# In the United States Court of Federal Claims

No. 06-472C

(Filed: February 20, 2009)

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| TDM AMERICA, LLC,<br><br>Plaintiff,<br><br>v.<br><br>THE UNITED STATES,<br><br>Defendant,<br><br>and<br><br>DONJON MARINE COMPANY, INC.,<br><br>Third-Party Defendant. | * | Patent Infringement Case; Markman Claim Construction Proceedings; Patents Relating to Processing and Treatment of Contaminated Materials for Beneficial Reuse. |

*David W. Denenberg,* with whom was *Michael A. Adler,* Davidoff Malito & Hutcher LLP, New York, New York, for Plaintiff.

*Walter W. Brown*, with whom were *Gregory G. Katsas,* Acting Assistant Attorney General, and *John J. Fargo,* Director, United States Department of Justice, Commercial Litigation Branch, Civil Division, Washington, D.C., and *Joshua B. Brady,* Of Counsel, for Defendant.

*Gary J. Campbell,* with whom was *John E. Flaherty*, McCarter & English LLP, Boston, Massachusetts, for Third-Party Defendant.

## OPINION AND ORDER

WHEELER, Judge.

In this patent case, Plaintiff TDM America, LLC ("TDM") claims that the United States Army Corps of Engineers ("USACE") and other federal agencies, through their contractors, infringed three patents owned by TDM for the processing and treatment of contaminated materials for beneficial reuse. The patents at issue are U.S. Patent Nos. 5,542,614 ("the '614 Patent"), 5,794,862 ("the '862 Patent") and, 6,293,731 ("the '731 Patent"). Third-Party Defendant Donjon Marine Company, Inc. ("Donjon") represents one of the contractors hired by USACE to perform cleanup work at these processing and treatment sites.

The Court possesses subject matter jurisdiction over this case in accordance with the following statutory provision:

> Whenever an invention described in and covered by a patent of the United States is used or manufactured by or for the United States without license of the owner thereof or lawful right to use or manufacture the same, the owner's remedy shall be by action against the United States in the United States Court of Federal Claims for the recovery of his reasonable and entire compensation for such use and manufacture . . . .
>
> For the purposes of this section, the use or manufacture of an invention described in and covered by a patent of the United States by a contractor, a subcontractor, or any person, firm, or corporation for the Government and with the authorization or consent of the Government, shall be construed as use or manufacture for the United States.

28 U.S.C. § 1498(a) (2006). Because DonJon is a contractor for the United States, DonJon's alleged use of the patented methods qualifies as "use . . . for the United States." Id. Therefore, DonJon is immune from suit by the patent owners, except "by action against the United States in the United States Court of Federal Claims" if two criteria are met: (1) the use is "for the Government;" and (2) the use is "with the authorization or consent of the Government." Id.; Hughes Aircraft Co. v. United States, 534 F.2d 889, 897-98 (Ct. Cl. 1976).

The Court's analysis in a patent infringement case involves two steps. See Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 807, 812 (Fed. Cir. 2002); Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1581-82 (Fed. Cir. 1996). The first step is to determine the scope and meaning of the patents in a Markman claim construction hearing. See Markman v. Westview Instruments, Inc., 517 U.S. 370, 388-89 (1996); Gen. Am. Transp. Corp. v. Cryo-Trans., Inc., 93 F.3d 766, 769 (Fed. Cir. 1996), rehearing denied, (1996), cert. denied, 520 U.S. 1155 (1997). "Claim construction" is a question of law for the Court to decide. Markman, 517 U.S. at 388-91; Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc). A patent's "claims" define the invention. Autogiro Co. of Am. v. United States, 384 F.2d 391, 395-96 (Ct. Cl. 1967). The claims are the numbered paragraphs "particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." 35 U.S.C. § 112 (2006). The Court must look to the wording of the claims to determine the scope and meaning of the patent. Autogiro Co., 384 F.2d at 395-96. In the second step, the patent claims as construed by the Court are compared to the accused device or method to determine alleged patent infringement. See Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co., 520 U.S. 17, 29 (1997). Those determinations are questions of fact. Bai v. L&L Wings, Inc., 160 F.3d 1350, 1353 (Fed. Cir. 1998) (citation omitted).

This opinion concerns the Markman "claim construction" phase of this case. TDM has presented for the Court's determination seven claims from the three patents at issue. The law provides that a claim may be either "independent" or "dependent." 35 U.S.C. § 112. An independent claim stands on its own as stated in a single claim, while a dependent claim refers to and adds a further limitation upon a previously stated claim. Id.; Honeywell Int'l Inc. v. Hamilton

Sundstrand Corp., 370 F.3d 1131, 1149 (Fed. Cir. 2004) (citation omitted). In this case, of the seven presented claims, three are independent claims and four are dependent claims. Most of the disputed terms are from the independent claims. Some of the disputed terms are common to more than one claim.

On October 10, 2008, the parties submitted a joint claim construction statement, setting forth the interpretation of terms on which they agree and disagree.[1] The parties filed opening claim construction briefs on November 14, 2008 and reply briefs on December 19, 2008. The Court conducted a Markman hearing on January 8, 2009 in which counsel for the parties participated in oral argument and provided supplemental written presentations.

For the reasons explained below, the Court adopts the Government's interpretation on the majority of the claim construction issues. Both parties have generally performed a comprehensive and well-supported analysis of the disputed claim terms. For the most part, the parties' interpretations of the disputed terms are properly based upon the intrinsic evidence within the patents, such as the claim language, the specifications, the prosecution history, and the drawings. However, TDM's interpretations appear, at times, to stretch the "ordinary meaning" of the disputed terms. It is a longstanding principle of claim construction that the words of a claim must be given their ordinary and customary meaning. Phillips v. AWH, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc) (citations omitted). The ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of invention. Id. at 1313 (citations omitted). In several instances, the Court finds that TDM's definitions ignore the plain claim language, overstate the breadth of the specification disclosures, or misstate limiting arguments made in the prosecution history. Accordingly, the Court agrees with Defendant's proposed claim constructions more often than Plaintiff's.

In the opinion that follows, the Court will address each of the disputed claim terms, providing the claim construction rationale deemed persuasive in each instance.

[1] In the parties' initial joint claim construction statement, filed October 10, 2008, TDM presented four patents for the Court's determination. TDM subsequently filed a stipulation on October 29, 2008 stating that it would not pursue an infringement claim against the Government related to the fourth patent.

## Factual Background[2]

### A. Dredging of United States Waterways

Federal, state, and local authorities are responsible for maintaining and improving the nation's waterways for navigation.[3] (See PX 1 at A14, col. 1, lines 18-29). The navigability of these waterways is critical to American commerce and national security. See id. Each year, however, waste material such as silt and other sediments build up in the channels, causing them to become shallow and inaccessible to commercial vessels. Id. at A14, col. 1, lines 34-42. These waste materials are often contaminated with pollutants, typically as a result of industrial practices. Id. at A14, col. 1, lines 58-66. Dredging these materials from our waterways is necessary to maintain depth for commercial and military vessels. Id. at A14, col. 1, lines 34-42.

To that end, USACE employs contractors to remove and process contaminated materials from navigation channels throughout the United States. TDM owns patents for the processing and treatment of dredged materials. TDM's patents include U.S. Patent No. 5,542,614, issued August 6, 1996, entitled "Processing of Waste Material;" U.S. Patent No. 5,794,862, issued August 18, 1998, also entitled "Processing of Waste Material;" and U.S. Patent No. 6,293,731, issued September 25, 2001, entitled "Method for Treatment for Dredged Materials to Form a Structural Fill." The patents-in-suit claim different methods for treating waste material, such as contaminated dredged materials, with an additive to stabilize and solidify such material for beneficial reuse. (Pl.'s Brief at 13). These methods are generally directed to in-situ and land-based techniques for solidifying and stabilizing waste materials with an additive so that the treated end product can be beneficially reused and disposed of upland in an environmentally safe manner. Id.

### B. The '614 Patent

The '614 Patent recites methods of treating waste material in a land-based apparatus. Id. Before the waste material arrives at the land-based apparatus, or pugmill, it goes through a vibrating screen to remove larger pieces of waste material and allow smaller pieces to accumulate. (PX 2). When a certain amount of waste material is accumulated, an additive is added and mixed with the waste material to form a homogenous mixture, which then drops to the process terminus. Id. at A28, col. 3, lines 34-39.

The '614 Patent issued from U.S. Patent No. 193,449 ("the '449 Application"), filed on February 8, 1994. (Def.'s Brief at 32). The prosecution of this patent was brief. The Patent Examiner first rejected all of the applicant's claims as obvious or not defined over two prior art

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[2] The facts set forth in this opinion do not constitute findings of fact by the Court. The facts cited are either undisputed, or accepted by the Court after considering the allegations and evidence submitted by the parties.

[3] In this opinion, the Court will refer to the parties' exhibits as "PX __" for Plaintiff's exhibits, and "DX__" for Defendant's exhibits. For multi-page exhibits, the Court has included citations to page numbers or to the parties' Bates numbers used during this case.

patents: U.S. Patent Nos. 5,007,590 ('the Taylor Patent") and 5,028,010 ("the Sansing Patent"). Id. Both of these prior art patents are incorporated by reference into the '614 Patent specifications, and both are owned by TDM. (DX 20 at A835; DX 2 at A 27, col. 1, lines 11-13).

Following the Patent Examiner's rejection of the claims, on December 2, 1994 the patent applicant submitted a responsive amendment distinguishing the Taylor and Sansing Patents, in part, by arguing that the Taylor Patent failed to "teach or suggest the processing steps involving a vibrating screen box." (DX 21 at A853). The applicant also amended many of his independent claims to recite a "vibrating screen box," or, alternatively, a "vibrating screen box having a slightly sloped mesh bottom and having openings of a desired size." E.g., id. at A841, A843-44, A847. The applicant argued that the claimed invention's step of "remov[ing] all large lumps of waste material completely from the process by requiring the waste material to pass through a vibrating screen having openings of a predetermined size" did not exist in prior art. Id. at A851.

Despite the applicant's arguments, the Patent Examiner rejected some of the pending claims in a subsequent office action, citing U.S. Patent No. 4,812,205 ("the Silveri Patent"). (DX 22 at A861). The Patent Examiner explained that the applicant's claims called for using a "vibrating screen," just as the Silveri Patent did. Id. However, the cited disclosure of the patent actually states that "[t]he first disk screen **54** includes rotating radially interfering disks **56** that have preset gaps that are constructed so that abrasive containments . . . pass through the preset gaps and fall . . . ." and does not include the term "vibrating." (DX 23 at A870, col. 4, lines 17-22). The Patent Examiner did allow six claims over the prior art of record, all of which included a "vibrating screen box" limitation. (See DX 22 at A862). These claims issued as claims 1 through 6 of the '614 Patent. (DX 2 at A28).

C. The '862 Patent

The '862 Patent is a continuation of the '614 Patent but differs in that it does not include the added step of homogenizing the dredged material after screening and before accumulating it in a mixer. (See PX 3 at A37, col. 4, lines 21-28). Instead, it combines the homogenizing and mixing steps, both of which occur in the mixer. Id. at A.37, col. 4, lines 31-32. The prosecution history of the '862 Patent is likewise brief. The patent issued from U.S. Patent Application No. 541,132 ("the '132 Application"). (Def.'s Brief at 47). During the prosecution of the '132 Application, the patent applicant amended one claim that had been rejected in the '449 Application and added six additional claims. Id. All of the claims included the same "vibrating screen box" limitation permitted in the '614 Patent claims and were issued without further amendment. (See DX 29 at A910-14).

D. The '731 Patent

The '731 Patent provides a method for treatment of dredged material that is cost-effective on a large scale, environmentally sound, and creates a mixture that is suitable for beneficial reuse as a structural fill. (PX 1 at A14, col. 2, lines 48-52). The process generally involves depositing dredged material into a treatment vessel, dewatering the dredged material, mixing the dredged material with an additive in the treatment vessel, and allowing the mixture to cure for reuse as structural fill material, thereby reducing particulate emissions. Id. at A14, col. 2, line 53-67; A15,

col. 3, lines 1-5. Unlike the '614 and '862 Patents, the '731 Patent contemplates treatment of dredged material directly in a waterborne vessel, such as a barge or scow. See id. at A14, col. 2, lines 56-60.

The '731 Patent issued from U.S. Patent Application No. 09/080,062 ("the '062 Application"), which the patent applicant filed on May 15, 1998. (Def.'s Brief at 10). The '062 Application claimed a method for creating a substantially homogenous mixture of additive and dewatered dredged material and letting the mixture cure, thereby producing a structural fill material. (See DX 4 at A74-86). The Patent Examiner three times rejected all of the claims in the application on the grounds that they were obvious or not defined over prior art. (Def.'s Brief at 12). In so doing, the Patent Examiner relied on three existing patents: U.S. Patent No. 5,868,940 ("the Gurfinkel Patent"), U.S. Patent No. 4,539,121 ("the Kapland Patent"), and U.S. Patent No. 4,465,518 ("the Miyoshi Patent"). Id.

In the first office action, dated September 21, 1999, the Patent Examiner rejected all pending claims. Id. He noted that the Gurfinkel Patent disclosed a method for remediation of contaminated sediments dredged from a waterway that called for obtaining the dredged materials, separating them into a coarse fraction/debris and a fine fraction, removing water from the fine fraction, and mixing dry additives into the material. (DX 4 at A118). The Patent Examiner also explained that the Miyoshi Patent disclosed the use of Portland cement as a treatment additive in conjunction with blast furnace slag. Id. at A119. In response, the patent applicant argued that the cited prior art resulted "in a material with a compressive strength suitable for bricks or concrete," but the present invention results in a material suitable for "stabilization material or capping landfills." (PX 9 at TDM000118).

In the second office action, dated May 24, 2000, the Patent Examiner again rejected all claims, citing the Kapland and Miyoshi Patents. (DX 4 at A185-92). He concluded that the Kapland Patent covered every element of the applicant's pending claims, including obtaining dredged material, dewatering dredged material, mixing additive with the dredged material, curing/basifying the mixture, and maintaining the mixture in a substantially quiescent state for a period of time to stabilize the sludge and produce "a sedentary mass having load supportive properties/structural fill material . . . ." Id. at A187-88; PX 9 at TDM000124-27. The Patent Examiner also maintained that the Kapland and Miyoshi Patents made it obvious to use Portland cement to increase compressive strength. (DX 4 at A189).

In response, the patent applicant canceled several claims and amended nearly all of the rest. Id. at A202-15. For example, the applicant amended claim 3 of the '062 Application to include the terms "structural fill" and "curing," both of which appear in the final language as issued in claim 1. Id. at A203. The applicant also disputed the Patent Examiner's characterization of the "basifying" step called for in the Kapland Patent as synonymous with "curing." Id. at A210-11. According to the applicant, "'curing' is the technical term for perfecting through chemical change," whereas "basifying" does not indicate a chemical change. Id. at A210. The applicant argued that the Kapland Patent was not a chemical reaction because it did not mention "solving the problem of the fines of the dredged materials drying out and blowing away as dust." Id.

In a third office action, dated December 19, 2000, the Patent Examiner again rejected all claims as unpatentable over the Kapland Patent. Id. at 218. The Patent Examiner agreed that Kapland did not disclose the step of "curing the mixture" but found that reciting such a step would have been obvious to one of skill in the art. Id. at A219. He also stated that "it would have been obvious to one of ordinary skill . . . to provide the Portland cement as an additional agent as taught by Miyoshi . . . to the additive of Kapland . . . in order to enhance the comprehensive strength of the mixture." Id. at A221.

Following the final rejection, the Patent Examiner conducted an interview with the patent applicant on April 9, 2001, for which the applicant submitted informal claim amendments. Id. at A229-39. The applicant proposed amending application claim 3, ultimately issued as claim 1, to recite the following additional limitations: "depositing the dredged material into a first vessel," "creating an additive slurry in a second vessel," "moving the additive slurry from the second vessel to the first vessel," and reducing "particulate emissions" as a result of curing the mixture of additive slurry and dredged material. Id. at A234. The Patent Examiner rejected the proposed amendments. Id. at A228. With respect to the limitations of "creating an additive slurry in a second vessel" and "moving the additive slurry from the second vessel to the first vessel," the Patent Examiner stated that "the method of creating and moving the additive slurry from the first to second vessel appear[s] not to be defined over the prior art." Id. He also found that the limitation on the additive slurry that it be "mixed separate from the dredged material" did not "give much patentable weight to the claim and moreover, would not be defined over the prior art." Id.

The applicant submitted a final amendment of his claims to the Patent Examiner on April 19, 2001, which canceled 18 claims and modified the remaining four claims to include the limitation "slurry." Id. at A240-53. The applicant also further defined the term "first vessel" as "containment receptacle" and "second vessel" as "mixing container." Id. at A250. Finally, the applicant replaced the language "moving the additive slurry from the second vessel to the first vessel" with "pumping the additive slurry from the mixing container to a mixing assembly disposed within the containment receptacle." Id.

In arguing for patentability, the applicant stated that:

> In the preferred embodiment of the present invention, the containment receptacle is shown to be a barge o[r] scow. The dredged material deposited into the containment receptacle remains therein during the step of removing the free water from the dredged material. An additive slurry is created in a mixing container which is separate from the containment receptacle. The additive slurry is pumped from the mixing container to a mixing assembly which is disposed within the containment receptacle to mix the dredged material with the additive slurry to form a substantially homogenous mixture. The homogenous mixture is then allowed to cure within the containment receptacle and is not removed until the curing process is finished. This method substantially reduces any particulate emissions which occur in a process outlined above. Applicant respectfully submits that HALEY, either singularly or in

> combination with KAPLAND, MIYOSHI, KIGEL or any other cited prior art fails to show, teach, or disclose the required steps of the pending amended claims.

Id. at A243-44. The applicant emphasized that the Kapland, Miyoshi, and Kigel Patents each had failed to show the claimed steps of "creating an additive slurry in a mixing container and pumping the additive slurry from the mixing container to a mixing assembly disposed within the containment receptacle." Id. at A242-43. Furthermore, the applicant distinguished his claims from prior art by arguing that "KAPLAND in view of MIYOSHI in fact teaches away from the Applicant's present invention by adding dry additives which contribute to potentially harmful particulate emissions." Id. at A243.

These amended claims ultimately issued as the claims of the '731 Patent. A comparison of the language as it changed through the various stages of the amendment process appears below.

| **Original Claim 1** | **Claim 3, as Amended on April 9, 2001** | **Claim 3, as Amended on April 23, 2001 and issued as the Final Claim 1** |
|---|---|---|
| A method for producing a structural fill material comprising the steps of: | 3. (Amended) The method for producing a structural fill material comprising the step (sic) thereof: | 1) The method for producing a structural fill material comprising the steps of: |
| obtaining a dredged material; | obtaining a dredged material; | obtaining a dredged material; |
| | depositing the dredged material into a first vessel; | depositing the dredged material into a containment receptacle; |
| removing free water from the dredged material; | removing free water from the dredged material and first vessel; | removing free water from the dredged material and the containment receptacle; |
| | creating an additive slurry in a second vessel; | creating an additive slurry in a mixing container; |
| | moving the additive slurry from the second vessel to the first vessel; | pumping the additive slurry from the mixing container to a mixing assembly disposed within the containment receptacle; |
| mixing an additive into the dredged material to form a substantially homogenous mixture; and | mixing the additive slurry into the dredged material to form a substantially homogenous mixture; and | mixing the additive slurry into the dredged material to form a substantially homogenous mixture; and, |
| curing the substantially homogenous mixture, thereby producing a structural fill material. | curing the substantially homogenous mixture in the first vessel, thereby a structural fill material is produced and particulate emissions are reduced. | curing the substantially homogenous mixture in the containment receptacle, thereby producing a structural fill material and reducing particulate emissions. |

E. The Present Litigation

On June 21, 2006, TDM filed suit against the United States in this Court alleging that USACE contractors, including Donjon, infringed its patented methods of processing dredged material during performance of USACE contracts. TDM seeks to hold the Government liable for the contractors' actions under 28 U.S.C. § 1498. On November 8, 2007, Defendant filed a "motion for partial summary judgment for lack of subject matter jurisdiction" as to 18 USACE contracts awarded by the agency's New York District. Following full briefing and oral argument on the motion, the Court denied Defendant's motion for partial summary judgment on September 17, 2008. TMD America, LLC v. United States, 83 Fed. Cl. 780 (2008). The Markman claim construction proceedings followed.

## Discussion

### A. Applicable Claim Construction Principles

#### 1. Ordinary and Customary Meaning

Claim construction is a question of law for the Court to decide. Sevenson Envtl. Servs., Inc. v. United States, 76 Fed. Cl. 51, 57-58 (2007) (citing Markman, 517 U.S. at 388-91); Vitronics Corp., 90 F.3d at 1581-82. A court should construe claim terms according to the ordinary and customary meanings attributed by those of ordinary skill in the relevant art at the date of invention (i.e., as of the effective filing date of the patent application). Phillips, 415 F.3d at 1312-13 (citations omitted); Abraxis Bioscience, Inc. v. Mayne Pharma (USA) Inc., 467 F.3d 1370, 1376 (Fed. Cir. 2006) (citations omitted); Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc., 334 F.3d 1294, 1298 (Fed. Cir. 2003), rehearing en banc denied, (2003) (citation omitted); CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002), rehearing denied, (2002) (citations omitted). The Federal Circuit has explained that a "person of ordinary skill is a hypothetical person who is presumed to be aware of all the pertinent prior art." Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc., 807 F.2d 955, 962 (Fed. Cir. 1986). Factors to consider when determining the level of skill include: type of problems encountered in art, prior art solutions to those problems, rapidity with which innovations are made, sophistication of the technology, and education level of workers in the field. Id.

Plaintiff asserts that a person of ordinary skill in the art of processing and remediation of contaminated material at the time of the patents-in-suit would have been one with approximately seven years of work experience in the environmental industry, including five years of experience in the remediation and processing of contaminated materials, all at the level of engineering technician or assistant project manager with at least three years experience above the junior level. (Pl.'s Expert Report of Donald R. Sansing ¶ 18, Nov. 13, 2008). Alternatively, the person would hold a bachelor's degree in environmental science or a related science field and have four years of work experience in the environmental industry, including three in the remediation and processing of contaminated materials, all at the level of engineer or project manager. Id.

An exception to the plain meaning rule is that the patentee is his or her own lexicographer. Phillips, 415 F.3d at 1316 (citing CCS Fitness, Inc., 288 F.3d at 1366). The patentee is free to define a claim term in any way that he or she wishes, even if that definition is inconsistent with the plain meaning. Id. However, the patentee must express his or her intent to redefine a particular term with "sufficient clarity to put one reasonably skilled in the art on notice that the inventor intended to redefine the claim term." Merck & Co., Inc. v. Teva Pharm. USA, Inc., 395 F.3d 1364, 1370 (Fed. Cir. 2005) (citations omitted).

2. Intrinsic Evidence

The claims themselves are the starting point for any claim construction. Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999) (citing Vitronics Corp., 90 F.3d at 1576). When interpreting a claim, a court should look first to the intrinsic evidence, which includes: (1) the language of the claims themselves, (2) the written specification, and (3) the prosecution history. Bell & Howell Document Mgmt. Prods. Co. v. Altek Sys., 132 F.3d 701, 705 (Fed. Cir. 1997), rehearing denied, (1998) (citing Vitronics Corp., 90 F.3d at 1582-83). The intrinsic evidence is the documentation that serves as the public record of the patent, protecting the patentee from infringement while allowing competitors "to design around the claimed invention." Id. at 706. Such evidence is "the most significant source of the legally operative meaning of disputed claim language." Vitronics Corp., 90 F.3d at 1582.

All claim terms are generally presumed to have meaning in a claim. Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1119 (Fed. Cir. 2004) (citation omitted). Accordingly, the Court cannot construe claims to read an express limitation or element out of the claims. See Tx. Instruments Inc. v. United States Int'l Trade Comm'n, 988 F.2d 1165, 1171 (Fed. Cir. 1993) (quoting Autogiro Co., 384 F.2d at 396). Furthermore, the doctrine of claim differentiation holds that different words within a claim and among claims have different meanings. Andersen Corp. v. Fiber Composites, LLC., 474 F.3d 1361, 1369 (Fed. Cir. 2007) (quoting Karlin Tech. Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed. Cir. 1999)); Innova/Pure Water, Inc., 381 F.3d at 1119-20 (citation omitted). However, usage of a term in one claim can often illuminate the meaning of the same term in other claims. See Phillips, 415 F.3d at 1314. Where patents-in-suit all derive from the same parent application and share many common terms, the Court must interpret the claim consistently across all asserted patents. NTP, Inc. v. Research in Motion, Ltd., 418 F.3d 1282, 1293 (Fed. Cir. 2005), rehearing en banc denied, (2005) (citations omitted); Microsoft Corp. v. Multi-Tech Sys. Inc., 357 F.3d 1340, 1350 (Fed. Cir. 2004), rehearing en banc denied, (2004) (citations omitted).

When considering intrinsic evidence, the Court must also read claims in view of the specification of which they are a part. Phillips, 415 F.3d at 1315 (citation omitted). A patent specification consists of a written description of (1) the invention, (2) the manner and process of making and using the invention, and (3) a "preferred embodiment" of the invention, which is the best mode contemplated by the inventor for carrying out the invention. See 35 U.S.C. § 112. The specification may be used as a dictionary, which explains the invention and defines terms used in the claims. Markman v. Westview, 52 F.3d 967, 979 (Fed. Cir. 1995), aff'd, 517 U.S. 370 (1996) (citation omitted); Bell Atl. Network Servs. v. Covad Commc'ns Group, 262 F.3d 1258, 1268 (Fed.

Cir. 2001) (citation omitted). The Court may also use the drawings or figures included or the documents expressly incorporated by reference in the specification to flesh out the words. Autogiro Co., 384 F.2d at 398 (citations omitted).

The Court should avoid reading a specification so narrowly as to confine the related claim to the embodiment described by the specification. See Acumed LLC v. Stryker Corp., 483 F.3d 800, 805 (Fed. Cir. 2007), rehearing en banc denied, (2007) (quoting Phillips, 415 F.3d at 1323); Ventana Med. Sys., Inc. v. Biogenex Labs., Inc., 473 F.3d 1173, 1181 (Fed. Cir. 2006), rehearing en banc denied, (2007) (quoting Phillips, 415 F.3d at 1323); SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1340-41 (Fed. Cir. 2001) (citations omitted). The Federal Circuit has "expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment." Phillips, 415 F.3d at 1323 (citation omitted). Rather, the embodiments may provide examples or representations to help define and clarify the terms of the claim. See Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 1571 (Fed. Cir. 1998) (citations omitted). "[U]pon reading the specification in that context, it will become clear whether the patentee is setting out specific examples of the invention to accomplish those goals, or whether the patentee instead intends for the claims and the embodiments in the specification to be strictly coextensive." Phillips, 415 F.3d at 1323 (citation omitted).

Finally, in construing claim language, the Court must consider the patent's prosecution history before the United States Patent and Trademark Office ("PTO"). Markman, 52 F.3d at 980 (citation omitted); Phillips, 415 F.3d at 1317 (citations omitted). Prosecution history facilitates claim construction by revealing the intended meaning and scope of technical terms and may even trump the weight of specification language in some circumstances. Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc., 200 F.3d 795, 804 (Fed. Cir. 1999) (citation omitted). A patentee may not construe a term one way to win approval from the PTO and then use the term in a different way against accused infringers. Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995), rehearing en banc denied, (1995) (citing Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1562 (Fed. Cir. 1991)). Prosecution history prevents "a patentee from regaining, through litigation, coverage of subject matter relinquished during prosecution of the application for the patent." Wang Labs. v. Mitsubishi Elecs. Am., Inc., 103 F.3d 1571, 1577-78 (Fed. Cir. 1997), rehearing en banc denied, (1997) (citation omitted). Accordingly, courts must determine "whether a patentee relinquished a particular claim construction based on the totality of the prosecution history, which includes amendments to claims and arguments made to overcome or distinguish references." Rheox, Inc. v. Enact, Inc., 276 F.3d 1319, 1326 (Fed. Cir. 2002) (citation omitted). Claims that the patentee narrowed in order to obtain the patent cannot be interpreted to extend to that which was previously eliminated from the patent. Graham v. John Deere Co., 383 U.S. 1, 33 (1966) (citations omitted). Furthermore, arguments made during prosecution to distinguish a claimed invention over prior art limit the interpretation so as to exclude any construction that was disclaimed or disavowed. Southwall Tech., Inc., 54 F.3d at 1576 (citation omitted).

3. Extrinsic Evidence

If the intrinsic evidence is insufficient and the claim language remains ambiguous, the Court may look to any extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art. Phillips, 415 F.3d at 1317 (citations omitted). Extrinsic evidence consists of all evidence apart from the patent and its prosecution history, including prior art, treatises, and expert testimony. Id. at 1318 (citations omitted); Vitronics Corp., 90 F.3d at 1584 (citation omitted). These sources can provide insight into how a person of ordinary skill in the relevant art would interpret the claim and whether an otherwise common term has a special meaning in a given field. See Phillips, 415 F.3d at 1317. The Court also may look to extrinsic evidence for assistance in understanding the underlying patent technology. See Vitronics Corp., 90 F.3d at 1584 (citing Markman, 52 F.3d at 979). The Court, however, may not use extrinsic evidence "to arrive at a claim construction that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history, in other words, with the written record of the patent." Key Pharms. v. Hercon Labs. Corp., 161 F.3d 709, 716 (Fed. Cir. 1998), rehearing en banc denied, (1999) (citations omitted); Vitronics Corp., 90 F.3d at 1583 ("In those cases where the public record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper.").

4. Narrowing a Claim Term's Meaning

There are three limited instances where the Court should narrow a claim term's meaning from an ordinary and customary meaning:

(1) If a patent specification reveals a *special definition* given to a claim term by the patentee that differs from the meaning it would otherwise possess. Phillips, 415 F.3d at 1316 (emphasis added). In such case, the inventor's definition will govern. Id. However, there is a heavy presumption in favor of the ordinary meaning unless the patentee clearly has set forth an explicit definition for a claim term. Prima Tek II, L.L.C. v. Polypap, S.A.R.L., 318 F.3d 1143, 1148 (Fed. Cir. 2003), rehearing en banc denied, (2003) (citations omitted).

(2) If the patent specification reveals an *intentional disclaimer*, or disavowal, of a claim scope by the inventor. Phillips, 415 F.3d at 1316 (emphasis added). This intention must be clear and cannot draw limitations from a preferred embodiment. Conoco, Inc. v. Energy & Envtl. Int'l, L.C., 460 F.3d 1349, 1357 (Fed. Cir. 2006), rehearing en banc denied, (2006) (citing Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002), rehearing en banc denied, (2002)).

(3) If a patentee has made a *clear and unmistakable disavowal* of scope during the prosecution of the patent. Purdue Pharma L.P. v. Endo Pharms., Inc., 438 F.3d 1123, 1136 (Fed. Cir. 2006) (citations omitted) (emphasis added). Such a disavowal is known as the doctrine of prosecution disclaimer. Id.

5. Method Claims

The invention recited in a method claim is the performance of a series of steps. NTP, Inc., 418 F.3d at 1322 (citing In re Kollar, 286 F.3d 1326, 1332 (Fed. Cir. 2002). The recited steps in a method claim do not have to be performed in the sequence recited in the claim unless logic, grammar, or the specification so require. See Interactive Gift Express, Inc. v. Compuserve Inc., 256 F.3d 1323, 1342-43 (Fed. Cir. 2001) (citations omitted). To establish whether the steps of a method claim must be performed in the order in which they are written, the Court must conduct a two-part test. Altiris, Inc. v. Symantec Corp., 318 F.3d 1363, 1369 (Fed. Cir. 2003), rehearing denied, (2003) (citing Interactive Gift, 256 F.3d at 1342-43). First, the Court looks to the claim language to determine if logic or grammar requires performance of the steps in the order written. Id. (citation omitted). If not, the Court examines the rest of the specification to decide whether it "directly or implicitly requires such a narrow construction." Id. at 1370 (citation omitted). If either condition is met, the steps recited in the method claim must be performed in the order written. See id.

B. The '614 and '862 Patents

The '614 and '862 Patents are related patents that originated from the same patent application and share a common specification. Accordingly, the Court will give claim terms appearing in both patents the same interpretation. See, e.g., NTP, Inc, 418 F.3d at 1293. The Court will first address the key disputed terms that appear in both claim 1 of the '614 Patent and claim 2 of the '862 Patent and then analyze the remaining disputed terms that appear in only one of the two patents. The Court will not discuss claims 2 or 4 of the '614 Patent or claim 3 or 4 of the '862 Patent because the parties agree that the plain meaning applies, and no further construction is necessary.

1. Analysis of Key Terms Appearing in Both Patents

a. Processing

Claim 1 of the '614 Patent and Claim 2 of the '862 Patent recite the same preamble, which states: "[a] method for processing waste material comprising the steps of . . . ." (PX 2, A28, col. 3, lines 60-61; PX 3, A37, col.4, lines 17-18). Defendant contends that the preamble limits the claim's scope, and therefore, the Court must construe the disputed term "processing." (Def.'s Brief at 34). To that end, Defendant asserts that "processing" means "remediation processing, whereby soil which is polluted, toxic, or otherwise contaminated is rendered stable – either chemically, physically, or both – by mixing the soil with an additive, thereby containing the hazardous components of the waste material." Id. Plaintiff rejects this view and argues that the preamble is merely introductory and not a limitation on the claim because it does not recite a central step. (Pl.'s Brief at 16). Therefore, "processing" is not limited to "remediation processing." (Pl.'s Reply Brief at 32-33).

The Court agrees with Plaintiff that the preamble does not contain limiting language. A preamble is an introductory phrase in the claim that often summarizes the invention or its intended uses or properties. See, e.g., Bristol-Myers Squibb Co. v. Immunex Corp., 86 F. Supp. 2d 447, 450 (D.N.J. 2000) (citation omitted). A preamble is presumed to be merely introductory language and not a limitation to the claim. Innova/Pure Water, Inc., 381 F.3d at 1118 (citing In re Paulson, 30

F.3d 1475, 1479 (Fed. Cir. 1994)). Only if the preamble recites essential structure or steps or is "necessary to give life, meaning, and vitality" to the claim does it limit the claimed invention. Catalina Mktg. Int'l, Inc., 289 F.3d at 808 (quoting Pitney Bowes, Inc., 182 F.3d at 1305). Where the patent references a preamble term again in the claim, the surrounding preamble language is incorporated by reference into the claimed invention and is limiting. See Bell Commc'ns Research, Inc. v. Vitalink Commc'ns Corp., 55 F.3d 615, 621 (Fed. Cir. 1995). In the present claims, the term "processing" as referenced in the preamble does not recite an essential step or give life to the claims. Nor is it an antecedent later used in the body of the claim. Therefore, the Court adopts Plaintiff's construction of the term and will not read a limitation into "processing."

b. Waste material

Claim 1 of the '614 Patent and Claim 2 of the '862 Patent both contain the term "waste material." The term first appears in the preamble of both patents, and Plaintiff therefore contends that the language is merely introductory and not limiting. Accordingly, Plaintiff urges the Court to adopt a broad interpretation of "waste material" that does not restrict the type of material used. (Pl.'s Brief at 16). In support of this view, Plaintiff emphasizes that the '614 Patent specification states: "[i]n general, in a first aspect, the invention features processing waste material by homogenizing waste material in a homogenizer . . . ." (PX 2 at A27, col. 1, lines 18-20). Later on, the specification explains that "[s]olid or semi-solid waste material (e.g., contaminated soil) to be processed is loaded into a loading hopper **10** of an homogenizer **12** . . . ." Id. at A27, col. 2, lines 10-12. Plaintiff argues that the patentee used "e.g." to denote that contaminated soil merely represents one example of many types of waste material. (Pl.'s Brief at 17). The specification states further that "[b]y solid or semi-solid, it is meant that the soil consistency may range from dry and totally solid to flowable – e.g., sludge-like – with as little as 5% by weight, solid chunks." (PX 2 at A27, col. 2, lines 12-15). Finally, the specification discloses that "[t]he waste material may be scooped up from a supply dump **14** previously deposited near the loading hopper, or from a sludge pit (not shown), and loaded into the loading hopper using an excavator **16**." Id. at A27, col. 2, lines 15-18. By using the term "waste material" rather than a specific type of waste material, Plaintiff asserts that the patentee intended to use the term in the broadest sense.

Defendant contends that "waste material" refers exclusively to soil and asks the Court to define the term as "contaminated soil, such as soil contaminated with mining waste." (Def.'s Brief at 36). Defendant emphasizes that the patent specification repeatedly describes "contaminated soil" as the waste material being treated. The Background of the Invention to the '614 Patent states that "[t]his invention relates to remediation processing of contaminated soil." (DX 2 at A27, col. 1, lines 6-7). Similarly, the Abstract to the '614 Patent explains that "[a]n apparatus and method for chemically and physically stabilizing contaminated soil is disclosed . . . . The apparatus and method are useful for processing highly clumped and/or acidic soil, e.g., soil contaminated with mining waste." Id. at A21. Later, the specification discloses that "[t]he invention provides a method and apparatus useful for processing soil which is heavily clumped and/or acidic, e.g., soil contaminated with mining waste." Id. at A27, col. 1, lines 58-60.

The Court agrees with Plaintiff that "waste material" does not refer exclusively to contaminated soil. Defendant is correct that the Background of the Invention describes the invention

as a method for remediation processing of contaminated soil. However, this section merely explains the ultimate objective of the invention and not the series of steps that lead up to it. These steps include receiving waste material, separating out and discharging undesirable chunks, and then homogenizing, weighing, and mixing an additive into the waste material in order to treat any contaminated soil within it. The other references to "soil" to which Defendant points merely support the proposition that the overall purpose of the invention is to treat contaminated soil, not that the material originally received into the homogenizer must only contain soil. The Court should construe the term "waste material" according to its ordinary and customary meaning and not read a limitation into it unless the patentee expresses such an intention with clarity. See, e.g., Phillips, 415 F.3d at 1312-13 (citation omitted). The patentee chose the term "waste material" and not "soil" so as not to limit the type of material covered by the patent. Any reference to "soil" in the specification is used in the context of an example or preferred embodiment, as denoted with the use of "e.g." Accordingly, the Court will not confine the definition of "waste material" to the embodiment described by the specification. See, e.g., Acumed LLC, 483 F.3d at 805 (quoting Phillips, 415 F.3d at 1323).

c. Vibrating screen box

Claim 1 of the '614 Patent contains the step of "receiving said waste material in a vibrating screen box." (PX 2, A28, col. 3, line 62). Claim 2 of the '862 Patent includes similar language. (See PX 3, A37, col.4, line 19). Plaintiff argues that "vibrating screen box" refers to a structure or apparatus in which a screen is mounted or otherwise held so that it may be moved. (Pl.'s Brief at 18). In Plaintiff's view, the term is not limited to an actual box and is used interchangeably with "vibrating screen." Id. Finally, Plaintiff asserts that there is no requirement that the box itself be caused to vibrate. Id. Defendant contends that "vibrating screen box" means a mechanical device that (1) uses a screen with openings of a predetermined size to separate out lumps greater than said predetermined size and (2) includes a mechanical shaker that vibrates the entire device, including the box holding the mesh screen. (Def.'s Brief at 37). Furthermore, Defendant maintains that "vibrating screen box" should be narrowly construed to refer only to an actual box. (Def.'s Reply Brief at 31).

The intrinsic evidence supports Plaintiff's proposed construction of the term. The '614 Patent specification explains that the purpose of the vibrating screen box is to prescreen the contaminated soil. (See PX 2 at A27, col 2., lines 37-38). The specification states that:

> [t]he vibrating screen box, caused to vibrate by a mechanical shaker (not shown), has a slightly sloped mesh bottom **32** with openings of a desired size, e.g., six inches across. Chunks of waste material **34** which are larger than the openings bounce off to the side of the screen box, and the remainder of the waste material **36** passes through the vibrating screen box when it vibrates.

Id. at A27, col. 2, lines 38-44. Figure 4 of the '614 Patent shows a screen which is caused to be vibrated by a mechanical shaker. Id. at A26, Fig. 4. The vibrating screen box depicted in Figure 4 as a preferred embodiment is a frame with a flat bottom and three sides, two of which are sloped and

hold a screen, thus resembling an arcade game. Id. This depiction suggests that a "vibrating box" is not limited to a four-sided box but merely refers to an apparatus that contains a screen capable of inducing movement or vibration therein.

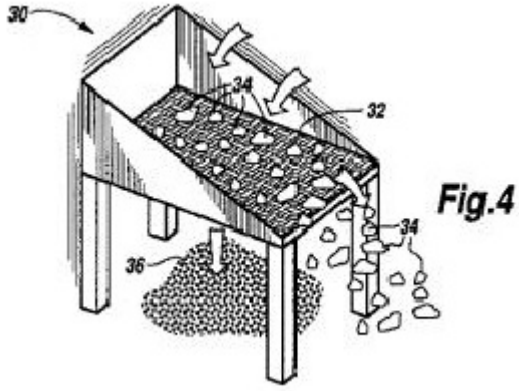


Fig.4

This construction is consistent with the '614 Patent's prosecution history, which shows that the patentee and the Patent Examiner used the terms "vibrating screen box" and "vibrating screen" interchangeably. In a December 2, 1994 amendment, the patentee argues that "[q]uite unlike Taylor, the present invention removes all large lumps of waste material completely from the process by requiring the waste material to pass through *a vibrating screen* having openings of a predetermined size." (PX 6 at TDM000307) (emphasis added). However, the patentee referred to a "vibrating screen box" earlier in the same amendment. Id. at 299. Likewise, the examiner noted in a May 16, 2005 office action that "Taylor does not disclose the *vibrating screen*" and then went on to say that "Silveri et. al. teaches, in the analogous field of separation and comminution, a *vibrating screen* . . . ." Id. at TDM000315-16 (emphasis added). Therefore, both the specification and prosecution history establish that a "vibrating screen box" means any apparatus or device containing a screen that can be moved and need not be an actual box.

Furthermore, there is no indication that the entire box must be caused to vibrate. Defendant contends that the phrase "caused to vibrate by a mechanical shaker" modifies "box" and not "screen," which infers that the entire box must vibrate. (Def.'s Brief at 37). Defendant also argues that the series of undulating lines surrounding the picture of the vibrating screen box in Figure 4 affirms this interpretation. Id. However, the '614 Patent specification contains no such limitation on what part of the vibrating screen must be vibrated. Moreover, the undulating lines depicted in Figure 4 indicate motion but do not restrict what parts or how much of the screen vibrates. Figure 4 merely represents a preferred embodiment, which the Court will not read into the claim.

d. Vibrating

Claim 1 of the '614 Patent contains the step of "vibrating said vibrating screen box to separate lumps of said waste material . . . ." (PX 2, A28, col. 3, lines 63-64). Claim 2 of the '862 Patent includes similar language. (See PX 3, A37, col.4, lines 20-21). Plaintiff argues that the ordinary meaning of the term "vibrating" applies and construes the element as "[t]he screen is

vibrated, shaken or moved so that lumps of waste material larger than the size of the screen openings are removed, while smaller lumps pass through the screen (for further processing in accordance with the patent claim)." (Pl.'s Brief at 20). Defendant maintains that "vibrating" means a "shaking to and fro as opposed to a rotational movement in a continuous direction." (Def.'s Brief at 39). In support of this view, Defendant emphasizes that the '614 Patent specification states that the vibrating screen box is "caused to vibrate by a mechanical shaker . . . ." (See DX 2 at A27, col. 2, lines 38-39). Defendant then offers definitions from a general use dictionary, which defines "to shake"as "to move to and fro" and "to vibrate" as "to move to and fro or from side to side: Oscillate." (DX 24 at A876-77). Finally, Defendant contends that the prosecution history supports such a limitation because the '614 Patent was allowed over prior art that disclosed a device using rotational disks. (Def.'s Brief at 39).

The Court adopts Plaintiff's construction of the term "vibrating." Neither the claims nor the specifications limit the directional movement of the vibrating screen box. Furthermore, the prosecution history does not enlighten the definition of "vibrating." The prior art raised by Defendant above does not disclose a vibrating screen; rather, it refers to a series of rotational discs used to separate material. Therefore, it would be improper to read the '614 Patent prosecution history as disavowing rotational movement under the definition of "vibrating." Finally, the Court need not look to extrinsic evidence in this case because the term "vibrating" is not ambiguous. Even if the Court felt it necessary to do so, the Court would not consult the definition of "to shake," a term not included in the patent. The Court must construe the term through the eyes of one of ordinary skill in the art, which favors using a technical dictionary over a standard dictionary. See Phillips, 415 F.3d at 1318 (citing Vitronics Corp., 90 F.3d at 1584 n.6). The McGraw-Hill Dictionary of Engineering defines "vibrating screen" as "[a] sizing screen which is vibrated by a solenoid or magnetostriction, or mechanically by eccentrics or unbalanced spinning weights." (PX 9 (Reply) at 545). This definition does not restrict the directional movement of the vibration as Defendant suggests.

e. Dropping

Claim 1 of the '614 Patent contains the step of "dropping said waste material into a mixer after homogenizing . . . ." (PX 2, A28, col. 4, lines 6-7). The parties dispute the meaning of "dropping." Claim 2 of the '862 Patent also includes the term "dropping," and, accordingly, the Court interprets this word consistently between the two claims. Plaintiff asserts that "dropping" means that the waste material drops or falls into the mixer after it is homogenized. (Pl.'s Brief at 24). After homogenization, the waste material is transferred directly or by another means of conveyance such as from a chute, conveyor, or hopper to where it falls into the mixer. Id. Defendant construes "dropping" to require the waste material to fall by gravity into the mixer. (Def.'s Brief at 40).

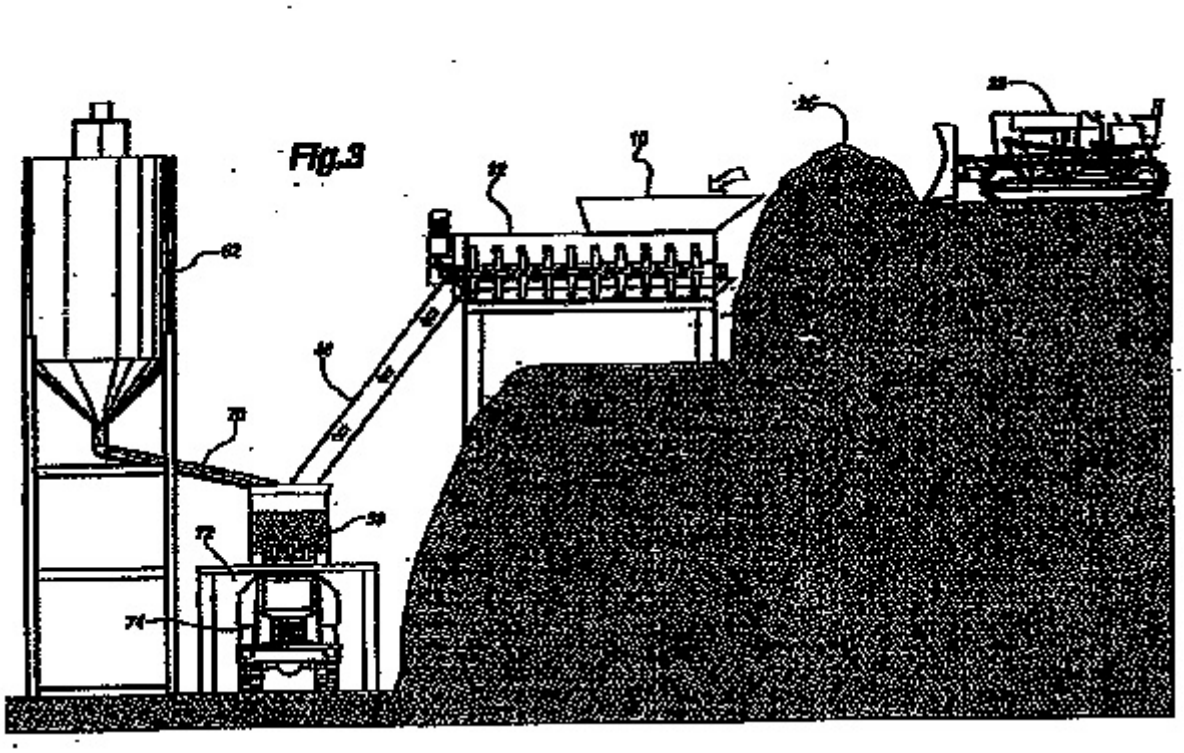
The Court adopts Defendant's construction of the term "dropping." The Summary of the Invention describes an apparatus that includes a "mixer located below the homogenizer to receive waste material from the homogenizer *by gravity feed* . . . ." (DX2 at A27, col. 1, lines 38-40) (emphasis added). The specification goes on to state that "[t]he waste drops, *by gravity*, through discharge chute **46** into a mixer **58** located below the homogenizer." Id. at A28, col. 3, lines 16-18

(emphasis added). The patentee uses the term "gravity" as a requirement and not in the context of a preferred embodiment. Therefore, the Court interprets the term "dropping" to mean falling as a result of gravity.

f. Located below

In the same element as discussed immediately above, Claim 1 of the '614 Patent goes on to state that "said mixer [is] located below said homogenizer." Id. at A28, col. 4, line 7. The parties dispute the meaning of "located below." Claim 2 of the '862 Patent also includes the term "located below" in another element, and, accordingly, the Court interprets these words consistently between the two claims. Plaintiff contends that "located below"only requires that the waste material enter the mixer after exiting the homogenizer and not that the mixer be located physically below the homogenizer. (Pl.'s Brief at 24). Plaintiff explains that the '614 Patent is a method claim which recites a series of steps not restricted to the order in which they are written unless the language of the claim so provides. Id. at 24-25. Here, the element lays out a sequence such that waste material drops into the mixer after homogenizing, clarifying that the mixer is located below the homogenizer in the process flow. Id. at 24. According to Plaintiff, any of the following situations meets the definition of "located below:" (1) the mixer being located physically below the homogenizer; (2) the mixer being located below the point of transfer or drop point from the homogenizer such that the waste material drops or falls into the mixer from a chute, conveyor, or hopper; or (3) the mixer being located after the homogenizer in the process flow. Id. Defendant construes "located below" to mean that the mixer is located at a lower level or altitude than the homogenizer. (Def.'s Brief at 40-41). Defendant argues that if the material must drop by gravity into a mixer, as the Court concludes, then that mixer necessarily is located physically below the homogenizer. Id. at 41. In support of this view, Defendant offers all of the figures depicting the apparatus, each of which shows a mixer located at a lower level than the homogenizer. Id.

The Court concludes that "located below" means physically below. The element in dispute states as follows: "dropping said waste material into a mixer *after* homogenizing, said mixer *located below* said homogenizer." (DX 2 at A28, col. 4, lines 7-8) (emphasis added). If the term "located below" merely meant "after in the process" as Plaintiff suggests, then the Court would be reading out of the claim the term "after." All claim terms are generally presumed to have meaning. Innova/Pure Water, Inc., 381 F.3d at 1119 (citation omitted); see also Tx. Instruments Inc., 988 F.2d at 1171(internal citation omitted). Furthermore, under the doctrine of claim differentiation, the Court will not infer that two different words within a claim– "located below" and "after"– have the same meaning. See, e.g., Andersen Corp., 474 F.3d at 1369 (citation omitted). Therefore, Plaintiff's definition of "located below" does not accurately reflect the plain meaning of the term. The Court notes however, that nothing in the '614 Patent specification requires the mixer to be located *directly* below the homogenizer so long as it sits at a lower level or altitude than the homogenizer. Figures 1A, 2, and 3 all depict preferred embodiments in which the mixer sits below, but not directly underneath, the homogenizer. As an example, Figure 3 appears as follows:




g. Mixer

Both claim 1 of the '614 Patent and claim 2 of the '862 Patent require the use of a "mixer" as part of the remediation process. However, the '862 Patent differs from the '614 Patent in that it removes the step of homogenizing the waste material. As a result, both the homogenization and mixing of the waste material take place in the mixer and not in separate locations. The parties do not dispute this distinction. They do dispute the definition of "mixer." Plaintiff argues that the Court should interpret "mixer" in both patents as a device or apparatus capable of combining or blending the additive and waste material. (Pl.'s Brief at 28). Defendant urges the Court to construe "mixer" in both patents as a mechanical device that (1) mixes the waste material and additive, (2) is separate from the homogenizer, and (3) includes weight-sensing elements (for weighing batches of waste material). (Def.'s Brief at 49).

The Court affirms Defendant's construction of "mixer" but remarks that it finds no material difference between the two parties' interpretations in light of the Court's construction of other terms in the two patents. Defendant admits that the first element of its definition corresponds generally with Plaintiff's definition as a whole. (Def.'s Reply Brief at 48). The second element requiring the mixer to be separate from the homogenizer adds no new meaning to the term. Later in this opinion, the Court adopts Defendant's construction of "homogenizer" as used in the '614 Patent to mean a device separate and distinct from the mixer. The '862 Patent does not use a homogenizer, so including the phrase "is separate from the homogenizer" merely restates the obvious. Finally, the third element of Defendant's definition agrees with the Court's later determination that the process

of weighing must occur in the mixer. Both patent specifications state that "[t]he mixer includes mixing augers which counter-rotate, as well as weight sensing elements." (DX 2 at A27, col. 1, lines 50-52; DX 3 at A36, col. 1, lines 50-52). This language limits the construction of "mixer" rather than merely reciting a preferred embodiment as Plaintiff suggests.

h. Accumulating a batch

Claim 1 of the '614 Patent contains the step of "accumulating a batch of waste material in said mixer . . . ." (PX 2, A28, col. 4, line 8). Claim 2 of the '862 Patent includes similar language. (See PX 3, A37, col.4, line 28). Plaintiff defines this element as "accumulating, loading or gathering a certain amount of waste material in the mixer." (Pl.'s Brief at 28). According to Plaintiff, the patent specification does not limit how much waste must accumulate; rather, it simply indicates that a certain amount of waste material gathers with the purpose of determining how much additive must be added. Id. at 28-29. Defendant focuses on the term "batch" and construes this element as "gathering a discrete amount (or group) of waste material in the mixer, which is separately mixed with an additive through one operation of the claimed method." (Def.'s Brief at 41). Defendant argues that the language of the claims calls for a "batch" of material to accumulate, rather than a constant flow of material into the mixture. Id. at 42.

The Court agrees that a "batch" refers to a discrete amount of material. Plaintiff argues that Defendant's construction reads a limitation into the claim against the patentee's intent. The Court disagrees. Defendant's construction merely gives the term "batch" its plain meaning as one of ordinary skill in the art would understand it. If the patentee meant to describe a continuous flow process, he would have used the words "ratio" or "proportion" and not "batch." Interpreting "accumulating a batch" as encompassing a continuous flow of material would fail to give meaning to the term "batch," as required under the canons of claim construction applied by this Court. See Innova/Pure Water, Inc., 381 F.3d at 1119 (citation omitted). Furthermore, the specification itself describes a process in which discrete amounts of waste material gather. The '614 Patent specification states that "[w]aste material is dropped into the mixer until a *batch weight* has been loaded into the mixer . . . ." (DX2 at A28, col. 3, lines 18-19) (emphasis added). After weighing the batch, "the amount of additive necessary to treat the waste material . . . is added to the mixer." Id. at A28, col. 3, lines 37-39. The resulting mixture is then "retained and mixed in the mixer . . . [and] then discharged from the mixer . . . ." Id. at A28, col. 3, lines 42-44. Thus, one batch of material is weighed and treated separately through one operation of the processing method.

Defendant's construction of the element also is consistent with the ordinary meaning of "batch" when used in the context of a chemical or physical mixing process. A "batch process" is one in which a quantity of material enters a system and is removed all at once before any additional material is added. (See DX25 at A886). Furthermore, technical dictionaries define "batch" as "[t]he quantity of material required for or produced by one operation" or "[a]n amount of material subjected to some unit chemical process or physical mixing process to make the final product substantially uniform." (DX 27 at A902; see also DX 28 at 908; DX 24 at A879). These definitions contrast sharply with the notion of a continuous process in which material flows constantly into and out of a mixer during the treatment process.

Finally, the Court of Federal Claims has defined "batch" in accordance with Defendant's construction in other cases. In Chemical Separation Technologies, Inc. v. United States, the Court found the difference between "continuous treatments" and "batch treatments" to be a "major distinction." 51 Fed. Cl. 771, 796 (2002). In support of this conclusion, the Court cited an expert's testimony that "[a] batch treatment is differentiated from continuous flow in that . . . a specific volume of water flows into the tank." Id. Based on the plain language of the patent and affirmed by dictionary definitions and case law, "batch" can only mean a discrete amount of material.

i. Weighing

Claim 1 of the '614 Patent contains the step of "weighing said batch of waste material to determine an amount of additive to be added to said waste material . . . ." (PX 2, A28, col. 4, lines 9-10). Claim 2 of the '862 Patent includes similar language. (See PX 3, A37, col.4, lines 29-30). The parties dispute the meaning of "weighing." Plaintiff contends that "weighing" means "[d]etermining the weight, by any means, of the amount of waste material added to the mixer to determine how much of any basic material should be added to the waste material." (Pl.'s Brief at A29). In this regard, Plaintiff maintains that the patent does not limit the method or location of the weighing, so long as it takes place at some point in the process. (Pl.'s Reply Brief at 44). Consistent with its construction of the previous step in the process, Defendant's interpretation requires the direct measuring of the waste material's batch weight within the mixer to determine the amount of additive to be added. (Def.'s Brief at 44). Defendant argues that the weighing step must occur in the mixer because both the preceding and subsequent steps take place in the mixer. Id. Furthermore, Defendant submits that the claims require the method of weighing to be a direct measurement of weight. Id. at 44-45.

The Court agrees with Defendant that the process of weighing must occur in the mixer. The plain language of the patent indicates that the weighing step occurs after the waste material drops into the mixer. Furthermore, the '614 Patent specification states that "[o]nce the waste material is loaded *into the mixer and weighed*, the amount of additive necessary to treat the waste material is determined and added to the mixer." (DX 2 at A28, col. 3, lines 36-39) (emphasis added). This language limits the location of the weighing to the mixer and the time to before the additive is added.

The specification also makes clear that the waste material must be weighed by direct, or scale, measurement of weight. The '614 Patent specification describes the inclusion of weight-sensing elements in the mixer. Specifically, it states that "[w]aste material is dropped into the mixer until a batch weight has been loaded into the mixer, as determined by load cells **60** on which the mixer is mounted." Id. at A28, col. 3, lines 18-20. Furthermore, the Summary of the Invention explains that "[t]he mixer includes mixing augers which counter-rotate, as well as weight sensing elements." Id. at A27, col. 1, lines 50-52. Plaintiff's interpretation of "weighing" as allowing any method of weighing, including by indirect measurements such as volumetric calculations, is not supported by the disclosures in the patent. Plaintiff argues that the following specification language indicates that "weighing" may occur through experimentation: "[t]he type and amount of specific additive(s) needed for a given weight of waste material of a given type is determined by experimentation." Id. at A28, col. 3, lines 34-36. However, "experimentation" refers to a method for determining the amount of additive to be added to the waste material, not the method of weighing

the waste material. Plaintiff also points to the '614 Patent prosecution history in support of its argument that neither location nor methodology for weighing were "significant to patentability." (Pl.'s Brief at 30). Whether a patentee adds a particular limitation to overcome prior art or not does not change the significance of the limitation. The Court must give each and every limitation on a claim meaning. Accordingly, the Court determines that "weighing" must occur by direct measurement in the mixer as Defendant contends.

j. Additive

Both Claim 1 of the '614 Patent and Claim 2 of the '862 Patent involve the process of adding an additive to the waste material. Plaintiff construes the term "additive" to mean any basic, or non-acidic, material. (Pl.'s Brief at 33). Alternatively, Defendant defines the term as "a substance or substances that, when mixed with the waste material, produces a chemically and/or physically stable material, thereby containing the hazardous components of the waste material." (Def.'s Brief at 45).

The Court finds Plaintiff's construction of the term "additive" unduly vague. The '614 Patent specification states that "[t]he treatment additive is calcium oxide (hot lime), calcium carbonate, some other type of lime, or other basic material which neutralizes the acidity of the waste material . . . ." (PX at A28, col. 3, lines 28-31). It goes on to provide that "many other additives known in the remediation art such as portland cement, sodium hydroxide, and sodium sulfide can be used, depending on the nature of the material being remediated, and the invention is not to be limited by the particular additive used." Id. at A28, col. 3, lines 54-58. Plaintiff formulates its definition of "additive" based on the patent specification's first disclosure but fails to account for the second. The second statement lists several other embodiments of the term "additive," all of which share the trait that they are "known in the remediation art." Id. at A28, col. 3, lines, 54-55. This disclosure clarifies that the '614 Patent defines "additive" in terms of substances that can be used in the remediation processing of soil and not whether the substance is basic. Finally, Plaintiff's interpretation conflicts with the principle of claim differentiation. This doctrine requires the Court to give meaning to all terms in a patent's claims and to assign a more limited scope to a claim with additional language. See, e.g., Andersen Corp., 474 F.3d at 1369 (citation omitted). Claim 5 of the '614 Patent recites "adding a *basic pretreatment additive* to said waste material in said homogenizer . . . ." (PX 2 at A28, col. 4, lines 41-42) (emphasis added). By using the word "basic" to describe "additive" in claim 5, the patentee makes clear his intent that the term "additive" in claim 1 does not refer exclusively to basic material. Thus, the Court rejects Plaintiff's reading of "additive" as a substance merely having a basic quality and adopts Defendant's construction of the term.

k. Processing terminus

Claim 1 of the '614 Patent concludes with the step of "dropping said mixture from said mixer to a processing terminus located below said mixer." Id. at A28, col. 4, lines 14-15. Claim 2 of the '862 Patent includes similar language. (See PX 3, A37, col.4, lines 33-34). Beyond the terms discussed above, the parties dispute the meaning of "processing terminus." Plaintiff asserts that this element means that the mixture is discharged from the mixer to an end point located below or after the mixer. (Pl.'s Brief at 34). In support of this view, Plaintiff offers language from the '614 Patent specification stating that "[t]he mixture is then discharged from the mixer by retracting slide gate

located at the bottom of the mixer (not shown) and allowing the mixture to drop, by gravity, to a processing termination location **72**." (PX 2, A28, col. 3, lines 44-48). Defendant argues that the element means dropping the mixture downward (by gravity) to a location that allows entry of a vehicle to receive the processed waste material. (Def.'s Brief at 46).

Plaintiff's construction of the term "processing terminus" fails to take into account the limiting language in the '614 Patent specification. The Summary of the Invention states that "[t]he processing terminus includes space below the mixer which allows entry of a vehicle below the mixer to receive and transport the processed waste material from the apparatus." (PX 2 at A27, col. 1, lines 54-57). The description of the patent goes on to disclose that "[t]he processing termination location is a truck access pit which is large enough to permit a waste-hauling truck **74** to drive under the mixer and receive the waste/additive mixture as it drops from the mixer. The mixture is then hauled away to a permanent disposal facility." Id. at A28, col. 3, lines 48-52. Plaintiff argues that the preceding statements merely reflect a preferred embodiment of the processing terminus location, and no language in the specification restricts the structure or location of the processing terminus. (Pl.'s Brief at 34). However, the Court finds that, when read as a whole, the language cited in the '614 Patent specification above does not merely describe a preferred embodiment. Rather, it limits the structure and location of the processing terminus to an area in which a vehicle can enter in order to remove waste material. Plaintiff's interpretation of "processing terminus" is therefore overly broad and unduly vague, and the Court adopts Defendant's construction of the term instead.

2. Analysis of Remaining Term in the '614 Patent

a. Homogenizer

Claim 1 of the '614 Patent includes the added step of "discharging said waste material of a size less than said predetermined size into a homogenizer . . . ." (PX 2 at A28, col. 4, lines 1-2). The parties disagree over the meaning of "homogenizer." Plaintiff argues that "homogenizer" refers to "an apparatus or device capable of making material more uniform or consistent." (Pl.'s Brief at 21). Plaintiff also contends that even though the '614 Patent specification describes a preferred embodiment of a homogenizer as having a pair of side-by-side homogenizing augers, claim 1 is not limited by this description. Id. Defendant construes the term to mean a mechanical device, separate and distinct from the mixer, which homogenizes the waste material. (Def.'s Brief at 39). Defendant distinguishes its definition from Plaintiff's in that its definition of homogenizer (1) must actually homogenize rather than be merely capable of doing so; (2) must be a mechanical device; and (3) must be separate and distinct from the mixer. (Def's Reply Brief at 35-36).

The Court agrees with Defendant that the homogenizer is separate and distinct from the mixer. After the method step of requiring "homogenizing said waste material in said homogenizer," the next element recites the step of "dropping said waste material into a *mixer* after homogenizing, said mixer located below said homogenizer." (DX 2 at A28, col. 4, lines 6-7) (emphasis added). The claim therefore describes two separate pieces of equipment – the homogenizer and the mixer – with the mixer located below the homogenizer. The patent specification supports this interpretation. The Summary of the Invention notes that "[t]he apparatus includes a homogenizer;

a mixer located below the homogenizer to receive waste material from the homogenizer . . . ." Id. at A27, col. 1, lines 38-40.

The Court also concludes that the homogenizer must be a mechanical device. The Summary of the Invention states that "[t]he homogenizer includes homogenizing augers which counter-rotate," implying that the homogenizer must operate mechanically. Id. at A27, col. 1, lines 47-48. Plaintiff argues that this description is modified by an earlier sentence, which explains that "[e]mbodiments of the invention *may* include one or more of the following features." Id. at A27, col. 1, lines 43-44 (emphasis added). In Plaintiff's view, this sentence renders the description of the homogenizer as a mechanical device merely a preferred embodiment. The Court disagrees. The two sentences immediately following the above-mentioned sentence use the conditional tense, stating: "*may* include a loading conveyor" and "*may* be solid." Id. at A27, col. 1, lines 44-47 (emphasis added). However, the patentee declined to employ the conditional tense when stating that "[t]he homogenizer *includes* homogenizing augers which counter-rotate." Id. at A27, col. 1, lines 47-48 (emphasis added). This suggests that the patentee intended for the homogenizer to be a mechanical device. Finally, the specification goes on to describe a homogenizer that has a pair of side-by-side augers, each with homogenizing paddles that are welded or otherwise mounted to a shaft. Id. at A27, col. 2, lines 52-62. While this description may be merely a preferred embodiment, that does not detract from the language in the Summary of the Invention requiring the homogenizer to have counter-rotating augers.

In all other aspects of the definitions, the Court finds that the parties agree. Plaintiff's reading of "homogenizer" as "an apparatus or device capable of making material more uniform or consistent" does not differ materially from Defendant's interpretation as a "mechanical device . . . which homogenizes the waste material." (Pl.'s Brief at 21; Def.'s Brief at 39). Claim 1 of the '614 Patent states that "homogenizing said waste material" will occur "in said homogenizer." (DX 2 at A28, col. 4, line 4). The parties agree that "homogenizing" means that the waste material is made more uniform or consistent as compared to the consistency of the waste material when first received by the homogenizer. Indeed, the patent specification states that the homogenizer serves to reduce the size of lumps in the waste material. Id. at A27, col. 2, lines 57-58.

3. Analysis of Remaining Term in the '862 Patent

a. Mixing and homogenizing

Claim 2 of the '862 Patent includes the added step of "mixing and homogenizing the waste material with the additive in the mixer to form a mixture . . . ." Id. at A37, col. 4, lines 31-33. Plaintiff construes the element to mean that "[t]he waste material and additive are combined and/or blended and the waste material is also made more uniform or consistent in the mixer as compared to the consistency of the material when it is first received in the mixer." (Pl.'s Brief at 38). Defendant interprets the element to mean "mixing the waste material with an additive in a mixer to form a mixture while simultaneously homogenizing the waste material." (Def.'s Brief at 51). Thus, the parties only disagree over whether the actions of mixing and homogenizing must occur simultaneously in the mixer.

Defendant's construction of the element as requiring simultaneous mixing and homogenizing in the mixer is the most natural reading of the plain language of the text. The patentee could have included a separate step each for homogenizing and mixing but chose not to do so. The Court gives great weight to the patentee's decision to incorporate these two actions into one step in the claim and therefore adopts Defendant's construction of the element.

C. The '731 Patent

1. Preamble

Claim 1 of the '731 Patent includes a preamble, which states: "[a] method for producing a structural fill material comprising the steps of . . . ." (PX 1 at A18, col. 10, lines 16-17). As with the '614 and '862 Patents, Plaintiff argues that the preamble provides an introduction and does not limit the terms of the claim. (Pl.'s Brief at 40). Defendant rejects this notion and asserts that the preamble restricts the definition of "structural fill material" to a soil-like material suitable for beneficial reuse, with improved structural or compressive strength and reduced windborne fugitive dust emissions. (Def.'s Brief at 18).

The Court agrees with Plaintiff that the preamble does not limit the terms of the '731 Patent. A preamble only restricts the meaning of a claim when it constitutes an antecedent for a term later used in the text of the claim. See Catalina Mktg. Int'l, Inc., 289 F.3d at 808 (citation omitted). In the claim at issue, the patentee uses the term "structural fill material" in the preamble and then again in the last step of claim 1. However, the term in the body of the claim does not refer back to the preamble because it does not state "*said* structural fill material." Thus, the Court will not read the preamble as limiting the meaning of "structural fill material" and will construe the term independently later in this opinion.

2. Dredged Material

Claim 1 of the '731 Patent refers repeatedly to "dredged material." Plaintiff urges the Court to adopt a broad interpretation of the term as referring to any material, including sediment, sand, or silt that is removed from waterways. (Pl.'s Brief at 40). According to Plaintiff, the patent specification supports this view by stating that the invention "involves dredging materials such as sediment or silt that has been deposited in navigable waterways such as channels, harbors, lakes, and rivers." (PX 1 at A14, col. 2, lines 53-56). Defendant construes "dredged material" more narrowly to mean material that has been removed from underwater locations by dredging. (Def.'s Brief at 19). Accordingly, Defendant offers language in the specification stating that the "invention relates in general to the fixation, stabilization and solidification of materials *dredged from a waterways* . . . ." (DX 1 at A14, col. 1, lines 13-15) (emphasis added). Defendant also maintains that the Background section discusses the importance of waterways in the United States, the need to dredge them to maintain adequate depths, and proper disposal of dredged sediments. Id. at A14, col. 1, lines 18-19, 35-37; A14, col. 2, lines 41-45. Finally, Defendant notes that the specification discloses the following:

> Once in the treatment vessel **26**, the sediment **16** will be referred to herein as dredged materials **28**. It should be noted that dredged materials **28** may typically include sands, silts, clays and other materials in addition to sediment **16** that is removed from the subaqueous location such as waterway **14**.

Id. at A15, col. 4, lines 16-21.

The Court favors a broad interpretation of "dredged material" as encompassing any material that can be dredged. The Court agrees with Plaintiff that the specification language cited by Defendant above merely explains that "dredged material" *may* include material removed from a subaqueous location such as a waterway but is not limited to material from a subaqueous source. The patent's description as an invention that "relates in general to the fixation, stabilization and solidification of materials *dredged from a waterways* . . . ." does not restrict dredged material to an underwater location as Defendant suggests; rather, it merely explains that the material is removed from a waterway. See id. at A14, col. 1, lines 13-15 (emphasis added). The Court will not read this limitation into the claim absent language that explicitly restricts "dredged material" to a substance deriving from a subaqueous source.

3. Containment Receptacle

Claim 1 of the '731 Patent includes the step of "depositing the dredged material into a containment receptacle . . . ." (PX 1 at A18, col. 10, lines 19-20). The parties dispute the meaning of the term "containment receptacle," which the patentee uses repeatedly in the claim. Plaintiff describes "containment receptacle" as any ocean-going or land-based device or apparatus capable of containing or holding material. (Pl.'s Brief at 42). Defendant defines the term as an apparatus, device, or structure, such as a barge, scow, or pit, separate and apart from the mixing container, where dredged material is held during treatment. (Def.'s Brief at 20). The primary difference between these two definitions is that Defendant's specifies that the containment receptacle is separate from the mixing container in which the additive slurry is created.

The Court agrees with Defendant that the containment receptacle is separate and distinct from the mixing container. The plain language of the claim supports this interpretation. The invention calls for "depositing the dredged material into a containment receptacle" and removing free water from the dredged material. (PX 1 at A18, col. 10, lines 19-22). In separate steps, the method claim then requires "creating an additive slurry in a mixing container" and "pumping the additive slurry from the mixing container to a mixing assembly disposed within the containment receptacle . . . ." Id. at A18, col. 10, lines 23-26. The plain language of the patent makes clear that the additive slurry originates in a mixing container and then pumps into the containment receptacle, thus demonstrating that the mixing container and containment receptacle exist separately and distinctly from one another. Under the doctrine of claim differentiation, the Court infers that different words within a claim have different meanings. See, e.g., Andersen Corp., 474 F.3d at 1369 (citation omitted). Thus, the Court must interpret "containment receptacle" and "mixing container" as referring to separate vessels.

The prosecution history also shows that the patent applicant explicitly disavowed any construction of "containment receptacle" not separate and distinct from the mixing container. The patent applicant's informal amendments called for "depositing the dredged material into a first vessel," "creating an additive slurry in a second vessel," and then "moving the additive slurry from the second vessel to the first vessel." (DX 4 at A230). The Patent Examiner objected, stating that "the method of creating and moving the additive slurry from the first to second vessel appear[s] not to be defined over the prior art." Id. at A228. In the final amendment of the claim, the applicant redefined "first vessel" as "containment receptacle" and "second vessel" as "mixing container." See id. at A246. In argument to the Patent Examiner, the patent applicant repeated several times that "[t]he pending amended claims require the steps of creating an additive slurry in a mixing container and pumping the additive slurry from the mixing container to a mixing assembly disposed within the containment receptacle." Id. at A242-44. He went on to state that "[a]n additive slurry is created in a mixing container *which is separate from the containment receptacle*." Id. at 244 (emphasis added). Thus, the patent applicant explicitly disavowed the possibility that the containment receptacle and the mixing container are one and the same.

4. Free Water

Claim 1 of the '731 Patent contains the step of "removing free water from the dredged material and the containment receptacle . . . ." (PX 1 at A18, col. 10, lines 21-22). The parties dispute the meaning of "free water." Plaintiff contends that a person of ordinary skill in the art would understand "free water" to mean the removal of water that is free from dredged material. (Pl.'s Brief at 42). Defendant would limit the term to standing water that has accumulated above the surface of the dredged material in the containment receptacle. (Def.'s Brief at 22). Defendant argues that the patent specification refers only to "free standing water" and not "free water" when describing the invention. (See DX 1 at A16, col. 5, lines 3-10, 34-35; A16 col. 6, lines 1-2).

The Court adopts Plaintiff's interpretation of "free water" because it most accurately reflects the plain meaning of the term. Defendant's definition impermissibly reads a limitation into the phrase. The claim language requires removal of free water from the dredged material and the containment receptacle but does not specify the method of such removal. The patentee could have used the term "free standing water" but chose "free water" instead. The fact that the patent specification speaks of "free standing water" merely reflects a preferred embodiment and not a limitation on the claim itself. Indeed, the specification offers examples of how free water can be removed from the dredged material without listing any restrictions on the process. For example, it states that "[t]he dredged materials in the treatment vessel are then dewatered and debris removed therefrom" and "free standing water is removed from the treatment vessel using pump **34**." Id. at A14, col. 2, lines 59-60; A16, col. 5, lines 3-4. Therefore, the Court will not read a limitation into the claim language where the patentee did not so intend. See Phillips, 415 F.3d at 1316.

5. Additive Slurry

Claim 1 of the '731 Patent includes the step of "creating an additive slurry in a mixing container . . . ." (PX 1 at A18, col. 10, line 23). The parties agree that an "additive" may comprise (1) a cement-based additive, Portland cement, a high alkali additive, CaO, $Ca(OH)_2$, $CaCO_3$, or any

mixture thereof; (2) $FeCl_3$, coal ash, fly ash, bed ash, cement kiln dust, lime kiln dust, clay slay, sodium silicate, calcium silicate, wood chips, ground corn cobs, diatomaceous earth, natural soil, or mixtures thereof; or (3) iron salts, ferrous sulfate, magnesium salts, silica, asphalt emulsions, alcohols, amides, amines, carboxylic acids, carbonyls, sulfonates, activated carbons, sodium carbonates, potassium permanganate, calcium hypochlorite, sodium hypochlorite, or mixtures thereof. (Joint Claim Constr. Brief at 4). However, the parties dispute the meaning of the term "additive slurry," which appears multiple times throughout the claim. Plaintiff construes the term to mean a form of additive that promotes uniform mixing and reduces the potential for particulate emissions. (Pl.'s Brief at 43). Defendant, on the other hand, proposes a definition of a uniform, thin, watery mixture of a liquid, usually water, and any of several additives. (Def.'s Brief at 23).

The Court agrees with Defendant that an "additive slurry" must contain a watery mixture or liquid of some sort. The '731 Patent specification states that "[t]he additives are introduced into the dredged material **58** in the form of a slurry to promote uniform mixing and to reduce the potential for particulate emissions." (DX 1 at A16, col. 6, lines 55-57). This language supports Plaintiff's proposition that the *purpose* of the additive slurry is to promote uniform mixing and reduce the potential for particulate emissions. However, it does not describe the *composition* of an additive slurry. The specification repeatedly discusses an additive slurry in the context of being pumped into the dredged material, which implies that the slurry contains liquid. It states "[f]or example, the clarified water may be mixed with an additive slurry . . . and pumped into the dredged materials **28**." Id. at A16, col. 5, lines 27-29. Later, the specification discloses that "[t]he additives may be combined in the mixer to form a slurry that is pumped through supply lines **68** via pump **70** directly to the mixing assembly **56**." Id. at A16, col. 6, lines 52-55. Plaintiff cites the following specification language for the proposition that the additive slurry may be dry:

> The additives are introduced into the dredged material **58** in the form of a slurry to promote uniform mixing and to reduce the potential for particulate emissions. It will be understood by one skilled in the ordinary art that *other methods for the transfer of dry additives from the silos* **64** *directly to the mixing assembly* **56***, such as pneumatic transfer or on a conveyor, may also be used* without departing from the principles of the present invention.

Id. at A16, col. 6, lines 55-62 (emphasis added). This language explains that dry additives may be used but does not suggest that the slurry itself remains dry. Therefore, the Court finds that the plain meaning of "additive slurry" requires a liquid mixture.

The patent's prosecution history further supports Defendants' construction. To overcome prior art, the patent applicant disclaimed or surrendered the use of dry additives. The word "slurry" was not included in the '731 Patent claims until the applicant's final amendment. (DX 4 at A230). In the applicant's accompanying remarks, he argues that "[t]he pending amended claims require the steps of creating an additive slurry in a mixing container and pumping the additive slurry from the mixing container to a mixing assembly disposed within the containment receptacle." Id. at A242. The applicant distinguished prior art as "teach[ing] away from the Applicant's present invention by adding dry additives which contribute to potentially harmful particulate emission." Id. at 243. Based

on the foregoing, the prosecution history affirms that the patent applicant disavowed the use of dry additives in the term "additive slurry."

Beyond the four corners of the patent specification and the prosecution history, the extrinsic evidence supports Defendant's construction of "additive slurry." Neither the patent specification nor the prosecution history provides a precise definition of "additive slurry." Therefore, the Court may consider extrinsic evidence in the form of dictionary definitions. See Phillips, 415 F.3d at 1317. The Merriam-Webster Dictionary defines "slurry" as "a watery mixture of insoluble matter (as mud, lime, or plaster of paris)." (DX 12 at A679). The American Heritage Dictionary similarly defines the term as "[a] thin mixture of a liquid, esp[ecially] water, and any of several finely divided substances, such as cement, plaster of Paris, or clay particles." Id. at A672. Furthermore, the patentee's 1997 brochure describing his patented process specifies that all water removed from the barges in the dewatering process is used in preparing the slurry. (DX 11 at A649).

Finally, the Court finds Plaintiff's construction of "additive slurry" unduly vague. In Geneva Pharmaceuticals, Inc. V. GlaxoSmithKline PLC, the Federal Circuit held that a patent claim is indefinite if a skilled artisan cannot determine if an accused product infringes. See 349 F.3d 1373, 1383-84 (Fed. Cir. 2003) (citation omitted). Furthermore, 35 U.S.C. § 112 requires a patent specification to "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." This statute seeks to allow third parties to design around and avoid actions which might infringe a patent. Under Plaintiff's purely functional construction of the claim, a person of ordinary skill in the art would not know whether a particular composition of slurry falls within the scope of the patent or not because Plaintiff does not define the amount of water necessary to meet its definition. Therefore, the Court rejects Plaintiff's construction of the term "additive slurry" in favor of Defendant's narrower interpretation.

6. Mixing Container

Claim 1 of the '731 Patent includes the steps of "creating an additive slurry in a mixing container" and "pumping the additive slurry from the mixing container to a mixing assembly disposed within the containment receptacle . . . ." (DX 1 at A18, col. 10, lines 23-25). The parties dispute the meaning of "mixing container." Plaintiff construes the term to mean a contained area, which does not have to be physically separate from the containment receptacle (Pl.'s Brief at 44-45). Defendant interprets "mixing container" to mean an apparatus, device, or structure that is separate and apart from the containment receptacle, wherein the additive(s) and water are held, while uniformly mixed to create the additive slurry. (Def.'s Brief at 24).

The Court agrees with Defendant that the mixing container must exist separately from the containment receptacle. The plain language of the claim supports this interpretation. The claim calls for creating an additive slurry in a mixing container and then pumping it to a mixing assembly within a containment receptacle. (DX 1 at A18, col. 10, lines 23-25). Thus, the invention requires three separate and distinct devices: a mixing container, a mixing assembly, and a containment receptacle. Defining a "mixing container" merely as a "contained area" does not indicate clearly to a third party to which of these three areas "mixing container" refers and violates the tenets of Geneva Pharmaceuticals, Inc. and 35 U.S.C. § 112. Furthermore, the figures that accompany the patent

specification show a separate device for mixing that connects to a mixing assembly by supply lines. (DX 1 at A2-A13). Figure 5 depicts a mixer that feeds to a pump that is connected by supply lines directly to the mixing assembly, which sits inside a containment receptacle identified as "treatment vessel 26." Id. at A7.

The prosecution history affirms Defendant's construction of "mixing container." Following the Patent Examiner's rejection of the patent applicant's claims on three occasions, the Patent Examiner conducted an interview with the applicant on April 9, 2001 to consider his informal claim amendments. (DX 4 at A228). The Patent Examiner rejected the proposed amendments and gave the following explanation:

> Applicant's attorney proposed changes to claims 3, 7, 9, 11, 30, 35, 37 and 39 to further define the claim to recite that method steps of depositing the dredged material into a first vessel, creating an additive slurry in a second vessel and moving the additive slurry from the second vessel to the first vessel as recited in the proposed amendment faxed 4/9/2001 for the interview purpose. *However, examiner respectfully disagreed with applicant's opinion because the first and second vessel for the dredged materials are broadly defined and the method of creating and moving the additive slurry from the first to second vessel appear not to be defined over the prior art.*

Id. (emphasis added). Thereafter, the patent applicant submitted a final amendment of claims on April 23, 2001. Id. at A240-53. In response to the Patent Examiner's interview comments, the patent applicant redefined "first vessel" as "containment receptacle" and "second vessel" as "mixing container." Id. at A228. In arguing for patentability, the applicant emphasized that "[a]n additive slurry is created in a mixing container which is separate from the containment receptacle." Id. at A244. This language makes clear that the applicant disavowed any claim construction inconsistent with the mixing container existing separate and apart from the containment receptacle. The patent applicant confirmed this disavowal in his repeated argument that "[t]he pending amended claims require the steps of creating an additive slurry in a mixing container and pumping the additive slurry from the mixing container to a mixing assembly disposed within the containment receptacle." Id. at A242-43. Ultimately, the amended claims issued as the claims of the '731 Patent.

Plaintiff mischaracterizes the prosecution history to suggest that the claim terms do not require the mixing container and containment receptacle to be separate vessels. Plaintiff interprets the Patent Examiner's April 9, 2001 interview summary as concluding that creating an additive slurry in a separate vessel and moving it to a first vessel was not a patentable method. This is not accurate. The interview summary rejects the amendments because "the first and second vessel . . . are broadly defined and the method of creating and moving the additive slurry from the first to second vessel appear not to be defined over the prior art." Id. at A228. The Patent Examiner rejected the amendments because the *method* of moving additive slurry from one vessel to another was not defined over the prior art, not because it required the use of two separate vessels. Indeed, when the applicant submitted revised amendments on April 23, 2001 more narrowly defining one

vessel as a "containment receptacle" and the second as a "mixing container," the Patent Examiner accepted the modifications and issued the patent.

Furthermore, the Court disagrees with Plaintiff's assertion that a separate mixing container is only a preferred embodiment. Plaintiff cites the following statement made by the patent applicant in response to the Patent Examiner's April 9, 2001 interview:

> *In the preferred embodiment of the present invention, the containment receptacle is shown to be a barge of* [sic] *scow.* The dredged material deposited into the containment receptacle remains therein during the step of removing the free water from the dredged material. An additive slurry is created in a mixing container which is separate from the containment receptacle. The additive slurry is pumped from the mixing container to a mixing assembly which is disposed within the containment receptacle to mix the dredged material with the additive slurry to form a substantially homogenous mixture.

(DX 4 at A243-44) (emphasis added). However, the preferred embodiment discussed above refers to a containment receptacle taking the form of a barge or scow, not whether the containment receptacle exists separately from the mixing container. Plaintiff's interpretation of the prosecution history stretches the plain meaning of the term. Accordingly, the Court upholds Defendant's construction of "mixing container" as an accurate reflection of the patentee's intent.

7. Pumping

Claim 1 of the '731 Patent contains the step of "pumping the additive slurry from the mixing container to a mixing assembly disposed within the containment receptacle . . . ." (PX 1 at A18, col. 10, lines 24-26). The parties dispute the meaning of "pumping." Plaintiff argues that the term means mechanically transferring, conveying, or moving. (Pl.'s Brief at 51). Defendant defines "pumping" as transferring a watery mixture by a pump. (Def.'s Brief at 26). Defendant also interprets the entire element as requiring the slurry to be pumped *directly* to the mixing assembly. Id. at 28-29 (emphasis added). Plaintiff opposes this limitation.

Defendant's construction of the term "pumping" as requiring an actual pump is supported by the plain language of the patent and the accompanying specification. The specification teaches that "[t]he additives may be combined in a mixer **66** to form a slurry *that is pumped through supply lines* **68** *via pump* **70** directly to the mixing assembly **56**." (DX 1 at A16, col. 6, lines 52-55) (emphasis added). The specification states further that "[d]uring the treatment process, a slurry of additives may be pumped into the dredged materials **28** as the mixing assembly **56** rotates, thereby transforming the dredged materials **28** into a homogenous mixture **60**." Id. at A16, col. 6, lines 15-18. This language establishes that the pumping action must occur via a pump and not some other device.

Plaintiff argues that a pump is merely a preferred method of pumping. Accordingly, Plaintiff cites specification language that states "additives *may* be combined in a mixer **66** to form a slurry

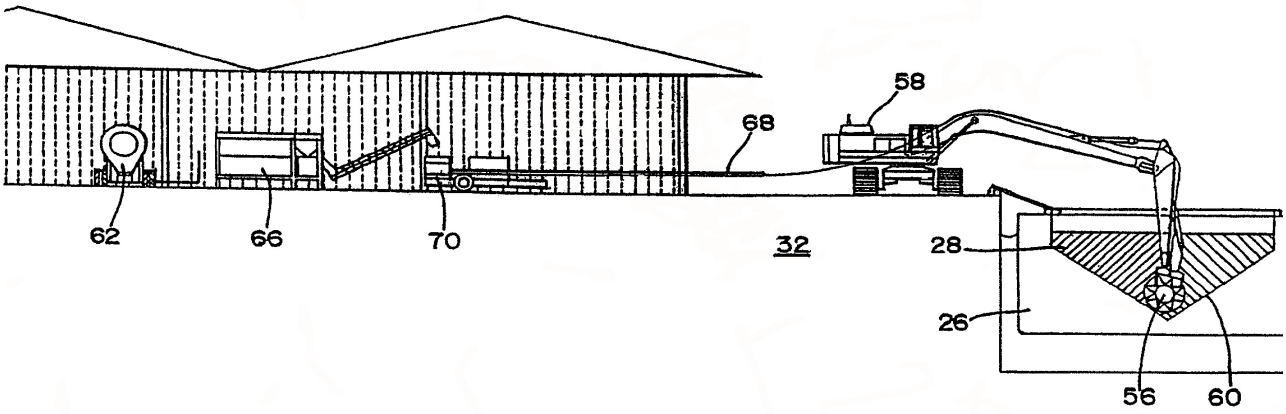
that is pumped through supply lines **68** via pump **70** . . . ." Id. at A16, col. 6, lines 52-54 (emphasis added). However, the claim does not recite the step of moving the additive slurry by pneumatic transfer or conveyor but instead plainly recites "pumping." The Court also reads the word "may" as referring to combining additives in a mixer, not of pumping slurry via pump. There is no indication here that the patentee intended this language to make a pump a preferred embodiment rather than a required mechanism. Plaintiff goes on to cite specification language stating: "[i]t will be understood by one skilled in the art that other methods for the transfer of dry additives . . . directly to the mixing assembly **56**, such as pneumatic transfer or via a conveyor, *may* also be used without departing from the principles of the present invention." Id. at A16, col. 6, lines 58-62 (emphasis added). Plaintiff also points to Figure 2 of the '731 Patent specification as showing that an additive slurry may be formed in a mixer **66**, then pumped through a supply line **68** using a pump to the mixing assembly **58**, or, alternatively, that a dry additive may be transferred to the mixing assembly **56**. (Pl.'s Brief at 52). According to Plaintiff, this figure and its accompanying description in the patent specification indicate that the material to be pumped could be either a dry additive or an additive slurry. Id. Thus, the pumping action need not occur by means of an actual pump, which only moves wet material. See id. The Court observes that the language Plaintiff cites above relates to means of moving dry additives, such as by pneumatic transfer or conveyor. Claim 1 of the '731 Patent does not cover such methods because it is directed to an "additive slurry," not "dry additives." Therefore, Plaintiff has stretched the meaning of "pumping" beyond its ordinary meaning, and the Court cannot accept its overly broad interpretation of the term.

The '731 Patent prosecution history substantiates Defendant's interpretation of the term. The patent did not include the "pumping" limitation until the final amendment of the claims. The patentee added the term in response to the Patent Examiner's rejection of the term "moving" during the April 9, 2001 interview. (See DX 4 at A246). Specifically, the patent applicant first proposed "moving the additive slurry from the second vessel to the first vessel." Id. at A234. After the Patent Examiner rejected this language as not defined over prior art, the applicant replaced "moving" with "pumping" in order to narrow the term. Id. at A246. On three separate occasions in his remarks accompanying the amendment, the patent applicant distinguished the claimed invention from the cited prior art by stating: "[t]he pending amended claims require . . . *pumping* the additive slurry from the mixing container to a mixing assembly disposed within the containment receptacle." Id. at A242-44 (emphasis added). In so doing, the applicant surrendered any method of moving the additive slurry other than by pumping.

The Court also agrees with Defendant that the slurry must be pumped *directly* to the mixing assembly. In the informal amendments the patent applicant submitted to the Patent Examiner prior to the April 9, 2001 interview, the applicant proposed the element of "*moving* the additive slurry from the second vessel *to the first vessel*." (DX 4 at A234) (emphasis added). The final amendment modified the phrase to state "*pumping* the additive slurry from the mixing container *to a mixing assembly* disposed within the containment receptacle . . . ." Id. at A250 (emphasis added). The applicant made the change in response to the Patent Examiner's objection that the method of moving and creating the slurry were not defined over prior art. See id. at A228. By this amendment, the applicant disavowed simply depositing the slurry into the containment receptacle and adopted a specific method and destination for the slurry: "pumping" and "mixing assembly" respectively. If the applicant had not intended for the slurry to be pumped directly to the mixing assembly, he could

have claimed the process of pumping the additive slurry to the containment receptacle. Instead, the applicant chose to narrow the claims in order to gain their issuance. Indeed, the patent specification states that the additive slurry "is pumped through supply lines **68** via pump **70** directly to the mixing assembly **56**." (DX 1 at A16, col. 6, lines 53-55). Figures 2, 5, 7, and 8 also show a supply line **68** running from the mixing container **66**, to the mixing apparatus **58**, and down the arm of the mixing apparatus to the mixing assembly **56**. Id. at A4, A7, A9, A20. Based upon the foregoing, the Court agrees with Defendant that the additive slurry must be pumped directly to a mixing assembly. Figure 5 is depicted below:

FIG.5



8. Mixing Assembly

The parties dispute the meaning of "mixing assembly" as used in claim 1 of the '731 Patent. This term appears in the element discussed above, which recites the step of "pumping the additive slurry from the mixing container to a mixing assembly disposed within the containment receptacle . . . ." Id. at A18, col. 10, lines 24-26. Plaintiff argues that the term refers to any apparatus capable of mixing and does not limit its location. (Pl.'s Brief at 54). Defendant defines "mixing assembly" as a device for mixing the additive slurry into the dredged materials, the mixing assembly positioned within the containment receptacle. (Def.'s Brief at 27).

While the Court does not see any material difference in the parties' construction, it finds that Defendant's interpretation more closely reflects the plain language of the patent. The primary difference between the two definitions is that Defendant's requires the mixing assembly to sit inside the containment receptacle and Plaintiff's does not. The plain language of the element describes a "mixing assembly disposed within the containment receptacle . . . ." (PX 1 at A18, col. 10, lines 25-26). Defendant's proposed definition gives meaning to all of the terms in the element. Plaintiff even concedes that "[t]o the extent that the mixing assembly is disposed within the container receptacle, TDM's claim term construction that the mixing assembly is placed in the containment receptacle does not appear at issue." (Pl.'s Reply Brief at 25). Accordingly, the Court adopts Defendant's interpretation of "mixing assembly."

9. Substantially Homogenous Material

Claim 1 of the '731 Patent contains the step of "mixing the additive slurry into the dredged material to form a substantially homogenous mixture . . . ." (PX 1 at A18, col. 10, lines 27-28). The parties dispute the meaning of "substantially homogenous mixture." Plaintiff defines the element in its entirety as combining or blending the additive slurry with the dredged material to form a mixture that is more consistent and uniform than it was before mixing. (Pl.'s Brief at 54). According to Plaintiff, the '731 Patent specification does not require any specific degree or amount of mixing under the claims. Id. Defendant argues that "substantially homogenous mixture" means a mixture in which additive slurry is uniformly distributed throughout the dredged material. (Def.'s Brief at 29).

The Court agrees with Defendant's definition requiring uniform distribution of the additive slurry. The patent specification explains that "a slurry of additives may be pumped into the dredged materials **28** as the mixing assembly **56** rotates, thereby transforming the dredged materials into **28** a homogenous mixture **60**." (PX 1 at A16, col. 6, lines 16-19). The specification goes on to disclose two benefits of creating an additive slurry: "promot[ing] uniform mixing and . . . reduc[ing] the potential for particulate emissions." Id. at A16, col. 6, lines 56-57. Thus, the purpose and function of the claimed invention support Defendant's interpretation. The specification later explains that:

> in order to beneficially re-use the dredged materials **28**, additives such as Portland Cement are blended thoroughly into the dredged materials **28** to form a substantially homogenous materials **69** [sic]. This treatment process chemically and physically alters, through fixation, solidification

> and stabilization, the finer elements of the dredged material **28** so that, upon hydration, the material **69** gains structural strength . . . .

Id. at A17, col. 8, line 65-A18, col. 9, line 5. This disclosure make clear that the "substantially homogenous mixture" results from the uniform mixing and thorough blending of the additive slurry and dredged material. Plaintiff's construction does not require the additive slurry to be thoroughly blended with the dredged material so long as the distribution becomes incrementally more uniform from mixing. This interpretation essentially vitiates the term "substantially" by requiring only a minimal improvement in uniformity of the mixture. If the Court were to adopt Plaintiff's definition, mixing of the additive might increase its distribution but fail to achieve the goal of chemically and physically altering the dredged material as a whole.

10. Curing

Claim 1 of the '731 Patent contains the step of "curing the substantially homogenous mixture in the containment receptacle, thereby producing a structural fill material and reducing particulate emissions." Id. at A18, col. 10, lines 29-31. The parties dispute the term "curing." Plaintiff argues that the term means simply allowing enough time for the mixture to solidify and stabilize. (Pl.'s Brief at 55). Defendant contends that it means allowing for chemical fixation, stabilization and solidification reactions, caused by the additive slurry, to occur. (Def.'s Brief at 30).

The Court adopts Plaintiff's construction of the term because it more clearly reflects the language in the patent specification. The patent specification states:

> Mixing of the additives into the dredged material is accomplished using a mixing assembly which may have horizontal or vertical mixing systems. Thereafter, the curing process effectively completes the dewatering of the dredged materials . . . and creates a highly impermeable structural fill material which may be used as a cap for a landfill, as the site for the construction of a building or as a paving material for parking lots, airfield construction, road base or other Department of Transportation projects.

(PX 1 at A14, col. 2, line 62-A15, col. 3, line 5). This language merely describes the intended goal of the curing process, which is to produce a structural fill material and reduce particulate emissions. Nothing in the specification limits the result of curing to chemical fixation, stabilization, and solidification reactions, as Defendant suggests. Indeed, Defendant's interpretation of the patent specification impermissibly reads a limitation into the claim. Defendant emphasizes that the '731 Patent Abstract describes the invention as a "method for treating materials" to "stabilize the dredged materials by chemical fixation and solidification to form the structural fill." Id. at A2. However, the language actually discloses "[a] method for treating materials dredged from a waterway, such as a harbor or channel, and forming a mixture suitable for beneficial re-use as a structural fill." Id. The Abstract only discusses chemical fixation and solidification in the context of the fixation, stabilization and solidification stage, which is separate and distinct from the curing stage. See id. Next, Defendant offers as support for its construction language in the specification stating that "[t]he fixation, stabilization and solidification process . . . physically and chemically transforms the dredged

materials into a structural fill . . . ." Id. at A15, col. 3, lines 13-15. Once again, this statement indicates that the fixation, stabilization and solidification process, not the curing process, requires physical or chemical transformation to occur. The Court will not impute limitations on the definition of "curing" where the patentee did not so intend.

Defendant claims that the prosecution history supports its case. According to Defendant, the prosecution history dictates the method of "chemical fixation" because the patent applicant distinguished his use of the term "curing" from the Kapland Patent's use of "basifying" by arguing that "curing" is "the technical term for perfecting through chemical change." (DX 4 at A210). Defendant also cites language in the applicant's statement stating that "[f]urther demonstrating that the '121 [Kapland] patent is not a chemical reaction is *the absence of any mention of solving the problem of the fines of the dredged materials drying out and blowing away as dust*." Id. (emphasis added). The Court reads this prosecution history as distinguishing "curing" from "basifying," not as surrendering or disavowing any subject matter. The patentee made no statement to indicate otherwise. Therefore, the Court adopts Plaintiff's construction of the term "curing."

11. Structural Fill Material

The final term of the '731 Patent in dispute is "structural fill material," which appears in the preamble and final step of the claim. Plaintiff asserts that it means fill material that may be used as: (1) a cap for a landfill; (2) the site for the construction of a building; (3) paving material for parking lots, airfield construction, road base or other Department of Transportation Projects; (4) material suitable for beneficial reuse as an engineered structural fill material; (5) a liner protective cover; (6) a daily cover or final cover over a landfill; (7) strip mine reclamation; (8) a cap for Brownfield property or in another environmental remediation plan; (9) beach nourishment; (10) habitat development projects; (11) other beneficial uses; or (12) other uses requiring the use of structural fill. (Pl.'s Brief at 56).

Defendant contends that the term means a soil-like material suitable for beneficial reuse, with improved structural or compressive strength and reduced wind-borne fugitive dust emissions. (Def's Brief at 18). Defendant offers several provisions in the patent specification in support of its argument that a "structural fill material" must have an improved structural strength and reduced windborne fugitive dust emissions. First, the specification states that the invention "relates . . . in particular to, a method for processing the dredged materials to form a mixture suitable for a beneficial re-use as a structural fill material." (DX 1 at A14, col. 1, lines 11-15). The specification elaborates that:

> This treatment process chemically and physically alters, through fixation, solidification and stabilization, the finer elements of the dredged material **28** so that, upon hydration, the material **69** gains structural strength and a soil-like material while minimizing the likelihood of wind-born fugitive dust emissions.

Id. at A18, col. 9, lines 1-6. In Defendant's view, this language demonstrates that the claimed method creates an end-product with improved structural strength and minimized dust emissions as

a result of curing the substantially homogenous mixture. Finally, Defendant maintains that the prosecution history shows that the patent applicant surrendered any construction of "structural fill material" that did not have these two properties. The patent applicant distinguished the proposed claim over prior art by explaining that "[t]he resulting material [from Miyoshi] has a compressive strength significantly less than that disclosed by the Applicant." (DX 4 at A182). He also referenced the Kapland Patent's lack of "any mention of solving the problem of the fines of the dredged materials drying out and blowing away as dust." Id. at A210.

The Court agrees with Plaintiff that the term "structural fill material" is not limited to a soil-like material suitable for beneficial reuse. The patent specification itself describes a myriad of uses for structural fill material, including all of those listed by Plaintiff in its proposed definition. (PX 1 at A15, col. 3, lines 1-5; A18, col. 9, lines 57-67). Nothing in the specification language Defendant cites above *requires* a structural fill material to have improved structural or compressive strength and reduce wind-borne fugitive dust emissions. On the contrary, it merely describes the *purpose* of the invention as a whole: to form a mixture suitable for a beneficial reuse as a structural fill material. The patentee has not made a clear and unmistakable disavowal or intentional disclaimer of the term. Accordingly, the Court will not read a limitation into the claim absent the patentee's intent. Tx. Instruments Inc., 988 F.2d at 1171 (citation omitted).

Finally, Defendant attempts to narrow the meaning of the last step in the '731 Patent process as a whole beyond the plain meaning of the claim. The step recites as follows: "curing the substantially homogenous mixture in the containment receptacle, *thereby* producing a structural fill material and reducing particulate emissions." (PX 1 at A18, col. 10, lines 29-31) (emphasis added). Defendant argues that the element's use of the word "thereby" in conjunction with the curing step confirms that the act of curing is what yields structural fill and reduced particulate emissions. (Def.'s Brief at 32). Plaintiff objects to this reading and asserts that the use of the word "thereby" merely explains that producing a structural fill material and reducing particulate emissions occur as a result of the entire patented process, not the curing step alone. (Pl.'s Reply Brief at 29). The Court agrees with Plaintiff that the curing step is not limited by the requirement that it produce a structural fill material and reduce particulate emissions. The patent specification describes these twin results in the context of the dredging process as a whole. For example, the specification states that additives are introduced into the dredged material in the form of a slurry to reduce the potential for particulate emissions; dredged materials are not moved from the containment receptacle to reduce particulate emissions; and the mixing of additives is necessary to obtain a structural fill. (PX 1 at A15, col. 3, lines 6-8; A16, col. 6, lines 55-57, 63-66). For this reason, the Court will not infer limiting language into the curing step of claim 1.

## Conclusion

The Court has interpreted in this decision the disputed terms of the '614, '862, and '731 Patents. Counsel for the parties are requested to submit a joint status report to the Court on or before March 13, 2009 providing a proposed schedule for further proceedings.

IT IS SO ORDERED.

s/ Thomas C. Wheeler
THOMAS C. WHEELER
Judge