, Welfare and/or the Environment**

Has the applicant demonstrated the proposed beneficial use will **not** create an adverse impact to public health, safety, welfare, or the environment, by providing information substantiating compliance with the criteria listed in the bullet list below?

Yes  No

- Has the applicant demonstrated that the material is not a hazardous waste under ORS 466.00?  
 Yes  No

Notes: Trace metal concentrations are all below clean fill screening criteria.

- Has the applicant demonstrated that until the time this material is used according to a beneficial use determination, the material will be managed, including any storage, transportation, or processing, to prevent releases to the environment or nuisance conditions?

Yes  No

Notes: Product will be bagged and kept dry during storage and transportation, minimizing any potential runoff or dust issues.

- Has the applicant demonstrated that hazardous substances in the material, if any, meet one of the criteria in the bulleted list below?  
 Yes  No
  - Hazardous substances do not significantly exceed the concentration in a comparable raw material or commercial product;
  - Hazardous substances do not exceed naturally occurring background concentrations; or
  - Hazardous substances will not exceed acceptable risk levels, including persistence and potential bioaccumulation, when the material is managed according to a beneficial use determination.

Notes: The material does not contain any hazardous substances.

- Has the applicant demonstrated that the proposed beneficial use will not result in the increase of a hazardous substance in a sensitive environment, such as a park, wildlife refuge or wetland?  
 Yes  No

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Notes: The material does not contain any hazardous substances. Trace metals are below clean fill screening criteria.

- Has the applicant demonstrated that the proposed beneficial use will not create objectionable odors, dust, unsightliness, fire, or other nuisance conditions?

Yes  No

Notes:

- Has the applicant indicated that the proposed beneficial use will comply with any other applicable federal, state, and local regulations?

Yes  No

Notes: Any uses must be done in accordance with Oregon Department of Agriculture requirements.

4) Public Involvement Evaluation (Note: this is not a Beneficial Use evaluation criterion)

Determine a public involvement recommendation using the current, **Guidance to DEQ Solid Waste Program Staff and Managers on Public Notice & Participation.**

- Is public notice and participation being recommended for this application?  Yes  No  
DEQ conferred with Cheryl Grabham, the RST member for Portland, and she anticipates public interest to be low. Therefore, public notice and participation is not recommended.