Comparison of High SQGs from LWG Floating Percentile Method

Chemical	LWG Final	PEC	PEL	EPA Lowest	EPA Pooled
Metals (mg/kg)					
Arsenic		33	17	22.9	22.9
Cadmium	3.51	4.98	3.53	3.51	3.51
Copper	562	149	197	562	562
Lead		128	91.3	1290	1290
Mercury	0.722	1.06	0.486	0.722	0.624
Silver	1.72			1.72	1.72
PAHs (ug/kg)					
Sum 34 ESB PAHs					
Benzofluoranthenes	53,000			53,000	53,000
HPAHs	610,000			610,000	610,000
LPAHs	18,000			1,600	2,300
Total PAHs		22,800	-	1,300,000	1,300,000
SVOC (ug/kg)					
Benzyl alcohol	36			16	16
Carbazole	1100			540	1100
Phenol	120			34	34
4-Methylphenol				96	96
Diethylphthalate				7	370
PCBs	500	676	277	3500	300
Pesticides (ug/kg)					
delta-HCH	2.35			1.29	0.912
Dieldrin	21.5			21.5	21.5
Endrin	20.8	207	62.4	20.7	20.7
Endrin ketone	8.5			8.5	8.5
Sum DDD		28	8.51	331	2460
Sum DDE		31.3	6.75	906	906
Sum DDT		63	?	72	8,110
DDx	218	572	-	11,500	53,000
TPH					
PYO-PTO				15,000	15,000
Conventionals (mg/kg)					
Ammonia	276			168	171
Sulfide	38.5			38.5	29.1
TOC (%)				13	2.7
Total fines (%)				80.4	80.4

Red indicates FPM used to derive PRG

LWG final SQGs from Benthic Reanalysis Memorandum, November 14, 2009, Table 4-5, high-toxicity threshold, BERA.
EPA values taken from LWG spreadsheets and evaluated in the following worksheets.
Lowest = lowest value from SQGs developed for each of four bioassay endpoints.
Pooled = FPM results for combined dataset where a hit in any bioassay is considered a hit for the sample.

LWG results copied from individual FPM files

High EPA	%False Negatives	%False Positives	Hit Reliability	Miss Reliability	Prec(Hit) Reliability	Prec(Miss) Reliability	Overall Reliability	4-Methylpl	Ammonia	Antimony	Arsenic	Benzyl alco	Cadmium	Carbazole	Chromium	Copper	delta-Hexa	Dibutylbin	Dieldrin	Dimthyl phl	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD (	Sum DDE (	Sum DDT (	Total % Fo	Total Beta	Total Chlo	Total DDTs	Total HPAH	Total LPAH	Total organ	Total PAHs	Total PCBs	Zinc
EPA	16.5%																																									
EPA Post-BIBA Pooled FN = 20	30.0	39.1	80.0	63.8	39.4	91.9	66.3	96	171	38.3	22.9	14	3.51	1100	224	592	0.614	910	21.5	270	28.7	8.5	1290	4.824	34	16000	1.72	29.1	2880	906	8143	80.4	50000	688	11600	630000	2900	2.7	1300000	300	1840
EPA pooled w/o HY G	18.2	18.1	86.8	81.8	44.4	96.1	81.8	96	171	38.3	34	38	3.51	1100	224	592	2.35	910	21.5	270	28.8	8.5	1290	4.867	130	26000	1.72	38.5	112	906	8143	260	50000	688	11600	630000	860000	13	1900000	300	1840
EPA pooled w/o HY G reduced	18.2	24.9	84.8	75.5	38.7	95.9	76.1						3.51	1100		592	2.35		21.5		28.7	8.5		4.824	130		1.72	29.1	2880	39.1	8143		50000		11600			2.7	1300000	300	
EPA CH G hi	12.0	13.9	91.9	88.1	49.3	98.6	88.3	96	171	38.3	32	26	3.51	560	41.6	592	2.35	910	21.5	270	28.8	8.5	1	3.914	130	27200	1.72	132	2880	906	71.6	100	50000	688	11600	610000	19000	13	1300000	1600	1840
EPA CH S hi	18.8	12.3	89.3	87.7	44.8	97.4	87.0	125	334	38.3	34	28	3.51	2600	224	1080	4.35	910	21.5	270	28.7	8.5	1290	4.722	130	26000	1.72	38.5	231	906	8143	100	50000	688	11600	610000	2300	13	1300000	1600	1840
EPA HY G hi	17.9	33.9	82.1	66.1	27.1	96.6	66.3	260	188	38.3	22.9	14	3.51	39000	224	592	1.29	150	21.5	7	28.8	8.5	1290	3.722	34	16000	1.72	994	2880	906	8143	80.4	160000	688	11600	1900000	1600	13	1700000	1600	1840
EPA HY S hi	15.8	3.7	84.2	96.3	56.2	99.9	95.5	260	334	38.3	22	26	3.51	2600	224	592	4.35	910	21.5	270	28.8	8.5	1290	4.722	130	26000	1.72	994	2570	906	8143	100	160000	688	11600	1900000	24000	13	1700000	1600	1840
EPA Lowest	21.6	27.0	78.5	62.7	27.6	91.1	60.2	96	188	38.3	22.9	14	3.51	560	41.6	592	1.29	150	21.5	7	28.7	8.5	1290	3.722	34	16000	1.72	38.5	231	906	71.6	80.4	50000	688	11600	610000	1600	13	1300000	1600	1840
EPA 2nd Lowest	10.8	11.8	89.2	84.2	52.2	95.9	79.1	125	171	38.3	32	26	3.51	2600	224	592	1.29	910	21.5	270	28.8	8.5	1290	4.722	130	16000	1.72	132	2570	906	8143	100	160000	688	11600	1900000	24000	13	1700000	1600	1840
FEC	28.2	25.5	70.9	71.5	39.7	94.1	66.5				33		4.98			149					207		128	1.56					28	31.3	62.9				572				23900	676	
PEL	28.2	25.5	70.9	71.5	39.7	94.1	66.5				17		3.53			107					62.4		91.3	0.486					8.51	6.75									277		
EPA HY G hi FN=20	17.9	33.9	80.1	66.1	27.1	96.0	66.3	260	188	38.3	22.9	14	3.51	39000	224	592	1.29	150	21.5	7	28.8	8.5	1290	3.722	34	16000	1.72	994	2880	906	8143	80.4	160000	688	11600	1900000	1600	13	1700000	1600	1840
EPA HY G hi FN=15	12.8	36.2	87.2	63.8	27.0	97.0	66.9	260	334	38.3	22.9	14	3.51	39000	224	592	1.29	910	21.5	7	28.8	8.5	1290	3.722	34	16000	1.72	994	2880	906	8143	75.9	160000	688	11600	1900000	1600	13	1700000	1600	1840

	a	c	b	d	N				
	Hit Pooled HY	Hit Pooled W	False Pos Pooled	False Pos Pooled W	Hit Statistics	Hit Statistics	False Pos Statistics	Kappa	Hit
EPA Pooled High - pooled	52	148	80	13	65	228	293	0.33	0.86
EPA Pooled High - lowest	51	143	85	14	65	228	293	0.30	0.88
EPA Pooled Hi FN=30	46	163	65	19	65	228	293	0.34	0.88
EPA Pooled Hi FN=40	39	181	47	26	65	228	293	0.35	0.89
EPA 2nd Lowest	32	201	27	33	65	228	293	0.39	0.88
FEC	33	171	57	32	65	228	293	0.23	0.95
PEL	35	148	80	30	65	228	293	0.15	0.98

Kappa = ((a+d)-(((a+c)(a+b)+(b+d)(c+d))/N))/(N-(((a+c)(a+b)+(b+d)(c+d))/N))

Normalized Mutual Information: NMI = (-a*log(a)-b*log(b)-c*log(c)-d*log(d)+(a+b)*log(a+b)+(c+d)*log(c+d)+(a+c)*log(a+c)+(b+d)*log(b+d))/(N*log(N)-((a+c)*log(a+c)+(b+d)*log(b+d)))

Alan H. Fielding and John F. Bell, A review of methods for the assessment of prediction errors in conservation presence/absence models, Environmental Conservation 24(1): 38-49, 1997

LWG results copied from individual FPM files

High EPA	%False Negatives	%False Positives	Hit Reliability	Non Hit Reliability	Predict Reliability	Predict Non Hit Reliability	Overall Reliability
	65 Nits						
EPA Post-BERA Pooled FN = 20	28.9	35.1	65.0	64.9	39.4	81.9	68.3
FN=30	29.2	28.5	70.8	71.5	41.4	89.6	71.3
FN=40	40.0	26.6	60.0	76.4	45.3	87.4	75.1
EPA pooled w/o HY G	44						
	18.2	18.1	81.8	81.9	44.4	96.2	81.9
EPA pooled w/o HY G reduced	44						
	16.2	24.9	81.8	75.1	36.7	95.9	76.1
EPA CH G hi	42						
	13.0	13.9	81.0	86.1	49.3	96.4	86.3
EPA CH S hi	32						
	14.8	12.3	81.3	87.7	44.8	97.4	87.0
EPA HY G hi	39						
	17.9	33.9	82.1	66.1	27.1	96.0	68.3
EPA HY S hi	19						
	15.8	4.7	84.2	95.3	55.2	98.9	94.5
PEC	49.2	25.0	50.8	75.0	36.7	84.2	69.6
PEL	46.2	26.1	53.8	64.9	30.4	83.1	62.5

	4-Methylphenol	Ammonia	Antimony	Arsenic	benzyl alcohol	Cadmium	Carbazole	Chromium	Copper	cyclohexyl 2-butyltin ion	Dieldrin	ethyl phthalate	Endrin	Endrin ketone	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	m DDD (cal m DDE (cal m DDT (cal 1% Fines (c	offuoranthe	Chlordane (	al DDTs (co	l HPAHs (co	l LPAHs (co	l organic ca	al PAHs (co	al PCBs (co	Zinc
EPA Post-BERA Pooled FN = 20	96	171	19.3	22.9	16	3.51	1100	224	562	0.912	910	21.5	370	20.7	8.5	1290	0.624	34	10000	1.72	26.1	2460	906	8130	80.4	53000	669	11500	610000	2200	2.7	1300000	390	1940
FN=30	96	168	19.3	7.76	36	3.51	1100	224	562	1.29	910	21.5	370	20.8	8.5	1290	0.235	130	22000	1.72	36.5	114	906	8130	84.4	53000	669	11500	610000	650000	13	30000	3500	469
FN=40	96	171	19.3	22.9	20	3.51	940	81.4	562	1.29	150	21.5	370	20.8	8.5	179	0.235	130	27000	1.72	110	2460	906	71.4	100	53000	669	11500	610000	33000	13	1300000	3500	1940
EPA pooled w/o HY G	4-Methylphenol	Ammonia	Antimony	Arsenic	benzyl alcohol	Cadmium	Carbazole	Chromium	Copper	cyclohexyl 2-butyltin ion	Dieldrin	ethyl phthalate	Endrin	Endrin ketone	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	m DDD (cal m DDE (cal m DDT (cal 1% Fines (c	offuoranthe	Chlordane (	al DDTs (co	l HPAHs (co	l LPAHs (co	l organic ca	al PAHs (co	al PCBs (co	Zinc
	96	171	19.3	34	36	3.51	1100	224	562	2.35	910	21.5	370	20.8	8.5	1290	0.407	130	22000	1.72	36.5	114	906	8110	100	53000	669	11500	610000	650000	13	200000	500	1940
EPA pooled w/o HY G reduced	Cadmium	Carbazole	Copper	cyclohexyl	Dieldrin	Endrin	Endrin ketone	Mercury	Phenol	Silver	Sulfide	m DDD (cal m DDE (cal m DDT (cal offuoranthe al DDTs (co l HPAHs (co l LPAHs (co l organic ca al PAHs (co al PCBs (cal(*0																								
	3.51	1100	562	2.35	21.5	20.7	8.5	0.604	110	1.72	26.1	2460	33.1	8110	53000	11500	610000	2460	2.7	1300000	300									
EPA CH G hi	4-Methylphenol	Ammonia	Antimony	Arsenic	benzyl alcohol	Cadmium	Carbazole	Chromium	Copper	cyclohexyl 2-butyltin ion	Dieldrin	ethyl phthalate	Endrin	Endrin ketone	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	m DDD (cal m DDE (cal m DDT (cal 1% Fines (c	offuoranthe	Chlordane (	al DDTs (co	l HPAHs (co	l LPAHs (co	l organic ca	al PAHs (co	al PCBs (co	Zinc
	96	171	19.3	34	36	3.51	940	81.4	562	2.35	910	21.5	370	20.8	8.5	179	0.624	130	27000	1.72	110	2460	906	71.4	100	53000	669	11500	610000	38000	13	1300000	3500	1940
EPA CH S hi	4-Methylphenol	Ammonia	Antimony	Arsenic	benzyl alcohol	Cadmium	Carbazole	Chromium	Copper	cyclohexyl 2-butyltin ion	Dieldrin	ethyl phthalate	Endrin	Endrin ketone	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	m DDD (cal m DDE (cal m DDT (cal 1% Fines (c	offuoranthe	Chlordane (	al DDTs (co	l HPAHs (co	l LPAHs (co	l organic ca	al PAHs (co	al PCBs (co	Zinc
	125	334	19.3	34	36	3.51	2500	224	1080	2.35	910	21.5	370	20.7	8.5	1290	0.722	130	15000	1.72	36.5	331	906	8110	100	53000	669	11500	610000	2200	13	1300000	3500	1940
EPA HY G hi	4-Methylphenol	Ammonia	Antimony	Arsenic	benzyl alcohol	Cadmium	Carbazole	Chromium	Copper	cyclohexyl 2-butyltin ion	Dieldrin	ethyl phthalate	Endrin	Endrin ketone	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	m DDD (cal m DDE (cal m DDT (cal 1% Fines (c	offuoranthe	Chlordane (	al DDTs (co	l HPAHs (co	l LPAHs (co	l organic ca	al PAHs (co	al PCBs (co	Zinc
	260	168	19.3	22.9	16	3.51	30000	224	562	1.29	150	21.5	7	38.6	8.5	1290	0.722	34	15000	1.72	166	2460	906	8110	80.4	160000	669	11500	1300000	1600	13	1700000	3500	1940
EPA HY S hi	4-Methylphenol	Ammonia	Antimony	Arsenic	benzyl alcohol	Cadmium	Carbazole	Chromium	Copper	cyclohexyl 2-butyltin ion	Dieldrin	ethyl phthalate	Endrin	Endrin ketone	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	m DDD (cal m DDE (cal m DDT (cal 1% Fines (c	offuoranthe	Chlordane (	al DDTs (co	l HPAHs (co	l LPAHs (co	l organic ca	al PAHs (co	al PCBs (co	Zinc
	260	334	19.3	34	36	3.51	8500	224	562	2.35	910	21.5	370	38.6	8.5	1290	0.722	130	31000	1.72	166	1370	906	8110	100	160000	669	11500	1300000	33000	13	1700000	3500	1940
PEC	4-Methylphenol	Ammonia	Antimony	Arsenic	benzyl alcohol	Cadmium	Carbazole	Chromium	Copper	cyclohexyl 2-butyltin ion	Dieldrin	ethyl phthalate	Endrin	Endrin ketone	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	m DDD (cal m DDE (cal m DDT (cal 1% Fines (c	offuoranthe	Chlordane (	al DDTs (co	l HPAHs (co	l LPAHs (co	l organic ca	al PAHs (co	al PCBs (co	Zinc
				33		4.98			149					207		128	1.06					28	31.3	62.9				572				22800		676
PEL	4-Methylphenol	Ammonia	Antimony	Arsenic	benzyl alcohol	Cadmium	Carbazole	Chromium	Copper	cyclohexyl 2-butyltin ion	Dieldrin	ethyl phthalate	Endrin	Endrin ketone	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	m DDD (cal m DDE (cal m DDT (cal 1% Fines (c	offuoranthe	Chlordane (	al DDTs (co	l HPAHs (co	l LPAHs (co	l organic ca	al PAHs (co	al PCBs (co	Zinc
				17		3.53			197					62.4		91.3	0.486					8.51	6.75											277

	True Pred H	True Pred	False Pred	False Pred	Hit Station	NH Station	Total Stations
EPA Pooled Hi FN=30	46	163	65	19	65	228	293
EPA Pooled Hi FN=40	39	181	47	26	65	228	293

Comparison of SQGs from LWG Floating Percentile Method

	Low Screen		High Screen		
	LWG Final Low	TEC	LWG Final High	PEC	PEL
Metals (mg/kg)					
Arsenic		9.8		33	17
Cadmium	0.714	0.99	3.51	4.5	3.53
Copper	76.9	32	562	150	197
Lead		26		130	91.3
Mercury	0.155	0.18	0.722	1.1	0.486
Silver	1.72		1.72		
PAHs (ug/kg)					
Sum 34 ESB PAHs					
Benzofluoranthenes	53,000		53,000		
HPAHs	610,000		610,000		
LPAHs	2,000		18,000		
Total PAHs		1,600		23,000	-
SVOC (ug/kg)					
Benzyl alcohol	36		36		
Carbazole	1100		1100		
Phenol	120		120		
4-Methylphenol					
Diethylphthalate					
PCBs	300	60	500	680	277
Pesticides (ug/kg)					
delta-HCH	1.29		2.35		
Dieldrin	21.5		21.5		
Endrin	20.7		20.8		62.4
Endrin ketone	8.5		8.5		
Sum DDD					8.51
Sum DDE					6.75
Sum DDT		5.3			?
DDx	218	5.3	218	570	-
TPH					
PYO-PTO					
Conventionals (mg/kg)					
Ammonia	132		276		
Sulfide	29.1		38.5		
TOC (%)					
Total fines (%)					

Comparison of SQGs from LWG Floating Percentile Method
Expanded Version

Chemical Concentrations Associated with SQG Screening Alternatives

Chemical	LWG Lowest	LWG Pooled	EPA Lowest	EPA Pooled	LPL Lowest	LPL Pooled 1	LPL Pooled 2	Background	TEL	TEC
4-Methylphenol	37		96	96	96	96	96			
alpha-Hexachlorocyclohexane										
Ammonia	141	132	120	132	164	171	171			
Antimony	19.3		0.69	19.3	19.3	19.3	19.3	1		
Arsenic	22.9		22.9	5.04	22.9	22.9	22.9	8	5.9	9.8
Benzyl alcohol	11	36	16	16	36	36	36			
Benzoic acid										
Beryllium										
beta-Hexachlorocyclohexane									0.94*	2.4*
bis(2-Ethylhexyl)phthalate										
Butylbenzyl phthalate										
Cadmium	0.283	0.714	0.507	0.507	0.714	3.51	0.714	0.5	0.6	0.99
Carbazole	1100	1100	1100	1100	1100	1100	1100			
Chromium	224	224	224	224	224	224	224	30	37	43
Copper	562	76.9	493	493	562	562	562	12	36	32
delta-Hexachlorocyclohexane	1.29	1.29	1.26	1.26	1.29	0.912	0.912		0.94*	2.4*
Dibenzofuran										
Dibutyltin	910		380	88.5	150	910	910			
Dieldrin	21.5	21.5	21.5	21.5	21.5	21.5	21.5		2.9	1.9
Diethylphthalate	120		7.9	7	7.9	370	7.9			
Dimethyl phthalate										
Di-n-butyl phthalate										
Di-n-octyl phthalate										
Dioxins/furans										
Endrin	20.7	20.7	20.7	20.7	20.7	20.7	20.7		2.7	2.2
Endrin ketone	8.5	8.5	8.5	8.5	8.5	8.5	8.5			
Lead	179		1290	1290	179	1290	1290	2	35	36
Mercury	0.128	0.155	0.249	0.249	0.407	0.624	0.624	0.2	0.17	0.18
Monobutyltin										
Nickel								20	18	23
Pentachlorophenol										
Phenol	120	120	32	36	120	120	120			
PYO-PTO	15,000	15,000	15,000	8,600	15,000	15,000	15,000			
Selenium								0.4		
Silver	1.72	1.72	0.412	0.277	1.72	1.72	1.72	0.4		
Sulfide	38.5	29.1	38.5	110	110	29.1	29.1			
Tetrabutyltin										
Total Aroclors									34	60
Total PCBs congeners	12,500,000						12,500,000			
Total PCBs calc'd	250		500	250	3500	300	300		34	60
Total Chlordanes	669		669	669	8.1	669	669		4.5	3.2
Total DDDs	114		114	2460	114	2460	2460		3.5	4.9
Total DDEs	906		906	906	906	906	906		1.4	3.2
Total DDTs	8110		32.5	32.5	8110	8110	8110		7**	4.2
Total DDTs calc'd	11,500	234	11,500	11,500	11,500	11,500	11,500			
Sum of 34 PAHs	1.2						1.5			
Total PAHs	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000			1600
TPH-Diesel										
TPH-Residual										
Total HPAH	610,000	610,000	22,000	610,000	610,000	610,000	610,000			
Total LPAH	2300	2000	1600	2000	2300	2300	650,000			
TOC	2.7		2.7	13	2.7	2.7	2.7			
Total % fines	74.9		76.7	76.7	84.4	80.4	91			
Total benzofluoranthenes	6,200	53,000	53,000	2,700	53,000	53,000	53,000			
Tributyltin										
Vanadium										
Zinc	162		1940	1940	1940	1940	1940	53	120	120

*gamma-HCH
**Total DDX

Low	%False Negatives	%False Positives	Hit Reliability	NoHit Reliability	PredHit Reliability	PredNoHit Reliability	Overall Reliability	4-Methylpl	Ammonia	Antimony	Arsenic	Benzyl alc	Cadmium	Carbazole	Chromium	Copper	delta-Hexa	Dibutyltin	Dieldrin	Diethyl pht	Endrin	Endrin ketone	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Sum of 34 PAH	Total % Fines (c	Total Benzoflu	Total Chlorda	Total DDTs (cal	Total HPAt	Total LPAt	Total orga	Total PAHs (calc'd)	Total PCB Cong	Total PCBs (calc'd)	Zinc
EPA																																											
EPA cglo reduced chem list FN=20	19.2	21.6	80.8	78.4	44.7	95.0	78.8				16.5		0.533	1100	224	359	2.35		21.5	120	20.7	8.5	1290	0.624	120		1.72	29.1	2460	33.1	8110		100	53000	669	11500	610000	650000	13	20000		3250	1940
EPA cha lo FN=20	19.2	21.2	80.8	78.8	45.2	95.0	79.2	96	171	19.3	22.9	36	0.714	1100	224	562	2.35	380	21.5	120	20.8	8.5	1290	0.407	120	22000	1.72	38.5	114	906	8110		100	53000	669	11500	22000	650000	13	1300000		500	1940
EPA chs lo FN=20	18.2	26.5	81.8	73.5	35.3	95.8	74.7	260	171	19.3	34	36	0.507	1100	224	1080	2.35	910	21.5	7.9	20.7	8.5	1290	0.722	120	15000	1.72	38.5	331	906	8110		100	53000	669	11500	610000	2300	2.7	1300000		3500	1940
EPA hva lo FN=20	20.0	54.1	80.0	45.9	33.7	87.0	54.6	96	120	0.69	22.9	16	3.51	30000	224	493	1.26	910	21.5	370	38.6	8.5	1290	0.249	32	15000	0.277	998	2460	906	32.5		76.7	160000	669	11500	1300000	1600	13	1700000		3500	1940
EPA hys lo FN=20	19.0	4.4	81.0	95.6	58.6	98.5	54.5	260	334	19.3	34	36	3.51	8500	224	562	2.35	910	21.5	370	38.6	8.5	1290	0.722	120	31000	1.72	166	1370	906	8110		100	160000	669	11500	1300000	33000	13	1700000		3500	1940
Lowest	18.5	55.1	81.5	44.9	46.3	80.6	58.4	96	120	0.69	22.9	16	0.507	1100	224	493	1.26	380	21.5	7.9	20.7	8.5	1290	0.249	32	15000	0.277	38.5	114	906	32.5		76.7	53000	669	11500	22000	1600	2.7	1300000		500	1940
EPA Post-BERA Pooled FN = 20	19.4	53.0	80.6	47.0	47.0	80.6	59.4	96	132	19.3	5.04	16	0.507	1100	224	493	1.26	88.5	21.5	7	20.7	8.5	1290	0.249	36	8600	0.412	110	2460	906	32.5		76.7	2700	669	11500	610000	2000	13	1300000		250	1940
LWG																																											
LWG chglo FN=20 screen 2	18.8	53.9	81.3	46.1	22.8	92.6	51.9	37	352	0.66	34	36	5.41	30000	224	1080	3.03	840	356	120	27.9	90.1	1290	0.128	120	33000	4.44	29.1	3040	2530	13000	1.2	74.9	170000	669	16000	1500000	1700000	13	3100000	35400000	250	1360
LWG chg lo 2 FN=20 screen 2	18.8	21.2	81.3	78.8	42.9	95.5	79.2	96	171	19.3	22.9	36	0.714	1100	224	562	2.35	910	21.5	120	20.7	8.5	1290	0.624	120	15000	1.72	38.5	2460	906	8110	1.5	100	53000	669	11500	610000	650000	13	1300000	12500000	500	1940
LWG chg lo refined FN=20 screen 2	18.8	18.0	81.3	82.0	47.0	95.7	81.9	96	171		22.9	36	0.714	1100		562	2.35		21.5	120	20.8	8.5	1290	0.407	120	22000	1.72	38.5	114	906	8110		100	53000		11500	610000	75000	13			500	
LWG chm lo 2 screen 2	18.9	19.1	81.1	80.9	38.0	96.7	80.9	260	171	19.3	34	36	3.51	1100	224	1080	2.35	910	21.5	370	20.7	8.5	179	0.722	120	15000	1.72	38.5	331	906	8110	110	100	53000	669	11500	610000	2300	2.7	1300000	12500000	3500	1940
LWG chm lo 2 refined screen 2	18.9	19.1	81.1	80.9	38.0	96.7	80.9	260	171	19.3	34	36	3.51	1100	224	1080	2.35	910	21.5	370	20.7	8.5	179	0.722	120	15000	1.72	38.5	331	906	8110	110	100	53000	669	11500	610000	2300	2.7	1300000	12500000	3500	1940
LWG hvg lo FN=20 screen 2	18.5	48.1	81.5	51.9	14.7	96.5	54.6	480	141	19.3	34	11	0.283	58000	224	1080	21.2	910	356	370	38.6	90.1	956	0.438	120	59000	4.44	336	3040	2530	111	120	100	4100	660	16000	2800000	5100000	15.2	7900000	35400000	30800	162
LWG hva lo 2 FN=20 screen 2	18.5	15.4	81.5	84.6	34.9	97.8	84.3	260	334	19.3	22.9	36	3.51	30000	224	562	1.29	910	21.5	370	38.6	8.5	1290	0.235	120	27000	1.72	998	2460	906	8110	110	84.4	6200	669	11500	1300000	650000	13	1700000	12500000	3500	1940
LWG hva lo 3 FN=20 screen 2	18.5	15.4	81.5	84.6	34.9	97.8	84.3	260	334	19.3	22.9	36	3.51	30000	224	562	1.29	910	21.5	370	38.6	8.5	1290	0.235	120	27000	1.72	998	2469	906	8110	110	84.4	6200	669	11500	1300000	650000	13	1700000	12500000	3500	1940
LWG hvg lo refined FN=20 screen 2	18.5	15.4	81.5	84.6	34.9	97.8	84.3	260									1.29							0.235	120					906			84.4	6200		11500							
LWG hym lo FN=20 screen 2	20.0	7.7	80.0	92.3	43.2	98.4	91.5	260	334	19.3	34	36	3.51	30000	224	562	2.35	910	21.5	370	38.6	8.5	1290	0.722	120	15000	1.72	336	2460	906	8110	5.8	100	160000	669	11500	1300000	650000	13	1700000	12500000	3500	1940
LWG hym lo refined FN=20 screen 2	20.0	7.7	80.0	92.3	43.2	98.4	91.5	260	334	19.3	34	36	3.51	30000	224	562	2.35	910	21.5	370	38.6	8.5	1290	0.722	120	15000	1.72	336	2460	906	8110	5.8	100	160000	669	11500	1300000	650000	13	1700000	12500000	3500	1940
LWG chm lo FN=20 screen 3	18.9	19.1	81.1	80.9	38.0	96.7	80.9	260	171														179			15000		38.5	331									2300	2.7				
LWG hvg lo FN=20 screen 3	18.5	14.3	81.5	85.7	36.7	97.9	85.3	260	334	19.3	22.9	36	3.51	30000	224	562	1.29	910	21.5	7	38.6	8.5	1290	0.722	120	15000	1.72	998	2460	906	8110		84.4	160000	669	11500	1300000	12000	13	1700000	12500000	3500	1940
LWG chm lo FN=20 screen 4	5.4	81.3	94.6	18.8	14.4	96.0	28.3	1.52	350														860			1.4		960	102									195	15				
Lowest	23.3	50.2	76.7	49.8	28.2	89.2	55.3	37	141	19.3	22.9	11	0.283	1100	224	562	1.29	910	21.5	120	20.7	8.5	179	0.128	120	15000	1.72	3805	114	906	8110	1.2	74.9	6200	669	11500	610000	2300	2.7	1300000	12500000	250	162
LWG pooled lo final FN=20	20.0	39.5	80.0	60.5	34.3	92.2	64.5		132			36	0.714	1100		76.9	1.29		21.5		20.7	8.5		0.155	120	15000	1.72	29.1						53000		234	610000	2000					
LPL																																											
LPL cg lo FN=20	18.2	15.3	81.8	84.7	48.6	96.3	84.3	96	171	19.3	22.9	36	0.714	1100	224	562	2.35	910	21.5	370	20.8	8.5	454	0.407	120	22000	1.72	110	114	906	8110		100	53000	669	11500	610000	75000	13	1300000		3500	1940
LPL cs lo FN=20	18.9	19.1	81.1	80.9	38.0	96.7	80.9	260	171	19.3	34	36	3.51	1100	224	1080	2.35	910	21.5	370	20.7	8.5	179	0.722	120	15000	1.72	38.5	331	906	8110		100	53000	669	11500	610000	2300	2.7	1300000		3500	1940
LPL he lo FN=20	20.0	18.6	80.0	81.4	32.9	97.3	81.2	260	164	19.3	22.9	36	3.51	30000	224	562	1.29	150	21.5	7.9	38.6	8.5	1290	0.722	120	15000	1.72	998	2460	906	8110		84.4	160000	8.1	11500	1300000	650000	13	1700000		3500	1940
LPL he lo no PTO FN=20	20.0	19.0	80.0	81.0	32.4	97.3	80.9	260	164	19.3	22.9	36	3.51	30000	224	562	1.29	150	21.5	7.9	38.6	8.5	1290	0.722	120		1.72	998	2460	906	8110		84.4	160000	8.1	11500	1300000	590000	13	1700000		3500	1940
LPL hys lo FN=20	19.0	4.4	81.0	95.6	58.6	98.5	54.5	260	334	19.3	34	36	3.51	8500	224	562	2.35	910	21.5	370	38.6	8.5	1290	0.722	120	31000	1.72	166	1370	906	8110		100	160000	669	11500	1300000	33000	13	1700000		3500	1940
Lowest	23.7	32.1	76.3	67.9	37.5	91.9	69.6	96	164	19.3	22.9	36	0.714	1100	224	562	1.29	150	21.5	7.9	20.7	8.5	179	0.407	120	15000	1.72	110	114	906	8110		84.4	53000	8.1	11500	910000	2300	2.7	1300000		3500	1940
LPL Post BERA pooled lo FN=20	18.6	31.6	81.4	68.4	39.3	93.6	71.0	96	171	19.3	22.9	36	3.51	1100	224	562	0.912	910	21.5	370	20.7	8.5	1290	0.624	120	15000	1.72	29.1	2469	906	8110		80.4	53000	669	11500	610000	2300	2.7	1300000		300	1940
LPL pooled lo FN=20	18.6	32.5	81.4	67.5	38.7	93.5	70.3	96	171	19.3	22.9	20	0.714	1100	224	562	0.912	910	21.5	7.9	20.7	8.5	1290	0.624	120	15000	1.72	29.1	2460	906	8110	1.5	91	53000	669	11500	610000	650000	2.7	1300000	12500000	300	1940

Low	%False Negatives	%False Positives	Hit Reliability	NoHit Reliability	PredHit Reliability	PredNoHit Reliability	Overall Reliability	4-Methylpl	Ammonia	Antimony	Arsenic	Benzyl alc	Cadmium	Carbazole	Chromium	Copper	delta-Hexa	Dibutyltin	Dieldrin	Diethyl pht	Endrin	Endrin ketone	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Sum of 34 PAH	Total % Fines (c	Total Benzoflu	Total Chlorda	Total DDTs (cal	Total HPAt	Total LPAt	Total orga	Total PAHs (calc'd)	Total PCB Cong	Total PCBs (calc'd)	Zinc
EPA Lowest	18.5	55.1	81.5	44.9	46.3	80.6	58.4	96	120	0.69	22.9	16	0.507	1100	224	493	1.26	380	21.5	7.9	20.7	8.5	1290	0.249	32	15000	0.277	38.5	114	906	32.5		76.7	53000	669	11500	22000	1600	2.7	1300000		500	1940
EPA Post-BERA Pooled FN = 20	19.4	53.0	80.6	47.0	47.0	80.6	59.4	96	132	19.3	5.04	16	0.507	1100	224	493	1.26	88.5	21.5	7	20.7	8.5	1290	0.249	36	8600	0.412	110	2460	906	32.5		76.7	2700	669	11500	610000	2000	13	1300000		250	1940
LWG Lowest	23.3	50.2	76.7	49.8	28.2	89.2	55.3	37	141	19.3	22.9	11	0.283	1100	224	562	1.29	910	21.5	120	20.7	8.5	179	0.128	120	15000	1.72	3805	114	906	8110	1.2	74.9	6200	669	11500	610000	2300	2.7	1300000	12500000	250	162
LWG pooled lo final FN=20	20.0	39.5	80.0	60.5	34.3	92.2	64.5		132			36	0.714	1100		76.9	1.29		21.5		20.7	8.5		0.155	120	15000	1.72	29.1						53000		234	610000	2000					
LPL Lowest	23.7	32.1	76.3	67.9	37.5	91.9	69.6	96	164	19.3	22.9	36	0.714	1100	224	562	1.29	150	21.5	7.9	20.7	8.5	179	0.407	120	15000	1.72	110	114	906	8110		84.4	53000	8.1	11500	910000	2300	2.7	1300000		3500	1940
LPL Post BERA pooled lo FN=20	18.6	31.6	81.4	68.4	39.3	93.6	71.0	96	171	19.3	22.9	36	3.51	1100	224	562	0.912	910	21.5	370	20.7	8.5	1290	0.624	120	15000	1.72	29.1	2469	906	8110		80.4	53000	669	11500	610000	2300	2.7	1300000		300	1940
LPL pooled lo FN=20	18.6	32.5	81.4	67.5	38.7	93.5	70.3	96	171	19.3	22.9	20	0.714	1100	224	562	0.912	910	21.5	7.9	20.7	8.5	1290	0.624	120	15000	1.72	29.1	2460	906	8110	1.5	91	53000	669	11500	610000	650000	2.7	1300000	12500000	300	1940

National Screening Values

ERL	10	85	90	15	45	67	48				12		0.7		39	41							51																240		50	110
TEL	6	90	94	10	45	68	47				5.9		0.6		37	36	0.94		2.9		2.7		35	0.17					3.5	1.4					4.5				448		34	120
TEC	13	77	87	23	46	69	51				9.8		0.99		43	32	2.4		1.9		2.2		36	0.18					4.9	3.2	4.2				3.2				1600		60	120
LEL	8	86	92	14	45	69	48				6		0.60		26	16	16		2		3		31	0.20					8	5					7				4000		70	120

Color-coded source of SQG from individual bioassay optimizations

SL1 CH growth CH morta HY growth HY mortality

LWG results copied from individual FPM files

Low	%False Negatives	%False Positives	Hit Reliability	NoHit Reliability	PredHit Reliability	PredNoHit Reliability	Overall Reliability
EPA Post-BERA Pooled FN = 20	19.4	53.0	80.6	47.0	47.0	80.6	59.4
EPA cglo reduced chem list FN=20	19.2	21.6	80.8	78.4	44.7	95.0	78.8
EPA chg lo FN=20	19.2	21.2	80.8	78.8	45.2	95.0	79.2
EPA chs lo FN=20	18.2	26.5	81.8	73.5	35.3	95.8	74.7
EPA hyg lo FN=20	20.0	54.1	80.0	45.9	33.7	87.0	54.6
EPA hys lo FN=20	19.0	4.4	81.0	95.6	58.6	98.5	94.5
LWG pooled lo final FN=20	20.0	39.5	80.0	60.5	34.3	92.2	64.5
LWG chglo FN=20 screen 2	18.8	53.9	81.3	46.1	22.8	92.6	51.9
LWG chg lo 2 FN=20 screen 2	18.8	21.2	81.3	78.8	42.9	95.5	79.2
LWG chg lo refined FN=20 screen 2	18.8	18.0	81.3	82.0	47.0	95.7	81.9
LWG chm lo 2 screen 2	18.9	19.1	81.1	80.9	38.0	96.7	80.9
LWG chm lo 2 refined screen 2	18.9	19.1	81.1	80.9	38.0	96.7	80.9
LWG hyg lo FN=20 screen 2	18.5	48.1	81.5	51.9	14.7	96.5	54.6
LWG hyg lo 2 FN=20 screen 2	18.5	15.4	81.5	84.6	34.9	97.8	84.3
LWG hyg lo 3 FN=20 screen 2	18.5	15.4	81.5	84.6	34.9	97.8	84.3
LWG hyg lo refined FN=20 screen 2	18.5	15.4	81.5	84.6	34.9	97.8	84.3
LWG hym lo FN=20 screen 2	20.0	7.7	80.0	92.3	43.2	98.4	91.5
LWG hym lo refined FN=20 screen 2	20.0	7.7	80.0	92.3	43.2	98.4	91.5
LWG chm lo FN=20 screen 3	18.9	19.1	81.1	80.9	38.0	96.7	80.9
LWG hyg lo FN=20 screen 3	18.5	14.3	81.5	85.7	36.7	97.9	85.3
LWG chm lo FN=20 screen 4	5.4	81.3	94.6	18.8	14.4	96.0	28.3
LPL Post BERA pooled lo FN=20	18.6	31.6	81.4	68.4	39.3	93.6	71.0
LPL cg lo FN=20	18.2	15.3	81.8	84.7	48.6	96.3	84.3
LPL cs lo FN=20	18.9	19.1	81.1	80.9	38.0	96.7	80.9
LPL hg lo FN=20	20.0	18.6	80.0	81.4	32.9	97.3	81.2
LPL hg lo no PTO FN=20	20.0	19.0	80.0	81.0	32.4	97.3	80.9
LPL hys lo FN=20	19.0	4.4	81.0	95.6	58.6	98.5	94.5
LPL pooled lo FN=20	18.6	32.5	81.4	67.5	38.7	93.5	70.3

EPA Post-BERA Pooled FN = 20

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Zinc
96	132	19.3	5.04	16	0.507	1100	224	493	1.26	88.5	21.5	7	20.7	8.5	1290	0.249	36	8600	0.412	110	2460	906	32.5	76.7	2700	669	11500	610000	2000	13	1300000	250	1940

EPA cglo reduced chem list FN=20

Ammonia	Antimony	Arsenic	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Zinc
171	19.3	16.5	0.533	1100	224	359	2.35	21.5	120	20.7	8.5	1290	0.624	120	1.72	29.1	2460	33.1	8110	100	53000	669	11500	610000	650000	13	20000	3250	1940

EPA chg lo FN=20

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Zinc
96	171	19.3	22.9	36	0.714	1100	224	562	2.35	380	21.5	120	20.8	8.5	1290	0.407	120	22000	1.72	38.5	114	906	8110	100	53000	669	11500	22000	650000	13	1300000	500	1940

EPA chs lo FN=20

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Zinc
260	171	19.3	34	36	0.507	1100	224	1080	2.35	910	21.5	7.9	20.7	8.5	1290	0.722	120	15000	1.72	38.5	331	906	8110	100	53000	669	11500	610000	2300	2.7	1300000	3500	1940

EPA hyg lo FN=20

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Zinc
96	120	0.69	22.9	16	3.51	30000	224	493	1.26	910	21.5	370	38.6	8.5	1290	0.249	32	15000	0.277	998	2460	906	32.5	76.7	160000	669	11500	1300000	1600	13	1700000	3500	1940

EPA hys lo FN=20

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Zinc
260	334	19.3	34	36	3.51	8500	224	562	2.35	910	21.5	370	38.6	8.5	1290	0.722	120	31000	1.72	166	1370	906	8110	100	160000	669	11500	1300000	33000	13	1700000	3500	1940

LWG pooled lo final FN=20

Ammonia	Benzyl al	Cadmium	Carbazole	Copper	delta-Hex	Dieldrin	Endrin	Endrin ket	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Total Ben	Total DDT	Total HPA	Total LPA	Total PCBs (calc'd)
132	36	0.714	1100	76.9	1.29	21.5	20.7	8.5	0.155	120	15000	1.72	29.1	53000	234	610000	2000	300

LWG chglo FN=20 screen 2

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Sum of 34	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Total PCB	Zinc
37	352	0.66	34	36	5.41	30000	224	1080	3.03	840	356	120	27.9	90.1	1290	0.128	120	33000	4.44	29.1	3040	2530	13000	1.2	74.9	170000	669	16000	1500000	1700000	13	3100000	35400000	250	1360

LWG chg lo 2 FN=20 screen 2

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Sum of 34	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Total PCB	Zinc
96	171	19.3	22.9	36	0.714	1100	224	562	2.35	910	21.5	120	20.7	8.5	1290	0.624	120	15000	1.72	38.5	2460	906	8110	1.5	100	53000	669	11500	610000	650000	13	1300000	12500000	500	1940

LWG chg lo refined FN=20 screen 2

4-Methylp	Ammonia	Arsenic	Benzyl al	Cadmium	Carbazole	Copper	delta-Hex	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Total % Fi	Total Ben	Total DDT	Total HPA	Total LPA	Total orga	Total PCBs (calc'd)
96	171	22.9	36	0.714	1100	562	2.35	21.5	120	20.8	8.5	1290	0.407	120	22000	1.72	38.5	114	906	8110	100	53000	11500	610000	75000	13	500

LWG chm lo 2 screen 2

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Sum of 34	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Total PCB	Zinc
260	171	19.3	34	36	3.51	1100	224	1080	2.35	910	21.5	370	20.7	8.5	179	0.722	120	15000	1.72	38.5	331	906	8110	110	100	53000	669	11500	610000	2300	2.7	1300000	12500000	3500	1940

LWG chm lo 2 refined screen 2

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Sum of 34	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Total PCB	Zinc
260	171	19.3	34	36	3.51	1100	224	1080	2.35	910	21.5	370	20.7	8.5	179	0.722	120	15000	1.72	38.5	331	906	8110	110	100	53000	669	11500	610000	2300	2.7	1300000	12500000	3500	1940

LWG hyg lo FN=20 screen 2

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Sum of 34	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Total PCB	Zinc
480	141	19.3	34	11	0.283	56000	224	1080	21.2	910	356	370	38.6	90.1	956	0.438	120	59000	4.44	336	3040	2530	111	120	100	4100	660	16000	2800000	5100000	15.2	7900000	35400000	30800	162

LWG hyg lo 2 FN=20 screen 2

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Sum of 34	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Total PCB	Zinc
260	334	19.3	22.9	36	3.51	30000	224	562	1.29	910	21.5	370	38.6	8.5	1290	0.235	120	27000	1.72	998	2460	906	8110	110	84.4	6200	669	11500	1300000	650000	13	1700000	12500000	3500	1940

LWG hyg lo 3 FN=20 screen 2

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Sum of 34	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Total PCB	Zinc
260	334	19.3	22.9	36	3.51	30000	224	562	1.29	910	21.5	370	38.6	8.5	1290	0.235	120	27000	1.72	998	2460	906	8110	110	84.4	6200	669	11500	1300000	650000	13	1700000	12500000	3500	1940

LWG hyg lo refined FN=20 screen 2

4-Methylp	delta-Hex	Mercury	Phenol	Sum DDE	Total % Fi	Total Ben	Total DDTs (calc'd)
260	1.29	0.235	120	906	84.4	6200	11500

LWG hym lo FN=20 screen 2

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Sum of 34	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Total PCB	Zinc
260	334	19.3	34	36	3.51	30000	224	562	2.35	910	21.5	370	38.6	8.5	1290	0.722	120	15000	1.72	336	2460	906	8110	5.8	100	160000	669	11500	1300000	650000	13	1700000	12500000	3500	1940

LWG hym lo refined FN=20 screen 2

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Sum of 34	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Total PCB	Zinc
260	334	19.3	34	36	3.51	30000	224	562	2.35	910	21.5	370	38.6	8.5	1290	0.722	120	15000	1.72	336	2460	906	8110	5.8	100	160000	669	11500	1300000	650000	13	1700000	12500000	3500	1940

LWG chm lo FN=20 screen 3

4-Methylp	Ammonia	Lead	PYO_PTO	Sulfide	Sum DDD	Total LPA	Total organic carbon
260	171	179	15000	38.5	331	2300	2.7

LWG hyg lo FN=20 screen 3

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Total PCB	Zinc
260	334	19.3	22.9	36	3.51	30000	224	562	1.29	910	21.5	7	38.6	8.5	1290	0.722	120	15000	1.72	998	2460	906	8110	84.4	160000	669	11500	1300000	12000	13	1700000	12500000	3500	1940

LWG chm lo FN=20 screen 4

4-Methylp	Ammonia	Lead	PYO_PTO	Sulfide	Sum DDD	Total LPA	Total organic carbon
1.52	350	860	1.4	960	102	195	15

LPL Post BERA pooled lo FN=20

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Zinc
96	171	19.3	22.9	36	3.51	1100	224	562	0.912	910	21.5	370	20.7	8.5	1290	0.624	120	15000	1.72	29.1	2460	906	8110	80.4	53000	669	11500	610000	2300	2.7	1300000	300	1940

LPL cg lo FN=20

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Zinc
96	171	19.3	22.9	36	0.714	1100	224	562	2.35	910	21.5	370	20.8	8.5	454	0.407	120	22000	1.72	110	114	906	8110	100	53000	669	11500	610000	75000	13	1300000	3500	1940

LPL cs lo FN=20

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Zinc
260	171	19.3	34	36	3.51	1100	224	1080	2.35	910	21.5	370	20.7	8.5	179	0.722	120	15000	1.72	38.5	331	906	8110	100	53000	669	11500	610000	2300	2.7	1300000	3500	1940

LPL hg lo FN=20

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Zinc
260	164	19.3	22.9	36	3.51	30000	224	562	1.29	150	21.5	7.9	38.6	8.5	1290	0.722	120	15000	1.72	998	2460	906	8110	84.4	160000	8.1	11500	1300000	650000	13	1700000	3500	1940

LPL hg lo no PTO FN=20

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Zinc
260	164	19.3	22.9	36	3.51	30000	224	562	1.29	150	21.5	7.9	38.6	8.5	1290	0.722	120	1.72	998	2460	906	8110	84.4	160000	8.1	11500	1300000	590000	13	1700000	3500	1940

LPL hys lo FN=20

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Zinc
260	334	19.3	34	36	3.51	8500	224	562	2.35	910	21.5	370	38.6	8.5	1290	0.722	120	31000	1.72	166	1370	906	8110	100	160000	669	11500	1300000	33000	13	1700000	3500	1940

LPL pooled lo FN=20

4-Methylp	Ammonia	Antimony	Arsenic	Benzyl al	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibutyltin	Dieldrin	Diethyl ph	Endrin	Endrin ket	Lead	Mercury	Phenol	PYO_PTO	Silver	Sulfide	Sum DDD	Sum DDE	Sum DDT	Sum of 34	Total % Fi	Total Ben	Total Chlc	Total DDT	Total HPA	Total LPA	Total orga	Total PAH	Total PCB	Total PCB	Zinc
96	171	19.3	22.9	20	0.714	1100	224	562	0.912	910	21.5	7.9	20.7	8.5	1290	0.624	120	15000	1.72	29.1	2460	906	8110	1.5	91	53000	669	11500	610000	650000	2.7	1300000	12500000	300	1940

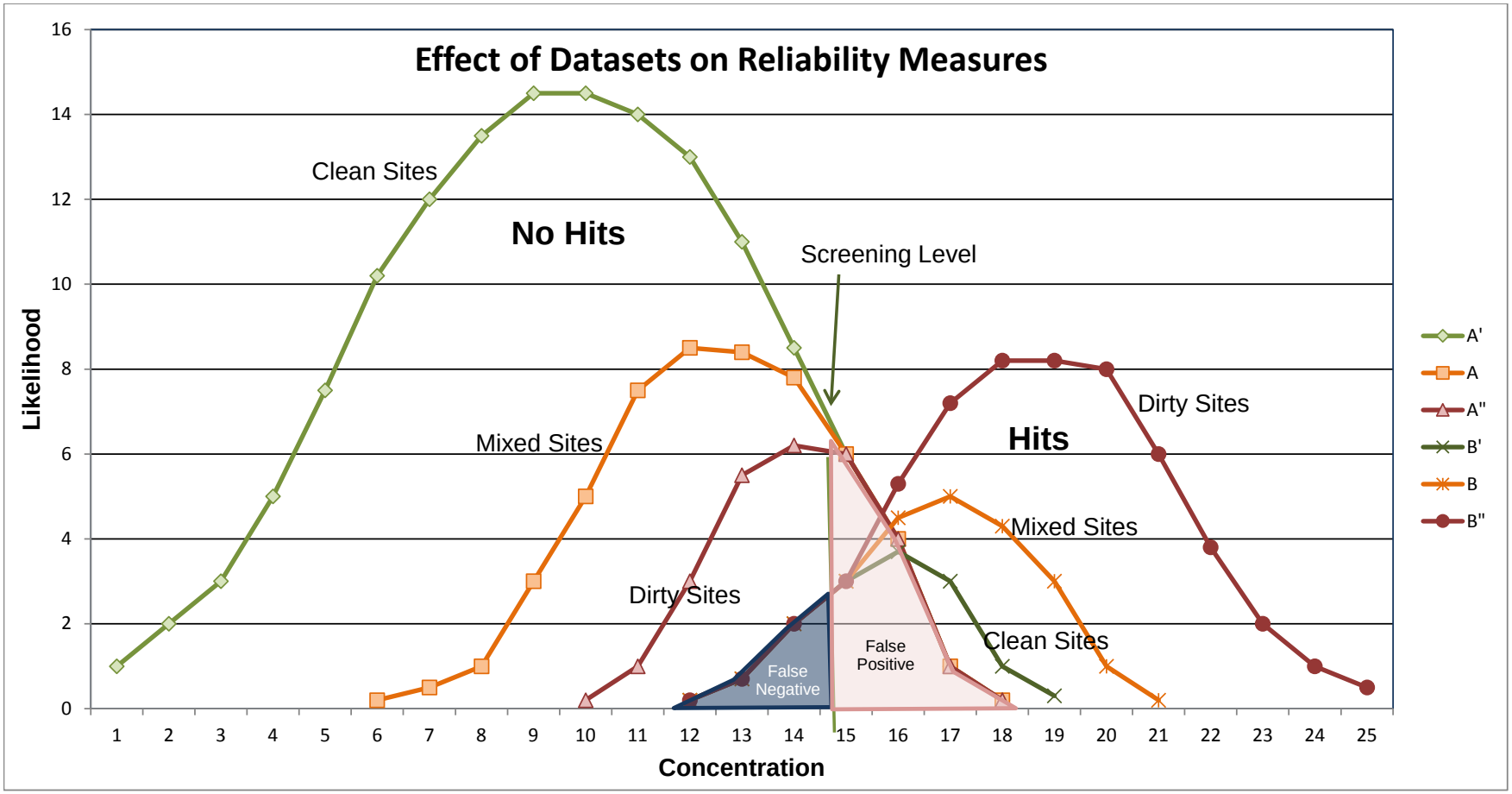
Pool 1 SL1	%False Negatives	%False Positives	Hit Reliability	NoHit Reliability	PredHit Sensitivity	PredNoHit Efficiency	Overall Reliability
National Screening Values							
ERL	10	85	90	15	45	67	48
TEL	6	90	94	10	45	68	47
TEC	13	77	87	23	46	69	51
LEL	8	86	92	14	45	69	48

Pool 1 SL1	4-Methylp	alpha-Hex	Ammonia	Antimony	Arsenic	Benzoic ac	Beryllium	beta-Hexa	Bis(2-ethy	Butyl benz	Cadmium	Carbazole	Chromium	Copper	delta-Hex	Dibenzofu	Dibutyltin	Dieldrin	Dimethyl	Di-n-butyl	Di-n-octyl	Dioxins/F	Endrin	Endrin ket	Lead	Mercury	Monobuty	Nickel	Pentachlo	Phenol	Selenium	Silver	Sulfide	Tetrabutyl	Total Aroc	Total Chlo	Total DDD	Total DDE	Total DDTs	Total PAHs	TPH-Diese	TPH-Resid	Tributyltin	Vanadium	Zinc
ERL					12						0.7		39	41											51			24							50					240					110
TEL					5.9						0.6		37	36	0.94			2.9					2.7		35	0.17		18							34	4.5	3.5	1.4		448					120
TEC					9.8						0.99		43	32	2.4			1.9					2.2		36	0.18		23							60	3.2	4.9	3.2	4.2	1600					120
LEL		3			6			6			0.60		26	16	16			2					3		31	0.20		16							70	7	8	5		4000					120

Evaluated on full RSET database

Summary of Reliability Results for Low and High Screens Based on EPA 2009

EPA	Samples	Hits	No-Hits	%False Negatives	%False Positives	Hit Reliability	NoHit Reliability	PredHit Reliability	PredNoHit Reliability	Overall Reliability
postBERA pooled lo	293	108	185	19.4	53.0	80.6	47.0	47.0	80.6	59.4
postBERA pooled hi	293	65	228	20.0	35.1	80.0	64.9	39.4	91.9	68.3
CH G lo	293	52	241	19.2	21.2	80.8	78.8	45.2	95.0	79.2
CH G hi	293	42	251	19.0	13.9	81.0	86.1	49.3	96.4	85.3
CH S lo	293	44	249	18.2	26.5	81.8	73.5	35.3	95.8	74.7
CH S hi	293	32	261	18.8	12.3	81.3	87.7	44.8	97.4	87.0
HY G lo	293	75	218	20.0	54.1	80.0	45.9	33.7	87.0	54.6
HY G hi	293	39	254	17.9	33.9	82.1	66.1	27.1	96.0	68.3
HY S lo	293	21	272	19.0	4.4	81.0	95.6	58.6	98.5	94.5
HY S hi	293	19	274	15.8	4.7	84.2	95.3	55.2	98.9	94.5


Effect of Datasets on Reliability Measures
Likelihood
Concentration
Clean Sites
No Hits
Screening Level
Mixed Sites
Dirty Sites
Hits
Dirty Sites
Mixed Sites
Clean Sites
False Positive
False Negative
A'
A
A"
B'
B
B"

	A'	A	A"	B'	B	B"
1	1					
2	2					
3	3					
4	5					
5	7.5					
6	10.2	0.2				
7	12	0.5				
8	13.5	1				
9	14.5	3				
10	14.5	5	0.2			
11	14	7.5	1			
12	13	8.5	3	0.2	0.2	0.2
13	11	8.4	5.5	0.7	0.7	0.7
14	8.5	7.8	6.2	2	2	2
15	6	6	6	3	3	3
16	4	4	4	3.7	4.5	5.3
17	1	1	1	3	5	7.2
18	0.2	0.2	0.2	1	4.3	8.2
19				0.3	3	8.2
20					1	8
21					0.2	6
22						3.8
23						2
24						1
25						0.5
26						