Online Search Aids

User Guide

Petroleum Abstracts®
A Division of
The University of Tulsa

August 22, 2016

Introduction

The Petroleum Abstracts BRICKS Online Thesaurus is the taxonomy tool that supports the indexing and subsequent retrieval of the articles and patents processed by Petroleum Abstracts. Under development for over 50 years, the BRICKS Thesaurus is a world standard for oilfield technical terminology.

The Dictionary actually consists of the following components:

- **The Exploration and Production Thesaurus.** A compilation of relevant E&P technical index terms and their relationships, covering the areas of geology; geochemistry; geophysics; drilling; well logging; well completion & servicing; production of oil & gas; reservoir engineering & recovery methods; pipelining, shipping & storage; ecology & pollution; alternate fuels & energy sources; and supplemental technology.
- **The Geographic Thesaurus.** A listing of sedimentary basins, geographic features, and geographic area terms and their relationships.
- **Geographic Supplement.** A compilation of names of formations, groups, series, oil fields, anticlines, faults, counties, and similar terms not included in the *Geographic Thesaurus* proper.
- **Company List.** Terms for indexing company and organization names.
- **Chemical List.** Terms for indexing specific chemical names.
- **The E&P KWOC (Key Word Out of Context).** An alphabetical listing of the words comprising the index terms in the E&P Thesaurus. Used as an aid in locating E&P index terms.
- **The Geographic KWOC.** An alphabetical listing of the words comprising the index terms in the Geographic Thesaurus. Used as an aid in locating geographic index terms.
- **The Term Frequency List.** A compilation of every term used in the TULSA database and the number of times those terms were used.

Previously, these components ("Search Aids") were distributed in paper form at various times and with various frequencies of update. Extensively used by the indexers at Petroleum Abstracts and by customers who search the TULSA database, these components are currently combined in one web-based product, Petroleum Abstracts' Online Search Aids package, WorldWide Bricks.

Disclaimers

World Wide Bricks

Figure 1

As can be seen in this figure, the active area consists of a text entry field that allows the user to enter the words for the query, and two results box. The Search Results box will display the list of terms resulting from the query and the Term Relationships box will display the thesaurus entry for any term clicked on in the Search Results box.

In the right-hand corner of the screen is a link to New Terms. Additions to the thesaurus are listed by the month in which they first appear in the TULSA database.

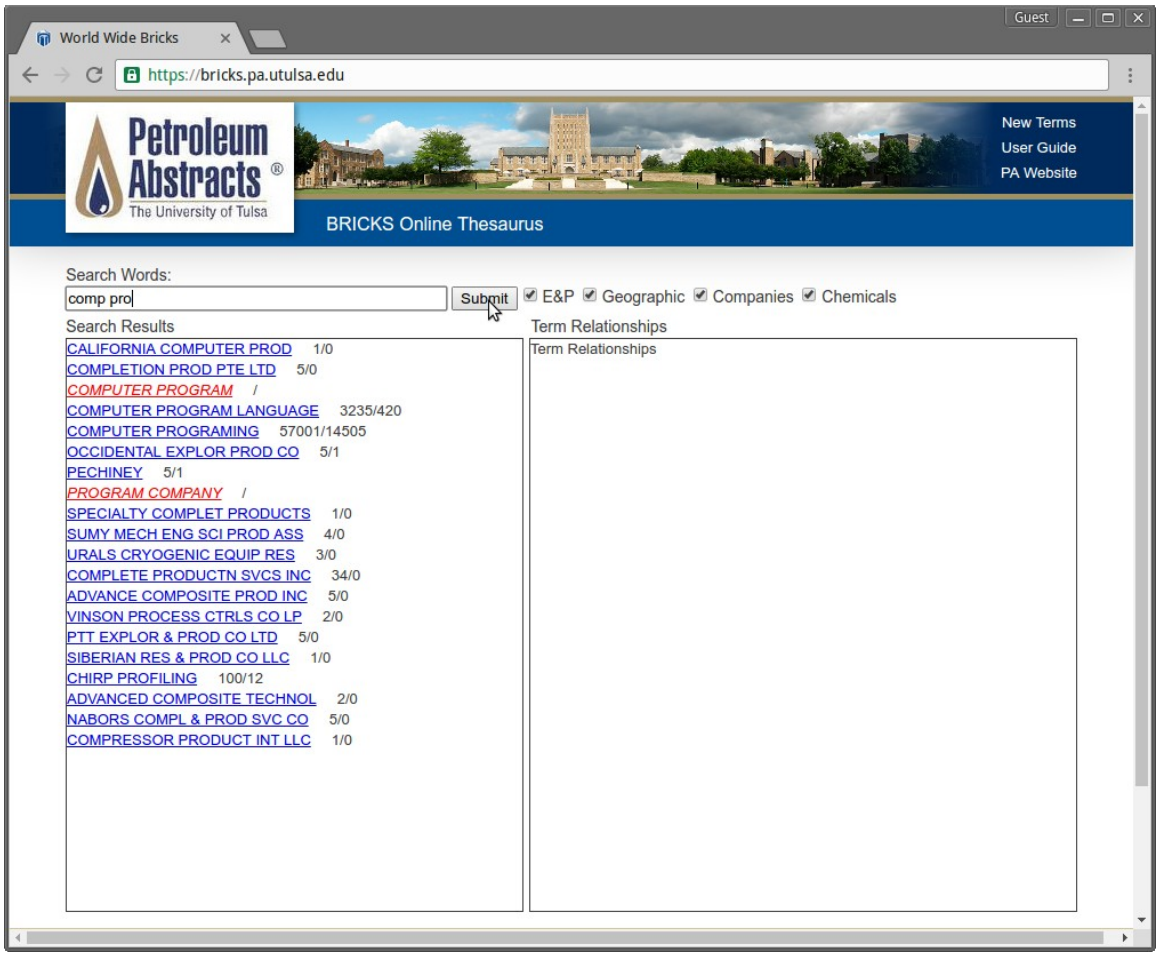

Figure 2

In Figure 2, the user has entered the "words" *comp pro* and has submitted them as component words to the query. It should be noted that the query will be performed with a wild card appended to each word and with an implied "AND" between search words. The following are additional notes concerning the query strategy:

- Every word entered in the text box will have its alphabetic characters forced to upper case since the thesaurus entries are uniformly upper case.
- Some chemical terms are difficult to KWOC. Some experimenting may be needed to deal with them.
- The more words entered, the shorter will be the result list. Usually, one or two will suffice.
- The result list will be truncated at 1000.
- If a word ends with a '*' character, a wild card is not appended.
- A leading wild card may be indicated by prepending the query with the '%' character.
- To limit the search to terms starting with a specific word, prepend the query with the '^' character.
- Queries may be limited to one or more subsets of the thesaurus using the vocabularies check boxes; E&P (Exploration & Production), Geographic, Companies, Chemicals.
- The Search Results shows frequency usage of valid terms (total/weighted).
- Invalid terms are displayed in red italic font.

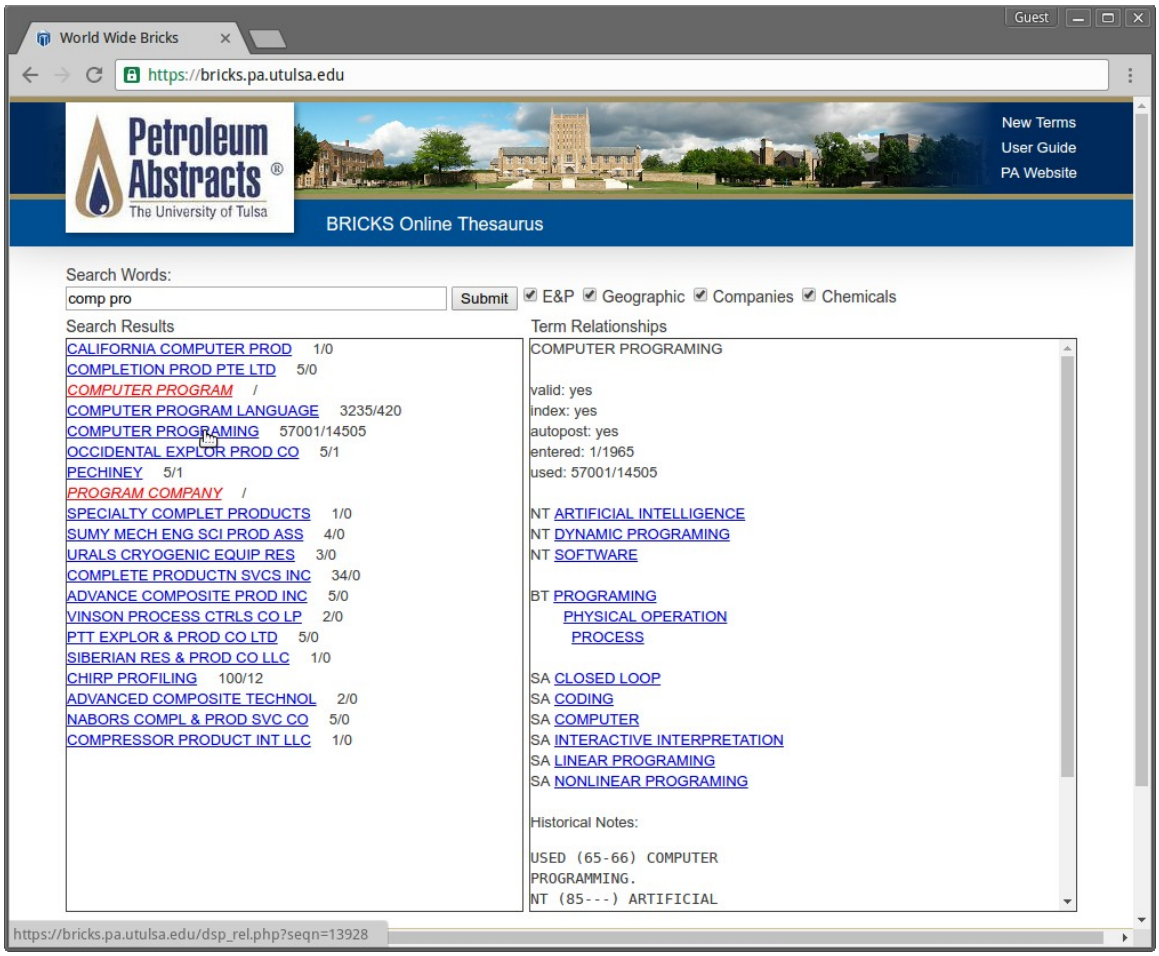

Figure 3

Figure 3 shows the display after the user has clicked on the term “COMPUTER PROGRAMING”. The relevant data for that term is displayed in the Term Relationships box. This includes the term, whether it's valid or invalid, indexed or not indexed, autoposted or not autoposted, entry date, and number of times it's used in the TULSA database (total/weighted) as well as any scope notes and all applicable relationships. Note that the Term Relationships box will cascade. That is, if the user clicks on a term in the Term Relationships box, the data will be replaced with data for the clicked term.

Some browsers will allow printing of just the contents of an iframe box. This can provide a convenient hard copy of the relationships for a given term.

Examples

Traditional search using KWOC methodology - wild card appended to each word

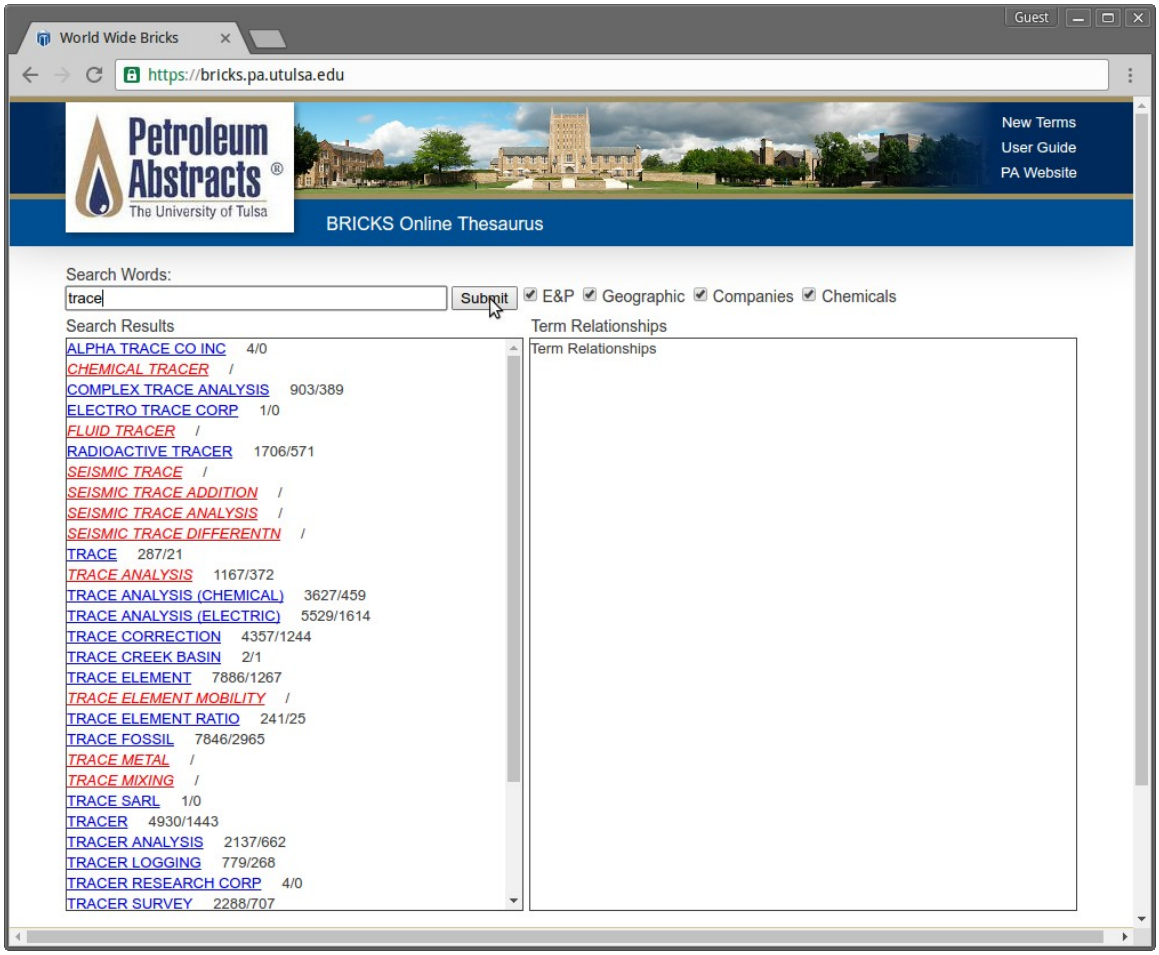

Figure 4

Special character '*' disables wild card at end of each word - requires exact match.

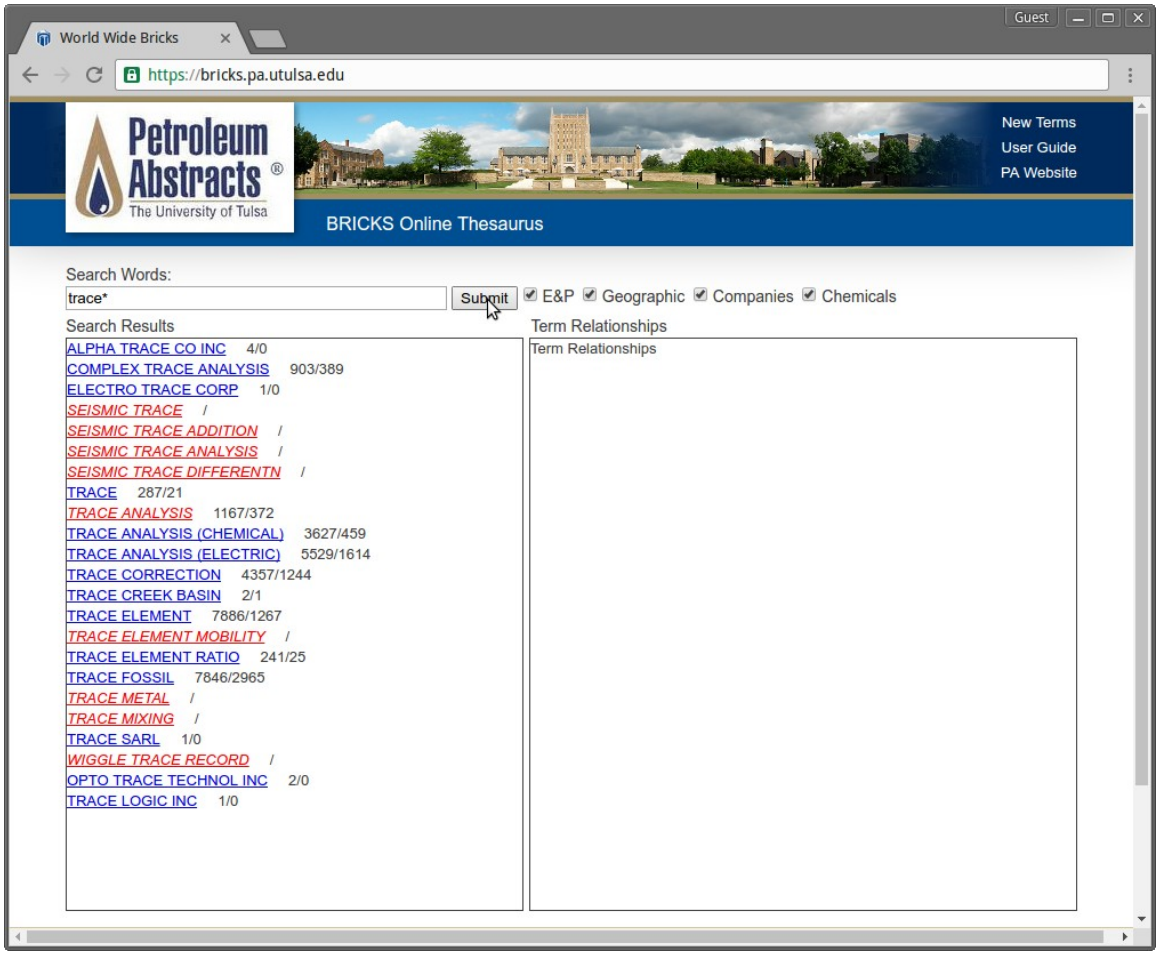

Figure 5

Special character '%' allows search words to be part of other words

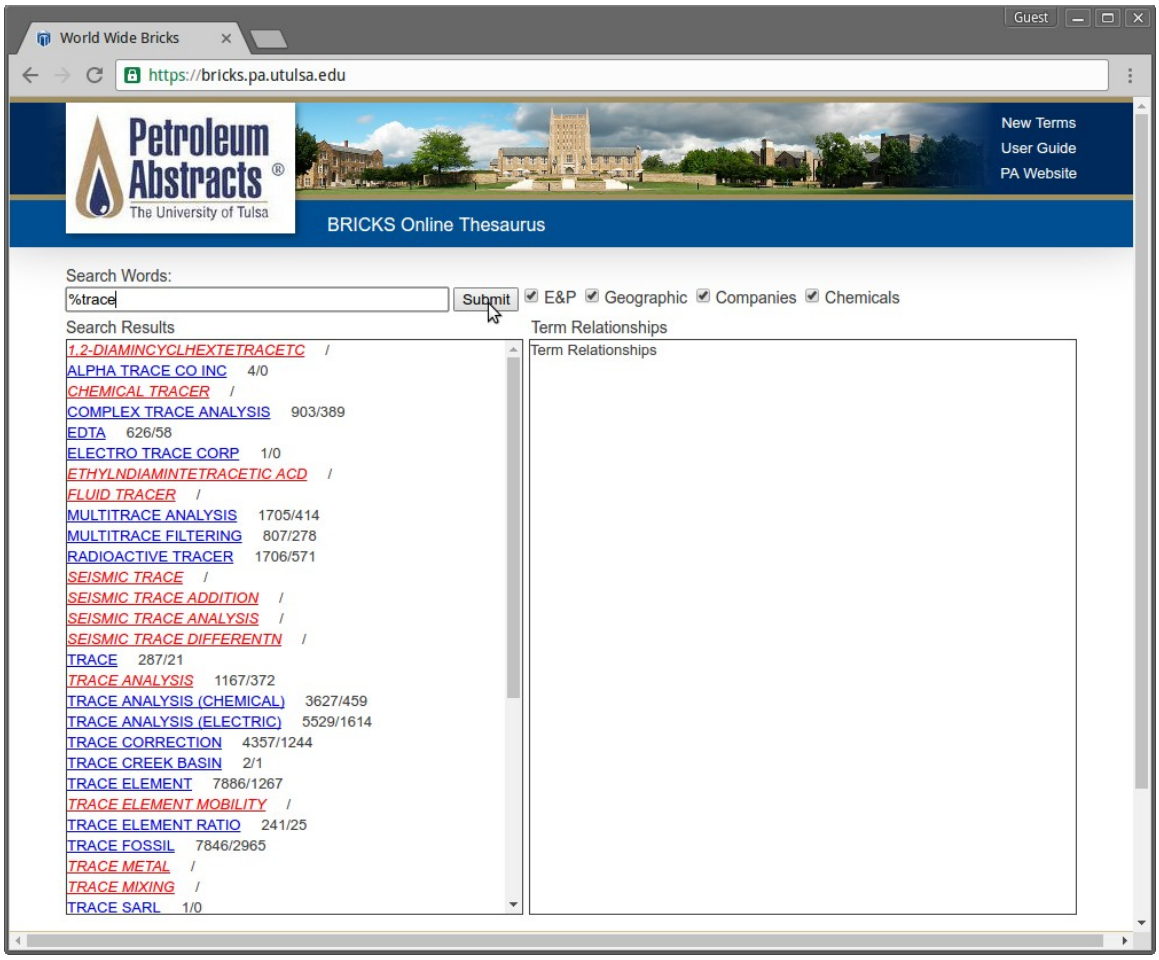

Figure 6

Special character '^' limits search to terms beginning with first work of query string

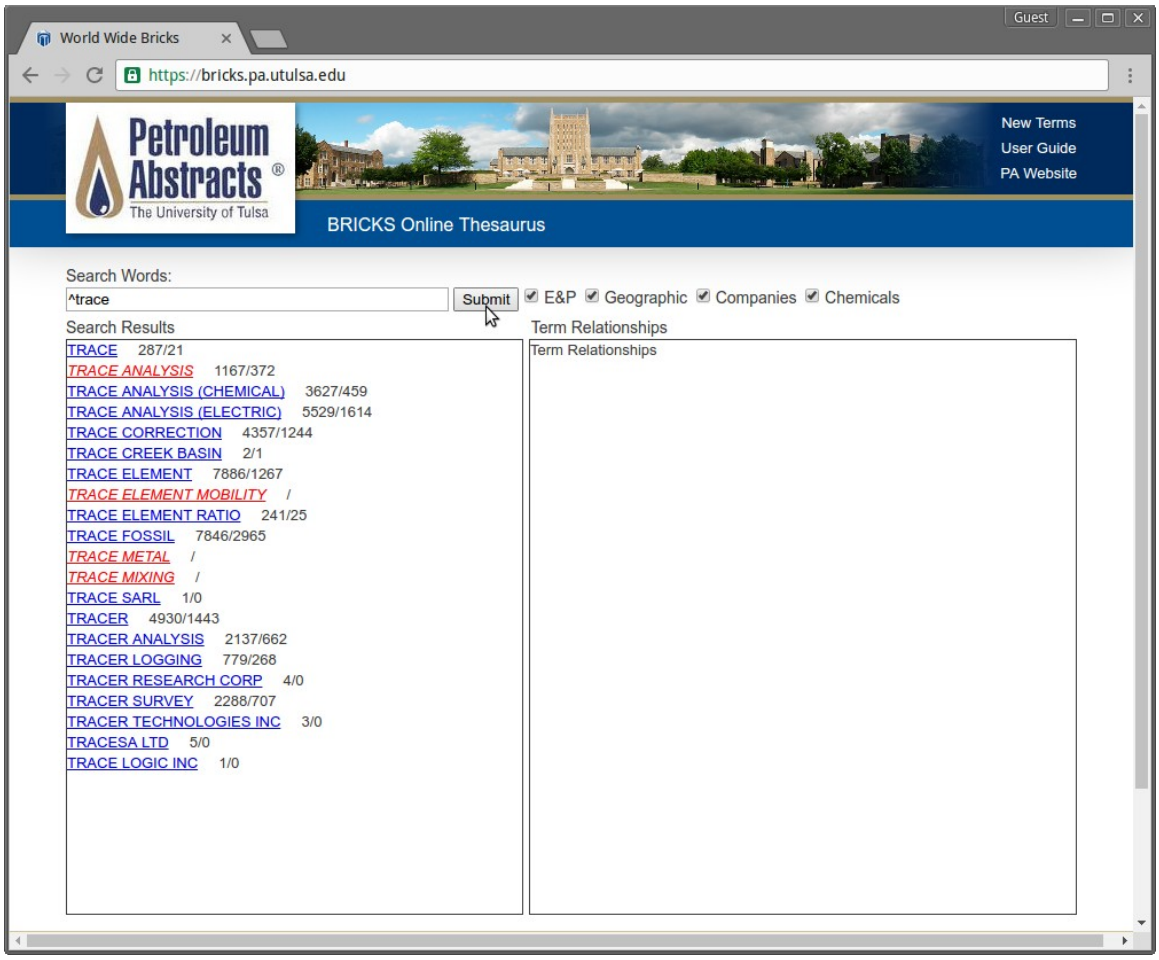

Figure 7

Combination of two special characters in search

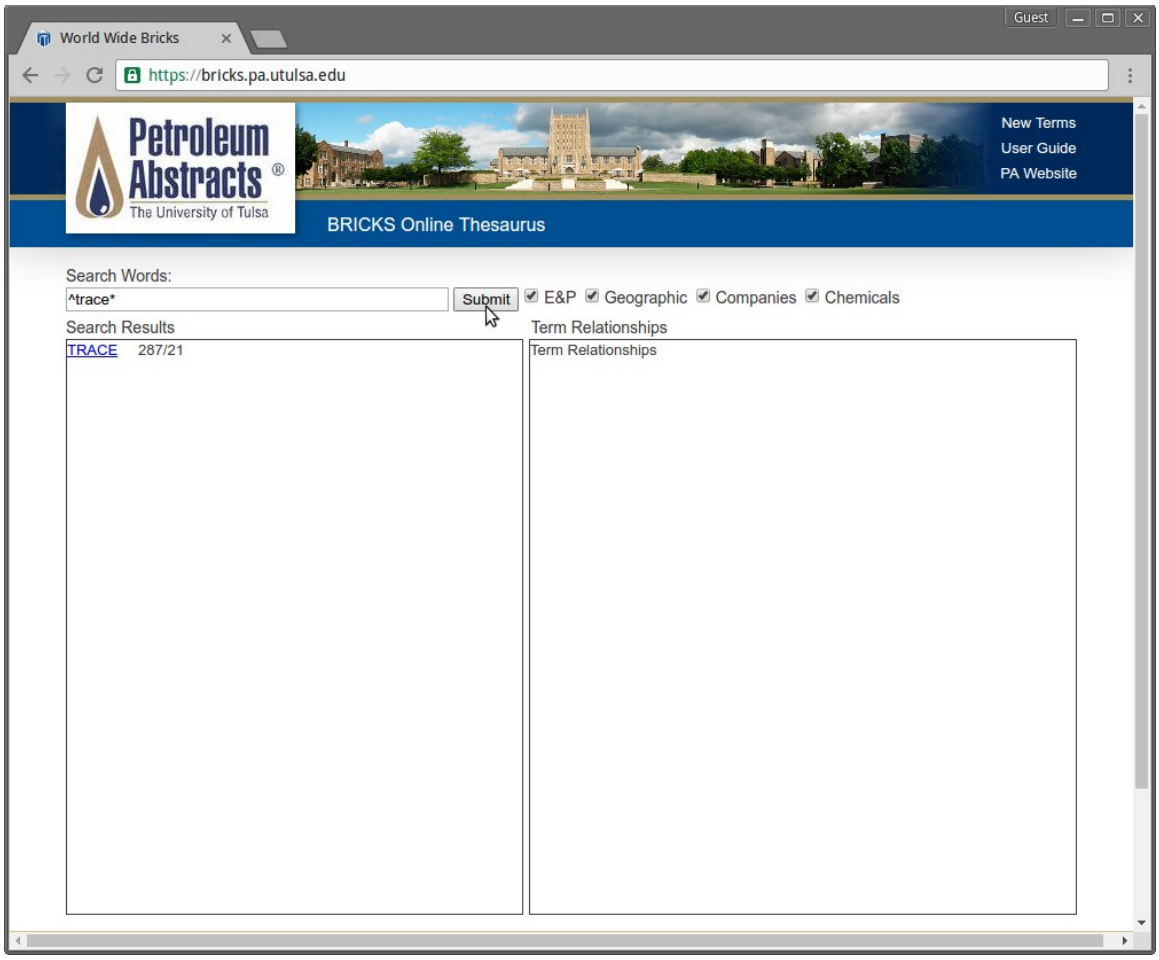

Figure 8

Narrow search by limiting to E&P subset

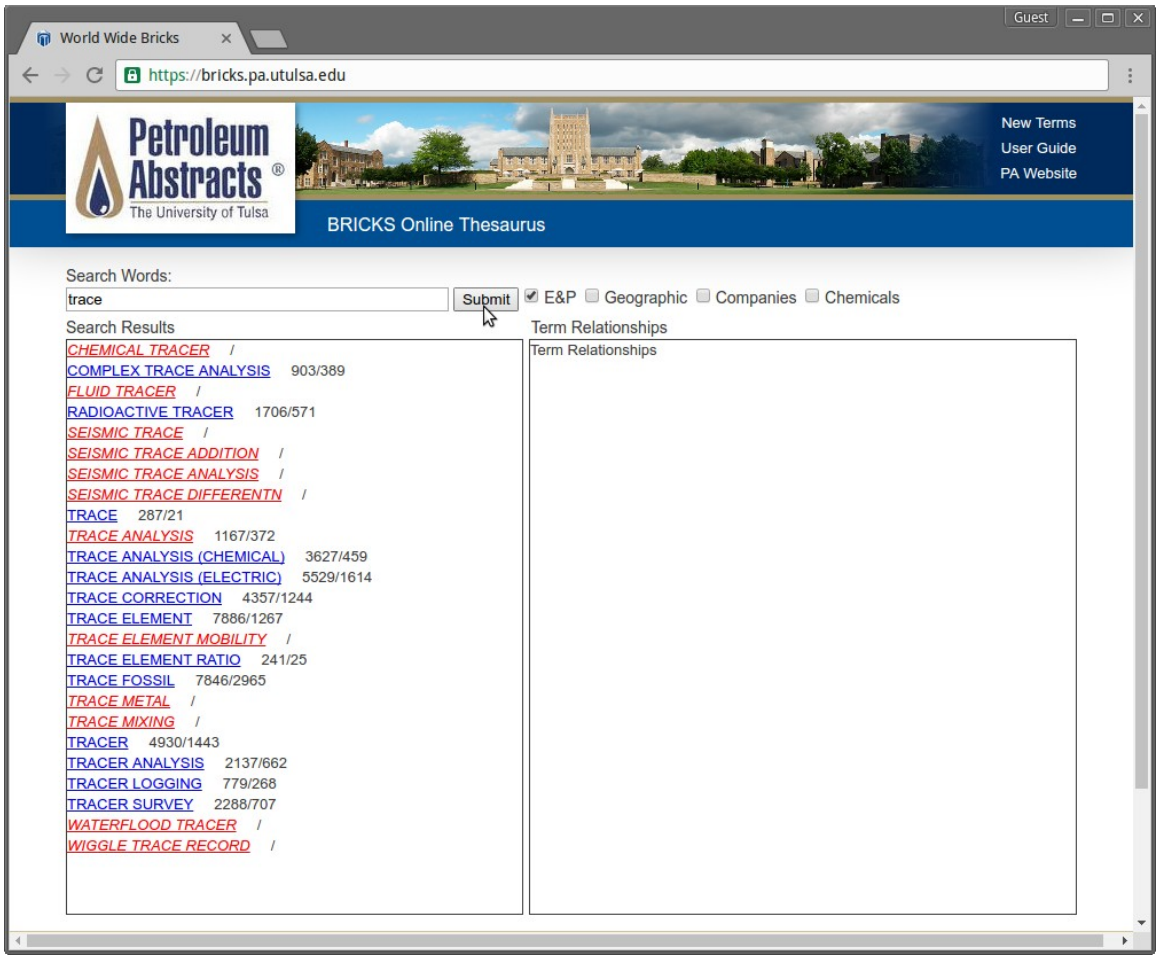

Figure 9

Narrow search by limiting to Geographic subsets

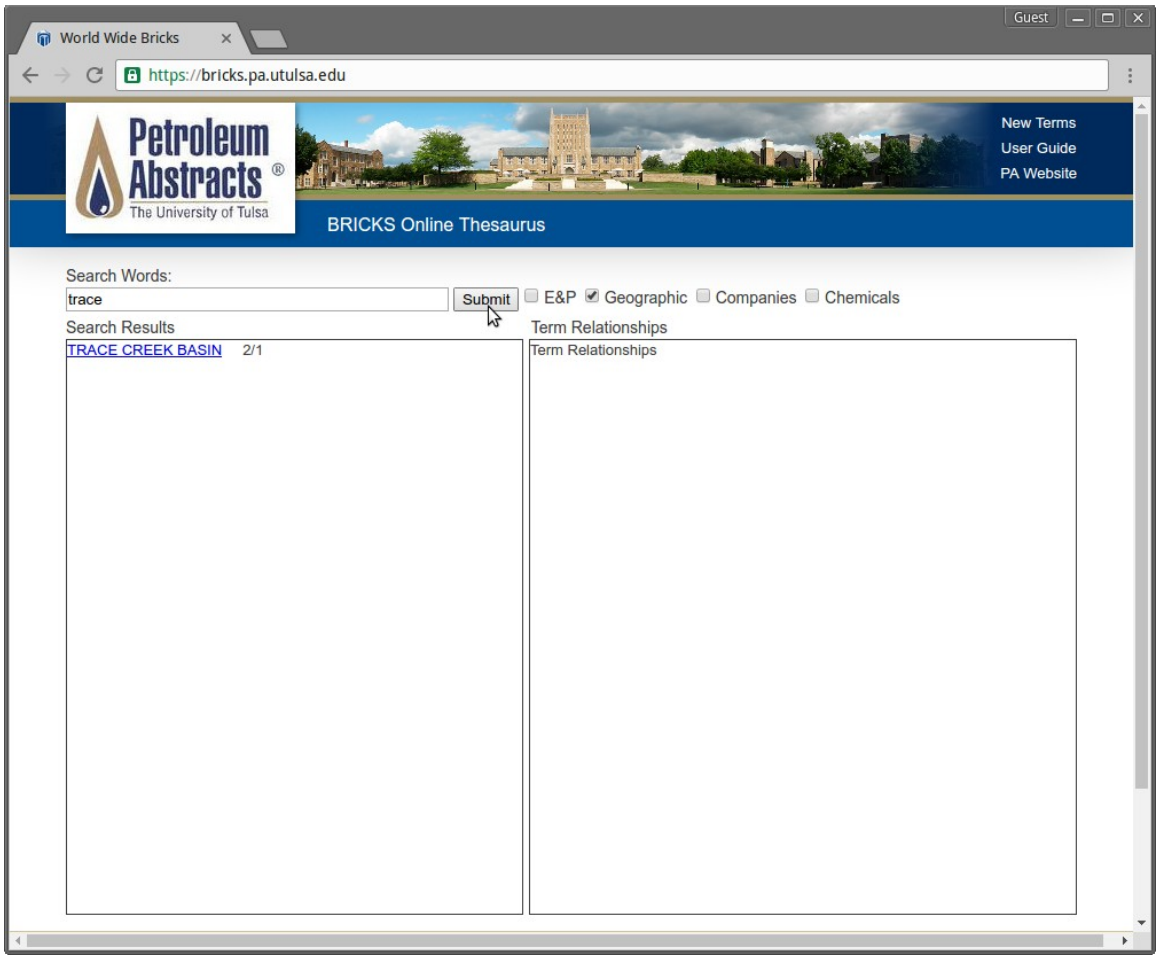

Figure 10

Narrow search by limiting to Companies subset

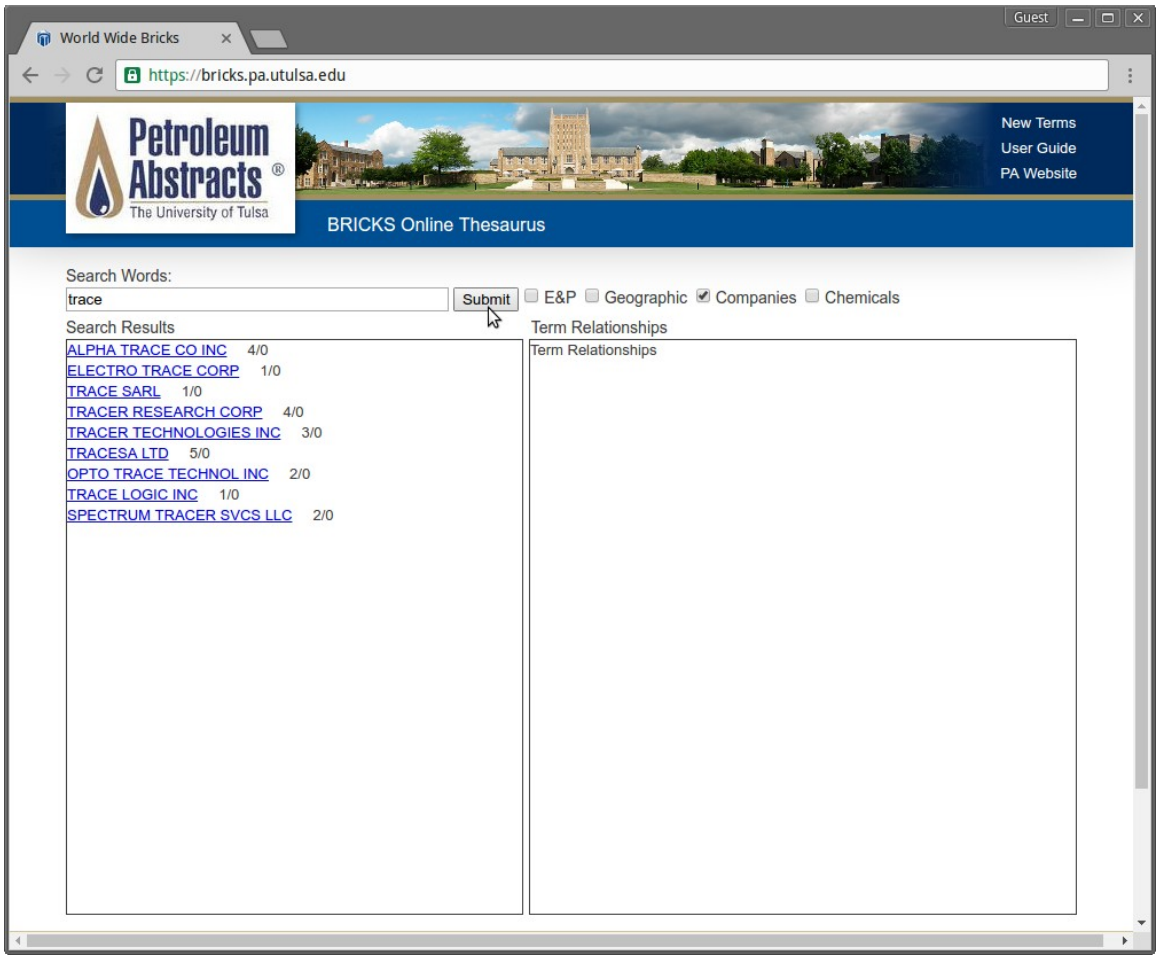

Figure 11

Using special character to get to Chemicals which contain search word

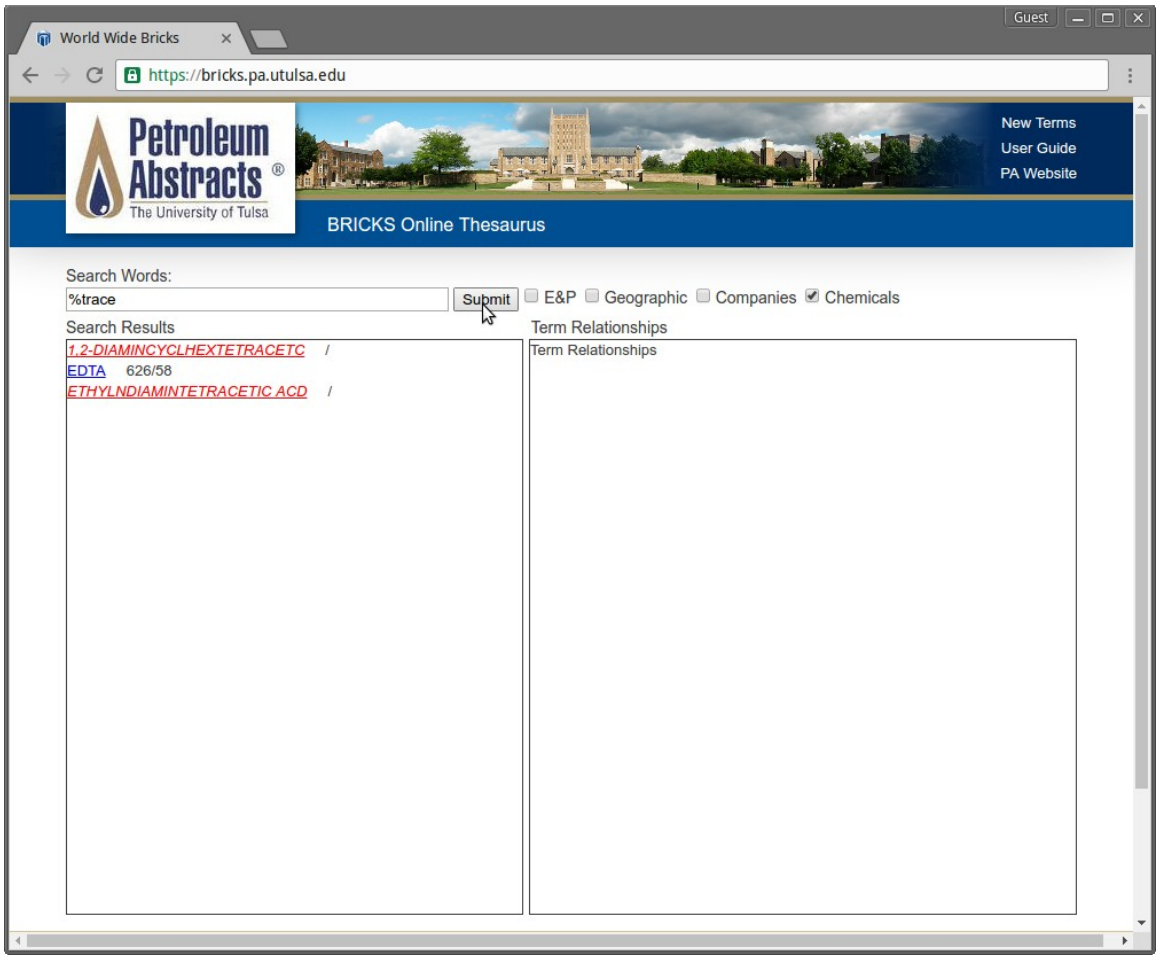

Figure 12

Narrow search by limiting to multiple subsets

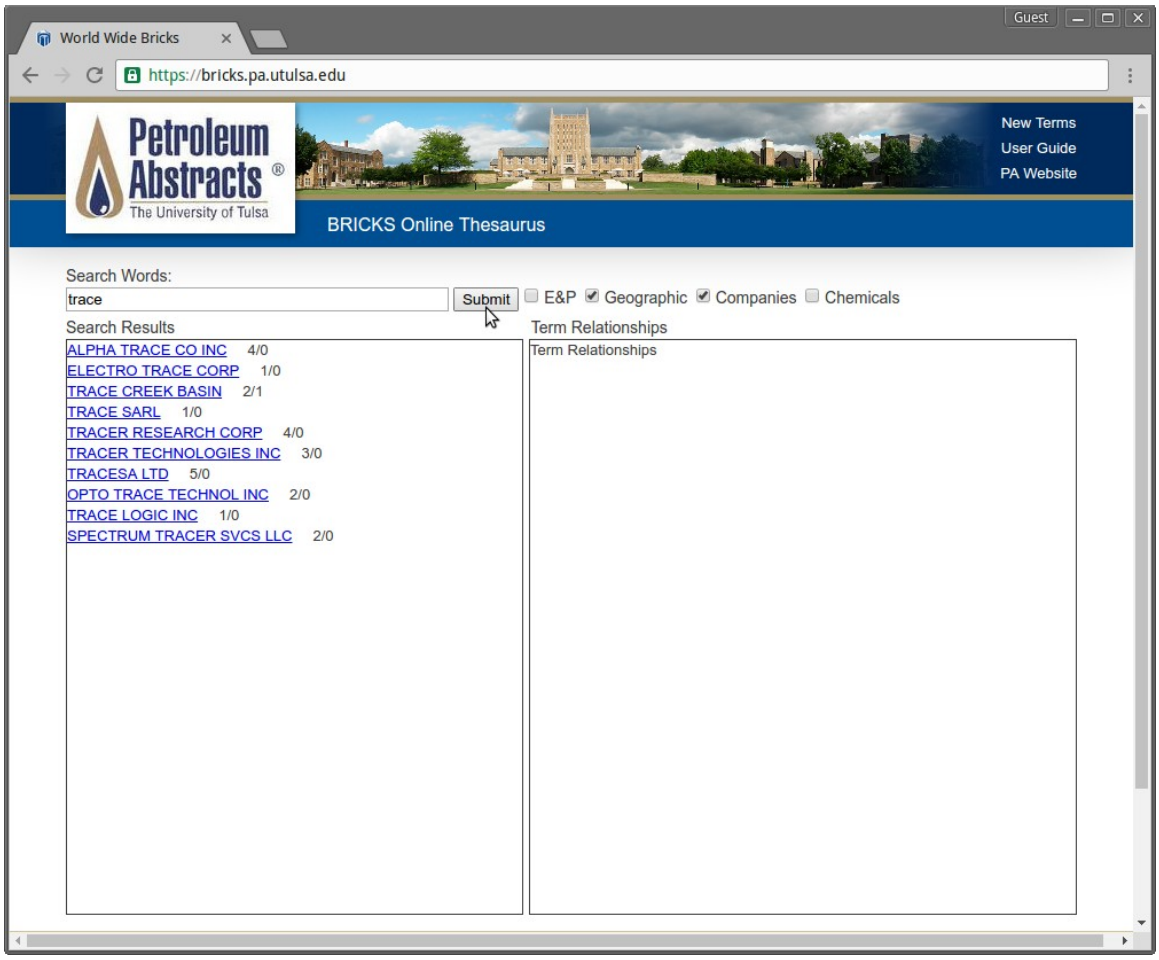

Figure 13

EXPLORATION & PRODUCTION THESAURUS DESCRIPTION

INTRODUCTION

The *Exploration and Production (E&P) Thesaurus* covers the subject areas of geology; geochemistry; geophysics; drilling; well logging; well completion & servicing; production of oil & gas; reservoir engineering & recovery methods; pipelining, shipping & storage; alternate fuels & energy sources; business & economics; health, safety & environment; and science & engineering. The first edition of the *E&P Thesaurus* (1965) was compiled in a format similar to that used by the Engineers Joint Council in its *Thesaurus of Engineering Terms*. All subsequent editions of the *Thesaurus* are similar in format to the first edition; however, the philosophy used in building hierarchies is different. In developing the hierarchical relationships of the first edition, discipline-oriented principles were used, whereas the later editions are based on concept-oriented (faceted) principles. A complete outline of the hierarchy and an alphabetic index to the hierarchy are included at the end of the main *Thesaurus*.

DEFINITION

A thesaurus, by definition, is "...a controlled vocabulary arranged in a known order in which equivalence, homographic, hierarchical, and associative relationships among terms are clearly displayed and identified by standardized relationship indicators, which must be employed reciprocally. Its purposes are to promote consistency in the indexing of documents, predominantly for postcoordinated information storage and retrieval systems, and to facilitate searching...." (National Information Standards Organization (NISO), Z39.19 - 1993). Petroleum Abstracts uses a set of two thesauri and their supplemental lists. The *E&P Thesaurus* is a collection of words and phrases that are descriptive of the concepts and equipment pertaining to petroleum exploration, development and production, exclusive of geographic areas and named geologic terms, which are included in the *Geographic Thesaurus* and its supplement. Further, the *E&P Thesaurus* is a controlled vocabulary for this subject area, in which the various concepts have been linked by means of generic or hierarchical relationships. These relationships may be truly generic or may be associations by use, or even convenience. Synonyms are handled as follows: all terms of like meaning are directed to one term for use as the index term for that particular concept. This selection usually follows popular usage and the patterns set by existing terms in the *Thesaurus*. The chosen term is called a "valid" index term; the other like terms are called "invalid" and are not used for indexing.

FORMAT

The main body of the *E&P Thesaurus* consists of entry terms arranged in alphabetical order. Under each entry term, one or more of the following entries may be found:

*	Entire spelling of abbreviated index term
**	Scope Note or Explanatory Note, including history of usage and previous relationships, where applicable
USE	Use ... (valid term)
UF	Used For ... (invalid term)
NT	Narrow Term
BT	Broad Term
SA	See Also
PLS	Plus
WTH	With

Terms are limited to a maximum length of 26 characters, including spaces between words. For longer descriptors, abbreviations are required.

ELECTROMAGNETIC EXPLR EQ
    * ELECTROMAGNETIC EXPLORATION EQUIPMENT

MPR
    * MAXIMUM PRODUCING RATE

Scope Note entries (double asterisk) are used to restrict the scope of an index term or to define its meaning, to indicate previous (now invalid) scope notes, to tell when the term was first available for indexing, to show what terms were used previously to describe this concept, and to indicate changes in hierarchical relationships. Numbers in parentheses show applicable year ranges.

MEGAORGANISM
    ** FOR GENERAL DESIGNATION OF RECENT FORMS ONLY. SEE SPECIFIC TYPES.

MARGINAL BASIN
    ** INDICATES A MARINE DEPOSITIONAL BASIN ON THE CONTINENTAL MARGIN.

GEOPHYSICAL COST
    ** ADDED JANUARY 1968. USED (65-67) GEOPHYSICS PLUS COST.

GEOLOGIC MAP
    ** NT (76---) PALEOGEOLOGIC MAP
    BT (67---) MAP

USE entries indicate the valid term used for indexing instead of the entry term.

DOWNHOLE PUMP
    USE WELL PUMP

FLUIDITY
    USE VISCOSITY

UF (Used For) indicates an invalid term that is directed to the valid term under which it is listed.

WELL PUMP
UF DOWNHOLE PUMP

NT (Narrow Term) designates a term which is a more specific subdivision of the entry term.

LIMESTONE
NT CHERTY LIMESTONE

BT (Broad Term) designates one or more hierarchically related terms, of which the concept is a logical subdivision.

METERING SEPARATOR
BT SEPARATION EQUIPMENT

MUD PUMPABILITY
BT MUD PROPERTY
FLUID PROPERTY
PHYSICAL PROPERTY

SA (See Also) usually designates terms that are related in meaning but not directly connected in a vertical hierarchical relationship. It may be used also to show terms of alternate or opposite meaning.

HELIPORT
SA HELICOPTER

HIGH MOLECULAR WEIGHT
SA LOW MOLECULAR WEIGHT
SA MOLECULAR STRUCTURE
SA POLYMER

PLS (Plus) indicates the second term of a two-term synonym; used with the *USE* statement.

CAVERNOUS POROSITY
USE VUGGY POROSITY
PLS CAVERN

WTH (With) indicates the second term of a two-term synonym; used with the *UF* statement.

CAVERN
UF CAVERNOUS POROSITY
WTH VUGGY POROSITY

VUGGY POROSITY
UF CAVERNOUS POROSITY
WTH CAVERN

(A) SEISMIC SPREAD
(B) ** FOR GEOPHONE CONFIGURATIONS. FOR SHOTPOINT CONFIGURATIONS SEE ARRAY. FOR HYDROPHONE CONFIGURATIONS SEE SEISMIC STREAMER.
NT (67---) INTERFERENCE SPREAD
NT (70---) LARGE APER SEIS AR (LASA)
(C) UF GEOPHONE PATTERN
UF GEOPHONE SPREAD
UF LONG SPREAD
UF SUBSURFACE SPREAD
(D) NT CROSS SPREAD
NT HORIZONTAL SPREAD
NT IN LINE SPREAD
NT INTERFERENCE SPREAD
NT LARGE APER SEIS AR (LASA)
NT OFF LINE SPREAD
NT SPLIT SPREAD
NT SURFACE SPREAD
NT VERTICAL SPREAD
(E) BT PATTERN
(F) SA DETECTOR LOCATION
SA GEOPHONE
SA MOVEOUT
SA NORMAL MOVEOUT
SA OVERLAP (NOISE REDUCTION)
SA PATTERN SHOOTING
SA SEISMIC EXPLORATION
SA SEISMIC STREAMER
SA SUBSURFACE SHOOTING

(A) SEISMIC TRACE DIFFERENTN
(G) * SEISMIC TRACE DIFFERENTIATION
(H) USE SEISMIC INTERPRETATION

Explanation:
(A) Entry Term
(B) *Scope Note*. Provides definition or limitations of meaning or usage.
(C) *Used For* reference. Indicates that SEISMIC SPREAD is used to index the concept GEOPHONE PATTERN.
(D) *Narrow Term* reference. Indicates a subsidiary or narrower hierarchical relationship to the entry term.
(E) *Broad Term* reference. Indicates the next higher term in the hierarchy.
(F) *See Also* reference. Indicates a synonymous or related relationship or, in some instances, an alternate or opposite concept.
(G) Abbreviated term spelled out.
(H) *Use* reference. Indicates the valid term used instead of the entry term.

Figure 1. Example of cross-reference notations.

EXPLORATION & PRODUCTION THESAURUS SUPPLEMENTAL TERMS

Sets of terms for company names and for chemicals are published in supplementary lists at annual intervals. Petroleum Abstracts uses these *Supplemental Terms* along with the *E&P Thesaurus* and the *Geographic Thesaurus* and its supplement to index documents. New E&P terms are incorporated into each new edition of the *E&P Thesaurus*.

GEOGRAPHIC THESAURUS

The *Geographic Thesaurus* contains a listing of sedimentary basins, geographic features, and geographic area terms and their relationships. Its format is patterned after the *E&P Thesaurus* in a hierarchical fashion. The *Geographic Thesaurus : Supplemental Terms* contains the names of formations, groups, series, oil fields, anticlines, faults, counties, and similar terms that are not included in the *Geographic Thesaurus* proper.

AUTOPOSTING

Petroleum Abstracts follows the policy of assigning the most specific index terms available to the document in hand. All broader terms in the hierarchies for those terms are automatically assigned through computer processing as additional index terms.

HIERARCHY

The hierarchy provides a compact listing of the index terms in their structured form. The *Thesaurus* terms are interrelated on the concept-oriented (faceted) principle, and all descriptors are narrower terms of one of ten facet headings. These ten facets, which appear alphabetically, are as follows:

COMMON ATTRIBUTE
EARTH AND SPACE CONCEPTS
ECONOMIC FACTOR
EQUIPMENT
LIFE FORM
MATERIAL
OPERATING CONDITION
PHENOMENON
PROCESS
PROPERTY

In hierarchical listings, the words appearing in [brackets] are there for the purpose of drawing sets of like terms together; they are not valid terms and do not appear in the body of the *Thesaurus*. Words appearing in (parentheses) are valid terms; they do appear in the body of the *Thesaurus*, but are not autoposted by their narrower terms.

The Hierarchy Index provides a convenient means for locating any term in the hierarchy. Each column of the hierarchy is numbered, and the index indicates the hierarchy column in which the term may be found.

ALPHABETIZATION RULES

Terms are ordered according to the ASCII sorting sequence: numbers precede letters and symbols, such as parentheses, precede numbers. Spaces precede all other data. Abbreviations appear in regular alphabetic sequence. See Figure 2 for an example of alphabetizing rules.

APHOTIC ZONE
API CODE

CARBON 15
CARBON BLACK

PENDULUM
PENDULUM (GRAVITY INSTRM)
PENDULUM EFFECT

WAVE VELOCITY
WAVEFORM

Figure 2. Alphabetizing order

ABBREVIATION PROCEDURES

1. Typical abbreviations of proper names:

Mount/Mountain(s)	Mt
Saint(e)	St(e)
Company	Co
Limited	Ltd
Incorporated	Inc

2. When abbreviations are used because of space limitation, the following criteria are applied:

   a. The first word of a concept is not abbreviated except in the rare instances where such is common usage.

      API STANDARD
      NMR SPECTROSCOPY

   b. When necessary, individual letters (usually vowels) are deleted from words, as near the end of a term as possible, making sure that a legitimate word is not created in the process.

      AIRBORNE GRAVITY EXPLORATN
      * AIRBORNE GRAVITY EXPLORATION

      CONT OFFSHORE STRAT TEST
      * CONTINENTAL OFFSHORE STRATIGRAPHIC TEST

      MINIMUM MISCIBILITY PRES
      * MINIMUM MISCIBILITY PRESSURE

   c. Spaces are not left between initials, and they are not punctuated; e.g., API STANDARD. Two exceptions occur in this *Thesaurus*: K A DATING and RB SR DATING.

3. Other abbreviations are selected from the following references:

   a. Abbreviation compilation used for *Petroleum Abstracts*.

   b. *Suggestions to Authors*, U.S. Geological Survey

   c. *Webster's Third International Dictionary*

   d. *American Standard for Periodical Title Abbreviations*, 1963; Council of National Library Associations

REQUIREMENTS FOR NEW INDEX TERMS

Rules for the creation of index terms are as follows:

1. A new index term must represent a distinctive concept not currently included in the *Thesaurus*.
2. Effort is made to retain commonly used word combinations.

   GAS CHROMATOGRAPHY
   IN SITU COMBUSTION
   SEISMIC RECORDING
   THRUST FAULT
   WATER DRIVE

3. Nouns, and not adjectives, are used as terms, whenever possible.

   ELECTRICAL
   USE ELECTRICITY

4. Where synonyms exist, one is selected as the valid term and the others are referred to it.

   ELECTROMOTIVE FORCE
   USE ELECTRIC POTENTIAL

5. Effort is made to avoid inversion of word order. However, some inversions have been necessary. Where inversions exist, parentheses are used to indicate the inversion. The inverted term is then cross-referenced to the uninverted term.

   GENERATOR (ELECTRICAL)
   USE ELECTRIC GENERATOR

   WELL DRILLING
   USE DRILLING (WELL)

6. All terms are given in the singular form unless the meaning is changed by using the singular instead of the plural form: CUTTING is a process; CUTTINGS (ROCK) is a material.

ALT FUELS & ENERGY SOURCES
BUSINESS & ECONOMICS
DRILLING (WELL)
GEOCHEMISTRY
GEOLOGY
GEOPHYSICS
HEALTH, SAFETY & ENVIRON
PIPELINING, SHIP & STORAGE
PRODUCING OIL & GAS
RESERVOIR ENG & REC METHOD
SCIENCE & ENGINEERING
WELL COMPL SERV & WORKOVER
WELL LOGGING & SURVEYING

Figure 3. List of category descriptors

ADDITIONAL DESCRIPTIVE TERMS

Category, Document Type and Language terms are added to each document in *Petroleum Abstracts* and these terms can be used for searching the online Petroleum Abstracts files. Consult the online documentation for the correct way to search the specific fields where these terms are listed.

The category designates the section of the weekly bulletin where the document appeared. The Mineral Commodities category was used September 1977 through June 1995. The Ecology & Pollution and Supplemental Technology categories were used until July 2006. The Business & Economics; Health, Safety & Environment; and Science & Engineering categories were added in July 2006. A list of the categories is shown in Figure 3.

Document types are assigned to indicate the type of document being indexed. A list of these is shown in Figure 4. *Patent* has been used since 1965; *Map, Thesis, Meeting Paper Text, Meeting Paper Abstract, Government Report* and *Book* have been assigned since 1974. The document type *Review or Survey* was used from 1974 until mid-1987. Since then, the index term REVIEW has been used. The document type *News* was used from 1974 until 2000. The document type *Standard* has been used since January 1997. The document type *Meeting Paper Visual* was added in July 2003. *Oil & Gas Fields File* is a special document type, applied to the 1920-1964 documents pertaining to oil and gas fields. PLEASE NOTE: If the document does not fit one of the document types, no aspect code is assigned to the document. This includes all of the journal articles and miscellaneous reports. When a document fits more than one document type, the type that is highest on the list is used; the other type is indicated by an additional index term.

Patent
Map
Thesis
Meeting Paper Text
Meeting Paper Abstract
Meeting Paper Visual
Standard
Government Report
Book
Oil & Gas Fields File

Figure 4. List of document types.

Finally, the language in which the document is written is indicated.

Document Retrieval

The University of Tulsa's McFarlin Library houses the documents covered by Petroleum Abstracts. Copies are provided on request, with a fee per page and the payment of appropriate royalties, from the Petroleum Abstracts Document Delivery Service.

TULSA File Access

The TULSA online file contains the contents of *Petroleum Abstracts* from 1965 to date, plus earlier documents pertaining to oil & gas fields. Direct access to the TULSA file is available through a search license. The Petroleum Abstracts staff will perform a search of TULSA on request. There is a charge for this service. Contact Petroleum Abstracts for more information on these services.

GEOGRAPHIC THESAURUS DESCRIPTION

INTRODUCTION

The *Geographic Thesaurus* contains terms for the proper names of the geographic and geologic features to be used in conjunction with the *Exploration and Production Thesaurus* to describe published information pertaining to the exploration and production of petroleum worldwide. First published in 1973, a new edition is published annually. This *Thesaurus* is supplemented by the *Geographic Thesaurus : Supplement* which is also published annually. The types of terms contained in the *Thesaurus* and in its *Supplement* are listed in Figure 1.

Geographic Thesaurus:
- Countries
- States & provinces
- Divisions of states (WEST TEXAS)
- Geographic areas (LA PAZ AREA)
- Geographic regions (ARAL REGION)
- Continents
- Divisions of continents
- Oceans & seas
- National parks
- Named geographic features:
  - Bays, gulfs & straits
  - Coasts & beaches
  - Ridges & mountains
  - Valleys, canyons & plains
  - Lakes & lagoons
  - Peninsulas & islands
  - Deserts
  - Sedimentary basins, troughs & embayments
  - Coal fields and basins
  - Submarine fans & canyons
  - Broad, basically structural, features
  - Uplifts, belts, arches, fault systems, fault belts, fracture zones, folded belts, & geosynclines
  - Other broad features
  - Platforms, shelves, pendants, scarps, & escarpments
- Other similar terms

Supplement:
- Formations, groups, & series
- US counties & parishes
- Oil & gas fields
- Named geologic features:
  - Anticlines & synclines
  - Faults & folds
  - Grabens & horsts
- Other similar terms

[The *Exploration and Production Thesaurus* contains the technical vocabulary used for geologic structures, rock types, earth age, and depositional and tectonic concepts.]

Figure 1. The *Geographic Thesaurus* vs its *Supplement*

This *Thesaurus* is organized in a hierarchial arrangement, with the broadest terms being the names of the continents and artificial terms SEAS AND OCEANS and OCEANIA, along with terms such as EASTERN HEMISPHERE and FAR EAST and EURASIA encompassing parts of more than one continent. Each country name is assigned to its appropriate continent except for Russia. In this instance, the country name is modified to include the continent name, that is RUSSIAN REPUBLIC ASIA and RUSSIAN REPUBLIC EUROPE, and these terms are assigned to the appropriate continental hierarchy.

GUIDELINES FOR THE CREATION OF TERMS

The ultimate authority for the location of geographic terms is the published material from which they are derived. In general, geographic locations that are used in professional refereed publications are accepted as terms for this *Thesaurus*. The following reference publications are used for verification and definition:

Geographic names

1. *National Geographic Atlas of the World*. Latest edition plus annual updates. The National Geographic Society.
2. *Commercial Atlas & Marketing Guide*. Annual publication, updated at regular intervals. Rand McNally.
3. *Webster's New Geographic Dictionary*. Latest edition. G&C Merriam Co.
4. In addition, geographic names published as part of the Ocean Drilling Program and the Deep Sea Drilling Project by the National Science Foundation, Joint Oceanographic Institutions, Inc., usually are accepted as published.

For a more complete explanation of the guidelines used, see the "Petroleum Abstracts Editorial Staff Manual, Indexing Section, Guidelines for Geographic/Geologic Terminology and Indexing."

FORMAT

The main body of the *Geographic Thesaurus* consists of terms arranged in alphabetical order. Under each term, one or more of the following entries may be found:

*	Entire spelling of abbreviated term
**	Scope Note or Explanatory Note, including history of usage and previous relationships, where applicable
USE	Use ... (preferred synonym)
UF	Used For ... (invalid term)
NT	Narrow Term
BT	Broad Term
SA	See Also
PLS	Plus
WTH	With

The *Geographic Thesaurus* preparation procedures allow a maximum of 26 characters (letters and spaces) for each term. A few terms require more characters than 26; hence, abbreviations are necessary. The single asterisk entry designates the entire spelling of such descriptors.

CARBONDALE RIVER GT CR STR
* CARBONDALE RIVER GOAT CREEK STRUCTURE

Scope Note entries (double asterisk) are used to restrict the scope of a term or to define its meaning, to instruct the indexer to use additional terms also, to tell when the term was first available for indexing, to show what terms were used previously to describe this area, and to indicate changes in hierarchical relationships. Numbers in parentheses show applicable year ranges, e.g., (65-75).

KAPUSKASING HIGH
** BOUGUER GRAVITY ANOMALY HIGH FROM JAMES BAY TO LAKE SUPERIOR
ADDED DECEMBER 1965

PSEZUAPSE RIVER
** INDEX STATE NAME AS APPLICABLE
ADDED JULY 1965

BOHAI BAY
** ADDED MARCH 1981

SOUTHERN ALPS MT (NZ)
** ADDED JUNE 1988
USED (65-88) ALPINE AREA PLUS NEW ZEALAND

EUROPE
** NT (88---) ALPINE AREA
BT (88---) EURASIA

NOTE: There have been very few changes in the broad term/narrow term relationships. Occasional adjustments are necessitated by political events. Starting with the changes made for the sixth edition (1988), historical scope notes for Broad Terms and Narrow Terms in the style of the *Exploration and Production Thesaurus* are being added to the *Geographic Thesaurus* entries.

USE entries indicate the preferred term used for indexing.

MISSISSIPPI RIVER
USE MISSISSIPPI VALLEY

GULF OF MEXICO
USE MEXICO GULF

UF (Used For) indicates an invalid term that is directed to the preferred term under which it is listed.

MISSISSIPPI VALLEY
UF MISSISSIPPI RIVER
UF MISSISSIPPI RIVER AREA
UF UPPER MISSISSIPPI VALLEY

NT (Narrow Term) designates a term which is a more specific subdivision of the term.

CAPE VERDE ISLANDS
NT SAL MAIO RIDGE

BT (Broad Term) designates one or more hierarchically related terms, of which the concept is a geographical subdivision.

MALAY PENINSULA
BT ASIA
EURASIA

SAHARA DESERT
BT AFRICA

SA (See Also) usually designates terms that are related but have not been directly connected in a vertical hierarchical relationship. In some cases, the SAs give information about the location of the feature or the features encompassed by the feature.

SANTA CRUZ ISLAND
BT CALIFORNIA
SA CHANNEL ISLANDS

SOUTH MT
BT EASTERN US
SA MARYLAND
SA PENNSYLVANIA

NORTHEASTERN MEXICO
BT MEXICO
SA CHIHUAHUA
SA COAHUILA
SA NUEVO LEON
SA TAMAULIPAS

PLS (Plus) indicates the second term of a two-term synonym; used with the *USE* statement.

WEST PUNJAB
USE PAKISTAN
PLS PUNJAB

WTH (With) indicates the second term of a two-term synonym; used with the *UF* statement.

PUNJAB
UF WEST PUNJAB
WTH PAKISTAN

EXPLORATION AND PRODUCTION THESAURUS

The *Exploration and Production Thesaurus* covers the subject areas of geology; geochemistry; geophysics; drilling; well logging; well completion & servicing; production of oil & gas; reservoir engineering & recovery methods; pipelining, shipping & storage; alternate fuels & energy sources; business & economics; health, safety & environment; and science & engineering. It contains a set of terms for "Earth and Space Concepts" (e.g., DEPOSITIONAL ENVIRONMENT, FACIES, and BASIN) that are closely related to the terms in this *Thesaurus*.

AUTOPOSTING

Petroleum Abstracts follows the policy of assigning the most specific index terms available to the document in hand. All broader terms in the hierarchies for those terms are automatically assigned through computer processing as additional index terms.

A complete outline of the hierarchy and an alphabetic index to the hierarchy are included at the end of the main *Thesaurus*.

HIERARCHY

The hierarchy provides a compact listing of the terms in their structured form. WORLD is the top level of hierarchy for this *Geographic Thesaurus*. The terms at the next level down, which appear alphabetically, are as follows:

AFRICA
CENTRAL AMERICA
EURASIA
NORTH AMERICA
OCEANIA
SEAS AND OCEANS
SOUTH AMERICA

The Hierarchy Index provides a convenient means for locating any word in the hierarchy. Each column of the hierarchy is numbered, and the index indicates the hierarchy column in which the term may be found.

ALPHABETIZATION RULES

Terms are ordered according to the ASCII sorting sequence: numbers precede letters and symbols, such as parentheses, precede numbers. Spaces precede all other data. Abbreviations appear in regular alphabetic sequence. See Figure 2 for an example of alphabetizing rules.

SRI LANKA
ST ALBANS AREA

ST VINCENT ISLAND
STAFFORDSHIRE COAL FIELD

Figure 2. Alphabetizing order

ABBREVIATION PROCEDURES

Terms, including spaces between words, are limited to a maximum length of 26 characters. For longer terms, abbreviations are required.

1. Abbreviations in proper names; the following always used:

Mount/Mountain(s)	Mt
Saint(e)	St(e)

2. When abbreviations are used because of space limitation, the following criteria are applied:

   a. The first word is not abbreviated.

   b. When necessary, individual letters (usually vowels) are deleted from individual words, as near the end of a concept as possible, making sure that a legitimate word is not created in the process.

BOLIVAR MANSFIELD FLT SYST
* BOLIVAR MANSFIELD FAULT SYSTEM

COURTHOUSE CREEK FRACT ZON
* COURTHOUSE CREEK FRACTURE ZONE

   c. Spaces are not left between initials, and they are not punctuated; e.g., EASTERN US.

3. Other abbreviations are selected from the following references:

   a. Abbreviation compilation used for Petroleum Abstracts.

   b. *Suggestions to Authors*, U.S. Geological Survey

   c. *Webster's Third International Dictionary*

   d. *American Standard for Periodical Title Abbreviations*, 1963; Council of National Library Associations

4. Abbreviations for state names (US)

ALABAMA	ALA
ALASKA	ALASKA
ARIZONA	ARIZ
ARKANSAS	ARK
CALIFORNIA	CALIF
COLORADO	COLO
CONNECTICUT	CT
DELAWARE	DEL
FLORIDA	FLA
GEORGIA	GA
HAWAII	HAWAII
IDAHO	IDAHO
ILLINOIS	ILL
INDIANA	IND
IOWA	IOWA
KANSAS	KANS
KENTUCKY	KY
LOUISIANA (not used with parish names, only parenthetically with field names)	LA
MAINE	MAINE
MARYLAND	MD
MASSACHUSETTS	MASS
MICHIGAN	MICH
MINNESOTA	MINN
MISSISSIPPI	MISS
MISSOURI	MO
MONTANA	MONT
NEBRASKA	NEBR
NEVADA	NEV
NEW HAMPSHIRE	NH
NEW JERSEY	N J
NEW MEXICO	N MEX
NEW YORK	N Y
NORTH CAROLINA	N CAR
NORTH DAKOTA	N DAK
OHIO	OHIO
OKLAHOMA	OKLA
OREGON	ORE
PENNSYLVANIA	PA
RHODE ISLAND	RI
SOUTH CAROLINA	S CAR
SOUTH DAKOTA	N CAR
TENNESSEE	TENN
TEXAS	TEX

UTAH	UTAH
VERMONT	VT
VIRGINIA	VA
WASHINGTON	WASH
WEST VIRGINIA	W VA
WISCONSIN	WIS
WYOMING	WYO

REQUIREMENTS FOR NEW TERMS

Rules for the creation of terms are as follows:

1. A new term must represent a distinctive area not currently included in the *Thesaurus*.
2. Where synonyms or near synonyms exist, one is selected as a term, and the others are referred to it.

   EAST TEXAS AREA
   USE EAST TEXAS BASIN

3. Terms containing "of", such as "Gulf of _____" and "Straits of _____", are inverted to facilitate online retrieval whenever possible. Examples: MEXICO GULF and FLORIDA STRAITS.

ALT FUELS & ENERGY SOURCES
BUSINESS & ECONOMICS
DRILLING (WELL)
GEOCHEMISTRY
GEOLOGY
GEOPHYSICS
HEALTH, SAFETY & ENVIRON
PIPELINING, SHIP & STORAGE
PRODUCING OIL & GAS
RESERVOIR ENG & REC METHOD
SCIENCE & ENGINEERING
WELL COMPL SERV & WORKOVER
WELL LOGGING & SURVEYING

Figure 3. List of category descriptors

ADDITIONAL DESCRIPTIVE TERMS

Category, Document Type and Language descriptors are added to each document in *Petroleum Abstracts* and these descriptors can be used for searching the online Petroleum Abstracts files. Consult the online documentation for the correct way to search the specific fields where these descriptors are listed.

The category descriptor designates the section of the weekly bulletin where the document appeared. The Mineral Commodities category was used September 1977 through June 1995. A list of the categories is shown in Figure 3.

Document types are assigned to indicate the type of document being indexed; only one document type per item. A list of these is shown in Figure 4. *Patent* has been used since 1965; *Map, Thesis, Meeting Paper Text, Meeting Paper Abstract, Government Report*, and *Book* have been assigned since 1974. The document type *Review or Survey* was used from 1974 until mid-1987. Since the index term REVIEW has been used. The document type *News* was used from 1974 until 2000. The document type *Standard* has been used since January 1997. The document type Meeting Paper Visual was added in July 2003. *Oil & Gas Fields File* is a special document type, applied to the 1920-1964 documents pertaining to oil and gas fields. PLEASE NOTE: If the document does not fit one of the document types, no aspect code is assigned to the document. This includes all of the journal articles and miscellaneous reports. When a document fits more than one document type, the type that is highest on the list is used; the other type is indicated by an additional index term.

Patent
Map
Thesis
Meeting Paper Text
Meeting Paper Abstract
Meeting Paper Visual
Standard
Government Report
Book
Oil & Gas Fields File

Figure 4. List of document types.

Finally, the language in which the document is written is indicated.

Document Retrieval

The University of Tulsa's McFarlin Library houses the documents covered by Petroleum Abstracts. Copies are provided on request, with a fee per page and the payment of appropriate royalties, from the Petroleum Abstracts Document Delivery Service.

TULSA File Access

The TULSA online file contains the contents of *Petroleum Abstracts* from 1965 to date, plus earlier documents pertaining to oil & gas fields. You can obtain direct access to the TULSA file through a Search License. The Petroleum Abstracts staff will perform a search of TULSA on request. There is a charge for this service. Contact Petroleum Abstracts for more information on these services.