

Helping Consultants Understand and Navigate the Complexity of Patent and Royalty issues: How Transitioning Ideas and Discoveries from Environmental Field Applications and Experiences into Defendable Patents May Expose Consultants and Their Clients to Infringement Litigation

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What is a Patent?

A patent is an exclusive right granted for an invention – a product or process that provides a new way of doing something, or that offers a new technical solution to a problem. A patent provides patent owners with protection for their inventions. Protection is granted for a limited period, generally 20 years.



Mr. Doug Ryder



Mr. Ryder's patent prosecution experience covers a vast array of technical fields including electrical, mechanical, computer, software, business method, Internet, video, telecommunications, semiconductors and environmental chemistry.

Successfully defended and filed both ex parte and inter parte reviews on behalf of IET.

Ex parte Review Statistics since 7/1981 (as of 12/2018):

Total ex parte reexamination certificates issued (1981 – present) – 10979

| | | |
|---|------|-----|
| a. Certificates with all claims confirmed | 2337 | 21% |
| b. Certificates with all claims canceled | 1339 | 12% |
| c. Certificates with claims changes | 7303 | 67% |

38 year Average = 227/yr total reexamine certificates issued upholding the claims either in totality or with changes.

BAR and COURT ADMISSIONS

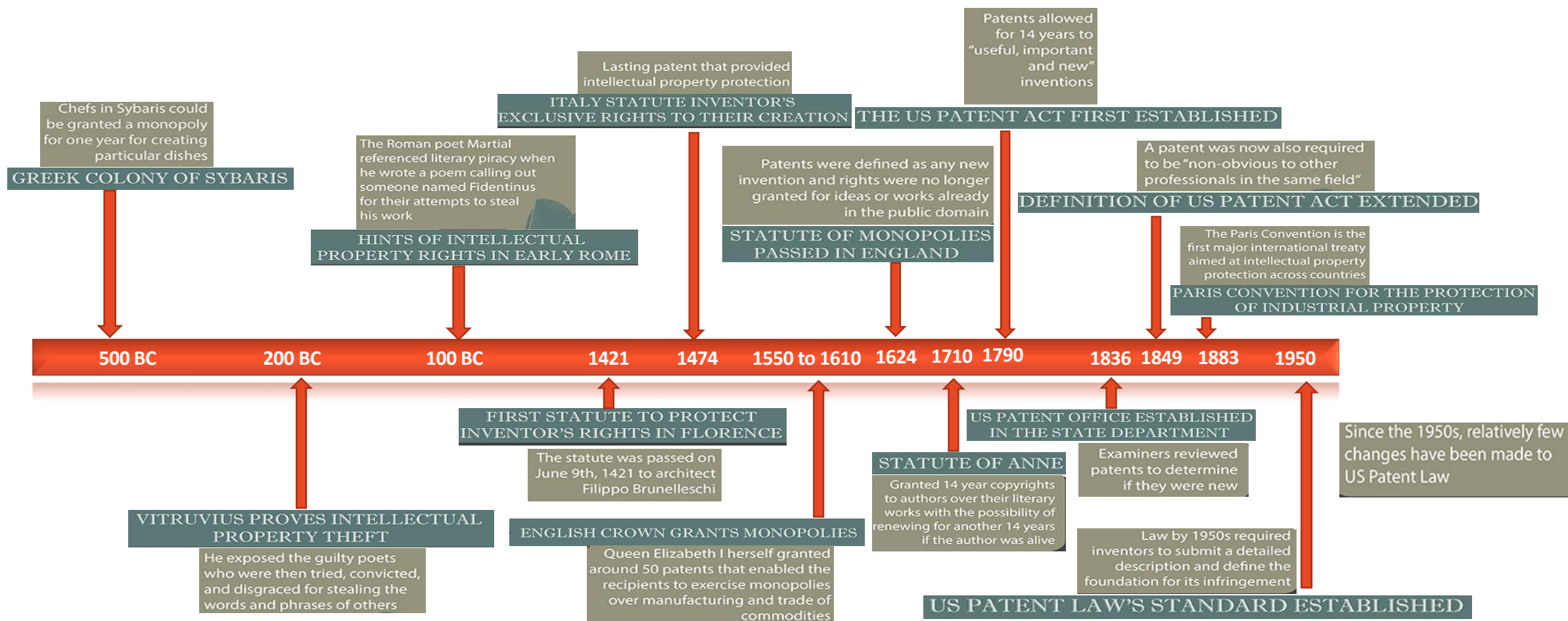
- U.S. District Court, Eastern District of Pennsylvania
- United States Patent and Trademark Office, 1998
- Pennsylvania, 2001
- Maryland, 1997

EDUCATION

- University of Maryland Law School, Juris Doctor, 1996
- George Washington University, Masters of Engineering Management, 1992
- Drexel University, Bachelor of Science in Electrical Engineering, 1989

Doug has graciously agreed to participate in today's presentation and answer any questions from the audience.

Food → Literature → Art → Discovery



Historical Perspective on Intellectual Property



The concept for U.S. patents was established by the founding fathers in **Article I, Section 8 of the original U.S. Constitution** that was adopted in 1787.

It gives Congress the power to "**promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.**"

Since patents were included in the original version of the U.S. Constitution, **patent rights are actually older than such other basic American rights, such as freedom of the press and freedom of speech** -- rights that were not established until the adoption of the Bill of Rights (the first 10 amendments to the Constitution) in 1791, 14 years later.

A U.S. patent is a **limited monopoly** granted to an inventor by the federal government for his or her invention. A patent gives the patent owner (or "patentee") the right to exclude others from using his patented invention without his or her permission.

What is Intellectual Property?

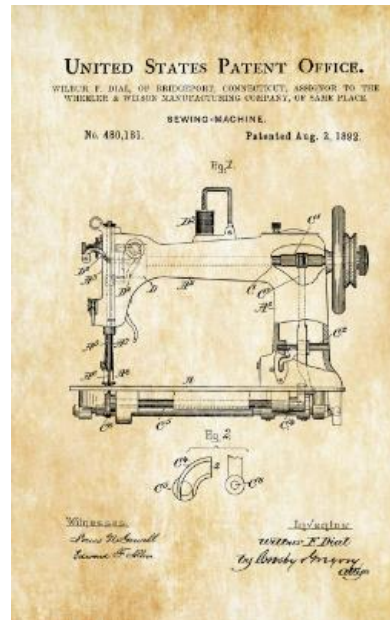
Intellectual property refers to creations of the mind: inventions; literary and artistic works; and symbols, names and images used in commerce. Intellectual property is divided into two categories:

Industrial (Intellectual) Property includes patents for inventions, trademarks, industrial designs and geographical indications.

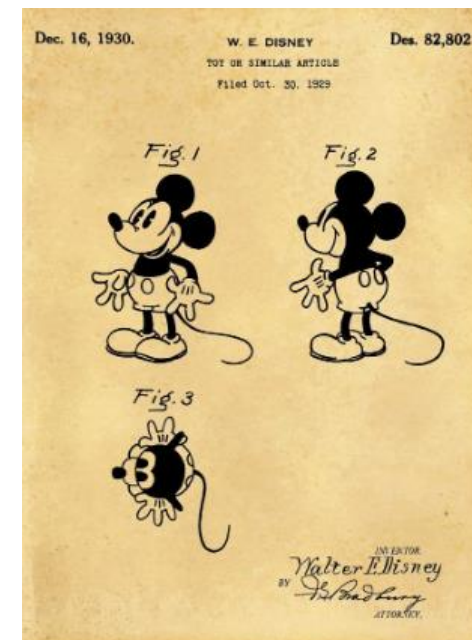
Utility Patent covers the creation of a new or improved—and useful—product, process, or machine. A **utility patent**, also known as a “**patent for invention**,” prohibits other individuals or companies from making, using, or selling the invention without authorization.

Method Patents (type of utility patent) generally are about intangibles. The rights afforded by patents do not attach to any particular, physical embodiment of the invention. Instead, the inventor describes the invention within the patent document itself. It is this written description and the attendant claims that govern what the patent holder’s exclusive rights cover.

Copyright covers literary works (such as novels, poems and plays), films, music, artistic works (e.g., drawings, paintings, photographs and sculptures) and architectural design. Rights related to copyright include those of performing artists in their performances, producers of phonograms in their recordings, and broadcasters in their radio and television programs.



VS.





Costs Associated with a Patent: \$30,000 to \$50,000

Provisional Patent Application: A provisional patent application typically costs between \$5,000 and \$9,000 to develop the idea and have the application prepared.

Professional Patent Search: A patent search lets inventors know if their ideas are unique enough and worth spending time and money to develop. The cost of the search depends on the complexity. A moderately complex invention will cost between \$2,000.00 and \$5,000.00.

Non-provisional patent application based off provisional filing: \$10,500 to \$20,000.00 including legal and filing fees.

Professional Drawings: Sometimes it is required to utilize a professional draftsmen to prepare drawings and this will raise an application's cost by approximately between \$500 and \$1,500.

Prosecution of the Application: Almost all patent applications will be rejected at least once after they're filed. The Examiner and the attorney exchange office actions and responses in an attempt to get the patent application allowed. The claims of the patent may be amended during this phase as long as there is support for the amendments in the specification. Prosecution costs can range from \$4,000.00 to \$10,000.00 with the costs increasing based on the amount of back and forth with the Examiner.

Issue Fee: Once the application is allowed the applicant needs to pay an issue fee - currently \$1000 (or \$500 for small entity)

Maintenance Fees: Maintenance fees are paid every few years to maintain the issued patent: currently 3 1/2 years after issue \$1,600 (\$800 small entity), 7 1/2 years after issue \$3,600 (\$1,800 small entity), 11 ½ years after issue \$7,400 (\$3,700 small entity)

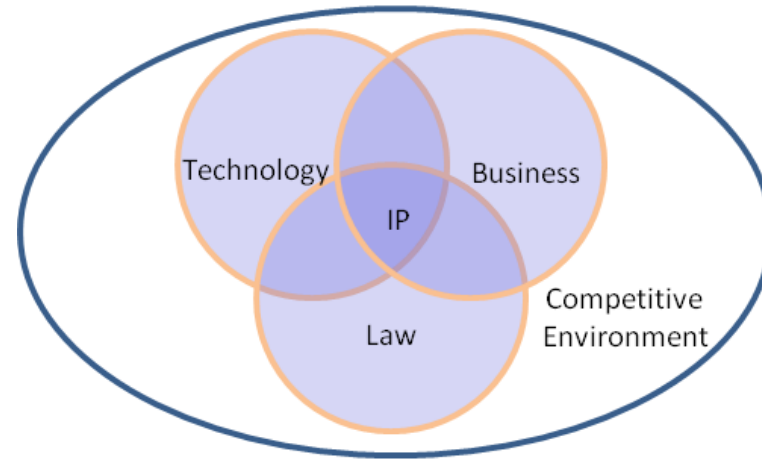
PAT. NO.

Title

| | |
|-------------------|---|
| 10,219,518 | Inhibition of methanogenesis to control wood boring insects and pestilence |
| 9,637,731 | Heavy metal stabilization and methane inhibition during induced or naturally occurring reducing conditions in contaminated media |
| 9,427,786 | Chemical oxidation and biological attenuation process for the treatment of contaminated media |
| 9,221,699 | Inhibition of methane production during anaerobic reductive dechlorination |
| 9,126,245 | Chemical oxidation and biological attenuation process for the treatment of contaminated media |
| 9,126,244 | Use of encapsulated substrates that control the release rates of organic hydrogen donors |
| 8,766,030 | Utilization of ferric ammonium citrate for in situ remediation of chlorinated solvents |
| 8,147,694 | Method for the treatment of ground water and soils using mixtures of seaweed and kelp |
| 7,828,974 | Method for the treatment of ground water and soils using dried algae and other dried mixtures |
| 7,531,709 | Method for accelerated dechlorination of matter |
| 7,129,388 | Method for accelerated dechlorination of matter |
| 7,044,152 | Apparatus for in-situ remediation using a closed delivery system |

12 Issued Patents – 4 Pending Patents

What is Intellectual Property Infringement?

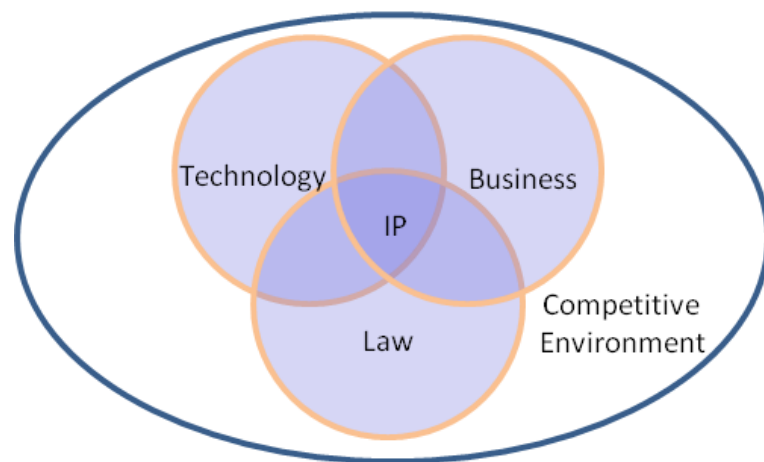


Receiving a patent doesn't give the patent holder complete protection against infringement.

When a patent is threatened, patent holders must take more drastic measures to protect their interests. Patent litigation includes legal actions, and may result in monetary damages or an injunction against the infringement.

Patent holders must bring infringement within six (6) years from the date of infringement; if the suit is not brought in this time limit, it is time-barred, ratifying the infringement. While patent litigation proceeds much like any other federal case, the complicated legal issues surrounding patent validity and infringement are reserved for the court's determination, although some patent litigation cases use juries for other aspects of the overall case.

The value of a patent is directly proportional to the vigilance the patent owner takes in enforcing it.



What is Intellectual Property Infringement?

Patent Infringement:

Selling, offering to sell, using, or manufacturing a patented product without the owner's permission (by license, waiver, or other contract) can constitute infringement and expose the unauthorized seller/user/manufacturer to liability, even if the infringement was unintentional.

Direct Infringement:

Actively engaging in a prohibited use of someone else's patented property.

Induced Infringement:

Actively inducing someone to make prohibited use of someone else's patented property.

Contributory Infringement:

Contributing to the unauthorized use of someone else's patented property can also constitute infringement under patent law.

The Company

The Corporate Officer(s)

The Customer

In the usual patent infringement case, a patent owner sues a company for patent infringement. Sometimes individuals, particularly corporate officers, are named as co-defendants with their company. Generally, the "corporate veil" shields corporate officers from liability for tortious conduct, such as patent infringement, occurring in the regular course of their employment.

The exception occurs. When the corporate officer actively aids and abets in the patent infringement committed by the corporation the corporate officer may be found personally liable for inducing infringement, even if the corporation is not the alter ego of the corporate officer. The patent infringement statute, 35 U.S.C. 271, provides for liability both for direct infringement and for indirect infringement (active inducement or contributory infringement). A corporate officer may be found personally liable as a direct infringer only if the corporate veil is pierced. In comparison, a corporate officer may be found personally liable as an indirect infringer if sufficient evidence of personal culpability is shown.

Patent owners can sue anyone up and down the chain of distribution for infringement of patent. Manufacturers, distributors and end users are all possible litigants. For example, the end user can be sued for using the patented invention. The distributor can be sued for selling the patented invention. The manufacturer can be sued for making and selling the patented invention. Not only can the manufacturer and distributor be sued for direct patent infringement, as discussed above, they can also be sued for indirect patent infringement if they induce another (e.g., end user) to infringe or contribute to the infringement of another by providing a key part of a larger, patented invention.

A customer of the manufacturing infringer who uses the infringing product also directly infringes under the using clause.' Under the selling clause, a customer who resells the infringing product is also a direct infringer. Furthermore, a patent that includes component and system claims or combination and subcombination claims can be directly infringed by both the competitor who sells the component and its customer who uses the component.

Section 271(c) defines the tort of contributory infringement." Contributory infringement requires the sale of a component of a patented machine, combination or composition, or a material or apparatus for use in practicing a patented process, which constitutes a material part of the invention." However, for this activity to constitute contributory infringement, the contributory infringer must know that the component, material or apparatus is specially made or adapted for use in a patent-infringing process."



Make sure you do not sign a services agreement that has you or your company representing or warranting that your deliverables will be “free from infringing the rights of third-parties” (especially patents), unless your client or customer is willing to conduct the appropriate patent search before giving you the specifications. Never sign an agreement with an indemnity clause indicating you’ll hold your customer or client harmless for any third-party cause of action for a patent infringement dispute.

Example: US Patent 7,531,709

US007531709B2

(12) **United States Patent**
Scalzi et al.

(10) **Patent No.:** **US 7,531,709 B2**
(45) **Date of Patent:** ***May 12, 2009**

(54) **METHOD FOR ACCELERATED DECHLORINATION OF MATTER**

(75) Inventors: **Michael Scalzi**, Doylestown, PA (US);
Wade Meese, Worthington, OH (US)

(73) Assignee: **Innovative Environmental Technologies, Inc.**, Doylestown, PA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 241 days.
This patent is subject to a terminal disclaimer.

(21) Appl. No.: **11/423,749**

(22) Filed: **Jun. 13, 2006**

(65) **Prior Publication Data**
US 2006/0223162 A1 Oct. 5, 2006

Related U.S. Application Data

(63) Continuation of application No. 10/610,558, filed on Jul. 2, 2003, now Pat. No. 7,129,388.

(60) Provisional application No. 60/437,983, filed on Jan. 6, 2003.

(51) **Int. Cl.** **A62D 3/00** (2007.01)

(52) **U.S. CL.** **588/316**; 588/406; 588/415

(58) **Field of Classification Search** **588/313**, 588/315, 316, 318, 319, 320, 402, 406, 415, 588/261; 423/240 R, 240 S
See application file for complete search history.

(56) **References Cited**
U.S. PATENT DOCUMENTS
494,061 A 3/1893 Day
1,929,659 A 10/1933 Trumble et al.
2,462,674 A 11/1944 Spangler et al.
2,421,765 A 6/1947 Taylor
2,424,440 A 7/1947 Duffy

2,617,765 A 11/1952 Swarr
2,966,921 A 1/1961 Whiteman
3,486,297 A 12/1969 Eisenga et al.
3,805,819 A 4/1974 Titer
4,488,850 A 12/1984 Worthington
5,264,018 A 11/1993 Koenigsberg et al.
5,277,815 A 1/1994 Boemm
5,411,664 A 5/1995 Seuch et al.
5,602,296 A 2/1997 Hughes et al.
5,833,855 A 11/1998 Saunders
5,975,798 A 11/1999 Lisowski et al.
6,068,777 A 5/2000 Kimura et al.
6,150,157 A 11/2000 Kestling et al.
6,238,579 B1 5/2001 Sivace
6,245,235 B1 6/2001 Perrella
6,255,551 B1 7/2001 Shapiro et al.
6,265,205 B1 7/2001 Hichens et al.
6,303,367 B1 10/2001 Kasaka et al.
6,312,605 B1 11/2001 Kerfoot
6,344,355 B1 2/2002 Hince et al.
6,430,594 B1 7/2002 Tameo et al.
6,464,064 B2 10/2002 Sivace
6,472,198 B1 10/2002 Sempini et al.
7,129,388 B2* 10/2006 Scalzi et al. 588/316
* cited by examiner

Primary Examiner—Edward M. Johnson
(74) Attorney, Agent, or Firm—Gregory J. Gore

(57) **ABSTRACT**
Accelerated dechlorination of soil and water contaminated with chlorinated solvents is achieved by stimulating anaerobic microorganisms and thus increasing the rate of biological mineralization of the solvents. This is accomplished by a treatment process consisting of colloidal suspension of metal powder, an organic hydrogen donor, chemical oxygen scavengers in solution with essential nutrients, and vitamin stimulants such as B2 and B12 delivered via compressed gases N or CO2 so as not to oxygenate an environment targeted for anaerobic processes. The treatment stimulates naturally occurring microorganisms while oxidizing dissolved phase target compounds via the surface action of the iron particles resulting in the breakdown of chlorinated solvents such as tetrachloroethene, trichloroethene, carbon tetrachloride and their daughter products.

16 Claims, 1 Drawing Sheet

US007531709C1

(12) **EX PARTE REEXAMINATION CERTIFICATE** (11348th)
United States Patent
Scalzi et al.

(10) **Number:** **US 7,531,709 C1**
(45) **Certificate Issued:** ***Jul. 16, 2018**

(54) **METHOD FOR ACCELERATED DECHLORINATION OF MATTER**

(75) Inventors: **Michael Scalzi**, Doylestown, PA (US);
Wade Meese, Worthington, OH (US)

(73) Assignee: **INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.**, Pipersville, PA (US)

Reexamination Request:
No. 90/013,999, Aug. 18, 2017

Reexamination Certificate for:
Patent No.: **7,531,709**
Issued: **May 12, 2009**
Appl. No.: **11/423,749**
Filed: **Jun. 13, 2006**

(*) Notice: This patent is subject to a terminal disclaimer.

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(51) **Int. Cl.** **A62D 3/00** (2006.01)
B09C 1/10 (2006.01)
B09C 1/08 (2006.01)

(52) **U.S. CL.** **B09C 1/10** (2013.01); **B09C 1/08** (2013.01); **B09C 2101/00** (2013.01)

(58) **Field of Classification Search**
None
See application file for complete search history.

(56) **References Cited**
To view the complete listing of prior art documents cited during the proceeding for Reexamination Control Number 90/013,999, please refer to the USPTO's public Patent Application Information Retrieval (PAIR) system under the Display References tab.

Primary Examiner—Elizabeth McKane

(57) **ABSTRACT**
Accelerated dechlorination of soil and water contaminated with chlorinated solvents is achieved by stimulating anaerobic microorganisms and thus increasing the rate of biological mineralization of the solvents. This is accomplished by a treatment process consisting of colloidal suspension of metal powder, an organic hydrogen donor, chemical oxygen scavengers in solution with essential nutrients, and vitamin stimulants such as B2 and B12 delivered via compressed gases N or CO2 so as not to oxygenate an environment targeted for anaerobic processes. The treatment stimulates naturally occurring microorganisms while oxidizing dissolved phase target compounds via the surface action of the iron particles resulting in the breakdown of chlorinated solvents such as tetrachloroethene, trichloroethene, carbon tetrachloride and their daughter products.

Issued: May 13, 2009
Priority Date: January 6, 2003
Reexamine Certificate Issued July 16, 2018

(57) ABSTRACT

Accelerated dechlorination of soil and water contaminated with chlorinated solvents is achieved by stimulating anaerobic microorganisms and thus increasing the rate of biological mineralization of the solvents. This is accomplished by a treatment process consisting of colloidal suspension of metal powder, an organic hydrogen donor, chemical oxygen scavengers in solution with essential nutrients, and vitamin stimulants such as B2 and B12 delivered via compressed gases N or CO2 so as not to oxygenate an environment targeted for anaerobic processes. The treatment stimulates naturally occurring microorganisms while oxidizing dissolved phase target compounds via the surface action of the iron particles resulting in the breakdown of chlorinated solvents such as tetrachloroethene, trichloroethene, carbon tetrachloride and their daughter products.

Reexamine Text

1. A method for accelerated anaerobic dechlorination of subsoil [matter], comprising the steps of:

supplying a mixture including a zero valent metal into [soil] *permeable pathways in the subsoil that chlorinated solvents have migrated to in order to* [biologically react with the] *reduce concentrations of dissolved chlorinated solvents in [the] groundwater via chemical reactions with a surface of the zero valent metal providing a hydrogen source via hydrolysis of the groundwater at the surface of the zero valent metal and evolution of hydroxides;* and

supplying an organic hydrogen donor into the [soil] *permeable pathways to provide a hydrogen source via the fermentation of the organic hydrogen donor and produce dechlorinating conditions such that indigenous anaerobic bacteria biodegrade residual concentrations of chlorinated solvents, wherein combined use of the zero valent metal and the organic hydrogen donor together in the permeable pathways accelerate dechlorination of contaminants in the subsoil and dechlorinate intermediates of the chlorinated solvents.*

[] Deleted Text; Italicized is inserted text

ZVI + Organic Hydrogen Donor

9. The method of claim 1 wherein said organic hydrogen donor is from the group consisting of lactate, propionate, chitin, butyrate, acetate, sugars, glycerol tripoly lactate, xylitol pentapoly lactate, and sorbitol hexapoly lactate.

\$\$ Spent in last 5 years defending 709' = \$2,150,000.00

1 License and 5 sublicenses issued

Terms and conditions of licenses vary

– Check with your contractor or the patent owner

- Patent infringement is when a business or individual infringes on a patented invention without the patent holder's permission. A person infringes on a patent when they make, use, sell, or offer to sell patented items.
 - Under the United States Code, you are a direct infringer if you make, use or sell within the United States an invention – whether a device or process – protected by a patent that hasn't expired.
- To avoid infringement, an individual or business who wants to use a product needs a commercial license to use the patented item.
 - If you believe a process or a product may infringe on a patent check with your supplier or vendor. Use indemnification clause in contracts
- You induce infringement by encouraging others to perform acts of direct infringement. For example, assume a patent exists for the use of ZVI and organic hydrogen donor and you issue an RFP for utilization of that technology ('709), then you are guilty of **Induced Infringement**.



709 Licenses

**Confirm with patent owner that
the process and supplier being used
will not incur infringement exposure**

Patent Owner



Exclusive Licensee



EOS Remediation LLC



Sublicensees

