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Documentation of the Illinois Spills Database for the: Preliminary Evaluation of the Risk of Accidental Spills of Hazardous Materials in Illinois Waterways

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DOCUMENTATION OF THE ILLINOIS SPILLS DATABASE

FOR THE

"PRELIMINARY EVALUATION OF THE RISK OF ACCIDENTAL SPILLS OF HAZARDOUS MATERIALS IN ILLINOIS WATERWAYS" PROJECT

by

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INTRODUCTION

This documentation is a guide to the structure and relational nature of the datafiles used in this project. Below are special notes to be taken into consideration when using the datafiles. It is strongly advised that a potential user of this data read the main report to fully understand the sources of the data, how it was developed into the present database and with what respect the data is being used. A reference to the main report is noted above most files for further information about the file development.

There are three sets of datafiles for the ILLINOIS SPILLS DATABASE: Facilities and Terminals, Spills, and Water Withdrawals. Some of the datafiles have a set of related files that are used specifically for the different sources of data. Figure 1 shows a flow diagram, which illustrates how the files can be linked.

Facilities and Terminals

The FACILITIES file has two related files called IDOT_CMD and CHEM_ID. These files are additional commodity or chemical information from IDOT and IEPA, respectively. Detailed commodity information for facilities from the IDOT database are shown in the IDOT_CMD file. Most of the fields are logical fields. Detailed chemical information for facilities from the IEPA database is shown in the CHEM_ID file. There may be more than one chemical identification record associated with a facility.

It should be noted that the USEPA contributed an address list of petroleum facilities. This data was absorbed into the FACILITIES file and used as a confirmation of addresses.

Two additional files are included in the FACILITIES AND TERMINALS datafiles: SITE_NUM and FAC_CAT. The SITE_NUM file serves two purposes. It shows the sources for each facility and serves as tool to relate the FACILITIES AND TERMINALS datafiles. Because of the volume of records received, a uniform site numbering system had to be developed. The method combined an agency prefix and the agency facility identification number. However, a problem would develop when more than one agency contributed information for the same facility. An arbitrary priority was given to each agency: first = IDOT, second = IEPA, and third = USCG. A dBASE program was developed, using the above priority, to determine which agency's facility identification number would be used as the uniform identification number. For example, if IDOT and USCG contributed data for a facility, then the IDOT number would be designated as the SITE_NO because it appeared first in the priority. Likewise, if IEPA and USCG appeared, then the IEPA number would be designated as the SITE_NO. When going into this database, it can be seen at a glance which agencies contributed information for a facility record.

Spills

The following agencies contributed the data for the SPILLS database: IEPA, NRC, and USCG. Because of the variety of sources, not all the fields in the structure contain information. It should be noted that the first four fields are spill record numbers given by the recording agency. Any field beginning with **L_** contains information of the party liable for the spill. Fields 16-19 are spill location data other than city, state and waterway. This data was inconsistent or not available from the contributing agencies. Field 19 (OTHER_LOCA) contains other brief location data such as bridge crossings, which may help define the spill location. Fields 23 and 24 (AMT_REL AND UNITS) indicate the amount spilled into the waterway. Each agency used the most appropriate unit of measure for each spill, therefore, the units are not consistent. When the amount spilled was unknown the default values were listed as AMT_REL =1 and UNITS = UKN. When available, additional information concerning the source or the circumstances of the spill is recorded in the SOURCE field.

Water Withdrawal

PWS_PT shows the facility information of the public water suppliers and the populations they serve. The populations are retail or residential population. PWS_FAC shows the appropriate site numbers, additional locational information and water withdrawal figures.

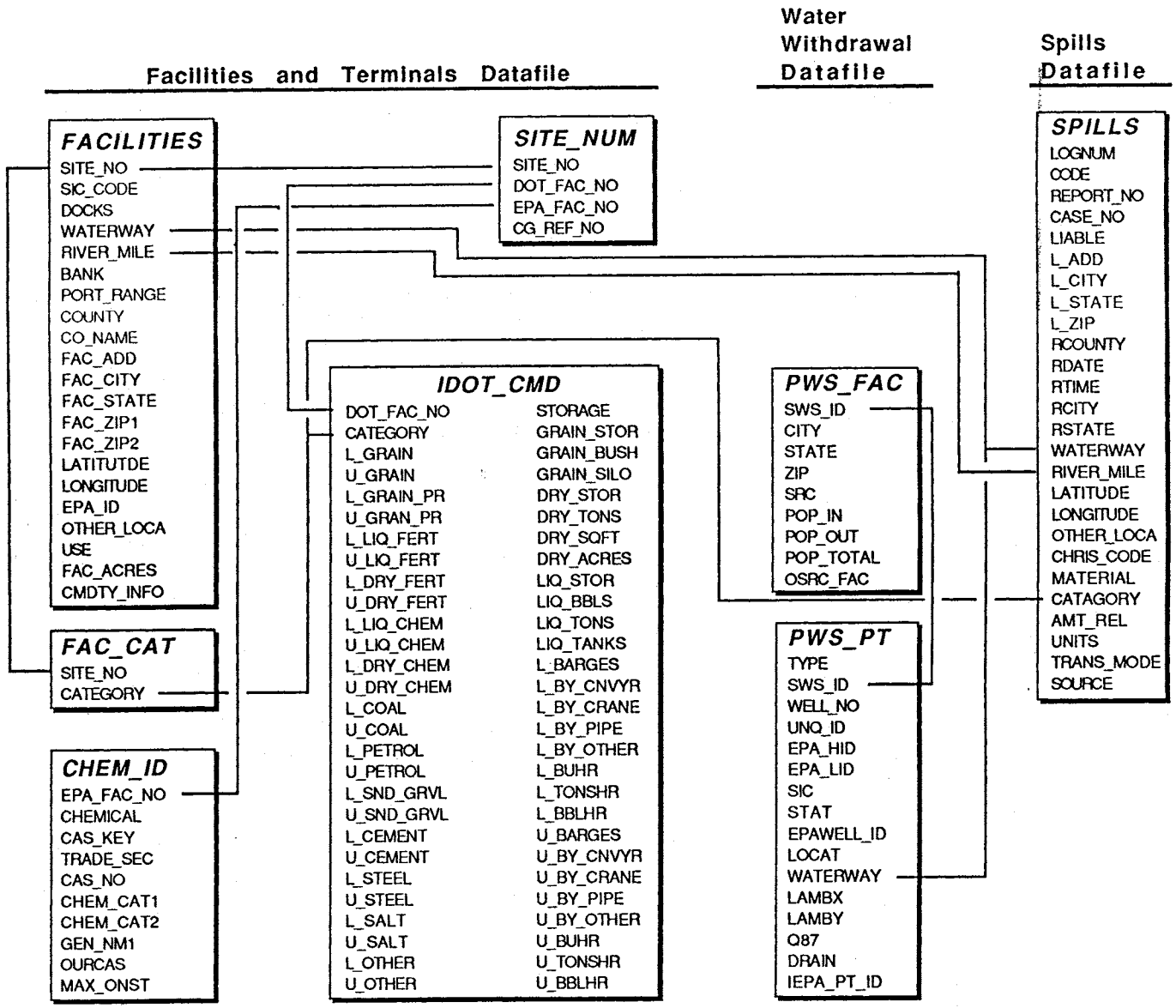

Figure 1. ILLINOIS SPILLS DATABASE flow diagram

DIRECTORY OF FIELD DEFINITIONS

The directory is a detailed listing of each file structure. The files are arranged in alphabetical order and the fields are listed in the order they appear in the files. The following is an explanation of how the directory is set up.

EXAMPLE:

SPILLS file:

[A]	[B]	[C]	[D]	[E]	[F]
	[G]	[H]			
17	WATERWAY	Waterway	Character	30	FACILITY
	n/a	*Any system of rivers, channels and/or canals that carry waterborne traffic.*			PWS_PT

[A] *Field number*
[B] *Field name as appears in file*
[C] *Field item common name*
[D] *Data type*
[E] *Field width*
[F] *Other files this field appears in*
[G] *List of specific codes defined in the field, where applicable.*
[H] *The definition of the field.*

Structure for file: **CHEMID.DBF**
Number of data records: **2905**
Main report reference: **Chapter 5, IEPA Toxic Chemical Release Database, pg. 29.**

[A]	[B]	[C]	[D]	[E]	[F]
	[G]	[H]			
1	EPA_FAC_NO	IEPA Facility Number	Numeric	5	SITE_NUM
	n/a	*A number given by IEPA for facilities*			
2	CHEMICAL	Chemical Name	Character	3	--
	n/a	--			
3	CAS_KEY		Character	9	--
	n/a	--			
4	TRADE_SEC	Trade Secret	Character	1	--
	Y-yes N-no	--			
5	CAS_NO	Chemical Abstracts Service Number	Character	9	--
	n/a	*CAS numbers are cross-referenced with an alphabetical list of trade names.*			
6	CHEM_CAT1	Chemical Category	Character	70	--
	n/a	--			
7	CHEM_CAT2	Chemical Category	Character	50	--
	n/a	--			
8	GEN_NM1	Generic Chemical Name	Character	60	--
	n/a	--			
9	OURCAS		Character	9	--
	n/a	--			
10	MAX_ONST	Maximum on site	Character	2	--
	01 0	99			
	02 100	999			
	03 1,000	9,999			
	04 10,000	99,999			
	05 100,000	999,999			
	06 1,000,000	9,999,999			
	07 10,000,000	49,999,999			
	08 50,000,000	99,999,999			
	09 100,000,000	499,999,999			
	10 500,000,000	999,999,999			
	11 1 billion	more than 1 billion			
		Maximum Amount of Chemical On Site Any Time Duringthe Calendar Year.			

Structure for file: **FACS_ALL.DBF**
Number of data records: **434**
Main Report Reference: **Chapter 5, pg. 29-31.**

[A]	[B]	[C]	[D]	[E]	[F]
	[G]	[H]			
1	SITE_NO	Site Number	Character	8	FAC_CAT
	n/a	*A number developed by the project using facility numbers from IDOT, IEPA, and USCG.*			SITE_NUM
2	SIC_CODE	Standard Industrial Classification Code	Numeric	4	--
	2100-3900	*These values are defined by SARA Title III.*			
3	DOCKS	Number of docks at site	Numeric	2	--
	n/a	--			
4	WATERWAY	Waterway	Character	30	PWS_PT
	n/a	*Any system of rivers, channels and/or canals that carry waterborne traffic.*			SPILLS
5	RIVER_MILE	River Mile	Numeric	9	SPILLS
	n/a	*Location using river mile.*			
6	BANK	Stream Bank	Character	9	--
	Left Right	*The side of the waterway a facility is located looking downstream.*			
7	PORT_RANGE	Port Range	Character	9	--
	1-10	*A segment of the inland waterway system in the State of Illinois (IDOT).*			
8	COUNTY	County	Character	12	SPILLS
	n/a	--			
9	CO_NAME	Company Name	Character	37	--
	n/a	--			
10	FAC_ADD	Address of Facility	Character	35	--
	n/a	--			
11	FAC_CITY	City facility is in	Character	20	--
	n/a	--			
12	FAC_STATE	State facility is in	Character	9	--
	n/a	--			

13	FAC_ZIP1 n/a	Zip Code *First 5 digits of zip-code.*	Numeric	5	--
14	FAC_ZIP2 n/a	+4 Zip Code *Plus 4 digits at end of zip code, when available.*	Numeric	4	--
15	LATITUDE n/a	Latitude --	Numeric	7	SPILLS
16	LONGITUDE n/a	Longitude --	Numeric	7	SPILLS
17	EPA_ID n/a	IEPA Facility ID --	Character	12	CHEM_ID SITE_NUM SPILLS
18	OTHER_LOCA n/a	Other Location Information *Miscellaneous descriptions for the location of the facility, such as cross-streets, near bridges and access roads.*	Character	50	--
19	USE Public/Private	Facility Use --	Character	9	--
20	FAC_ACRES n/a	Facility Acreage *The number of acres a facility occupies.*	Numeric	9	--
21	CMDTY_INFO n/a	Commodity Info *Brief list of hazardous materials handled at the facility.*	Character	175	--

Structure for file: **FAC_CAT.DBF**
Number of data records: **587**

[A]	[B]	[C]	[D]	[E]	[F]
	[G]	[H]			
1	SITE_NO	Site Number	Character	8	FAC_ALL
	n/a	*A number developed by the project using facility numbers from IDOT, IEPA, and USCG.*			SITE_NUM
2	CATEGORY	Commodity Category	Character	25	IDOT_CMD
	n/a	*Commodity Categories as list in Table 19, pg. 54 in main report.*			SPILLS

Structure for file: **IDOT_CMD.DBF**
Number of data records: **295**
Main Report Reference: **Chapter 5, IDOT Directory of Lake and River Terminals Database, pg. 29; Chapter 5, Analysis of Facilities and Terminals Datafile, pg. 30-31.**

[A]	[B]	[C]	[D]	[E]	[F]
	[G]	[H]			
1	DOT_FAC_NO	IDOT Facility Number	Numeric	9	SITE_NUM
	n/a	*Created by this project not IDOT.*			
2	CATEGORY	Commodity Category	Character	25	FAC_CAT
	n/a	*Commodity Categories as list in Table 19, pg. 54 in main report.*			SPILLS

[Fields 3-56 prefix codes are **L_** *= loads the material and* **U_** *= unloads material.]*

3	L_GRAIN	Loads grain	Numeric	9	--
4	U_GRAIN	Unloads grain			
5	L_GRAIN_PR	Loads grain products			
6	U_GRAIN_PR	Unloads grain products			
7	L_LIQ_FERT	Loads liquid fertilizer			
8	U_LIQ_FERT	Unloads liquid fertilizer			
9	L_DRY_FERT	Loads dry fertilizer			
10	U_DRY_FERT	Unloads dry fertilizer			
11	L_LIQ_CHEM	Loads liquid chemicals			
12	U_LIQ_CHEM	Unloads liquid chemicals			
13	L_DRY_CHEM	Loads dry chemicals			
14	U_DRY_CHEM	Unloads dry chemicals			
15	L_COAL	Loads coal			
16	U_COAL	Unloads coal			
17	L_PETROL	Loads petroleum			
18	U_PETROL	Unloads petroleum			
19	L_SND_GRVL	Loads sand and gravel			
20	U_SND_GRVL	Unloads sand and gravel			
21	L_CEMENT	Loads cement			
22	U_CEMENT	Unloads cement			
23	L_STEEL	Loads steel			
24	U_STEEL	Unloads steel			
25	L_SALT	Loads salt			
26	U_SALT	Unloads salt			
27	L_OTHER	Loads other materials			
28	U_OTHER	Unloads other materials			
	1-Yes	*Facility (loads or unloads) material*			
	0-No	*to be transported at the facility.*			
29	STORAGE	Storage facilities	Character	9	--
	Y-Yes	*Storage for materials.*			
	N-No				

30	GRAIN_STOR	Grain storage provided	Character	9	--
	Y-Yes N-No	*Storage for grain.*			
31	GRAIN_BUSH	Grain Storage measured in bushels	Numeric	9	--
	n/a	--			
32	GRAIN_SILO	Grain Storage measured in silos	Numeric	9	--
	n/a	--			
33	DRY_STOR	Dry storage provided	Character	9	--
	Y-Yes N-No	*Storage for dry materials.*			
34	DRY_TONS	Dry Storage measured in tons	Numeric	9	--
	n/a	--			
35	DRY_SQFT	Dry Storage measured in square feet	Numeric	9	--
	n/a	--			
36	DRY_ACRES	Dry Storage measured in acres	Numeric	9	--
	n/a	--			
37	LIQ_STOR	Liquid storage provided	Character	9	--
	Y-Yes N-No	*Storage for liquid materials.*			
38	LIQ_BBLS	Liquid Storage measured in barrels	Numeric	9	--
	n/a	--			
39	LIQ_TONS	Liquid Storage measured in tons	Numeric	9	--
	n/a	--			
40	LIQ_TANKS	Liquid Storage measured by tanks	Numeric	9	--
	n/a	--			
41	L_BARGES	Loads barges	Character	9	--
	Y-Yes N-No	--			
42	L_BY_CNVYR	Loads barges by conveyor	Character	9	--
	Y-Yes N-No	--			

43	L_BY_CRANE	Loads barges by crane	Character	9	--
	Y-Yes	--			
	N-No				
44	L_BY_PIPE	Loads barges by pipeline	Character	9	--
	Y-Yes	--			
	N-No				
45	L_BY_OTHER	Loads barges by other methods	Character	25	--
	Y-Yes	--			
	N-No				
46	L_BUHR	Loads barges at rate of bushels per hour	Numeric	9	--
	n/a	--			
47	L_TONSHR	Loads barges at rate of tons per hour	Numeric	9	--
	n/a	--			
48	L_BBLHR	Loads barges at rate of barrels per hour			
	n/a	--			
49	U_BARGES	Unloads barges	Character	9	--
	Y-Yes	--			
	N-No				
50	U_BY_CNVYR	Unloads barges by conveyor	Character	9	--
	Y-Yes	--			
	N-No				
51	U_BY_CRANE	Unloads barges by crane	Character	9	--
	Y-Yes	--			
	N-No				
52	U_BY_PIPE	Unloads barges by pipeline	Character	9	--
	Y-Yes	--			
	N-No				
53	U_BY_OTHER	Unloads barges by other methods	Character	25	--
	Y-Yes	--			
	N-No				
54	U_BUHR	Unloads barges at rate of bushels per hour	Numeric	9	--
	n/a	--			

55	U_TONSHR	Unloads barges at rate of tons per hour	Numeric	9	--
	n/a	--			
56	U_BBLHR	Unloads barges at rate of barrels per hour	Numeric	9	--
	n/a	--			

Structure for file: **PWS_FAC.DBF**
Number of data records: **37**
Main Report Reference: **Chapter 7, Water Supply, pg. 56-58, 63, 67.**

[A]	[B]	[C]	[D]	[E]	[F]
	[G]	[H]			
1	SWS_ID	ISWS ID Number	Numeric	8	PWS_PT
	n/a	--			
2	ADDRESS	PWS Address	Character	30	--
	n/a	--			
3	CITY	PWS City	Character	20	--
	n/a	--			
4	STATE	PWS State	Character	2	--
	n/a	--			
5	ZIP	PWS Zip-code	Numeric	5	--
	n/a	--			
6	Z4	PWS Zip +4 code	Numeric	4	--
	n/a	--			
7	SRC	Water source code	Character	1	--
	G-ground water	--			
	S-surface water				
	C_combination G and S				
8	POP_IN	Population inside	Numeric	11	--
	n/a	*Retail population served inside corp limits*			
9	POP_OUT	Population outside	Numeric	11	--
	n/a	*Retail population served outside corp limits*			
10	POP_TOTAL	Population total	Numeric	11	--
	n/a	*Total retail population served.*			
11	OSRC_FAC	Original source	Numeric	8	--
	n/a	*SWS facility id of original water source.*			

Structure for file: **PWS_PT.DBF**
Number of data records: **37**
Main Report Reference: **Chapter 7, Water Supply, pg. 56-58, 63, 67.**

[A]	[B]	[C]	[D]	[E]	[F]
	[G]	[H]			
1	TYPE	Type source	Numeric	2	--
	even #-surface water odd #-ground water no #-not specified	*Point source type*			
2	SWS_ID	ISWS ID Number	Numeric	8	PWS_FAC
	n/a	--			
3	WELL_NO	--	Numeric	4	--
	n/a	*ISWS point source number.*			
4	UNQ_ID	Unique ID	Numeric	12	--
	n/a	*Prime computer code.*			
5	EPA_HID	IEPA county code	Numeric	3	--
	001-203	*IEPA FIPS county code.*			
6	EPA_LID	IEPA facility code	Numeric	4	--
	n/a	*IEPA facility code.*			
7	SIC	Standard Industrial Classification Code	Numeric	4	FAC_ALL
	n/a	--			
8	STAT	Status	Character	1	--
	A-abandoned C-capped D-discontinued E-emergency I-in use O-observation well S-sealed U-unused blank-in use	*Point source status.*			
9	EPAWELL_ID	IEPA well ID	Numeric	5	--
	n/a	--			
10	LOCAT	Location	Numeric	3	--
	n/a	*Legal location description in township, range, 10 acre plot.*			

11	WATERWAY n/a	Waterway *Any system of rivers, channels and/or canals that carry waterborne traffic.*	Character	30	SPILLS PWS_PT FAC_ALL
12	LAMBX n/a	Lambert x *Lambert x in feet.*	Numeric	7	--
13	LAMBY n/a	Lambert y *Lambert y in feet.*	Numeric	7	--
14	Q86 n/a	1986 water use *1986 total gallons.*	Numeric	18	--
15	Q87 n/a	1987 water use *1987 total gallons.*	Numeric	18	--
16	Q88 n/a	1988 water use *1988 total gallons.*	Numeric	18	--
17	DRAIN n/a	Drainage area *Drainage area in square miles.*	Numeric	18	--
18	IEPA_PT_ID n/a	IEPA well ID --	Numeric	5	--

Structure for file: **SITE_NUM.DBF**
Number of data records: **434**

[A]	[B]	[C]	[D]	[E]	[F]
	[G]	[H]			
1	SITE_NO	Site Number	Character	8	FAC_CAT
	n/a	*A number developed by the project using facility numbers from IDOT, IEPA, and USCG.*			FAC_ALL
2	DOT_FAC_NO	IDOT facility number	Numeric	5	IDOT_CMD
	n/a	*IDOT facility number given by this project and not IDOT.*			
3	EPA_FAC_NO	IEPA facility number	Numeric	5	CHEM_ID
	n/a	*IEPA facility number found in database.*			
4	CG_REF_NO	USCG reference number.	Numeric	3	--
	n/a	*USCG reference number found in database.*			

Structure for file: **SPILLS.DBF**
Number of data records: **794**
Main Report Reference: **Chapter 6, pg. 41, 42, 47, 48, 49, 51, 52, 54.**

[A]	[B] [G]	[C] [H]	[D]	[E]	[F]
1	LOGNUM n/a	IESDA field log number --	Numeric	6	--
2	CODE n/a	NRC number *Number used from 1982-1985.*	Character	12	--
3	REPORT_NO n/a	NRC number *Number used from 1986-1989.*	Numeric	6	--
4	CASE_NO n/a	USCG numbers *Numbers used by USCG.*	Character	10	--
5	LIABLE n/a	Liable party --	Character	30	--
6	L_ADD n/a	Liable party address --	Character	25	--
7	L_CITY n/a	Liable party city --	Character	20	--
8	L_STATE n/a	Liable party state --	Character	2	--
9	L_ZIP n/a	Liable party zip-code --	Character	5	--
10	RCOUNTY n/a	Release county *County in which spill occurred.*	Character	12	--
11	RDATE n/a	Release date *Date in which spill occurred.*	Date	8	--
12	RTIME n/a	Release time *Time in which spill occurred.*	Numeric	4	--
13	RCITY n/a	Release city *City in or near spill occurred.*	Character	20	--
14	RSTATE n/a	Release state *State in which spilled occurred.*	Character	2	--
15	WATERWAY n/a	Waterway *Any system of rivers, channels and/or canals that carry waterborne traffic.*	Character	30	FAC_ALL PWS_PT

16	RIVER_MILE n/a	River mile *River mile where spill occurred.*	Numeric	9	FAC_ALL
17	LATITUDE n/a	Latitude --	Numeric	7	--
18	LONGITUDE n/a	Longitude --	Numeric	7	--
19	OTHER_LOCA n/a	Other Location *Any other locational information in order to better locate the spill or for when other information is not available.*	Character	50	--
20	CHRIS_CODE n/a	Chris code *USCG material code.*	Character	3	--
21	MATERIAL n/a	Hazardous material *Rough description of spill material.*	Character	25	--
22	CATEGORY n/a	Commodity Category *Commodity Categories as list in Table 19, pg. 50 in main report.*	Character	25	FAC_CAT IDOT_CMD
23	AMT_REL n/a	Amount released *Amount of hazardous materials spilled.*	Numeric	7	--
24	UNITS n/a	Amount units *Units in which spill was measured, if any.*	Character	7	--
25	TRANS_MODE FIXED-land source MARINE-navigation related PIPE-pipeline source UNK-unknown source	Transportation Mode *Source type of spill.*	Character	6	--
26	SOURCE n/a	Source of spills *Miscellaneous information that describes the source, nature, and/or conditions of the spill.*	Memo	10	--