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- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))
- of inventorship (Rule 4.17(iv))

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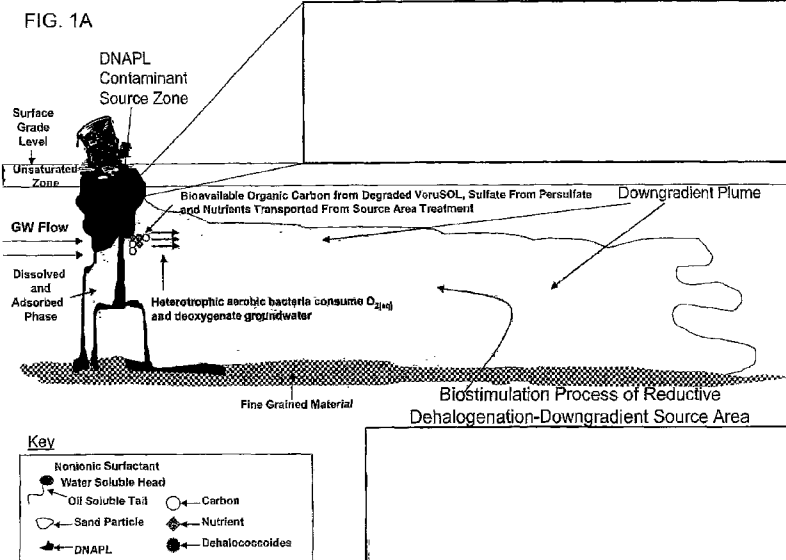
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(54) Title: ENHANCED BIODEGRADATION OF NON-AQUEOUS PHASE LIQUIDS USING SURFACTANT ENHANCED IN-SITU CHEMICAL OXIDATION

Integrated Surfactant Enhanced In Situ Chemical Oxidation (S-ISCO™) and Reductive Dehalogenation



(57) Abstract: A method for in-situ reduction of contaminants in soil that uses chemical oxidation and biodegradation.

# INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2008/008905

## A. CLASSIFICATION OF SUBJECT MATTER

INV. C02F1/72 C02F3/30 B09C1/08 B09C1/10

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)

C02F B09C

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 practical, search terms used)

EPO-Internal, BIOSIS, WPI Data, COMPENDEX

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No.                                  |
|-----------|------------------------------------------------------------------------------------|--------------------------------------------------------|
| X         | WO 2006/055054 A (DE TORRES FERNANDO A [US]) 26 May. 2006 (2006-05-26)             | 1-5, 11, 13-16, 18-22, 25-29, 32, 35, 47-51, 53-55, 58 |
| Y         | page 8 - page 19; claims<br>-----<br>-/--                                          | 1-59                                                   |

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

☒ See patent family annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

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| C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Category*                                            | Citation of document, with indication, where appropriate, of the relevant passages                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Relevant to claim No. |
| Y                                                    | <p>JOHN COLLINS AND GEORGE HOAG: "Coelution Technologies and Surfactant-Enhanced in Situ Oxidation as new breakthrough technologies in the treatment of toxic subsurface contaminants"</p> <p>11TH ANNUAL GREEN CHEMISTRY AND ENGINEERING CONFERENCE, [Online]<br/>28 June 2007 (2007-06-28), XP002521075<br/>Washington<br/>Retrieved from the Internet:<br/>URL: <a href="http://acs.confex.com/acs/green07/techprogram/P42826.HTM">http://acs.confex.com/acs/green07/techprogram/P42826.HTM</a><br/>[retrieved on 2009-03-25]<br/>abstract</p> | 1-59                  |
| Y                                                    | <p>GOI A ET AL: "Combined chemical and biological treatment of oil contaminated soil"</p> <p>CHEMOSPHERE, PERGAMON PRESS, OXFORD, GB, vol. 63, no. 10, 1 June 2006 (2006-06-01), pages 1754-1763, XP025041839<br/>ISSN: 0045-6535 [retrieved on 2006-06-01]<br/>page 1755, right-hand column, paragraph 2 - page 1757, left-hand column<br/>page 1762, left-hand column, last paragraph - right-hand column</p>                                                                                                                                   | 1-59                  |
| Y                                                    | <p>US 6 719 902 B1 (ALVAREZ PEDRO J [US] ET AL) 13 April 2004 (2004-04-13)<br/>claims</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 7, 8,<br>21-24        |
| P, X                                                 | <p>WO 2007/126779 A (HOAG GEORGE E [US]; COLLINS JOHN [US] VERUTEK TECHNOLOGIES INC [US]; H) 8 November 2007 (2007-11-08)<br/>cited in the application<br/>page 43 - page 52</p>                                                                                                                                                                                                                                                                                                                                                                  | 58                    |

# INTERNATIONAL SEARCH REPORT

Information on patent family members

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