

Appendix 10D

CALPUFF MODELING, Q/D AND VISIBILITY

FOR ISLE ROYALE

SUPPORT DOCUMENTATION

FOR THE

REGIONAL HAZE SIP

July 2008

Back trajectory analysis indicate where air is most likely and least likely to come from on the 20% worst days. As indicated in Figures 10.2.b, Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri and Wisconsin have the majority of impact for the worst 20% days at Isle Royale.

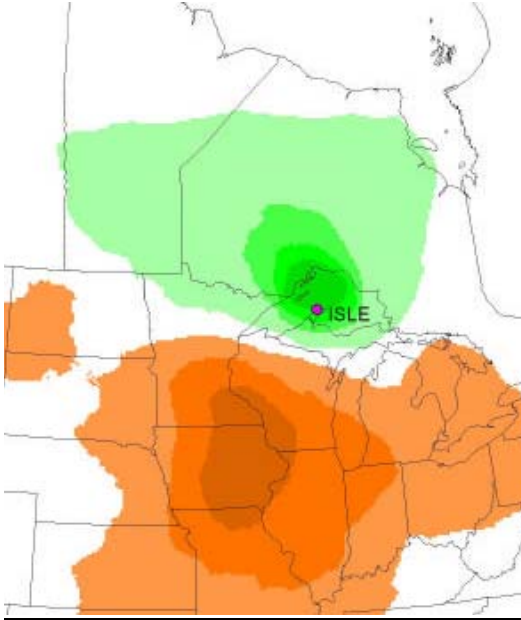


Figure 10.2.b: Composite back trajectories for Isle Royale for the 20% worst days. Orange is where the air is most likely to come from and green is where it is least likely to come from.

Table 1. Calpuff modeling for Isle Royale, includes only facilities located in the state of Michigan.

ISLE ROYALE CLASS I AREA

FACILITY	SRN	1/(M-m)
WISCONSIN ELECTRIC POWER COMPANY	B4261	0.775
EMPIRE IRON MINING PARTNERSHIP	B1827	0.766
Tilden Mining Company L.C.	B4885	0.209
STONE CONTAINER CORPORATION	A5754	0.205
J. H. Campbell Plant	B2835	0.088
DETROIT EDISON/MONROE POWER	B2816	0.084
ESCANABA PAPER COMPANY	A0884	0.067
Marquette Board of Light & Power	B1833	0.064
Neenah Paper - Michigan, Inc.	B1470	0.046
Lafarge North America - Alpena Plant	B1477	0.040
Karn - Weadock Facility	B2840	0.039
ST MARYS CEMENT INC	B1559	0.033
ESCANABA POWER PLANT	B1573	0.025
B. C. Cobb Plant	B2836	0.024
INTERNATIONAL PAPER CO	B7192	0.021
GREAT LAKES GAS TRANSMISSION STATION #8	N3760	0.017
DETROIT EDISON TRENTON CHANNEL	B2811	0.017
GREAT LAKES GAS TRANSMISSION STATION #7	N2168	0.015
ST. CLAIR / BELLE RIVER POWER PLANT	B2796	0.015
J.R. WHITING CO	B2846	0.013
ANR Pipeline Company - Bridgman Compressor Station	N5575	0.011
Holland BPW, Generating Station & WWTP	B2357	0.008
MANISTIQUE PAPERS INC	A6475	0.008
DETROIT EDISON RIVER ROUGE	B2810	0.007
HOLCIM (US) INC.	B1743	0.007
Packaging Corporation of America - Filer City Mill	B3692	0.006
Martin Marietta Magnesia Specialties, LLC	A3900	0.006
TES FILER CITY STATION	N1685	0.006
S. D. Warren, Muskegon, MI, Operations	A4203	0.006
Traverse City Light and Power Bayside Power Plant	B4257	0.005
Eckert & Moores Park Station	B2647	0.004
General Chemical Industrial Products Inc.	B1821	0.004
ANR Pipeline Company - Hamilton Compressor Station	N5574	0.004
Morton Salt Specialty Magnesia	B1824	0.004
MENOMINEE PAPER COMPANY	B1855	0.003
MERIT ENERGY CO. - Manistee Sulfur Plant	B6013	0.003
Louisiana-Pacific Corporation	N1315	0.003
U S STEEL GREAT LAKES WORKS	A7809	0.003
Michigan State University	K3249	0.002
Lansing Board of Water & Light, Erickson Station	B4001	0.002
Decorative Panels International, Inc	B1476	0.002
DETROIT EDISON GREENWOOD ENERGY CENTER	B6145	0.001
Midland Cogeneration Venture	B6527	0.001
J. B. Sims Generating Station	B1976	0.001
ANR Pipeline Co - Woolfolk Compressor Station	B7220	0.001

FACILITY	SRN	1/(M- m)
FARWELL COMPRESSOR STATION NO 12	N5581	0.001
Pharmacia & Upjohn Co LLC, a subsidiary of Pfizer	B3610	0.001
ANR-Coldsprings/ Blue Lake Gas Storage Company	B7198	0.001
DEARBORN INDUSTRIAL GENERATION	N6631	0.001
GREAT LAKES GAS TRANSMISSION STATION #9	N3759	0.001
East Jordan Iron Works	A0767	0.001
GUARDIAN INDUSTRIES	B1877	0.001
Michigan Sugar Company - Carrollton Factory	B2874	0.001
Merit Energy Company. - Mayfield 23	B5587	0.001
Harbor Beach Power Plant	B2815	0.001
Reed City Compressor Station	B3721	0.001
Merit Energy Co. - Brown 7	B5589	0.001
KINROSS CORRECTIONAL FACILITY	N2955	0.001
WYANDOTTE DEPT MUNI POWER	B2132	0.001
MARATHON ASHLAND PETROLEUM	A9831	0.001
White Pigeon Paper Company	B2024	0.001
GENERAL MOTORS CORPORATION - ORION ASSEMBLY	B7227	0.001
GREAT LAKES TISSUE	B1563	0.001
Great Lakes Gas Transmission Station #11	B8573	0.001
Viking Energy of McBain	N1160	0.001
ANR Pipeline Company Lincoln Compressor Station	N5586	0.001
Delphi Saginaw Steering Systems, Holland Road	A6175	0.000
GRAPHIC PACKAGING INTERNATIONAL, INC.	B1678	0.000
Michigan Sugar Company - Sebewaing Factory	B2873	0.000
Aztec Producing Company, Inc.	B7093	0.000
Steelcase Inc. - Grand Rapids Complex	N0980	0.000
HILLMAN POWER CO	N1266	0.000
GREAT LAKES GAS TRANSMISSION STATION #10	N3758	0.000
Muskegon River Compressor Station	N2901	0.000
TAGGART COMPRESSOR STATION	N3392	0.000
JAGUAR ENERGY, FREDERIC 15 GAS PLANT	B7222	0.000
MERIT ENERGY CO. - OTSEGO LAKE 34	N0200	0.000
Michigan Sugar Company, Caro Factory	B2875	0.000
Pharmacia & Upjohn Company LLC	B4288	0.000
CMS ANTRIM GAS L.L.C.	N2940	0.000
Michigan Power Limited Partnership	N4975	0.000
QUICKSILVER RESOURCES INC. - P-LEASE	N3190	0.000
MERIT ENERGY CO. - KALKASKA GAS PLANT	B4292	0.000
Cadillac Renewable Energy Facility	N1395	0.000
Ludlow Coated Products	B2013	0.000
GRAYLING GENERATING STATION LTD PTNR	N2388	0.000
Overisel Compressor Station	N5792	0.000
ABBOTT LABORATORIES-ROSS PRODUCTS DIVISION	A6380	0.000
SEVERSTAL NORTH AMERICA, INC.	A8640	0.000
GMC-MFD Grand Blanc Metal Fab Plant	B1610	0.000
VIKING ENERGY OF LINCOLN, INC.	N0890	0.000
CONSUMERS ENERGY COMPANY- WHITE PIGEON CO	N5573	0.000

FACILITY	SRN	1/(M- m)
Hanson Brick - Michigan Plant	A6497	0.000
GM POWERTRAIN GROUP - SAGINAW METAL CASTING	B1991	0.000
Michigan Sugar Company, Croswell Factory	B2876	0.000
E.B. EDDY PAPER INC.	B6420	0.000
MI SO CENTRAL POWER AGENCY	B6611	0.000
SUMMIT ESSEXVILLE INC	N0827	0.000
CARGILL SALT	A6240	0.000
DETROIT WASTEWATER TREATMENT PLANT	B2103	0.000
CARMEUSE LIME/ RIVER ROUGE	B2169	0.000
DETROIT THERMAL BEACON HEATING PLANT	B2814	0.000
General Motors Pontiac Site Operations	B4032	0.000
BELLE RIVER COMPRESSOR STATION	B6478	0.000
GREATER DETROIT RESOURCE RECOVERY	M4148	0.000
MUSKEGON DEVELOPMENT--HEADQUARTERS OIL FIELD	N0924	0.000
KINDER MORGAN CO	N6626	0.000
The Dow Chemical Company U.S.A., Midland	A4033	0.000
DETROIT DIESEL CORPORATION	A8638	0.000
Michigan Sugar Company - Bay City	B1493	0.000
QUANEX CORP MACSTEEL DIVISION	B4306	0.000
MID MICHIGAN GAS STORAGE CO - CAPAC	B6481	0.000
ST. CLAIR COMPRESSOR STATION	B6637	0.000
Central Michigan University	K2460	0.000
Kent County Waste to Energy Facility	N1604	0.000
ADA COGENERATION	N1784	0.000
Great Lakes Gas Transmission Station #13	N3818	0.000
Howell Compressor Station	N5572	0.000
Menasha Packaging Company, LLC, Otsego Mill	A0023	0.000
Kellogg USA Inc.	A0563	0.000
IPMC AQUISITION LLC	A7051	0.000
FORD MOTOR CO/ WAYNE COMPLEX	A8650	0.000
General Motors Corporation - Van Slyke Complex	B1606	0.000
DETROIT PUBLIC LIGHTING	B2185	0.000
CARMEUSE/DETROIT LIME	B3520	0.000
GM Technical Center	B4049	0.000
CENTRAL WAYNE ENERGY RECOVERY	B4281	0.000
Hyperion Energy, Rich Field Gas Plant	B5462	0.000
Western Michigan University	K2131	0.000
UNIVERSITY OF MI	M0675	0.000
GENERAL MOTORS HAMTRAMCK	M4199	0.000
FORD MOTOR CO ELM ST BOILERHOUSE	M4764	0.000
EQ-SITE #2	M4782	0.000
DaimlerChrysler Technology Center	N1436	0.000
ONYX-ARBOR HILLS LANDFILL	N2688	0.000
GENESEE POWER STATION LIMITED PARTNERSHIP	N3570	0.000
FREEDOM COMPRESSOR STATION	N3920	0.000

Table 2. Top 30 facilities contributing to decreased visibility at Seney, includes facilities in and out of state.

Area	Deciviews	State	County	Facility ID	Facility Name
ISLE1	0.83927	MI	Marquette	B4281	WI_Electric
ISLE1	0.50708	MI	Ottawa	B2835	JH_Campbell
ISLE1	0.44585	MN	Sherburne	2714100004	NSP
ISLE1	0.43193	WI	Sheboygan	460033090	WPL_Alliant
ISLE1	0.35391	WI	Brown	405032870	FortJames
ISLE1	0.34702	MN	Itasca	2706100004	MinnesotaPower_Bos
ISLE1	0.33165	WI	Columbia	111003090	Alliant
ISLE1	0.27882	MN	Cook	2703100001	MinnesotaPower_Tac
ISLE1	0.23289	IL	Will	197809AAO	MidwestGen
ISLE1	0.22347	WI	Outagamie	445031180	Intl_Paper
ISLE1	0.17458	MI	Marquette	B4885	TildenMining
ISLE1	0.16985	MI	Alpena	B1477	LaFarge
ISLE1	0.16743	ND	Mercer	11	NA
ISLE1	0.16559	ND	Oliver	1	NA
ISLE1	0.15244	ND	McLean	17	NA
ISLE1	0.14597	MI	St_Clair	B2796	BelleRiver
ISLE1	0.14482	IN	Spencer	20	IN_MI_Power
ISLE1	0.13599	MI	Monroe	B2816	Detroit_Ed
ISLE1	0.13172	MI	Bay	B2840	Kam_Weadock
ISLE1	0.11052	ND	Mercer	4	NA
ISLE1	0.10953	ND	Mercer	1	NA
ISLE1	0.1088	MN	StLouis	2713700005	US_Steel
ISLE1	0.07896	MN	StLouis	2713700113	EVTAC_Mining
ISLE1	0.06756	IN	Jefferson	1	IKEC
ISLE1	0.05745	MN	StLouis	2713700063	KeewatinTaconite
ISLE1	0.05186	IL	Massac	127855AAC	ElectricEnergyInc
ISLE1	0.04685	IN	Floyd	4	PSI_EnergyGallagher
ISLE1	0.03674	MI	Marquette	B1827	EmpireIronMining
ISLE1	0.03061	MN	StLouis	2713700061	HibbingTaconite
ISLE1	0.02097	MN	StLouis	2713700062	IspatInlandMining
ISLE1	0.0194	OH	Clemont	1413100008	Cinergy
sum =		6.1			

Table 3 2018 Q/d EGUs for Isle Royale for facilities in and out of state.

Obs	State	State	County	County	Facility ID	Facility Name	X grid	Y Grid	Min	Class	Q/d	Nox	Q/d	SO2	Nox	Nox	Q/d	SO2	SO2
ID	Name	ID	Name						Dist	I Area	for	Emis	for	Emis	Emis.	Rank	Emis.	Emis.	Q/d
									(km)		Nox	(tons/day)	SO2	(tons/day)	Rank	Rank	Rank	Rank	Rank
1	26	Mich	103	Marquette	B4261	Wisconsin Electric	736.05	769.94	113	ISLE1	0.141	16	0.342	38.8	113	1	129		2
2	26	Mich	147	St_Clair	B2796	St. Clair / Belle	1175.6	406.81	681	ISLE1	0.088	60.2	0.367	249.6	14	4	2		1
3	27	Minn	141	Sherburne	2714100004	Nsp - Sherburne Ge	242.98	601.12	498	ISLE1	0.109	54.3	0.146	73	20	2	45		13
4	18	Indi	147	Spencer	20	Indiana Michigan P	868.79	-182.36	1062	ISLE1	0.056	59.1	0.183	193.9	15	11	4		8
5	27	Minn	61	Itasca	2706100004	Minnesota Power In	250.45	815.4	420	ISLE1	0.056	23.5	0.176	73.8	67	10	44		9
6	55	Wisc	11	Buffalo	606034110	Dairyland Power Co	412.92	490.06	450	ISLE1	0.049	21.9	0.172	77.3	75	15	39		10
7	55	Wisc	117	Sheboygan	460033090	Wp & L Alliant Ene	726.01	448.45	416	ISLE1	0.047	19.5	0.158	66	89	16	58		12
8	17	Illi	197	Will	197809AAO	Midwest Generation	754.82	201.22	665	ISLE1	0.043	28.3	0.169	112.2	52	19	16		11
9	55	Wisc	21	Columbia	111003090	Alliant Energy-Col	604.68	417.45	448	ISLE1	0.036	16	0.198	88.7	115	29	30		6
10	55	Wisc	73	Marathon	737009020	Wis Public Service	581.37	565	308	ISLE1	0.042	13	0.133	41	143	20	118		15
11	29	Miss	71	Franklin	3	Amerenue-Labadie P	533.09	-140.88	1011	ISLE1	0.034	34.7	0.216	218.7	43	31	3		5
12	13	Geor	207	Monroe	20700008	Georgia Power Comp	1227.2	-681.37	1640	ISLE1	0.036	58.4	0.197	322.4	17	30	1		7
13	21	Kent	145	McCracken	2114500006	Tva-Environmental	725.03	-282.55	1145	ISLE1	0.052	59.1	0.091	104.4	16	13	19		27
14	26	Mich	115	Monroe	B2816	Detroit Edison/Mon	1122.4	293.92	726	ISLE1	0.029	21.1	0.253	183.6	78	42	5		4
15	26	Mich	139	Ottawa	B2835	J. H. Campbell Pla	875.41	374.7	528	ISLE1	0.028	14.9	0.304	160.7	127	45	6		3
16	18	Indi	73	Jasper	8	Nipsco - R.M. Scha	829.67	180.7	699	ISLE1	0.031	21.8	0.136	95.4	76	35	25		14
17	31	Nebr	111	Lincoln	19	Nppd Gerald Gentle	-346	127.9	1251	ISLE1	0.054	67.2	0.078	98.2	11	12	22		41
18	27	Minn	31	Cook	2703100001	Minnesota Power -	456.12	868.74	212	ISLE1	0.036	7.7	0.091	19.3	237	28	230		28
19	20	Kans	107	Linn	5	Kansas City Power	204.64	-180.37	1140	ISLE1	0.101	114.9	0.066	75.7	2	3	41		58
20	40	Okla	101	Muskogee	1209	Og&E	153.25	-468.02	1425	ISLE1	0.044	63.4	0.068	96.8	12	18	24		55
21	38	Nort	57	Mercer	11	Antelope Valley	-366.4	829.12	1035	ISLE1	0.034	34.8	0.075	77.9	42	32	37		45
22	17	Illi	197	Will	197810AAK	Midwest Generation	739.33	216.94	648	ISLE1	0.025	16.4	0.110	71.4	106	56	47		21
23	29	Miss	183	St_Charles	1	Amerenue-Sioux Pla	577.43	-98.68	964	ISLE1	0.024	23.5	0.113	108.5	66	59	17		20
24	26	Mich	17	Bay	B2840	Karn - Weadock Fac	1054	480.5	542	ISLE1	0.024	12.7	0.129	69.7	145	63	49		16
25	26	Mich	163	Wayne	B2810	Detroit Edison Riv	1135	338.82	700	ISLE1	0.028	19.5	0.085	59.2	88	47	68		34
26	5	Arka	63	Independen	506300042	Entergy Ark-Indepe	492.48	-457.61	1330	ISLE1	0.038	50.8	0.062	81.9	23	22	34		62
27	40	Okla	131	Rogers	212	Public Svc Co Of O	116	-394.96	1372	ISLE1	0.037	50.3	0.065	89.7	24	27	28		59
28	55	Wisc	9	Brown	405031990	Wi Public Service	711.56	538.78	325	ISLE1	0.031	10.1	0.069	22.4	193	37	211		53
29	38	Nort	65	Oliver	1	Milton R Young	-320.9	792.72	992	ISLE1	0.069	68.5	0.049	48.5	10	6	95		86
30	26	Mich	163	Wayne	B2811	Detroit Edison Tre	1132	321.47	711	ISLE1	0.021	15.1	0.113	80.1	124	74	36		19
31	48	Texa	449	Titus	3	Monticello Stm Ele	183.02	-764.16	1696	ISLE1	0.023	39.7	0.088	148.9	31	65	12		31
32	10	Dela	5	Sussex	1000500001	Indian River Gener	1865.7	68.12	1436	ISLE1	0.025	36.5	0.075	107.1	38	54	18		46
33	55	Wisc	79	Milwaukee	241007800	Wis Electric Power	735.39	372.57	493	ISLE1	0.024	11.8	0.081	39.9	163	62	122		38
34	21	Kent	177	Muhlenberg	2117700006	Tva Paradise Steam	881.29	-254.8	1136	ISLE1	0.020	22.4	0.119	135	72	85	13		18
35	22	Loui	77	Pointe_Cou	5	La Generating Llc/	541.11	-1012.9	1878	ISLE1	0.022	41.6	0.083	156.2	29	69	7		35
36	46	Sout	51	Grant	1001	Big Stone	38.52	588.77	686	ISLE1	0.061	41.9	0.045	31	27	9	158		95
37	48	Texa	401	Rusk	11	Martin Lake Electr	228.94	-855.56	1772	ISLE1	0.031	54.6	0.058	103.6	18	39	20		70
38	19	Iowa	179	Wapello	90-07-001	Ipl - Ottumwa Gene	370.37	130.73	789	ISLE1	0.024	19.1	0.073	57.3	92	60	74		49
39	21	Kent	41	Carroll	2104100010	Kentucky Utilities	1030.3	-70.65	999	ISLE1	0.020	20.2	0.091	90.6	83	80	26		30
40	39	Ohio	113	Montgomery	857780013	Dp&L, O.H. Hutchin	1080.8	32.2	926	ISLE1	0.022	20.1	0.081	74.6	84	71	42		39

Obs	State ID	State Name	County ID	County Name	Facility ID	Facility Name	X grid	Y Grid	Min Dist	Class	I Area	Q/d for Nox	Nox Emis (tons/day)	Q/d for SO2	SO2 Emis (tons/day)	Nox Emis. Rank	Nox Q/d Rank	SO2 Emis. Rank	SO2 Q/d Rank
41	54	West	79	Putnam	6	Appalachian Power	1309.8	-59.75	1122	ISLE1	0.024	26.9	0.072	81.2	57	61	35	50	
42	19	Iowa	193	Woodbury	97-04-010	Midamerican Energy	50.9	257.79	863	ISLE1	0.022	19.2	0.077	66.5	90	67	56	44	
43	20	Kans	149	Pottawatom	1	Westar Energy, Inc	76.41	-78.82	1111	ISLE1	0.067	74.3	0.043	47.4	8	7	99	104	
44	31	Nebr	55	Douglas	2	Omaha Public Power	87.56	147.4	920	ISLE1	0.030	27.6	0.057	52.4	54	40	86	74	
45	35	New	45	San_Juan	2	Four Corners	-1017	-302.17	2048	ISLE1	0.062	127.9	0.042	86.5	1	8	31	107	
46	18	Indi	89	Lake	117	Nipsco - Dean H. M	792.89	223.83	649	ISLE1	0.021	13.4	0.079	51.2	138	77	88	40	
47	5	Arka	69	Jefferson	506900110	Entergy Ark-White	444.95	-604.3	1482	ISLE1	0.019	27.8	0.091	134.8	53	92	14	29	
48	55	Wisc	3	Ashland	802033320	Northern States Po	470.9	749.06	227	ISLE1	0.021	4.7	0.073	16.5	328	76	252	48	
49	18	Indi	29	Dearborn	2	American Electric	1040.1	-31.95	967	ISLE1	0.025	24.1	0.060	57.8	62	58	71	67	
50	40	Okla	97	Mayes	799	Grand River Dam Au	152.96	-420.36	1381	ISLE1	0.033	45.3	0.046	63.1	26	33	65	94	
51	31	Nebr	131	Otoe	36	Oppd Nebraska City	102.73	69.51	973	ISLE1	0.031	30.1	0.046	45	48	38	107	89	
52	18	Indi	43	Floyd	4	Psi Energy - Galla	968.21	-132.21	1037	ISLE1	0.022	22.5	0.067	69.9	71	72	48	56	
53	19	Iowa	115	Louisa	58-07-001	Midamerican Energy	491.15	161.82	721	ISLE1	0.022	16	0.064	46	114	68	105	61	
54	17	Illi	97	Lake	097190AAC	Midwest Generation	737.64	294.2	571	ISLE1	0.019	10.8	0.078	44.3	176	89	109	42	
55	30	Mont	87	Rosebud	14	Colstrip	-745.5	692.28	1424	ISLE1	0.070	99.4	0.035	50.2	3	5	89	127	
56	19	Iowa	155	Pottawatta	78-01-026	Midamerican Energy	96.67	131.21	927	ISLE1	0.023	21.8	0.059	54.9	77	64	80	69	
57	29	Miss	189	St_Louis	10	Amerenuue-Meramec P	577.8	-155.79	1021	ISLE1	0.020	20.4	0.071	72.3	82	82	46	52	
58	54	West	33	Harrison	15	Monongahela Power	1420.2	62.14	1097	ISLE1	0.026	28.7	0.050	55.1	51	52	79	82	
59	29	Miss	175	Randolph	1	Associated Electri	372.28	-40.81	949	ISLE1	0.023	22.2	0.057	54.2	73	66	81	73	
60	17	Illi	179	Tazewell	179801AAA	Midwest Generation	623.59	83.59	779	ISLE1	0.015	11.8	0.109	85.2	161	120	33	22	
61	39	Ohio	81	Jefferson	641160017	W. H. Sammis Plant	1370.1	182.63	976	ISLE1	0.037	36.4	0.036	35.3	39	24	143	123	
62	1	Alab	127	Walker	1	Alabama Power Comp	905.95	-655.15	1535	ISLE1	0.021	32.7	0.056	86	45	73	32	75	
63	38	Nort	57	Mercer	1	Leland Olds	-333.9	817.63	1003	ISLE1	0.045	45.6	0.033	33.2	25	17	152	137	
64	1	Alab	73	Jefferson	10730011	Alabama Power Comp	918.55	-655.58	1537	ISLE1	0.014	20.8	0.098	151.2	80	130	10	25	
65	38	Nort	55	McLean	17	Coal Creek	-315	827.45	984	ISLE1	0.016	15.6	0.077	76.1	120	112	40	43	
66	26	Mich	121	Muskegon	B2836	B. C. Cobb Plant	867.65	412.1	491	ISLE1	0.015	7.2	0.085	41.9	246	122	116	33	
67	29	Miss	99	Jefferson	16	Amerenuue-Rush Isla	585.2	-185.06	1049	ISLE1	0.014	14.6	0.086	90.2	130	125	27	32	
68	18	Indi	51	Gibson	13	Psi Energy - Gibso	800.1	-139.75	1009	ISLE1	0.021	21.1	0.049	49.7	79	75	91	84	
69	18	Indi	167	Vigo	21	Psi Energy - Wabas	816.7	-9.44	883	ISLE1	0.020	18	0.050	43.7	96	78	110	83	
70	17	Illi	31	Cook	031600AIN	Midwest Generation	740.23	258.24	607	ISLE1	0.017	10.1	0.064	39	194	102	128	60	
71	39	Ohio	31	Coshocton	616000000	Conesville Power P	1273.1	126.55	951	ISLE1	0.017	15.9	0.060	57.5	116	100	72	65	
72	35	New	45	San_Juan	902	San Juan	-1004	-291.61	2031	ISLE1	0.038	77.5	0.033	66.3	7	23	57	143	
73	40	Okla	103	Noble	1211	Og&E	-4.49	-392.21	1422	ISLE1	0.026	37.4	0.039	55.6	35	51	78	115	
74	19	Iowa	5	Allamakee	03-03-001	lpl - Lansing Gene	470.71	385.08	515	ISLE1	0.019	9.8	0.054	27.6	198	90	180	79	
75	18	Indi	77	Jefferson	1	Ikec - Clifty Cree	996.96	-75.84	993	ISLE1	0.012	12	0.100	99.2	158	146	21	24	
76	26	Mich	115	Monroe	B2846	J.R. Whiting Co	1115.6	281.92	732	ISLE1	0.016	12	0.060	43.6	159	105	111	68	
77	17	Illi	137	Morgan	137805AAA	Ameren Energy Gene	573.75	-11.93	878	ISLE1	0.017	14.5	0.058	51.2	131	103	87	71	
78	56	Wyom	37	Sweetwater	1002	Jim Bridger	-972.4	254.8	1749	ISLE1	0.052	90.1	0.029	50	4	14	90	160	
79	27	Minn	109	Olmsted	2710900011	Rochester Public U	362.62	455.63	508	ISLE1	0.016	8.1	0.061	30.9	230	110	159	64	
80	39	Ohio	85	Lake	243160009	Cleveland Electric	1279.1	291.75	835	ISLE1	0.020	17	0.045	37.4	103	79	135	97	
81	48	Texa	161	Freestone	2	Big Brown	89.59	-907.29	1860	ISLE1	0.013	23.6	0.081	151.3	64	141	9	37	

Obs	State ID	State Name	County ID	County Name	Facility ID	Facility Name	X grid	Y Grid	Min Dist	Class	I Area	Q/d for Nox	Nox Emis (tons/day)	Q/d for SO2	SO2 Emis (tons/day)	Nox Emis. Rank	Nox Q/d Rank	SO2 Emis. Rank	SO2 Q/d Rank
82	42	Penn	123	Warren	421230004	Reliant Energy Mid	1461.5	347.07	945	ISLE1	0.014	13	0.067	63.5	142	127	64	57	
83	19	Iowa	193	Woodbury	97-04-011	Midamerican Energy	52.64	255.39	864	ISLE1	0.016	14	0.055	47.5	135	108	98	76	
84	26	Mich	65	Ingham	B2647	Eckert & Moores Pa	1011	370.28	598	ISLE1	0.019	11.1	0.046	27.6	173	93	181	91	
85	29	Miss	83	Henry	1	Kansas City Power	266.4	-182.27	1118	ISLE1	0.016	18.2	0.052	58.2	95	107	70	80	
86	42	Penn	7	Beaver	420070005	Pa Power Co/Bruce	1385.8	197.02	978	ISLE1	0.015	14.9	0.057	56.2	128	116	75	72	
87	47	Tenn	161	Stewart	11	Tva Cumberland Fos	832.73	-356.9	1229	ISLE1	0.014	17.5	0.060	74	101	123	43	66	
88	13	Geor	15	Bartow	1500011	Georgia Power Comp	1108	-577.91	1505	ISLE1	0.018	27.5	0.045	67.5	55	96	54	96	
89	54	West	61	Monongalia	1	Monongahela Power	1447.5	102.18	1088	ISLE1	0.032	35	0.029	31.3	40	34	157	158	
90	26	Mich	103	Marquette	B1833	Marquette Board Of	736.83	764.5	118	ISLE1	0.019	2.2	0.043	5.1	476	91	398	103	
91	17	Illi	21	Christian	021814AAB	Kincaid Generation	640.02	-18.93	880	ISLE1	0.012	10.4	0.074	64.8	183	148	62	47	
92	39	Ohio	1	Adams	701000007	Dp&L, J.M. Stuart	1146.6	-66.91	1044	ISLE1	0.015	15.9	0.054	56.1	117	118	76	78	
93	39	Ohio	61	Hamilton	1431350093	Cinergy Corp Miami	1044.5	-28.04	965	ISLE1	0.017	16.1	0.043	41.9	109	99	115	101	
94	12	Flor	17	Citrus	170004	Progress Energy Fl	1400.3	-1117.6	2110	ISLE1	0.014	29.8	0.054	114.4	50	124	15	77	
95	1	Alab	71	Jackson	8	Tva - Widows Creek	1021.5	-503.21	1409	ISLE1	0.009	13.2	0.106	149.4	140	179	11	23	
96	21	Kent	111	Jefferson	127	Lou Gas & Elec, Mi	964.53	-156.68	1060	ISLE1	0.009	10	0.092	97.3	196	178	23	26	
97	17	Illi	79	Jasper	079808AAA	Ameren Energy Gene	757.13	-86.21	951	ISLE1	0.018	17.5	0.041	39.1	100	94	126	110	
98	18	Indi	125	Pike	2	Ipl Petersburg Gen	842.68	-117.98	994	ISLE1	0.012	11.5	0.069	68.3	167	151	52	54	
99	29	Miss	165	Platte	7	Kansas City Power	172.78	-58.96	1045	ISLE1	0.016	16.3	0.046	47.8	107	115	96	93	
100	17	Illi	127	Massac	127855AAC	Electric Energy In	730.42	-276.69	1139	ISLE1	0.013	15.1	0.052	58.7	126	132	69	81	
101	32	Neva	3	Clark	P001	Mohave	-1586	-385.32	2576	ISLE1	0.031	80.3	0.025	64.2	6	36	63	178	
102	8	Colo	81	Moffat	18	Craig	-890.3	103.31	1733	ISLE1	0.030	51.8	0.021	37.1	22	41	137	199	
103	47	Tenn	85	Humphreys	11	Tva Johnsonville F	807.5	-400.68	1269	ISLE1	0.007	9.2	0.121	153.1	207	230	8	17	
104	38	Nort	57	Mercer	12	Coyote	-365.6	812.34	1035	ISLE1	0.037	38	0.015	15.6	33	26	261	242	
105	49	Utah	15	Emery	10237	Hunter (Emery)	-1199	1.37	2056	ISLE1	0.027	54.6	0.017	35.7	19	49	142	224	
106	56	Wyom	9	Converse	1	Dave Johnston	-712.4	349.12	1472	ISLE1	0.028	41.8	0.015	22.6	28	44	209	241	
107	56	Wyom	31	Platte	1	Laramie River	-646.5	261.76	1445	ISLE1	0.037	53.2	0.013	18.4	21	25	238	266	
108	37	Nort	35	Catawba	3703500073	Duke Energy Corpor	1439.2	-361.13	1445	ISLE1	0.026	38.2	0.012	17	32	50	247	282	
109	55	Wisc	123	Vernon	663020930	Dairyland Power Co	499.22	413.37	478	ISLE1	0.005	2.4	0.082	39.2	461	298	124	36	
110	53	Wash	41	Lewis	10	Centralia	-1953	1030.3	2627	ISLE1	0.027	71.5	0.012	30.3	9	48	163	286	
111	49	Utah	27	Millard	10327	Intermountain	-1324	59.6	2148	ISLE1	0.029	62.4	0.009	20.2	13	43	222	318	
112	4	Ariz	5	Coconino	4	Navajo	-1269	-242	2230	ISLE1	0.039	86.8	0.006	13.2	5	21	286	371	
113	47	Tenn	165	Sumner	25	Tva Gallatin Fossi	944.61	-353.49	1245	ISLE1	0.028	34.8	0.005	6.5	41	46	372	389	

Table 4. 2018 Q/d for non-EGUs for Isle Royale in and out of state.

Obs	State ID	State Name	County ID	County Name	Facility ID	Facility Name	X grid	Y Grid	Min Dist	Class Area	Q/d for Nox	Nox Emis (tons/day)	Q/d for SO2	SO2 Emis (tons/day)	Nox Emis. Rank	Nox Q/d Rank	SO2 Emis. Rank	SO2 Q/d Rank
1	26	Mich	7	Alpena	B1477	LAFARGE NORTH AMER	1064.79	642.46	453	ISLE1	0.06	27.2	0.137	61.9	9	4	10	2
2	26	Mich	103	Marquette	B4885	TILDEN MINING COMP	717.88	752.31	119	ISLE1	0.164	19.5	0.059	7	21	1	254	11
3	18	Indi	127	Porter	1	BETHLEHEM STEEL CO	816.81	225.57	652	ISLE1	0.038	24.7	0.073	47.9	12	10	18	4
4	55	Wisc	9	Brown	405032870	Fort James Operati	711.36	532.24	331	ISLE1	0.034	11.3	0.104	34.5	73	14	32	3
5	18	Indi	79	Jennings	2	MUSCATATUCK STATE	983.64	-43.09	957	ISLE1	0.035	33.7	0.055	53	4	12	12	12
6	26	Mich	131	Ontonagon	A5754	STONE CONTAINER CO	585.66	788.16	110	ISLE1	0.025	2.8	0.051	5.6	590	16	295	14
7	55	Wisc	69	Lincoln	735008010	PACKAGING CORPORAT	556.13	626.3	260	ISLE1	0.019	4.8	0.072	18.8	333	26	75	5
8	26	Mich	41	Delta	A0884	ESCANABA PAPER COM	768.76	686.2	202	ISLE1	0.053	10.7	0.038	7.7	81	6	235	25
9	55	Wisc	87	Outagamie	445031180	INTERNATIONAL PAPE	694.55	508.2	354	ISLE1	0.016	5.7	0.061	21.4	250	31	66	9
10	29	Miss	163	Pike	1	HOLCIM (US) INC-CL	517.79	-51.92	925	ISLE1	0.023	21.7	0.041	38.1	16	20	28	21
11	26	Mich	29	Charlevoix	B1559	CEMEX, INC.	913.95	648.93	324	ISLE1	0.035	11.4	0.036	11.6	71	13	142	30
12	35	New	43	Sandoval	350430005	RIO RANCHO FACILIT	-873.64	-482.1	2045	ISLE1	0.016	33.4	0.051	103.7	5	30	3	15
13	18	Indi	89	Lake	121	U S STEEL CO GARY	800.33	221.74	653	ISLE1	0.026	16.7	0.032	20.8	37	15	70	33
14	36	New	1	Albany	4012400001	LAFARGE BUILDING M	1875.55	517.3	1255	ISLE1	0.015	18.6	0.059	73.6	27	40	7	10
15	17	Illi	31	Cook	031012ABI	CORN PRODUCTS INTE	757.27	234.85	632	ISLE1	0.016	10.2	0.045	28.2	95	32	45	18
16	19	Iowa	33	Cerro_Gord	17-01-005	LEHIGH CEMENT COMP	306.72	359.46	618	ISLE1	0.016	9.8	0.048	29.4	98	34	41	17
17	55	Wisc	141	Wood	772009480	Stora Enso No. Ame	572.9	514.1	360	ISLE1	0.015	5.4	0.039	14.1	284	39	114	24
18	19	Iowa	33	Cerro_Gord	17-01-009	HOLCIM (US) INC. -	307.38	358.1	619	ISLE1	0.019	11.9	0.026	16.3	60	23	92	41
19	55	Wisc	85	Oneida	744008100	RHINELANDER PAPER	590.04	650.4	225	ISLE1	0.018	4	0.027	6	415	28	285	40
20	48	Texa	331	Milam	1	ALCOA SANDOW PLANT	-6.64	-1048.6	2025	ISLE1	0.011	22.8	0.07	140.8	15	64	2	6
21	27	Minn	137	St_Louis	2713700113	EVTAC Mining - Fai	332.38	817.67	339	ISLE1	0.015	5.2	0.029	9.8	291	35	175	36
22	47	Tenn	163	Sullivan	3	EASTMAN CHEMICAL C	1282.39	-283.13	1298	ISLE1	0.012	15.3	0.05	64.5	42	62	9	16
23	19	Iowa	45	Clinton	23-01-006	ADM CORN PROCESSIN	559.9	222.35	648	ISLE1	0.02	12.9	0.021	13.5	54	22	118	61
24	27	Minn	37	Dakota	2703700011	Flint Hills Resour	313.1	536.07	481	ISLE1	0.019	9	0.021	10	120	25	173	60
25	27	Minn	137	St_Louis	2713700005	US Steel Corp - Mi	329.2	844.37	339	ISLE1	0.119	40.4	0.016	5.3	1	2	307	85
26	31	Nebr	25	Cass	2	Ash Grove Cement C	70.4	111.58	959	ISLE1	0.016	15.3	0.021	19.9	41	33	71	62
27	19	Iowa	163	Scott	82-04-005	LAFARGE NORTH AMER	522.89	179.92	696	ISLE1	0.011	7.5	0.03	21.1	158	67	68	34
28	19	Iowa	113	Linn	57-01-080	ADM CORN PROCESSIN	437.9	226	675	ISLE1	0.014	9.4	0.021	14.4	111	46	109	57
29	17	Illi	179	Tazewell	179060ACR	WILLIAMS ETHANOL S	616.71	86.4	776	ISLE1	0.009	7	0.04	31.1	177	84	37	22

Obs	State ID	State Name	County ID	County Name	Facility ID	Facility Name	X grid	Y Grid	Min Dist	Class Area	Q/d for Nox	Nox Emis (tons/day)	Q/d for SO2	SO2 Emis (tons/day)	Nox Emis. Rank	Nox Q/d Rank	SO2 Emis. Rank	SO2 Q/d Rank
30	39	Ohio	141	Ross	671010028	MW CUSTOM PAPERS L	1196.53	14.78	997	ISLE1	0.008	8.1	0.053	52.5	135	98	13	13
31	55	Wisc	75	Marinette	438039360	Stora Enso No. Ame	699.42	675.24	188	ISLE1	0.01	1.9	0.027	5	817	74	318	39
32	22	Loui	19	Calcasieu	16	CITGO PETROLEUM CO	354.5	-1083.4	1969	ISLE1	0.013	26.2	0.019	38.4	11	50	27	66
33	21	Kent	19	Boyd	2101900004	MARATHON ASHLAND P	1245.07	-80.57	1104	ISLE1	0.013	14.2	0.021	22.9	48	53	58	63
34	48	Texa	245	Jefferson	18	BEAUMONT REFINERY	284	-1098.2	1996	ISLE1	0.01	20.4	0.026	51.9	19	72	14	45
35	38	Nort	57	Mercer	65	GREAT PLAINS SYNFU	-366.4	822.14	1035	ISLE1	0.012	12.5	0.021	21.7	55	59	65	59
36	55	Wisc	141	Wood	772010690	Domtar A. W. Corp-	564.3	500.64	375	ISLE1	0.01	3.6	0.028	10.4	459	80	168	38
37	47	Tenn	107	McMinn	12	BOWATER NEWSPRINT	1106.02	-447.1	1379	ISLE1	0.012	16.3	0.021	29	39	61	43	58
38	26	Mich	103	Marquette	B1827	EMPIRE IRON MINING	721.86	753.57	120	ISLE1	0.087	10.4	0.011	1.4	89	3	652	117
39	18	Indi	89	Lake	316	ISPAT INLAND INC.	789.68	225.78	647	ISLE1	0.023	15.1	0.013	8.5	44	21	209	101
40	29	Miss	186	Ste_Genevi	1	MISSISSIPPI LIME C	604.82	-201.25	1064	ISLE1	0.01	10.5	0.022	22.9	85	75	57	56
41	17	Illi	143	Peoria	143065AJE	ARCHER DANIELS MID	620.28	100.05	762	ISLE1	0.011	8.1	0.02	15.1	137	68	101	65
42	17	Illi	197	Will	197090AAI	CITGO PETROLEUM CO	739.52	218.57	646	ISLE1	0.009	5.7	0.022	14.3	253	85	112	53
43	37	Nort	87	Haywood	3708700159	BLUE RIDGE PAPER P	1273.03	-395.75	1395	ISLE1	0.011	15.1	0.017	24	43	66	54	73
44	22	Loui	101	St_Mary	5	COLUMBIAN CHEM CO/	539.96	-1130.4	1995	ISLE1	0.008	16.8	0.024	47	36	91	22	50
45	26	Mich	163	Wayne	A7809	NATIONAL STEEL COR	1135.07	339.67	700	ISLE1	0.014	9.6	0.014	9.7	105	48	178	94
46	17	Illi	197	Will	197800AAA	EXXONMOBIL OIL COR	731.72	191.95	672	ISLE1	0.01	6.6	0.017	11.6	202	78	140	72
47	51	Virg	580	Covington_	3	MEADWESTVACO PACKA	1479.42	-104.98	1261	ISLE1	0.007	8.3	0.038	48.2	131	124	17	27
48	36	New	55	Monroe	8261400205	KODAK PARK DIVISIO	1554.15	520.79	949	ISLE1	0.006	5.4	0.065	61.7	278	155	11	8
49	18	Indi	93	Lawrence	2	LEHIGH CEMENT COMP	908.36	-87.24	978	ISLE1	0.012	11.8	0.012	12	64	57	134	110
50	26	Mich	115	Monroe	B1743	HOLCIM (US) INC.	1095.18	301.31	704	ISLE1	0.006	4.1	0.038	26.6	401	151	48	29
51	17	Illi	119	Madison	119813AAI	NATIONAL STEEL COR	593.44	-122.12	986	ISLE1	0.01	10	0.012	11.5	97	73	146	112
52	36	New	39	Greene	4192600021	ST LAWRENCE CEMENT	1877.11	479.42	1268	ISLE1	0.009	11	0.013	16.6	74	88	89	103
53	55	Wisc	141	Wood	772010140	Stora Enso No. Ame	569.27	510.68	364	ISLE1	0.015	5.3	0.009	3.3	286	41	422	150
54	24	Mary	5	Baltimore	005-0147	BETHLEHEM STEEL	1745	111.32	1312	ISLE1	0.01	13	0.011	14.8	51	76	104	118
55	27	Minn	137	St_Louis	2713700063	Keewatin Taconite	341.99	853.46	326	ISLE1	0.059	19.4	0.007	2.3	23	5	499	193
56	55	Wisc	9	Brown	405032210	PROCTER & GAMBLE P	712.19	536.92	327	ISLE1	0.007	2.2	0.016	5.3	724	119	309	81
57	39	Ohio	3	Allen	302020012	PREMCOR REFINING G	1077.33	156.38	815	ISLE1	0.008	6.2	0.013	10.9	220	106	154	97
58	18	Indi	89	Lake	3	BP PRODUCTS NORTH	786.62	226.25	646	ISLE1	0.024	15.6	0.007	4.6	40	19	337	186
59	48	Texa	201	Harris	39	DEER PARK PLANT	181.22	-1140.9	2060	ISLE1	0.009	18.8	0.011	21.9	26	83	64	125

Obs	State ID	State Name	County ID	County Name	Facility ID	Facility Name	X grid	Y Grid	Min Dist	Class I Area	Q/d for Nox	Nox Emis (tons/day)	Q/d for SO2	SO2 Emis (tons/day)	Nox Emis. Rank	Nox Q/d Rank	SO2 Emis. Rank	SO2 Q/d Rank
60	54	West	51	Marshall	2	PPG INDUSTRIES, IN	1368.77	92.13	1040	ISLE1	0.005	5.3	0.033	34.6	288	188	31	31
61	48	Texa	233	Hutchinson	15	BORGER REFINERY	-393.25	-467.47	1700	ISLE1	0.005	9.1	0.023	39.1	117	170	26	51
62	24	Mary	1	Allegany	001-0011	WESTVACO FINE PAPE	1523.36	92.53	1150	ISLE1	0.005	5.4	0.043	49.5	281	209	15	19
63	48	Texa	139	Ellis	22	HOLCIM (TEXAS) LP	2.71	-830.73	1818	ISLE1	0.011	19.3	0.008	14.6	24	69	107	167
64	48	Texa	167	Galveston	1	TEXAS CITY REFINER	202.52	-1179	2092	ISLE1	0.009	19.5	0.009	17.8	22	82	77	158
65	17	Illi	99	La_Salle	099816AAF	LONE STAR INDUSTRI	660.86	171.62	689	ISLE1	0.006	3.8	0.016	10.8	427	162	156	86
66	55	Wisc	31	Douglas	816009590	MURPHY OIL USA	375.35	752.08	313	ISLE1	0.005	1.7	0.016	5	895	169	319	83
67	39	Ohio	17	Butler	1409010006	AK STEEL CORPORATI	1074.3	17.69	936	ISLE1	0.007	6.1	0.01	9.7	223	127	176	127
68	28	Miss	59	Jackson	2805900058	CHEVRON PRODUCTS C	805.08	-1022.4	1888	ISLE1	0.007	12.9	0.01	18.6	53	117	76	138
69	19	Iowa	139	Muscatine	70-01-004	GRAIN PROCESSING C	493.3	171.15	712	ISLE1	0.004	3.1	0.039	27.9	539	234	47	23
70	54	West	3	Berkeley	6	CAPITOL CEMENT COR	1615.47	106.66	1211	ISLE1	0.01	11.6	0.007	9	67	79	196	180
71	55	Wisc	73	Marathon	737009570	MOSINEE PAPER CORP	576.5	554.53	320	ISLE1	0.006	1.9	0.011	3.7	821	150	392	114
72	45	Sout	75	Orangeburg	1860-0005	HOLCIM:HOLLY HILL	1533.29	-599.62	1697	ISLE1	0.006	10.9	0.01	17.2	77	132	83	133
73	48	Texa	139	Ellis	2	NORTH TEXAS CEMENT	-0.39	-829.74	1818	ISLE1	0.006	10.9	0.01	18.9	75	145	74	128
74	47	Tenn	163	Sullivan	22	WILLAMETTE INDUSTR	1280.28	-281.22	1296	ISLE1	0.006	8.3	0.01	12.6	132	134	129	139
75	51	Virg	23	Botetourt	3	ROANOKE CEMENT COM	1486.06	-140.6	1293	ISLE1	0.007	8.4	0.009	11.9	129	128	135	147
76	28	Miss	87	Lowndes	2808700025	HOLNAM INC, ARTESI	776.03	-700.15	1565	ISLE1	0.007	10.6	0.008	13.1	84	118	124	161
77	18	Indi	17	Cass	5	ESSROC CEMENT CORP	886.86	133.3	760	ISLE1	0.006	4.7	0.009	7	341	136	253	145
78	26	Mich	121	Muskegon	A4203	S. D. WARREN, MUSK	863.45	407.17	494	ISLE1	0.009	4.3	0.007	3.4	382	87	410	194
79	27	Minn	137	St_Louis	2713700061	Hibbing Taconite C	312.33	829.93	357	ISLE1	0.051	18.2	0.005	1.7	30	8	573	273
80	18	Indi	19	Clark	8	ESSROC CEMENT CORP	973.34	-115.29	1023	ISLE1	0.005	5.4	0.012	12.7	285	175	128	107
81	37	Nort	117	Martin	3711700069	WEYERHAEUSER COMPA	1802.13	-257.21	1592	ISLE1	0.008	13.1	0.007	11.3	50	94	151	188
82	17	Illi	119	Madison	119090AAA	TOSCOPIETRO CORP	597.73	-106.12	970	ISLE1	0.009	8.5	0.007	6.3	127	86	275	204
83	17	Illi	115	Macon	115015AAE	ARCHER DANIELS MID	688.52	16.11	845	ISLE1	0.013	11.3	0.006	4.6	72	49	331	242
84	56	Wyom	37	Sweetwater	5603700048	SODIUM PRODUCTS	-1057.5	253.95	1829	ISLE1	0.006	11.9	0.008	15.1	61	131	100	162
85	18	Indi	129	Posey	2	GE PLASTICS MT. VE	792.71	-187.85	1056	ISLE1	0.006	6.5	0.009	9.2	209	142	189	152
86	1	Alab	103	Morgan	10	SOLUTIA, INC	909.72	-543.84	1425	ISLE1	0.005	6.5	0.016	23.1	205	219	56	82
87	5	Arka	3	Ashley	500300013	GEORGIA-PACIFIC CO	483.48	-742.27	1614	ISLE1	0.007	10.9	0.007	11.7	78	120	137	185
88	55	Wisc	87	Outagamie	445030960	Stora Enso No. Ame	688.7	507.13	354	ISLE1	0.005	1.6	0.013	4.6	911	217	339	105
89	42	Penn	95	Northampto	420950006	HERCULES CEMENT CO	1805.85	300.02	1268	ISLE1	0.006	7.1	0.008	10.2	176	161	171	166

Obs	State ID	State Name	County ID	County Name	Facility ID	Facility Name	X grid	Y Grid	Min Dist	Class Area	Q/d for Nox	Nox Emis (tons/day)	Q/d for SO2	SO2 Emis (tons/day)	Nox Emis. Rank	Nox Q/d Rank	SO2 Emis. Rank	SO2 Q/d Rank
90	48	Texa	245	Jefferson	4	PORT ARTHUR REFINE	295.78	-1122.4	2018	ISLE1	0.007	15.1	0.006	12.2	45	108	131	220
91	51	Virg	101	King_Willi	1	STONE CONTAINER CO	1758.92	-76.26	1438	ISLE1	0.005	7.3	0.009	13.2	168	189	119	146
92	38	Nort	105	Williams	270	TIOGA GAS PLANT	-483.02	945.64	1154	ISLE1	0.008	9.5	0.006	6.3	107	92	274	243
93	47	Tenn	65	Hamilton	3070	SIGNAL MOUNTAIN CE	1055.41	-474.82	1391	ISLE1	0.008	10.6	0.006	8	83	105	226	235
94	28	Miss	77	Lawrence	2807700007	GEORGIA PACIFIC CO	656.91	-904.14	1765	ISLE1	0.006	10.5	0.007	11.8	88	148	136	197
95	54	West	51	Marshall	11	VENCO MOUNDSVILLE	1369.32	103.48	1032	ISLE1	0.004	3.8	0.025	26.2	426	304	49	46
96	42	Penn	95	Northampto	420950012	KEYSTONE PORTLAND	1796.01	293.91	1262	ISLE1	0.005	6.5	0.008	9.6	203	178	182	178
97	48	Texa	139	Ellis	9	MIDLOTHIAN PLANT	-2.46	-836.27	1825	ISLE1	0.009	17.2	0.005	8.8	31	81	203	276
98	13	Geor	115	Floyd	11500021	INLAND PAPERBOARD	1069.64	-568.38	1485	ISLE1	0.005	7.6	0.008	11.3	151	183	150	175
99	42	Penn	73	Lawrence	420730024	CEMEX INC/WAMPUM C	1388.73	225.03	961	ISLE1	0.005	4.3	0.01	9.3	377	222	188	140
100	45	Sout	41	Florence	1040-0003	STONE CONTAINER FL	1573.22	-495.26	1630	ISLE1	0.006	9.2	0.006	10.6	116	158	162	205
101	17	Illi	31	Cook	ORD	O'Hare Airport	748.32	256.51	610	ISLE1	0.051	31.2	0.003	2.1	7	7	522	358
102	46	Sout	103	Pennington	28.1121-02	GCC DACOTAH	-500.27	470.86	1232	ISLE1	0.017	20.8	0.004	4.5	18	29	347	337
103	22	Loui	19	Calcasieu	69	VENCO/LAKE CHARLES	354.38	-1087.5	1974	ISLE1	0.003	6.5	0.038	74.9	208	349	6	28
104	22	Loui	89	St_Charles	79	SHELL CHEMICAL LP/	639.64	-1087.8	1949	ISLE1	0.019	37	0.003	6.8	2	24	264	355
105	51	Virg	670	Hopewell_C	26	HONEYWELL NYLON IN	1724.53	-110.82	1435	ISLE1	0.024	35	0.003	4.9	3	18	325	362
106	54	West	73	Pleasants	6	CABOT CORPORATION-	1333.59	40.93	1056	ISLE1	0.003	3.3	0.028	29.8	494	374	40	37
107	16	Idah	29	Caribou	2900001	P4 PRODUCTION LLC	-1184.4	393.32	1911	ISLE1	0.003	6	0.025	47.2	234	370	21	48
108	26	Mich	43	Dickinson	B7192	INTERNATIONAL PAPE	701.73	678.23	186	ISLE1	0.025	4.6	0.003	0.5	356	17	1000	405
109	27	Minn	137	St_Louis	2713700062	lspat Inland Minin	344.47	852.92	324	ISLE1	0.044	14.2	0.002	0.7	47	9	924	455
110	29	Miss	99	Jefferson	2	RC CEMENT COMPANY	577.69	-182.41	1047	ISLE1	0.014	14.4	0.002	2.3	46	47	498	444
111	27	Minn	53	Hennepin	27053XMSP	MINNEAPOLIS-ST PAU	298.25	547.7	485	ISLE1	0.018	8.8	0.002	0.9	122	27	825	491
112	42	Penn	41	Cumberland	420410013	PPG IND INC/WORKS	1665.79	196.8	1198	ISLE1	0.014	17.1	0.001	1.5	33	43	614	608
113	48	Texa	485	Wichita	15	WORKS NO 4	-143.17	-664.17	1728	ISLE1	0.014	24	1E-03	1.7	13	45	581	698
114	22	Loui	39	Evangeline	1	CABOT CORPORATION/	456.09	-1015.5	1888	ISLE1	0.002	3.1	0.026	49.4	519	713	16	44
115	48	Texa	227	Howard	2	BIG SPRING CARBON	-416.53	-847.53	2024	ISLE1	0.002	3.1	0.024	47.9	544	779	19	49
116	22	Loui	47	Iberville	8	DOW CHEMICAL CO/LA	557.14	-1058.1	1922	ISLE1	0.014	27.4	7E-04	1.3	8	42	660	817
117	17	Illi	197	Will	197803AAK	CHICAGO CARBON CO	740.81	220.67	644	ISLE1	1E-03	0.6	0.025	16.4	2000	1000	91	47
118	22	Loui	33	East_Baton	21	GREAT LAKES CARBON	554.41	-1028.3	1893	ISLE1	9E-04	1.7	0.043	81.4	905	1000	5	20
119	1	Alab	53	Escambia	7	EXXONMOBIL PRODUCT	920.59	-943.87	1822	ISLE1	5E-04	0.9	0.026	47.8	1000	2000	20	43

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120	47	Tenn	163	Sullivan	7	SEAMAN CORPORATION	1314.19	-273.47	1305	ISLE1	0.015	20	1E-04	0.1	20	37	2000	2000
121	21	Kent	91	Hancock	2109100004	CENTURY ALUMINUM O	890.34	-177.37	1062	ISLE1	4E-04	0.4	0.03	31.9	2000	2000	34	35
122	28	Miss	67	Jones	2806700010	TRANSCONTINENTAL G	753	-875.43	1738	ISLE1	0.015	26.7	7E-05	0.1	10	36	2000	2000
123	29	Miss	93	Iron	8	DOE RUN COMPANY-GL	554.08	-259.61	1126	ISLE1	2E-04	0.3	0.175	196.9	3000	3000	1	1
124	48	Texa	39	Brazoria	41	PLANT B	157.03	-1224	2147	ISLE1	0.015	32.3	1E-05	0	6	38	4000	4000
125	51	Virg	11	Appomattox	11	TRANSCO STATION 17	1587.14	-134.93	1355	ISLE1	0.014	18.9	0	0	25	44	5000	5000
126	29	Miss	99	Jefferson	3	DOE RUN COMPANY-HE	575.2	-171.7	1037	ISLE1	8E-05	0.1	0.069	72	6000	6000	8	7
127	17	Illi	31	Cook	031600AMC	LTV STEEL CO	780.85	227.97	643	ISLE1	0.036	23.3	0	0	14	11	10000	10000
128	28	Miss	121	Rankin	2812100036	PURSUE ENERGY CORP	662.47	-843.93	1705	ISLE1	1E-05	0	0.026	44.7	10000	10000	24	42
129	4	Ariz	7	Gila	40072435	ASARCO - RAY COMPL	-1271	-590.46	2422	ISLE1	.	.	0.038	92.7	30000	30000	4	26
130	18	Indi	89	Lake	383	COKENERGY INC.	791.75	227.82	645	ISLE1	.	.	0.033	21.3	30000	60000	67	32