



Beneficial Use of Fill-Like Materials Survey Report

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**Beneficial Use Task Force
of the Materials Management Subcommittee**

**Association of State and Territorial Solid Waste Management Officials
(ASTSWMO)**

Acknowledgments

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Disclaimer

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INTRODUCTION

In late 2019, the Beneficial Use Task Force (BUTF) of the Materials Management Subcommittee of the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) undertook the task of surveying the States and Territories (States) regarding beneficial uses of various fill-like materials in the United States. This report summarizes the results of that survey and provides a discussion of the results.

The types of fill-like materials considered in the survey ranged from concrete and crushed glass to auto shredder waste and water treatment plant residuals. So many fill-like materials are generated that it is sometimes a struggle to determine how best to manage them. Generators tend to look for the simplest and/or cheapest solution, which is typically sending it to a landfill for alternate daily cover (ADC). While that certainly provides an alternative to virgin soil, the BUTF wondered what other ways States are using these fill-like materials.

Why pursue beneficial uses of fill-like materials? There are a variety of reasons. Depending on the region, the cost of disposal of them can be quite costly. Landfill capacity is finite and will be maxed out, sooner for some States than others. From an environmental perspective, substituting a suitable fill-like material for a virgin material saves natural resources, including energy and water.

The Task Force's intent with this survey was to identify the beneficial uses of fill-like materials in order to bring awareness and options for States that may not have been considered or been viable in the past. The survey also sought to identify those uses that have had implementation issues and some challenges for gaining approval to use these fill-like materials. The BUTF does recognize that many of the fill-like materials listed may have outlets for diversion but not as fill. For the purpose of this survey, the BUTF focused on fill-like materials that were common to more than one region. It is also important to note that our survey allowed the survey participant to select multiple uses for each fill material type. Table 1 lists the fill-like materials included in the survey. Beneficial uses surveyed are listed in Table 2.

The questions in this survey were developed by the BUTF. Forty-one (41) States responded to the survey, which opened on November 19, 2019 and ultimately closed on January 10, 2020. In early 2020, the BUTF followed up with a few States to clarify some responses.

Table 1. List of Fill-Like Materials Surveyed:

Alum Sludge
Ash & Cement Kiln Dust
Asphalt Roofing Shingles
Baghouse Fines
Biosolids
Brick Lining And Slag Materials Used In Steel Making Process
C&D (Construction & Demolition Debris) Fines
Coal Combustion Products
Concrete
Concrete Washout (Hardened)
Contaminated Sediments
Cooling Tower Sediment
Crushed Concrete
Crushed Glass
Dredge Material
Drill Cuttings
Drinking Water Treatment Plant Sludge/Residuals
Dust Collector Fines
Excess Frac Sand
Foundry Sands

Ground Asphalt
Gypsum/Limestone Byproduct
Gypsum/Wallboard
Wastewater Treatment Sludge
Mildly Contaminated Soils
Processed C&D Waste
Shredded Tires
Slag
Soil From Cement Impoundment
Soil From Tank Removal
Spent Sand Blasting Media
Storage Pond Sediment
Storm Drain Waste
Street Sweepings
Tire Derived Aggregate
Treated Auto Shredder Waste
Tree Trimming Material
Trench Line Excess Soils

Table 2. List of Uses Surveyed:

Aggregate Substitute
Alternate Daily Cover
Aquatic Habitat Restoration
Backfill
Bottle Manufacturing
Brownfield Sites
Bulking Agent
Cement Manufacturing
Concrete
Construction Material
Drainage Media
Dust Control
Encapsulated Construction Projects
Erosion Control

Fill Material In Low Areas Of Previously Closed Impoundments
Foundation Repair Around Wind Turbines
General Fill
Industrial Filler In Paints, Coatings, etc.
Landfill Cover
Non-Structural Contouring
Pipe Bedding
Replacement of Virgin Material
Rip Rap
Soil Stabilization
Structural Fill
Top Soil Blend
Transportation Project
Wet Weather Pads

DEFINITIONS

When conducting any survey, it is important to define the terms being used. Therefore, the first part of the survey asked the States to provide their definitions for Fill Material and, similarly, Clean Fill. Not surprisingly, the definitions varied, if they exist at all. Nationwide, 41 States responded. Approximately 42% of States that responded have a definition for Fill Material. Several States have a stand-alone definition of Fill Material, while others include it under definitions within waste categories such as general fill, alternative fill or construction fill, and some States evaluate the term on a case-by-case basis.

Similarly, the survey asked States for their definition of Clean Fill. Forty (40) States responded to this survey question. More than half (52.5%) of the States do not define the term “clean fill”. While several States define “clean fill” in regulation, two States reference the term only in guidance or policy.

Only ten of the States that responded have *both* a definition for Fill Material and Clean Fill. It may be that in most cases, fill material and clean fill are considered to be the same or very similar and therefore do not require separate definitions.

Appendix A shows a map of the EPA Regions. Links to responding States’ definitions are included in Appendix B.

REPORTED RESULTS

Survey results identified thirty-nine (39) fill-like materials based on a preliminary nationwide search of those having one or more approved beneficial uses. The fill-like materials with the greatest number of approved beneficial uses include Concrete, Crushed Glass and Shredded Tires, each having 16. The fill-like material with the least number of beneficial uses was Cooling Tower Sediment, with only two approved uses. The most common beneficial use nationwide for any fill-like material identified in this survey was ADC followed closely by General Fill.

EPA Regions 3 and 10 reported using the most fill-like materials (10) as part of a transportation project. Six of the 10 Regions reported approving the beneficial use of crushed glass for bottle manufacturing. Table 3 shows the primary approved beneficial uses by EPA Region. Appendix C shows beneficial uses of fill-like materials by EPA Region.

Table 3. Top 3 Beneficial Uses by Region:

Region	Top 3 Beneficial Uses		
1	General Fill	Landfill Cover	ADC
2	ADC	Non-Structural Contouring	Aggregate Substitute
3	General Fill	Topsoil Blend	Transportation Projects/ADC
4	Aggregate Substitute	ADC	Structural Fill
5	ADC	Aggregate Substitute	Topsoil Blend
6	Backfill	General Fill	Structural Fill
7	ADC	General Fill	Aggregate Substitute
8	General Fill	ADC	Topsoil Blend
9	ADC	Construction Material	Aggregate Substitute/Wet Weather Pads
10	General Fill	Transportation Projects	Topsoil Blend

BENEFICIAL USE APPROVAL PROCESS

States were asked to briefly describe their beneficial use approval process. Thirty-nine (39) States reported approving beneficial uses of fill-like materials. A wide range of responses was received among the States who responded to this question. Each State’s response fell into one of two categories of approval: a formal written policy or informal approval done on a case-by-case basis. Among the 24 States that have a formal application and permitting process, there was a considerable amount of overlap among the States in information that is required, including a description of the proposed material, a description of the proposed use, and analytical data. Additional information is often required depending on material type and proposed beneficial use. States often conduct reviews that result in approval or denial of a permit, license, or authorization.

The 14 States that had an informal process of review often required an initial request, which served as the basis for approval or denial. These States either did not have a written policy stating their approval process or did not provide enough information to thoroughly convey their process. Links to States’ beneficial use approval processes are provided in Appendix D.

ISSUES WITH APPROVED BENEFICIAL USES OF FILL-LIKE MATERIALS

Of the 41 States that responded to the survey, 55% said there have been no issues with any approved beneficial use of fill material while 40% responded that they had experienced negative issues. Two States left this question blank. Negative issues included legitimacy of benefit, environmental matters, and policy and politics.

Legitimacy of benefit could sometimes appear subjective. Comments were received questioning use of materials as fill with no engineering justification or, in some cases, over-use that simply resulted in cheap disposal. Examples were given of projects where a material had been approved

for beneficial use that were never completed, resulting in inexpensive disposal with no actual benefit. Use of a “proprietary” blend of construction and demolition (C&D) debris failed to perform as expected as ADC, a use frequently mentioned throughout the survey. A comment was provided stating that it can sometimes be difficult for agency personnel to properly evaluate legitimate beneficial use versus inexpensive disposal in the guise of beneficial use.

Environmental impacts noted include generation of hydrogen sulfide odor generated from gypsum wallboard mixed with other construction and demolition waste then used as ADC. Impacts from spills during transport and placement of materials approved for beneficial use as fill was also reported but did not reflect negatively on the material itself. Historical use of slag, foundry sands, and coal combustion residue as an alternative cover beneficial use was reported to have resulted in water pollution and the need for major soil remediation efforts.

Finally, some responses reflected difficulty with policy and politics rather than legitimacy of benefit or environmental issues related to beneficial use materials. Political opposition to certain industry sectors can lead to opposition for use of any by-product materials generated by that sector even though regulations may allow or even encourage beneficial use consideration.

REGULATORY OVERSIGHT OF MILDLY CONTAMINATED FILL-LIKE MATERIAL

The BUTF also queried States as to whether a proposed fill-like material that has contamination at levels below that State’s residential cleanup standards is regulated. Twenty-six (26) States responded to this question, with 16 States responding with an example showing how the material is used and what conditions must be met prior to application.

Some respondents stated that regulations, specific groundwater quality screening levels, or their State’s definition of a clean-up standard need to be met before the material could be land applied.

A fill-like material’s proximity to groundwater received the most responses from States. Five States noted anyone applying fill material should adhere to that State’s groundwater-screening criteria.

- Two States mentioned daily or intermediate cover and one State specifically mentioned use at a Class III landfill, specifying those uses specifically would be regulated.
- One State required that the even mildly-contaminated soils used as fill need to be sampled.

Additional limitations reported on land application of contaminated fill-like material include the following:

- Eleven States did not address groundwater criteria as it pertains to land application.
- Three States reported that use of fill-like material would be evaluated on a case-by-case basis or with approval. Two States require only a visual inspection of the soil.
- Two States had their own definition of contaminated fill material including “urban” and “polluted” soils.

- One State responded saying any material in excess to or discarded by the generator is considered a solid waste, and thus regulated as such.
- One State reported that there can be no contamination of any kind prior to land application.

CHALLENGES TO BENEFICIAL USE OF FILL-LIKE MATERIALS

In addition to asking States to identify the top three reuse applications for various fill-like materials, the BUTF sought feedback regarding the primary challenges States face related to the beneficial use of fill-like material. The vast majority of respondents (83%) identified at least one primary challenge related to the greater adoption of fill-like material in beneficial reuse applications.

These challenges can be categorized into four main areas:

- 1) Lack of standardized chemical and physical characterization of fill-like materials.
- 2) Lack of understanding (by waste generators and end-users) regarding what is “beneficial reuse” and the presumption that “recycling” is exempt from regulation.
- 3) Lack of consensus regarding allowable uses of “mildly-contaminated” soil as fill.
- 4) Lack of staffing and regulatory guidance/authority to administer a beneficial use program.

As was found in ASTSWMO’s [2006 Beneficial Use Survey Report](#), the greatest barrier to issuing approvals for the beneficial use of waste was the lack of sufficient information to properly evaluate the risk to human health and the environment. Given the challenges identified by respondents to this 2020 survey, proper waste characterization through by-product testing remains the primary barrier to greater adoption of beneficial reuse applications. Decision making for beneficial reuse of any solid waste, including fill-like materials, must balance the objective of promoting fill-like material reuse with the need to be protective of human health and the environment. This can only be achieved through upfront testing (e.g., approved test methods and constituents) to adequately assess the chemical and physical characteristics of solid wastes. It is clear from the current responses that States still seek this analytical guidance as it pertains to the proper evaluation of beneficial use materials.

In addition to properly evaluating the risks associated with beneficial use of fill-like materials, respondents to the 2020 survey identified staffing and regulatory authority as another significant obstacle to increased adoption. In comparison to the above-referenced 2006 survey, “the lack of staff resources to review the beneficial use requests” was the second greatest barrier. As was noted in 2006, with the increased desire by generators to beneficially reuse more waste as a means to avoid disposal expenses, staffing and regulatory deficiencies experienced by States will continue to be a significant obstacle to expanded adoption. Though a lack of staffing and financial resources was again noted by several States as a primary challenge in 2020, many continue to see an increase in beneficial use requests resulting from the adoption of new federal regulations (e.g., Federal Coal Combustion Residual (CCR) Rule, 40 CFR 257, Subpart D).

Another predominant challenge noted by respondents in the 2020 survey was the lack of consensus regarding allowable uses of “mildly-contaminated” soil. Comments included “There is too large of a quantity of contaminated soils to economically manage” to “Public distrust of dredged sediments or other lightly contaminated wastes.” While the management of mildly-contaminated soil (below residential cleanup standard) is an issue for States across the country, the majority were from the East Coast of the United States.

Lastly, survey respondents commented that waste generators and end-users often do not have a clear understanding of what is and is not “beneficial reuse”, or are under the assumption that such reuse activities are considered “recycling” and thus not regulated. Whether it is inappropriate or excessive use of materials or disposal under the guise of beneficial fill, States note that there is a general lack of technical expertise regarding applicable regulations and allowable fill applications. Given the significant variation between the States and regions on what constitutes beneficial fill, establishing standardized definitions and testing protocols with a strong education and outreach program would help reduce cases of avoidable physical or chemical contamination, as well as instances of compliance and enforcement.

ADDITIONAL STATE COMMENTS

The BUTF’s intent with this option was to allow States to provide comments on the fill-like materials and/or uses the survey may have missed. Of all respondents, 27 provided comments related to the fill-like materials or uses by States. As expected, the comments varied based on the maturity of a State’s programs.

Many States provided a reference to their rule or guidance. Many of the comments listed materials that may have outlets for beneficial diversion but not as fill. For example, tree trimming, certain C&D waste, and shredded tires are often used for fuel. Other material uses not considered fill included livestock bedding, composting, and land application.

In the end it was clear that not every State was looking at the issue from the same perspective. Some respondents mentioned they were still wrestling with how to define “clean fill” and how to develop policy for clean fill usage. This survey and the responses should give States in similar circumstances some options to review and issues to consider. For States creating new definitions or policy or updating existing ones, these comments are well worth reviewing.

CONCLUSION

The survey has shown that, as the BUTF expected, ADC is the primary beneficial use of fill-like materials. It may be that its frequent use is because landfills are known entities to those generating ADC-like materials and have relationships that are already developed, making the process smoother. The use of ADC at landfills is more likely to have technical requirements that need to be met since the landfills themselves are regulated. Landfill permits have significant environmental controls in place that make the use of fill-like materials for ADC less of an environmental risk. And it may simply be that it is the cheapest option.

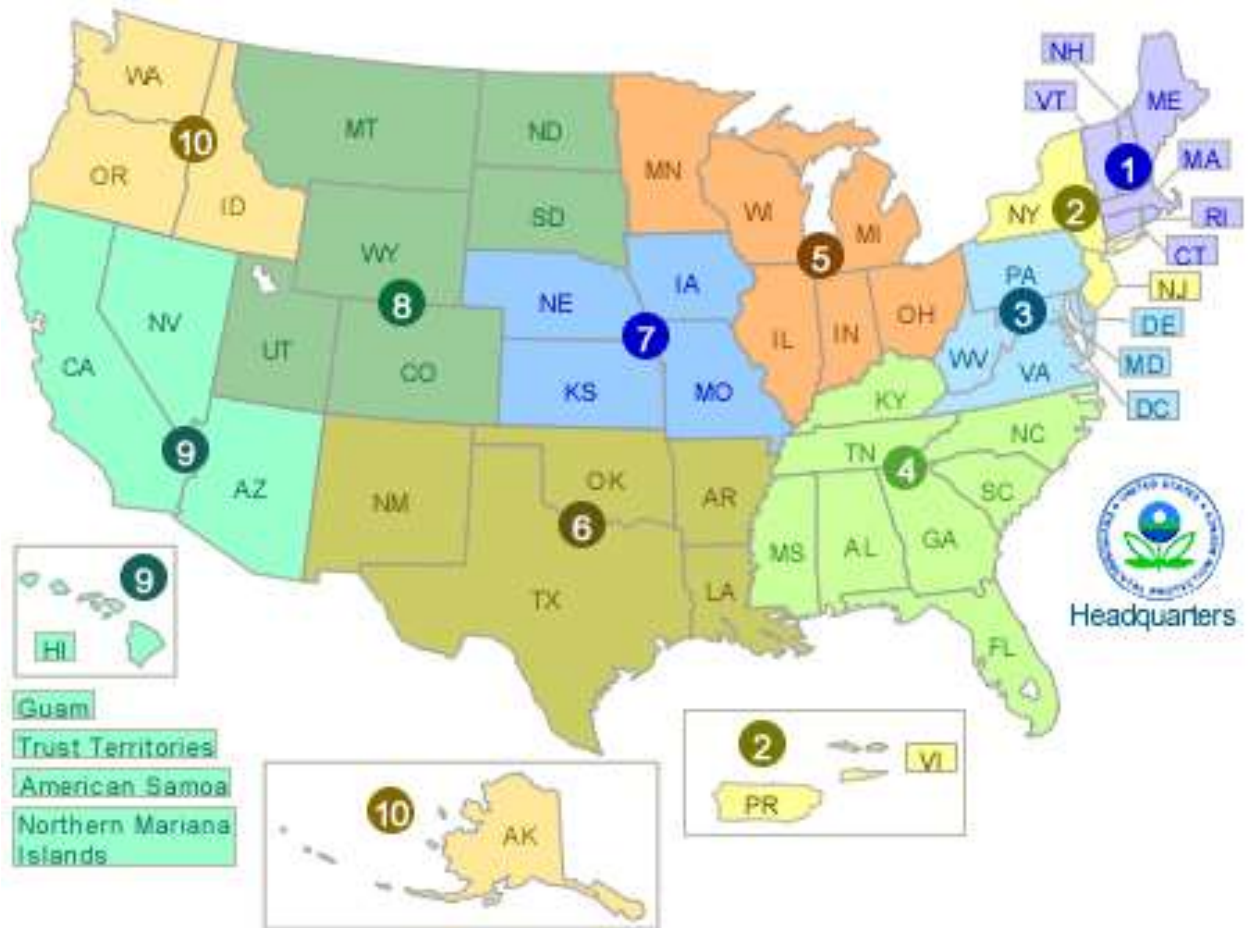
Given the comments received, many of ASTSWMO's 2006 Beneficial Use Survey Report findings remain valid today. There is clearly a need for increased information exchange among peers in State waste management programs, especially those that share borders or are within the same EPA Region. Through building these peer relationships, States can work cooperatively to develop beneficial use programs with similar protocols in place to properly characterize fill-like materials to ensure beneficial fill applications do not adversely affect human health or the environment.

And while staffing and funding levels will vary from State to State, and are generally beyond our control, the information obtained from this survey will be made available to all States to aid in developing or improving established beneficial use programs. The goal of this survey was to not only to identify how States and Territories across the county are utilizing beneficial fill materials, but also to foster improved communication and information dissemination amongst parties to advance beneficial reuse programs and processes.

Finally, the BUTF recognizes this survey was not perfect, but the goal was to be as complete as possible when identifying the most common fill-like materials.

The Beneficial Use Task Force appreciates the time each State took to complete this survey and hopes that this report may offer solutions not previously considered, as well as provide resources for future beneficial use development within States.

APPENDIX A: MAP OF EPA REGIONS



APPENDIX B: LINKS TO STATE DEFINITIONS OF FILL MATERIAL AND CLEAN FILL

STATE	LINK	COMMENT
Region 1		
CT	https://eregulations.ct.gov/eRegsPortal/Browse/getDocument?guid=%7BF0DC9F57-0100-C7B7-BF07-DE0E453778A8%7D	
ME	https://www.maine.gov/sos/cec/rules/06/096/096c400.doc	
MA	https://www.mass.gov/doc/310-cmr-400000-massachusetts-contingency-plan-mcp-1/download	310 CMR 40,0006 "Definitions"
Region 2		
NJ	https://www.state.nj.us/dep/rules/rules/njac7_26e.pdf	7:26E-1.8 Definitions
NY	https://govt.westlaw.com/nycrr/Document/Id4d6080cdf911e7aa6b9b71698a280b?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default)&bhcp=1	6 NYCRR 360.2(b)(107)
Region 3		
DE	https://regulations.delaware.gov/AdminCode/title7/1000/1300/1301.shtml#TopOfPage	Section 3.0
MD	https://mde.maryland.gov/programs/Marylander/Documents/Dr edging/NoTrackChangesFillMaterial_andSoilManagementFactSheet82217.pdf	
	https://mde.maryland.gov/programs/LAND/MarylandBrownfieldVCP/Documents/www.mde.state.md.us/assets/document/Clean%20Imported%20Fill%20Material(2).pdf	see COMAR 26.04.07.04C(5) at http://www.dsd.state.md.us/comar/com arhtml/26/26.04.07.04.htm
VA	https://law.lis.virginia.gov/admincode/title9/agency20/chapter81/section10/	See "structural fill"
PA	http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4647	PA Management of Fill Policy provides a definition of "fill".
	http://www.pacodeandbulletin.gov/Display/pacode?file=/secure/pacode/data/025/chapter271/s271.1.html&d=reduce	25 Pa. Code 271.1 and 287.1, provides a definition of "clean fill." The PA Management of Fill Policy

Region 4		
FL	https://www.flrules.org/gateway/ChapterHome.asp?Chapter=62-701	
NC	https://www.ncleg.net/enactedlegislation/statutes/html/bysection/chapter_130a/gs_130a-294.html	130A-294(m)
Region 5		
IL	http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1585&ChapterID=36	
IN	http://iac.iga.in.gov/iac/T03290/A00100.PDF	See 329 IAC 10-2-183 (Fill Material); See 329 IAC 10-3-1(1) (Clean Fill)
MI	http://www.legislature.mi.gov/documents/mcl/pdf/mcl-451-1994-ii-3-115.pdf	
MN	https://www.pca.state.mn.us/sites/default/files/c-rem2-02.pdf	
WI	https://docs.legis.wisconsin.gov/code/admin_code/nr/500/500/08/2/a	NR 500.08(2)(a)
Region 6		
AR	https://www.adeg.state.ar.us/downloads/regs/oldregs/reg22_final_950507.pdf	APC&EC Regulation No. 22.102 "beneficial fill"
Region 7		
IA	https://www.legis.iowa.gov/docs/ACO/chapter/567.108.pdf	
KS	https://www.kdheks.gov/waste/regsstatutes/sw_laws.pdf ; https://www.ksrevisor.org/statutes/chapters/ch65/065_034_0002.html	K.A.R. 28-29-501; K.S.A. 65-3402 (w)
MO	https://www.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c80-2a.pdf	
NE	http://deq.ne.gov/RuleAndR.nsf/Title_132.xsp http://deq.ne.gov/RuleAndR.nsf/pages/PDF/%24FILE/T132_5.17.16.pdf	Links provided by BUTF Region 7 rep.
Region 8		
WY	http://deq.wyoming.gov/media/attachments/Solid%20%26%20Hazardous%20Waste/Solid%20Waste/Rules%20%26%20Regulations/Chapter%2001%20General%20Provisions%20(1).pdf	"Cover Material"

Region 9		
CA	<u>https://govt.westlaw.com/calregs/Document/IE6390BE05F6811DFBF66AC2936A1B85A?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default)</u>	27 CCR 20164 – Fill
HI	<u>https://www.capitol.hawaii.gov/hrscurrent/Vol06_Ch0321-0344/HRS0342H/HRS_0342H-0001.htm</u>	Inert Fill
Region 10		
AK	<u>https://dec.alaska.gov/media/1042/18-aac-60.pdf</u>	Not defined directly, but is effectively in regulation. 18 AAC 60.008
OR	<u>https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=256072</u>	
WA	<u>https://apps.leg.wa.gov/WAC/default.aspx?cite=173-350&full=true#173-350-100</u>	

APPENDIX C: BENEFICIAL USES OF FILL-LIKE MATERIALS, BY EPA REGION

EPA REGION 1:

Fill-like Material	Beneficial Use	CT	ME	MA	NH	RI	VT
Alum Sludge	Bulking agent	X					
Ash & Cement Kiln Dust	Concrete	X					
	General fill		X				
	Replacement of virgin material		X				
Asphalt Roofing Singles	Aggregate substitute	X			X		X
	Replacement of virgin material		X				
	Transportation project			X			X
Baghouse Fines	Landfill cover			X			
Biosolids	Topsoil blend				X		
C&D Fines	ADC		X	X	X		
	Non-structural contouring		X				
	Landfill cover			X		X	
Coal Combustion Products	General fill		X				
	Cement manufacturing			X			
	Landfill cover			X			
Concrete	General fill	X	X			X	
	Construction material	X					X
	Structural fill	X					X
	Aggregate substitute		X				X
	Backfill		X				
Concrete Washout (hardened)	General fill		X				
Contaminated Sediments	General fill		X				
	ADC		X				X
	Encapsulated construction projects		X				
	Landfill cover					X	
Crushed Concrete	General fill	X	X	X			
	Construction material	X					X
	Structural fill	X		X			X
	Backfill				X		
	Aggregate substitute						X

Fill-like Material	Beneficial Use	CT	ME	MA	NH	RI	VT
Crushed Glass	Aggregate substitute	X		X			X
	Pipe bedding	X	X				
	Transportation project	X					
	General fill		X				
	ADC		X		X		
	Drainage media			X			X
	Construction material				X		
	Landfill cover					X	
	Bottle manufacturing						X
Dredge Material	General fill		X				
	Landfill cover			X			
Drinking Water Treatment Plant Sludge/Residuals	Bulking agent	X					
	General fill			X			
	Topsoil blend			X			
	Replacement of virgin material				X		
Dust Collector Fines	Landfill cover			X			
Foundry Sands	General fill		X				
	Landfill cover			X			
Ground Asphalt	Aggregate substitute	X		X			X
	General fill	X				X	
	Replacement of virgin material		X				
	Transportation project		X	X			
	Construction material						X
Gypsum/Limestone Byproduct	General fill		X				
Gypsum/Wallboard	Topsoil blend			X			
Mildly Contaminated Soils	ADC	X	X				
	Aggregate substitute	X					
	General fill	X	X	X			
	Backfill		X				
	Landfill cover			X		X	
Processed C&D Waste	ADC		X	X	X		
	Non-structural contouring		X				
	Landfill cover			X			
Shredded Tires	Transportation project		X				
	General fill			X			
	Landfill cover			X			

Fill-like Material	Beneficial Use	CT	ME	MA	NH	RI	VT
Crushed Glass	Aggregate substitute	X		X			X
	Pipe bedding	X	X				
	Transportation project	X					
	General fill		X				
	ADC		X		X		
	Drainage media			X			X
	Construction material				X		
	Landfill cover					X	
	Bottle manufacturing						X
Slag	ADC			X			
	Landfill cover			X			
Soil from Tank Removal	Backfill		X				
	General fill		X				
	Aggregate substitute			X			
	Landfill cover					X	
Storm Drain Waste	General fill		X				
Street Sweepings	ADC	X		X			X
	General fill		X	X			
Tire Derived Aggregate	Aggregate substitute	X					
	Transportation project		X	X			
	Drainage media			X			X
Treated Auto Shredder Waste	ADC		X				
	General fill			X			
	Landfill cover			X			
Tree Trimming Material	Erosion control	X	X				
	Soil stabilization	X					
	Bulking agent						X
Trench Line Excess Soils	Backfill	X					
Wastewater Treatment Sludge	Landfill cover			X			

EPA REGION 2:

Fill-like Material	Beneficial Use	NJ	NY
Alum Sludge	Topsoil blend		X
	Non-structural contouring		X
Ash & Cement Kiln Dust	Cement manufacturing	X	X
	Soil stabilization	X	X
Asphalt Roofing Singles	Aggregate substitute		X
	Transportation project	X	

Fill-like Material	Beneficial Use	NJ	NY
	ADC	X	
Baghouse Fines	ADC		X
Biosolids	Topsoil blend	X	X
	ADC	X	
Brick Lining and Slag Materials Used in Steel Making Process	Aggregate substitute		X
C&D Fines	ADC	X	X
	Pipe bedding	X	
Coal Combustion Products	Cement manufacturing	X	
	Concrete	X	
	Encapsulated construction projects		X
Concrete	Structural fill	X	X
	Aggregate substitute		X
	Backfill	X	
Concrete Washout (hardened)	Aggregate substitute	X	X
	Backfill	X	
Contaminated Sediments	Brownfield sites	X	
	Structural fill		X
	Non-structural contouring		X
Crushed Concrete	Structural fill	X	X
	Aggregate substitute	X	X
Crushed Glass	Aggregate substitute	X	
	Pipe bedding		X
	Non-structural contouring		X
	Structural fill	X	
Dredge Material	ADC	X	
	Bottle manufacturing	X	
	Non-structural contouring		X
	Topsoil blend		X
Drill Cuttings	Brownfield sites	X	
	Non-structural contouring		X
	ADC		X
Drinking Water Treatment Plan Sludge/Residuals	General fill	X	
	Topsoil blend		X
	ADC	X	
	Non-structural contouring		X
Dust Collector Fines	ADC		X
Foundry Sands	ADC	X	
	Brownfield sites	X	

Fill-like Material	Beneficial Use	NJ	NY
	Backfill		X
	Non-structural contouring		X
Ground Asphalt	Aggregate substitute		X
	Transportation project	X	X
	Pipe bedding	X	
Gypsum/Limestone Byproduct	Soil stabilization	X	
	Topsoil blend	X	X
	Replacement of virgin material		X
Gypsum/Wallboard	Topsoil blend	X	
	Soil stabilization	X	
	Replacement of virgin material		X
Mildly Contaminated Soils	ADC	X	
	Backfill		X
	Brownfield sites	X	
	Non-structural contouring		X
Processed C&D Waste	Non-structural contouring		X
Shredded Tires	Erosion control	X	
	Non-structural contouring	X	X
Slag	ADC	X	
	Brownfield sites	X	
	Aggregate substitute		X
	Construction material		X
Soil from Cement Impoundment	Non-structural contouring		X
Soil from Tank Removal	ADC		X
Spent Sand Blasting Media	ADC	X	
	Brownfield sites	X	
	Aggregate substitute		X
Storage Pond Sediment	Backfill		X
	Non-structural contouring		X
Storm Drain Waste	ADC	X	
	Brownfield sites	X	
Street Sweepings	ADC	X	
	Backfill	X	
	Non-structural contouring		X
	Pipe bedding		X
Tire Derived Aggregate	Aggregate substitute	X	X
	Backfill	X	X

Fill-like Material	Beneficial Use	NJ	NY
Tree Trimming Material	Erosion control		X
Trench Line Excess Soils	Backfill	X	X
	ADC	X	
	Non-structural contouring		X
Wastewater Treatment Sludge	ADC	X	X
	Brownfield sites	X	
	Non-structural contouring		X

EPA REGION 3:

Fill-like Material	Beneficial Use	DE	MD	PA	VA
Alum Sludge	Topsoil blend			X	
Ash & Cement Kiln Dust	Cement manufacturing		X		X
	Encapsulated construction projects		X	X	
	Structural fill			X	
Asphalt Roofing Singles	Replacement of virgin material		X		
	Transportation project	X		X	
	Backfill			X	
	Dust Control			X	
Baghouse Fines	Cement manufacturing			X	
	Transportation project			X	
	Topsoil blend			X	
Biosolids	Topsoil blend			X	X
	Pipe bedding			X	
	Soil stabilization		X	X	
Brick Lining and Slag Materials Used in Steel Making Process	Aggregate substitute		X		
	Structural fill		X		
	General fill		X		
	Construction material			X	
	Topsoil blend			X	
	Transportation project				X
C&D Fines	ADC				X
	General fill		X		
	Brownfield sites			X	
	Bulking agent			X	
	Topsoil blend			X	

Fill-like Material	Beneficial Use	DE	MD	PA	VA
Coal Combustion Products	Cement manufacturing		X		X
	Concrete		X		
	Encapsulated construction projects		X	X	
	Structural fill			X	X
	ADC				X
Concrete	General fill			X	
	Structural fill		X		
	Aggregate substitute		X		
	Brownfield sites		X		
	Pipe bedding			X	
	Concrete			X	
Concrete Washout (hardened)	Transportation project			X	
	Cement manufacturing			X	
	Concrete			X	
Contaminated Sediments	General fill			X	X
	ADC			X	X
	Encapsulated construction projects		X		
	Landfill cover				X
	Brownfield sites			X	
	Structural fill		X		
	Aquatic habitat restoration		X		
Crushed Concrete	General fill				X
	Construction material				X
	Aggregate substitute		X	X	
	Brownfield sites		X		
	Drainage media		X		
	Pipe bedding			X	
Crushed Glass	Aggregate substitute		X	X	
	Transportation project			X	X
	ADC				X
	Drainage media		X		
	Soil stabilization			X	
	Structural fill				X
Dredge Material	General fill		X	X	X
	Aquatic habitat restoration		X		
	Encapsulated construction projects		X		

Fill-like Material	Beneficial Use	DE	MD	PA	VA
	Cement manufacturing			X	
	Brownfield sites			X	
Drill Cuttings	Backfill		X		
	Landfill cover			X	
Drinking Water Treatment Plan Sludge/Residuals	General fill		X		X
	Topsoil blend			X	
	Backfill		X		
Dust Collector Fines	Transportation project			X	
	Topsoil blend			X	
Excess Frac Sand	Pipe bedding			X	
	Replacement of virgin material			X	
Foundry Sands	General fill		X		
	Backfill		X		
	Transportation project			X	
	Pipe bedding			X	
Ground Asphalt	Aggregate substitute		X	X	
	Replacement of virgin material			X	
	Transportation project		X	X	
	Structural fill		X		
Gypsum/Limestone Byproduct	Topsoil blend			X	
	Replacement of virgin material		X		
	Aggregate substitute			X	
	Erosion control			X	
Gypsum/Wallboard	Topsoil blend			X	X
	Replacement of virgin material		X		
	Structural fill			X	
Mildly Contaminated Soils	ADC	X			X
	General fill		X	X	X
	Landfill cover			X	
	Brownfield sites	X	X		
	Structural fill		X		
	Bulking agent			X	
Processed C&D Waste	Construction material			X	
	Topsoil blend			X	
	Structural fill			X	
Shredded Tires	ADC	X			X
	Aggregate substitute		X		

Fill-like Material	Beneficial Use	DE	MD	PA	VA
	Construction material		X		
	Bulking agent			X	
	Replacement of virgin material			X	
	Pipe bedding				X
Slag	Construction material			X	
	Backfill		X		
	General fill		X		
	Topsoil blend			X	
Soil from Cement Impoundment	Backfill		X		
	General fill		X		
Soil from Tank Removal	General fill			X	
	Landfill cover			X	
Spent Sand Blasting Media	ADC				X
	Brownfield sites			X	
	Aggregate substitute			X	
	Transportation project			X	
Storage Pond Sediment	Backfill		X		
	General fill		X		
	Replacement of virgin material			X	
Street Sweepings	General fill				X
	Replacement of virgin material			X	
	Aggregate substitute			X	
	Landfill cover				X
Tire Derived Aggregate	Transportation project				X
	Construction material		X		
	Replacement of virgin material			X	
	Pipe bedding				X
	ADC				X
Treated Auto Shredder Waste	ADC			X	X
	Landfill cover		X		
	Bulking agent			X	
Tree Trimming Material	Erosion control			X	
	Bulking agent				X
	Topsoil blend			X	
Trench Line Excess Soils	Backfill		X		
	General fill		X	X	

Fill-like Material	Beneficial Use	DE	MD	PA	VA
	Replacement of virgin material			X	
Wastewater Treatment Sludge	Landfill cover			X	X
	Topsoil blend			X	X

EPA REGION 4:

Fill-like Material	Beneficial Use	FL	KY	NC	SC	TN
Ash & Cement Kiln Dust	Cement manufacturing	X				
	Aggregate substitute	X				
	Bulking agent				X	
	Backfill					
Asphalt Roofing Singles	Aggregate substitute					X
	Replacement of virgin material				X	X
	Transportation project			X		X
Biosolids	Topsoil blend		X		X	
	Bulking agent			X		
	Landfill cover		X			
	Soil stabilization		X	X		
C&D Fines	ADC				X	X
Coal Combustion Products	Cement manufacturing	X	X		X	
	Landfill cover		X			
	Concrete			X		X
	Encapsulated construction projects				X	
	Structural fill		X	X		X
	Replacement of virgin material	X				X
	Aggregate substitute			X		
Concrete	Structural fill				X	X
	Aggregate substitute			X	X	X
	Transportation project	X				
	Rip rap			X	X	
Concrete Washout (hardened)	Aggregate substitute				X	X
	Transportation project	X				
	Structural fill				X	X
Contaminated Sediments	ADC				X	
	Brownfield sites			X		
	Backfill			X		

Fill-like Material	Beneficial Use	FL	KY	NC	SC	TN
Cooling Tower Sediment	General fill				X	
Crushed Concrete	General fill					X
	Structural fill					X
	Aggregate substitute			X	X	X
	Transportation project	X				
Crushed Glass	Aggregate substitute			X	X	X
	Pipe bedding					X
	General fill					X
	ADC			X		
	Concrete	X				
Dredge Material	ADC			X		
	Replacement of virgin material				X	
Drill Cuttings	Landfill cover			X		
	Soil stabilization				X	
Drinking Water Treatment Plan Sludge/Residuals	Topsoil blend		X		X	X
	ADC	X				
	Pipe bedding		X			
	Structural fill		X			
Foundry Sands	General fill					X
	ADC			X		
	Backfill			X		
	Encapsulated construction projects					X
	Structural fill		X			X
Ground Asphalt	Aggregate substitute			X		X
	Replacement of virgin material				X	X
	Transportation project	X		X		X
Gypsum/Limestone Byproduct	Topsoil blend				X	X
	Replacement of virgin material	X				
Gypsum/Wallboard	Soil stabilization			X	X	X
Mildly Contaminated Soils	ADC	X			X	X
	Structural fill					X
	Encapsulated construction projects					X
	Topsoil blend					
Processed C&D Waste	ADC					X
	Construction material	X				

Fill-like Material	Beneficial Use	FL	KY	NC	SC	TN
	Aggregate substitute				X	
Shredded Tires	Transportation project					X
	ADC	X				
	Aggregate substitute			X		X
	Pipe bedding				X	
	Backfill			X		
	Drainage media			X	X	X
Slag	Aggregate substitute			X		
	Backfill			X		
	General fill			X		
Soil from Tank Removal	General fill				X	
	ADC					X
Storage Pond Sediment	General fill				X	
	ADC			X		X
Storm Drain Waste	Landfill cover			X		
Street Sweepings	ADC			X		
Tire Derived Aggregate	Aggregate substitute					X
	Transportation project					X
	Drainage media				X	
	Pipe bedding				X	
Treated Auto Shredder Waste	ADC			X	X	X
	Bulking agent				X	
Tree Trimming Material	Soil stabilization					X
	Bulking agent				X	X
	ADC					X
Trench Line Excess Soils	Backfill			X		
	General fill				X	
	Structural fill				X	
Wastewater Treatment Sludge	Topsoil blend					X
	Soil stabilization			X		

EPA REGION 5:

Fill-like Material	Beneficial Use	IL	IN	MI	MN	WI
Alum Sludge	Topsoil blend				X	X
	Non-structural contouring					
	ADC	X				X
	General fill					
Ash & Cement Kiln Dust	Concrete	X			X	X
	Cement manufacturing		X		X	X

Fill-like Material	Beneficial Use	IL	IN	MI	MN	WI
	Soil stabilization		X	X		
	Encapsulated construction projects				X	
	Bulking agent			X		
	Construction material			X		
	ADC	X				X
Asphalt Roofing Singles	Aggregate substitute		X			X
	Replacement of virgin material	X		X		X
	ADC	X				X
	Dust Control				X	
	Soil stabilization				X	
Baghouse Fines	Encapsulated construction projects				X	
	Concrete	X			X	
Biosolids	Topsoil blend	X	X		X	X
	ADC	X				X
	Replacement of virgin material			X		
Brick Lining and Slag Materials Used in Steel Making Process	Aggregate substitute					X
	ADC					X
	Replacement of virgin material		X			
	Encapsulated construction projects				X	
C&D Fines	ADC	X				X
	Aggregate substitute	X				
Coal Combustion Products	Cement manufacturing		X	X	X	X
	Landfill cover		X			
	ADC	X				X
	Construction material			X		
	Soil stabilization					X
	Concrete				X	
	Transportation project		X			
Concrete	General fill				X	X
	Construction material			X		
	Structural fill					X
	Aggregate substitute	X				X
	Backfill			X		
	Rip rap	X		X		

Fill-like Material	Beneficial Use	IL	IN	MI	MN	WI
	Cement manufacturing				X	
Concrete Washout (hardened)	Cement manufacturing				X	
Contaminated Sediments	General fill					X
	ADC	X				X
	Encapsulated construction projects	X				
	Topsoil blend					X
Crushed Concrete	Construction material		X	X		
	Structural fill		X			
	Aggregate substitute	X	X		X	X
	Transportation project					X
	ADC	X				
Crushed Glass	Pipe bedding				X	
	ADC	X				X
	Drainage media					X
	Bottle manufacturing	X			X	X
	Encapsulated construction projects				X	
Dredge Material	General fill	X				X
	ADC					X
	Topsoil blend					X
	Transportation project	X				
Drill Cuttings	General fill					X
Drinking Water Treatment Plant Sludge/Residuals	Topsoil blend				X	X
	Replacement of virgin material			X		
Excess Frac Sand	ADC					X
	Backfill					X
Foundry Sands	General fill					X
	ADC	X	X	X		X
	Backfill			X		
	Transportation project		X			
	Pipe bedding	X				
	Structural fill					X
	Topsoil blend		X			
	Concrete			X		
Cement manufacturing				X		
Ground Asphalt	Aggregate substitute		X		X	X
	Replacement of virgin material	X				X

Fill-like Material	Beneficial Use	IL	IN	MI	MN	WI
	Transportation project					X
	Construction material			X		
	Backfill			X		
Gypsum/Limestone Byproduct	Topsoil blend			X	X	
	Replacement of virgin material	X		X		
	ADC	X				
	Backfill					X
Gypsum/Wallboard	Topsoil blend			X		X
	Replacement of virgin material	X				X
Mildly Contaminated Soils	ADC	X			X	X
	General fill					X
	Brownfield sites				X	
	Structural fill		X			
	Encapsulated construction projects	X				
Processed C&D Waste	ADC	X				
	Topsoil blend				X	
	Aggregate substitute					X
	Replacement of virgin material					X
Shredded Tires	Transportation project	X				
	ADC					X
	Aggregate substitute		X		X	
	Replacement of virgin material			X		X
	Backfill			X	X	
	Drainage media	X				X
	Concrete			X		
Slag	ADC					X
	Aggregate substitute		X			X
	Backfill			X		
	Transportation project		X			
	Structural fill	X				
Soil from Tank Removal	ADC	X				X
Spent Sand Blasting Media	ADC	X				
	Aggregate substitute	X				
	General fill					X
Storm Drain Waste	Topsoil blend					X
Street Sweepings	ADC	X			X	X

Fill-like Material	Beneficial Use	IL	IN	MI	MN	WI
	General fill					X
	Backfill				X	
	Topsoil blend			X		
	Construction material				X	
Tire Derived Aggregate	Aggregate substitute	X	X		X	X
	Drainage media	X				X
	Backfill			X	X	
	Structural fill				X	
Treated Auto Shredder Waste	ADC		X			
Tree Trimming Material	Topsoil blend		X			
Trench Line Excess Soils	Backfill					X
Wastewater Treatment Sludge	ADC	X				
	Topsoil blend		X			X
	Replacement of virgin material			X		

EPA REGION 6:

Fill-like Material	Beneficial Use	AR	LA	OK
Ash & Cement Kiln Dust	General fill			X
	Soil stabilization		X	
	Structural fill		X	
	Backfill		X	X
Asphalt Roofing Singles	Aggregate substitute		X	
	Replacement of virgin material	X		
	Backfill		X	
Biosolids	Topsoil blend		X	
	General fill		X	
	Backfill		X	
Brick Lining and Slag Materials Used in Steel Making Process	Aggregate substitute	X		
Coal Combustion Products	Construction material	X		
	Soil stabilization	X	X	
Concrete	General fill	X	X	X
	Backfill	X	X	X
	Rip rap		X	X
Concrete Washout (hardened)	General fill		X	
	Backfill		X	
	Rip rap		X	
Contaminated Sediments	Landfill cover	X		

Fill-like Material	Beneficial Use	AR	LA	OK
Cooling Tower Sediment	Backfill			X
Crushed Concrete	General fill		X	
	Backfill		X	X
Crushed Glass	Aggregate substitute			
	Pipe bedding			
Dredge Material	General fill		X	
	Backfill		X	
Drinking Water Treatment Plan Sludge/Residuals	General fill		X	
	Backfill		X	
	Structural fill		X	
Dust Collector Fines	Low areas of previously closed impoundments			X
Foundry Sands	General fill			X
Ground Asphalt	General fill		X	X
	Structural fill		X	
	Backfill		X	
Gypsum/Limestone Byproduct	General fill		X	
	Transportation project		X	
	Backfill		X	
Mildly Contaminated Soils	General fill		X	
	Backfill		X	
	Landfill cover	X	X	
Processed C&D Waste	Replacement of virgin material	X		
Shredded Tires	General fill			X
	Erosion control	X		
	ADC		X	X
	Construction material	X		
	Pipe bedding			X
Slag	Aggregate substitute	X		
Soil from Cement Impoundment	Backfill		X	
	General fill		X	
	Structural fill		X	
Spent Sand Blasting Media	Structural fill		X	
	Backfill		X	
	General fill		X	X
Storage Pond Sediment	Backfill		X	
	General fill		X	
	Pipe bedding		X	
Storm Drain Waste	General fill		X	
	Backfill		X	

Fill-like Material	Beneficial Use	AR	LA	OK
	Structural fill		X	
Tire Derived Aggregate	Aggregate substitute	X		
	Erosion control		X	
Treated Auto Shredder Waste	ADC		X	
Tree Trimming Material	Backfill		X	
Trench Line Excess Soils	Backfill		X	
	Topsoil blend		X	
Wastewater Treatment Sludge	Topsoil blend		X	

EPA REGION 7:

Fill-like Material	Beneficial Use	IA	KS	MO	NE
Alum Sludge	ADC			X	
	General fill			X	
Ash & Cement Kiln Dust	General fill			X	
	Cement manufacturing	X			
	Soil stabilization	X		X	
	Construction material	X			
	Transportation project		X		
Asphalt Roofing Singles	Aggregate substitute	X		X	X
	Replacement of virgin material	X			
	ADC	X	X	X	X
Baghouse Fines	Topsoil blend				X
Biosolids	Topsoil blend		X	X	X
	ADC		X	X	
Brick Lining and Slag Materials Used in Steel Making Process	Aggregate substitute	X			
	Construction material	X			
	Transportation project		X		
	Cement manufacturing	X			
C&D Fines	ADC	X	X	X	
Coal Combustion Products	General fill	X			
	Cement manufacturing	X			X
	Structural fill		X	X	X
	ADC	X			
	Replacement of virgin material		X		
	Low areas of previously closed impoundments				X
	Concrete			X	

Fill-like Material	Beneficial Use	IA	KS	MO	NE
	Transportation project		X		
Concrete	General fill	X	X	X	X
	Construction material		X		
	Aggregate substitute	X			X
	Transportation project	X			
	Rip rap			X	X
	ADC		X		
Concrete Washout (hardened)	General fill	X		X	
	ADC		X	X	
Contaminated Sediments	General fill			X	
	ADC	X		X	X
	Backfill	X			
Cooling Tower Sediment	General fill		X		
Crushed Concrete	General fill	X	X	X	X
	Construction material		X		
	Aggregate substitute	X		X	X
	Transportation project	X			
	ADC		X		
Crushed Glass	Aggregate substitute				X
	General fill		X		
	ADC	X			
	Drainage media	X		X	
	Bottle manufacturing	X			
	Backfill			X	
Dredge Material	General fill	X		X	X
	ADC		X	X	
Drill Cuttings	ADC			X	
	General fill			X	X
Drinking Water Treatment Plan Sludge/Residuals	General fill	X	X		
	Topsoil blend			X	
	ADC		X	X	
	Soil stabilization	X	X		
Excess Frac Sand	General fill	X			
Foundry Sands	General fill	X	X	X	
	ADC		X		X
	Backfill			X	
	Transportation project	X	X		
	Topsoil blend	X			
Ground Asphalt	Aggregate substitute				X
	General fill	X	X	X	X

Fill-like Material	Beneficial Use	IA	KS	MO	NE
	Replacement of virgin material	X			
	Transportation project	X		X	
	Construction material		X		
Gypsum/Limestone Byproduct	General fill			X	
	Soil stabilization	X		X	
	Topsoil blend		X		X
	Replacement of virgin material	X			
	ADC	X			
Gypsum/Wallboard	Soil stabilization	X			
	Replacement of virgin material	X			
	ADC	X			
	General fill			X	
Mildly Contaminated Soils	ADC	X	X	X	X
	General fill			X	
	Backfill	X			
Processed C&D Waste	ADC		X		
	Replacement of virgin material		X		
Shredded Tires	General fill			X	
	ADC	X	X	X	X
	Drainage media	X			X
	Concrete				X
Slag	ADC		X		
	Aggregate substitute	X			X
	Construction material	X			
	Cement manufacturing	X			
	Concrete			X	
	Drainage media			X	
Soil from Cement Impoundment	ADC		X		
Soil from Tank Removal	General fill		X	X	
	ADC		X	X	X
Spent Sand Blasting Media	Aggregate substitute	X			
	Structural fill		X		
	General fill	X			
	Cement manufacturing	X			
	Concrete		X		

Fill-like Material	Beneficial Use	IA	KS	MO	NE
Storage Pond Sediment	General fill			X	
	ADC		X	X	
Street Sweepings	ADC	X		X	
	Aggregate substitute	X			
	Transportation project	X			
Tire Derived Aggregate	Aggregate substitute			X	
	Drainage media			X	X
	Construction material	X			
	ADC	X			X
	Concrete				X
Treated Auto Shredder Waste	ADC	X		X	X
	Bulking agent			X	
Tree Trimming Material	Bulking agent	X			
	Topsoil blend			X	
	Replacement of virgin material	X			
	ADC		X		X
Trench Line Excess Soils	ADC		X		
	General fill			X	
	Structural fill			X	
Wastewater Treatment Sludge	ADC		X	X	
	Topsoil blend		X		
	General fill	X			

EPA REGION 8:

Fill-like Material	Beneficial Use	CO	SD	UT	WY
Alum Sludge	Topsoil blend	X			
	General fill			X	
Ash & Cement Kiln Dust	Concrete	X			
	General fill		X		
	Replacement of virgin material	X			
	Cement manufacturing	X			
	Backfill		X		
Asphalt Roofing Singles	Aggregate substitute				X
	Transportation project				X

Fill-like Material	Beneficial Use	CO	SD	UT	WY
	Encapsulated construction projects		X		
	General fill			X	
Baghouse Fines	General fill			X	
Biosolids	Topsoil blend	X	X		X
	ADC			X	X
Brick Lining and Slag Materials Used in Steel Making Process	Aggregate substitute	X			
	General fill			X	
C&D Fines	ADC				X
	Construction material			X	
Coal Combustion Products	General fill			X	X
	Encapsulated construction projects	X			
	Replacement of virgin material	X			
	Concrete	X			X
Concrete	Construction material			X	
	Aggregate substitute	X			
	Backfill		X		X
	Rip rap	X			X
	Erosion control		X		X
	Concrete	X			
Concrete Washout (hardened)	General fill			X	
	Backfill		X		
	Concrete	X			
Contaminated Sediments	General fill			X	
Cooling Tower Sediment	General fill			X	
Crushed Concrete	Construction material	X	X	X	
	Aggregate substitute	X	X		X
	Concrete	X			
Crushed Glass	Aggregate substitute	X			
	Pipe bedding				X
	General fill			X	
	ADC				X
	Drainage media	X			
	Bottle manufacturing	X			
Dredge Material	General fill			X	
	Encapsulated construction projects	X			
Drill Cuttings	ADC				X

Fill-like Material	Beneficial Use	CO	SD	UT	WY
	General fill			X	
	Topsoil blend		X		
Drinking Water Treatment Plan Sludge/Residuals	General fill	X		X	
	Topsoil blend	X	X		
Foundry Sands	Backfill		X		
Ground Asphalt	General fill	X		X	
	Topsoil blend	X	X		
Gypsum/Limestone Byproduct	General fill			X	
	Topsoil blend	X	X		
	Concrete	X			
Gypsum/Wallboard	General fill			X	
Mildly Contaminated Soils	General fill	X		X	
	Backfill		X		
	Structural fill	X			
	Encapsulated construction projects	X			
Processed C&D Waste	ADC				X
	Construction material			X	
	Structural fill	X			
	Aggregate substitute	X			
Shredded Tires	General fill			X	
	ADC	X	X		X
	Replacement of virgin material	X			
	Pipe bedding				X
	Drainage media		X		
	Encapsulated construction projects				X
Slag	Aggregate substitute	X			
	General fill			X	
Soil from Cement Impoundment	General fill			X	
Soil from Tank Removal	General fill			X	
Spent Sand Blasting Media	General fill			X	
	Pipe bedding				X
Storage Pond Sediment	General fill			X	
Storm Drain Waste	General fill			X	
Street Sweepings	ADC		X	X	
Tire Derived Aggregate	ADC			X	
Treated Auto Shredder Waste	ADC			X	
Tree Trimming Material	ADC			X	

Fill-like Material	Beneficial Use	CO	SD	UT	WY
	Backfill		X		
Trench Line Excess Soils	General fill			X	
Wastewater Treatment Sludge	ADC			X	
	Topsoil blend	X	X		

EPA REGION 9:

Fill-like Material	Beneficial Use	CA	HI	NV
Alum Sludge	ADC			X
Ash & Cement Kiln Dust	Cement manufacturing			X
	ADC	X		
Asphalt Roofing Singles	ADC	X		
Baghouse Fines	ADC			X
Biosolids	Topsoil blend			X
	ADC	X		X
	Erosion control	X		
Coal Combustion Products	ADC			X
Concrete	Aggregate substitute			X
	Rip rap	X	X	
	Wet weather pads	X	X	
	Soil stabilization		X	
Concrete Washout (hardened)	General fill		X	
	Aggregate substitute			X
	Wet weather pads	X		
	Construction material			X
Contaminated Sediments	General fill		X	
	ADC	X	X	
	Backfill	X		
Crushed Concrete	General fill		X	
	Construction material	X		
	Aggregate substitute		X	X
	Transportation project	X		
	Wet weather pads	X		
Crushed Glass	Pipe bedding		X	
	ADC	X		X
	Bottle manufacturing	X	X	
Dredge Material	General fill		X	
	ADC	X	X	X
Drill Cuttings	ADC	X		X
	General fill			X

Fill-like Material	Beneficial Use	CA	HI	NV
	Construction material			X
Drinking Water Treatment Plan Sludge/Residuals	ADC	X		X
	Construction material			X
Dust Collector Fines	Non-structural contouring			X
Excess Frac Sand	ADC			X
	Construction material			X
Foundry Sands	ADC	X		X
	Construction material			X
Ground Asphalt	Transportation project	X	X	
	Construction material	X		X
	Wet weather pads	X	X	
	Soil stabilization		X	
Gypsum/Limestone Byproduct	Construction material			X
Gypsum/Wallboard	Construction material			X
Mildly Contaminated Soils	ADC			X
	Brownfield sites			X
Processed C&D Waste	ADC	X		
Shredded Tires	ADC	X		X
	Aggregate substitute	X		
	Cement manufacturing	X		
Soil from Cement Impoundment	ADC			X
Soil from Tank Removal	Landfill cover	X		
Spent Sand Blasting Media	ADC			X
Storage Pond Sediment	ADC			X
Street Sweepings	ADC			X
Tire Derived Aggregate	Aggregate substitute	X		
	Pipe bedding			X
Treated Auto Shredder Waste	ADC	X		
Tree Trimming Material	Erosion control		X	
	Bulking agent		X	
	ADC	X		
Trench Line Excess Soils	Landfill cover			X
Wastewater Treatment Sludge	ADC	X		X
	Erosion control	X		

EPA REGION 10:

Fill-like Material	Beneficial Use	AK	OR	WA
Asphalt Roofing Singles	Aggregate substitute			X
	Construction material			X
Baghouse Fines	General fill	X		
	Structural fill	X		
	Encapsulated construction projects		X	
	Concrete			
Biosolids	Topsoil blend		X	X
	ADC	X		
Brick Lining and Slag Materials Used in Steel Making Process	Aggregate substitute		X	
	Structural fill			X
	General fill		X	
	Construction material			X
	Transportation project		X	
Coal Combustion Products	General fill	X		
	Cement manufacturing	X		
	Structural fill	X		
Concrete	General fill	X	X	
	Backfill	X		
	Transportation project		X	
	Construction projects		X	
Contaminated Sediments	General fill		X	
	Encapsulated construction projects		X	
	Landfill cover	X		
	Transportation project		X	
Crushed Concrete	General fill		X	
	Construction material		X	X
	Structural fill	X		X
	Transportation project		X	X
Crushed Glass	Aggregate substitute		X	
	Pipe bedding			X
	Drainage media		X	
	Bottle manufacturing		X	
	Backfill	X		
	Industrial filler in paints, coatings, etc.			X
Dredge Material	General fill		X	X

Fill-like Material	Beneficial Use	AK	OR	WA
	Landfill cover	X		
	Encapsulated construction projects		X	
	Transportation project		X	
Drill Cuttings	Replacement of virgin material	X		
Drinking Water Treatment Plant Sludge/Residuals	General fill		X	
Foundry Sands	General fill		X	
	ADC			X
	Bulking agent			X
Ground Asphalt	Aggregate substitute	X		
	General fill		X	X
	Transportation project		X	X
	Construction material			X
Gypsum/Limestone Byproduct	Landfill cover		X	
Gypsum/Wallboard	Replacement of virgin material			X
Mildly Contaminated Soils	General fill		X	X
	Landfill cover	X		
	Encapsulated construction projects		X	
	Transportation project		X	X
	Topsoil blend			X
Slag	Aggregate substitute		X	X
	General fill		X	
	Transportation project		X	
	Encapsulated construction projects			X
	Structural fill			X
Soil from Tank Removal	General fill		X	X
	Landfill cover	X		
	ADC			X
	Encapsulated construction projects		X	
	Transportation project		X	
Spent Sand Blasting Media	ADC			X
	General fill		X	
	Pipe bedding		X	
	Encapsulated construction projects		X	
Storage Pond Sediment	Topsoil blend		X	

Fill-like Material	Beneficial Use	AK	OR	WA
Storm Drain Waste	ADC			X
	Topsoil blend		X	X
Street Sweepings	ADC			X
	Backfill			X
	Drainage media		X	
	Topsoil blend			X
Tire Derived Aggregate	Drainage media			X
	Construction material			X
Treated Auto Shredder Waste	ADC		X	X
Tree Trimming Material	Topsoil blend		X	
Trench Line Excess Soils	Backfill		X	
	General fill		X	
	Topsoil blend		X	
Wastewater Treatment Sludge	Topsoil blend		X	

APPENDIX D: LINKS TO STATE BENEFICIAL USE APPROVAL PROCESSES

STATE	LINK	COMMENT
Region 1		
CT	https://www.ct.gov/deep/lib/deep/permits_and_licenses/waste_general_permits/bud_guid.pdf	Search for “Beneficial Use of Solid Waste”
MA	https://www.mass.gov/doc/draft-interim-guidance-document-for-310-cmr-19060-beneficial-use-determination-bud-0/download	
ME	https://www.maine.gov/sos/cec/rules/06/096/096c418.docx	
NH	https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/Env-Sw%201500.pdf	
VT	https://dec.vermont.gov/sites/dec/files/wmp/SolidWaste/Documents/Acceptable_Uses.pdf	
Region 2		
NJ	https://www.state.nj.us/dep/dshw/resource/rules.htm	N.J.A.C. 7:26-1.7(g)
NY	https://www.dec.ny.gov/chemical/8821.html	
Region 3		
VA	https://law.lis.virginia.gov/admincode/title9/agency20/chapter81/section95/; https://law.lis.virginia.gov/admincode/title9/agency20/chapter81/section97/	
WV	https://dep.wv.gov/Pages/Search.aspx?q=beneficial%20use%20of%20solid%20waste	
Region 4		
FL	http://www.leg.state.fl.us/Statutes/index.cfm?App_mode=Display_Statute&URL=0400-0499/0403/0403ContentsIndex.html&Title=Chapter%20403	Chapters 403.7045, 403.7046 and 403.7047
KY	https://apps.legislature.ky.gov/law/kar/401/045/060.pdf; https://apps.legislature.ky.gov/law/kar/401/045/070.pdf; https://apps.legislature.ky.gov/law/kar/401/047/150.pdf	
TN	https://www.tn.gov/content/dam/tn/environment/solid-waste/documents/solid-waste/sw-solid-waste-policy-manual.pdf	
Region 5		
IN	https://casetext.com/regulation/indiana-administrative-code/title-329-solid-waste-management-division/article-10-solid-waste-land-disposal-facilities/rule-329-iac-10-3-exclusions/section-329-iac-10-3-1-exclusions-general	329 IAC 10-3-1 (16)
MN	https://www.pca.state.mn.us/waste/beneficial-use-solid-waste	
WI	https://docs.legis.wisconsin.gov/code/admin_code/nr/500; https://docs.legis.wisconsin.gov/statutes/statutes/289/iv/43/8	See NR 538; NR 518; 289.43(8)

Region 6		
OK	http://okrules.elaws.us/oac/title252_chapter515	252:515-1-7
Region 7		
IA	https://www.iowadnr.gov/Environmental-Protection/Land-Quality/Solid-Waste/Solid-Waste-Permitting	
MO	https://www.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c80-2b.pdf	
Region 8		
CO	www.colorado.gov/pacific/cdphe/recycling	
Region 9		
CA	https://calrecycle.ca.gov/SWFacilities/Permitting/Guidance/DailyIntCovr/ ; https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=ID08ADD40D44F11DEA95CA4428EC25FA0&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default)	Title 27 CCR and guidance
Region 10		
AK	https://dec.alaska.gov/media/1042/18-aac-60.pdf	18 AAC 60.008 for structural fill, 60.009 for use in a manufactured product, and 60.025(c) for polluted soil
OR	https://www.oregon.gov/deq/mm/Pages/Beneficial-Use-of-Solid-Waste.aspx	
WA	https://apps.leg.wa.gov/wac/default.aspx?cite=173-350-021 ; https://app.leg.wa.gov/wac/default.aspx?cite=173-350-200	