



Minnesota Pollution Control Agency

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March 4, 2010

Ms. Therese Benkowski
Metalcasters of Minnesota
18706 - 68th Avenue North
Maple Grove, MN 55311

RE: Executed Case Specific Beneficial Use Determination, UT0078

Dear Ms. Benkowski:

Enclosed is your signed copy of the executed Case Specific Beneficial Use Determination (CSBUD) that was signed on February 26, 2010, by the Minnesota Pollution Control Agency Commissioner or his designee. Therefore, February 26, 2010, is the effective date of the CSBUD.

If there are any questions, please contact me at 651-757-2759.

Sincerely,

A handwritten signature in black ink, appearing to read "Geoffrey D. Strack".

Geoffrey D. Strack, P.E.
Senior Engineer
Policy, Local Government Assistance and Solid Waste Section
Municipal Division

GDS:kk

Enclosure

**STATE OF MINNESOTA
MINNESOTA POLLUTION CONTROL AGENCY**

CASE SPECIFIC BENEFICIAL USE DETERMINATION

The Minnesota Pollution Control Agency (MPCA) is issuing this Case Specific Beneficial Use Determination (CSBUD) to iron foundries (gray or ductile), aluminum foundries, and steel foundries associated with the Metalcasters of Minnesota (MCM), and other iron, aluminum, and steel foundries meeting the requirements herein, to establish as a beneficial use the incorporation of spent foundry sand as an ingredient in Manufactured Soil, as defined herein, under the conditions set forth in this CSBUD. Under Minn. R. 7035.2860, the MPCA has the authority to issue a CSBUD when it has determined that use of a material classified as a solid waste is a beneficial use.

1. Background

- A. The MPCA received a proposal for a CSBUD from MCM as outlined in Minn. R. 7035.2860, subp. 5. The proposal was dated May 11, 2009. The proposal seeks a CSBUD for the use of certain spent foundry sands (as defined below) in Manufactured Soil (as defined below).
- B. As set forth in the proposal, foundries, including MCM's members, cast many types of metal using many types of mold processes. These processes generate spent foundry sand (as defined further below).
- C. Foundries recycle sand within the foundry to the greatest extent possible. In order to maintain foundry specifications for molding sand, the foundry must waste some of its molding sand, which is called spent foundry sand (defined further below).
- D. For the purposes of this CSBUD, spent foundry sand is defined as:

Excess, spent molding sand (green sand) and excess, spent core sand. This does not include unused or broken cores, core butts (which are pieces of the core that did not break down to grain size during the shakeout process), nor does it include pollution control dust, eupola slag, core room sweepings, or shot blast fines. It also does not include other non-sand material such as wood, paper, plastic, and garbage.
- E. This CSBUD only pertains to non-olivine spent foundry sand from casting iron, aluminum, and steel. The use of olivine sand is not authorized by this CSBUD and would require a separate approval from the MPCA.
- F. This CSBUD does not apply to spent foundry sand that is obtained by excavation or "mining" of existing storage stockpiles, disposal piles, monofills of spent foundry sand, or landfills containing a variety of solid wastes that include spent foundry sand.
- G. The U.S. Department of Agriculture and the U.S. Environmental Protection Agency (USEPA) have been conducting research and publishing findings on the use of spent foundry sand in soil applications, including "Manufactured Soil". "Manufactured Soil" is a soil that results from the blending of spent foundry sand with soils and/or organic amendments (i.e., compost, peat, etc.) to develop soils suitable for horticultural, landscaping, and turfgrass applications.

H. The MPCA has reviewed the information submitted and determined that the proposed use of foundry sand for manufactured soil meets the standards for beneficial use described in Minn. R. 7035.2860, subp. 2.

2. Beneficial Use Determination

A. Based on the information submitted by MCM in the May 11, 2009 submittal, and other information the MPCA obtained from its research, the MPCA has determined that the use of spent foundry sand, as defined above, as an ingredient in Manufactured Soil constitutes a beneficial use subject to the following conditions:

- i. A qualifying foundry that wishes to utilize its spent foundry sand in accordance with this CSBUD must take a representative sample of its spent foundry sand and have it analyzed for the constituents listed in Table 1. The sample(s) must be analyzed according to the USEPA's publication SW-846, which is titled "*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*". The foundry must ensure that the laboratory is able to achieve the detection limits listed below. The detection limit and the reporting limit for each result must be included with the sampling results. If the constituent is detected below the reporting limit, the concentration, with appropriate qualifier, shall be reported.

Table 1: Analytical List

Constituent	Detection Limit (mg/kg)
Aluminum	100
Arsenic	1.0
Barium	5.0
Beryllium	5.0
Chromium	1.0
Copper	1.0
Iron	50
Lead	5.0
Manganese	50
Mercury	0.02
Nickel	1.0
Selenium	1.0
Sulfate	100
Zinc	5.0
Total Phenolics	5.0

- ii. Prior to beneficial use or making available for beneficial use in accordance with this CSBUD, a foundry must apply for determination of applicability to the MPCA. In order to obtain a determination of applicability, a foundry must submit the following to the MPCA: the name of the foundry, the location of the foundry, the mailing address for the foundry, a contact name for the foundry, a list of all the types of metal being cast at the foundry, a description of the sand the foundry is submitting the application for, and the analytical results for the sand in accordance with item (i) above.
- iii. Each foundry shall submit analysis for the recharacterization of its spent foundry sand once per year.

- iv. If any changes are made in the types of sand binder system, binder additives, or coatings, the spent foundry sand must be recharacterized and receive a new determination of applicability from the MPCA prior to the beneficial use of the altered spent foundry sand.
- v. The storage of the spent foundry sand shall be done in accordance with Minn. R. 7035.2855.
- vi. Spent foundry sand shall not account for more than 50 percent (by volume) of the Manufactured Soil.
- vii. Blending with class II compost must be in accordance with the MPCA's April 2004 program management decision (attached).
- viii. If a previous notification was not sent to a local unit of government in accordance with Minn. R. 7035.2860, subp. 5(J), one shall be sent 10 days prior to utilization in accordance with this CSBUD. The notification shall be done in writing.
- ix. Participating foundries must notify all parties utilizing spent foundry sand in accordance with this CSBUD of the requirements of this CSBUD.
- x. Upon request, a participating foundry must provide samples of the spent foundry sand to the MPCA for the purposes of research and analysis.

B. This CSBUD shall remain in effect until modified or terminated by the MPCA as described in Minn. R. 7035.2860, subp. 8 or 9.

3. Reporting

A. Each participating foundry shall submit a report meeting the criteria in Minn. R. 7035.2860, subp. 7 by January 31 of each year.

B. In addition to the report required under part 3.A., each participating foundry must submit a report to the MPCA each year by January 31 that includes the following information:

- i. Total quantity of spent foundry sand used as an ingredient in Manufactured Soil under the authority of this CSBUD;
- ii. A list of foundries that operated under this CSBUD;
- iii. Description of any complaints received related to the management of the spent foundry sand and how they were resolved;
- iv. Description of any problems associated with the storage and handling of the spent foundry sand and how those problems were resolved; and
- v. Description of any problems associated with the Manufactured Soil that were related to the use of spent foundry sand.

4. Other Conditions

A. Participating foundries shall ensure that the spent foundry sand is stored, transported, and utilized in a manner consistent with Minn. R. 7011.0150, which prohibits a person from handling material in a manner which may allow avoidable amounts of particulate matter to become airborne. The objective in controlling dust is to prevent impact on nearby residences or businesses, and prevent complaints. Use of the spent foundry sand shall be discontinued on excessively windy days when and if nuisance conditions cannot be controlled.

B. This CSBUD shall not release any participating foundry from any liability, penalty, or duty imposed by Minnesota or federal statutes, or regulations, or local ordinances.

- C. The CSBUD authorizes MCM, its members, and other MPCA-approved foundries to perform the activities described in the CSBUD under the conditions of the CSBUD. In issuing the CSBUD, the State and MPCA assume no responsibility for damage to persons, property, or the environment caused by the activities of MCM, its members, or other MPCA-approved foundries in the conduct of its actions, including those activities authorized, directed, or undertaken under the CSBUD. To the extent the State and MPCA may be liable for the activities of its employees, that liability is explicitly limited to that provided in the Tort Claims Act, Minn. Stat. § 3.736.

**STATE OF MINNESOTA
POLLUTION CONTROL AGENCY**

By: *Lisa J. Thorvig*
Lisa J. Thorvig
Division Director
Municipal Division

Date: 2-26-2010