



State of Oregon  
Department of  
Environmental  
Quality

State of Oregon Department of Environmental Quality

# Beneficial Use of Solid Waste Determination

## Evaluation Form

Applicant: Mutual Materials

BUD#: 20180312

Solid Waste: raw clay, clay and concrete brick, clay grog, concrete brick debris

Summary of proposed beneficial use: road base, construction fill, aggregate material

Reviewer: Heather Kuoppamaki

Date: 7/27/2018

Tier:  One  Two  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: *If these materials were not an industrial waste, they would be considered clean fill and not regulated. Mutual Materials estimates between 10,000 to 100,000 cubic yards per year would be reused. Mutual Materials has been stockpiling this material onsite as it is frequently reused in the manufacturing process. However, some material is not able to be reused and Mutual Material would like to receive approval to beneficially use the material as aggregate base, road base, and construction fill. Mutual Materials estimates between 3,000 and 5,000 cubic yards each year from each of the Empire Plant and the Gresham Facility. Mutual Materials tested the material for TCLP metals. All but one result was non-detect. Zinc was detected in the concrete at 0.554 mg/L. The clean fill value for zinc in the Portland Basin is 180 mg/kg. While these concentrations are not directly comparable since one is from the Toxicity characteristic leaching procedure (TCLP) which analyzes a liquid, and the other is a solids analysis, the results indicate the zinc concentration would be below clean fill screening levels.*

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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 effect of the Proposed Beneficial Use on Public Health, Safety, Welfare and/or the Environment

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**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

Notes: *If these materials were not an industrial waste, they would be considered clean fill and not regulated.*

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: *Clay, clay and concrete brick, clay, grog, and concrete brick. If this material was not an industrial waste, it would be considered clean fill. The applicant estimates they may generate between 10,000 to 100,000 cubic yards each year most of which is reused in making new products on site. Mutual Materials would like to sell 3,000 to 5,000 cubic yards per year as aggregate/fill.*

- Did the applicant provide an adequate description of the proposed beneficial use and justify how the proposed use is beneficial?

Yes  No

Notes: *Proposed beneficial uses are road base course and construction backfill. The material may also be mixed with other materials to make aggregate. The material may also be used directly in the production of concrete, mortar, wall materials, and/or recyclable cement. Because the material meets clean fill screening values there are no restrictions on where the material can be used as fill. Residential, commercial, industrial and other fill uses are acceptable.*

- 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:

- 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:

- If required, did the applicant provide any other DEQ required information to evaluate the proposal?

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Yes  No

Notes: *Not required*

**Tier 2:  Applicable  Not applicable**

- Did the applicant submit all the information required for a Tier 1 application?

Yes  No

Notes:

- 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: *This material would be used as fill material, road base, and aggregate material. The sampling provided demonstrates this would be a suitable beneficial use of this material.*

- 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:

- 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:

- 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, email, site address and site coordinates (latitude and longitude)?

Yes  No

Notes: *Not applicable*

- 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: *Material does not pose an adverse impact to public health, safety, welfare, or the environment. DEQ will place onsite storage limitations on this material in the BUD conditions.*

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**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: *This is a typical reuse of this type of material.*

- Did the applicant successfully identify or demonstrate a reasonably likely proposed beneficial use for the material that is not speculative?  
 Yes  No
- The applicant is a port district and has demonstrated the proposed use is upland placement of dredged material in accordance with Senate Bill 412.  
 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?

Yes  No  N/A

Notes:

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- 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: *Effective substitute of raw material.*

- Is the use in accordance with applicable engineering standards, commercial standards, and agricultural or horticultural practices?

Yes  No

Notes: *The materials in the BUD are commonly used for these purposes.*

**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

Notes:

- Has the applicant demonstrated that the material is not a hazardous waste under ORS 466.00?

Yes  No

Notes:

- 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: *DEQ to provide some limitations on storage onsite prior to beneficial reuse.*

- 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: *No hazardous substances*

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- 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

Notes:

- 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:

**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 and Participation.

- Is public notice and participation being recommended for this application?

Yes  No

Notes: *This material is commonly reused in the manner proposed in the BUD application.*