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Declarations under Rule 4.17:

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

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[Continued on next page]

(54) Title: METHOD FOR TREATING EFFLUENT WATERS

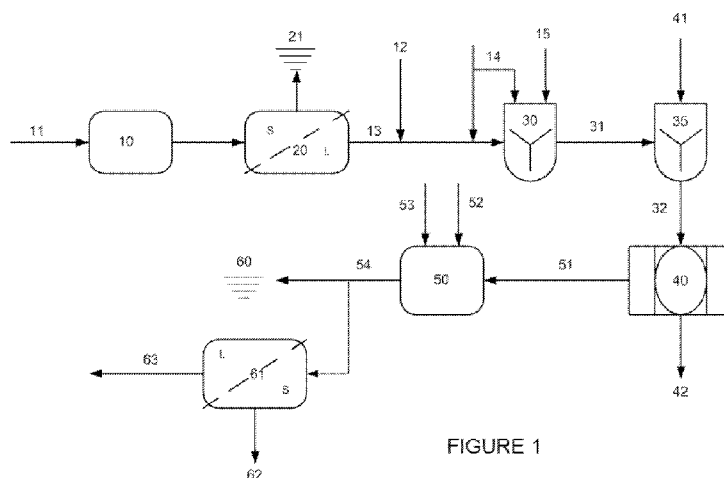


FIGURE 1

(57) Abstract: A process for treating waste water, effluent streams, e.g., acid mine drainage, containing heavy metals and soluble contaminants is provided. In one embodiment, at least a metal cation is added to the effluent stream at a pre-select pH to form insoluble heavy metal complexes. In one embodiment, the metal cation is a trivalent metal ion, e.g., ferric iron such as in ferric sulfate. In another embodiment, a divalent metal ion such as in ferrous sulfate is used. After the removal of the heavy metal complexes, the effluent water is treated with an additive selected from aluminum salts, phosphate additives, and mixtures thereof, to remove remaining soluble contaminants, thus producing a treated water stream with reduced levels of contaminants.



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**A. CLASSIFICATION OF SUBJECT MATTER***C02F 1/62(2006.01)i, C02F 1/52(2006.01)i, C02F 1/66(2006.01)i, C02F 1/42(2006.01)i*

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 1/62; C02F 5/10; C02F 1/00

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) &amp; Keywords:metal, ferric ion, calcium, aluminate, phosphate, and fertilizer.

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2003-0132166 A1 (REY, PAUL) 17 July 2003 See abstract, paragraphs [0017], [0050], [0052], [0054], [0060]-[0062], claims 1 and 11.	1-39
A	US 2003-0132421 A1 (SESAY, SAHID et al.) 17 July 2003 See abstract, paragraphs [0002], [0014] and claim 1.	1-39
A	US 1958-2844439 A (CHRIS, SCHURR) 22 July 1958 See abstract, column 1, lines 15-41, column 2, line 54, column 3, line 2, column 4, lines 16-58 and figure 1.	1-39
A	US 2004-0040912 A1 (MCCONCHIE, DAVID M. et al.) 04 March 2004 See abstract, paragraphs [0012]-[0021], [0035], [0043]-[0044], [0049] and claim 1.	1-39

 Further documents are listed in the continuation of Box C. See patent family annex.

\* Special categories of cited documents:

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"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

"&amp;" document member of the same patent family

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2003-0132166 A1	17.07.2003	US 2005-0145574 A1 US 6932909 B2 US 7115201 B2	07.07.2005 23.08.2005 03.10.2006
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