

ECOTOX

ECOTOXicology Database System

ECOTOX Literature Searches, Citation Identification and Skimming

Prepared for:

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LITERATURE SEARCHES

The principal search methods are:

- **Keyword:** Keyword searches are Boolean in nature and constructed for use on Web of Science, PubMed, Dissertation Abstracts, and ProQuest. With the exception of ProQuest, results are provided via email with such results compiled into a ProCite file on a quarterly basis.
- **Table of Contents (TOC):** Web of Science provides bibliographic information and abstracts for all articles appearing in each volume/issue of a selected set of journals. Results are provided via email with such results compiled into a ProCite file on a quarterly basis.
- **Reviews:** Bibliographies/lists of references from selected papers are examined on a regular and ongoing basis. References identified as likely to be applicable are then entered into UNIFY on a regular and ongoing basis.

Keyword Searches

Keyword searches are performed via automatic alerts (see Table 1), except for ProQuest, which does not have an option for tagged citation alerts. Each vendor search strategy and process is displayed under each vendor section below.

Table 1. Electronic Vendors and Databases Used in ECOTOX Searches

Vendor	Database	Alert Period
ProQuest	Environmental Science and Pollution Management (ESPM) http://proquest.libguides.com/ Aquatic Sciences and Fisheries Abstracts (ASFA) Part 3 Ecology Abstract Pollution Abstracts Toxicology Abstracts Water Resources Abstracts	Manual monthly and annual search
ProQuest	Dissertation Abstracts (ceased STN on Feb 1, 2015) ProQuest staff sends Excel file via email of citations	Quarterly (ProQuest staff)
PubMed	TOXLINE (tox subset)	Weekly via NCBI alert
Web of Science	Current Contents: Life Sciences and Agriculture, Biology & Environmental Sciences sections	Weekly

ProQuest Search Instructions

Searches within the ProQuest system (<http://search.proquest.com/espm>) are set up and saved in My Research option. Run manual searches on a quarterly basis and download citations by month. Use these instructions and search terms (Appendix A) to initiate monthly searches.

For additional background information about the database and search instructions, refer to "About ECOTOX Literature Searches" document.

Instructions:

1. **Database/Subfiles:** Access the ProQuest website (<http://search.proquest.com/espm>), select the database, Environmental Science and Pollution Management (ESPM), then restrict to the five subfiles listed in Table 1.


You are searching: 1 database ([See list](#) | [Change »](#))


ProQuest

Select Databases


Select databases to search, then click **Use selected databases** to go to the search for

[Brief view](#) | [Detailed view](#)

☐ Select all  Full Text Include

☐ ☐ **Environmental Science and Pollution Management** (1967 - current) 
 Environmental biotechnology, engineering, pollution - journal articles, conference proceedings, government publications
 Subject Area(s): Science & Technology

☐ **Aquatic Science & Fisheries Abstracts (ASFA) 3: Aquatic Pollution & Environment**
 Aquatic pollution, prevention and control - journal articles
 Subject Area(s): Science & Technology

☐ **Bacteriology Abstracts (Microbiology B)** (1982 - current) 
 Subject Area(s): Science & Technology

2. **Search Strategy:** a. Copy/paste the search strategy listed found in Appendix A into the Command Line search box.

After search results display, click on “Save Search” link in the upper right on search screen.

 [Create alert](#)  [Create RSS feed](#)  [Save search](#)

3. **Saved Searches (My Research):** In upper right corner is a link to My Research, which displays a new window to set up or enter your My Research Login information. Enter username = ecotoxduluth and the password (available from contractor literature search staff). Locate the saved search and select “Modify Search” and search terms will be display in the Command Line Search box.



The screenshot shows the ProQuest My Research interface. At the top, it says "Searching: 2 databases" and "8 Recent searches | 100 Selected items | My Research". Below this, there's a search bar and the ProQuest logo. The main content area shows a list of search results. At the bottom, there's a navigation bar with buttons for "Documents (0)", "Figures & tables (0)", "Searches (12)", "Alerts (0)", "RSS feeds (2)", "Widgets", and "Account".

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Name:

ECOTOX Quarterly Keyword Search [Edit name](#)

Searched for:

(STYPE("Scholarly Journals" OR Reports OR Thesis OR "Government Documents") AND (su("toxicity OR "toxicology OR bioassay" OR "lethal OR bioaccum") OR cc(01504 OR 08504) OR (LC NEAR/3 50)) NOT ISSN(0002-1962 OR 0003-4746 OR 0166-445X OR 0090-4341 OR 0340-5761 OR 0006-2952 OR 1354-750X OR 0007-4861 OR 0045-6535 OR 0010-3624 OR 1532-0456 OR 1064-3389 OR 1040-8444 OR 0963-9292 OR 0147-6513 OR 0091-6765 OR 0269-7491 OR 0013-936X OR 1552-8618 OR 0960-3271 OR 1528-7394 OR 1341-0725 OR 0141-1136 OR 0048-3575 OR 0041-008X OR 0378-4274 OR 1096-6080 OR 0300-483X OR 0049-6979 OR 0043-1745) NOT IF(m?n OR human* OR child* OR occupant* OR infant* OR wom?n OR patient* OR pediatric) AND LA(ENG))

Databases:

5 databases searched [Hide list](#)

Aquatic Science & Fisheries Abstracts (ASFA) 3: Aquatic Pollution & Environmental Quality

Ecology Abstracts

Pollution Abstracts

Toxicology Abstracts

Water Resources Abstracts

Notes:

Approved 5/14/14 by EPA for ECOTOX

Saved:

May 16 2014

[Modify Search](#)
[Delete](#)
[Create alert](#)
[Create RSS feed](#)
[Get link](#)

4. **Publication Year:** Restrict month/year within the month(s) associated within each quarterly search deliverable (see table below). For example, within the next year's first quarter search, search the entire previous year, by month.

Do not enter calendar days and do not use the UD= field code within Advance/Command Line search boxes, as it only allows entry of one date (e.g., year-mo-day).

Limit to:

☐ Full text
 ☐ Peer reviewed [?](#)

Publication date:

On this date...

Search for documents published on this specific year, month, or date

January

Any Day

2015

(yyyy)

Maintain a unique ProCite file each calendar year and import citations into the master ProCite file for the previous year to remove duplicates. This will streamline the process by precisely searching/downloading citations and removing duplicates each quarter. For each quarterly search download, import citations into the master annual ProCite file to remove duplicates prior to adding to searches from other vendors



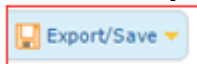
The alert options within ProQuest does not include tagged citations format, so searches must be manually performed via saved search stored within My Research. Use an electronic reminder process to help remember to perform the searches after the end of each month. Citations are downloaded from resulting search each quarter, by month.

ProQuest Monthly Search Schedule

Month	Jan – Mar	Apr – Jun	July – Sept	Oct - Dec	Annual Search (all months)
Jan (include citations lacking month identifier)	X	x	X	X	X
Feb	X				X
Mar	X				X
Apr		X			X
May		X			X
Jun		X			X
Jul			X		X
Aug			X		X
Sep			X		X
Oct				X	X
Nov				X	X
Dec				X	X

5. Download Citations: When the citation results are displayed in the Search Result screen, you save the results by selecting all items on the page, then clicking on the

Export/Save, link.



The system seems to function up to about 500 citations marked per download. More than 500 citations marked may cause download to fail. Do not utilize the “My Research” function to save the citations first, as it will only allow 100 citations to be exported at one time. Click on the “Export/Save” link to save the output to the LITSRCH\ECOTOX Quarterly Searches*. * as an RIS text file. When the citations are downloaded, ProQuest only includes unique citations, so number of citations may be less.

Selected items



Web of Science : Current Contents

1. Access via the MED EPA Library intranet system – the Web of Science link under the “Favorites” grouping or obtain remote access permission via the EPA ECOTOX Technical Monitor.
2. Select Current Contents as your database (Select a Database)

ECOTOX Literature Searches, Citation Identification and Skimming

[All Databases](#) [Select a Database](#) [Current Contents Connect](#) [Additional Resources](#)

[Search](#) [Advanced Search](#) [Search History](#) [Browse Journals](#)

Current Contents Connect®

Search

Example: oil spill mediterranean*

in [Topic](#)

AND
Example: O'Brian C OR OBrian C**

in [Author](#)

AND
Example: Cancer OR Journal of Cancer Research and Clinical Oncology*

in [Publication Name](#)

[Add Another Field >>](#)

[Search](#) [Clear](#) Searches must be in English

Current Limits: [Save As My Defaults](#) ✓ **SAVED**

Timespan

☒ All Years (updated 2012-02-02)

☐ From [1998](#) to [2012](#) (default is all years)

Editions

☒ Agriculture, Biology & Environmental Sciences (ABES) --1998-present

☒ Life Sciences (LS) --1998-present

☐ Physical, Chemical & Earth Sciences (PCES) --1998-present

☐ Engineering, Computing & Technology (ECT) --1998-present

Save Search History

[<< Back](#)

Save on Web of Knowledge Server

Use this box to save your history to your private account.

1. Edit the fields you wish to change.
2. Click "Save" below when done.

Product: Current Contents Connect

History Name: (Required)

Description: (Optional)

Number of Search Queries: 11

Send Me E-mail Alerts: ☒ (Results of the last query in your history will be e-mailed to you.)

Send to e-mail address:

Alert type: [Full Record](#)

E-mail format: [Field Tagged](#)

Alert query: ((DIS=(ENVIRONMENT ECOLOGY) OR DIS=(PHARMACOLOGY TOXICOLOGY)) AND TS=Toxic*) AND Language=(English)

Alert editions: ABES, LS


E-mail frequency: ☐ Daily ☒ Weekly ☐ Monthly

[Save](#) Save your history to the server

3. Enter search terms in the advanced search and select editions "Agriculture, Biology & Environmental Science (ABES) and Life Sciences (LS). Perform search.

MED ECOTOXICOLOGY DATABASE SOPS JUNE 2016

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4. Go to “Save search history”. Locate your search and select the option to save as an alert. Select Alert type as “Full Record”, Email format as “Fielded Tagged” and Frequency as “Weekly” for options.
5. The alerts will be sent and downloaded within the alert email account (ecotoxduluth@gmail.com)
 - a. Select the email to download by “Show original” (select from drop-down menu)
 - b. Click on your web browser  icon (upper right corner) and select “Save Page As” in text (*.txt) format
 - c. Within the email account, archive the downloaded file (do not delete).
 - d. Open EndNote software and import saved file to EndNote using the “ISI-CE” filter. Note: the ProCite import filter for “ISI-CE” improperly imports citations (several problems exist that do not seem to be related to content/tags)
 - e. Within EndNote, display newly imported citations and press CNTL-A to selected all citations to export
 - f. From the file menu, click export in RIS format and save as a text file

Toxline Search Strategy via PubMed (NCBI Account)

1. Set up an NCBI account (free) The URL to set up your NCBI is:
<http://www.ncbi.nlm.nih.gov/myncbi/>
2. Access PubMed advanced search website:
<http://www.ncbi.nlm.nih.gov/pubmed/advanced>
3. Insert the ECOTOX standard search strategy (Appendix A) using the PubMed (advanced) “Builder” entry fields and system will display terms in the entry box above. Click on Search button after all terms have been entered

("Cyanobacteria"[Mesh] OR "Aquatic Organisms"[Mesh] OR "Alveolata"[Mesh] OR "Choanoflagellata"[Mesh] OR "Cryptophyta"[Mesh] OR "Diplomonadida"[Mesh] OR "Euglenozoa"[Mesh] OR "Fungi"[Mesh] OR "Haptophyta"[Mesh] OR "Mesomycetozoea"[Mesh] AND "Plants"[Mesh] OR "animals"[MeSH Terms:noexp] OR "Rhizaria"[Mesh] OR "Stramenopiles"[Mesh])

[Edit](#) [Clear](#)

Builder

All Fields [Show index list](#)

AND [Show index list](#)

[Search](#) or [Add to history](#)

- Save search (found at top, under your search term entry box)

PubMed [Search](#)

[RSS](#) [Save search](#) [Advanced](#)

- Set up Saved search within your NCBI account as a weekly alert. Select "Medline" as the Report

Your PubMed search

Name of saved search:

Search terms:

[Test search terms](#)

E-mail: [dgrunwal@csc.com](#) ([change](#))

Would you like e-mail updates of new search results?

- ☐ No, thanks.
- ☒ Yes, please.

Frequency:

Which day?

Formats:

Report format:

Number of items:

Send at most: ☐ Send even when there aren't any new results

Any text you want to be added at the top of your e-mail (optional):

Format.

[Save](#) [Cancel](#) [Delete](#)

6. Within the alert email Gmail account (ecotoxduluth@gmail.com), select the email to download by “Show original”, then copy and save text in Notepad. Save in text (*.txt) format. Within the email account, archive the downloaded file (do not delete).

ProQuest Excel File Conversion to ProCite

Quarterly ProQuest (Dissertation Abstracts) Excel files are sent by email from ProQuest staff. The Excel files are store in this directory, LITSRCH\ECOTOX Quarterly Searches\Dissertations. To import the citations from Excel into ProCite format, use these instructions:

1. Open file in Excel and save file (Save as) in Text (Tab delimited) format. Then open saved file in Word and use the find tabs (^t) and replace with “|”. Resave file format text (ASCII) format.
2. Within ProCite, select the “Import text file” command in the “Tools” drop down menu to import the MS-DOS “*.txt” that was exported from the MS-Excel tables.
3. Use the following import delimited settings:
 - a. Select File Type = Delimited
 - b. Modify file format = “Custom”
 - c. Click on “Modify” to update these fields separated by “Other = |” (pipe delimited)
 - d. Included fields = “All 45 Fields” (Uncheck “Workform Indicators” and “Record IDs”)
4. Import the file and globally transfer fields into correct ProCite fields (e.g., Author (#1), Title #4), Dates (#20), UMI# (#25) and University (#10) data fields. Remove (“) quotes with within fields. Remove blank and header row text only records.

Compiling Keyword Searches

Track all imported files from ProQuest, Web of Science, PubMed and Dissertation Abstracts to match the number of citations as documented in: LITSRCH\ECOTOX Quarterly Searches\YYYY\Keyword Searches (Example: ECOTOXalert_searchhistoryFY2015.doc. Use standard ProCite fields, per “*ECOTOX Literature Acquisition and Paper Processing*” SOP for preparing the file.

1. In ProCite, create a new database, then select “Import Text File” option from “File” menu. Use these import filters as found in LITSRCH\ProCite_RefMan\

Database	Import Filter	Comment
ProQuest	RIS_ISI.cfg	
Web of Science (Current Content Alert)	EndNote: “ISI-CE” Export from EndNote to ProCite using “RIS_EndnNote.cfg”	Note: the ProCite import filter for “ISI-CE” improperly imports citations (several problems exist that do not seem to be related to content/tags)*.

Database	Import Filter	Comment
PubMed	MEDLARS.cfg	
Dissertation Abstracts (Excel)	Delimited/Custom format	See instructions in this document, " ProCite Excel File Instructions... "
ECOTOX Unify	RIS_ECOTOX.cfg	

To ensure compatibility with software, select the appropriate filter for database fields, which has been customized for our file format (ECOTOX OW workform).

2. Remove manual table of content (TOC) journals found in Table 2 and any Non-English language identifiers (found in #43 in ProCite file). For citations from the table of contents (TOC) search journals, mark Field #40 and #45 with "DUPLICATE QUARTERLY MANUAL SEARCH". This will remove the citations from the skimming process, but keep citations in the file for documentation purposes.
3. Remove duplicates between the searches (before adding Unify citations). Also copy the previous two quarterly searches (tag Field #44 with a unique code), deleting the new quarterly citations). After duplicate check, delete the entire previous search.
4. Export ECOTOX references from Unify search (or daily RIS files) for only the recent publication years (i.e. typically the current and one previous year using RIS_ECOTOX.cfg. Mark the search duplicates with the term ECOREF in Field #37 and habitat (A and/or T) in Field#40. Delete entire ECOTOX reference file after. Note: Unify are checked at this point in the process to:
 - Decrease time in skimming citations, quality assurance tasks and manual duplicate checking by data entry.
 - Search identifies citations in Unify, which are not detected in the title only searches. Citations that are located are tagged and marked for ordering and/or recalling paper early in the acquisition process.
 - Remove non-applicable citations previously sent in previous non-ProQuest literature searches.

5. Convert all imported citations to the correct ECOTOX workform-

Select "Database"

then "Edit Marked Records"

then "Global Change Workform", from the drop down menu select "Ecotox Workform"

6. Format the ProCite ID file, mark or check these fields have the following information:

Field #1 = Author (replace [Reprint Author] with a blank space. Check for diacritical marks and replace with non-diacritical alternate characters should be imported into Unify system)

Field #10 = Journal Title

Field #20 = Publication Year

Field #22 = Volume

Field #24 = Issue

Field #30 = [YEAR]ID (e.g., 2014ID)

Field #37 = "Non Applicable"

Field #39 and #40 = (empty)

Field #42 = [Vendor supplied abstract/keyword text, if available]

Field #43 = [YEAR]QA (e.g., 2014QA)

Field #44 = Search history text to identify search by month and year (e.g., "BIOSIS, AUG 2008")

Note: If vendor does not parse out the bibliographic fields, leave text in Field #10 and for applicable publications, the acquisition staff will manually format these fields to match the above .

Table of Contents (TOC) Search

Approved journals are searched quarterly, skimming the entire table of contents. These journal citations are received via regular updates, exported and transferred to ProCite format. Search journals are listed in Table 2. Also includes the annual MED library search.

Table 2: Manually Searched Journals Removed from Quarterly ECOTOX Searches

Journal Abbreviation	Journal Full Name	ISSN
Agron. J.	Agronomy Journal	0002-1962
Ann. Appl. Biol.	Annals of Applied Biology	0003-4746
Aquat. Toxicol.	Aquatic Toxicology	0166-445X
Arch. Environ. Contam. Toxicol.	Archives of Environmental Contamination and Toxicology	0090-4341
Arch. Toxicol.	Archives of Toxicology	0340-5761
Biochem. Pharmacol.	Biochemical Pharmacology	0006-2952
Bull. Environ. Contam. Toxicol.	Bulletin of Environmental Contamination and Toxicology	0007-4861
Chemosphere	Chemosphere	0045-6535
Commun. Soil Sci. Plant Anal.	Communications in Soil Science and Plant Analysis	0010-3624
Comp. Biochem. Physiol. C Toxicol.	Comparative Biochemistry and Physiology: Toxicology and Pharmacology. C Toxicology and Pharmacology	1532-0456
Ecotoxicology	Ecotoxicology	0963-9292

Journal Abbreviation	Journal Full Name	ISSN
Ecotoxicol. Environ. Saf.	Ecotoxicology and Environmental Safety	0147-6513
Environ. Health Perspect. and Supplement	Environmental Health Perspectives	0091-6765
Environ. Pollut.	Environmental Pollution	0269-7491
Environ. Sci. Technol.	Environmental Science and Technology	0013-936X
Environ. Toxicol. Chem.	Environmental Toxicology and Chemistry	1552-8618
J. Toxicol. Environ. Health Part A	Journal of Toxicology and Environmental Health Part A	1528-7394
Mar. Environ. Res.	Marine Environmental Research	0141-1136
Pestic. Biochem. Physiol.	Pesticide Biochemistry and Physiology	0048-3575
Toxicol. Appl. Pharmacol.	Toxicology and Applied Pharmacology	0041-008X
Toxicol. Environ. Chem.	Toxicological and Environmental Chemistry	0277-2248
Toxicol. Lett.	Toxicology Letters	0378-4274
Toxicol. Sci.	Toxicological Sciences	1096-6080
Toxicology	Toxicology	0300-483X
Water Air Soil Pollut.	Water, Air and Soil Pollution	0049-6979
Weed Sci.	Weed Science	0043-1745

Web of Science Email Alerts via EPA Desktop Library or contractor approved access

1. Access via the MED EPA Library Intranet system – the Web of Science link under the “Favorites” grouping or obtain remote access permission via the EPA ECOTOX Technical Monitor
2. Locate the Web of Knowledge link under the “Favorites” grouping.
3. Click on “My Journal List” This will access all journals and option to select RSS Feed or Email Alert for the Current Contents database.
4. Select the manual quarterly search journal titles. Searches can be completed by “title keywords” or with abbreviated wildcard descriptors (e.g., biolog*).

5. When an Email alert for a journal is created, the alert is active for one year and can be renewed. Currently, renewed through December 2015.
6. After the journal title is added – select both boxes “Display on Home Page” and “Send me Table of Contents Alert”.
7. Click on “Submit selections “to finish the setup process.
8. Do not use your contractor email address to receive alerts as the firewall deletes emails with perceived “offensive” words. Send email to the ecotoxduluth@gmail.com (see contractor literature search lead for access).

Importing Email Alerts into ProCite

1. Create and open new blank ProCite file. Use Chrome browser software for efficiency.
2. Download alerts from email account (ecotoxduluth@gmail.com) and copy/save text into an ASCII text file format. (*.txt) e.g., file name, N:\LITSRCH\Web of Knowledge\Archive\ CHEMOSPHERE 81 -1 2010.txt (Within the Gmail inbox, select “show original” format, then Save as (*.txt) format). Document the number of citations listed in alert to ensure all alerts are transferred. Archive the email after downloaded.
3. Import text file from email download into the ProCite file using the following import filter.
 - a. Web of Knowledge N:\Litacquis\handsrch\FY 11\EMAIL Alerts TOC for ISI WoK-Alert.cfg
 - b. ProQuest (formally CSA) Web of ScienceN:\LITSRCH\ProCite_RefMan\ISI WoK-Alert ALT.cfg or ISI WoK-Alert.cfg

PubMed Search within ProCite Software

Within ProCite got to the Menu Bar, then select “Tools”, then select “PUBMED Search”

In the Search fields select:

Title = Journal Name (e.g., *Aquatic Toxicology*)

Volume = Volumes searched (for multiple volumes/issues), search instead on publication year the volumes were published)

Resulting citations will display below. Select and “copy marked” citations to master ProCite ID file (e.g. Nov2011ALL.pdt)

PubMed requires the name entry to match their journal name (full or abbreviated). To locate the correct format to enter, search the PubMed journal website at:

<http://www.ncbi.nlm.nih.gov/nlmcatalog/journals>

(Example: Comp Biochem Physiol C Toxicol Pharmacol)

Compiling Table of Contents (TOC) Searches

You will create a new ProCite database to import citations in the master file (ALL.pdt)

1. Create a new ProCite file named – ALL (Quarter) (year).pdt that serves as the master file for importing all downloaded citations for the respective quarter.

Example: ALL Q1 2015.pdt located at LITSRCH\ECOTOX Quarterly Searches\2015\Table of Contents Searches\Q1.

2. Create a subfolder for each website/or database searched. Within each website/database folder, create subfolders for each Journal title that is returned by the search, LITSRCH\ECOTOX Quarterly Searches\YYYY\Table of Contents Searches

Example: LITSRCH\ECOTOX Quarterly Searches\2015\Table of Contents Searches\Q1\PubMed\Aquatic Toxicology

Downloads from all alerts should be archived as an archived subfolder within the subdirectory that is being created.

3. Each separate issue or volume should also be created into individual ProCite files that are all under the relevant Journal title/subfolder

4. For downloaded files in the *.pdt format (ProCite), use the “Copy Marked” button in ProCite to copy the files into the ALL.pdt “master” ProCite file.

5. For files in *.RIS format, use the ProCite function in “Tools” -- “Import Text File”

Then select “File Type” as “Tagged”,

“File Format” as “RIS”,

“Target Database” as “ALL.pdt”

Click on the “Transfer” button to complete the transfer.

6. Convert all imported citations to the correct ECOTOX workform-

Select “Database”

then “Edit Marked Records”

then “Global Change Workform”, from the drop down menu select “Ecotox Workform”

Format the ProCite ID file, mark or check these fields have the following information:

Field #1 = Author (replace [Reprint Author] with a blank space. Check for diacritical marks and replace with non-diacritical alternate characters should be imported into Unify system)

Field #10 = Journal Title (Globally change journal title to exactly match the Unify full journal name)

Field #20 = Publication Year

Field #22 = Volume

Field #24 = Issue

Field #30 = [YEAR]ID (e.g., 2014ID)

Field #37 = “Non Applicable”

Field #39 and #40 = (empty)

Field #42 = [Vendor supplied abstract/keyword text, if available]

Field #43 = [YEAR]QA (e.g., 2014QA)

Field #44 = Search history text to identify search by month and year (e.g., “BIOSIS, AUG 2008”).

MED Library Reprints, Other Literature and Thesis

Searching and Processing of the MED Staff Publications

A MED staff publications search is completed on an annual basis.

MED Reprints Search

Annually request current "TechInfo.pdt" ProCite file from EPA and locate any new additions in Field #31 (Compare EPA Reprint # and track on the quarterly search memo). Master contractor file is found at LitAcquis\Journal holdings\MED Reprints Tech Info\Reprints_Master.pdt

Medium Type (Field #5) Only extract, journal "articles", Reports (all types), Book, paper (Note- ProCite does not allow searching on the term "journal")

Reprint Status (Field #12) contains date entered into file

Call Number (Field #44) contains a tracking number

Sort on Record ID to locate new citations (July, 2014, Record ID 5978)

If unable to access the electronic version for MED staff publications, hard copies are located in the EPA MED library. You may also access the computer network with prior approval. EPA MED visitors must be cleared by security before entering the facility.

MED Thesis and Other Literature Search

1. Search for new MED theses ProCite file found in L:\Priv\Library\Library.pdt (request from onsite contractor staff) using the term "Thesis" There is not sequential numbering within the thesis category (Do not use EPA Online OLS system to locate).
2. Copy citations resulting from this search to a new ProCite file and send to contractor site. Search Field#2 = "OTHERLIT" to locate MED other literature citations. Sort on Record ID to locate new citations (July, 2014 Record ID 75008).
3. Compare against the master thesis ProCite file (LitAcquis\MED Thesis Collection\MASTER ECOTOX MED Library Thesis Tracking.pdt). Determine if new thesis was received and notify staff to locate new thesis in MED library.
4. Locate full copy in MED Library by author last name and skim the full thesis to determine applicability. Add "MED Thesis Collection" to the Order Notes field, if PDF has been made for ECOTOX files (July 2014, Record ID 75018).
5. Forward thesis to data entry for citation entry. If applicable, forward the full thesis to EPA for copying before returning thesis to MED library. If non-applicable return directly to the MED library.
6. Extract the ProCite citation for the new thesis and forward to Contractor staff to add to the master ProCite file used to track completed thesis.

To track the MED thesis process, update the quarterly manual search summary:

1. Using the previous quarterly search memo check the numbers recorded and assigned to the documents in the section.
2. Note the numbers assigned to all documents collected and record in the new memo.

Each tracking table in the search history matches an update period. For journal alerts and table of content searches, total and applicable citations are documented in a file (LITSRCH\ECOTOX Quarterly Searches\YYYY\Table of Contents Searches by year, then quarter (Q1).

SEARCH SUMMARIES AND TRACKING

Electronic search summaries are forwarded to EPA when only a brief summary is total citations downloaded, number applicable are required. The information below Table 3 is a more detailed summary used when specifically requested to provide a more detailed analysis. If more than one database is searched, overlap between citations in the downloaded set can be determined as the Example in Table 4.

Table 3. Example Electronic Detailed Search Summary

Database/Date Search Performed	Total Hits	Citations after Duplicates Removed*	Applicable ECOTOX Citations	% Applicable ECOTOX Citations	New Applicable ECOTOX Citations ***	% New Applic. ECOTOX Citations	Additional Applicable ECOTOX Citations	Non-Applicable Citations**
Chemical Abstracts (12/6/00)	936	933	344	36.8	202	21.6	109	480
Toxline (12/6/00)	1428	1000*	367	36.7	258	25.8	54	579
Total	2364	1933	711	36.7	460	23.8	163	1059

* Many internal duplicates within the Toxline database

** Non-applicable Categories (multiple terms may be used for one citation)

Chemical Method- 280

Human Health - 257

Survey - 191

No Tox Data - 119

In Vitro - 54

Bacteria – 42

Method - 37

Effluent - 31

Model - 25

QSAR - 16

Review (no tox) - 15

Mixture - 13

No Species - 7

Yeast – 3

***New Applicable Terrestrial by Species Groups

Insect - 291

Plant - 83

Avian - 29

Invertebrate - 34

Mammal - 7

Table 4. Overlap (All Citations) Between Search Databases

Database	CAS	TOXLINE	ECOREF
CAS		285	192
TOXLINE			187
ECOTOX			

108 found in all three databases, * 210 located in ECOTOX that were not located by either CAS or TOXLINE

Each search retrieved is tracked from search download through when applicable citations are transferred into the Unify system (Table 5).

Table 5. File Location for Searches, Summary Results and Tracking Spreadsheets

Table Type/Purpose	Location of Table
--------------------	-------------------

ECOTOX Literature Searches, Citation Identification and Skimming

Table Type/Purpose	Location of Table
Search tracking/status	Current search tracking file is located at "litsearch.doc" Completed searches from "searchlog.doc" contains the recent searches into "searchlog.xls" and periodically forward to EPA
EPA Search Summary Memos	.LITSRCH\ECOTOX Quarterly Searches (various subdirectories to match the bibliographic file
Downloaded Citations and Bibliographic Search Files	LITSRCH\ECOTOX Quarterly Searches

CITATION IDENTIFICATION

ECOTOX staff identifies applicable citations from electronic (e.g., search databases, Table of Contents = TOC) and manual (hard copy) searches (e.g., bibliographies, some table of contents).

Electronic Search Citation Storage

Citations are processed in an electronic format using ProCite (*.pdt). The directory locations for ECOTOX search result files are in litsrch\csa\ (CSA), N:\litsrch\ResearchAlert (STN) or LITSRCH\ECOTOX Quarterly Searches\YYYY\Table of Contents (TOC).

For determining applicable citations and data field content, refer the “*Unify Data Fields and Codes*” that describes detailed categorization for papers (non-applicable, database, subdatabase) fields.

Electronic Skimming Identification (ID) Procedure using ProCite Software

1. Locate the search file to process
2. Double click on the file to ID, opening ProCite software
3. As needed, remove duplicates within this database (primary duplicate checking should have already been completed).
 - a. Note: sorting citations by start and end page helps to find duplicates
4. Identify citations according to the criteria found in “*Unify Data Fields and Codes*”.
5. Complete the following ProCite fields:
 - a. Field #37 - (order status) changes from >NON-APPLICABLE= to >OL- > for applicable citations that should be ordered
 - b. Field #45 – (keyword)- if the citation is NON-APPLICABLE
 - c. Field #40 – (database) - for all citations (A,S,T) - if unsure, enter AT
 - d. Field #29 -(Chemical of Concern - if specific chemical name is not listed in the title, especially when title listed only general terms (e.g., pesticide, insecticide, metals)
 - e. Field #39 - (sub-database) – enter for applicable citations, optional for non-applicable citations

Quality Assurance of Identified Citations

Bibliographic Information Quality Assurance

1. Open ProCite software and select the *.pdt file (Ex. CSA_mar03.pdt)
2. View set in the index list display to the following fields:
 - a. Field #37 – availability = OL
 - b. Field #10 – periodical (full journal name, as found in Unify Manage Journals)
 - c. Field #25 - pages
 - d. Field #22 - volume, Field #24 – issue (as needed)
 - e. Field #20 - year
3. Retrieve references with availability Field#37 =”OL”
4. Check to be sure that all citations for order have journal, start and end page in

citations with availability "OL". Most missing bibliographic data is located within the citations (Field #10 or #42 (abstract)).

5. If not located within the citation, then search Google the title to locate information or for CSA, check on ProQuest website. STN citations can be checked by searching within the search download file.
6. Type the missing information to the ProCite citation.
7. If duplicate citations are found, merge the source location text (Field #44, if different)
8. Ensure no diacritical marks in the author or title fields. Although these do transfer, the search feature in Unify, will not locate diacritical marks.

Proper Categorization Quality Assurance

For untrained reviewers, another trained reviewer examines the completed files to ensure citations were properly completed. The quality assurance checks are:

1. Proper field formatting and valid fields populated:

Field #37 must not be blank. Must have the terms OL or NON-APPLICABLE:

- If NON-APPLICABLE citation, ensure Field #45 had keyword (and it is correctly spelled)
- If OL , make sure there that Field #45 = empty, unless "REVIEW"

These QA steps can be easily viewed, if you display Field #37 (Availability), Field #6 (Keyword), Field #40 (Database), Field #39 (Subdatabase), Field #29 (fill in if not in the title, especially when title listed only general terms (e.g., pesticide, insecticide, metals) and scroll through the file. Sorting on any field header name can also be helpful in quality assuring typos etc.

For all OL (to be ordered) citations, you need to ensure that Field #10 (Periodical) is not empty. Most of the time, the information is stored in other fields in the citation (document title, editors, publisher, etc.).

For keyword searches, check to ensure manual (TOC) journal citations have been removed.

For citations from the manual search journals, mark Field #40 and #45 with "DUPLICATE QUARTERLY MANUAL SEARCH" This will remove the citations from the skimming process, but keep citations in the file for documentation purposes.

2. Proper Keyword Categorization:

- Check for abstracts (1-2 pages may be proceedings/meetings)
- Check biological toxicants and air pollutants
- Check In Vitro citations (may be In Vivo testing)
- Check correct species group (sub-database)

If you determine citations the staff member skimming the citations were in error (applicability and/or reject keyword assignment), you need to mark the change/comment in Field #43 and return to staff member for review and concurrence before forwarding file to data entry staff to process applicable citations.

Review Bibliography Citations

These citations are identified from the source material (i.e., hard copy document).

Bibliographic Reviews

Reviews are divided into two groups:

- REVIEW publications (papers with fewer than 50 relevant citations) are manually skimmed. REVIEW citations are checked upon receipt, do not receive an ECOREF number.
- Review publications with 50 or more relevant citations are reviewed and do not receive an ECOREF number.

If the references have no titles, add the keyword REFS CHECKED, (i.e., the keywords will be REVIEW, REFS CHECKED). Write a note in Order Notes "NO TITLES". If a citation from a bibliography is incomplete (In Press, No Source), it should not be ordered, despite its potential applicability to the ECOTOX databases.

Identify citations according to the criteria found in "*Unify Data Fields and Codes*".

Write the codes on the hard copy bibliography for the following data fields for each citation:

- Habitat - for all citations - if unsure, enter AT
- Non-Applicable Keyword), if the citation is NON-APPLICABLE
- Chemical of Concern (COC), as applicable
- Species group(s), for applicable citations (optional for non-applicable citations)

EPA Criteria and Advisory Documents (CAD) bibliographies have been searched. Relevant published and unpublished literature has been acquired or identified for acquisition. Publications are identified by a "CAD" reference code in Projects and on the paper under the habitat code. Instructions on entering bibliographies for these documents are located in "*ECOTOX Literature Acquisition and Paper Processing, Appendix B*".

Review Bibliography Quality Assurance

Citation Identification Quality Assurance

For reviewers, a second reviewer skims listings of citations identified for order. Citations identified as NON-APPLICABLE are:

- identified with NON-APPLICABLE keyword
- sent back to the originating reviewer for QA
- removed from the order list

The originating reviewer:

- agrees or disagrees with the NON-APPLICABLE designation

- NON-APPLICABLE keyword
- NON-APPLICABLE
- Confirmed applicable citations are sent back to the second reviewer for ordering. Applicable citations are highlighted, so data entry staff can easily determine which citations to order vs. non-applicable.

Non-Applicable Citation Entry:

All Non-applicable citations from hard copy reviews are entered into the master NON-APPLICABLE ProCite file found at nonapplicable\nonapplicable.rmd. Use standard ECOTOX formatting to enter citations and make sure the reject keyword is entered. The Source of the citations is the ECOREF# found on the hard copy review. Processing hard copy manual search papers is located in the *“ECOTOX Literature Acquisition and Paper Processing”*.

SKIMMING PAPERS

Access

The purpose of the reference Skim system is to support the processing of scientific data categorization. The Reference module stores the skimmed information and can be accessed through the ECOTOX Unify dashboard upon login. To enter, select the References module icon. This allows you to access to search and view reference information. To edit with the Skim area, you must have the toxicity module skimmer role assigned by a database administrator.







After a hard copy publication is received, each paper is skimmed for an initial evaluation of the paper's relevance to the ECOTOX database. Skimming determines how the paper is categorized in the data system. Skimming needs to be a quick procedure that accurately identifies whether the paper meets ECOTOX criteria and if applicable, extract critical toxicity test elements.







Habitat and species group are written on the front page of the publication. All relevant data entered into the Skim screen with printable checklists generated by the Unify system for ECOTOX and EFED that are attached to the back of the publication.

General Navigation

You may tab between data fields and use the down arrow to select the entry for the data field. All data fields have an auto fill feature to display all options that are available for selection. The skimming process workflow is displayed in Figure 1. Navigation icons are listed in Table 6.

Table 6. References Navigation Icon/Graphics

ICON	Description	Usage
	Magnifying glass	Print View
	Pencil	Edit View
	Page with 'X'	Delete
	Plus Sign/Add Button	Add
	Right Arrow	Hover over to display complete text
	Page with Check	Verified or Activate

ICON	Description	Usage
↓	Invoke index to display	Match typed in text to valid index
	Circle with Slash	Reject for Verification
	Binoculars	Search
	Printer	Print Command
	Excel Sheet	Download to Excel
	RIS Export	Exports citations in RIS delimited format for transfer into ProCite or Reference Manager
	Circle Arrow	Return to search screen

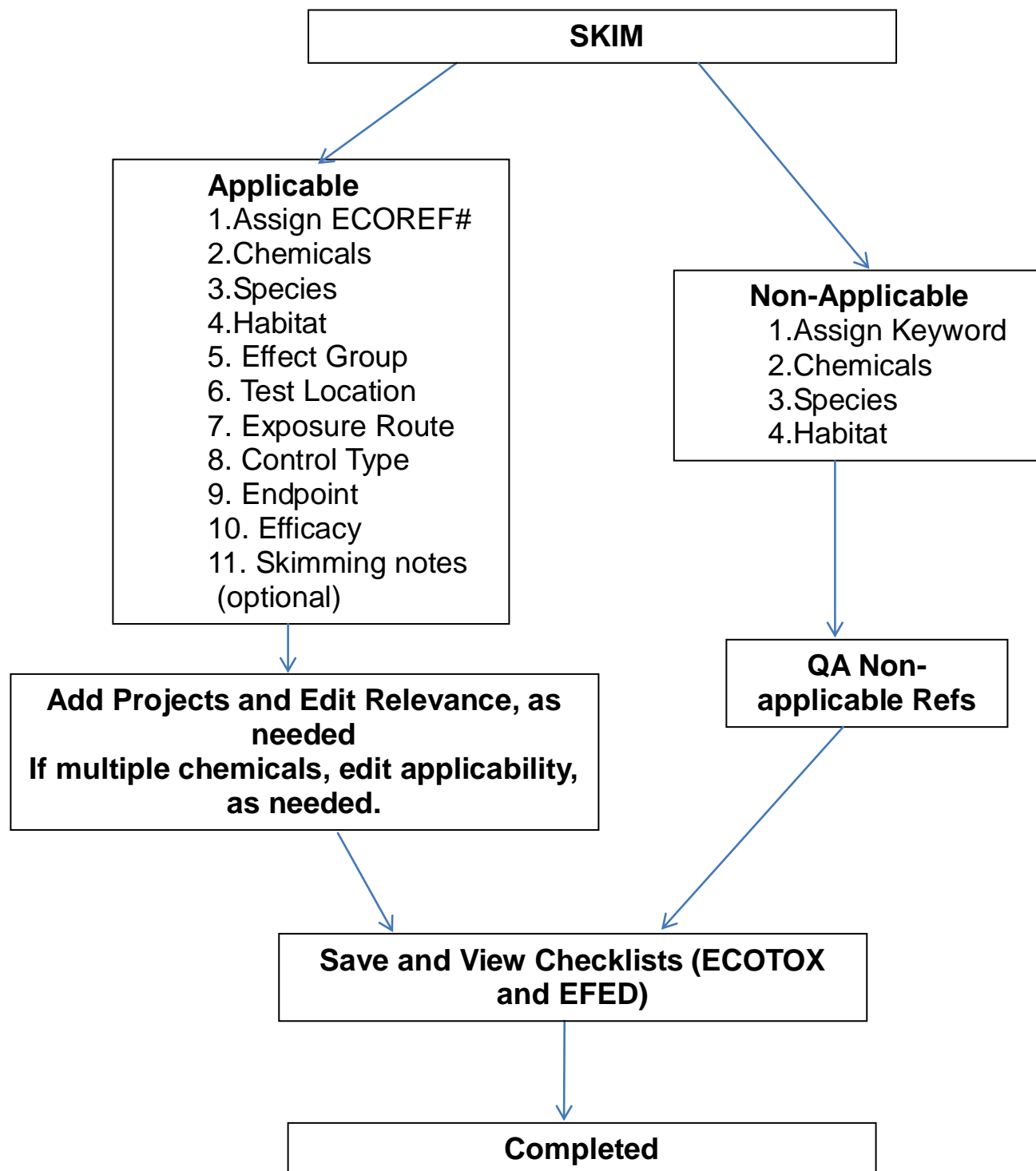







Figure 1. Skimming Workflow



Skim Screen Data Entry


1. Access the References module
2. Select Search Refs and search the publication to be skimmed by publication title, author or ECOREF#
3. Select the “Skim” hyperlink on the displayed reference to access the skimming fields described in the document.
4. For codes, descriptions and details about data to be entered refer to the “*Unify Data Fields and Codes*” document. Enter data in these fields:
 - **ECOREF#:** Select the “Add EcoReference Number” button for applicable papers or Non-Applicable papers that require an ECOREF Number (e.g., LITBIB, Verification sources, etc.). The Add button toggles to “Remove EcoReference Number”.
 - **Keywords:** If the paper is Non-applicable, enter the appropriate Keyword. You may search for the keyword by using the . You may also select the matching name from the auto-complete list by using the down arrow↓ when typing the keyword. Edits can be made by selecting the .
 - **Chemicals:** Enter all of ECOTOX relevant chemicals that are in the paper. . You may search for the Chemical by using the . You may also select the matching Chemical name from the auto-complete list by using the down arrow↓when typing the Chemical. Edits can be made by selecting the . For Non-applicable papers, select the Chemical for which the paper was ordered.



If the chemical formulation is a mixture of multiple components and the concentration is reported as the formulation, enter the formulation as the chemical and not the components. If the chemical formulation is reported as the concentration of component 1 + concentration of component 2, skim the chemical formulation and report as ‘No Conc’, and skim the components and enter as ‘No Mixture’ for each.



If the Chemical is not located by the search or the auto-complete functions, select the . This will allow an unverified Chemical to be added and add the Chemical to the verification queue. Correctly assigning chemicals names and checking for current names in the system is very important. Follow these steps to ensure accuracy and reduce extra effort by chemical verification staff:





- When adding new chemicals where punctuation is variable (e.g., RU-486 or RU 486). One form of the name may already be added to Chemicals. If so, the previously verified variant should be selected.

- If the chemical in the paper is reported as a trade name, check to see if an alternate name is presented in the paper to ensure correct chemical assignment. For example, the trade name Horizon is associated with three chemical active ingredients in the literature; Fenoxaprop-p-ethyl, Clodinafop-propargyl and Tebuconazole. Select the Horizon associated with the correct active ingredient. If no active ingredient is reported, forward to the chemical verification staff for additional verification.
- Sometimes the company name is reported next to the chemical tested is a trade name. However, it could be documentation of where the chemical was purchased. For example: Ortho Sevin is the company name and only enter "Sevin" as the chemical name.
- Size descriptions of the chemical particles are not included in the chemical name field. This is most common with nanotechnology. Examples of excluded terms are: nanoparticle or nanocrystal
- Ensure the correct variant of the chemical is entered by checking the name documented throughout the paper. For example, MCPA may be the form noted in multiple places throughout the paper but the methods section also reports the full chemical name as 2-(4-Chloro-2-methylphenoxy)acetic acid butyl ester which is not MCPA but MCPA butyl ester. The name that should be entered into skimming is 2-(4-Chloro-2-methylphenoxy) acetic acid butyl ester since the paper doesn't specifically report MCPA butyl ester.
- **Species:** Enter all ECOTOX species that are in the paper. You may search for the Species by using the . You may also select the matching Species name from the auto-complete list by using the down arrow ↓ when typing the species. Edits can be made by selecting the .

If the Species is not located by the search or the auto-complete functions, select the . This will allow an unverified Species to be added and add the Species to the verification queue. For unverified species names, if the paper does not test another verified species, the unverified species needs to be verified prior to returning the MED files.

pEffect Groups: Enter all of the ECOTOX Effect Group codes that are in the paper. You may search for the Effect Groups by using the . You may also select the matching Effect Groups from the auto-complete list by using the down arrow ↓ when typing the keyword. Edits can be made by selecting the .

- **Test Locations:** Enter all of the ECOTOX Test Location codes that are in the paper. You may search for the Test Locations by using the . You may also select the matching Test Locations from the auto-complete list by using the down arrow ↓ when typing the keyword. Edits can be made by selecting the .

- **Exposure Route Groups:** Enter all of the ECOTOX Exposure Route Group codes that are in the paper. You may search for the Exposure Route Groups by using the . You may also select the matching Exposure Route Groups from the auto-complete list by using the down arrow ↓ when typing the keyword. Edits can be made by selecting the .
- **Habitats:** Enter all of the ECOTOX Habitat codes that are in the paper. You may search for the Habitats by using the . You may also select the matching Habitats from the auto-complete list by using the down arrow ↓ when typing the keyword. Edits can be made by selecting the .
- **Control Type:** Select the ECOTOX Control Type code from the drop-down menu. Note: If data encoded (reviewed status), match this skimming field to the previously encoded data. Make the following comment in the **Skimming Notes** field: “Paper has valid control per current skimming guidelines”.
- **Endpoint:** Select YES or NO or GRAPHED (only if all Endpoint data in the paper are graphed) from the Endpoint drop-down menu. Note: If data encoded (reviewed status), match this skimming field to the previously encoded data. Make the following comment in the **Skimming Notes** field: “Paper has valid endpoint per current skimming guidelines”.
- **Efficacy:** Select YES or NO from the Efficacy drop-down menu, based on EFED coding guidelines. The initial default is unselected and will need to update to either YES or NO.
- **Skimming Notes:** Notes about the skimming of the paper may be entered into this section. This provides additional explanation about the data.

Project Relevance: The Project Relevance will be calculated by the system from the entries above. You may select the “Clear” button to remove all entries prior to committing the record or the “Save” button to save entries while in the process of skimming.

5. Once skimming has been completed, and ready to be committed, select the “Skim Complete (Assign Status and View Checklists) button. This will evoke the skim by chemical screen. This screen allows you to refine each chemical from the skim screen. You may modify the Control, Efficacy, Endpoint, Habitat and Statuses for each chemical.
6. Individual chemicals have been modified, select where the Reference will be moved after skimming has been completed by using the Reference Location dropdown menu. Select the “Save, View Checklist and Close button”. Example checklists are found in Appendix B.
7. Your completed checklists for EFED and ECOTOX will display in a print ready format. Print the checklists and attach to the back of the paper. Make sure you have only one staple in the paper after you attach the checklist.

8. Applicable publications are either returned to the MED files or forwarded to appropriate offsite contractor staff for further processing if needed. Non-applicable papers and those that do not meet criteria are forwarded to a second reviewer for quality assurance.

Quality Assurance of Non-Applicable Skimmed Papers

QA N/A Refs

Displays all citation for publication rejected in the skimming process to be quality assured by a reviewer prior to returning publication

Submit all rejected papers for quality assurance by a second reviewer. If the decision to reject the paper holds, the person doing the QA will write NON-APPLICABLE across the top center of the front page and will click on the NA QAed button in the Unify application. If the second reviewer disagrees with the rejection, the paper will be returned to the original skimmer for corrections.

	Order ID	ECOREF#	Author Title Source Year	Project	Habitat	Chemical Group	Keyword	Skimmer
	161975		Soliman,F.S., and A.T.F. Tag E. Chemical Weed Control in Carrot Meded. Fac. Landbouww. Univ. G 1995 60 31 38	EFED	Non-Soil	DQT,LNR,MBZ, PDM,PZM	MIXTURE	
<input checked="" type="checkbox"/>	188977		Magee,L.A., and A.R. Colmer Decomposition of 2,2-Dichlorop Can. J. Microbiol. 1959 5 255 260		Non-Soil		BACTERIA	

APPENDIX A: ECOTOX KEYWORD SEARCH TERMS

For ECOTOX searches, the language is restricted to English only, as software allows.

ProQuest, PubMed and Web of Science Search Terms

ProQuest: Environmental Science and Pollution Management Database only (=CSA) (ASFA3 OR Toxicology Abstracts OR Pollution Abstracts OR Water Resources Abstracts OR Ecology Abstracts)

STYPE("Scholarly Journals" OR Reports OR Thesis OR "Government Documents") AND (su(*toxicity OR *toxicology OR bioassay* OR *lethal OR bioaccum*) OR cc(01504 or 08504) OR (LC NEAR/3 50)) NOT ISSN(0002-1962 OR 0003-4746 OR 0166-445X OR 0090-4341 OR 0340-5761 OR 0006-2952 OR 1354-750X OR 0007-4861 OR 0045-6535 OR 0010-3624 OR 1532-0456 OR 1064-3389 OR 1040-8444 OR 0963-9292 OR 0147-6513 OR 0091-6765 OR 0269-7491 OR 0013-936X OR 1552-8618 OR 0960-3271 OR 1528-7394 OR 1341-0725 OR 0141-1136 OR 0048-3575 OR 0041-008X OR 0378-4274 OR 1096-6080 OR 0300-483X OR 0049-6979 OR 0043-1745) NOT IF(m?n or human* or child* or occupant* or infant* or wom?n or patient* or pediatric) AND LA(ENG)

See Table 2 for the specific list of journals and associated ISSN.

PubMed

((("Cyanobacteria"[Mesh] OR "Aquatic Organisms"[Mesh] OR "Alveolata"[Mesh] OR "Choanoflagellata"[Mesh] OR "Cryptophyta"[Mesh] OR "Diplomonadida"[Mesh] OR "Euglenozoa"[Mesh] OR "Fungi"[Mesh] OR "Haptophyta"[Mesh] OR "Mesomycetozoea"[Mesh] AND "Plants"[Mesh] OR "animals"[MeSH Terms:noexp] OR "Rhizaria"[Mesh] OR "Stramenopiles"[Mesh]) AND tox[sb])) AND "Chemical actions and uses"[majr] AND english[Language] AND "adverse effects"[sh]

Web of Science : Current Contents (Life Sciences and Agriculture, Biology & Environmental Sciences)
(DIS=(ENVIRONMENT ECOLOGY) OR DIS=(PHARMACOLOGY TOXICOLOGY)) AND TS=Toxic*)

Research Alerts Search Terms

BIOSIS Abstracts Search

```

> file biosis
=> set ran (2005,)
=> s 22506/cc or 37015/cc
=> s agronomy journal/jt or agron j/jt or ann appl biol/jt or "annals of applied biology"/jt or Aquat Toxicol/jt or aquat
toxicol amst/jt or aquatic toxicology amsterdam/jt
=> s arch toxicol/jt or "archives of toxicology"/jt or biochem pharmacol/jt or biochemical pharmacology/jt or Arch
Environ Contam Toxicol/jt or "archives of environmental contamination and toxicology"/jt
=> s "bulletin of environmental contamination and toxicology"/jt or Bull Environ Contam Toxicol/jt or Chemosphere/jt
or Comp Biochem Physiol C/jt or "comparative biochemistry and physiology C"/jt or comm soil sci plant anal/jt
=> s "communications in soil science and plant analysis"/jt or "critical reviews in environmental science and
toxicology"/jt or critical reviews in toxicology/jt or Ecotoxicol Environ Saf/jt Or "ecotoxicology and environmental
safety"/jt
=> s Environ health perspect/jt or environmental health perspectives/jt or Environ Pollut/jt Or environmental
pollution/jt Or Environ Toxicol Chem/jt Or "environmental toxicology and chemistry"/jt
=> s Environ sci technol/jt or "Environmental Science and Technology"/jt or j toxicol environ health/jt "Journal of
Toxicology and Environmental health"/jt Or Mar Environ Res/jt Or marine environmental research/jt
=> s pestic biochem physiol/jt or "pesticide biochemistry and physiology"/jt or toxicol sci/jt or toxicological science/jt
=> s Toxicology/jt or toxicol appl pharmacol/jt or "toxicology and applied pharmacology"/jt or toxicol environ chem/jt or
"toxicology and environmental chemistry"/jt or toxicol lett/jt or toxicology letters/jt or weed sci/jt or weed science/jt
=> s l2-l9
=> s l1 not l10
=> s l11 not (bacteria or cell(3n)(line? or culture?) Or child? or cooking or cookery or human? Or occupation? or
patient? or venom? or wom!n or sprague-dawley or wistar(3n)rat?)/it
=> s alligator or alligators or amphibi? or caiman or crocodil? or frog or frogs or lizard or lizards or newt or newts
=> s reptil? Or salamander? Or snake or snakes or terrapin? Or toad or toads or tortoise? Or turtle or turtles
=> s (L13 or l14) and (Amphibia or Reptilia)/bc and l12
=> s vole or lemming? Or bear or bears or opossum? Or beaver or beavers or weasel? Or skunk or skunks
=> s marten or martens or badger? Or ferret? Or mink or raccoon? Or otter? Or fox or foxes or armadillo?
=> s shrew or shrews or cottontail? Or horse or horses or equine? Or ungulate? Or gopher or gophers or squirrel or
squirrels or chipmunk? Or mammal or mammals
=> s (l16 or l17 or l18) and nonhuman mammals/bc and l12
=> s annelid? Or bee or apis or caenorhabditis or collembol? Or dendrobaena or earthworm? Or eisenia
=> s insect(3n)larva? Or lumbricus or lumbricid? Or (metal? (p) invertebrat?) Or mite? Or potworm? Or scud?
=> s springtail? Or soil?(3n)arthropod? or microarthropod? or macroarthropod? Or soil?(3n)biota
=> s microbiota or macrobiota or soil?(3n)animal? Or soil?(3n)fauna or microfauna or macrofauna
=> s soil?(3n)invertebrat? or microinvertebrat? or macroinvertebrat? Or soil?(3n)nematod? Or worm?
=> s (l20 or l21 or l22 or l23 or l24) and Invertebrates/bc and l12
=> s bean? or phaseolus or bluegrass or poa or bluestem or carrot? or daucus or brassica or clover or corn
=> s maize or cotton or crop(w)yield? Or cucumber? or cucumis or fescue or foliage or leaf or leaves or legum?
=> s lettuce? or lactuca or oak? or quercus or oat or avena or pea or phytotoxic? Or pine?
=> s pinus or plant?(3n)grow? Or plant?(w)yield or radish? or raphanus or rice or root? Or ryegrass?
=> s seed?(3n)germinat? Or seedling? Or soil?(3n)emergence or soil?(3n)germinat? Or soybean? Or spinach?
=> s stem? Or tree? Or vascular (w)plant? Or wheat
=> s (l26 or l27 or l28 or l29 or l30 or l31) and Plants/bc and l12
=> s aves or avian? or bird or bobwhite? or chicken or gallus or duck or duckling? or mallard? or anas
=> s quail or coturnix or songbird? or turkey or waterbird? or waterfowl
=> s (l33 or l34) and aves/bc and l12
=> s l15 or l19 or l25 or l32 or l35
=> s l36 and english/la and up>20080419

```

CAB International Search Terms (Aquatic)

```
=> file caba
=> s aquati? or benth? or bog? or brackish? or creek? or emergent? or estuar? or freshwater?
=> s lake? or lentic? or littoral? or lotic? or marine? or marsh? or pond? or river? or salinit?
=> s saltwater? or sea or seas or stream? or toxicity(w)test? or (water)(w)(pollut? or toxic?) or wetland?
=> s l1 or l2 or l3
=> s HH400/cc or LL900/cc or FF800/cc or hh430/cc or yy900/cc
=> s l4 and l5
=> s agronomy journal/jt or annals of applied biology/jt or Aquatic Toxicology/jt or archives of toxicology/jt
=> s "Archives Of Environmental Contamination and Toxicology"/jt or biochemistry and Pharmacology/jt
Or "Bulletin Of Environmental Contamination And Toxicology"/jt
=> S Chemosphere/jt or "communication in soil science and plant analysis"/jt or "Comparative
Biochemistry and Physiology C"/jt
=> s "critical reviews in environmental science and toxicology"/jt or critical reviews in toxicology/jt
=> s "Ecotoxicology and Environmental Safety"/jt or Environmental Pollution/jt or environmental health
perspectives /jt or "Environmental Toxicology and Chemistry"/jt
=> S "environmental science and technology"/jt or "journal of toxicological and environmental health"/jt or
Marine Environmental Research/jt or "pesticide biochemistry and physiology"/jt or toxicology/jt
=> s "toxicology and environmental chemistry"/jt or Toxicological Science/jt or "Toxicology and Applied
Pharmacology"/jt or toxicology letters /jt or weed science/jt
=> s l7 or l8 or l9 or l10 or l11 or l12 or l13
=> s l6 not l14
=> s l15 not (bacterial Or child? or cooking or cookery or human? Or occupation? or patient? or venom?
or wom!n)/ct
=> s l16 and and english/la and ud>apr 21, 2008
```

APPENDIX B: EXAMPLE CHECKLISTS (ECOTOX/EFED)

ECOTOX 156308 (*Metal Distributions in Tigriopus brevicornis (Crustacea, Copepoda) Exposed to Copper, Reference #: Zinc, Nickel, Cadmium, Silver, and Mercury, and Implication for Subsequent Transfer in the Food Web*)

All pages received and legible: Yes

Chemicals:	Chemical	COCs	EFED Statuses	ECOTOX Statuses
	Cadmium chloride (CdCl ₂) (10108642)	CdCl	NO EFED CHEM	OK
	Copper chloride (CuCl ₂) (7447394)	CuCl	OK	OK
	Mercury chloride (HgCl ₂) (7487947)	HgCl ₂	NO EFED CHEM	OK
	Nickel sulfate (7786814)	NiS	NO EFED CHEM	OK
	Silver nitrate (7761888)	AgN	OK	OK
	Zinc sulfate (7733020)	ZnS	OK	OK

Keywords:

Exposure Type
Groups: AQUA

Projects: ECOTOX, EFED

Effect Groups: ACC

Status: UNREVIEWED

Species Groups: INVERT

Skimming Notes:

ECOTOX Checklist

Criteria	Description	Yes/No
Valid control	Does the paper have a valid control? Studies that do not discuss the use of controls, or where the authors specifically state that a control was not used (ECOTOX codes NR and Z) will be marked as lacking a control. "NO CONTROL" is the Project Status. It is removed from the coding queue.	Yes
Endpoint or analyzed results	Do the authors report either a calculated endpoint, as defined by the ECOTOX coding guidelines, or present statistically analyzed results? Papers presenting only qualitative data will be marked as such. "NO ENDPOINT, STATS" is the Project Status. It is removed from the coding queue.	Yes
Text or tabular data	Are the endpoints and/or statistical results summarized in either the text or the tables? If results are only presented graphically or in figures, and specific concentrations (not ranged or approximate values) associated with the endpoint/statistical results are not presented, the paper is marked as having only graphed/figure data. "NO ENDPOINT, GRAPHED" is the Project Status. It is removed from the coding queue.	Yes

EFED Checklist

General Instructions: If more than one experimental design is used in the study, multiple Literature Acceptance Criteria Checklist forms may be required, but the acceptability of the paper is based on at least one experimental design meeting all of the Acceptability Criteria.

No.	Criteria / Instructions	Yes/No
1	The paper reports toxicology information for a chemical of concern to EFED.	OK
2	The article is published in the English language.	OK
3	The study is presented as a full article.	OK
4	The paper is a publicly available document.	OK
5	The paper is the primary source of the data. Remember to identify applicable citations before returning.	OK
6	The paper reports a calculated endpoint.	OK
7	The paper reports that treatment(s) were compared to an acceptable control.	OK
8	The paper reports an explicit duration of exposure.	OK
9	The paper reports a concurrent environmental chemical concentration/dose or application rate.	OK
10	The paper reports a route exposure that is NOT an by injection type.	OK
11	The paper reports the location of the study (e.g., laboratory vs. field).	OK
12	The paper reports a biological effect on live, whole organisms.	OK
13	The paper reports the species that was tested; and this species can be verified in a reliable source.	OK
14	The paper reports effect associated with a single chemical exposure.	OK
15	For chemicals that have designated terrestrial species/species group(s) that should not be coded for EFED: The species/species group is acceptable for coding (NOT identified as TARGET 2012/PESTS/WEEDS).	OK

Appendix C: Unify References Data Fields and Codes

Table 1. Unify Data Fields and Descriptions

“Additional Information” column refers to data tables within this document or the *ECOTOX Literature Acquisition and Paper Processing SOP*.

Unify Field Name	Field Category	Field Description	Additional Information	ProCite Field Name [#]
Abstract only	Bibliography	Checkbox whether document is an abstract only format.	Literature Acquisition SOP	Page#s [25]
Additional Source Notes	Bibliography	Specific additional information about a publication must be included in the citation. NTIS numbers, abstract, foreign language abbreviations, and other journal information (e.g., Author Communication Used)	Formatting Additional Source Notes	Page#s [25]
Authors	Bibliography	The authors of the paper.	Formatting Author Names and Manage Authors	Authors [1]
ECOREF #	Bibliography	A unique number generated by the Unify system assigned to a physical copy of a paper. An applicable paper is always tracked by this number. Deleted numbers are retained by Unify.	Literature Acquisition SOP	ECOREF# [38]
Issue	Bibliography	The issue number associated with the paper. If more than one, enter as: 12/13 or 12-15	Formatting Issue	Issue [24]
Journals or Sources	Bibliography	The bibliographic source (journal, report or book title) of the publication. Journals selected from the Manage Journal index and all other publications types selected from the Sources index.	Formatting Bibliographic Source	Journal/Book Title [10]
Language	Bibliography	The full-text language of the document.	Table 2. Language	Page#s [09]
Publication Type	Bibliography	Categorizes the type of publications is and determines which index to utilize (journal index or sources index).	Literature Acquisition SOP	Not transferred
Start/End/ Total Pages	Bibliography	The first page, last page or total pages of the publication.	Formatting Pages	Page#s [25]
Title	Bibliography	The title of the paper.	Formatting Titles	Title [4]
Volume	Bibliography	The volume number associated with the journal article. If more than one, enter as: 12/13 or 12-15	Formatting Volume	Volume [22]

ECOTOX Literature Searches, Citation Identification and Skimming

Unify Field Name	Field Category	Field Description	Additional Information	ProCite Field Name [#]
Year	Bibliography	The year the paper was published.	4-digit	Year [20]
Archived Reason	Order	Unable to locate a source for the publication due to incorrect or invalid citations or not pursuing due to probability the publication is non-applicable.	Table 4. Reject Keywords	Keywords [45]
Completeness	Order	The completeness of the publication hard copy (missing paper, partial or full document). Also used when microfiche received, but not printed.	Table 3. Order and Completeness Codes	All codes, except "COMPLETE"
Order Code	Order	Order routing process to forward the citation for full publication acquisition.	Table 3. Order and Completeness Codes	Paper Status[37]
Order Email	Order	The author email address. Only one address is entered.		Order Notes [43]
Order Notes	Order	Order information and some reviewer information pertaining to special projects (PUBL AS, LITBIB). All entries <u>must</u> end with a double-slash.	Free Text	Order Notes [43]
Order Priority	Order	Low, Medium or High general order priority, as determined by projects.		Not transferred
Order URL	Order	URL web link for article abstract or full document. Place journal URL links in the Manage Journal index.		Not transferred
Criteria Documents	Project Tracking	Citation located within a published EPA water quality criteria document or advisory (CAD).	Criteria Document Index	Notes [43]
Project Tracking Notes	Project Tracking	General area to use for temporary new projects or until formal project tracking codes/fields are established within Unify.	General text	Not transferred
Projects	Project Tracking	Project codes (6a). Table 6b. contains additional tracking or reject keywords associated only with special project citations/publications (non-ECOTOX).	Table 6a/6b. Special Project Keywords	Species Group/Project [39]
Control Type	Skim	Control type	Table 13	Not Transferred
ECOTOX Status	Skim	ECOTOX Project Checklist Criteria codes	Automated.	Reviewers Status [28]
EFED	Skim	EFED Project Checklist Criteria codes	Automated.	Reviewers Status [28]
Effect Group	Skim	ECOTOX Effect Group	Table 10	Major Effect Group [31]

ECOTOX Literature Searches, Citation Identification and Skimming

Unify Field Name	Field Category	Field Description	Additional Information	ProCite Field Name [#]
Efficacy	Skim	Mark "Yes", if paper meets efficacy criteria	See EFED Acquisition SOP	Reviewer Status [28]
Endpoint	Skim	Mark "Yes", if papers contains as least one endpoint.	Table 14	Not Transferred
Exposure Route Group	Skim	Exposure Route Group	Table 12	Project Status [30]
PCBRES	Skim	PCBRES Project Tracking	Automated.	
Project Relevance/ Notes	Skim	Parsed between projects. Table 6b. contains additional tracking or reject keywords associated only with special project citations/publications (non-ECOTOX).	Table 6b.	Species Group/Project [39]
Skimming Notes	Skim	Related comments about data reported.		Not transferred
Test Location	Skim	Test Location	Table 11	Not Transferred
TRV/ ECOSSL	Skim	TRV or EcoSSL project tracking codes.	Automated.	Reviewer Status [28]
Chemical Groups	Skim/ Projects	Chemical abbreviation for chemical of concern (COC).	See EcoChem SOP	Project Chemical(s) [29]
Habitats	Skim/ Projects	The habitat to the paper belongs as determined by the reviewer. If not stated, the citation should be entered as aquatic/terrestrial by default.	Table 5. Habitats	Database [40]
Keywords	Skim/ Projects	NON-APPLICABLE (reject) keywords as determined by a reviewer within order or skimming process.	Table 4. Reject Keywords	Keywords [45]
Species Groups	Skim/ Projects	Species group codes as defined by ECOTOX.	Table 7. Species Groups	Species Group/Project[39]
Batch(es)	Status Tracking	Lists all batch names this citation is found.	Manage Batches	Not transferred
Checkin/ Checkout (MED files)	Status Tracking	Checkin date is the last date checked into the MED files. Checkout is the last date pulled from the MED files as determined by the "Recall" and "MED File Refs" process.	EPA maintains a separate checkin/ checkout log	Abstract [26] Date, Secondary [28]
Data Status	Status Tracking	Displays the amount of data encoded from the publication and which coding guidelines used.	Table 9. Data Status	Paper Status [37]
Duplicate Status	Status Tracking	Determines if the Unify system has detected a potential duplicate citation, duplicate has been rectified or no duplicates.	Literature Acquisition SOP	Not transferred

ECOTOX Literature Searches, Citation Identification and Skimming

Unify Field Name	Field Category	Field Description	Additional Information	ProCite Field Name [#]
Last Returned	Status Tracking	Date that the paper was added to a Return Memo for return to MED files.	Return Date	Date, Secondary [28]
Old ID Numbers	Status Tracking	The number that was assigned to the paper when in ProCite (OLD IP) or old ECOREF # transferred from Reference Manager.		Note transferred
Order Date	Status Tracking	The date a copy of the paper was compiled in an order batch by contractor staff and forwarded to EPA for processing	Order Date	Paper Status [37]
Paper Status	Status Tracking	Tracks publication physical location at the downtown office. Stores the reviewer names (first initial and last name) and the reason for requesting or holding the paper. For user name codes, check Unify system and export file, as needed.	Table 8. Paper Reason	Not transferred
QA Citation	Status Tracking	Box is checked when bibliographic citation fields are quality assured against the full publication.	Literature Acquisition SOP	Not transferred
Receive Date	Status Tracking	The date the physical copy of the paper was received from the library or photocopied by contractor staff.	Receive Date	Notes [42]
Received from Files	Status Tracking	Tracks the paper while at contractor location. Paper is 'checked out' from the MED files.	Paper Processing	Notes [42]
Record History	Status Tracking	Displays the citation creation date, the last data modified and quality assurance of the citation. Also, include the staff person's name associated with these edits.		Not Transferred
Input Search Source	Tracking	Source of citation (electronic or manual entry). For manual entries, it is the ECOREF or citation. For electronic it is the search tag to locate the vendor and original download file.	Literature Acquisition SOP	Search Source [42]
Order ID	Tracking	A unique number generated by the Unify system assigned to each new citation upon entry. This number is used in the ordering process. This is not the ECOREF#	Assigned by Unify	Series Title, [32]
PDF Link	Tracking	Checkbox whether a PDF of the entire document is stored in the MED PDF directory.	Literature Acquisition SOP	Not transferred

Table 2. Language

AFR	Afrikaans	JPN	Japanese
ALB	Albanian	KOR	Korean
ARA	Arabic	LAV	Latvian
ARM	Armenian	LTH	Lithuanian
BEL	Belarussian	MAL	Malay
BUL	Bulgarian	NOR	Norwegian
CHE	Chechen	PER	Persian
CHI	Chinese	POL	Polish
CZE	Czech; Bohemian	POR	Portuguese
CRO	Croatian	ROM	Romanian
DAN	Danish	RUS	Russian
DUT	Dutch	SCR	Serbo-Croatian
ENG	English	SER	Serbian
FIN	Finish	SLA	Slovak
FRE	French	SLO	Slovenian (Yugoslavian)
GEO	Georgian	SPA	Spanish
GER	German	SWE	Swedish
GRE	Greek	THA	Thailand
HEB	Hebrew	TUR	Turkish
HIN	Hindu	TUK	Turkmen
HUN	Hungarian	UKR	Ukraine
ICE	Icelandic		
ITA	Italian		
INO	Indonesia		

Table 3. Order Code and Completeness

Order/ Completeness	Description
ARCHIVE	Paper cannot be located due to no bibliography source or not pursuing based on expected data.
Assign	Used to temporarily check on appropriate order source or if a known order source is unable to temporarily complete the request, but could at a later date.
Auth	Request from author by email.
COMM	Commercial order processing. The vendor list is located in <i>Literature Acquisition and Paper Processing, Appendix C SOP</i> .
Complete	All pages of the physical copy of publication has been received and all pages legible.
Copy Request	Publication available at MED library (MED), Science Direct or other EPA library electronic resource (SCI) or free Internet location (WEB).
ILL	Request made to MED library interlibrary loan source. This is the default order code.

Order/ Completeness	Description
Illegible	Paper received, but one or more pages not readable.
Missing Pages	Paper received, but one or more pages are missing.
Missing Paper	Paper was received, but physical copy or PDF not currently located in files or by contractor staff.
PRESS	Paper received is not the final version and expect a final version to be published in the future.
UNKNOWN	Order code unknown. Code used for citation upon migration from previous Reference system, if papers had been received.
Unprinted Microfiche	Microfiche received, but physical copy not extracted/printed. When printed, the Order Notes should include the dates it was processed.

Table 4. Reject and Archive Keywords

Keyword	Description
ABSTRACT	Study results published as an abstract only.
ADDENDUM	Publication is a supplement to another publication and attach to that full publication (erratum or addendum).
BACTERIA	Bacteria and microbes - for microbes, enter bacteria as keyword, Includes microbes and Microtox tests.
BENEFICIAL EFFECT	Studies that result in a positive effects (improving the health of the organism
BIOLOGICAL TOXICANT	General biological toxicants including venoms, fungal toxins, <i>Bacillus thuringiensis</i> , and other plant, animal or microbial extracts or toxins not purified.
CAS # UNAVAILABLE	Chemical is not verifiable or no CAS # available.
CHEM METHODS	The description of chemical analysis procedures and measurements in a laboratory setting. No organism or biochemical measurements are reported in the paper.
ECOCHEM VERIFICATION SOURCE	Publication used to verify chemical CAS or physical/chemical properties.
EFFLUENT	Includes sewage and polluted runoff. Used in aquatic publications. Terrestrial categorized under MIXTURE keyword.

Keyword	Description
FATE	Chemical distribution in natural media (water,soil,air) and residue not measured in the organism or valid ECOTOX organism not present.
FOOD	Test organism is dead or harvested in the form of consumer-ready food products. Frequently studies include analyses of fresh meat or produce purchased in a market, or processed and packaged foods (e.g., wine, cheese, canned fish, sausages, packaged milk, or cereal products). This includes market studies used to enhance the marketability of an organism and maximize a producer's profit. Optimum marbling of meat, color of apple skins, and firmness of bananas for durability in shipping.
HUMAN HEALTH	Studies with human subjects or with surrogate animal subjects for human health risk assessment. If a surrogate laboratory rodent (RODE) or domestic animal (DOM,DOMA) is tested, citations will be rejected unless the effect is GRO, MOR, POP, BEH (feeding/reproductive behavior only) or REP.
INCIDENT	Reports of animal deaths by poison, which lacks a usable concentration and/or duration.
INCOMPLETE CITATION	Citation is not complete; order status ARCHIVE.
INCORRECT CITATION	Citation is wrong; order status ARCHIVE.
INHALE	Inhalation dose route only. Keyword also used for intratracheal instillation of a chemical directly into the lungs.
IN VITRO	In vitro studies, including exposure of cell cultures and excised tissues.
METHODS	Publication provides documentation for toxicology test methods, experimental design, statistical methods, standard terminology, recently developed test methods.
MIXTURE	No single chemical tests reported. The exception for In Situ studies (field studies of chemicals mixtures) are coded for bioaccumulation, if the exposure duration and concentrations of any specific chemical component of the ambient water or effluent is given for caged or transplanted organisms.
MODELING	Modeling only, no new organism exposure data; modeling studies may report original toxicity tests performed as comparisons or as a basis for extrapolation, if so, papers are ordered.

Keyword	Description
NO CONC	No usable dose or concentration reported after examination of the entire paper; includes lead shot studies lacking dose information and which report only the number of pellets. Concentrations reported in log units only are not coded.
NO DURATION	No duration reported (entire publication examined).
NO EFFECT	No organism effect reported. Chemical metabolism is included (defined as biological effect on the chemical).
NO SOURCE	Source of publication undetermined; order status ARCHIVE (includes internal chemical company document and personal communication citations).
NO TOXICANT	No chemical toxicant added or not ecotoxicologically relevant chemical. - includes ambient air component chemicals (ozone, CO ₂ , SO ₂) and pollution - other ambient conditions including changes in conditions (other than chemical addition), including radioactivity, ultraviolet light (UV), temperature, pH, salinity, dissolved oxygen (DO), or other water, air or soil parameters
NON-ENGLISH	Paper's full text language other than English - (these papers do not receive ECOREF numbers).
NUTRIENT	In situ chemicals tested as nutrients.
OIL	Oil and petroleum products
PUBL AS	Paper (by same author/study) was published in another journal or book, ECOREF number of other paper listed in References citation. Ex. Publ As #####
QSAR	Quantitative Structure Activity Relationships.
REFS CHECKED	References in a REVIEW have been checked.
RETRACTED	Retracted article from publication by journal.
REVIEW	All toxicity tests reported elsewhere; REVIEW bibliography may be skimmed to identify relevant citations.
SEDIMENT CONC	Chemical concentration reported in sediment only (if pore or overlying water concentrations reported, then applicable).
SKIMMED	Used to show that publication has been skimmed for applicable sections.

Keyword	Description
SPECIES VERIFICATION SOURCE	Publication used to verify species common or scientific name.
SURVEY	Measured chemical present in organism, but lacking quantification of exposure; lacks usable concentration and/or duration.
VIRUS	Virus used as a test organism.
YEAST	Yeast used as test organism.

Table 5. Habitats

Habitats	Description (see skimming SOP for additional description)
Water (A)	Tests of organisms that are living in fresh and/or salt water (the exception being hydroponically grown, terrestrial plants, which are considered to be in an artificial, simulated-soil medium). If a test environment is described as sediment, or as “soil” in a wetland study, the medium code is WATER.
Non-Soil (T)	Terrestrial species live above ground and do not normally derive primary nutrition in the soil (see below). This is the default for any terrestrial environment or species.
Soil (S)	Applies to all tests in natural soils and artificial substrates, such as vermiculite, sand, agar, liquid solutions for terrestrial plants grown hydroponically or moistened filter paper for seed germination. List the medium as soil for invertebrates that are air-breathing organisms that naturally inhabit the soil (if they derive primary nutrients from the soil), such as earthworms, fungi, some insect larvae or slugs.
AT	Aquatic and Terrestrial habitats. If unable to definitively categorize the species tested into one habitat or if multiple species tested fit into multiple categories, all appropriate habitats are selected.
AST	Aquatic, Soil and Non-Soil habitats.

Table 6a. Project Codes

Projects	Description
CAD	Published EPA criteria or advisory document citation. Includes codes identifying specific table the citation is located in the document (CAD-ACUTE, CAD-BCF, CAD-CHRONIC, CAD-OTHER)

ECOTOX Literature Searches, Citation Identification and Skimming

Projects	Description
CAD-S	Designation for papers from Stephan files, but not published in a criteria document. If citation already has CAD or UWS-WQC designation, do not add CAD-S code.
CHEMVER	Reference used to verify chemicals (Keyword = Ecochem Verification Source)
ECOTOX	ECOTOX Project. All current data, except for a few EFED chemicals (e.g. Fox Urine)
EDC	Endocrine disruptor project
EFED	OPP database project (EFED- ECOTOX used when data downloaded from ECOTOX for EFED project)
MEDxx	EPA Fathead Minnow dataset* (01,02,03,04,05)
NANO	Nanotechnology project
NSSL	Final EcoSSL document citation (Keyword = REVIEW)
NTA	Non-applicable for ASTER (Keyword = ECOCHEM VERIFICATION SOURCE)
NTC	Non-applicable for Criteria Documents (Keyword = REVIEW)
NTQ	Non-applicable for QSAR (Keyword = ECOCHEM VERIFICATION SOURCE)
OECD F	Dataset from France *
OECD G	Dataset from Germany *
OECD N	Dataset from The Netherlands *
OPP	Office of Pesticide Programs dataset *
OW-Se	Office of Water – Selenium project
PCBRES	PCB Residue project
RUSSN	Russian dataset *
SKIM BY CHEMICAL	OPP Database Project
SPECVER	References used to verify species (Keyword = Species Verification Source)
TOXRES or TOX	EPA toxicity residue database (from Al Jarvinen)
TRV/EcoSSL	Wildlife Toxicity Reference Value (from USEPA Denver) or Ecological Soil Screening Level project
USGS	United States Geological Survey (Mayer & Eilersieck, 1986, also known as the “Gold Book”)*

Projects	Description
WQC -UWS	Water Quality Criteria documents from the University of Wisconsin Superior. Also used for R. Spehar files.

* Data with these sub-database codes were compiled outside of the ECOTOX program. Citations and data were imported to the ECOTOX database; papers are not necessarily in the ECOTOX files.

Table 6b. Special Project Status Codes (Skim only)

(Note: All Reject Keywords valid, Table 3. These terms are in addition to project specific codes. Refer to project SOPs for full descriptions)

ECOSL	EFED	PCBRES	TRV
1 or 2 conc	COC	COC	ACC
Control	Control	Effect*	Acute
ECOSL Species		Endpoint	Alt
ECOSL Chem	Efficacy	Residue	Control
ERE	Endpoint	TOXRES	Diet
Foreign	Target TARGET2012 WEEDS PESTS		Dose
Media	Target Growth Reg		Genetic
Mixture-Field	RODEHH		Nut (Nut Def) or Nutrition
OM			Oral
pH			OrgMet
Soil			Score
			Tumor

*Effect codes definition different than ECOTOX

OK = OK for project, NO = Rejected for project and CODED = data extracted.

Table 7. Species Groups

Species Groups	Description
----------------	-------------

Species Groups	Description
AVIAN	Wild birds, includes mallard and quail
BEES	Bees, including wasps, ants and all species of the Hymenoptera order
DOM	Domesticated animals; Ex: pig, sheep, horse, cat, dog, rabbit
DOMA	Domesticated birds; Ex: turkey, chicken, duck
FISH	Fish
FUNGI	Fungus (except penicillin, <i>Candida</i> which is human health). Slime molds are protozoa
HERP	Amphibians, reptiles
INSECT	Insects; includes mites and flies
INVERT	Invertebrates. Includes slime molds
MAMMAL	Wild mammals
MISC	Two or more taxonomic groups reported by author as one result (e.g. aquatic community) or waiting species verification. See <i>Species Verification SOP</i> for additional documentation.
NEMA	Nematoda
P	Plants
RODE	Lab cultured rodents; guinea pig, hamster, rat

Table 8. Citation and Paper Status

Paper Status	Description
Archived	Citation has been archived and will not be ordered.
Chemical Verification	Chemical verification.
Code Verification Pending	Paper coded, but awaiting code verification to finalize data and complete quality assurance.
Completed	Paper completed from all processing and ready to be returned to MED files.
Data Maintenance	Data maintenance. Use specifically for papers on tracking lists. Maintenance Complete and Maintenance QAed also used.
Double Reviewing QAed	The reviews of both the original and second review has been evaluated and completed by EPA coordinator.

Paper Status	Description
Double Reviewed	Independent review of a paper by a second reviewer has been completed.
Double Reviewing	10% duplicate review.
Fiche	Microfiche format stored on contractor site. Paper not printed.
Filed at EPA	Paper filed in MED files.
Filed at Offsite	General status for METHODS and LITBIB, as determined by project code.
Maintenance Complete	Maintenance reviewing completed and ready to be returned to MED files.
Maintenance QAed	Maintenance reviewing has been quality assurance by a second reviewer.
N/A (NON-APPLICABLE)	Non-applicable papers.
Ordered	Citations have been ordered.
Processed	Citation has been processed by MED staff for either citation ordering or paper has been pulled from MED files and en route to offsite location.
QAed	Reviewing quality assurance has been completed by a second reviewer.
Recalled	General status for recalling paper from the MED files.
Received	Paper has been received (new or recalled from file) to be routed to specific offsite staff or project.
Recheck Citation	Modifications needed for citations or verification of the bibliographic information of a paper.
Re-skim for Applicability	Re-skim the citation in order process to determine if order process should be continued.
Returned	Paper returned (or en route) to MED files.
Reviewing	Paper in process of being reviewed. View project code to determine which project.
RQAing	Quality assurance of reviewed paper in progress.

Paper Status	Description
Skimming	Skimming process (project code determined within this process).
Species Verification	Species verification.
To Order	Citations have been quality assured and ready to be ordered.
To Order QA	Newly entered citations to be checked prior to ordering.
To Recall	Paper expected to be recalled. Used as a way to group papers to be recalled into batches.

Table 9. Data Status

Data Status	Description	RIS OUTPUT (Field #27)
ARCHIVED	Paper not pursued	ARCHIVE
Reviewed – ECOTOX Complete	Reviewed/entered into AQMOD/TERRETOX data entry systems and data published in AQUIRE and/or TERRETOX.	A,S,T, AT,ST,AST
Reviewed – Partial Coded	Chemicals partially coded in Lite (EFED) system.	UR
Reviewed – Unify Lite Complete	EFED data encoded via Unify system. ECOTOX coding still need to be completed.	AL,TL,SL
Reviewed - Unify Complete	All data completely encoded for both ECOTOX and EFED via Unify system.	A,S,T
Reviewed – Lite Complete	Aquatic or terrestrial data coded in Lite Eval system (fully coded per ECOTOX guidelines), but missing some ECOTOX data fields. ECOTOX Lite coded paper (All chemicals and effects coded per ECOTOX rules in LiteEval).	AL,TL,SL
Reviewed – Lite Coded	Partially coded in Lite Eval system (not fully coded per ECOTOX guidelines).	AV,TV,SV
Reviewed – Partially Coded	Partially coded (some chemicals) in Lite Eval system (not fully coded per ECOTOX guidelines).	UR

Data Status	Description	RIS OUTPUT (Field #27)
NA with ECOREF	Does not meet ECOTOX inclusion criteria. NON-APPLICABLE in RIS files, but kept for tracking purposes (LITBIB, METHFILE, Species Verification, Chemical Verification).	NON-APPLICABLE
NA with No ECOREF	Does not meet ECOTOX inclusion criteria.	NON-APPLICABLE
Unknown	Paper has not been received.	(ILL, Copy Request, COMM, Auth)
Unreviewed	Skimmed, but not coded	UR
Unskimmed	Paper has been received, but not skimmed.	UR

Table 10. Effect Group

Effect Groups	Description
ACC	Accumulation: Effects, measurements and endpoints which characterize the process by which chemicals are taken into and stored in plants or animals. Includes lethal body burden.
BEH	Behavior: Overt activity of an organism represented by three <i>effect</i> groups - avoidance, general behavior, and feeding behavior. All measurements related to reproductive behavior are listed under the major effect group REP.
BCM	Biochemical: measurement of biotransformation or metabolism of chemical compounds, modes of toxic action, and biochemical responses in plants and animals including three <i>effect</i> groups - biochemical, enzyme and hormone effects.
CEL	Cellular Effects: measurements and endpoints regarding changes in structure and chemical composition of cells and tissues of plants or animals as related to their functions; the three <i>effect</i> groups include cellular, genetic and histological effects.
GRO	Growth: a broad category, which encompasses measures of weight and length and includes effects on development, growth and morphology. Development covers toxicant effects on tissue organization in growing progeny. Growth represents length and weight changes at any point in the life cycle. Morphology measurements and endpoints address the structure (bones) and form (organ/tissue development) of an organism at any stage of its life history.
MOR	Mortality: measurements and endpoints where the cause of death is by direct action of the chemical.
PHY	Physiology: measurements and endpoints regarding basic activity in cells and tissues of plants or animals. Four <i>effect</i> groups include injury, immunity,

Effect Groups	Description
	intoxication and general physiological response.
POP	Population: measurements and endpoints relating to a group of organisms or plants of the same species occupying the same area at a given time.
REP	Reproduction: measurements and endpoints to track the effect of toxicants on the reproductive cycle. All measurements related to reproduction and care of progeny are included in this category, including behavioral and physiological measurements. Measurements related to development of progeny are found under the major <i>effect</i> group GRO, minor <i>effect</i> group DVP. The <i>effect</i> group AEG includes measurements of avian or reptilian eggs.
SYS	Ecosystem: measurements and endpoints to track the effects of toxicants on ecosystem processes. Includes microbial processes.
NOC	No Group Code: measurements related to multiple or delayed effects or endpoints reported without a specific effect.

Table 11. Test Location

Test Location	Definition
FieldA	Field, Artificial - a simulated or artificial field study is conducted in “an artificially bounded system that is a simplification of a specific ecosystem”, e.g., aviaries, pens, enclosures, outdoor pots.
FieldN	Field, Natural - a natural field study is one “in which both the test system and exposure to the stressor are ‘naturally’ derived”; e.g. sprayed agricultural field or orchard plots, field surveys.
Lab	Laboratory indoor setting, including environmental chamber, greenhouse, lath house, garden frame or indoor pots.
NR	Not Reported; unable to determine whether laboratory or field.

Table 12. Exposure Route Groups

Exposure Route Groups	Definition
Mixture	If the papers reports a mixture where there is an addition of two or more chemicals were tested (not effluent, etc.), place MIXTURE with the exposure route/media SKIMMING data field.
Oral	Exposure through consumption; includes diet and/or water intake; this code will be automatically assigned if one of the diet categories

Exposure Route Groups	Definition
	from ECOTOX Code Appendix J.1 is used.
Inject	Insertion of the toxicant into the skin, vessels, muscle, subcutaneous tissue, or any body cavity; this code will be automatically assigned if one of the injection categories from ECOTOX Code Appendix J.2 is used.
Multiple	Multiple exposures to the toxicant through two or more different routes.
AQUA	Aquatic exposures through the water.
NR	Exposure type is Not Reported .
TOP	Topical exposure includes dermal, eggshell, immersion or soaking.
ENV	Environmental exposures include field In situ and specific application types as well as incidental exposures.

Table 13. Control Types

Code	Definition
B	Baseline or background control: parameters of actual or representative test species measured before and after administration of test chemical, though not as part of the same test scenario. Note: TERRESTRIAL FULL DOSE RESPONSE DATA ONLY: pretreatment values, collected during the same test scenario as the observed responses, are recorded as exposure concentrations with a negative exposure duration; <u>not</u> as baseline control parameters.
C	Concurrent control: controls are run simultaneously with the exposure, e.g. in the laboratory where a chemical free test chamber is used or in field studies where the control data are obtained upstream from the exposure data; also includes field tests where the controls are run in a separate system, i.e. pond A and pond B or field A and field B but the ponds are in the same geographic area and have similar media.
H	Historical control: applicable to natural field system testing, data collected prior to exposure often during an independent long-term survey of the area; see also B - Baseline
K	Data for control is presented but without accompanying methodology to identify procedures used
M	Multiple controls were reported, e.g. historic and concurrent
NR	Not reported; there is no information about presence or absence of controls in the publication

Code	Definition
O	The 'O' code should be used when a control is run in a different system (e.g. defined by different dilution water or soil properties) than the exposure treatments. This also includes laboratory studies where different solvents are used for control versus treatment (e.g. Water was used as a solvent for test compound, controls were injected with saline, or a blood sample from an unexposed female used for a control for an exposed male).
P	Positive controls were used
V	Carrier or solvent; organisms exposed to carrier or solvent as the only control
Z	Author states that no controls were used in the study

Table 14. Endpoint

Endpoint	Definition
ATCN	Asymptotic threshold concentration: The concentration of a chemical at which some percentage of a population of test organisms is in a state of approximate homeostasis for some prolonged period of time.
BAF	Bioaccumulation factor: A value that is the "ratio of the concentration of a chemical in the organism to that in the medium (usually water). Bioaccumulation refers to both uptake of dissolved chemicals from water (bioconcentration) and uptake from ingested food and sediment residues." (Casarett et.al. 1986) For TERRETOX, use BAF to reflect concentration/accumulation in tissues regardless of whether the author addresses the ratio as BAF or BCF. The use of a BCF code in the TERRETOX database will require prior approval.
BCF	Bioconcentration factor: A term describing the degree to which a chemical can be concentrated in the tissues of an organism in the <i>aquatic environment</i> as a result of exposure to waterborne chemical at steady state during uptake phase. The BCF is a value which is equal to the concentration of a chemical in one or more tissues of the exposed aquatic organism divided by the average exposure water concentration of a chemical in the test. (Rand 1995) Use BCF only when reported by author for water exposures i.e., AQUIRE; if BCF reported for terrestrial organisms/plants code as BAF. BCFs of less than 1 and negative BCF values are suspect and should be looked at by the EPA data base coordinator. Reviewers will code the data and send the paper on to the EPA data base coordinator for review and approval. The BCFs less than 1 are coded as reported by the author and negative BCF values are coded as <1.
BCFD	Bioconcentration factor calculated using dry weight tissue concentration

Endpoint	Definition
BMCxx	Benchmark Concentration at xx% level of response above background. Benchmark Concentration is an exposure to a concentration of a substance associated with a specified low incidence of risk, generally in the range of 1% to 10% of a health effect; or the concentration associated with a specified measure or change of a biological effect. Note the BMCL should be coded in the range/CI fields as the lowest value, since it is from the one-side 95% CI
BMDxx	Benchmark Dose at xx% level of response above background. Benchmark Dose is an exposure due to a dose of a substance associated with a specified low incidence of risk, generally in the range of 1% to 10% of a health effect; or the dose associated with a specified measure or change of a biological effect. Note the BMDL should be coded in the range/CI fields as the lowest value, since it is from the one-side 95% CI.
ECxx	Effective concentration for xx% of tested organisms.
EC100	Effective concentration to 100% of test organisms
EDxx	Effective dose for xx% of tested organisms
ERxx	Tissue concentration of toxicant needed to cause xx% effect in the test population. (ECOREF#51644) The ERxx concentration should be coded into the Concentration field and not the BCF field.
ETxx	Effective time response to xx% of organisms. The time associated with the response is coded in the DURATION field.
ICxx	Inhibition concentration to xx% of organisms.
IDxx	Inhibition dose to xx% of organisms.
LCxx	Lethal concentration to xx% of test animals.
LDxx	Lethal dose to xx% of test animals
LETC	Lethal Threshold Concentration: Toxicity curve asymptotic concentration indicating an incipient LC50 value. Acute lethal action has essentially ceased.
LOEC	Lowest observable effect concentration
LOEL	Lowest-observable-effect-level: lowest dose (concentration) producing effects that were significantly different (as reported by authors) from responses of controls (LOAEL/LOEC)
LOER	Lowest Observed Effects Residue: The lowest residue concentration producing effects that were significantly different from responses of controls according to author's reported statistical test
LRxx	Lethal Residue Concentration. Tissue concentration of toxicant needed to cause xx% mortality in the test population. (ECOREF#20453) The LRxx concentration should be coded into the Concentration field and not the BCF field.

Endpoint	Definition
LTxx	Lethal time, median: time required for xx% of a population to die from a given dose; also reported as “STxx” - survival time for xx% of a population. The time associated with the response is coded in the DURATION field.
MATC	Maximum Acceptable Toxicant Concentration: Hypothetical threshold concentration that is the geometric mean between the NOEC and LOEC concentration. The term Chronic Value (ChV) is encoded as MATC. Refer to companion endpoint note under LOEC definition
MATR	Maximum Allowable Toxicant Residue: Hypothetical threshold residue concentration that is the geometric mean between the NOER and LOER values.
NOEC	No observable effect concentration
NOEL	No-observable-effect-level: highest dose (concentration) producing effects not significantly different from responses of controls according to author's reported statistical test (NOAEL/NOEC)
NOER	No Observed Effects Residue: The highest residue concentration producing effects not significantly different from responses of controls according to author's reported statistical test
NR-LETH	100% mortality
NR-ZERO	0% mortality
NR (=NO)	Not reported
GRAPHED	Graphed endpoint data only

All six of these criteria located in Table 15 must be included in at least one toxicity test for the paper to be categorized as applicable. If the toxicity test lacks of one or more areas listed in Table 15 requires that the paper be classified as non-applicable.

Table 15. ECOTOX Minimum Data Requirements

Key Area	Data Requirement
Chemical	Tests using single, verifiable chemical toxicants, administered through an acceptable route. Must also be used in relevant environmental exposure studies, as determined by usual toxicology standards, Special EPA projects may alter this criteria.
Species	Tests of the single toxicants on live, whole, taxonomically verifiable organisms, (including gametes, embryos, or plant or fungal sections capable of forming whole, new organisms) that are not bacteria, humans, monkeys, viruses, or yeast.

Key Area	Data Requirement
Effect	Biological adverse or neutral response of an acceptable organism to a chemical toxicant.
Quantified Exposure Amount (Concentration)	The amount of chemical the organisms were exposed, either as a concentration (CONC) in the environment when administered via soil or water, or as a dosage when introduced directly into or on the organism, via injection, orally, or topically.
Known Exposure Duration	A known duration from the time of initial exposure to the time of measurement. May be imprecise, as in "less than 6 months," "one growing season," or "from 3 to 5 weeks."
Publication Type	<p>If all the above criteria are met, but one of these conditions is true, it will be rejected:</p> <ul style="list-style-type: none">• Original data from experimental toxicity tests not conducted by the author, but cited in other publication, i.e., a review of data.• Abstract only (paper type must be full text)• Full text is non-English language