



United States  
Environmental Protection Agency

Office of Chemical Safety and  
Pollution Prevention

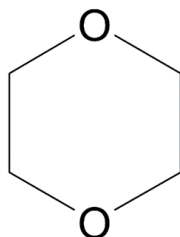
---

# Final Risk Evaluation for 1,4-Dioxane

Supplemental Information File on

Aquatic Exposure Screen Facility Information

CASRN: 123-91-1



*December 2020*

Tables 1 through 3 show discharging facility information that was downloaded from EPA's Enforcement and Compliance History Online (ECHO) [Water Pollutant Loading Tool](#) and Toxic Release Inventory (TRI) [TRI Explorer](#). Table 1 contains the top ten discharging facilities from the Discharge Monitoring Report (DMR) for years 2015 and 2016, which were the most recent complete reporting years available at the time of the screening-level assessment. Tables 2 and 3 contain the top ten direct and indirect discharging facilities from the Toxics Release Inventory (TRI) for years 2014 and 2015, which were the most recent complete reporting years available at the time of the screening-level assessment. Information was only extracted for the top ten dischargers for each of the years covered for the purposes of this screening-level assessment; for TRI, that includes the top ten direct and indirect dischargers. Key pieces of information that were used for surface water modeling to estimate surface water concentrations included the site name, site location, National Pollutant Discharge Elimination System (NPDES) code, and total pounds released (DMR) or direct TRI pounds (TRI). These reported annual loading amounts (lbs/year) were used to generate the release inputs required by E-FAST (kg/day) by converting from lbs to kgs and dividing by the number of release days for a given scenario.

Following Tables 1 through 3, an example EFAST output file is shown for a select site to demonstrate how the site and loading information were utilized to obtain the results presented in Appendix E.

**Table 1 DMR Top Ten Dischargers Used for Aquatic Exposure Screening-Level Assessment**

DMR Top Facility Dischargers, Water Pollutant Loading Tool																		
NPDES	FRS_ID	Name	City	ST	Lat	Long	SIC Code	Mean Effluent Conc. (mg/L)	Max Effluent Conc. (mg/L)	Total Pounds Released (lbs/yr)	Annual Release (kgs/yr)	Max Allowable Load (lbs/yr)	Outlier/Data Error Flag	%tile (calculated)	Reach Code	Water-body Name	Mean Effluent Flow (MGD)	Mean Effluent Flow (MLD)
<b>2016 Data</b>																		
WV0000132	110064606010	M and G POLYMERS USA, LLC	APPLE GROVE	WV	38.6667	-82.1832	2821	11.7	67.9	30,319	13,752	blank		100%	05090101000058	Ohio River	0.54	2.04
SC0026506	110016953224	DAK AMERICAS LLC COOPER RIVER PLANT	MONCKS CORNER	SC	33.0567	-79.9414	2821	6.67	9.9	21,532	9,767	blank		97%	03050201000870	Cooper River	1.97	7.46
SC0046311	110006623270	LAKE CITY WASTE WATER TREATMENT PLANT	LAKE CITY	SC	33.8722	-79.6139	4952	0.303	0.55	2,980	1,352	91449		93%	03040202002501	Lynches River	3.35	12.68
WV0000086	110064632312	INSTITUTE PLANT	INSTITUTE	WV	38.3864	-81.7984	2869	0.044	0.2	598	271	blank		90%	05050008000998	Rocky Fork	73.2	277.09
NY0001643	110000492173	EASTMAN KODAK - KODAK PARK	ROCHESTER	NY	43.1978	-77.6298	3861	0.21	1	173	78	44984		87%	04130003000001	Round Pond Creek	6.94	26.27
PA0026492	110000716217	THE SCRANTON SEWER AUTHORITY WWTP	SCRANTON	PA	41.3875	-75.6929	4952	0.0034	0.0034	121	55	blank		83%	02050107000110	Lackawanna River	10.5	39.75
CA0054011	110000525995	LOS COYOTES WATER RECLAMATION PLANT	CERRITOS	CA	33.8799	-118.104	4952	0.0019	0.002	89.6	40.6	blank		80%	18070106000026	San Gabriel River	16.1	60.94
DTMIU0161	110009271983	BEACON HEIGHTS LANDFILL	BEACON FALLS	CT	41.432	-73.0353	not listed	1.25	1.7	87.9	39.9	blank		77%	01100005001883	"Not Found"	0.029	0.11
CA0053911	110000526538	SAN JOSE CREEK WATER RECLAMATION PLANT	WHITTIER	CA	34.0322	-118.021	4952	0.00051	0.0012	69.07	31.3	blank		73%	18070106000770	San Gabriel River	25.4	96.15
CA0056227	110000526556	DONALD C TILLMAN WRP	VAN NUYS	CA	34.1801	-118.483	4952	0.00105	0.00105	43.1	19.5	blank		70%	18070105000097	Los Angeles River	26.3	99.56
<b>2015 Data</b>																		
WV0000132	110064606010	M and G POLYMERS USA, LLC	APPLE GROVE	WV	38.6667	-82.1832	2821	26.9	48.1	20,974	9,514	blank		100%	05090101000058	Ohio River	0.38	1.44

**DMR Top Facility Dischargers, Water Pollutant Loading Tool**

NPDES	FRS_ID	Name	City	ST	Lat	Long	SIC Code	Mean Effluent Conc. (mg/L)	Max Effluent Conc. (mg/L)	Total Pounds Released (lbs/yr)	Annual Release (kgs/yr)	Max Allowable Load (lbs/yr)	Outlier/Data Error Flag	%tile (calculated)	Reach Code	Water-body Name	Mean Effluent Flow (MGD)	Mean Effluent Flow (MLD)
SC0026506	110016953224	DAK AMERICAS LLC COOPER RIVER PLANT	MONCKSCORNER	SC	33.0567	-79.9414	2821	6.77	8.2	20,287	9,202	blank		96%	03050201000870	Cooper River	1.87	7.08
SC0046311	110006623270	LAKE CITY WASTE WATER TREATMENT PLANT	LAKE CITY	SC	33.8722	-79.6139	4952	0.26	0.53	2,365	1,073	91449		92%	03040202002501	Lynches River	3.41	12.91
SC0002798	110038160272	AURIGA POLYMERS INC - SPARTANBURG FACILITY	SPARTANBURG	SC	35.0278	-81.879	2821	0.17	2.4	342	155	blank		88%	03050105000403	Pacolet River	0.54	2.04
WV0000086	110064632312	INSTITUTE PLANT	INSTITUT E	WV	38.3864	-81.7984	2869	0.042	0.23	202	92	blank		84%	05050008000998	Rocky Fork	88.8	336.14
CA0054011	110000525995	LOS COYOTES WATER RECLAMATION PLANT	CERRITOS	CA	33.8799	-118.104	4952	0.0018	0.0018	73.8	33	blank		80%	18070106000026	San Gabriel River	17.2	65.11
CA0053953	110039778176	LA-GLENDALE WRP	LOS ANGELES	CA	34.1412	-118.273	4952	0.0019	0.00209	59.5	27.0	blank		76%	18070105000050	Los Angeles River	9.88	37.40
CA0056227	110000526556	DONALD C. TILLMAN WRP	VAN NUYS	CA	34.1801	-118.483	4952	0.0012	0.0012	48.6	22.0	blank		72%	18070105000097	Los Angeles River	27.2	102.96
MO0101184	110017980443	BUCKMAN LABORATORIES, INCORPORATED	CADET	MO	37.9843	-90.6923	2899	0.035	0.13	44.2	20.0	blank		68%	07140104001615	Mill Creek	0.24	0.91
NY0001643	110000492173	EASTMAN KODAK - KODAK PARK	ROCHESTER	NY	43.1978	-77.6298	3861	0.00054	0.0041	43.6	19.8	74460		64%	04130003000001	Round Pond Creek	9.35	35.39

**Table 2 TRI Top Ten Dischargers Used for Aquatic Exposure Screening-Level Assessment**

TRI Top Facility Dischargers, TRI Explorer													
NPDES	FRS_ID	TRI Facility ID	Facility Name	City	ST	Lat	Long	NAICS	Direct TRI Pounds (lbs/yr)	%tile	Direct TRI (kg/yr)	Reach Code	Waterbody Name
<b>2015 Data</b>													
WV0000132	110064606010	25502GDYRTS TRT2	APG POLYTECH LLC	APPLE GROVE	WV	38.6667	-82.1832	325211	21,533	1.00	9,767	05090101017	OHIO RIVER
SC0026506	110016953224	29423DKMRCC YPRE	DAK AMERICAS LLC COOPER RIVER PLANT	OAKLEY	SC	33.05671	-79.9414	325211	17,857	0.909	8,100	03050201005	COOPER RIVER
LA0036421	110000597104	70057NNCRBH WY31	BASF CORP	ZACHARY	LA	30.61325	-91.2333	325199	11,820	0.818	5,361	08070100007	MISSISSIPPI RIVER
LA0000191	110007175154	77979NNCRBP OBOX	ST CHARLES OPERATIONS (TAFT/STAR) UNION CARBIDE CORP	HAHNVILLE	LA	29.98734	-90.4451	325199	1,802	0.727	817	08090100022	MISSISSIPPI RIVER
Not reported (in EFAST as TX0002844)	110022439798	28302CMRCSP OBOX	UNION CARBIDE CORP SEADRIFT PLANT	SEADRIFT	TX	28.51064	-96.7715	325199	1,411	0.636	640	12100402011	MATAGORDA BAY
NC0003719	110022439798	28302CMRCSP OBOX	DAK AMERICAS LLC	FAYETTEVILLE	NC	34.98305	-78.7872	325211	968	0.545	439	03030004001	CAPE FEAR RIVER
LA0116602 (in EFAST as LA0003301)	110001244724	70765THDWCH IGHW	THE DOW CHEMICAL CO - LOUISIANA OPERATIONS	PLAQUEMINE	LA	30.3209	-91.239	325199	743	0.454	337	08070100007	MISSISSIPPI RIVER
SC0002798	110038160272	29304HCHSTI8 5AT	AURIGA POLYMERS INC	SPARTANBURG	SC	35.027817	-81.87896	325211	346	0.363	157	03050105066	PACOLET RIVER
NC0001112	110007116101	28402CPNDSHI IGHW	INVISTA SA RL	WILMINGTON	NC	34.31309	-77.9786	325211	219	0.272	99	03030007001	NE CAPE FEAR RIVER
TN0002640	110000574423	37662TNNSSE ASTM	EASTMAN CHEMICAL CO	KINGSPORT	TN	36.52222	-82.5411	325211	123	0.181	56	06010102004	HOLSTON RIVER SOUTH FORK
<b>2014 Data</b>													
WV0000132	110064606010	25502GDYRTS TRT2	APG POLYTECH LLC	APPLE GROVE	WV	38.6667	-82.1832	325211	26,962	1.00	12,230	05090101017	OHIO RIVER
SC0026506	110016953224	29423DKMRCC YPRE	DAK AMERICAS LLC COOPER RIVER PLANT	OAKLEY	SC	33.0567	-79.9414	325211	18,188	0.916	8,250	03050201005	COOPER RIVER

TRI Top Facility Dischargers, TRI Explorer													
NPDES	FRS_ID	TRI Facility ID	Facility Name	City	ST	Lat	Long	NAICS	Direct TRI Pounds (lbs/yr)	%tile	Direct TRI (kg/yr)	Reach Code	Waterbody Name
LA0036421	110000597104	70057NNCRBHWY31	BASF CORP	ZACHARY	LA	30.6133	-91.2333	325199	2,643	0.833	1,199	08070100007	MISSISSIPPI RIVER
LA0000191	110007175154	77979NNCRBP OBOX	ST CHARLES OPERATIONS (TAFT/STAR) UNION CARBIDE CORP	HAHNVILLE	LA	29.9873	-90.4451	325199	1,728	0.75	784	08090100022	MISSISSIPPI RIVER
LA0116602 (in EFAST as LA0003301)	110001244724	70765THDWCHIGHW	THE DOW CHEMICAL CO - LOUISIANA OPERATIONS	PLAQUEMINE	LA	30.3209	-91.239	325199	688	0.666	312	08070100007	MISSISSIPPI RIVER
NC0003719	110022439798	28302CMRCSP OBOX	DAK AMERICAS LLC	FAYETTEVILLE	NC	34.9831	-78.7872	325211	382	0.583	173	03030004001	CAPE FEAR RIVER
SC0002798	110038160272	29304HCHSTI85AT	AURIGA POLYMERS INC	SPARTANBURG	SC	35.0278	-81.87896	325211	184	0.5	83	03050105066	PACOLET RIVER
TN0002640	110000574423	37662TNNSSE ASTM	EASTMAN CHEMICAL CO	KINGSPORT	TN	36.5222	-82.5411	325211	147	0.416	67	06010102004	HOLSTON RIVER SOUTH FORK
WV0000086	110069544390	25112RHNPLR OUTE	BAYER CROPSCIENCE LP	INSTITUTE	WV	38.3831	-81.77721	325320	145	0.333	66	05050008008	KANAWHA RIVER
NC0001112	110007116101	28402CPNDSHIGHW	INVISTA SA RL	WILMINGTON	NC	34.3131	-77.9786	325211	98	0.25	44	03030007001	NE CAPE FEAR RIVER

**Table 3 TRI Top Ten Indirect Dischargers that Transfer Off-Site to POTWs Used for Aquatic Exposure Screening-Level Assessment**

NPDES	TRI Facility ID	Facility Name	Receiving POTW	City	ST	Lat	Long	NAICS	POTW Transfers-Treatment (lbs/yr)	%tile	POTW Transfers-Treatment (kg/yr)	Reach Code	Waterbody Name
<b>2015 Data</b>													
AL0048593	35601MCCHM FINLE	INDORAMA VENTURES	DECATUR UTILITIES DRY CREEK WWTP	DECATUR	AL	34.64	-87.063	325110	165,416.24	1.00	75,031	06030002024	TENNESSEE RIVER
Ind. POTW (SIC 4952)	55343SMNCS 5951C	SUEZ WTS SOLUTIONS USA INC.	BLUE LAKE WWTP	MINNETONKA	MN	44.895	-93.44	333999	14,861.44	0.98	6,741	Not Found	Not Found
Ind. POTW (SIC 4952)	29560NNYPL HWY52	NAN YA PLASTICS CORP AMERICA	LAKE CITY WWTP	LAKE CITY	SC	33.834	-79.764	325211	3,930.08	0.95	1,783	Not Found	Not Found
Ind. POTW (SIC 4952)	29651HCHST HOODR	MITSUBISHI POLYESTER FILM INC.	PELHAM WWTP	GREER	SC	34.923	-82.261	326113	1,001.88	0.93	454	Not Found	Not Found
NY0087971	12144STRLN3 3RIV	AMRI RENNELAER INC.	RENSELAEER CO SD#1 WWTP	RENSELAEER	NY	42.632	-73.75	325412	196.284	0.91	89	02020006048	HUDSON RIVER
MD0021601	21226LCLCX3 440F	SOLVAY USA INC.	PATAPSCO WWTP	BALTIMORE	MD	39.237	-76.579	325613	61	0.88	28	02060003028	PATAPSCO RIVER
Ind. POTW (SIC 4952)	39520WLLMN 3303P	DAK AMERICAS MISSISSIPPI INC.	HANCOCK COUNTY PORT AND HARBOR COMMISSION PORT BIENVILLE IND	BAY ST LOUIS	MS	30.233	-89.562	325211	29.2468	0.86	13	Not Found	Not Found
WI0025411	53085LDRCH 6100H	ALDRICH CHEMICAL CO LLC.	SHEBOYGAN REGIONAL WWTP	SHEBOYGAN FALLS	WI	43.674	-87.781	325199	2.2	0.84	1	04030101003	LAKE MICHIGAN
WI0060453	53563XXNCH 1012T	EVONIK MATERIALS CORP.	MILTON WATERWORKS	MILTON	WI	42.781	-88.969	325613	0.44	0.81	0.2	07090001007	ROCK RIVER
OH0024970	43920VNRL1 250S	HERITAGE THERMAL SERVICES	EAST LIVERPOOL WWTP	EAST LIVERPOOL	OH	40.632	-80.546	562213	1.32e-4	0.79	0.0001	05030101002	OHIO RIVER
<b>2014 Data</b>													
AL0048593	35601MCCHM FINLE	INDORAMA VENTURES	DECATUR UTILITIES DRY CREEK WWTP	DECATUR	AL	34.64	-87.063	325110	122,130.36	1.00	55,397	06030002024	TENNESSEE RIVER

NPDES	TRI Facility ID	Facility Name	Receiving POTW	City	ST	Lat	Long	NAICS	POTW Transfers-Treatment (lbs/yr)	%tile	POTW Transfers-Treatment (kg/yr)	Reach Code	Waterbody Name
Ind. POTW (SIC 4952)	55343SMNCS 5951C	SUEZ WTS SOLUTIONS USA INC.	BLUE LAKE WWTP	MINNETONKA	MN	44.895	-93.44	333999	16,264.16	0.98	7,377	Not Found	Not Found
Ind. POTW (SIC 4952)	29560NNYPL HWY52	NAN YA PLASTICS CORP AMERICA	LAKE CITY WWTP	LAKE CITY	SC	33.834	-79.764	325211	4,175.00	0.96	1,894	Not Found	Not Found
Ind. POTW (SIC 4952)	29651HCHST HOODR	MITSUBISHI POLYESTER FILM INC.	PELHAM WWTP	GREER	SC	34.923	-82.261	326113	736.56	0.941	334	Not Found	Not Found
Ind. POTW (SIC 4952)	39520WLLMN 3303P	DAK AMERICAS MISSISSIPPI INC.	HANCOCK COUNTY PORT AND HARBOR COMMISSION PORT BIENVILLE IND	BAY ST LOUIS	MS	30.233	-89.562	325211	52.3292	0.921	24	Not Found	Not Found
MD0021601	21226LCLCX3 440F	SOLVAY USA INC.	PATAPSCO WWTP	BALTIMORE	MD	39.237	-76.579	325613	52	0.901	24	02060003028	PATAPSCO RIVER
WI0025411	53085LDRCH 6100H	ALDRICH CHEMICAL CO LLC.	SHEBOYGAN REGIONAL WWTP	SHEBOYGAN FALLS	WI	43.674	-87.781	325199	2.2	0.882	1	04030101003	LAKE MICHIGAN
WI0060453	53563XXNCH 1012T	EVONIK MATERIALS CORP.	MILTON WATERWORKS	MILTON	WI	42.781	-88.969	325613	0.44	0.862	0.2	07090001007	ROCK RIVER



INITIAL REVIEW EXPOSURE REPORT

Chemical ID: 1-4dioxane TRI

Assessor:

ENVIRONMENTAL RELEASES
------------------------

Scenario#:2

Number of Release Sites: 1.

Release Activity: 2014 APG 20dy

Release Description:	WATER	LANDFILL	STACK	FUGITIVE
	Non-sludge/Sludge			

Total Releases:	1.22E+04	N/A	N/A	N/A
	(kg/yr)	(kg/yr)	(kg/yr)	(kg/yr)

Non-sludge/Sludge

Release Days/yr:	20.00	0.00/0.00	N/A	N/A
Per Site Release:	611.00	N/A/0.00	N/A	N/A
	(kg/site/day)	(kg/site/day)	(kg/site/day)	(kg/site/day)

Remarks:

INITIAL EXPOSURE REVIEW REPORT

Chemical ID: 1-4dioxane TRI

SITE-SPECIFIC HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES

SCENARIO NUMBER:2                      RELEASE ACTIVITY: 2014 APG 20dy  
 FACILITY NAME: M & G POLYMERS USA CORP.  
 FACILITY LOCATION: APPLE GROVE WV 25502  
 RECEIVING WATER NAME: OHIO R  
 REACH NUMBER: 05090101017              FACILITY ON REACH: Yes    DISCHARGE TYPE: Direct  
 NPDES PERMIT #: WV0000132              EXPOSED POPULATION: Adult

WWT REMOVAL (%)	RELEASE DAYS	PRETREATMENT RELEASE (kg/site/day)	POSTTREATMENT RELEASE (kg/site/day)	DWT (%)	BCF (L/kg)
0.	20.	611.	611.00	0.00	0.00

AQUATIC EXPOSURE ESTIMATES - SURFACE WATER

FLOW DESCRIPTOR	Harmonic Mean	30Q5	7Q10	1Q10	PLANT
FLOW (MLD)	6.88E+04	1.89E+04	1.42E+04	1.13E+04	NA
CONCENTRATION (µg/L)	8.88	32.41	43.01	54.22	NA

DRINKING WATER INGESTION AND FISH INGESTION EXPOSURE ESTIMATES

Exposure Units	Drinking Water Results	Drinking Water Units	Fish Ingestion Results	Fish Ingestion Units
Cancer				
LADD <sub>pot</sub>	2.68E-06 mg/kg/day		0.00 mg/kg/day	
LADC <sub>pot</sub>	2.06E-04 mg/L		0.00 mg/kg	
Acute				
ADR <sub>pot</sub>	1.23E-03 mg/kg/day		0.00 mg/kg/day	

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: 1-4dioxane TRI

SITE-SPECIFIC HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES

SCENARIO NUMBER: 2                      RELEASE ACTIVITY: 2014 APG 20dy  
 FACILITY NAME: M & G POLYMERS USA CORP.  
 FACILITY LOCATION: APPLE GROVE WV 25502  
 RECEIVING STREAM NAME: OHIO R  
 REACH NUMBER: 05090101017              FACILITY ON REACH: Yes              DISCHARGE TYPE: Direct  
 NPDES PERMIT NUMBER: WV0000132              GAGING STATION ID: N/A  
 GAGING STATION                      GAGING STATION                      NUMBER OF STATIONS ON REACH: N/A  
 PERIOD OF RECORD: N/A                      NUMBER OF OBSERVATIONS: N/A  
 MEAN FLOW (MLD): 1.74E+05              7q10 FLOW (MLD): 1.42E+04              EFFLUENT FLOW (MLD):3.28

RESULTS					
COC (µg/L)	Percent of Year COC Exceeded	Number of Days COC Exceeded	Release days/year	Pre-treatment Loading (kg/site/day)	Waste Water Treatment (%)
1.45E+04	0	0	20.00	611.00	0.00