
Research and Development



CETIS: Complex Effluents Toxicity Information System

CETIS Retrieval System User's Manual



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CETIS: COMPLEX EFFLUENTS TOXICITY INFORMATION SYSTEM

CETIS RETRIEVAL SYSTEM USER'S MANUAL

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GLOSSARY

FIPS	-	Federal Information Processing Standards
GAGE	-	United States Geological Survey river gage level file
IFD	-	Industrial Facilities Discharge file
IHS	-	In-House Software
Q7-10		
Low Flow	-	7-day, 10-year low flow (in cfs) of a receiving stream
NCC	-	National Computer Center
NPDES	-	National Pollutant Discharge Elimination System program
REACH	-	Hydrologic network file
SAS	-	Statistical Analysis System available at NCC on the IBM computer
SIC	-	Standard Industrial Classification
STORET	-	Computerized data base system maintained by the EPA for the STOrage and RETrieval of data relating to the quality of the waterways within and contiguous to the United States
TSO	-	Time Sharing Option for interactive computer use on the NCC IBM computer

INTRODUCTION

PROJECT DESCRIPTION

A computerized Complex Effluent Toxicity Information System (CETIS) data base has been developed to assemble the results of effluent toxicity tests so toxicity characteristics of complex effluents can be determined on an industry-by-industry basis. The information is available through the National Computer Center (NCC) to state or regional environmental offices to assist them in determining where to use toxicity testing, in interpreting the results, and in setting discharge limits. This data base was designed collaboratively by the Environmental Research Laboratory-Duluth (ERL-D) of the Office of Research and Development and the Permits Division of the Office of Water.

DATA ACQUISITION

Data for CETIS are obtained from both published papers and from unpublished results of tests conducted by state or regional environmental offices.

DATA ENCODING AND ENTRY

These data are evaluated by trained reviewers, and selected information is encoded onto data record forms. The data are entered into data files on the PDP 11/70 computer at ERL-D. The data files are proofread and checked to insure they accurately reflect the test data.

ERL-D CETIS personnel transmit data to the IBM computer system at NCC. Incoming CETIS data are cross-referenced with corresponding data from the Industrial Facilities Discharge (IFD) file using In-House Software (IHS). IFD is linked to the United States Geological Survey river gage level file, GAGE, by way of the hydrologic network file, REACH. Consequently, cross-referenced information from the IFD, REACH and GAGE files are included in the

IHS CETIS data base. The cross-referenced information is proofread and edited by ERL-D CETIS personnel prior to inclusion in the IHS CETIS data base.

DATA RETRIEVAL

The CETIS Retrieval System allows users with an account at NCC to select the following template retrieval reports: 1) industrial report, 2) receiving water or area report, 3) test report, 4) test species report, 5) effluent treatment report, and 6) total data listing report. The user can also design and implement specific retrievals to obtain data from CETIS.

USING THE CETIS RETRIEVAL SYSTEM

The CETIS retrieval system is an interactive TSO CLIST program that prepares and submits batch IHS retrieval requests. Several different types of reports are available. Within each report type are options for selecting and sorting records and for formatting outputs. Table 1 summarizes the CETIS report specifications.

The program is useful for retrieving large quantities of data from CETIS. Further analysis of retrieval data can be accomplished by specifying the SAS format output which is saved on disk storage. The data can then be analyzed using SAS.

Because the program submits a batch request, it may take several hours or overnight to generate the reports requested. Job turnaround time can be shortened by selecting a high priority number for the job. However, computer cost is directly related to job priority.

Users may also design their own retrieval specifications and output format by using IHS directly without going through the CETIS retrieval program.

TABLE 1.

CETIS REPORT SPECIFICATION SUMMARY

REPORT OPTIONS	SELECT OPTIONS	SORT OPTIONS	FORMAT OPTIONS
Industry Report	Industrial Category SIC Codes	SIC Codes & State State & SIC Codes	Brief Format Expanded Format SAS Format Disk File
Area or Receiving Water Report	Eight-digit Catalog Unit Eight-digit Catalog Unit & three-digit Segment Number Basin Code State	Catalog Unit & Segment Number NPDES Number	Brief Format Expanded Format SAS Format Disk File
Test Report	Bioassay Type 1 Bioassay Type 2 Exposure Type Test Duration	NPDES Number SIC Code	Brief Format Expanded Format SAS Format Disk File
Test Species Report	Test Species Lifestage	NPDES Number SIC Code	Brief Format Expanded Format SAS Format Disk File
Effluent Treatment Report	NPDES Number SIC Code Effluent Treat- ment*	NPDES Number SIC Code Low Flow Discharge Flow	Brief Format Expanded Format SAS Format Disk File
Total Data Listing Report	Reference Number* NPDES Number* Catalog Unit and Segment Number*	Not applicable	Full Data Listing Format

* Available by October, 1984.

ACCESSING CETIS

It is assumed that the user is familiar with the basic operation and use of TSO on the EPA NCC IBM computer. If not, the user should contact EPA User Support (FTS/629-7862 or 919/541-7862) for further information. The "NCC-IBM User's Guide" and the "TSO User's Guide" may also be obtained from EPA User Support.

Different types of accounts and phone connectors require slightly different logon procedures. Usually, an account number and password are all that are required. After entering the CETIS retrieval program, you will also have to enter the number of the remote printer (station id) where the output will be sent.

HELP

General questions regarding CETIS may be directed to the CETIS Coordinator, U.S. EPA Environmental Research Laboratory, 6201 Congdon Boulevard, Duluth, MN 55804.

Questions about the retrieval program and IHS should be directed to the STORET Support Group (WH-553), U.S. EPA, 401 M Street SW, Washington, DC 20460 (FTS/382-7220 or 202/382-7220).

The following CETIS data base documentation may be purchased from the National Technical Information Service (U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22151):

Crane, J. L., A. Pilli, and R. C. Russo. 1984. CETIS: Complex Effluents Toxicity Information System. Data Encoding Guidelines and Procedures. EPA Report, Environmental Research Laboratory, U.S. Environmental Protection Agency, Duluth, MN: 20 p.

SAMPLES

An example of a typical retrieval session and sample outputs (Appendix A) for the various report types follows:

To begin a retrieval:

- LOGON to TSO using your user id and password.
- Type: EX 'GDOETDB.CLIST(RETRIEVE)'

```
*****
*           WELCOME TO THE CETIS RETRIEVAL SYSTEM!           *
*                                                             *
* This TSO procedure is designed to allow the user to        *
* access the Complex Effluents Toxicity Information System *
* (CETIS) data base for purposes of generating standard      *
* format reports. Several retrieval and selection options *
* are offered to enable limited modification of the          *
* desired report.                                           *
*****
```

```
*****
* If at any point you wish to start over or exit this      *
* procedure hit the 'BREAK' or 'ATTN' key.                  *
*****
```

1. The first input required is your station id number.

ENTER YOUR 3 DIGIT STATION ID

EXAMPLE: 013

ENTER STATION ID: NNN (CR)

Type: NNN (CR) where NNN = your station id and (CR) = a carriage return

2. Choose the type of report you want.

SELECT THE TYPE OF REPORT YOU WISH TO OBTAIN BY NUMBER.

1. INDUSTRY REPORT
2. RECEIVING WATER OR AREA REPORT
3. TEST REPORT
4. TEST SPECIES REPORT
5. EFFLUENT TREATMENT REPORT
6. TOTAL DATA LISTING FOR UP TO 8 REFERENCES
7. GO BACK TO TSO COMMAND MODE

ENTER (1-7): 1 (CR)

Your response would be entered after the colon. We chose the industry report.

3. Choose your select option.

SELECT YOUR OPTION BY NUMBER.

1. SELECT AN INDUSTRY CATEGORY FROM A MENU
2. SELECT SIC CODES (UP TO 15)

ENTER (1 or 2): 1 (CR)

Your response would be entered after the colon. We chose to select an industry category.

4. Choose an industry category number.

SELECT YOUR INDUSTRY CATEGORY BY NUMBER.

- | | |
|--------------------------|------------------------------|
| 1. ALUMINUM FORMING | 15. STEAM ELECTRIC |
| 2. BATTERY MANUFACTURING | 16. POTW |
| 3. COAL MINING | 17. COPPER FORMING |
| 4. COIL COATING | 18. TEXTILES |
| 5. FOUNDRIES | 19. TIMBER |
| 6. INORGANIC CHEMICALS | 20. PHARMACEUTICALS |
| 7. IRON AND STEEL | 21. INK |
| 8. LEATHER TANNING | 22. PESTICIDES |
| 9. METAL FINISHING | 23. PETROLEUM REFINING |
| 10. NON-FERROUS METALS | 24. PULP AND PAPER |
| 11. ORE MINING | 25. AUTO AND OTHER LAUNDRIES |
| 12. ORGANIC CHEMICALS | 26. PHOTOGRAPHIC EQUIPMENT |
| 13. PAINT | 27. ELECTRICAL |
| 14. PORCELAIN ENAMELING | |

ENTER (1-27): 3 (CR)

Your response would be entered after the colon. We chose to get information on the coal mining industry.

5. Choose your sort option.

CHOOSE HOW YOU WANT THE REPORT SORTED.

1. SIC CODE / STATE
2. STATE / SIC CODE

ENTER (1 or 2): 2 (CR)

Your response would be entered after the colon. We chose to get the information sorted by state abbreviation and by SIC codes within those states.

6. Choose the format option for your retrieval.

SELECT YOUR FORMAT OPTION BY NUMBER.

1. BRIEF FORMAT
2. EXPANDED FORMAT
3. SAS FORMAT DISK FILE AND PRINTOUT

ENTER (1-3): 2 (CR)

Your response would be entered after the colon. We chose the expanded format.

Note: The SAS format will be available by October, 1984.

7. Choose the type of output you would prefer.

SELECT YOUR REPORT CRITERIA BY NUMBER.

1. PRINTED REPORT ONLY
2. PRINTED REPORT AND DATA SAVED ON DISK

ENTER (1 or 2): 1 (CR)

Your response would be entered after the colon. We chose to get the printed report only.

8. Choose the job priority. Keep in mind that job priority correlates directly with the cost of each report.

ENTER THE PRIORITY YOU WANT THIS JOB TO RUN AT.
PRIORITY = 2 IS NORMAL.

5 IS THE HIGHEST.
1 IS THE LOWEST.

ENTER (1-5): 3 (CR)

Your response would be entered after the colon. We chose a job priority of three.

9. Wait. The CETIS retrieval system is compiling your request and submitting it as a batch job.

A BATCH RETRIEVAL IS NOW BEING ASSEMBLED. WAIT WHILE THE SYSTEM
PROCESSES YOUR REQUEST.

SAVED
SAVED

JOB GDO (JOB02373) SUBMITTED
SUBMIT COMPLETED
JOB SUBMITTED AT 10:54:53 ON 05/31/84

YOUR BATCH RETRIEVAL IS SUBMITTED.

PLEASE TAKE NOTE OF THE JOB NUMBER ENCLOSED IN PARENTHESES FOR
FUTURE REFERENCE.

The job number is the number that will be used for identification purposes when the retrieval is in the queue and when the retrieval is printed.

11. Choose to continue with another retrieval or stop the CETIS retrieval system.

WOULD YOU LIKE TO SUBMIT ANOTHER RETRIEVAL?

ENTER (Y OR N): N (CR)

ENTERING TSO COMMAND LEVEL ...

READY

You would enter your response after the colon. If you had chosen yes (to continue with more retrievals), the CETIS retrieval system would return you to selection of report type (see #2 of this section). By choosing not to continue, we were returned to the TSO command level.

11. When you are finished creating retrievals, the output can be printed at your remote site. If you created a disk file using the CETIS retrieval system, you can use that file with other programs for analysis.

Appendix A

CETIS RETRIEVAL SYSTEM EXAMPLES

The following section contains examples of each report option in a brief and expanded format. A unique set of data elements are retrieved from the IHS CETIS data base for each report option (refer to Appendix B for a description of the CETIS data elements). The SAS format output examples are for viewing purposes only. The NCC-IBM, SAS package utilizes the disk file which is generated. This disk file contains no headings or column labels and all the data for a record is on a single line.

CETIS RETRIEVAL SYSTEM - INDUSTRIAL REPORT - BRIEF FORMAT

REFERENCE #	NPDES #	S T A	FACILITY NAME	SIC CODE	SAMPLE DATE	TEST #	SPEC	EFCT ENDPT	EFCT CODE	CONC, CONC RANGE
ERLD05806000			BLEACHED KRAFT PULPMILL EFFLU	2611	/ /	1	23	LC50		55%
					/ /	2	23		BIO	44%
					/ /				BIO	44%
					/ /				BIO	44%
					/ /	3	23		BIO	31.5%
					/ /	4	23		BIO	31.5%
					/ /	5	23		BIO	31.5%
					/ /	6	23		BIO	31.5%
ERLD05695000			ON BLEACHED KRAFT MILL	2611	/ /	1	4	LC50		16.5%
					/ /	2	4	LC50		14%
					/ /	3	4	LC50		18.70001%
					/ /	4	4	LC50		28%
					/ /	5	4	LC50		49%
					/ /	6	4	LC50		37%
					/ /	7	4	LC50		36%
					/ /	8	4	LC50		25.8%
					/ /	9	4	LC50		21.8%
					/ /	10	4		GRO	6%
ERLD06066000			STAR PAPER MILL	2611	/ /	1	407	LC50		21.5%
					/ /			LC50		19.5%
					/ /			LC50		18.5%
					/ /			LC50		17%
										21 - 24
										18 - 21
										18 - 21
										15.5 - 18
					/ /	2	407	LC50		27%
					/ /			LC50		24.5%
					/ /			LC50		22%
					/ /			LC50		20%

CETIS RETRIEVAL SYSTEM - INDUSTRIAL REPORT - EXPANDED FORMAT

REFERENCE #	NPDES #	STATE	FACILITY NAME	SIC CODE	RECEIVING WATER	DIS FLOW	EFF TREATMNT	
TEST #	SAMPLE DATE	SAMP TYPE	SPEC	DUR/DAYS	EFCT ENDPT	EFCT CODE	CONC	CONC RANGE
=====								
ERLDO5806000								
BLEACHED KRAFT PULPMILL EFFLU 2611								
1	/ /		23	4	LC50		55%	-
2	/ /		23	5		BIO	44%	-
	/ /			3		BIO	44%	-
	/ /			4		BIO	44%	-
3	/ /		23	5		BIO	31.5%	-
4	/ /		23	5		BIO	31.5%	-
5	/ /		23	5		BIO	31.5%	-
6	/ /		23	5		BIO	31.5%	-
ERLDO5695000								
ON BLEACHED KRAFT MILL 2611 NIPIGON BAY								
1	/ /	P	4	4	LC50		16.5%	-
2	/ /	P	4	4	LC50		14%	-
3	/ /	P	4	4	LC50		18.70001%	-
4	/ /	P	4	4	LC50		28%	-
5	/ /	P	4	4	LC50		49%	-
6	/ /	P	4	4	LC50		37%	-
7	/ /	P	4	4	LC50		36%	-
8	/ /	C	4	4	LC50		25.8%	-
9	/ /	C	4	4	LC50		21.8%	-
10	/ /	C	4	18		GRO	6%	-
ERLDO5352000								
FINNISH BLEACHED KRAFT PULP M 2611								
1	/ /	P	4	4	LC50		1.54%	1.43 - 1.62
2	/ /	P	4	4	LC50		5.8%	5.2 - 6.4
3	/ /	P	4	4	LC50		6.3%	5.7 - 6.9
4	/ /	P	4	4	LC50		5.5%	5.3 - 5.7
5	/ /	P	4	4		MOR	16%	-
	/ /			4		MOR	18%	-
6	/ /	P	4	4	LC50		44%	33 - 59
7	/ /	P	4	4	LC50		1.51%	1.37 - 1.66
8	/ /	P	4	4	LC50		2%	1.6 - 2.4
9	/ /	P	4	4	LC50		10.7%	9.7 - 11.7
10	/ /	P	4	4	LC50		12.1%	11.2 - 13.1
11	/ /	P	4	4	LC50		14.3%	13.7 - 14.9
12	/ /	P	4	4	LC50		42.1%	40.5 -43.70001
ERLDO0686000								
BC BLEACH KRAFT PULP MILLS 2611								
1	74/12/00		90	4	LC50		.01%	-
2	74/12/00		90	4	LC50		1.7M	-
3	74/12/00		90	4	LC50		2.2M	-
4	74/12/00		90	4	LC50		1.3M	-
5	74/12/00		90	4	LC50		.017%	-
6	74/12/00		90	4	LC50		.018%	-
7	74/12/00		90	4	LC50		3.9M	-
8	74/12/00		90	4	LC50		2M	-

CETIS RETRIEVAL SYSTEM - INDUSTRIAL REPORT - SAS FORMAT DISK FILE

NPDES #	S T A	SIC	DIS FLOW	TREATMENT CODES	SAMP TYPE	SPEC	DUR/DAYS	EFCT ENDPT	EFCT CODE	CONC	
					#C	1	2		MOR	100%	#
					#C	8	2		MOT	100%	#
					#G	1	4	LC50		75%	#
					#G	1	4	LC50		80%	#
*OH0005681	OH	2621			*						
					#G	1	4	LC50		61%	#
					#G	1	4	LC50		49%	#
*OH0005703	OH	2631	900		*						
					#G	1			MOR	100%	#
*OH0009130	OH	2621	960		*						
					#G	1	4		MOR	100%	#
*OH0009377	OH	2621	8100		*						
					#G	1	4	LC50		43%	#
*OH0009539	OH	2621	3350		*						
					#G	1	4		MOR	100%	#
*OH0009717	OH	2621			*						
					#G	1	4		MOR	100%	#
*OH0009784	OH	2621	2320		*						
					#G	1	1		MOR	100%	#
					#G	8	1		MOT	100%	#
					#G	1	1		MOR	100%	#
					#G	8	1		MOT	100%	#
					#G	8	1		MOR	100%	#
					#G	8	1		MOT	100%	#
*OH0045322	OH	2621	540		*						
					#G	1	4	LC50		13%	#
*PA0008265	PA	2611	4800		*						
					#	1	1		MOR	100%	#
					#	8	1		MOR	100%	#
*SC0000868	SC	2631			*						
					#C	86	4		MOR	56%	#
					#C	142	4		MOR	56%	#
					#	86	2		MOR	60%	#
					#	142	2		MOR	60%	#
*SC0001015	SC	2611	35500		*						
					#C	2	4	LC50		53%	#
*TN0001643	TN	2621	17000	4A	*						
					#P	1	2		MOR	100%	#
*WI0000990	WI	2621			*						
					#C	1	4		MOR	100%	#
*WI0001121	WI	2621			*						
					#C	2	4		MOR	100%	#
*WI0003379	WI	2611			*						
					#C	2	4		MOR	100%	#
*WI0003671	WI	2611			*						
					#C	1	4		MOR	100%	#

CETIS RETRIEVAL SYSTEM - RECEIVING WATER REPORT - BRIEF FORMAT

CATALOG UNIT	SEQ. #	REFERENCE #	NPDES #	FACILITY NAME	SIC CODE	RECEIVING WATER	DISC. FLOW
	0	0	FLED00051000	REEVES SOUTHEAST	0		
	0	0	FLED00046000	SCHUYLKILL METALS CORPORA	0	DITCH TO PEMBERTON CREEK	
	0	0	FLED00006000	AMERICAN CYANAMID	2824		
3110206	16	FLED00020000	FL0000035	DU PONT DE NEMOURS LAWTEY	1099	RECVG STRM-BOGGY B	3
3100202	10	FLED00056000	FL0000043	TROPICANA PROD	2033	MANATEE R	
3080103	36	FLED00019000	FL0000051	DU PONT DE NEMOURS STARKE	1099	ALLIGATOR C	7
3080103	6	FLED00052000	FL0000060	REICHOLD CHEM JAX	2821	CEDAR C	50
	0	0	FLED00047000	SO WOOD PIEDMONT-BALDWIN	2491	CANAL TO ST MARY'S RIVER	
	0	0	FLED00061000	UNION CARBIDE KENNEDY PLT	2813	WILEY RD D TO INDIAN R	
3080103	3	FLED00039000	FL0000400	ST REGIS PAPER CO JAX	2631	ST JOHNS R	69400
3100207	1	FLED00036000	FL0000477	H P HOOD & SON DUNEDIN	2033	ST JOSEPH SND	705
3100204	7	FLED00050000	FL0000671	ROYSTER CO PHOSPH PL MULB	2874	ALAFIA R	610
	0	0	FLED00050001	ROYSTER CO PHOSPH PL MULB	2874	ALAFIA RIVER	
3070204	28	FLED00064000	FL0000701	ITT FERNANDINA	2611	AMELIA R	165000
3100204	7	FLED00027000	FL0000752	FARMLAND IND BARTOW	2874	TR TO ALAFIA R	2500
3100204	1	FLED00033001	FL0000761	GARDINIER EAST TAMPA	2819	ALAFIA R	
3100204	1	FLED00033002	FL0000761	GARDINIER EAST TAMPA	2819	ALAFIA R	
3100204	1	FLED00033000	FL0000761	GARDINIER EAST TAMPA	2819	ALAFIA R	32100
	0	0	FLED00054000	TAMPA ELEC-GANNON STEAM	4911	HILLSBOROUGH BAY	
3100206	4	FLED00055000	FL0000817	TAMPA ELEC-BIG BEND STEAM	4911	HILLSBOROUGH BAY	239000
	0	0	FLED00048000	SCM CORP ORGANIC CHEM JAX	2861	MONCRIEF CREEK	
3080103	17	FLED00004000	FL0000892	ALTON BOX BOARD JAX	2631	ST JOHNS R	50
	0	0	FLED00058000	USN NAVAL AIR STATION	4952	ST JOHNS RIVER	
	0	0	FLED00005000	ANCHOR HOCKING CORPORATIO	3221	MCCOY CREEK	
3080103	17	FLED00060000	FL0001040	UNION CAMP JAX	2869	L SIX MILE C	4080
3080101	19	FLED00037000	FL0001074	HI-ACRES CONCENTRATE ORLA	2033	L WEKIVA R	3.45
3100207	1	FLED00071000	FL0001121	MODERN PLATING PINELLAS P	3471	D TO CROSS BAYOU CA	62
3080103	17	FLED00028000	FL0001139	FL WIRE & CABLE JAX	3315	RECVG STRM-D TO CEDAR C	72
3100204	7	FLED00030000	FL0001589	W R GRACE CHEM COMPLEX BA	2874	ALAFIA R	.5
3100206	9	FLED00072000	FL0001643	NITRAM CHEM TAMPA	2873	DELANEY C	450
3100208	13	FLED00021000	FL0001929	EVANS PACKING DADE CITY	2037	TANK LK	1700
3100101	31	FLED00059000	FL0001961	US STEEL BARTOW CHEM PLT	2819	BEAR B	4700
3090203	0	FLED00043000	FL0002089	KEY WEST UTIL-STOCK ISL S	4911	ATLANTIC OCEAN	42400
3080103	46	FLED00008000	FL0002119	TITANIUM ENTERPRISES ORN	1099	RECVG STRM-CLARKES C	4800
3120003	31	FLED00053000	FL0002241	REICHOLD CHEM-NEWPORT DV	2861	STOKES B	131
3140105	1	FLED00031000	FL0002275	GULF PWR CO-CRIST STEAM	4911	ESCAMBIA R	
	0	0	FLED00073000	MONSANTO PENSACOLA	2869	ESCAMBIA RIVER	
3140305	1	FLED00073001	FL0002488	MONSANTO PENSACOLA	2869	ESCAMBIA R	30.8
	0	0	FLED00083000	PENSACOLA NAVAL AIR STATI	4952	PENSACOLA BAY	
3120001	3	FLED00078000	FL0002518	OLIN CORP SMOKELESS PL ST	2892	BIG BOGGY B	478
3140106	3	FLED00040000	FL0002526	ST REGIS PAPER PENSACOLA	2621	ELEVENMILE C	29100
3140105	8	FLED00007000	FL0002593	AM CYANAMID SANTA ROSA MI	2824	RECVG STRM-ESCAMBIA BAY	2600
3140105	8	FLED00007001	FL0002593	AM CYANAMID SANTA ROSA MI	2824	RECVG STRM-ESCAMBIA BAY	2600
3080103	54	FLED00032000	FL0002763	GEORGIA-PACIFIC CORP-PALA	2621	RECVG STRM-RICE C	37000
3080103	6	FLED00081000	FL0002780	CARGILL-DBA-PARAMOUNT POU	2016	D TO CEDAR C	351
	0	0	FLED00086000	PORT ST JOE WTP	4952	ST JOSEPH SOUND	
3080101	11	FLED00022000	FL0020303	DELAND WTP	4952	ST JOHNS R	1360
3080101	11	FLED00022001	FL0020303	DELAND WTP	4952	ST JOHNS R	1360
3090202	5	FLED00025000	FL0020311	FT LAUDERDALE-NW 6TH ST/W	4952	NF NEW R	6320
3090202	6	FLED00026001	FL0020524	FT LAUDERDALE-CORAL RDGE/	4952	INTERCOASTAL WATERWAY	5620
3090202	4	FLED00026000	FL0020524	FT LAUDERDALE-CORAL RDGE/	4952	INTERCOASTAL WATERWAY	5620

CETIS RETRIEVAL SYSTEM - RECEIVING WATER REPORT - EXPANDED FORMAT

CAT. UNIT/SEG.		RECEIVING WATER		NPDES #	FACILITY NAME		AV FLD/TGD	SIC	REFERENCE
		TEST NO.	DUR. /DAYS	SPECIES	EFCT	ENDPT EFCT CODE	CONC	CONC RANGE	
0	0					REEVES SOUTHEAST		0	FLED00051000
		1	1	1	LC50		.028%	-	
		2	1	8	LC50		.2%	-	
0	0	DITCH TO PEMBERTON CREEK				SCHUYLKILL METALS CORPORATIO		0	FLED00046000
		1	1	8		MOR	5.6%	-	
		2	1	54		MOR	5.6%	-	
		3	1	1527		MOR	5.6%	-	
0	0					AMERICAN CYANAMID		2824	FLED00006000
		1	2	8		MOR	100%	-	
		2	2	1		MOR	100%	-	
3110206	16	RECVG STRM-BOGGY B			FL0000035	DU PONT DE NEMOURS LAWTEY	45.02	1099	FLED00020000
		1	1	1		MOR	100%	-	
		2	1	8		MOR	100%	-	
3100202	10	MANATEE R			FL0000043	TROPICANA PROD		2033	FLED00056000
		1	2	1		MOR	100%	-	
3080103	36	ALLIGATOR C			FL0000051	DU PONT DE NEMOURS STARKE	52.44	1099	FLED00019000
		1	1	1		MOR	100%	-	
		2	1	8		MOR	100%	-	
3080103	6	CEDAR C			FL0000060	REICHOLD CHEM JAX	5.111	2821	FLED00052000
		1	2	1		MOR	100%	-	
		2	2	8		MOR	100%	-	
		3	2	1		MOR	100%	-	
		4	2	1		MOR	100%	-	
0	0	CANAL TO ST MARY'S RIVER			FL0000221	SO WOOD PIEDMONT-BALDWIN		2491	FLED00047000
		1	1	1	LC50		12.62%	-	
			2		LC50		12.62%	-	
			3		LC50		12.62%	-	
			4		LC50		12.62%	-	
		2	1	8	LC50		40.1%	-	
			2		LC50		12.03%	-	
		3	3	8	LC50		6.2%	-	
		4	4	8	LC50		5.92%	-	
		5	1	1	LC50		12.64%	-	
			2		LC50		12.64%	-	
		6	1	1	LC50		34.22%	-	
			2		LC50		34.22%	-	
		7	1	8	LC50		29.69%	-	

CETIS RETRIEVAL SYSTEM - RECEIVING WATER REPORT - SAS FORMAT DISK FILE

CAT/UNIT	SEQ	NPDES #	AV/FLOW	SIC	DUR/DAYS	SPEC	EFCT ENDPT	EFCT CODE	CONC	CONC RANGE	
* 3100204	7	FL0000671	74.65	2874	#	2	142	LC50	54.5%	41	75#
					#	1	142	MOR	100%		#
					#	2	1	MOR	100%		#
					#	2	1	MOR	100%		#
* 0	0	FL0000671		2874	#	2	8	MOR	100%		#
* 3070204	28	FL0000701	61.22	2611	#	2	1	MOR	100%		#
					#	4	2	LC50	13.3%		#
					#	4	1	LC50	5.9%		#
					#	2	1	LC50	44%		#
					#	2	142	MOR	56%		#
					#	1	142	LC50	82%		#
					#	1	1	LC50	79%		#
					#	1	1	LC50	60%		#
					#	1	142	LC50	85%		#
					#	1	1	LC50	22%		#
					#	1	8	LC50	47.4%		#
					#	1	142	LC50	48.8%	36	69#
					#	2		LC50	26.20001%	19	36#
* 3100204	7	FL0000752	74.65	2874	#	1	8	LC50	38.9%	18	56#
					#	2	8	LC50	29.9%	18	56#
					#	2083	1	LC50	35.4%	18	56#
					#	1		LC50	26.70001%	18	56#
					#	2		LC50	19.4%	10	32#
					#	1	1	MOR	100%		#
					#	1	8	MOR	100%		#
* 3100204	1	FL0000761		2819	#	4	86	MOR	56%		#
* 3100204	1	FL0000761		2819	#	4	86	MOR	56%		#
* 3100204	1	FL0000761	525.4001	2819	#	4	86	MOR	100%		#
					#	4	86	MOR	100%		#
					#	3	142	LC50	82.5%		#
					#	4		LC50	43.5%		#
* 0	0	FL0000809		4911	#	2	142	MOR	100%		#
* 3100206	4	FL0000817		4911	#	2	142	MOR	100%		#
* 0	0	FL0000884		2861	#	2	8	MOR	100%		#
* 3080103	17	FL0000892	5.111	2631	#	1	142	LC50	19.9%	10	32#
					#	2		LC50	15.7%	10	32#
* 0	0	FL0000957		4952	#	2	8	MOR	100%		#
					#	2	8	MOR	5.6%		#
					#	2	8	MOR	100%		#

CETIS RETRIEVAL SYSTEM - TEST REPORT - BRIEF FORMAT

NPDES #	SIC CODE	TEST #	EXP TYP	TEST DUR/DAYS	SPEC	EFCT ENDPT	EFCT CODE	CONC	CONC RANGE
AL0000108	2869	2	S	1	8	LC50		43%	-
AL0000213	2812	1	S	1	1		MOR	100%	-
		2	S	1	8		MOR	100%	-
AL0000329	3361	1	S	1	1	LC50		78%	-
		2	S	1	8		MOR	100%	-
AL0002194	3471	1	S	1	1	LC50		13. 5%	-
				2		LC50		13. 5%	-
AL0002763	2048	4	S	1	1		MOR	56%	-
		2	S	1	1	LC50		6. 2%	-
		3	S	1	8		MOR	75%	-
		1	S	1	8	LC50		8. 5%	-
AL0003085	2819	5	S	1	1	LC50		43%	-
				2		LC50		24%	-
		6	S	1	142	LC50		29%	-
				2		LC50		23%	-
AL0003093	2879	2	S	1	8	LC50		100%	-
		1	S	1	1		MOR	100%	-
AL0003361	3321	1	S	1	1		MOR	100%	-
		2	S	1	8		MOR	100%	-
AL0003395	2016	1	S	1	1	LC50		24%	-
		2	S	1	8	LC50	<	10%	-
AL0003417	3312	1	S	1	1	LC50		44. 1%	-
		2	S	1	8	LC50		56. 5%	-
AL0003603	2649	1	S	1	8	LC50		56%	-
				2		LC50		42%	-
AL0020001	4952	2	S	1	8		MOR	100%	-
		1	S	1	1		MOR	100%	-
AL0022870	1211	7	S	1	8		MOR	100%	-
		8	S	1	8		MOR	100%	-
		3	S	1	1		MOR	100%	-
		4	S	1	8		MOR	100%	-
		5	S	1	1	LC50		52%	-
		6	S	1	1	LC50		66%	-
		1	S	1	1	LC50		75%	-
		2	S	1	8		MOR	100%	-
AL0025330	2869	2	S	1	8		MOR	100%	-
AL0025330	2869								-

CETIS RETRIEVAL SYSTEM - TEST REPORT - EXPANDED FORMAT

NPDES #	SIC CODE	TEST #	EXP TYP	BIOASSAY 1 2	TEST DUR/DAYS	SPEC	EFCT ENDPT	EFCT CODE	CONC	CONC RANGE
AL0000108	2869	1	S	A C	2	1	LC50		37. 5%	-
		3	S	A C	2	8	LC50		41%	-
AL0002194	3471	1	S	A C	1	1	LC50		13. 5%	-
					2		LC50		13. 5%	-
AL0002895	4911	1	S	A C	2	8	LC50		91%	-
		2	S	A C	2	1		MOR	100%	-
AL0003085	2819	5	S	A C	1	1	LC50		43%	-
					2		LC50		24%	-
		6	S	A C	1	142	LC50		29%	-
					2		LC50		23%	-
AL0003603	2649	1	S	A C	1	8	LC50		56%	-
					2		LC50		42%	-
FL0000043	2033	2	S	A C	2	1		MOR	100%	-
FL0000060	2821	1	S	A C	2	1		MOR	100%	-
		3	S	A C	2	1		MOR	100%	-
		4	S	A C	2	1		MOR	100%	-
		1	S	A C	2	1		MOR	100%	-
		2	S	A C	2	8		MOR	100%	-
FL0000221	2491	11	S	A C	2	1		MOR	100%	-
		7	S	A C	1	8	LC50		29. 69%	-
					2		LC50		22. 64001%	-
		8	S	A C	1	8	LC50		74. 5%	-
					2		LC50		24%	-
		9	S	A C	2	8		MOR	100%	-
		10	S	A C	2	54		MOR	100%	-
		1	F	A C	1	1	LC50		12. 62%	-
					2		LC50		12. 62%	-
					3		LC50		12. 62%	-
					4		LC50		12. 62%	-
		2	F	A C	1	8	LC50		40. 1%	-
					2		LC50		12. 03%	-
		5	S	A C	1	1	LC50		12. 64%	-
					2		LC50		12. 64%	-
		6	S	A C	1	1	LC50		34. 22%	-
					2		LC50		34. 22%	-
FL0000337	2813	1	S	A C	2	8	LC50		7. 3%	-
					4		LC50		7. 3%	-
		2	S	A C	2	1	LC50		22. 6%	-
					4		LC50		21. 6%	-
FL0000400	2631	1	S	A C	2	142		MOR	100%	-
FL0000477	2033									-

CETIS RETRIEVAL SYSTEM - TEST REPORT - SAS FORMAT DISK FILE

NPDES #	SIC CODE	E X P	B T 1	B T 2	TEST DUR/DAYS	SPEC	EFCT ENDPT	EFCT CODE	CONC	CONC RANGE
AL0000108	2869	#S	A	C	2	1	LC50		37. 5%	- #
		#S	A	C	1	8	LC50		43%	- #
		#S	A	C	2	8	LC50		41%	- #
AL0000213	2812	#S	A	C	1	1		MOR	100%	- #
		#S	A	C	1	8		MOR	100%	- #
AL0000329	3361	#S	A	C	1	1	LC50		78%	- #
		#S	A	C	1	8		MOR	100%	- #
AL0001341	2892	#	A	C	4	2	LC50		. 5%	- #
		#F	A	C	4	2		MOR	100%	- #
AL0001791	3321	#	A	C	3	2	LC50		76%	- #
		#			4		LC50		22. 4%	- #
AL0002194	3471	#S	A	C	1	1	LC50		13. 5%	- #
		#			2		LC50		13. 5%	- #
AL0002763	2048	#S	A	C	1	1		MOR	56%	- #
		#S	A	C	1	1	LC50		6. 2%	- #
		#S	A	C	1	8		MOR	75%	- #
		#S	A	C	1	8	LC50		8. 5%	- #
AL0002895	4911	#S	A	C	2	8	LC50		91%	- #
		#S	A	C	2	1		MOR	100%	- #
AL0003085	2819	#S	A	C	1	1	LC50		43%	- #
		#			2		LC50		24%	- #
		#S	A	C	1	142	LC50		29%	- #
		#			2		LC50		23%	- #
		#F	A	C	4	86		MOR	56%	- #
		#S	A	C	4	86		MOR	56%	- #
		#F	A	C	4	142		MOR	56%	- #
		#S	A	C	4	142		MOR	56%	- #
AL0003093	2879	#S	A	C	4	2	LC50		13. 5%	- #
		#S	A	C	1	1		MOR	100%	- #
		#S	A	C	1	8	LC50		100%	- #
AL0003361	3321	#S	A	C	1	8		MOR	100%	- #
		#S	A	C	1	1		MOR	100%	- #
AL0003395	2016	#S	A	C	1	1	LC50		24%	- #
		#S	A	C	1	8	LC50		10%	- #
AL0003417	3312	#S	A	C	1	1	LC50		44. 1%	- #
		#S	A	C	1	8	LC50		56. 5%	- #
AL0003603	2649	#S	A	C	1	8	LC50		56%	- #

CETIS RETRIEVAL SYSTEM - TEST SPECIES REPORT - BRIEF FORMAT

NPDES #	SIC CODE	TEST #	SPECIES	LIFESTAGE	EFCT ENDPT	EFCT CODE	CONC	CONC RANGE
MI0001422	4911	33	23			MOR	.05M	-
		32	23			MOR	M	.03 - .1
MI0023027	4952	82	23			MOR	100%	-
		60	23			MOR	100%	-
		40	23			MOR	100%	-
		21	23			MOR	7.8%	-
WA0024503	4952	1	23	YRLG		HEM	1.1%	-
						HEM	3.6%	-
						HEM	1.1%	-
						HEM	3.6%	-

CETIS RETRIEVAL SYSTEM - TEST SPECIES REPORT - EXPANDED FORMAT

NPDES #	SIC											
TEST DATE	BIO-1	BIO-2	ENDPT	EFCT	CONC	CONC RANGE						
SPEC	LFSTG	AGE	AGE RANGE	WEIGHT	WT RANGE	LENGTH	LGTH RANGE					
MI0001422	4911											
73/05/14	A	C		MOR	.05M	.03 -	.1					
	23		-				100-	150				
73/05/14	A	C		MOR	M	.03 -	.39					
	23		-				100-	150				
MI0023027	4952											
74/00/00	A	C		MOR	100%	-						
	23		-									
74/00/00	A	C		MOR	100%	-						
	23		-		4.5		65					
74/00/00	A	C		MOR	100%	-						
	23		-									
74/00/00	A	C		MOR	7.8%	-						
	23		-		1.3		44					
WA0024503	4952											
/ /	A	C		HEM	1.1%	-						
/ /				HEM	3.6%	-						
/ /				HEM	1.1%	-						
/ /				HEM	3.6%	-						
	23	YRLG	-		29	-						

CETIS RETRIEVAL SYSTEM - TEST SPECIES REPORT - SAS FORMAT DISK FILE, FORMAT #1

NPDES #	SIC CODE	TEST DUR/D	EFCT ENDPT	EFCT CODE	CONC	SPEC	LFSTG	AGE	AGE RANGE
*MI0001422	4911	*							
		#	2	MOR	.05M	23			#
		#	3	MOR	M	23			#
*MI0023027	4952	*							
		#	2	MOR	100%	23			#
		#	4	MOR	100%	23			#
		#	4	MOR	100%	23			#
		#	4	MOR	7.8%	23			#
*WA0024503	4952	*							
		#	84	HEM	1.1%	23	YRLG		#
		#	84	HEM	3.6%				#
		#	112	HEM	1.1%				#
		#	112	HEM	3.6%				#

CETIS RETRIEVAL SYSTEM - TEST SPECIES REPORT - SAS FORMAT DISK FILE, FORMAT #2

SIC CODE	TEST DUR/D	EFCT ENDPT	EFCT CODE	CONC	SPEC	WEIGHT	WEIGHT RANGE	LENGTH	LENGTH RANGE
* 4911*									
#	2		MOR	.05M	23				100 150#
#	3		MOR	M	23				100 150#
* 4952*									
#	2		MOR	100%	23				#
#	4		MOR	100%	23	4.5		65	#
#	4		MOR	100%	23				#
#	4		MOR	7.8%	23	1.3		44	#
* 4952*									
#	84		HEM	1.1%	23	29			#
#	84		HEM	3.6%					#
#	112		HEM	1.1%					#
#	112		HEM	3.6%					#

CETIS RETRIEVAL SYSTEM - EFFLUENT TREATMENT REPORT - BRIEF FORMAT

REFERENCE #	NPDES #	SIC CODE	EFFLUENT TREATMENTS							LOW FLOW	DIS FLOW
FLED00064000	FL0000701	2611	1U	2K	3B	4A	5D	5G		. 4967	165000
FLED00004000	FL0000892	2631	1U	3G	4A						50
FLED00028000	FL0001139	3315	2C	2K	3G	4A					72
FLED00030000	FL0001589	2874	3G	4A						2. 765	. 5
FLED00008000	FL0002119	1099	1U	1G	3G	2K	4A			. 226	4800
FLED00032000	FL0002763	2621	1U	3G	3B	4A				43. 51	37000
FLED00025000	FL0020311	4952	1U	4A							6320
FLED00026000	FL0020524	4952	1H	1L	1M	1U	3A	3H	4A		5620
FLED00016000	FL0020541	4952	1L	1U	3A	4A	5B	5H			530
FLED00023000	FL0024830	4952	1U	3H	3G	4A					50
FLED00023001	FL0024830	4952	1U	2F	3G	3H	4A				50
FLED00009000	FL0027243	2033	1T	1U	3B	3G	4A			2. 751	2100
FLED00024000	FL0027278	4952	1L	1M	1U	3A	4A			3. 625	3450
FLED00044000	FL0028959	4952	1U	3H	4A						1000
FLED00001000	FL0030121	3315	2K	2C	4A						30
FLED00012000	FL0031054	2491	1U	2D	2F	4A					3. 5
FLED00011001	FL0032468	4952	2F	4A						771. 7001	30
FLED00066000	FL0034649	4952	3G	2F	4A						
FLED00034000	FL0034681	3679	2C	3G	4A					3	920
FLED00035000	FL0034690	3674	3G	4A	2K					3	380
KYED00001000	KY0001112	2869	3B	3C	3G	1U	4A			6436	2730
KYED00003000	KY0001589	2822	1U	2K	4A					6436	2000
KYED00003001	KY0001589	2822	1U	2K	4A						
KYED00002000	KY0003514	2813	3B	3G	4A					7837	907
KYED00011000	KY0003603	2812	1U	2K	4A					7837	15000
LABB00011000	LA0000761	2812	2K	4A							82000
LABB00002000	LA0000922	2821	2K	3A	4A						1120
LABB00002001	LA0000922	2821	2K	3A	4A						
LABB00012000	LA0002950	2812	3A	4A							
LABB00006000	LA0003522	2911	3B	4A							6. 95
LABB00007001	LA0003549	3483	2L	2C	1U	2K	4A				
LABB00007002	LA0003549	3483	1U	1V	2A	4A					
LABB00007000	LA0003549	3483	2L	2C	1U	2K	4A				50
LABB00008001	LA0003751	2865	1H	2L	2K	3A	1A	4A			
LABB00003000	LA0005223	2819	2K	2C	2D	5U	4A				270
LABB00014000	LA0005584	2911	4C	2K	3B	4A					78000
LABB00005000	LA0029963	2865	2K	1H	1A	4A					1580
LABB00001000	LA0032417	2911	3B	2B	1H	4A					613
LABB00004000	LA0046787	2911	1H	3B	4A						
MNAA00001000	MN0020362	4952	1M	1T	1U	2F	3H	4A			
MNAA00006000	MN0020486	4952	1U	2F	3H	4A					
MNAA00056000	MN0020532	4952	3A	1L	1U	5A	4A				
MNAA00062000	MN0020796	4952	3H	1T	1U	5U	4A				
MNAA00061000	MN0021032	4952	3H	1U	5H	4A					
MNAA00054000	MN0021164	4952	3H	1U	5H	4A					
MNAA00004000	MN0021237	4952	1L	1T	1U	3A	5A	4A			
MNAA00057000	MN0021296	4952	3A	1L	5A	4A					
MNAA00060000	MN0021652	4952	3H	1U	5H	4A					
MNAA00052000	MN0021687	4952	3H	1U	5H	4A					
MNAA00066000	MN0021849	4952	3H	1U	4A	5H					
MNAA00059000	MN0022071	4952	3H	1U	3H	5H	4A				

CETIS RETRIEVAL - EFFLUENT TREATMENT REPORT - EXPANDED FORMAT

REFERENCE # TEST #	NPDES # DUR/DAYS	SIC CODE SPECIES	EFCT ENDPT	EFFLUENT TREATMENTS EFCT CODE	CONC	LOW FLOW CONC RANGE	DIS FLOW
NMBB00002000	NM0022306	1061	2D	1U 4A 4C		37. 78001	4680
1	1	8		MOR	100%	-	
NMBB00001000	NM0028100	1094	1U	4A		3. 488	7800
1	1	8		MOR	100%	-	
FLED00008000	FL0002119	1099	1U	1G 3G 2K 4A		. 226	4800
1	2	8		MOR	100%	-	
2	2	54		MOR	100%	-	
3	2	1		MOR	100%	-	
FLED00009000	FL0027243	2033	1T	1U 3B 3G 4A		2. 751	2100
1	2	8		MOR	100%	-	
2	2	8		MOR	100%	-	
3	2	54		MOR	100%	-	
TXBB00001000	TX0088781	2076	3A	3C 4A			
1	1	5		MOR	100%	-	
TXBB00002000	TX0000698	2211	3A	4A		6	3000
1	1	5		MOR	100%	-	
FLED00012000	FL0031054	2491	1U	2D 2F 4A			3. 5
1	8333E-05	8		LC50	27%	-	
	1			LC50	5. 2%	-	
2	8333E-05	1		LC50	5. 8%	-	
FLED00064000	FL0000701	2611	1U	2K 3B 4A 5D 5G		. 4967	165000
1	4	2		LC50	13. 3%	-	
2	4	1		LC50	5. 9%	-	
3	2	1		LC50	44%	-	
4	2	142		MOR	56%	-	
5	1	142		LC50	82%	-	
6	1	1		LC50	79%	-	
7	1	1		LC50	60%	-	
8	1	142		LC50	85%	-	
9	1	1		LC50	22%	-	
10	1	8		LC50	47. 4%	-	
11	1	142		LC50	48. 8%	36 -	69
	2			LC50	26. 20001%	19 -	36
FLED00032000	FL0002763	2621	1U	3G 3B 4A		43. 51	37000
1	2	8		MOR	100%	-	
2	2	1		MOR	100%	-	
FLED00004000	FL0000892	2631	1U	3G 4A			50
1	1	142		LC50	19. 9%	10 -	32
	2			LC50	15. 7%	10 -	32
WVED00011000	WV0004405	2812	2F	4A			10200
1	1	1		LC50	1%	-	
2	4	1		MOR	100%	-	
3	1	1		LC50	8%	-	
4	1	1		LC50	7. 8%	-	
5	4	1		MOR	100%	-	
6	4	1		MOR	100%	-	
7	4	1		MOR	100%	-	
8	1	8		LC50	24%	-	
	2			LC50	19%	-	
9	1	8		EC50IM	. 14%	-	
10	1	1		LC50	. 28%	-	

A-16

CETIS RETRIEVAL SYSTEM - EFFLUENT TREATMENT REPORT - SAS FORMAT DISK FILE

NPDES #	SIC CODE	EFFLUENT TREATMENTS	LOW FLOW	DIS FLOW	SPEC	EFCT ENDPT	EFCT CODE	CONC	CONC RANGE
FL0000701	2611	1U 2K 3B 4A 5D 5G	. 4967	165000	#	2 LC50		13. 3%	#
					#	1 LC50		5. 9%	#
					#	1 LC50		44%	#
					#	142	MOR	56%	#
					#	142 LC50		82%	#
					#	1 LC50		79%	#
					#	1 LC50		60%	#
					#	142 LC50		85%	#
					#	1 LC50		22%	#
					#	8 LC50		47. 4%	#
					#	142 LC50		48. 8%	36 69#
					#	LC50		26. 20001%	19 36#
FL0000892	2631	1U 3G 4A		50	#	142 LC50		19. 9%	10 32#
					#	LC50		15. 7%	10 32#
FL0001139	3315	2C 2K 3G 4A		72	#	8	MOR	100%	#
					#	54	MOR	100%	#
FL0001589	2874	3G 4A	2. 765	. 5	#	54	MOR	100%	#
					#	1527	MOR	100%	#
FL0002119	1099	1U 1G 3G 2K 4A	. 226	4800	#	8	MOR	100%	#
					#	54	MOR	100%	#
					#	1	MOR	100%	#
FL0002763	2621	1U 3G 3B 4A	43. 51	37000	#	8	MOR	100%	#
					#	1	MOR	100%	#
FL0020311	4952	1U 4A		6320	#	8 LC50		26. 8%	#
					#	LC50		7. 96%	#
FL0020524	4952	1H 1L 1M 1U 3A 3H 4A		5620	#	142	MOR	100%	#
					#	142	MOR	100%	#
FL0020541	4952	1L 1U 3A 4A 5B 5H		530	#	142 LC50		56%	32 100#
					#	142 LC50		79. 6%	56 100#
					#	LC50		56%	32 100#
FL0024830	4952	1U 3H 3G 4A		50	#	8 LC50		69%	59 85#
					#	54 LC50		72%	60 94#
					#	54 LC50		27%	21 34#
					#	8 LC50		82%	69 104#
					#	1	MOR	100%	#
FL0024830	4952	1U 2F 3G 3H 4A		50	#	8	MOR	100%	#
FL0027243	2033	1T 1U 3B 3G 4A	2. 751	2100	#	8	MOR	100%	#
					#	8	MOR	100%	#
					#	54	MOR	100%	#

REFERENCE # : FLED00066000 CETIS FULL DATA LISTING

1. REFERENCE NUMBER	FLED00066000
2. NPDES NO. - DIRECT	FL0034649
3. IND? / IND. SOURCE NO.	N /
5. FACILITY NAME	LOXAHATCHEE RV REQ WWTP&RECL
6. ADDRESS	
CITY, COUNTY CODE	JUPITER , 99
STATE, ZIP OR PROV, CNTRY	FL ,
7. FACILITY SIC CODES	4952 4952 0 0 0
11. NPDES OUTFALL PIPE NO.	0
12. EFFLUENT TREATMENT	30 2F 4A
14. DISPOSAL	
DISCHARGE HIT FLAG	N
15. DISCHARGE TYPE	
16. DISCHARGE SIC CODES	0 0 0 0 0
17. RECEIVING WATER NAME	NF LOXAHATCHEE R
MAJOR, MINOR BASIN	328
18. REACH NUMBER	3090202 2
DISCH FLOW-IFD, PREC	
19. MN FLOW, LW FLOW-GAGE	
CODER NAME, DATE	MORIARIT, CA 83/04/07
TEST NUMBER	1
21. COLLECTION DATE, TIME	81/07/28, 10:30
22. SAMPLE TYPE	Q
23. LOCATION	E
24. WASTE TYPE	A
25. DAILY AVE. FLOW AT SAMPLE	
31. TEST DATE AND TIME	81/07/29, 09:30
32. TESTING ORGANIZATION	S
33. EXPOSURE TYPE	S
34. RESIDUE ANALYSIS	N
35. BIOASSAY TYPE - 1	A
36. BIOASSAY TYPE - 2	C
41. DIS. OXY-MN, RANGE, UNITS	, 7.4- 8.6 M
42. PH - MEAN, RANGE	, 7.8- 8.5
43. TEMP - MEAN, RANGE	, 20.1- 22.6
44. ALKALINITY - MEAN, RANGE	, 121- 189
45. HARDNESS - MEAN, RANGE	, 117- 121
51. ANIONS	N
52. METALS	N
53. NON-METALLIC CATIONS	N
54. ORGANICS	N
55. OTHER ANALYSES	Y
61. TEST SPECIES	B
62. LIFE STAGE	NEON
63. AGE IN DAYS - MEAN, RANGE	, -
64. WEIGHT IN G - MEAN, RANGE	, -
65. LENGTH IN MM - MEAN, RANGE	, -
66. ORGANISM SOURCE	C
67. ACC. TIME IN DAYS-MEAN	
71. DIL WATER SOURCE	W
72. DIL WATER PRETREATMENT	1

REFERENCE # FLED00066000 CETIS FULL DATA LISTING

81. CONTROLS	S
82. STATISTICAL METHOD	0
83. DATA QUALITY	3
TEST 1 RESK DUR. IN DAYS MEAN CONCENTRATION RANGE EFF. ENDPOINT EFFECT	100, - % - MOR
310 TO 81/07/31, 0930	
550 NH3, NH3 + NH4	
551 TRC UNDETECTED	
810 0 % MORTALITY	
940 0 % MORTALITY	
TEST NUMBER	2
21. COLLECTION DATE, TIME	81/07/28, 10:30
22. SAMPLE TYPE	Q
23. LOCATION	E
24. WASTE TYPE	A
25. DAILY AVE. FLOW AT SAMPLE	
31. TEST DATE AND TIME	81/07/29, 09:30
32. TESTING ORGANIZATION	S
33. EXPOSURE TYPE	S
34. RESIDUE ANALYSIS	N
35. BIOASSAY TYPE - 1	A
36. BIOASSAY TYPE - 2	C
41. DIS. OXY-MN, RANGE, UNITS	, 7.5- 8.7 M
42. PH - MEAN, RANGE	, 8- 8.6
43. TEMP - MEAN, RANGE	, 20.3- 22.1
44. ALKALINITY - MEAN, RANGE	, 121- 189
45. HARDNESS - MEAN, RANGE	, 117- 121
51. ANIONS	N
52. METALS	N
53. NON-METALLIC CATIONS	N
54. ORGANICS	N
55. OTHER ANALYSES	Y
61. TEST SPECIES	54
62. LIFE STAGE	NEON
63. AGE IN DAYS - MEAN, RANGE	, -
64. WEIGHT IN G - MEAN, RANGE	, -
65. LENGTH IN MM - MEAN, RANGE	, -
66. ORGANISM SOURCE	C
67. ACC. TIME IN DAYS-MEAN	
71. DIL WATER SOURCE	W
72. DIL WATER PRETREATMENT	1
81. CONTROLS	S
82. STATISTICAL METHOD	0
83. DATA QUALITY	3
TEST 2 RESK DUR. IN DAYS MEAN CONCENTRATION RANGE EFF. ENDPOINT EFFECT	100, - % - MOR
310 TO 81/07/31, 0930	
550 NH3, NH3 + NH4	
551 TRC UNDETECTED	
810 5 % MORTALITY	
900 48 H TEST INVALIDATED DUE TO 65 % CONTROL MORTALITY	

Appendix B
CETIS DATA ELEMENTS

The following list of data elements has been excerpted from the CETIS Project Description, Guidelines, and Procedures documentation; the complete documentation may be obtained from NTIS (see page 3). Data elements which are cross-referenced with the IFD, REACH and GAGE IHS data files at NCC are denoted by an asterisk. Further information about these cross-referenced elements may be obtained from the Monitoring and Data Support Division, U.S. EPA, Washington, D.C. 20460 (FTS/382-7046 or 202/382-7046).

Unavailable or not applicable information is denoted by blank spaces on printouts from the IHS CETIS data base.

FACILITY INFORMATION

1) REFERENCE NUMBER

Consists of a 4-letter prefix assigned by ERL-D indicating the organization that is responsible for the coding, a 5-digit sequence assigned by the encoder identifying the number assigned to each report, and a 3-digit suffix assigned by the encoder to uniquely identify multiple references from a single paper. Any change in data elements 2-6 requires a new reference number, and any change in data elements 11-14 requires a new 3-digit suffix.

Example:

<u>M</u> <u>N</u>	<u>E</u> <u>D</u>	<u>0</u> <u>0</u> <u>0</u> <u>1</u> <u>5</u>	<u>0</u> <u>0</u> <u>0</u>
State Code	Coded at ERL-D	Assigned Number	3-Digit Suffix

***2) NPDES NUMBER**

Direct discharger (receiving facility) NPDES number.

***3) INDIRECT SOURCE/INDIRECT SOURCE NUMBER**

A yes (Y) or no (N) indicates if the test data refers to an indirect discharge facility. If yes, the indirect source number is given.

***4) INDIRECT DISCHARGER FACILITY NAME OR TYPE**

If the facility name is unknown, the type of facility (e.g., textile mill) is indicated.

***5) DIRECT DISCHARGER FACILITY NAME OR TYPE**

If the facility name is unknown, the type of facility (e.g., textile mill) is indicated.

***6) DIRECT DISCHARGER LOCATION**

ADDRESS

CITY

COUNTY (3-digit county code (obtained from the STORET User's Handbook, second edition)

STATE (State (see Appendix C) or Canadian province)

ZIP OR COUNTRY (zip code or country if foreign)

***7) FACILITY SIC CODES**

Up to five 4-digit codes identifying the type of discharging industry (see Appendix D).

EFFLUENT/RECEIVING WATER INFORMATION

***11) DIRECT DISCHARGER PIPE NUMBER**

NPDES outfall pipe number.

INDIRECT DISCHARGER PIPE NUMBER

Pipe number assigned by IFD.

12) EFFLUENT TREATMENT

Up to 7 codes for treatment processes employed by the facility prior to effluent discharge (see Appendix E).

14) DISPOSAL

S = facility discharges to surface water (e.g., stream, lake, reservoir)

O = facility disposes of its waste in some other manner (e.g., evaporation, lagoon or pond, septic tank, underground well)

*15) DISCHARGE TYPE/INDIRECT DISCHARGE TYPE

Flow type for the direct and indirect dischargers.

C = non-contact cooling water

P = process water (e.g., mine drainage, wash down, filter backwash, ash pond, transport water, or if the SIC code = 4952, sanitary waste)

B = both process and cooling water (e.g., contact cooling water, boiler blowdown)

O = other (e.g., storm water runoff, or if the SIC code ≠ 4952, sanitary waste)

*16) DISCHARGE SIC CODES

Up to five 4-digit codes for each pipe (see Appendix D).

*17) RECEIVING WATER NAME

MAJOR/MINOR BASIN

Refer to Appendix F for major/minor basin codes.

*18) REACH NUMBER

8-digit catalog unit and 3-digit segment number identifying the stream reach.

*19) MEAN ANNUAL FLOW

Flow in cfs units.

Q7-10 LOW FLOW

Flow in cfs units.

REVIEWER NAME/CODING DATE INFORMATION

REVIEWER NAME

CODING DATE

TEST DATA INFORMATION

TEST NUMBER

Test numbers begin sequentially with 1. Any change in sections 20-80 requires a new test number. If data elements 20-80 remain constant, but section 90 changes (e.g., LC50s given at multiple durations for one bioassay), then the same test number is kept.

SAMPLING INFORMATION

21) SAMPLE COLLECTION DATE AND TIME

Date and time at which sampling began as YY/MM/DD and HHMM.

22) SAMPLE TYPE

Composite (P), Continuous (C), or Grab (G).

23) SAMPLING LOCATION

End of treatment (E), or Different (D).

24) WASTE TYPE

Actual (A), Spiked (K), or Synthetic (S).

25) DAILY AVERAGE FLOW AT SAMPLING TIME

Flow unit codes:

1 = mgd	5 = 10^6 l/hr
2 = 1000 gpd	6 = l/min
3 = cfs	7 = gal/min
4 = m^3/d	

TOXICITY TEST INFORMATION

31) TEST DATE AND TIME

Date and time at which the bioassay began as YY/MM/DD and HHMM.

32) TESTING ORGANIZATION

College/University (C), U.S. EPA (E), Local (L), National (N),
Private (P), State (S), or Different (D).

33) EXPOSURE TYPE

Diet (D), Flow-through (F), Renewal (R), or Static (S).

34) RESIDUE ANALYSIS

Tissue analysis conducted? (Y or N)

35) BIOASSAY TYPE - 1

Acute (A), Life cycle (L), or Partial life cycle (P).

36) BIOASSAY TYPE - 2

Complete (C) or Screen (S).

TEST WATER INFORMATION

Test water values are reported if given. Otherwise, for all parameters, excepting temperature, diluent/effluent values are used and denoted as such in Remarks. Chemical data is reported only for the length of time reported in data element 91 (i.e., test duration).

41) DISSOLVED OXYGEN

Units in mg/l (M), percent (%), or saturation (S).

42) PH

43) TEMPERATURE

Units in °C.

44) ALKALINITY

Units in mg/l CaCO₃.

45) HARDNESS

Units in mg/l CaCO₃

OTHER WATER PROFILE INFORMATION

Analyses of water/wastewater constituents (Y or N).

51) ANIONS

52) METALS

53) NONMETAL CATIONS

54) ORGANICS

55) OTHER ANALYSES

TEST ORGANISM INFORMATION

61) SPECIES

5-digit code (see Appendix G)

62) LIFESTAGE

ALEV - alevin	FRY - fry	YNG - young
ADLT - adult	INST - instars	YRLG - yearling
EGG - egg	JUV - juvenile	ZOEA - zoea, zoeal stages
EGGE - eyed egg	LARV - larval	
EGGF - fertilized egg	NEON - neonate	
EMBR - embryo	NYMP - nymph	
FING - fingerling	UNYR - underyearling	

63) AGE units in days (D), hours (H), weeks (W), months (M), or years (Y)

64) WEIGHT

Units in grams

65) LENGTH

Units in millimeters

66) SOURCE

Cultured (C), Field-Collected (F), Hatchery (H), or Different (D)

67) ACCLIMATION TIME

Time in dilution water prior to test. Units in days (D), hours (H), or weeks (W).

DILUTION WATER INFORMATION

71) SOURCE

A = other	P = pond
B = brackish	R = reconstituted
C = chlorinated tap	S = stream, river, brook
D = dechlorinated tap	T = unchlorinated tap
G = spring	W = well
L = lake	X = distilled
M = marine, sea	

72) PRETREATMENT

1 = none	11 = deionization (Cu, Pb, Zn, etc.)
2 = pH adjustment	12 = defluoridization
3 = hardness adjustment	13 = dechlorination
4 = dissolved oxygen adjustment	14 = carbon filtered
5 = temperature adjustment	15 = filtered
6 = salinity adjustment	16 = de-supersaturated
7 = solids removal	17 = neutralized
8 = phosphate removal	18 = autoclaved
9 = sulfate removal	98 = not applicable
10 = ammonia removal	99 = unknown

TEST METHOD INFORMATION

81) CONTROL QUALITY

S = satisfactory, if ≤ 10 percent of the controls die/are affected or if the control mortality/effect is statistically accounted for by standard methods.

N = not satisfactory, if more than 10 percent of the controls die/are affected and are not statistically accounted for or if no controls are used.

I = indeterminate, if insufficient information is provided for assessment.

82) STATISTICAL METHOD

- 1 = Log-Concentration vs. Percent Survival
- 2 = Litchfield-Wilcoxon
- 3 = Probit
- 4 = Logit
- 5 = Moving-Average
- 6 = Trimmed Spearman-Kärber
- 7 = Students T-test
- 0 = unknown, not applicable or other

83) DATA QUALITY CODE

- 1 = Published papers; e.g., journal articles, EPA reports, and other agency reports, which meet the following criteria:

- Effluent was collected less than 24 hours prior to testing.

The method of collection was reported. Experimental procedures followed published methods.

- Standard test water chemistry data (i.e., D.O., pH, temperature, alkalinity, and hardness) were reported.
- Control mortality/effect was satisfactory (i.e., equal to or less than 10%).
- Statistical methodology used to determine the endpoint was reported.

- 2 = Published papers which contain satisfactory effluent collection methods and experimental procedures but:

- Standard test water chemistry data (i.e., D.O., pH, temperature, alkalinity, and hardness) were either partial or not reported.

- Control mortality/effect was not reported, was high (>10%) or was high but accounted for statistically.

- Statistical methodology used to determine the endpoint was not reported.

3 = Unpublished reports; e.g., state and Federal agency studies which document experimental procedures and results.

4 = Data sheets which contain the raw test data and include minimal information about experimental procedures.

TEST RESULT INFORMATION

Statistically-derived effect endpoint (see data element 93) values are reported for each test duration. If no effect endpoint is calculated, a sublethal effect (see data element 94) is reported, and a description of the effect is given in the Remarks. Mortalities are reported at the earliest time and lowest concentration at which 100% mortality occurs. If mortality is not 100%, the latest time and highest concentration tested is reported. For other effects (e.g., abundance, behavior, and population growth), the percent change from the control or pretreatment at the lowest concentration and earliest time is reported along with the significance level (if calculated).

A total data listing report will contain the word "RESK" just before data element 91. RESK numbers are a bookkeeping procedure to denote multiple durations, concentrations, and effect endpoints for a test (e.g., the RESK numbers 1, 2, 3, and 4 denote 24, 48, 72, and 96 H LC50s for a single test, respectively).

91) TEST DURATION

Units in hours (H), days (D), weeks (W), months (M), or years (Y)

92) CONCENTRATION

Test endpoint concentrations as g/l (G), mg/l (M), µg/l (X), % effluent (%), or different (D). The statistical range (usually a 95% confidence interval) is reported if given.

93) EFFECT ENDPOINT

EC50 - Median effect concentration at which an effect occurred to 50% of the test organisms within a given length of time.

EC50AB - Abnormalities

EC50GR - Growth

EC50IM - Immobilization

EC50RE - Reproduction

LC50 - Median concentration lethal to 50% of the test species within a given length of time.

LT50 - Median lethal time for 50% of the test organisms.

94) EFFECT

ABD - Abundance: number of organisms of the same species has changed within a population

ABN - Abnormalities: physical deviations observed from normal control organisms

AVO - Avoidance: organism avoids or is attracted to certain effluent concentrations

BEH - Behavior: quantifiable change in activity which arose from exposure to internal or external stimuli

BIO - Biochemical Effect: physiochemical reactions (e.g., change in glycogen levels) occurring within the organism on a cellular level

CYT - Cytogenetic Effect: genetic mutation on a cellular level

DIS - Disease: impairment of vital functions observed as a result of effluent concentrations, specific infective agents, inherent organism defects, or a combination of these factors

ENZ - Enzyme Effect: deviations in enzyme activity

FCR - Food Consumption Rate: quantifiable change in rate of food consumed by test animal

GRO - Growth: measured increase of animal size in length and/or weight

HAT - Hatchability: percent hatch

HEM - Hematological Effect: changes in the blood parameters observed

HIS - Histological Effect: indicated by the presence of lesions or other damage to tissues

MOR - Mortality: percentage of dead organisms

MOT - Motility: change in locomotor behavior

OC - Oxygen Consumption: change in O₂ uptake in animals

PGR - Population Growth: increase or decrease in growth of an algal population (e.g., change in cell number)

POP - Population: change in the species composition or diversity

PSE - Photosynthesis Effect: change in plant productivity

RES - Respiratory Rate: change in respiratory rate of vertebrates, invertebrates

RSD - Residue: toxicant uptake by tissues of test organism

SS - Swimming Speed: change in swimming speed

STR - Stress: observed physiological tension in animals or plants

TMR - Tumor Occurrence: presence of a mass of abnormal tissue

REMARKS

Remarks are coded with the number of the data element to which they refer, plus a third digit to permit multiple comments for a single data element. For example, if the Remark refers specifically to the control

mortality (#81) the first Remark would be numbered 810, any additional remarks would be numbered as 811, 812, etc. For standard abbreviations used in Remarks, refer to Appendix H.

For the following common Remarks, these codes are used:

200/ sampler used//

300/ photoperiod//

400/ aeration, salinity (units as ppt instead of o/oo), carrier or solvent (in what amount)//

600/ fed or unfed (during test)//

800/ reference cited including any deviations from cited methods//

900/ erratic mortality and/or stress//

Appendix C

STATE CODES¹

<u>Name</u>	<u>Abbreviation</u>	<u>Code</u>	<u>Name</u>	<u>Abbreviation</u>	<u>Code</u>
ALABAMA	AL	01	MISSOURI	MO	29
ALASKA	AK	02	MONTANA	MT	30
ARIZONA	AZ	04	NEBRASKA	NE	31
ARKANSAS	AR	05	NEVADA	NV	32
CALIFORNIA	CA	06	NEW HAMPSHIRE	NH	33
COLORADO	CO	08	NEW JERSEY	NJ	34
CONNECTICUT	CT	09	NEW MEXICO	NM	35
DELAWARE	DE	10	NEW YORK	NY	36
DISTRICT OF COLUMBIA	DC	11	NORTH CAROLINA	NC	37
FLORIDA	FL	12	NORTH DAKOTA	ND	38
GEORGIA	GA	13	OHIO	OH	39
HAWAII	HI	15	OKLAHOMA	OK	40
IDAHO	ID	16	OREGON	OR	41
ILLINOIS	IL	17	PENNSYLVANIA	PA	42
INDIANA	IN	18	RHODE ISLAND	RI	44
IOWA	IA	19	SOUTH CAROLINA	SC	45
KANSAS	KS	20	SOUTH DAKOTA	SD	46
KENTUCKY	KY	21	TENNESSEE	TN	47
LOUSIANA	LA	22	TEXAS	TX	48
MAINE	ME	23	UTAH	UT	49
MARYLAND	MD	24	VERMONT	VT	50
MASSACHUSETTS	MA	25	VIRGINIA	VA	51
MICHIGAN	MI	26	WASHINGTON	WA	53
MINNESOTA	MN	27	WEST VIRGINIA	WV	54
MISSISSIPPI	MS	28	WISCONSIN	WI	55
			WYOMING	WY	56

Note: The following codes are reserved for possible future use in identifying American Samoa (03), Canal Zone (07), Guam (14), Puerto Rico (43), and Virgin Islands (52).

¹ from STORET User's Handbook, Second Edition

Appendix D

SIC CODES¹

SIC Codes in 22 Industrial Groups

Note: In the list below, some SIC codes are split between two Industrial Groups. A star (*) indicates those SIC codes which are split between two Industrial Groups, but are considered to belong only to the alternate group for processing purposes.

Code	Title	Code	Title
01	ORE MINING DRESSING	2292	Lace goods
1011	Iron ores	2293	Paddings and upholstery filling
1021	Copper ores	2294	Processed textile waste
1031	Lead and zinc ores	2295	Coated fabrics, not rubberized
1041	Gold ores	2296	Tire cord and fabric
1044	Silver ores	2297	Nonwoven fabrics
1051	Bauxite and other aluminum ores	2298	Cordage and twine
1061	Ferroalloy ores, except vanadium	2299	Textile goods, nec
1092	Mercury ores	2311	Men's and boy's suits and coats
1094	Uranium-radium-vanadium ores	2321	Men's and boy's shirts and nightwear
1099	Metal ores, nec	2322	Men's and boy's underwear
		2323	Men's and boy's neckwear
02	COAL MINING	2327	Men's and boy's separate trousers
1111	Anthracite	2328	Men's and boy's work clothing
1112	Anthracite mining services	2329	Men's and boy's clothing, nec
1211	Bituminous coal and lignite	2331	Women's and misses' blouses and waists
1213	Bituminous and lignite mining services	2335	Women's and misses' dresses
		2337	Women's and misses' suits and coats
03	TEXTILE MILLS	2339	Women's and misses' outerwear, nec
2211	Weaving mills, cotton	2341	Women's and children's underwear
2221	Weaving mills, synthetics	2342	Brassieres and allied garments
2231	Weaving and finishing mills, wool	2351	Millinery
2241	Narrow fabric mills	2352	Hats and caps, except millinery
2251	Women's hosiery, except socks	2361	Children's dresses and blouses
2252	Hosiery, nec	2363	Children's coats and suits
2253	Knit outerwear mills	2369	Children's outerwear, nec
2254	Knit underwear mills	2371	Fur goods
2257	Circular knit fabric mills	2381	Fabric dress and work gloves
2258	Warp knit fabric mills	2384	Robes and dressing gowns
2259	Knitting mills, nec	2385	Waterproof outer garments
2261	Finishing plants, cotton	2386	Leather and sheep lined clothing
2262	Finishing plants, synthetics	2387	Apparel belts
2269	Finishing plants, nec	2389	Apparel and accessories, nec
2271	Woven carpets and rugs	2391	Curtains and draperies
2272	Tufted carpets and rugs	2392	House furnishings, nec
2279	Carpets and rugs, nec	2393	Textile bags
2281	Yarn mills, except wool	2394	Canvas and related products
2282	Throwing and winding mills	2395	Pleating and stitching
2283	Wool yarn mills	2396	Automotive and apparel trimmings
2284	Thread mills	2397	Schiffi machine embroideries
2291	Felt goods, exc. woven felts and hats	2399	Fabricated textile products, nec

¹ from Status Report of the Industrial Facilities Discharge (IFD) File. March, 1983

SIC Codes in 22 Industrial Groups - (Continued)

Code	Title	Code	Title
04	TIMBER PRODUCTS PROCESSING	2754	Commercial printing, gravure
2411	Logging camps and logging contractors	2761	Manifold business forms
2421	Sawmills and planing mills, general	2771	Greeting card publishing
2426	Hardwood dimension and flooring	2793	Photoengraving
2429	Special-product sawmills, nec	2794	Electrotyping and stereotyping
2431	Millwork	2795	Lithographic platemaking services
2434	Wood kitchen cabinets	2851	Paints, variables, lacquers and enamels
2435	Hardwood veneer and plywood	2893	Printing ink
2436	Softwood veneer and plywood	*3951	Pens and mechanical pencils
2439	Structural wood members, nec	3952	Lead pencils and art goods
2491	Wood preserving	3955	Carbon paper and inked ribbons
2499	Wood products, nec		
*2661	Building paper and board mills	07	INORGANIC CHEMICALS MANUFACTURING
		2812	Alkalies and chlorine
		2813	Industrial gases
05	PULP AND PAPERBOARD MILLS AND CONVERTED PAPER PRODUCTS	2816	Inorganic pigments
2611	Pulp mills	2819	Industrial inorganic chemicals, nec
2621	Paper mills, except building paper		
2631	Paperboard mills	08	PLASTICS AND SYNTHETIC MATERIALS MANUFACTURING
2641	Paper coating and glazing	2821	Plastics materials and resins
2642	Envelopes	*2822	Synthetic rubber
2643	Bags, except textile bags	2823	Cellulosic man-made fibers
2645	Die-cut paper and board	2824	Organic fibers, noncellulosic
2646	Pressed and molded pulp goods		
2647	Sanitary paper products	09	MISCELLANEOUS CHEMICALS
2648	Stationery products	2831	Biological products
2649	Converted paper products, nec	2833	Medicinals and botanicals
2651	Folding paperboard boxes	2834	Pharmaceutical preparations
2652	Set-up paperboard boxes	2861	Gum and wood chemicals
2653	Corrugated and solid fiber boxes	2879	Agricultural chemicals, nec
2654	Sanitary food containers	*2891	Adhesives and sealants
2655	Fiber cans, drums and similar products	2892	Explosives
2661	Building paper and board mills	2895	Carbon black
2782	Blankbook and looseleaf binders	2899	Chemical preparations, nec
		3861	Photographic equipment and supplies
06	PAINT AND INK FORMULATING AND PRINTING	10	ORGANIC CHEMICALS MANUFACTURING
2711	Newspapers	2865	Cyclic crudes and intermediates
2721	Periodicals	2869	Industrial organic chemicals, nec
2731	Book publishing		
2741	Miscellaneous publishing	11	SOAP AND DETERGENT MANUFACTURING
2751	Commercial printing, letterpress	2841	Soap and other detergents
2752	Commercial printing, lithographic		
2753	Engraving and plate printing		

SIC Codes in 22 Industrial Groups - (Continued)

Code	Title	Code	Title
12	PETROLEUM REFINING	3333	Primary zinc
2911	Petroleum refining	3334	Primary aluminum
		3339	Primary nonferrous metals, nec
13	PAVING AND ROOFING MATERIALS (TARS AND ASPHALT)	3341	Secondary nonferrous metals
2951	Paving mixtures and blocks	18	MACHINERY AND MECHANICAL PRODUCTS MANUFACTURING
2952	Asphalt felts and coatings	*3021	Rubber and plastics footwear
3996	Hard surface floor coverings	*3041	Rubber and plastics hose and belting
14	RUBBER PROCESSING	3079	Miscellaneous plastics products
2822	Synthetic rubber	3293	Gaskets, packing, and sealing devices
2891	Adhesives and sealants	3321	Gray iron foundries
3011	Tires and inner tubes	3322	Malleable iron foundries
3021	Rubber and plastics footwear	3324	Steel investment foundries
3031	Reclaimed rubber	3325	Steel foundries, nec
3041	Rubber and plastics hose and belting	3351	Copper rolling and drawing
3069	Fabricated rubber products, nec	3353	Aluminum sheet, plate, and foil
*3293	Gaskets, packing and sealing devices	3354	Aluminum extruded products
		3355	Aluminum rolling and drawing, nec
		3356	Nonferrous rolling and drawing, nec
		3357	Nonferrous wire drawing and insulating
15	LEATHER TANNING AND FINISHING	3361	Aluminum foundries
3111	Leather tanning and finishing	3362	Brass, bronze, and copper foundries
3131	Boot and shoe cut stock and findings	3369	Nonferrous foundries, nec
3142	House slippers	3398	Metal heat treating
3143	Men's footwear, except athletic	3399	Primary metal products, nec
3144	Women's footwear, except athletic	3411	Metal cans
3149	Footwear, except rubber, nec	3412	Metal barrels, drums, and pails
3151	Leather gloves and mittens	3421	Cutlery
3161	Luggage	3423	Hand and edge tools, nec
3171	Women's handbags and purses	3425	Hand saws and saw blades
3172	Personal leather goods, nec	3429	Hardware, nec
3199	Leather goods, nec	3431	Metal sanitary ware
		3432	Plumbing fittings and brass goods
16	IRON AND STEEL MANUFACTURING	3433	Heating equipment, except electric
3312	Blast furnaces and steel mills	3441	Fabricated structural metal
3313	Electrometallurgical products	3442	Metal doors, sash, and trim
3315	Steel wire and related products	3443	Fabricated plate work (boiler shops)
3316	Cold finishing of steel shapes	3444	Sheet metal work
3317	Steel pipe and tubes	3446	Architectural metal work
		3448	Prefabricated metal buildings
		3449	Miscellaneous metal work
17	NONFERROUS METALS MANUFACTURING	3451	Screw machine products
*2819	Industrial inorganic chemicals, nec	3452	Bolts, nuts, rivets, and washers
3331	Primary copper	3462	Iron and steel forgings
3332	Primary lead	3463	Nonferrous forgings
		3465	Automotive stampings

SIC Codes in 22 Industrial Groups - (Continued)

Code	Title	Code	Title
3466	Crowns and closures	3568	Power transmission equipment, nec
3469	Metal stampings, nec	3569	General industrial machinery, nec
3482	Small arms ammunition	3572	Typewriters
3483	Ammunition, exc. for small arms, nec	3573	Electronic computing equipment
3484	Small arms	3574	Calculating and accounting machines
3489	Ordnance and accessories, nec	3576	Scales and balances exc. laboratory
3493	Steel springs, except wire	3579	Office machines, nec
3494	Valves and pipe fittings	3581	Automatic merchandising machines
3495	Wire springs	3582	Commercial laundry equipment
3496	Misc. fabricated wire products	3585	Refrigeration and heating equipment
3497	Metal foil and leaf	3586	Measuring and dispensing pumps
3498	Fabricated pipe and fittings	3589	Service industry machinery, nec
3499	Fabricated metal products, nec	3592	Carburetors, pistons, rings, valves
3511	Turbines and turbine generator sets	3599	Machinery, except electrical, nec
3519	Internal combustion engines, nec	3612	Transformers
3523	Farm machinery and equipment	3613	Switchgear and switchboard apparatus
3524	Lawn and garden equipment	3621	Motors and generators
3531	Construction machinery	3622	Industrial controls
3532	Mining machinery	3623	Welding apparatus, electric
3533	Oil field machinery	3624	Carbon and graphite products
3534	Elevators and moving stairways	3629	Electrical industrial apparatus, nec
3535	Conveyors and conveying equipment	3631	Household cooking equipment
3536	Hoists, cranes, and monorails	3632	Household refrigerators and freezers
3537	Industrial trucks and tractors	3633	Household laundry equipment
3541	Machine tools, metal cutting types	3634	Electric housewares and fans
3542	Machine tools, metal forming types	3635	Household vacuum cleaners
3544	Special dies, tools, jigs and fixtures	3639	Household appliances, nec
3545	Machine tool accessories	3641	Electric lamps
3546	Power driven hand tools	3643	Current-carrying wiring devices
3547	Rolling mill machinery	3644	Noncurrent-carrying wiring devices
3549	Metalworking machinery, nec	3645	Residential lighting fixtures
3551	Food products machinery	3646	Commercial lighting fixtures
3552	Textile machinery	3647	Vehicular lighting equipment
3553	Woodworking machinery	3648	Lighting equipment, nec
3554	Paper industries machinery	3651	Radio and TV receiving sets
3555	Printing trades machinery	3652	Phonograph records
3559	Special industry machinery, nec	3661	Telephone and telegraph apparatus
3561	Pumps and pumping equipment	3662	Radio and TV communication equipment
3562	Ball and roller bearings	3671	Electron tubes, receiving type
3563	Air and gas compressors	3672	Cathode ray television picture tubes
3564	Blowers and fans	3673	Electron tubes, transmitting
3565	Industrial patterns	3674	Semiconductors and related devices
3566	Speed changers, drives, and gears	3675	Electronic capacitors
3567	Industrial furnaces and ovens	3676	Electronic resistors
		3677	Electronic coils and transformers
		3678	Electronic connectors
		3679	Electronic components, nec

SIC Codes in 22 Industrial Groups - (Continued)

Code	Title	Code	Title
3691	Storage batteries	3951	Pens and mechanical pencils
3692	Primary batteries, dry and wet	3961	Costume jewelry
3693	X-ray apparatus and tubes	3991	Brooms and brushes
3694	Engine electrical equipment	3993	Signs and advertising displays
3699	Electrical equipment and supplies, nec	3995	Burial caskets
3711	Motor vehicles and car bodies	19	ELECTROPLATING
3713	Truck and bus bodies	3471	Plating and polishing
3714	Motor vehicle parts and accessories	3479	Metal coating and allied services
3715	Truck trailers	20	ELECTRIC SERVICES
3721	Aircraft	4911	Electric services
3724	Aircraft engines and engine parts	21	AUTO AND OTHER LAUNDRIES
3728	Aircraft equipment, nec	7211	Power laundries, family and commercial
3731	Ship building and repairing	7213	Linen supply
3732	Boat building and repairing	7214	Diaper service
3743	Railroad equipment	7215	Coin-operated laundries and cleaning
3751	Motorcycles, bicycles, and parts	7216	Dry cleaning plants, except rug
3761	Guided missiles and space vehicles	7217	Carpet and upholstery cleaning
3764	Space propulsion units and parts	7218	Industrial launderers
3769	Space vehicle equipment, nec	7219	Laundry and garment services, nec
3792	Travel trailers and campers	7542	Car washes
3795	Tanks and tank components	22	SEWERAGE SYSTEMS
3799	Transportation equipment, nec	4952	Sewerage systems
3811	Engineering and scientific instruments		
3822	Environmental controls		
3823	Process control instruments		
3824	Fluid meters and counting devices		
3825	Instruments to measure electricity		
3829	Measuring and controlling devices, nec		
3832	Optical instruments and lenses		
3841	Surgical and medical instruments		
3842	Surgical appliances and supplies		
3843	Dental equipment and supplies		
3851	Ophthalmic goods		
3873	Watches, clocks, and watchcases		
3911	Jewelry, precious metal		
3914	Silverware and plated ware		
3915	Jewelers' materials and lapidary work		
3931	Musical instruments		
3942	Dolls		
3944	Games, toys, and children's vehicles		
3949	Sporting and athletic goods, nec		

SIC Codes in Reserved Group

Code	Title	Code	Title
1311	Crude petroleum and natural gas	2092	Fresh and frozen packaged fish
2011	Meat packing plants	2095	Roasted coffee
2013	Sausages and other prepared meats	2097	Manufactured ice
2016	Poultry dressing plants	2098	Macaroni and spaghetti
2017	Poultry and egg processing	2099	Food preparations, nec
2021	Creamery butter	2111	Cigarettes
2022	Cheese, natural and processed	2121	Cigars
2023	Condensed and evaporated milk	2131	Chewing and smoking tobacco
2024	Ice cream and frozen desserts	2141	Tobacco stemming and redrying
2026	Fluid milk		
2032	Canned specialties	2441	Nailed wood boxes and shooks
2033	Canned fruits and vegetables	2448	Wood pallets and skids
2034	Dehydrated fruits, vegetables, soups	2449	Wood containers, nec
2035	Pickles, sauces, and salad dressings	2451	Mobile homes
2037	Frozen fruits and vegetables	2452	Prefabricated wood buildings
2038	Frozen specialties	2492	Particleboard
2041	Flour and other grain mill products	2511	Wood household furniture
2043	Cereal breakfast foods	2512	Upholstered household furniture
2044	Rice milling	2514	Metal household furniture
2045	Blended and prepared flour	2515	Mattresses and bedsprings
2046	Wet corn milling	2517	Wood TV and radio cabinets
2047	Dog, cat, and other pet food	2519	Household furniture, nec
2048	Prepared feeds, nec	2521	Wood office furniture
2051	Bread, cake, and related products	2522	Metal office furniture
2052	Cookies and crackers	2531	Public building and related furniture
2061	Raw cane sugar	2541	Wood partitions and fixtures
2062	Cane sugar refining	2542	Metal partitions and fixtures
2063	Beet sugar	2591	Drapery hardware and blinds and shades
2065	Confectionery products	2599	Furniture and fixtures, nec
2066	Chocolate and cocoa products		
2067	Chewing gum	2732	Book printing
2074	Cottonseed oil mills	2789	Bookbinding and related work
2075	Soybean oil mills	2791	Typesetting
2076	Vegetable oil mills, nec	2842	Polishes and sanitation goods
2077	Animal and marine fats and oils	2843	Surface active agents
2079	Shortening and cooking oils	2844	Toilet preparations
2082	Malt beverages	2873	Nitrogenous fertilizers
2083	Malt	2874	Phosphatic fertilizers
2084	Wines, brandy, and brandy spirits	2875	Fertilizers, mixing only
2085	Distilled liquor, except brandy	2992	Lubricating oils and greases
2086	Bottled and canned soft drinks	2999	Petroleum and coal products, nec
2087	Flavoring extracts and sirups, nec		
2091	Canned and cured seafoods	3211	Flat glass

SIC Codes in Reserved Group - (Continued)

Code	Title	Code	Title
3221	Glass containers		
3229	Pressed and blown glass, nec		
3231	Products of purchased glass		
3241	Cement, hydraulic		
3251	Brick and structural clay tile		
3253	Ceramic wall and floor tile		
3255	Clay refractories		
3259	Structural clay products, nec		
3261	Vitreous plumbing fixtures		
3262	Vitreous china food utensils		
3263	Fine earthenware food utensils		
3264	Porcelain electrical supplies		
3269	Pottery products, nec		
3271	Concrete block and brick		
3272	Concrete products, nec		
3273	Ready-mixed concrete		
3274	Lime		
3275	Gypsum products		
3281	Cut stone and stone products		
3291	Abrasive products		
3292	Asbestos products		
3295	Minerals, ground or treated		
3296	Mineral wool		
3297	Nonclay refractories		
3299	Nonmetallic mineral products, nec		
3636	Sewing machines		
3953	Marking devices		
3962	Artificial flowers		
3963	Buttons		
3964	Needles, pins, and fasteners		
4931	Electric and other services combined		
4941	Water supply		
4953	Refuse systems		
4961	Steam supply		
7212	Garment pressing and cleaners' agents		
7534	Tire retreading and repair shops		
7535	Paint shops		
7538	General automotive repair shops		
7539	Automotive repair shops, nec		

Appendix E

EFFLUENT TREATMENT PROCESSES¹

Physical Treatment Processes

1A = Ammonia stripping	1M = Grit removal
1B = Dialysis	1N = Microstraining
1C = Diatomaceous earth filtration	1O = Mixing
1D = Distillation	1P = Moving bed filters
1E = Electrodialysis	1Q = Multimedia filtration
1F = Evaporation	1R = Rapid sand filtration
1G = Flocculation	1S = Reverse osmosis (hyperfiltration)
1H = Flotation	1T = Screening
1I = Foam fractionation	1U = Sedimentation (settling)
1J = Freezing	1V = Slow sand filtration
1K = Gas-phase separation	1W = Solvent extraction
1L = Grinding (comminutors)	1X = Sorption

Chemical Treatment Processes

2A = Carbon adsorption	2G = Disinfection (ozone)
2B = Chemical oxidation	2H = Disinfection (other)
2C = Chemical precipitation	2I = Electrochemical treatment
2D = Coagulation	2J = Ion exchange
2E = Dechlorination	2K = Neutralization
2F = Disinfection (chlorine)	2L = Reduction

Biological Treatment Processes

3A = Activated sludge	3E = Pre-aeration
3B = Aerated lagoons	3F = Spray irrigation/land application
3C = Anaerobic treatment	3G = Stabilization ponds
3D = Nitrification-denitrification	3H = Trickling filtration

Other Processes

4A = Discharge to surface water	4C = Reuse/recycle of treated effluent
4B = Ocean discharge through outfall	4D = Underground injection

Sludge Treatment and Disposal Processes

5A = Aerobic digestion	5M = Heat drying
5B = Anaerobic digestion	5N = Heat treatment
5C = Belt filtration	5O = Incineration
5D = Centrifugation	5P = Land application
5E = Chemical conditioning	5Q = Landfill
5F = Chlorine treatment	5R = Pressure filtration
5G = Composting	5S = Pyrolysis
5H = Drying beds	5T = Sludge lagoons
5I = Elutriation	5U = Vacuum filtration
5J = Flotation thickening	5V = Vibration
5K = Freezing	5W = Wet oxidation
5L = Gravity thickening	UN = Unknown

¹ from NPDES Application 2C, Table 1

Appendix F

MAJOR/MINOR BASIN CODES¹

The following contains complete listings of the major and minor river basin codes which the EPA has defined for the waterways within the United States. There are 23 major river basins defined within the U.S., with a variable number of minor basins defined within each major basin. The listings are in order by major basin code, and minor basin code within major basin.

Major River Basins

CODE	NAME
01	NORTHEAST
02	NORTH ATLANTIC
03	SOUTHEAST
04	TENNESSEE RIVER
05	OHIO RIVER
06	LAKE ERIE
07	UPPER MISSISSIPPI RIVER
08	LAKE MICHIGAN
09	MISSOURI RIVER
10	SOUTH CENTRAL LOWER MISSISSIPPI RIVER
11	COLORADO RIVER
12	WESTERN GULF
13	PACIFIC NORTHWEST
14	CALIFORNIA
15	GREAT BASIN
16	ALASKA
17	HAWAII
18	PUERTO RICO
19	VIRGIN ISLANDS
20	OCEANIA
21	LAKE HURON
22	LAKE SUPERIOR
23	HUDSON BAY

Minor River Basins

Listings of the minor river basins appear under the major river basin sequences on the following pages.

¹from STORET User's Handbook, Second Edition

01 NE NORTHEAST

01	QUINNIPIAC RIVER & WESTERN CONN COASTAL
02	HOUSATONIC RIVER
03	PAWCATUCK RIVER & EASTERN CONN COASTAL
04	CONNECTICUT RIVER
05	THAMES RIVER
06	NARRAGANSETT BAY
08	MASSACHUSETTS COASTAL
09	MERRIMACK RIVER
10	PISCATAQUA RIVER & NEW HAMPSHIRE COASTAL
12	SACO RIVER & SOUTH MAINE COASTAL
14	PRESUMSCOT RIVER AND CASCO BAY
15	ANDROSCOGGIN RIVER
16	KENNEBEC AND SHEEPSCOT RIVER
17	PENOBSCOT RIVER
18	NORTH MAINE COASTAL
19	ST. CROIX RIVER
20	ST. JOHNS RIVER
21	LAKE MEMPHREMAGOG
24	LAKE CHAMPLAIN
25	ST. LAWRENCE RIVER
26	LAKE ONTARIO SHRE - OSWEGO RIVER TO ST. LAWRENCE RIVER
27	NIAGARA RIVER
28	GENESEE RIVER
29	OSWEGO RIVER
30	MOHAWK RIVER
31	UPPER HUDSON RIVER
32	MIDDLE HUDSON RIVER
33	LOWER HUDSON-NEW YORK METROPOLITAN AREA
34	NEW JERSEY COAST
35	LAKE ERIE SHORE & MINOR TRIBUTARIES
36	LAKE ONTARIO SHORE - GENESEEE R - OSWEGO R
37	LAKE ONTARIO SHORE - NIAGARA R - GENESEE R
38	ST. REGIS RIVER

02 NA NORTH ATLANTIC

03	DELAWARE RIVER - ZONE 1
04	DELAWARE RIVER - LEHIGH
05	DELAWARE RIVER - SCHUYLKILL
06	DELAWARE RIVER - ZONE 2
07	DELAWARE RIVER - ZONE 3
08	DELAWARE RIVER - ZONE 4
12	SUSQUEHANNA RIVER
13	UPPER CHESAPEAKE BAY & MD-DEL COASTAL DEL-MARVA
14	POTOMAC RIVER
15	RAPPAHANNOCK AND YORK RIVERS - VIRGINIA COAST
16	JAMES RIVER

03 SE SOUTHEAST

01	CHOWAN RIVER
02	ROANOKE RIVER
03	TAR RIVER
04	NEUSE RIVER
05	NORTH CAROLINA COASTAL AREA
06	CAPE FEAR RIVER
07	YADKIN-PEE DEE-LOWER PEE DEE RIVER
08	CATAWBA-WATEREE, CONGAREE, SANTEE-COOPER RESERVOIR
09	EDISTO-COMBAHEE RIVER
13	SAVANNAH RIVER
14	OGEECHEE RIVER
15	OCOMEET RIVER
16	OCOMULGEE RIVER
17	ALTAMAHA RIVER
18	SATILLA RIVER
19	ST. MARYS-NASSAU RIVER
20	ST. JOHNS RIVER
21	SUWANNEE RIVER
22	OCHLOCKONEE-ST. MARKS RIVER
23	WITHLACOOCHIE RIVER
24	TAMPA BAY AREA
25	PEACE RIVER
26	KISSIMEE RIVER
27	FLORIDA EAST COASTAL AREA
28	LOWER FLORIDA AREA
29	FLINT RIVER
30	CHATTACHOOCHIE RIVER
31	APALACHICOLA RIVER
32	CHOCTAWHATCHIE RIVER
33	PERDIDO-ESCAMBIA RIVER
34	TALLAPOOSA RIVER
35	COOSA RIVER
36	CAHABA RIVER
37	ALABAMA RIVER
38	UPPER TOMBIGBEE RIVER
39	WARRIOR RIVER
40	LOWER TOMBIGBEE RIVER
41	MOBILE BAY AREA
42	PASACAGOULA RIVER
43	PEARL RIVER

04 TR TENNESSEE RIVER

01	CLINCH RIVER
02	HOLSTON RIVER
03	FRENCH BROAD RIVER
04	LITTLE TENNESSEE RIVER
05	HIWASSEE RIVER
06	ELK RIVER
07	DUCK RIVER
08	TENNESSEE RIVER - MAIN STEM & MINOR TRIBS

05 OR OHIO RIVER

01	ALLEGHENY RIVER
02	MONONGAHELA RIVER
03	BEAVER RIVER
04	MUSKINGUM RIVER
05	LITTLE KANAWHA RIVER
06	HOCKING RIVER
07	KANAWHA RIVER
08	GUYANDOT RIVER
09	BIG SANDY RIVER
10	SCIOTO RIVER
11	LITTLE MIAMI RIVER
12	LICKING RIVER
13	MIAMI RIVER
14	KENTUCKY RIVER
15	SALT RIVER
16	GREEN RIVER
17	WABASH RIVER
18	EAST FORK WHITE RIVER
19	WEST FORK WHITE RIVER
20	CUMBERLAND RIVER
21	OHIO RIVER - MAIN STEM & MINOR TRIBS

06 LE LAKE ERIE

01	MAUMEE RIVER
02	SANDUSKY RIVER
03	CUYAHOGA RIVER
04	LAKE ERIE SHORE - MAUMEE R TO SANDUSKY R
05	LAKE ERIE SHORE - SANDUSKY R TO CUYAHOGA R
06	LAKE ERIE SHORE - CUYAHOGA R TO N.Y. STATE LINE
11	RAISIN
12	HURON
13	DETROIT
14	CLINTON
15	ST. CLAIR

07 UM UPPER MISSISSIPPI RIVER

03	UPPER PORTION UPPER MISSISSIPPI RIVER
04	MINNESOTA RIVER
05	ST. CROIX
06	LOWER PORTION UPPER MISSISSIPPI RIVER
07	WISCONSIN RIVER
08	MISSISSIPPI-WAPSIPINICON & TRIBUTARIES
09	ROCK RIVER
10	MISSISSIPPI-IOWA-CEDAR RIVERS
11	MISSISSIPPI-DES MOINES-SKUNK RIVERS
12	MISSISSIPPI-SALT RIVERS
13	CHICAGO-CALUMET RES.-DES PLAINES RIVER
15	KANKAKEE RIVER
16	FOX RIVER
17	ILLINOIS RIVER

18	MISSISSIPPI-ST. LOUIS AREA
19	MERAMEC RIVER
20	KASKASKIA RIVER
21	BIG MUDDY RIVER
22	MISSISSIPPI RIVER-CAPE GIRARDEAU AREA

08 LM LAKE MICHIGAN

03	MENOMINEE .
04	CEDAR
05	FORD
06	ESCANABA
07	RAPID
08	WHITEFISH
09	STURGEON
10	FISHDAM
11	MANISTIQUE
12	MILLECOQUINS
13	BEAR
14	PINE
15	ELK
16	BOARDMAN
17	PLATTE
18	BETSIE
19	MANISTEE
20	BIG SABLE
21	PERE MARQUETTE
22	PENTWATER
23	WHITE
24	GREEN BAY - WESTERN SHORE
25	FOX RIVER-WOLF CREEK
26	LAKE MICHIGAN - WESTERN SHORE
27	MUSKEGON
28	GRAND
29	BLACK RIVER AT LAKE MACATAWA
30	KALAMAZOO
31	BLACK RIVER AT SOUTH HAVEN
32	ST. JOSEPH RIVER
33	GALIEN
49	CALUMET-BURNS DITCH COMPLEX

09 MR MISSOURI RIVER

01	UPPER MISSOURI RIVER - HEADWATERS TO MILK RIVER
02	YELLOWSTONE RIVER
03	N CENTRAL MISSOURI R - MILK R TO SPRING CREEK
04	S CENTRAL MISSOURI R - SPRING CREEK TO NIOBRARA R
05	NIOBRARA RIVER
06	JAMES RIVER
07	BIG SIOUX RIVER
08	LOWER PLATTE R FROM NORTH PLATTE
09	NORTH PLATTE RIVER
10	SOUTH PLATTE RIVER
11	KANSAS RIVER

12 LOWER MISSOURI R FROM NIOBRARA R
13 GRAND-CHARITON RIVERS
14 OSAGE-GASCONADE RIVERS

10 SM SOUTH CENTRAL LOWER MISSISSIPPI RIVER

01 UPPER ARKANSAS R ABOVE KANSAS-COLORADO STATE LINE
02 ARKANSAS R - KANSAS-COLORADO STATE LINE TO TULSA
03 VERDIGRIS RIVER
04 GRAND NEOSHO RIVER
05 WHITE RIVER
06 LOWER MISSISSIPPI R - CAIRO TO HELENA ARK
07 CIMARRON RIVER-NEX MEX-COLO-KANSAS-OKLA
08 NORTH CANADIAN RIVER
09 ARKANSAS RIVER - TULSA TO VAN BUREN
10 ARKANSAS RIVER - VAN BUREN TO MOUTH
11 LOWER MISSISSIPPI RIVER-YAZOO RIVER
12 SOUTH CANADIAN RIVER - ABOVE TEX-OKLA STATE LINE
13 SOUTH CANADIAN RIVER - BELOW TEX-OKLA STATE LINE
14 WASHITA RIVER
15 UPPER RED RIVER - ABOVE DENISON
16 LOWER RED RIVER - BELOW DENISON
17 OUACHITA RIVER
18 LOWER MISSISSIPPI RIVER-BIG BLACK RIVER
19 ATCHAFALAYA RIVER
20 CALCASIEU RIVER
21 LOWER MISSISSIPPI RIVER - NATCHEZ TO GULF

11 CR COLORADO RIVER

01 LOWER COLORADO RIVER
02 MIDDLE COLORADO RIVER-SAN JUAN RIVER
03 UPPER COLORADO RIVER
04 GILA RIVER
05 LITTLE COLORADO RIVER
06 GREEN RIVER
20 DEAD BASIN 01
21 DEAD BASIN 02
22 DEAD BASIN 03
23 DEAD BASIN 04
24 DEAD BASIN 05
25 DEAD BASIN 06
26 DEAD BASIN 07
27 DEAD BASIN 08
28 DEAD BASIN 09
29 DEAD BASIN 10

12 WG WESTERN GULF

01 SABINE RIVER
02 NECHES RIVER
03 TRINITY & SAN JACINTO RIVERS
04 BRAZOS RIVER

05	COLORADO RIVER
06	GUADALUPE LAVACA & SAN ANTONIO BASIN
07	NUECES RIVER
08	UPPER PECOS RIVER
09	RIO GRANDE UPPER ABOVE PECOS RIVER
10	RIO GRANDE LOWER BELOW PECOS RIVER

13 PN PACIFIC NORTHWEST

01	KOOTENAI RIVER
02	CLARK FORK-PEND OREILLE RIVER
03	SPOKANE RIVER
04	YAKIMA RIVER
05	COLUMBIA RIVER ABOVE YAKIMA RIVER
06	UPPER SNAKE RIVER
07	CENTRAL SNAKE RIVER
08	MIDDLE & LOWER SNAKE RIVER
09	WILLAMETTE RIVER
10	COLUMBIA RIVER BELOW YAKIMA RIVER
11	PUGET SOUND
12	WASHINGTON COAST
13	OREGON COAST
14	SOUTHERN OREGON LAKES

14 CL CALIFORNIA

01	KLAMATH RIVER
02	NORTH COASTAL
03	SAN FRANCISCO BAY REGION
04	CENTRAL COASTAL
05	SANTA CLARA RIVER
06	LOS ANGELES RIVER
07	SANTA ANA RIVER
08	SAN DIEGO COASTAL REGION
09	SACRAMENTO RIVER
10	SAN JOAQUIN RIVER
11	KINGS & KERN RIVERS AND TULARE LAKE

15 GB GREAT BASIN

01	NORTHWESTERN LAHONTAN
02	HUMBOLDT RIVER
03	CENTRAL NEVADA
04	OWENS RIVER
05	MOJAVE RIVER
06	COLORADO RIVER BASIN REGION OF CALIFORNIA
07	GREAT SALT LAKE
08	SEVIER RIVER

16 AL ALASKA

01	ARCTIC SLOPE (COLVILLE & SAGAVAHIRKTOK RES)
02	N W (KOTSEVUR SOUND, NOATAK & KOBUK RES)

03	YUKON RIVER
04	KUSKOKWIM RIVER
05	BRISTOL BAY - BUSHAGAK & MULCHATNA RIVERS
06	SOUTHERN ALASKA PENINSULA
07	EAST COOK INLET-SUSITNA RIVER
08	KENAI & KNIK ARM RIVERS
09	KODIAK ISLAND
10	COPPER RIVER
11	YAKUTAT BAY
12	SOUTHEASTERN ALASKA
17	HA HAWAII
01	HAWAII
02	HONOLULU OAHU ISLAND
03	KAUAI CO-KAUAI, MIIHAU & SMALL ISLANDS
04	MAUI-KALAWAO CO
18	PR PUERTO RICO
	PUERTO RICO
19	VI VIRGIN ISLANDS
	VIRGIN ISLANDS
20	OC OCEANIA
01	GUAM
02	MARIANA ISLANDS
03	PALAU
04	YAP
05	PONAPE
06	TRUK
07	MARSHALL ISLANDS
08	AMERICAN SAMOA
21	LH LAKE HURON
01	CHERRY CREEK
02	PIGEON
03	WISCOGGIN
04	SAGINAW
05	KAWKAWLIN
06	RIFLE
07	AUGRES
08	AUSABLE
09	BLACK (AT BLACK RIVER)
10	THUNDER BAY
11	SWAN CREEK
12	OCQUEOC
13	CHEBOYGAN
14	CARP

15	PINE
16	MUNUSCONG
17	CHARLOTTE
18	WAIKA

22 LS LAKE SUPERIOR

01	PENDILLS
02	TAHQUAMENON
03	TWO HEARTED
04	AUTRAIN
05	CHOCOLAY
06	CARP
07	SALMON TROUT
08	STURGEON (HOUGHTON COUNTY)
09	TOBACCO
10	PORTAGE LAKE
11	MISERY
12	ONTONAGON
13	IRON
14	PRESQUE ISLE
15	MONTREAL
16	WISC & MINN DRAINAGE

23 HB HUDSON BAY

01	RED RIVER OF THE NORTH
02	RAINY RIVER
03	DEVILS LAKE AREA
04	SOURIS RIVER

Appendix G

SPECIES CODES

CETIS

List of species that are being used in CETIS as of May, 1984. The list is sorted numerically by species number. Updated or alternatively sorted lists are available on request from the CETIS Coordinator.

Species		
No.	Latin Name	Common Name
1	PIMEPHALES PROMELAS	FATHEAD MINNOW
2	LEPOMIS MACROCHIRUS	BLUEGILL
3	SALVELINUS FONTINALIS	BROOK TROUT
4	SALMO GAIRDNERI	RAINBOW TROUT, DONALDSON TROUT
5	DAPHNIA MAGNA	WATER FLEA
6	GAMMARUS LACUSTRIS	SCUD
7	GAMMARUS FASCIATUS	SCUD
8	DAPHNIA PULEX	WATER FLEA
10	CARCINUS MAENAS	SHORE OR GREEN CRAB
11	CRANGON CRANGON	COMMON SHRIMP
16	GAMBUSIA AFFINIS	MOSQUITOFISH
18	SEMOTILUS ATROMACULATUS	CREEK CHUB
19	LAGODON RHOMBOIDES	PINFISH
20	ICTALURUS PUNCTATUS	CHANNEL CATFISH
21	CYPRINUS CARPIO	COMMON, MIRROR, COLORED, CARP
22	ONCORHYNCHUS TSHAWYTSCHA	CHINOOK SALMON
23	ONCORHYNCHUS KISUTCH	COHO SALMON
25	CARASSIUS AURATUS	GOLDFISH
27	GAMMARUS PSEUDOLIMNAEUS	SCUD
28	POECILIA RETICULATA	GUPPY
30	LEPOMIS CYANELLUS	GREEN SUNFISH
33	FISH	FISH
38	PERCA FLAVESCENS	YELLOW PERCH
39	PALAEMONETES KADIAKENSIS	GRASS SHRIMP, FRESHWATER PRAWN
49	SALMO TRUTTA	BROWN TROUT
52	HYALELLA AZTECA	SCUD
54	SIMOCEPHALUS SERRULATUS	WATER FLEA
56	ASTERIAS RUBENS	STARFISH
67	CRASSOSTREA VIRGINICA	AMERICAN OR VIRGINIA OYSTER
68	SALMO SALAR	ATLANTIC SALMON
69	LABIDESTHES SICCVLUS	BROOK SILVERSIDE
70	DAPHNIA SP	WATER FLEA
74	PENAEUS AZTECUS	BROWN SHRIMP
75	PENAEUS DUORARUM	PINK SHRIMP
77	PENAEUS SETIFERUS	WHITE SHRIMP (AMERICA)
82	SALVELINUS NAMAYCUSH	LAKE TROUT, SISCOWET
83	STIZOSTEDION VITREUM VITREUM	WALLEYE

APPENDIX G. (continued)

Species No.	Latin Name	Common Name
85	CHIRONOMUS TENTANS	MIDGE
86	CYPRINODON VARIEGATUS	SHEEPSHEAD MINNOW
89	MICROPTERUS SALMOIDES	LARGEMOUTH BASS
90	ONCORHYNCHUS NERKA	SOCKEYE SALMON
94	BARBUS TICTO	TWO SPOTTED, TIC TAC TOE BARB
96	LEPOMIS MICROLOPHUS	REDEAR SUNFISH
102	PROCAMBARUS CLARKII	RED SWAMP CRAYFISH
105	UMBRA PYGMAEA	EASTERN MUDMINNOW
106	MICROPTERUS DOLOMIEUI	SMALLMOUTH BASS
110	LEIOSTOMUS XANTHURUS	SPOT
112	NOTEMIGONUS CRYSOLEUCAS	GOLDEN SHINER
113	CLARIAS BATRACHUS	WALKING CATFISH
133	ICTALURUS MELAS	BLACK BULLHEAD
140	CYMATOGASTER AGGREGATA	SHINER PERCH
142	MYSIDOPSIS BAHIA	OPOSSUM SHRIMP
202	LABEO ROHITA	ROHU
205	OSCILLATORIA LIMNETICA	BLUE-GREEN ALGAE
208	MYTILUS EDULIS	COMMON BAY MUSSEL, BLUE MUSSEL
211	ALBURNUS ALBURNUS	BLEAK
219	ONCORHYNCHUS GORBUSCHA	PINK SALMON
224	NEREIS ARENACEODENTATA	POLYCHAETE
235	CAMPELOMA DECISUM	BROWN MYSTERY SNAIL
239	PHYSA INTEGRAL	POUCH SNAIL
263	COREGONUS CLUPEAFORMIS	LAKE WHITEFISH
283	CATOSTOMUS COMMERSONI	WHITE SUCKER
285	ICTALURUS NEBULOSUS	BROWN BULLHEAD
288	CULAEA INCONSTANS	BROOK STICKLEBACK
290	LEPOMIS MEGALOTIS	LONGEAR SUNFISH
293	ETHEOSTOMA SPECTABILE	ORANGETHROAT DARTER
302	PALAEMONETES PUGIO	GRASS SHRIMP, FRESHWATER PRAWN
308	MYSTUS VITTATUS	CATFISH
309	SKELETONEMA COSTATUM	DIATOM
346	HOMARUS AMERICANUS	AMERICAN LOBSTER
352	HETEROPNEUSTES FOSSILUS	INDIAN CATFISH
361	ORCONECTES VIRILIS	CRAYFISH
366	ARTEMIA SALINA	BRINE SHRIMP
371	CYPRINODONTIDAE	KILLIFISH, TOPMINNOW FAMILY
375	MENIDIA MENIDIA	ATLANTIC SILVERSIDE
376	ACARTIA TONSA	CALANOID COPEPOD
407	NOTOPTERUS NOTOPTERUS	FEATHERBACK
418	CHANNA PUNCTATUS	SNAKE-HEAD CATFISH
422	CIRRHINUS MRIGALA	CARP, HAWKFISH
423	BREVOORTIA TYRANNUS	ATLANTIC MENHADEN
436	BOWMANIELLA DISSIMILIS	MYSID, OPOSSUM SHRIMP
466	NOTROPIS CORNUTUS	COMMON SHINER

APPENDIX G. (continued)

Species No.	Latin Name	Common Name
482	ALGAE	ALGAE, PHYTOPLANKTON, ALGAL MAT
483	CHAOBORUS PUNCTIPENNIS	PHANTOM MIDGE
486	SELENASTRUM CAPRICORNUTUM	GREEN ALGAE
488	INVERTEBRATES	INVERTEBRATES
508	CERATOPHYLLUM DEMERSUM	COON-TAIL
522	RANGIA CUNEATA	COMMON RANGIA OR CLAM
540	HYDROPSYCHE SP	CADDISFLY
549	HIPPOLYTE SP	SHRIMP OR PRAWN
572	CATLA CATLA	CATLA
574	ANGUILLA ANGUILLA	COMMON EEL
575	CRASSOSTREA GIGAS	PACIFIC OYSTER
578	ALOSA AESTIVALIS	BLUEBACK HERRING
602	ORCONECTES PROPINQUUS	CRAYFISH
639	OPHIOCEPHALUS PUNCTATUS	SNAKEHEAD
677	PTERONARCYS SP	STONEFLY
713	MYSTUS SEENGHALA	CATFISH
736	ONCORHYNCHUS KETA	CHUM SALMON
892	ICTALURUS NATALIS	YELLOW BULLHEAD
894	CLUPEA HARENGUS PALLASI	PACIFIC HERRING
964	CHIRONOMUS RIPARIUS	MIDGE
970	AMBYSTOMA OPACUM	MARBLED SALAMANDER
988	BUCCINUM UNDATUM	LARGE WHELK
1022	CTENODRILUS SERRATUS	POLYCHAETE
1074	NOTROPIS HETEROLEPIS	BLACKNOSE SHINER
1132	NOTROPIS ANOGENUS	PUGNOSE SHINER
1133	NOTROPIS EMILIAE	PUGNOSE MINNOW
1137	TUBIFEX SP	TUBIFICID WORM
1140	CENTRARCHIDAE	SUNFISH FAMILY
1178	PAROPHRYS VETULUS	ENGLISH SOLE
1186	BRANCHIURA SOWERBYI	OLIGOCHAETE
1295	MYSIDOPSIS ALMYRA	OPOSSUM SHRIMP
1321	DAPHNIA SCHODLERI	WATER FLEA
1329	HEMIGRAPUS SP	SHORE CRAB
1369	BALANUS GLANDULA	ROCK BARNACLE
1407	LEMNA SP	DUCKWEED
1527	HETERANDRIA FORMOSA	LEAST KILLIFISH
1570	OPHRYTROCHA LABRONICA	POLYCHAETE
1584	BARBUS SOPHORE	TWO SPOTTED BARB, DOTTED BARB
1585	CHANNA MARULIUS	SNAKE-HEAD CATFISH
1586	ANISOGAMMARUS PUGETTENSIS	SCUD
1587	LEPOMIS SP	SUNFISH
1593	LEMNA PERPUSILLA	DUCKWEED
1619	POMOXIS SP	CRAPPIE
1620	HELIODIAPTOMUS VIDUUS	CALANOID COPEPOD
1738	NOTROPIS PERCOBROMUS	FISH

APPENDIX G. (continued)

Species		
No.	Latin Name	Common Name
1739	NOTROPIS ZONATUS	BLEEDING SHINER
1905	MACROBRACHIUM KISTNENSIS	SHRIMP
1984	MYSIDACEA	MYSID OR OPOSSUM SHRIMP ORDER
1990	HYBOGNATHUS PLACITUS	PLAINS MINNOW
1991	GLYPTOTENDIPES SP	MIDGE
2052	MERCENARIA CAMPECHIENSIS	SOUTHERN QUAHOG
2053	DONAX VARIABILIS TEXASIANA	COQUINA
2054	DINOPHILUS SP	BRISTLE WORM
2065	PHOXINUS SP	DACE
2107	PAGURUS BERNHARDUS	HERMIT CRAB
2108	GAMMARUS DAIBERI	SCUD
2109	NEOMYSIS AMERICANA	OPOSSUM SHRIMP
2123	ONCHIDORIS FUSCA	SEA SLUG, NUDIBRANCH
2124	CANCER PAGURUS	EDIBLE OR ROCK CRAB
2143	MENIDIA PENINSULAE	TIDEWATER SILVERSIDE
2190	MUDFISH	MUDFISH
2191	SALVELINUS ALPINUS	ARCTIC CHAR
2203	PSAMMECHINUS MILIARIS	SEA URCHIN

Appendix H

STANDARD ABBREVIATIONS FOR USE IN REMARKS

ALK	-	alkalinity
AVG	-	average
CHEM	-	chemical
CMPD	-	compound
CONC	-	concentration
DEC	-	decrease
DEG	-	degrees
EST	-	estimate
FT	-	feet
G	-	grams
GAL	-	gallons
>	-	greater than
H	-	hours
HARD	-	hardness
INC	-	increase
KJL-N	-	Kjeldahl nitrogen
LAB	-	laboratory
<	-	less than
MAX	-	maximum
MED	-	medium
MIN	-	minimum
minutes are abbreviated as a fraction of the hour		
MORT	-	mortality
POP	-	population
SP	-	species
TEMP	-	temperature
TDS	-	total dissolved solids, total solids, dissolved solids
TKN	-	total Kjeldahl nitrogen
TRC	-	total residual chlorine
TSS	-	total suspended solids
WK	-	weeks
WT	-	weight
YD	-	yards
YR	-	years