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61/450,609 8 March 2011 (08.03.2011) US(71) Applicant (for all designated States except US): **DIVERSIFIED TECHNOLOGIES SERVICES, INC.** [US/US]; Westbridge Business Park, 2680 Westcott Boulevard, Knoxville, TN 37931-3111 (US).

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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))
- of inventorship (Rule 4.17(iv))

[Continued on next page]

(54) Title: ORGANIC NITRATE EXPLOSIVE TREATMENT SYSTEM

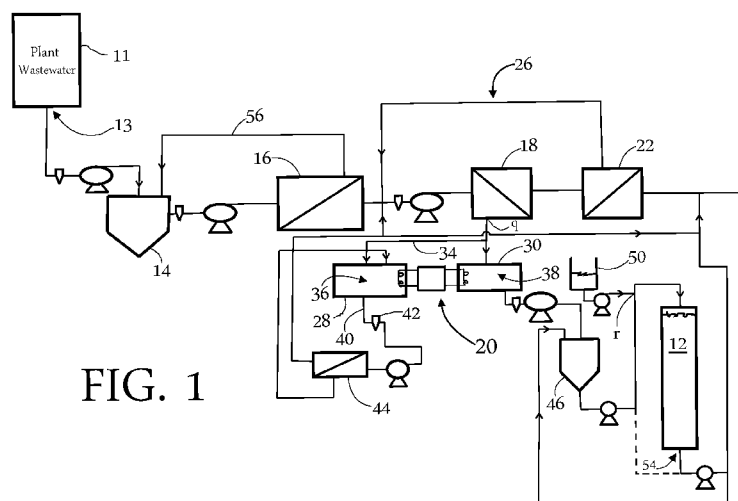


FIG. 1

(57) Abstract: The present Treatment System addresses destruction of general nitrogen based organic (plastic) explosives in wastewater discharge applications and potential recovery of quantities of explosives otherwise lost to the environment. In one embodiment, the invention treats a wastestream or aqueous substance from a plant containing such matter by a process including selective filtration, reverse osmosis, crystallization and continuous retained biological treatment to recover a maximum amount of explosive material from the wastestream or aqueous substance, containing organic nitrate explosive matter and related materials prior to discharge to the environment, or for the purposes of recycle, burning or food for the continuously retained biological subsystem when utilized in the invention. In included aspects of the system filtration sub-process 1, crystallization and filtration subprocess 2 and continuous biotreatment sub-process 3 are employed to resolve the problem of excessive explosive materials being dumped as waste into the environment and treating wastestreams.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - C02F 1/22 (2012.01)

USPC - 210/634

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - B01D 9/02, 9/04, 35/18; C01F 11/36; C02F 1/00, 1/22; G21C 9/00, 19/307, 19/313 (2012.01)

USPC - 62/123, 532; 210/294, 295, 634, 648, 774, 797; 376/306, 310, 312, 313

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

MicroPatent, Google Patents, Public PatFT and AppFT

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 7,127,913 B2 (WITKAMP et al) 31 October 2006 (31.10.2006) entire document	1-5
Y	US 2010/0020915 A1 (BEETS et al) 28 January 2010 (28.01.2010) entire document	1-5
Y	US 4,043,936 A (FRANCIS et al) 23 August 1977 (23.08.1977) entire document	3-5
Y	US 2001/0045383 A1 (COFFMAN) 29 November 2001 (29.11.2001) entire document	3-5

☐ Further documents are listed in the continuation of Box C.


* Special categories of cited documents:

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"&" document member of the same patent family

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29 May 2012

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