

Appendix 1: Short Summary of BATS, TBATS and ARIMA Models.

For a The BATS model as in [De Livera et. al. 2011] is given by:

$$y_t^\omega = \frac{y_t^{\omega-1}}{\omega} \text{ if } \omega \neq 0 \dots\dots\dots(21)$$

$$y_t^\omega = \log y_t \text{ if } \omega = 0 \dots\dots\dots(22)$$

$$y_t^\omega = l_{t-1} + \phi b_{t-1} + \sum_{i=1}^T s_{t-m_i}^i + d_t \dots\dots(23)$$

$$l_t = l_{t-1} + \phi b_{t-1} + \alpha d_t \dots\dots\dots(24)$$

$$b_t = (1 - \phi)b + \phi b_{t-1} + \beta d_t \dots\dots\dots(25)$$

$$s_t^i = s_{t-m_i}^i + \gamma d_t \dots\dots\dots(26)$$

$$d_t = \sum_{i=1}^p \phi_i d_{t-i} + \sum_{i=1}^q \epsilon_{t-1} + \epsilon_i \dots\dots(27)$$

The TBATS model on the other hand is a more "flexible and parsimonious" approach given by a trigonometric representation of the seasonal components given above ([De Livera et. al. 2011], [Harvey, 1989], [West, Harrison 1997]) with the seasonal components based on the Fourier series given as follows:

$$s_t^i = \sum_{j=1}^{k_j} s_{j,t}^i \dots\dots\dots(28)$$

$$s_{j,t}^i = s_{j,t-1}^i \cos \lambda_j^i + s_{j,t-1}^{*i} \sin \lambda_j^i + \gamma_1^i d_t \dots\dots\dots(29)$$

$$s_{j,t}^{*i} = -s_{j,t-1}^i \sin \lambda_j^i + s_{j,t-1}^{*i} \cos \lambda_j^i + \gamma_2^i d_t \dots\dots\dots(30)$$

with γ_1^i and γ_2^i being smoothing parameters and $\lambda_j^i = 2\pi j/m_i$. The authors describe the stochastic component by $s_{j,t}^i$ and the stochastic growth in level for the i-th seasonal component needed for description of change as $s_{j,t}^{*i}$. Therefore, the TBATS model can be fitted by replacing this new seasonal component into the equations for the BATS model (for further details please see [De Livera et. al. 2011]).

In addition, a Seasonal Auto Regressive Integrated Moving Average Model with drift (SARIMAd) is also fit to the data subsetted by each analyte or type of pollutants/variables measured. Which as explained below has wide applicability in a wide range of time series analysis. Thus, let $\epsilon_t \in Z$ be a white noise process, $p, q \geq 0$ be integers and $a_0, a_1, \dots, a_p \in R$ and $b_0, b_1, \dots, b_q \in R$. Then, a real valued stochastic process $Y_t \in Z$, is said to be an

Autoregressive Moving Average Process of order (p,q) if

$$Y_t = a_1 Y_{t-1} + a_2 Y_{t-2} \dots + a_p Y_{t-p} + b_1 \epsilon_{t-1} + b_2 \epsilon_{t-2} + \dots + b_q \epsilon_{t-q} \dots\dots\dots(31)$$

In addition, if the underlying stochastic model has some type of polynomial trend to it of order say $k \neq 0$, then by considering the difference of $Y_{t=c}$ and $Y_{t=c-k}$ we can get rid of this trend and the process would then be called and ARIMA process. As an extension of this model the SARIMA model this trend and the process would then be called an ARIMA process. As an extension of this model the SARIMA model elaborated on above, which is given by:

$$\phi_p(B)\theta_p(B^S)W_t = \Phi_q(B)\Theta_q(B^S)Z_t \dots\dots\dots(32)$$

where B is the backward shift operator and $\phi_p, \theta_p, \Phi_q, \Theta_q$ are polynomials of order p, P, q, Q respectively and Z_t is a purely random process and

$$W_t = \Delta^d \Delta_s^D X_t \dots\dots\dots(33)$$

is the differenced series ([Chatfield 2004]).

Appendix 2: Short Summary of Chen and Liu Algorithm.

Based on the underlying construct as mentioned in the Materials and Methods Section, the authors can define the impact on the errors by

$$\pi(B) = \frac{\phi(B)\alpha(B)}{\theta(B)} = 1 - \pi_1 B - \pi_2 B^2 - \dots \dots \dots (34)$$

with the impact of $\pi_{j=p+d+q}$ being essentially 0 beyond a moderately large j. Therefore, the least square estimate of a single outlier at $t = t_1$ can be given by:

$$\widehat{\omega}_{IO}(t_1) = \widehat{e}_{t_1} \dots \dots \dots (35)$$

$$\widehat{\omega}_{AO}(t_1) = \frac{\sum_{t=t_1}^n \widehat{e}_t X_{2t}}{\sum_{t=t_1}^n X_{2t}^2} \dots \dots \dots (36)$$

$$\widehat{\omega}_{LS}(t_1) = \frac{\sum_{t=t_1}^n \widehat{e}_t X_{3t}}{\sum_{t=t_1}^n X_{3t}^2} \dots \dots \dots (37)$$

$$\widehat{\omega}_{TC}(t_1) = \frac{\sum_{t=t_1}^n \widehat{e}_t X_{4t}}{\sum_{t=t_1}^n X_{4t}^2} \dots \dots \dots (38)$$

where

$$x_{1(t_1+k)} = 0, x_{2(t_1+k)} = -\pi_k, x_{3(t_1+k)} = 1 - \sum_{j=1}^k \pi_j, x_{4(t_1+k)} = \delta^k - \sum_{j=1}^k \delta^{k-j} \pi_j - \pi_k \dots \dots \dots (39)$$

Thus, as Chang et. al. (1988) discuss one possible way to detect outliers is to look at the maximum value of a standardized statistic. This is exactly what is done in ([Chen, Liu 1993]) with the standardized statistics being

$$\widehat{\tau}_{IO}(t_1) = \frac{\widehat{\omega}_{IO}(t_1)}{\widehat{\sigma}_a} \dots \dots \dots (40)$$

$$\widehat{\tau}_{AO}(t_1) = \frac{\widehat{\omega}_{IO}(t_1)}{\widehat{\sigma}_a} \times (\sum_{t=t_1}^n X_{2t}^2)^{1/2} \dots \dots (41)$$

$$\widehat{\tau}_{LS}(t_1) = \frac{\widehat{\omega}_{LS}(t_1)}{\widehat{\sigma}_a} \times (\sum_{t=t_1}^n X_{3t}^2)^{1/2} \dots \dots (42)$$

$$\widehat{\tau}_{TC}(t_1) = \frac{\widehat{\omega}_{LS}(t_1)}{\widehat{\sigma}_a} \times (\sum_{t=t_1}^n X_{4t}^2)^{1/2} \dots \dots (43)$$

where

$$\widehat{\sigma}_a = 1.483 \times \text{median } \widehat{e} - \widetilde{e} \dots \dots \dots (44)$$

with

$$\widetilde{e} = \text{median of estimated residuals} \dots \dots (45)$$

This same methodology can be easily extended to the presence of multiple outliers by considering:

$$Y_t^* = \omega_1 I_t(t_1) + \omega_2 I_t(t_2) + \left(\frac{\theta(B)}{\phi(B)}\right) a_t \dots \dots \dots (46)$$

$$\widehat{e}_t = \pi(B) Y_t^* = \omega_1 \pi(B) I_t(t_1) + \omega_2 \pi(B) I_t(t_2) \dots \dots \dots (47)$$

thus in the presence of m interventions at time points $\{t_1, \dots, t_m\}$

$$Y_t^* = \sum_{j=1}^m \omega_j L_j(B) I_t(t_j) + \left(\frac{\theta(B)}{\alpha(B)\phi(B)}\right) \dots \dots \dots (48)$$

where $L_j(B) = \left(\frac{\theta(B)}{\alpha(B)\phi(B)}\right)$ for an IO, 1 for an AO, $1/(1-B)$ for a LS, and $\frac{1}{1-\delta B}$ for a TC at $t = t_j$. This, the residuals for fitting the ARMA model can be expressed as

$$\sum_{j=1}^m \omega_j \pi(B) L_j(B) I_t^j + a_t \dots \dots \dots (49)$$

These last two equations can be used to identify outlier effect, correct for it and rerun the model, till no more outliers are detectable, the reader is referred to [Chen, Liu 1993] for further details.

Appendix 3: GT I Result High Level Summary.

<u>Normal Data Generating Process Summarized Ground Truthing Results</u>			
<u>Cutoff in Standard Deviation</u>	<u>Outlier Value Added to Average of Ensemble</u>	<u>Outcome</u>	<u>Count</u>
1	0.1	Superior	74
1	0.1	Cannot Compare	7
1	10.1	Superior	78
1	10.1	Cannot Compare	3
1	20.1	Superior	72
1	20.1	Same	9
1	30.1	Superior	60
1	30.1	Same	21
1	40.1	Superior	48
1	40.1	Same	22
1	40.1	Inferior	11
1	50.1	Superior	47
1	50.1	Same	22
1	50.1	Inferior	12
1	60.1	Superior	44
1	60.1	Same	22
1	60.1	Inferior	15
1	70.1	Superior	44
1	70.1	Same	22
1	70.1	Inferior	15
1	80.1	Superior	53
1	80.1	Same	22
1	80.1	Inferior	6
1	90.1	Superior	56
1	90.1	Same	22
1	90.1	Inferior	3
2	0.1	Cannot Compare	47
2	0.1	Superior	34
2	10.1	Cannot Compare	56
2	10.1	Superior	25
2	20.1	Cannot Compare	39
2	20.1	Superior	31
2	20.1	Same	8

2	20.1	Inferior	3
2	30.1	Cannot Compare	37
2	30.1	Same	21
2	30.1	Superior	21
2	30.1	Inferior	2
2	40.1	Cannot Compare	33
2	40.1	Same	22
2	40.1	Superior	15
2	40.1	Inferior	11
2	50.1	Cannot Compare	32
2	50.1	Same	22
2	50.1	Superior	15
2	50.1	Inferior	12
2	60.1	Cannot Compare	29
2	60.1	Same	22
2	60.1	Inferior	15
2	60.1	Superior	15
2	70.1	Cannot Compare	29
2	70.1	Same	22
2	70.1	Inferior	15
2	70.1	Superior	15
2	80.1	Cannot Compare	37
2	80.1	Same	22
2	80.1	Superior	16
2	80.1	Inferior	6
2	90.1	Cannot Compare	37
2	90.1	Same	22
2	90.1	Superior	19
2	90.1	Inferior	3
3	0.1	Cannot Compare	81
3	10.1	Cannot Compare	76
3	10.1	Superior	5
3	20.1	Cannot Compare	47
3	20.1	Superior	23
3	20.1	Same	8
3	20.1	Inferior	3
3	30.1	Cannot Compare	41
3	30.1	Same	20
3	30.1	Superior	16
3	30.1	Inferior	4
3	40.1	Cannot Compare	33

3	40.1	Same	22
3	40.1	Superior	15
3	40.1	Inferior	11
3	50.1	Cannot Compare	32
3	50.1	Same	22
3	50.1	Superior	15
3	50.1	Inferior	12
3	60.1	Cannot Compare	29
3	60.1	Same	22
3	60.1	Inferior	15
3	60.1	Superior	15
3	70.1	Cannot Compare	29
3	70.1	Same	22
3	70.1	Inferior	15
3	70.1	Superior	15
3	80.1	Cannot Compare	38
3	80.1	Same	22
3	80.1	Superior	15
3	80.1	Inferior	6
3	90.1	Cannot Compare	41
3	90.1	Same	22
3	90.1	Superior	15
3	90.1	Inferior	3
4	0.1	Cannot Compare	81
4	10.1	Cannot Compare	81
4	20.1	Cannot Compare	57
4	20.1	Superior	13
4	20.1	Inferior	6
4	20.1	Same	5
4	30.1	Cannot Compare	41
4	30.1	Superior	16
4	30.1	Inferior	12
4	30.1	Same	12
4	40.1	Cannot Compare	33
4	40.1	Same	22
4	40.1	Superior	15
4	40.1	Inferior	11
4	50.1	Cannot Compare	32
4	50.1	Same	22
4	50.1	Superior	15
4	50.1	Inferior	12

4	60.1	Cannot Compare	29
4	60.1	Same	22
4	60.1	Inferior	15
4	60.1	Superior	15
4	70.1	Cannot Compare	29
4	70.1	Same	22
4	70.1	Inferior	15
4	70.1	Superior	15
4	80.1	Cannot Compare	38
4	80.1	Same	22
4	80.1	Superior	15
4	80.1	Inferior	6
4	90.1	Cannot Compare	41
4	90.1	Same	22
4	90.1	Superior	15
4	90.1	Inferior	3
5	0.1	Cannot Compare	81
5	10.1	Cannot Compare	81
5	20.1	Cannot Compare	66
5	20.1	Inferior	11
5	20.1	Same	3
5	20.1	Superior	1
5	30.1	Cannot Compare	41
5	30.1	Inferior	16
5	30.1	Superior	15
5	30.1	Same	9
5	40.1	Cannot Compare	33
5	40.1	Same	22
5	40.1	Superior	15
5	40.1	Inferior	11
5	50.1	Cannot Compare	32
5	50.1	Same	22
5	50.1	Superior	15
5	50.1	Inferior	12
5	60.1	Cannot Compare	29
5	60.1	Same	22
5	60.1	Inferior	15
5	60.1	Superior	15
5	70.1	Cannot Compare	29
5	70.1	Same	22
5	70.1	Inferior	15

5	70.1	Superior	15
5	80.1	Cannot Compare	38
5	80.1	Same	22
5	80.1	Superior	15
5	80.1	Inferior	6
5	90.1	Cannot Compare	41
5	90.1	Same	22
5	90.1	Superior	15
5	90.1	Inferior	3

Appendix 4: GT II Result High Level Summary.

<u>Poisson Data Generating Process Summarized Ground Truthing Results</u>			
<u>Cutoff in Standard Deviation</u>	<u>Outlier Value Added to Average of Ensemble</u>	<u>Outcome</u>	<u>Count</u>
1	0.1	Superior	143
1	0.1	Cannot Compare	10
1	10.1	Superior	149
1	10.1	Cannot Compare	2
1	20.1	Superior	126
1	20.1	Same	21
1	20.1	Inferior	4
1	30.1	Same	83
1	30.1	Superior	61
1	30.1	Inferior	7
1	40.1	Same	87
1	40.1	Superior	58
1	40.1	Inferior	6
1	50.1	Same	85
1	50.1	Superior	65
1	50.1	Inferior	3
1	60.1	Same	79
1	60.1	Superior	68
1	70.1	Same	78
1	70.1	Superior	69
1	80.1	Same	78
1	80.1	Superior	69
1	90.1	Superior	74
1	90.1	Same	73
2	0.1	Superior	116
2	0.1	Cannot Compare	37
2	10.1	Superior	137
2	10.1	Cannot Compare	14
2	20.1	Superior	126
2	20.1	Same	21
2	20.1	Inferior	4
2	30.1	Same	77
2	30.1	Superior	57
2	30.1	Inferior	13
2	30.1	Cannot Compare	4

2	40.1	Same	78
2	40.1	Superior	40
2	40.1	Cannot Compare	18
2	40.1	Inferior	15
2	50.1	Same	80
2	50.1	Cannot Compare	35
2	50.1	Superior	30
2	50.1	Inferior	8
2	60.1	Same	79
2	60.1	Cannot Compare	39
2	60.1	Superior	29
2	70.1	Same	78
2	70.1	Cannot Compare	39
2	70.1	Superior	30
2	80.1	Same	78
2	80.1	Cannot Compare	40
2	80.1	Superior	29
2	90.1	Same	73
2	90.1	Cannot Compare	41
2	90.1	Superior	33
3	0.1	Cannot Compare	88
3	0.1	Superior	65
3	10.1	Superior	118
3	10.1	Cannot Compare	33
3	20.1	Superior	102
3	20.1	Cannot Compare	24
3	20.1	Same	17
3	20.1	Inferior	8
3	30.1	Same	59
3	30.1	Cannot Compare	41
3	30.1	Inferior	31
3	30.1	Superior	20
3	40.1	Same	72
3	40.1	Cannot Compare	36
3	40.1	Superior	22
3	40.1	Inferior	21
3	50.1	Same	76
3	50.1	Cannot Compare	42
3	50.1	Superior	23
3	50.1	Inferior	12
3	60.1	Same	76

3	60.1	Cannot Compare	47
3	60.1	Superior	21
3	60.1	Inferior	3
3	70.1	Same	76
3	70.1	Cannot Compare	48
3	70.1	Superior	21
3	70.1	Inferior	2
3	80.1	Same	77
3	80.1	Cannot Compare	48
3	80.1	Superior	21
3	80.1	Inferior	1
3	90.1	Same	72
3	90.1	Cannot Compare	48
3	90.1	Superior	26
3	90.1	Inferior	1
4	0.1	Cannot Compare	133
4	0.1	Superior	20
4	10.1	Cannot Compare	84
4	10.1	Superior	67
4	20.1	Superior	76
4	20.1	Cannot Compare	50
4	20.1	Inferior	18
4	20.1	Same	7
4	30.1	Inferior	50
4	30.1	Cannot Compare	41
4	30.1	Same	40
4	30.1	Superior	20
4	40.1	Same	58
4	40.1	Cannot Compare	36
4	40.1	Inferior	35
4	40.1	Superior	22
4	50.1	Same	65
4	50.1	Cannot Compare	43
4	50.1	Inferior	23
4	50.1	Superior	22
4	60.1	Same	65
4	60.1	Cannot Compare	47
4	60.1	Superior	21
4	60.1	Inferior	14
4	70.1	Same	66
4	70.1	Cannot Compare	48

4	70.1	Superior	21
4	70.1	Inferior	12
4	80.1	Same	67
4	80.1	Cannot Compare	49
4	80.1	Superior	20
4	80.1	Inferior	11
4	90.1	Same	66
4	90.1	Cannot Compare	49
4	90.1	Superior	25
4	90.1	Inferior	7
5	0.1	Cannot Compare	153
5	10.1	Cannot Compare	144
5	10.1	Inferior	7
5	20.1	Superior	60
5	20.1	Cannot Compare	51
5	20.1	Inferior	37
5	20.1	Same	3
5	30.1	Inferior	63
5	30.1	Cannot Compare	41
5	30.1	Same	28
5	30.1	Superior	19
5	40.1	Inferior	56
5	40.1	Same	40
5	40.1	Cannot Compare	36
5	40.1	Superior	19
5	50.1	Same	50
5	50.1	Cannot Compare	43
5	50.1	Inferior	41
5	50.1	Superior	19
5	60.1	Same	51
5	60.1	Cannot Compare	47
5	60.1	Inferior	31
5	60.1	Superior	18
5	70.1	Same	54
5	70.1	Cannot Compare	49
5	70.1	Inferior	26
5	70.1	Superior	18
5	80.1	Same	55
5	80.1	Cannot Compare	50
5	80.1	Inferior	25
5	80.1	Superior	17

5	90.1	Cannot Compare	55
5	90.1	Same	55
5	90.1	Inferior	20
5	90.1	Superior	17

Appendix 5: Cluster Based GT I Results

<u>Summary of Cluster Based GT I Results</u>				
<u>Heuristic Dataset Percentage of Outliers</u>	<u>Chen and Liu Dataset Percentage of Outliers</u>	<u>Cluster</u>	<u>Outcome</u>	<u>Number of Outcomes</u>
0.03%	0.13%	22	Same	329
0.03%	0.13%	22	Cannot Compare	86
0.03%	0.13%	22	Superior	29
0.03%	0.13%	22	Inferior	6
0.06%	0.25%	17	Superior	39
0.06%	0.25%	17	Cannot Compare	10
0.06%	0.25%	17	Inferior	1
0.07%	0.13%	5	Same	148
0.07%	0.13%	5	Cannot Compare	35
0.07%	0.13%	5	Superior	10
0.07%	0.13%	5	Inferior	7
0.10%	0.13%	28	Same	34
0.10%	0.13%	28	Superior	8
0.10%	0.13%	28	Cannot Compare	7
0.10%	0.13%	28	Inferior	1
0.10%	0.25%	19	Superior	42
0.10%	0.25%	19	Cannot Compare	7
0.10%	0.25%	19	Inferior	1
0.12%	0.25%	9	Superior	41
0.12%	0.25%	9	Cannot Compare	9
0.14%	0.13%	35	Same	33
0.14%	0.13%	35	Cannot Compare	9
0.14%	0.13%	35	Superior	6
0.14%	0.13%	35	Inferior	2
0.16%	0.37%	25	Superior	79
0.16%	0.37%	25	Cannot Compare	21
0.17%	0.13%	36	Same	166
0.17%	0.13%	36	Cannot Compare	40
0.17%	0.13%	36	Superior	30
0.17%	0.13%	36	Inferior	14
0.20%	0.25%	32	Superior	84
0.20%	0.25%	32	Cannot Compare	16
0.21%	0.13%	10	Same	66

0.21%	0.13%	10	Cannot Compare	15
0.21%	0.13%	10	Superior	15
0.21%	0.13%	10	Inferior	4
0.24%	0.25%	13	Superior	44
0.24%	0.25%	13	Cannot Compare	6
0.24%	0.37%	3	Superior	88
0.24%	0.37%	3	Cannot Compare	12
0.26%	0.25%	6	Superior	84
0.26%	0.25%	6	Cannot Compare	16
0.28%	0.50%	20	Superior	128
0.28%	0.50%	20	Cannot Compare	20
0.28%	0.50%	20	Inferior	2
1.54%	1.75%	12	Inferior	34
1.54%	1.75%	12	Cannot Compare	12
1.54%	1.75%	12	Superior	4
7.49%	7.56%	15	Inferior	75
7.49%	7.56%	15	Cannot Compare	16
7.49%	7.56%	15	Superior	9
11.94%	12.63%	1	Inferior	25
11.94%	12.63%	1	Cannot Compare	17
11.94%	12.63%	1	Superior	8
17.45%	16.75%	41	Inferior	70
17.45%	16.75%	41	Cannot Compare	55
17.45%	16.75%	41	Superior	25
23.49%	22.25%	24	Cannot Compare	64
23.49%	22.25%	24	Inferior	20
23.49%	22.25%	24	Superior	16
26.44%	26.88%	38	Cannot Compare	40
26.44%	26.88%	38	Superior	10
28.31%	28.71%	37	Cannot Compare	111
28.31%	28.71%	37	Superior	29
28.31%	28.71%	37	Inferior	10
31.74%	27.50%	14	Cannot Compare	35
31.74%	27.50%	14	Superior	10
31.74%	27.50%	14	Inferior	5
31.96%	31.75%	26	Cannot Compare	40
31.96%	31.75%	26	Superior	10
32.16%	30.13%	31	Cannot Compare	40
32.16%	30.13%	31	Superior	10
32.65%	34.21%	18	Cannot Compare	118
32.65%	34.21%	18	Superior	32

33.14%	33.50%	42	Cannot Compare	39
33.14%	33.50%	42	Superior	11
33.66%	34.13%	33	Cannot Compare	28
33.66%	34.13%	33	Inferior	15
33.66%	34.13%	33	Superior	7
33.95%	33.75%	2	Cannot Compare	79
33.95%	33.75%	2	Superior	21
34.42%	32.25%	27	Cannot Compare	39
34.42%	32.25%	27	Superior	11
34.42%	33.38%	40	Cannot Compare	27
34.42%	33.38%	40	Inferior	15
34.42%	33.38%	40	Superior	8
34.57%	37.69%	7	Cannot Compare	62
34.57%	37.69%	7	Inferior	20
34.57%	37.69%	7	Superior	18
34.62%	36.13%	29	Cannot Compare	39
34.62%	36.13%	29	Superior	11
34.92%	35.13%	30	Cannot Compare	39
34.92%	35.13%	30	Superior	11
34.95%	35.88%	21	Cannot Compare	106
34.95%	35.88%	21	Superior	29
34.95%	35.88%	21	Inferior	15
35.65%	36.94%	39	Cannot Compare	66
35.65%	36.94%	39	Superior	19
35.65%	36.94%	39	Inferior	15
36.07%	38.62%	4	Cannot Compare	110
36.07%	38.62%	4	Superior	30
36.07%	38.62%	4	Inferior	10
36.53%	35.44%	34	Cannot Compare	79
36.53%	35.44%	34	Superior	21
36.56%	34.25%	8	Cannot Compare	40
36.56%	34.25%	8	Superior	10
36.78%	35.75%	16	Cannot Compare	39
36.78%	35.75%	16	Superior	11
37.04%	37.81%	11	Cannot Compare	78
37.04%	37.81%	11	Superior	22
38.20%	38.50%	23	Cannot Compare	39
38.20%	38.50%	23	Superior	11

Appendix 6: Summary of Cluster Based GT II Results.

Summary of Cluster Based GT II Results				
<u>Heuristic Dataset Percentage of Outliers</u>	<u>Chen and Liu Dataset Percentage of Outliers</u>	<u>Cluster</u>	<u>Outcome</u>	<u>Number of Outcomes</u>
0.03%	0.13%	48	Same	350
0.03%	0.13%	48	Cannot Compare	85
0.03%	0.13%	48	Superior	20
0.03%	0.13%	48	Inferior	5
0.07%	0.13%	30	Same	450
0.07%	0.13%	30	Cannot Compare	86
0.07%	0.13%	30	Superior	44
0.07%	0.13%	30	Inferior	20
0.09%	0.25%	11	Superior	49
0.09%	0.25%	11	Cannot Compare	11
0.14%	0.13%	3	Same	181
0.14%	0.13%	3	Cannot Compare	32
0.14%	0.13%	3	Superior	28
0.14%	0.13%	3	Inferior	9
0.14%	0.50%	41	Superior	43
0.14%	0.50%	41	Cannot Compare	7
0.17%	0.25%	2	Superior	218
0.17%	0.25%	2	Cannot Compare	31
0.17%	0.25%	2	Inferior	1
0.20%	0.13%	36	Same	37
0.20%	0.13%	36	Cannot Compare	6
0.20%	0.13%	36	Superior	4
0.20%	0.13%	36	Inferior	3
0.22%	0.13%	4	Same	35
0.22%	0.13%	4	Superior	11
0.22%	0.13%	4	Cannot Compare	4
0.25%	0.41%	19	Superior	219
0.25%	0.41%	19	Cannot Compare	31
0.26%	0.25%	39	Superior	221
0.26%	0.25%	39	Cannot Compare	29
1.51%	1.06%	43	Same	68
1.51%	1.06%	43	Superior	22
1.51%	1.06%	43	Cannot Compare	8

1.51%	1.06%	43	Inferior	2
1.56%	0.87%	20	Same	34
1.56%	0.87%	20	Superior	12
1.56%	0.87%	20	Cannot Compare	3
1.56%	0.87%	20	Inferior	1
1.66%	1.91%	33	Same	135
1.66%	1.91%	33	Superior	43
1.66%	1.91%	33	Cannot Compare	17
1.66%	1.91%	33	Inferior	5
1.72%	1.06%	23	Same	66
1.72%	1.06%	23	Superior	22
1.72%	1.06%	23	Cannot Compare	8
1.72%	1.06%	23	Inferior	4
2.06%	2.04%	45	Same	101
2.06%	2.04%	45	Superior	33
2.06%	2.04%	45	Cannot Compare	12
2.06%	2.04%	45	Inferior	4
2.10%	3.13%	5	Same	34
2.10%	3.13%	5	Superior	12
2.10%	3.13%	5	Cannot Compare	3
2.10%	3.13%	5	Inferior	1
2.15%	2.88%	24	Same	52
2.15%	2.88%	24	Superior	37
2.15%	2.88%	24	Cannot Compare	8
2.15%	2.88%	24	Inferior	3
2.51%	2.44%	26	Same	194
2.51%	2.44%	26	Superior	66
2.51%	2.44%	26	Cannot Compare	23
2.51%	2.44%	26	Inferior	17
3.01%	2.84%	21	Same	122
3.01%	2.84%	21	Superior	44
3.01%	2.84%	21	Inferior	18
3.01%	2.84%	21	Cannot Compare	16
3.45%	3.25%	29	Same	86
3.45%	3.25%	29	Superior	34
3.45%	3.25%	29	Inferior	19
3.45%	3.25%	29	Cannot Compare	11
3.70%	4.13%	38	Same	89
3.70%	4.13%	38	Superior	69
3.70%	4.13%	38	Inferior	27
3.70%	4.13%	38	Cannot Compare	15

3.80%	3.63%	44	Same	52
3.80%	3.63%	44	Superior	23
3.80%	3.63%	44	Inferior	19
3.80%	3.63%	44	Cannot Compare	6
4.15%	4.31%	47	Same	50
4.15%	4.31%	47	Inferior	21
4.15%	4.31%	47	Superior	20
4.15%	4.31%	47	Cannot Compare	9
4.30%	4.38%	42	Same	25
4.30%	4.38%	42	Inferior	11
4.30%	4.38%	42	Superior	9
4.30%	4.38%	42	Cannot Compare	5
4.52%	5.81%	14	Same	39
4.52%	5.81%	14	Inferior	33
4.52%	5.81%	14	Superior	21
4.52%	5.81%	14	Cannot Compare	7
5.28%	3.69%	34	Same	43
5.28%	3.69%	34	Inferior	28
5.28%	3.69%	34	Superior	19
5.28%	3.69%	34	Cannot Compare	10
5.41%	6.17%	9	Same	54
5.41%	6.17%	9	Inferior	43
5.41%	6.17%	9	Superior	38
5.41%	6.17%	9	Cannot Compare	15
5.94%	5.69%	32	Superior	118
5.94%	5.69%	32	Inferior	44
5.94%	5.69%	32	Same	21
5.94%	5.69%	32	Cannot Compare	17
6.07%	6.19%	10	Same	37
6.07%	6.19%	10	Inferior	30
6.07%	6.19%	10	Superior	24
6.07%	6.19%	10	Cannot Compare	9
6.61%	6.96%	27	Same	52
6.61%	6.96%	27	Inferior	47
6.61%	6.96%	27	Superior	39
6.61%	6.96%	27	Cannot Compare	12
10.66%	10.75%	40	Superior	31
10.66%	10.75%	40	Inferior	29
10.66%	10.75%	40	Cannot Compare	24
10.66%	10.75%	40	Same	16
15.98%	16.63%	35	Superior	36

15.98%	16.63%	35	Cannot Compare	34
15.98%	16.63%	35	Inferior	23
15.98%	16.63%	35	Same	7
20.97%	22.19%	13	Superior	36
20.97%	22.19%	13	Cannot Compare	33
20.97%	22.19%	13	Inferior	25
20.97%	22.19%	13	Same	6
26.64%	26.31%	46	Cannot Compare	126
26.64%	26.31%	46	Superior	79
26.64%	26.31%	46	Inferior	23
26.64%	26.31%	46	Same	2
28.65%	29.59%	28	Cannot Compare	229
28.65%	29.59%	28	Superior	121
28.65%	29.59%	28	Inferior	10
30.39%	30.81%	37	Cannot Compare	123
30.39%	30.81%	37	Superior	77
31.24%	26.94%	7	Cannot Compare	47
31.24%	26.94%	7	Superior	28
31.24%	26.94%	7	Inferior	5
32.32%	31.96%	8	Cannot Compare	168
32.32%	31.96%	8	Superior	102
32.32%	31.96%	8	Inferior	26
32.32%	31.96%	8	Same	4
34.02%	34.75%	16	Cannot Compare	66
34.02%	34.75%	16	Superior	34
34.51%	33.03%	22	Cannot Compare	115
34.51%	33.03%	22	Superior	70
34.51%	33.03%	22	Inferior	15
34.80%	35.25%	49	Cannot Compare	34
34.80%	35.25%	49	Superior	16
34.85%	33.94%	6	Cannot Compare	62
34.85%	33.94%	6	Superior	33
34.85%	33.94%	6	Inferior	5
35.99%	37.31%	12	Cannot Compare	58
35.99%	37.31%	12	Superior	32
35.99%	37.31%	12	Inferior	9
35.99%	37.31%	12	Same	1
36.26%	34.25%	15	Cannot Compare	34
36.26%	34.25%	15	Superior	16
36.35%	38.19%	18	Cannot Compare	64
36.35%	38.19%	18	Superior	36

36.43%	35.38%	1	Cannot Compare	77
36.43%	35.38%	1	Superior	53
36.43%	35.38%	1	Inferior	20
36.77%	37.25%	17	Cannot Compare	55
36.77%	37.25%	17	Superior	35
36.77%	37.25%	17	Inferior	10
37.00%	36.00%	25	Cannot Compare	66
37.00%	36.00%	25	Superior	34
37.56%	36.88%	31	Cannot Compare	32
37.56%	36.88%	31	Superior	18

Appendix 7: Summary of Analytes Fit.

List of Analytes on Which Each Models Could Be Fit - Note All Corresponding Graphs Follow Index Shown From Left to Right								
<u>I</u> <u>n</u> <u>d</u> <u>e</u> <u>x</u>	<u>Heuristic</u> <u>Dry</u> <u>Weight</u> <u>(Figure</u> <u>4)</u>	<u>Heuristic</u> <u>Wet</u> <u>Weight</u> <u>(Figure 5)</u>	<u>Chen</u> <u>and Liu</u> <u>Dry</u> <u>Weight</u> <u>(Figure</u> <u>6)</u>	<u>Chen and</u> <u>Liu Wet</u> <u>Weight</u> <u>(Figure 7)</u>	<u>Supervis</u> <u>ed I Dry</u> <u>Weight</u> <u>(Figure</u> <u>8)</u>	<u>Supervis</u> <u>ed I Wet</u> <u>Weight</u> <u>(Figure</u> <u>9)</u>	<u>Supervis</u> <u>ed II</u> <u>Dry</u> <u>Weight</u> <u>(Figure</u> <u>10)</u>	<u>Supervis</u> <u>ed II</u> <u>Wet</u> <u>Weight</u> <u>(Figure</u> <u>11)</u>
1	Boron, Total	Acid Neutralizing Capacity, Total	Acid Volatile Sulfides, Total	Acid Neutralizing Capacity, Total	DDE(o,p'), Total	Acenaphthene, Total	Acenaphthylene, Total	Acenaphthylene, Total
2	Butyl Benzyl Phthalate, Total	Ash Free Dry Mass, Total	Boron, Total	Aldrin, Dissolved	DDT(o,p'), Total	Clay, Fine <0.00098 mm	Anthracene, Total	Anthracene, Total
3	Coliform, Fecal	Bacteroidales, Universal, Total	Cobalt, Total	Alkalinity as CaCO ₃ , Dissolved	PCB 114, Total	CPOM	Barium, Total	Barium, Total
4	Lanthanum, Total	Barium, Dissolved	HxCDD, 1,2,3,4,7,8-, Total	Allethrin, Total	Iron, Total	DDE(p,p'), Total	Beryllium, Total	Beryllium, Total
5	Methylphenanthrene, 2-, Total	Benz(a)anthracenes/Chrysenes, C2-, Dissolved	HxCDF, 2,3,4,6,7,8-, Total	Anthracene, Dissolved	PCB 177, Total	Fluorene, Total	Biphenyl, Total	Biphenyl, Total
6	Nonylphenol, p-, Total	Chrysenes, C2-, Total	Iron, Total	Barium, Dissolved	Methylfluoranthene, 2-, Total	Fluorenes, C2-, Total	Cyfluthrin, total, Total	DDE(o,p'), Total
7	PBDE 194, Total	Coronene, Dissolved	Methylphenanthrene, 2-, Total	Benz(a)anthracenes/Chrysenes, C2-, Dissolved	PCB 151, Total	Oxadiazon, Total	DDE(o,p'), Total	DDT(o,p'), Total
8	PCB 159, Total	Demeton, Total, Total	Nitrogen, Total, Total	Benz(a)anthracenes/Chrysenes, C3-, Dissolved	Methylphthalene, 1-, Total	Perchlorate, Dissolved	DDT(o,p'), Total	Iron, Total
9	Phosphorus as P, Total	Dissolved Inorganic Carbon, Dissolved	Nonylphenol, p-, Total	Benz(a)anthracenes/Chrysenes, C4-, Dissolved	Barium, Total	Sand, 0.0625 to <2.0 mm	Fluoranthene/Pyrenes, C1-, Total	Mercury, Total
10	Sodium, Total	Esfenvalerate/Fenvalerate-1,	PBDE 051, Total	Bicarbonate, Total	Beryllium, Total	Silver, Total	Fluorene, Total	Methylfluoranthene, 2-,

		Total						Total
1 1	Total DDTs, Total	Fine, <0.0625 mm	PBDE 194, Total	BOD, Not Recorded	Phenanthrene/Ant hracene, C1-, Total	Clay, <0.005 mm	Iron, Total	Methylna phthalene , 1-, Total
1 2	Trifluralin, Total	Fluvalinate , Total	PBDE 201, Total	Bromacil, Total	Phenanthrene/Ant hracene, C2-, Total	Silt, 0.005 to <0.075 mm	Mercury, Total	Naphthalene, Total
1 3	PCB 138, Total	PBDE 017, Dissolved	PCB 006, Total	Chlordene, trans-, Total	Chrysene s, C1-, Total	Sand, Medium 0.425 to <2.0 mm	Methylna phthalene , 1-, Total	PCB 114, Total
1 4	PCB 153, Total	PBDE 206, Particulate	PCB 011, Total	Clay, <0.0039 mm	Phenanthrene/Ant hracene, C3-, Total	Alkalinity as CaCO3, Dissolved	Naphthalene, Total	PCB 138, Total
1 5	PCB 180, Total	PBDE 207, Dissolved	PCB 017, Total	Clay, <0.005 mm	PCB 138, Total	Velocity	PCB 097, Total	PCB 151, Total
1 6	PCB 052, Total	PBDE 208, Particulate	PCB 041, Total	Clomazone , Total	Acenapht hylene, Total	Clay, <0.0039 mm	PCB 114, Total	PCB 170, Total
1 7	PCB 028, Total	PCB 040, Dissolved	PCB 043, Total	Color, True	Silver, Total	Sodium, Dissolved	PCB 151, Total	PCB 177, Total
1 8	PCB 049, Total	Resmethrin , Total	PCB 067, Total	Coronene, Dissolved	Methylna phthalene , 2-, Total	Silt, 0.0039 to <0.0625 mm	PCB 170, Total	PCB AROCL OR 1248, Total
1 9	PCB 177, Total	Sand, 0.0625 to <2.0 mm	PCB 089, Total	Dibenzothiophenes, C1-, Particulate	Lead, Total	Calcium, Dissolved	PCB 183, Total	Perylene, Total
2 0	PCB 170, Total	Silt, 0.005 to <0.075 mm	PCB 109, Total	Dissolved Inorganic Carbon, Dissolved	PCB 170, Total	Sand, Fine 0.075 to <0.425 mm	PCB AROCL OR 1248, Total	Copper, Total
2 1	PCB 194, Total	StationWaterDepth, Total	PCB 124, Total	Esfenvalerate/Fenvalerate-1, Total	PCB 158, Total	Silica as SiO2, Dissolved	Perylene, Total	Benzo(b) fluoranthene, Total
2 2	PCB 031, Total	Suspended Sediment Concentration, Total	PCB 130, Total	Fine, <0.0625 mm	PCB 128, Total	Phenanthrene/Ant hracene, C2-, Total	Phosphorus as P, Total	Aluminum, Total
2 3	PCB 018, Total	Total Normal, Total	PCB 131, Total	Fine, <0.075 mm	Phenanthrene, Total	Dibenzothiophenes, C1-, Total	Trimethyl naphthalene,	Benzo(e) pyrene, Total

						Total	2,3,5-, Total	
24	PCB 008, Total	Toxaphene, Total	PCB 133, Total	HpCDF, 1,2,3,4,7,8,9-, Total	Chromium, Total	Sodium, Total	Copper, Total	Benzo(a)pyrene, Total
25	PCB 195, Total	TPH as Motor Oil C21-C32, Total	PCB 136, Total	HxCDF, 2,3,4,6,7,8-, Total	Anthracene, Total	Magnesium, Total	Zinc, Total	Chrysene, Total
26	PCB 132, Total	PAR	PCB 144, Total	Isoxaben, Total	Phenanthrene/Anthracene, C4-, Total	Iron, Dissolved	Benzo(b)fluoranthene, Total	Indeno(1,2,3-c,d)pyrene, Total
27	Hexachlorobenzene, Total	Specific Conductivity, Total	PCB 159, Total	Nickel, Dissolved	PCB 101, Total	MBAS, Total	Aluminum, Total	Benz(a)anthracene, Total
28	HCH, beta-, Total	Turbidity, Total	PCB 171, Total	Nonylphenol, p-, Total	PCB 110, Total	Naphthalene, Total	Benzo(e)pyrene, Total	Phenanthrene/Anthracene, C1-, Total
29	HCH, gamma-, Total	Velocity	PCB 175, Total	PAR	Naphthalenes, C2-, Total	Magnesium, Dissolved	Benzo(a)pyrene, Total	Benzo(k)fluoranthene, Total
30	Heptachlor Epoxide, Total	Oxygen, Dissolved, Total	PCB 176, Total	PBDE 007, Dissolved	PCB 149, Total	Chlorophyll a, Particulate	Chrysene, Total	Phenanthrene/Anthracene, C2-, Total
31	PCB 201, Total	Temperature	PCB 179, Total	PBDE 008, Dissolved	Methylphenanthrene, 1-, Total	Aluminum, Total	Indeno(1,2,3-c,d)pyrene, Total	Chrysene, C1-, Total
32	Mirex, Total	Coliform, Total	PCB 182, Total	PBDE 008, Particulate	DDD(o,p'), Total	Nitrate + Nitrite as N, Dissolved	Benzo(a)anthracene, Total	Lead, Total
33	DDMU(p,p'), Total	Transmittance	PCB 195/208, Total	PBDE 017, Dissolved	PCB 118, Total	Total Suspended Solids, Fixed	Phenanthrene/Anthracene, C1-, Total	Nickel, Total
34	HCH, delta-, Total	PCB 201, Total	PCB 204, Total	PBDE 017, Particulate	PBDE 100, Total	Total Organic Carbon, Total	Benzo(k)fluoranthene, Total	Naphthalenes, C1-, Total
35	Mercury, Total	Oxygen, Saturation, Total	Phosphorus as P, Total	PBDE 028, Dissolved	Acenaphthene, Total	Dimethylnaphthalene, 2,6-, Total	Naphthalenes, C3-, Total	PCB 137, Total

36	Heptachlor, Total	Total Suspended Solids, Particulate	Tetradecane, 2-phenyl-, Total	PBDE 047, Particulate	PCB 008, Total	Chromium, Total	Phenanthrene/Anthracene, C2-, Total	Phenanthrene/Anthracene, C3-, Total
37	Aldrin, Total	Cadmium, Total	Total DDTs, Total	PBDE 066, Particulate	DDT(p,p'), Total	Cadmium, Total	Chrysene, C1-, Total	Dibenz(a,h)anthracene, Total
38	Cyhalothrin, Total lambda-, Total	Sulfate, Not Recorded	Trifluralin, Total	PBDE 085, Particulate	Chlorpyrifos, Total	Nickel, Total	Lead, Total	Benzo(g,h,i)perylene, Total
39	HCH, alpha-, Total	PCB 110, Dissolved	Aluminum, Total	PBDE 099, Particulate	Antimony, Total	Total Dissolved Solids, Volatile	Nickel, Total	Methylphenanthrene, 1-, Total
40	PCB 087, Total	Silt, 0.0039 to <0.0625 mm	Tin, Total	PBDE 100, Dissolved	Methyl dibenzothioophene, 4-, Total	Potassium, Dissolved	Naphthalenes, C1-, Total	Phenanthrene, Total
41	PCB 101, Total	PCB 118, Dissolved	Copper, Total	PBDE 100, Particulate		Selenium, Dissolved	PCB 137, Total	Chromium, Total
42	Weight, Total	PCB 153, Dissolved	Thallium, Total	PBDE 153, Particulate		Manganese, Dissolved	Phenanthrene/Anthracene, C3-, Total	Silver, Total
43	PCB 118, Total	PCB 138, Dissolved	PCB 146, Total	PBDE 154, Particulate		Total Suspended Solids, Volatile	Naphthalenes, C4-, Total	Methylnaphthalene, 2-, Total
44	PCB 149, Total	PCB 149, Dissolved	PBDE 049, Total	PBDE 206, Particulate		Benzo(g,h,i)perylene, Total	Chrysene, C3-, Total	DDD(o,p'), Total
45	PBDE 015, Total	Coliform, Fecal	PCB 172, Total	PBDE 207, Dissolved		Nitrogen, Total Kjeldahl, Not Recorded	Dibenzothiophenes, C1-, Total	Pyrene, Total
46	Cyfluthrin, total, Total	PCB 070, Dissolved	PBDE 203, Total	PBDE 208, Particulate		Total Dissolved Solids, Fixed	Dibenz(a,h)anthracene, Total	PCB 153, Total
47	PCB 187, Total	PCB 031, Dissolved	PCB 092, Total	PCB 040, Dissolved		Aluminum, Dissolved	Cyhalothrin, Total lambda-, Total	Cadmium, Total
48	PBDE 049, Total	PCB 044, Dissolved	PBDE 071, Total	PCB 089, Total		AFDM_ Algae, Particulate	PCB 028, Total	PCB 095, Total

49	Acenaphthene, Total	PCB 101, Dissolved	Vanadium, Total	PCB 189, Dissolved		Lead, Dissolved	PCB 052, Total	PCB 031, Total
50	PCB 095, Total	PCB 099, Dissolved	Zinc, Total	PCB 207, Dissolved		BOD, Total	Chrysene, C2-, Total	Permethrin, cis-, Total
51	Dibenzothiophene, Total	Silt, V. Fine 0.0039 to <0.0078 mm	PCB 042, Total	Permethrin, trans-, Total		Discharge	Benzo(g,h,i)perylene, Total	PBDE 153, Total
52	PBDE 209, Total	PCB 049, Dissolved	PCB 091, Total	Prallethrin, Total		Selenium, Total	Methylphenanthrene, 1-, Total	Phenanthrene/Anthracene, C4-, Total
53	Antimony, Total	PCB 028, Dissolved	PCB 190, Total	Sand, 0.0625 to <2.0 mm		Coliform, Fecal	PCB 044, Total	Fluoranthene, Total
54	PCB 110, Total	PCB 095, Dissolved	PeCDD, 1,2,3,7,8-, Total	Sand, Fine 0.075 to <0.425 mm		Lead, Total	Phenanthrene, Total	PCB 174, Total
55	PBDE 079, Total	PCB 018, Dissolved	Beryllium, Total	Sand, Fine 0.125 to <0.25 mm		Fluorenes, C1-, Total	Chromium, Total	Dimethylnaphthalene, 2,6-, Total
56	PBDE 155, Total	PCB 087, Dissolved	PBDE 007, Total	Sand, Medium 0.425 to <2.0 mm		Naphthalenes, C1-, Total	PCB 099, Total	PCB 056, Total
57	PCB 203, Total	PCB 066, Dissolved	PCB 016, Total	Sand, V. Fine 0.0625 to <0.125 mm		PCB 018, Total	PCB 087, Total	PCB 033, Total
58	PCB 141, Total	Selenium, Total	PCB 134, Total	Silt, 0.005 to <0.075 mm		Iron, Total	PCB 018, Total	PCB 101, Total
59	PCB 033, Total	PCB 132, Dissolved	PCB 201, Total	Silt, Coarse 0.031 to <0.0625 mm		Dacthal, Total	Silver, Total	PCB 141, Total
60	PCB 082, Total	PCB 151, Dissolved	HpCDF, 1,2,3,4,7,8,9-, Total	Silt, Medium 0.0156 to <0.031 mm		Nitrate as N, Not Recorded	Methylnaphthalene, 2-, Total	PCB 110, Total
61	FPOM	PCB 187, Dissolved	PCB 063, Total	Silt, V. Fine 0.0039 to <0.0078 mm		Chlorpyrifos, Total	PCB 105, Total	Naphthalenes, C2-, Total
62	PBDE 071, Total	PCB 180, Dissolved	Fine, <0.075 mm	StationWaterDepth		Molybdenum, Total	PCB 187, Total	PCB 149, Total

63	Endrin, Total	PCB 008, Dissolved	PCB 013, Total	Station Water Depth, Total		Dibenz(a, h)anthracene, Total	DDD(o,p'), Total	PCB 203, Total
64	PCB 151, Total	Nickel, Total	Total Organic Carbon, Total	Sulfate, Total		Fluoranthene/Pyrenes, C1-, Total	PCB 049, Total	PCB 156, Total
65	PCB 099, Total	Endosulfan Sulfate, Total	PBDE 208, Total	Tin, Total		Potassium, Total	Pyrene, Total	PCB 060, Total
66	PCB 066, Total	Enterococcus	Tridecane, 3-phenyl-, Total	Total Normal, Total		Naphthalenes, C3-, Total	Fluorenes, C2-, Total	PCB 118, Total
67	PCB 183, Total	PCB 052, Dissolved	PCB 019, Total	Triclopyr, Total		Naphthalenes, C2-, Total	PCB 153, Total	PBDE 100, Total
68	PBDE 116, Total	Silt, Fine 0.0078 to <0.0156 mm	PCB 137, Total	Bromide, Total		Zinc, Dissolved	Fluorenes, C3-, Total	Acenaphthene, Total
69	PCB 081, Total	PCB 174, Dissolved	PCB 195, Total	Sand, Medium 0.25 to <0.5 mm		Nitrate + Nitrite as N, Not Recorded	Cadmium, Total	Total Organic Carbon, Total
70	Acenaphthylene, Total	PCB 177, Dissolved	Methylnaphthalene, 1-, Total	Silica as SiO2, Dissolved		Arsenic, Dissolved	PCB 095, Total	PCB 128, Total
71	PCB 191, Total	E. coli	PBDE 160, Total	Silt, Fine 0.0078 to <0.0156 mm		Methylnaphthalene, 1-, Total	PCB 194, Total	PCB 158, Total
72	PCB 156, Total	PCB 195, Total	PBDE 140, Total	Clay, Coarse 0.00195 to <0.0039 mm		Manganese, Total	PCB 206, Total	PBDE 047, Total
73	PCB 070, Total	PCB 170, Dissolved	PCB 122, Total	Clay, Fine <0.00098 mm		Methylnaphthalene, 2-, Total	PCB 195, Total	Chlordane, trans-, Total
74	Nitrogen, Total, Total	PCB 183, Dissolved	PBDE 008, Total	Moisture, Total		Electrical Conductivity, Total	PCB 031, Total	PCB 008, Total
75	OCDD, 1,2,3,4,6,7,8,9-, Total	Salinity, Total	HxCDD, 1,2,3,7,8,9-, Total	Secchi Depth		Phenanthrene/Anthracene, C1-, Total	Permethrin, cis-, Total	DDT(p,p'), Total
76	PCB 174, Total	Oxychlordane, Total	HxCDF, 1,2,3,6,7,8-, Total	Velocity		Simazine, Total	Dibenzothiophenes, C2-, Total	Antimony, Total

7 7	PCB 207, Total	PCB 156, Dissolved	PCB 022, Total	PCB 203, Total		Sand, Coarse 2.0 to <4.75 mm	Dibenzot hiophene s, C3- Total	DDE(p,p') , Total
7 8	PCB 171, Total	PCB 141, Dissolved	PCB 085, Total	Turbidity, Total		Fluorene s, C3- Total	PBDE 153, Total	Chlordan e, cis- Total
7 9	PCB 077, Total	Chloride, Not Recorded	PCB 048, Total	Biphenyl, Particulate		Phenanth rene, Total	Phenanth rene/Ant hracene, C4- Total	Chlorpyri fos, Total
8 0	PCB 048, Total	Sand, Medium 0.25 to <0.5 mm	Cadmium , Total	HCH, delta- Total		Atrazine, Total	Fluoranth ene, Total	DDD(p,p') , Total
8 1	PCB 124, Total	Moisture, Total	Chromium, Total	PCB 097, Dissolved		Mercury, Dissolve d	PCB 174, Total	Selenium , Total
8 2	PCB 176, Total	Oxidation- Reduction Potential	PCB 046, Total	Chrysene, Dissolved		Benz(a) nthalene , Total	Dimethyl naphthal ene, 2,6- Total	Nonachlor, trans- Total
8 3	PCB 016, Total	Fluorescen ce, Total	PCB 153/168, Total	Alkalinity as CaCO3, Total		Gravel, 4.75 to <75 mm	PCB 056, Total	Methyl-di benzothi ophene, 4- , Total
8 4	PCB 067, Total	PBDE 085, Total	PBDE 015, Total	Barometric Pressure		Fine, <0.0625 mm	PCB 033, Total	DDMU(p ,p') , Total
8 5	PCB 134, Total	PCB 031, Total	PCB 059, Total	Indeno(1,2, 3- c,d)pyrene, Particulate		Diazinon , Total	PCB 101, Total	Heptachl or Epoxide, Total
8 6	PCB 037, Total	PCB 060, Total	Tetradeca ne, 6- phenyl- Total	Nitrate as N, Not Recorded		HCH, gamma- Total	PCB 141, Total	PCB 209, Total
8 7	PBDE 138, Total	PCB 203, Dissolved	PBDE 209, Total	Sand, Coarse 0.5 to <1.0 mm		Molybde num, Dissolve d	PCB 110, Total	Hexachlor obenzene, Total
8 8	Naphthal ene, Total	HCH, alpha- Total	PCB 053, Total	Silt, 0.0039 to <0.0625 mm		Vanadium, Dissolve d	Naphthal enes, C2- Total	
8 9	Fluoranth ene, Total	Aluminum, Dissolved	Tridecane , 2- phenyl- Total	Phenanthre ne, Dissolved		Thallium , Total	Esfenval erate/Fen valerate, Total, Total	
9 0	Sand, 0.075 to <4.75	HCH, beta- , Particulate	Dodecane , 2- phenyl- Total	Silica as SiO2, Total			PCB 203, Total	

	mm		Total					
91	E. coli	Nickel, Dissolved	Biphenyl, Total	Endosulfan Sulfate, Total			PCB 156, Total	
92	Esfenvale rate/Fenv alerate, Total, Total	Boron, Total	PCB 199, Total	Acenaphth ene, Dissolved			Dieldrin, Total	
93	Fluoranth ene/Pyren es, C1-, Total	PCB 194, Dissolved	PCB 040, Total	Coronene, Particulate			PCB 060, Total	
94	DDE(o,p'), Total	Nitrate as N, Not Recorded	Mangane se, Total	HCH, beta-, Total			Fluorene s, C1-, Total	
95	Enterococ cus	Heptachlor Epoxide, Total	Naphthal enes, C1-, Total	Nitrogen, Total Kjeldahl, Not Recorded			PBDE 099, Total	
96	PCB 189, Total	PCB 195, Dissolved	Nitrogen, Total Kjeldahl, Total	Total Organic Carbon, Total			Cyperme thrin, Total, Total	
97	Dieldrin, Total	Nitrogen, Total Kjeldahl, Total	Titanium, Total	Benzo(g,h, i)perylene, Particulate			Dibenzot hiophene, Total	
98	PCB 128, Total	Chromium, Total	Total Solids, Total	Dieldrin, Dissolved			PBDE 100, Total	
99	PCB 126, Total	Dimethyln apthalene, 2,6-, Particulate	Tetradeca ne, 5-phenyl-, Total	Pristane, Dissolved			Acenapht hene, Total	
100	PBDE 007, Total	PCB 044, Total	Tetradeca ne, 7-phenyl-, Total	Salinity, Dissolved			Total Organic Carbon, Total	
101	PCB 131, Total	PCB 201, Dissolved	Undecane , 2-phenyl-, Total	HxCDF, 1,2,3,6,7,8-, Total			Dacthal, Total	
102	PCB 139, Total	Dissolved Organic Carbon, Dissolved	PCB AROCL OR 1260, Total	Coronene, Total			PBDE 047, Total	
103	PBDE 206, Total	PBDE 183, Total	PCB 196, Total	Dibenzothi ophenes, C3-, Dissolved			Chlordan e, trans-, Total	
104	PBDE 208,	DDT(p,p'), Total	Barium, Total	Chlorophyl l a,			Mangane se, Total	

4	Total			Particulate				
105	PCB 041, Total	Clay, Coarse 0.00195 to <0.0039 mm	Chrysene s, C2-, Total	Fluoranthene, Dissolved			Permethrin, Total, Total	
106	Fluorene, Total	PBDE 047, Total	DDE(o,p'), Total	Nitrogen, Total Kjeldahl, Total			Methylfluorene, 1-, Total	
107	PCB 085, Total	PCB 033, Dissolved	Lead, Total	Strontium, Total			PBDE 154, Total	
108	Tridecane, 3-phenyl-, Total	DDD(o,p'), Total	Nickel, Total	Heptachlor, Dissolved			PCB 008, Total	
109	DDE(p,p'), Total	Copper, Total	Nonachlor, trans-, Total	Aluminum, Dissolved			DDT(p,p'), Total	
110	PCB 089, Total	Manganese, Total	HxCDF, 1,2,3,4,7,8-, Total	Benzo(k)fluoranthene, Particulate			Antimony, Total	
111	Naphthalenes, C3-, Total	PCB 008, Total	PBDE 197, Total	Chromium, Total			DDE(p,p'), Total	
112	PCB 019, Total	PCB 209, Total	Toxaphene, Total	Discharge			Chlordane, cis-, Total	
113	Phenanthrene/Anthracene, C1-, Total	Phosphorus as P, Total	PCB 015, Total	Hardness as CaCO3, Dissolved			Chlorpyrifos, Total	
114	Phenanthrene/Anthracene, C3-, Total	Fine, <0.075 mm	Chrysene s, C1-, Total	Hardness as CaCO3, Total			PCB 074, Total	
115	Chrysene s, C1-, Total	PBDE 008, Total	Decane, 3-phenyl-, Total	Molybdenum, Total			DDD(p,p'), Total	
116	Acid Volatile Sulfides, Total	Simazine, Total	Undecane, 3-phenyl-, Total	Nitrate + Nitrite as N, Total			Selenium, Total	
117	Fluorenes, C2-, Total	Lead, Dissolved	Dibenzothiophene, Total	Titanium, Total			Nonachlor, trans-, Total	
118	PCB 074, Total	Toluene, Total	Methylnaphthalene, 2-, Total	Granule, 2.0 to <4.0 mm			Methyl dibenzothiophene, 4-, Total	

1 1 9	Methylphenanthrene, 1-, Total	Total Organic Carbon, Total	Dodecane, 3-phenyl-, Total	PeCDD, 1,2,3,7,8-, Total			DDMU(p,p'), Total	
1 2 0	Naphthalenes, C4-, Total	CPOM	Decane, 2-phenyl-, Total	PCB 084, Dissolved			Nonachlor, cis-, Total	
1 2 1	Toxaphene, Total	Benzo(e)pyrene, Total	Tridecane, 6/7-phenyl-, Total	Paraquat, Total			Dimethylphenanthrene, 3,6-, Total	
1 2 2	Anthracene, Total	PBDE 099, Total	PCB 170/190, Total	Fluoride, Not Recorded			Heptachlor Epoxide, Total	
1 2 3	Naphthalenes, C1-, Total	Total Dissolved Solids, Dissolved	Sodium, Total	HCH, alpha-, Total			PCB 209, Total	
1 2 4	Phenanthrene, Total	Aluminum, Total	Tridecane, 5-phenyl-, Total	Nickel, Total			Permethrin, trans-, Total	
1 2 5	Tridecane, 4-phenyl-, Total	Sand, Fine 0.075 to <0.425 mm	Cyhalothrin, Total lambda-, Total	PCB 194, Total			Hexachlorobenzene, Total	
1 2 6	PBDE 051, Total	Pheophytin a, Total	Mercury, Total	Suspended Sediment Concentration, Particulate				
1 2 7	Nonachlor, trans-, Total	PBDE 012, Total	Silver, Total	Zinc, Total				
1 2 8	PCB 209, Total	Silica as SiO2, Total	Undecane, 4-phenyl-, Total	Oxygen, Dissolved, Dissolved				
1 2 9	PBDE 028, Total	StationWaterDepth	PCB 208, Total	PCB 146, Dissolved				
1 3 0	Benzo(g,h,i)perylene, Total	Mercury, Total	Dodecane, 4-phenyl-, Total	Benz(a)anthracenes/Chrysenes, C3-, Particulate				
1 3 1	DDD(p,p'), Total	Heptachlor, Dissolved	Benzo(b)fluoranthene, Total	Endosulfan Sulfate, Particulate				
1 3 2	PBDE 030, Total	PBDE 153, Total	PBDE 207, Total	Naphthalenes, C1-, Dissolved				
1 3 3	Chrysene, C2-,	Hardness as CaCO3,	PCB 074, Total	Endosulfan I,				

3	Total	Total		Dissolved				
1 3 4	PCB 097, Total	HCH, delta- Dissolved	PCB 099, Total	Fluorene, Dissolved				
1 3 5	PCB 199, Total	PCB 097, Dissolved	PCB 206, Total	HCH, alpha- Dissolved				
1 3 6	Calcium, Total	Sodium, Total	Piperonyl Butoxide, Total	HCH, beta- , Dissolved				
1 3 7	Magnesium, Total	PCB 105, Dissolved	Dibenz(a, h)anthracene, Total	PCB 099, Total				
1 3 8	Phenanthrene/ Anthracene, C2- Total	Silt, Coarse 0.031 to <0.0625 mm	Molybdenum, Total	PCB 110, Total				
1 3 9	PBDE 203, Total	Aldrin, Total	PCB 097, Total	AFDM_Al gae, Particulate				
1 4 0	Fluorenes, C3- Total	Hardness as CaCO3, Dissolved	PCB 187, Total	Iron, Dissolved				
1 4 1	PCB AROCL OR 1254, Total	Oxychloro dane, Dissolved	Phenanthrene/ Anthracene, C1- Total	Iron, Total				
1 4 2	Tetradecane, 2- phenyl- Total	Malathion, Total	Weight, Total	Nonachlor, cis- Dissolved				
1 4 3	Pyrene, Total	PBDE 190, Total	PCB AROCL OR 1254, Total	Methylphenanthrene, 1- Dissolved				
1 4 4	Methylfluoranthene, 2- Total	PCB 128, Dissolved	Dacthal, Total	Methylnaphthalene, 1- Dissolved				
1 4 5	PCB 109, Total	Arsenic, Dissolved	Undecane, 5- phenyl- Total	Calcium, Dissolved				
1 4 6	Gravel, 4.75 to <75 mm	Manganese, Dissolved	PCB 200, Total	Manganese, Dissolved				
1 4 7	PCB 042, Total	Fluorenes, C2- Particulate	PCB 082, Total	PCB 087, Total				
1 4 8	PCB 179, Total	Fluoranthene, Dissolved	Antimony, Total	PCB 101, Total				

149	Aluminum, Total	Zinc, Total	Benzo(g,h,i)perylene, Total	PCB 156, Total				
150	Undecane, 3-phenyl-, Total	CDOM, Total	Fluoranthene/Pyrenes, C1-, Total	PCB 187, Total				
151	PCB 056, Total	PBDE 037, Total	PBDE 206, Total	PCB 195, Total				
152	PCB AROCLOR 1260, Total	Magnesium, Total	Selenium, Total	Phosphorus as P, Total				
153	PCB 122, Total	Naphthalenes, C3-, Total	Strontium, Total	Total Dissolved Solids, Volatile				
154	PCB 208, Total	HCH, alpha-, Particulate	PBDE 126, Total	Chloroform, Total				
155	PCB 202, Total	Dacthal, Total	FPOM	Phenanthrene, Particulate				
156	HpCDD, 1,2,3,4,6,7,8-, Total	Mercury, Dissolved	Tetradecane, 3-phenyl-, Total	Benz(a)anthracenes/Chrysenes, C1-, Particulate				
157	PCB 091, Total	PCB 056, Total	Methylphenanthrene, 1-, Total	DDD(p,p'), Particulate				
158	PCB 119, Total	Diuron, Total	PCB 095, Total	Pyrene, Dissolved				
159	PCB 190, Total	Oxadiazon, Total	Benzo(k)fluoranthene, Total	PCB 003, Total				
160	PBDE 085, Total	Total Suspended Solids, Volatile	Chrysene, Total	Dimethylnaphthalene, 2,6-, Particulate				
161	Naphthalenes, C2-, Total	Pheophytin a, Particulate	Naphthalenes, C3-, Total	Particulate Organic Carbon, Particulate				
162	Trimethylnaphthalene, 2,3,5-, Total	Clay, <0.0039 mm	PCB 203, Total	Biphenyl, Total				
163	PCB 105, Total	PCB 146, Total	Phenanthrene/Anthracene, C2-,	Benzo(e)pyrene, Particulate				

			Total					
1 6 4	Undecane , 2- phenyl- Total	PCB 196, Particulate	Phytane, Total	Chrysene, Particulate				
1 6 5	PCB 006, Total	Naphthalen es, C3- Dissolved	PCB 178, Total	Copper, Dissolved				
1 6 6	PCB 144, Total	Esfenvaler ate/Fenval erate, Total, Total	Tridecane , 4- phenyl- Total	Lead, Total				
1 6 7	PCB 045, Total	Silver, Total	PCB 114, Total	Nitrate + Nitrite as N, Dissolved				
1 6 8	Iron, Total	Acenaphth ylene, Dissolved	Dodecane , 6- phenyl- Total	PCB 028, Total				
1 6 9	Tridecane , 5- phenyl- Total	PBDE 035, Total	Dodecane , 5- phenyl- Total	PCB 070, Total				
1 7 0	Chlordan e, cis- Total	Total Suspended Solids, Fixed	HpCDF, 1,2,3,4,6, 7,8- Total	PCB 095, Total				
1 7 1	Perylene, Total	Dicofol, Total	Decane, 4-phenyl- , Total	PCB 099, Dissolved				
1 7 2	HxCDF, 1,2,3,4,7, 8-, Total	Nitrate + Nitrite as N, Dissolved	PCB 207, Total	PCB 158, Total				
1 7 3	HxCDF, 1,2,3,6,7, 8-, Total	Sand, V. Fine 0.0625 to <0.125 mm	Benz(a)a nthracene , Total	Dibenz(a,h)anthracen e, Particulate				
1 7 4	PCB 022, Total	Indeno(1,2, 3- c,d)pyrene, Dissolved	Benzo(e) pyrene, Total	HxCDF, 1,2,3,4,7,8- , Total				
1 7 5	PBDE 196, Total	Silt, Medium 0.0156 to <0.031 mm	Phenanthr ene, Total	DDMU(p,p '), Dissolved				
1 7 6	PCB 032, Total	Benzo(k)fl uoranthene , Particulate	PCB 032, Total	PCB 074, Dissolved				
1 7 7	Chlordan e, trans- Total	AFDM_Al gae, Total	Uranium, Total	PCB 207, Particulate				

7	Total	Particulate						
178	Dicofol, Total	Disulfoton, Total	PCB 001, Total	Oxygen, Dissolved, Not Recorded				
179	Chrysene, C3-, Total	Lead, Total	Acenaphthene, Total	Phytane, Particulate				
180	PCB 133, Total	Coronene, Particulate	Endosulfan Sulfate, Total	Chlorpyrifos, Dissolved				
181	PCB 153/168, Total	HxCDD, 1,2,3,6,7,8-, Total	PCB 005/8, Total	Potassium, Dissolved				
182	Indeno(1,2,3-c,d)pyrene, Total	Phenanthrene/Anthracene, C2-, Total	PBDE 205, Total	Barium, Total				
183	Fluorenes, C1-, Total	PCB 018, Particulate	PBDE 155, Total	Chromium, Dissolved				
184	PCB 146, Total	HCH, delta-, Total	DDMU(p,p'), Total	DDD(p,p'), Dissolved				
185	PCB 103, Total	PBDE 032, Total	PCB 180, Total	DDE(p,p'), Dissolved				
186	Dibenzothiophenes, C1-, Total	PCB 008, Particulate	PBDE 028, Total	Fluoranthene, Particulate				
187	PCB 063, Total	Benzo(g,h,i)perylene, Particulate	PCB 024, Total	PCB 128, Total				
188	Dimethylphenanthrene, 3,6-, Total	Sodium, Dissolved	Chlordane, trans-, Total	PCB 201, Total				
189	Methylfluorene, 1-, Total	Benz(a)anthracene, Particulate	Fluorene, Total	Silver, Total				
190	PCB 059, Total	PCB 015, Total	Naphthalene, Total	Clay, Medium 0.00098 to <0.00195 mm				
191	PCB 200, Total	Nitrogen, Total, Total	PBDE 066, Total	Dacthal, Dissolved				
192	Tetradecane, 6-phenyl-, Total	PBDE 015, Total	PBDE 085, Total	Methoxychlor, Particulate				

1 9 3	Dodecane , 6- phenyl-, Total	PCB 027, Dissolved	PCB 119, Total	PCB 148, Total				
1 9 4	Dodecane , 5- phenyl-, Total	Dieldrin, Total	Pristane, Total	Perchlorate , Dissolved				
1 9 5	PCB 182, Total	Discharge	DDE(p,p') , Total	Methoxych lor, Dissolved				
1 9 6	Lead, Total	Diazinon, Total	Naphthal enes, C2-, Total	PCB 209, Particulate				
1 9 7	PCB 092, Total	Endosulfan II, Particulate	PBDE 017, Total	Chloride, Not Recorded				
1 9 8	DDD(o,p') , Total	Phenanthre ne, Total	PBDE 183, Total	Cobalt, Total				
1 9 9	Tetradeca ne, 5- phenyl-, Total	HCH, beta- , Total	PCB 153, Total	Enterococ cus				
2 0 0	Biphenyl, Total	PBDE 203, Total	Pyrene, Total	PCB 101, Dissolved				
2 0 1	Fine, <0.075 mm	PCB 146, Dissolved	Moisture, Total	PCB 118, Total				
2 0 2	PCB 175, Total	Methylphe nanthrene, 1-, Dissolved	Benzo(a) pyrene, Total	PCB 138, Total				
2 0 3	Undecane , 4- phenyl-, Total	PCB 027, Total	Dieldrin, Total	Sand, V. Coarse 1.0 to <2.0 mm				
2 0 4	PBDE 008, Total	Chlorpyrif os, Total	Dimethyl naphthale ne, 2,6-, Total	Calcium, Total				
2 0 5	Cadmium , Total	Calcium, Total	Indeno(1, 2,3- c,d)pyren e, Total	Dissolved Organic Carbon, Dissolved				
2 0 6	PCB 003, Total	Potassium, Total	PBDE 100, Total	ElectricalC onductivity , Total				
2 0 7	PBDE 153, Total	PCB 095, Total	PCB 084, Total	Total Dissolved Solids, Dissolved				

208	PBDE 190, Total	HxCDF, 1,2,3,4,7,8-, Total	Tetradecane, 4-phenyl-, Total	Zinc, Dissolved				
209	Strontium, Total	PBDE 128, Total	Nonachlor, cis-, Total	Endosulfan Sulfate, Dissolved				
210	PBDE 100, Total	Pristane, Dissolved	PCB 202, Total	BOD, Total				
211	PBDE 017, Total	DDE(p,p'), Total	Permethrin, cis-, Total	Acenaphthylene, Dissolved				
212	PCB 043, Total	Chrysenes, C1-, Particulate	PCB 025, Total	PCB 056, Particulate				
213	Dodecane, 4-phenyl-, Total	Endosulfan I, Particulate	PBDE 047, Total	Benz(a)anthracenes/Chrysenes, C2-, Particulate				
214	Dimethylnaphthalene, 2,6-, Total	Mirex, Total	PCB 194, Total	Naphthalene, Dissolved				
215	DDT(p,p'), Total	DDMU(p,p'), Dissolved	Perylene, Total	PCB 198, Particulate				
216	PCB 136, Total	Oxadiazon, Particulate	Phenanthrene/Anthracene, C3-, Total	Hexachlorobenzene, Particulate				
217	Methyl dibenzothioephene, 4-, Total	Thiobencarb, Total	Magnesium, Total	Benzo(e)pyrene, Dissolved				
218	Phytane, Total	PCB 110, Total	PBDE 116, Total	PCB 105, Total				
219	PCB 044, Total	Acenaphthylene, Particulate	PCB 035, Total	Chlordane, trans-, Dissolved				
220	PCB 084, Total	Dibenzothioephene, Total	Permethrin, Total, Total	Mercury, Total				
221	PBDE 035, Total	Endrin, Total	Butyl Benzyl Phthalate, Total	PCB 132, Total				
222	Dibenz(a,h)anthracene, Total	Naphthalenes, C3-, Particulate	PBDE 079, Total	PCB 170, Total				

2 2 3	PBDE 207, Total	Total Dissolved Solids, Volatile	PCB 049, Total	PCB 183, Total				
2 2 4	PCB 013, Total	Copper, Dissolved	PCB 170, Total	Pyrene, Particulate				
2 2 5	PCB 035, Total	Coronene, Total	Cypermethrin, Total, Total	Temperature				
2 2 6	PBDE 099, Total	Fluorenes, C1-, Total	PBDE 035, Total	Weight, Total				
2 2 7	Zinc, Total	Iron, Total	PCB 026, Total	Suspended Sediment Concentration, Total				
2 2 8	Decane, 3-phenyl- , Total	PBDE 206, Total	Anthracene, Total	Dibenzothio- phene, Dissolved				
2 2 9	Manganese, Total	PBDE 028, Total	PBDE 153, Total	Silicate as Si, Total				
2 3 0	Methyl- naphthalene, 1-, Total	PBDE 116, Total	PCB 123, Total	PBDE 077, Total				
2 3 1	PBDE 119, Total	PBDE 126, Total	PCB 167, Total	Boron, Dissolved				
2 3 2	PCB 167, Total	PCB 060, Dissolved	PCB 139, Total	HCH, gamma- Total				
2 3 3	Copper, Total	PCB 137, Total	PCB 177, Total	PCB 018, Total				
2 3 4	Trimethyl- naphthalene, 1,6,7- Total	Trimethyl- naphthalene, 2,3,5- Dissolved	PCB 141, Total	PCB 141, Total				
2 3 5	PBDE 066, Total	Naphthalenes, C2- Particulate	PCB 127, Total	PCB 153, Total				
2 3 6	DDT(o,p') , Total	Trimethyl- naphthalene, 2,3,5- Particulate	PBDE 196, Total	PCB 177, Total				
2 3 7	Dodecane, 3- phenyl- Total	Benzo(g,h, i)perylene, Dissolved	Oxychloro- dane, Total	Pheophytin a, Particulate				
2 3 8	PBDE 047, Total	Biphenyl, Particulate	PBDE 032, Total	COD, Total				

2 3 9	Chromium, Total	Electrical Conductivity, Total	PCB 128, Total	Permethrin, cis-, Total				
2 4 0	PCB 040, Total	PCB 128, Total	PCB 174, Total	DDT(p,p'), Dissolved				
2 4 1	Gold, Total	PBDE 208, Total	Acenaphthylene, Total	PCB 187, Dissolved				
2 4 2	Nitrogen, Total Kjeldahl, Total	Trifluralin, Total	PCB 018, Total	PCB 128, Particulate				
2 4 3	PBDE 075, Total	Biphenyl, Total	PBDE 181, Total	Benz(a)anthracenes/Chrysenes, C1-, Dissolved				
2 4 4	Benz(a)anthracene, Total	PBDE 197, Total	Fluoranthene, Total	PCB 017, Particulate				
2 4 5	Dibenzothiophenes, C2-, Total	Chloride, Dissolved	PCB 183, Total	PCB 199, Particulate				
2 4 6	PCB 157, Total	Bromide, Total	PCB 045, Total	Prodiamine, Total				
2 4 7	Phenanthrene/Anthracene, C4-, Total	Nitrate + Nitrite as N, Not Recorded	DDT(p,p'), Total	Hexachlorobenzene, Dissolved				
2 4 8	Tridecane, 2-phenyl-, Total	PCB 158, Total	Hexachlorobenzene, Total	Silicate as Si, Dissolved				
2 4 9	Tetradecane, 4-phenyl-, Total	PCB 018, Total	PCB 101, Total	Arsenic, Dissolved				
2 5 0	Tetradecane, 7-phenyl-, Total	Acenaphthene, Dissolved	PCB 064, Total	Benzo(b)fluoranthene, Particulate				
2 5 1	Dodecane, 2-phenyl-, Total	PCB 118, Total	PCB 003, Total	Nitrate as N, Total				
2 5 2	Tridecane, 6/7-phenyl-, Total	Dibenzothiophenes, C3-, Particulate	DDD(p,p'), Total	PCB 060, Total				
2 5 5	Permethrin, cis-,	PCB 060, Particulate	HCH, beta-,	PCB 087, Dissolved				

3	Total		Total					
254	Total Organic Carbon, Total	PCB 099, Total	PBDE 154, Total	PCB 118, Particulate				
255	Fenproprathrin, Total	Fluorene, Dissolved	PCB 156, Total	PCB 149, Total				
256	Potassium, Total	PCB 015, Dissolved	Deltamethrin, Total	PCB 174, Total				
257	Dacthal, Total	Dimethylnaphthalene, 2,6-, Total	Endosulfan II, Total	Transmittance				
258	PBDE 154, Total	DDD(o,p'), Particulate	Permethrin, trans-, Total	PCB 105, Dissolved				
259	Thallium, Total	Methylphenanthrene, 1-, Particulate	Trimethylnaphthalene, 2,3,5-, Total	PCB 180, Dissolved				
260	PCB 158, Total	PCB 070, Total	DDD(o,p'), Total	PCB 095, Particulate				
261	Chrysene, Total	PCB 207, Dissolved	PCB 158, Total	PCB 151, Dissolved				
262	PCB 130, Total	Pebble, Medium 8 to <16 mm	Oxadiazon, Total	DDD(o,p'), Dissolved				
263	PCB 196, Total	Zinc, Dissolved	PBDE 049/71, Total	Benz(a)anthracene, Particulate				
264	PCB 114, Total	Benzo(k)fluoranthene, Dissolved	HCH, gamma-, Total	HCH, beta-, Particulate				
265	Benzo(b)fluoranthene, Total	Benzo(g,h,i)perylene, Total	Trimethylnaphthalene, 1,6,7-, Total	OilandGrease; HEM, Total				
266	PBDE 181, Total	DDT(o,p'), Dissolved	PCB 028, Total	PCB 031, Total				
267	PCB 011, Total	PBDE 138, Total	Cyfluthrin, total, Total	PCB 049, Total				
268	Permethrin, trans-, Total	Benz(a)anthracene, Total	HCH, delta-, Total	PCB 052, Total				
269	HpCDF, 1,2,3,4,6,7,8-, Total	PCB 105, Total	PBDE 012, Total	PCB 118, Dissolved				

270	PCB 060, Total	Alkalinity as CaCO3, Total	Coliform, Fecal	PCB 151, Total				
271	PeCDD, 1,2,3,7,8-, Total	Indeno(1,2,3-c,d)pyrene, Particulate	Chlorpyrifos, Total	Potassium, Total				
272	Dibenzothiophenes, C3-, Total	Anthracene, Total	PCB 033, Total	Sulfate, Not Recorded				
273	Cobalt, Total	Anthracene, Dissolved	Fluridone, Total	Total Suspended Solids, Particulate				
274	Benzo(a)pyrene, Total	HxCDF, 2,3,4,6,7,8-, Total	PCB 103, Total	Carbonate, Total				
275	PCB 017, Total	Total Dissolved Solids, Fixed	PBDE 037, Total	Mirex, Dissolved				
276	Decane, 4-phenyl-, Total	Perylene, Total	PBDE 138, Total	Acenaphthylene, Particulate				
277	Barium, Total	PCB 132, Total	PCB 008, Total	Nonachlor, trans-, Dissolved				
278	HxCDD, 1,2,3,4,7,8-, Total	Fluorene, Total	PCB 151, Total	DDD(o,p'), Particulate				
279	PBDE 197, Total	Dibenzothiophenes, C1-, Total	PBDE 099, Total	Heptachlor Epoxide, Dissolved				
280	Decane, 2-phenyl-, Total	PCB 074, Total	PCB 056, Total	Benz(a)anthracene, Dissolved				
281	PCB 137, Total	Boron, Dissolved	PBDE 010, Total	Pheophytin a, Total				
282	Silver, Total	Hexachlorobenzene, Total	PCB 027, Total	PCB 060, Dissolved				
283	Nickel, Total	Methylnaphthalene, 2-, Dissolved	Heptachlor Epoxide, Total	PCB 200, Dissolved				
284	Chrysene, C4-, Total	PCB 194, Total	PCB 132, Total	PCB 183, Dissolved				
285	Benzo(k)fluoranthene, Total	DDD(p,p'), Particulate	PBDE 013, Total	PCB 099, Particulate				

286	Chlorpyrifos, Total	PCB 101, Total	HxCDD, 1,2,3,6,7,8-, Total	PCB 138, Dissolved				
287	Beryllium, Total	DDD(o,p'), Dissolved	PCB 191, Total	Total Dissolved Solids, Fixed				
288	Permethrin, Total, Total	Pyrene, Dissolved	DDT(o,p'), Total	Ammonium as N, Total				
289	PCB 046, Total	Parathion, Methyl, Total	Fluorenes, C1-, Total	Disulfoton, Total				
290	Benzo(e)pyrene, Total	Dimethoate, Total	PCB 149, Total	PBDE 007, Total				
291	HpCDF, 1,2,3,4,7,8,9-, Total	Clay, Medium 0.00098 to <0.00195 mm	Methylfluoranthene, 2-, Total	Naphthalenes, C2-, Particulate				
292	PBDE 205, Total	Methylnaphthalene, 2-, Total	Chlordane, cis-, Total	Dacthal, Particulate				
293	PCB 132/168, Total	Naphthalenes, C2-, Dissolved	Endrin, Total	Oxychlordane, Dissolved				
294	PBDE 183, Total	PeCDD, 1,2,3,7,8-, Total	Fluorenes, C3-, Total	PCB 167, Particulate				
295	HxCDF, 2,3,4,6,7,8-, Total	HCH, gamma-, Particulate	PCB 052, Total	Phenanthrene/Anthracene, C2-, Particulate				
296	PCB 206, Total	PBDE 077, Total	PCB 118, Total	Hexachlorobenzene, Total				
297	PBDE 204, Total	Dibenz(a,h)anthracene, Particulate	Heptachlor, Total	PCB 028, Particulate				
298	PCB 064, Total	Phenanthrene/Anthracene, C3-, Total	Dicofol, Total	PBDE 208, Total				
299	Selenium, Total	Benzo(b)fluoranthene, Particulate	PCB 110, Total	PCB 128, Dissolved				
300	Undecane, 5-phenyl-, Total	Sand, V. Coarse 1.0 to <2.0 mm	PCB 189, Total	PCB 070, Particulate				
300	PCB 053, Total	PCB 052, Total	PCB 209, Total	PBDE 008, Total				

1								
302	PCB 123, Total	Glyphosate, Total	PCB 004, Total	Dimethylnaphthalene, 2,6-, Dissolved				
303	Nonachlor, cis-, Total	Paraquat, Total	Chrysene, C4-, Total	Coliform, Total				
304	PBDE 037, Total	PCB 028, Total	PCB 044, Total	Copper, Total				
305	Total Solids, Total	PBDE 079, Total	PCB 105, Total	Oxygen, Dissolved, Total				
306	PBDE 140, Total	DDT(o,p'), Total	Deltamethrin/Tralomethrin, Total	PCB 070, Dissolved				
307	PBDE 012, Total	PCB 087, Total	PCB 031, Total	PCB 153, Dissolved				
308	PCB 025, Total	Fluoranthene, Total	PCB 060, Total	PCB 033, Total				
309	PBDE 049/71, Total	PCB 156, Total	PBDE 077, Total	PCB 066, Dissolved				
310	Methylnaphthalene, 2-, Total	Methylphenanthrene, 1-, Total	Enterococcus	PCB 074, Total				
311	Fluridone, Total	Silica as SiO ₂ , Dissolved	Dimethylphenanthrene, 3,6-, Total	Methylnaphthalene, 2-, Dissolved				
312	PCB 132/153/168, Total	PCB 156, Particulate	PBDE 030, Total	PCB 158, Particulate				
313	PCB 170/190, Total	DDT(o,p'), Particulate	HpCDD, 1,2,3,4,6,7,8-, Total	PCB 157, Particulate				
314	Tetradecane, 3-phenyl-, Total	PCB 137, Dissolved	OCDD, 1,2,3,4,6,7,8,9-, Total	PCB 056, Dissolved				
315	Vanadium, Total	Benzo(a)pyrene, Total	HCH, alpha-, Total	Chrysenes, C4-, Particulate				
316	Oxadiazon, Total	Density	PBDE 190, Total	PCB 110, Dissolved				
317	PCB 055, Total	Chloride, Total	PCB 205, Total	PCB 149, Dissolved				

318	Tin, Total	PCB 074, Dissolved	PBDE 075, Total	PCB 177, Particulate				
319	PCB 026, Total	PCB 019, Total	PCB 070, Total	Total Suspended Solids, Total				
320	Titanium, Total	PCB 097, Total	PCB 138, Total	Total Solids, Total				
321	Granule + Pebble, 2.0 to <64 mm	Suspended Sediment Concentration, Particulate	Aldrin, Total	Cyanide, Weak Acid Dissociable				
322	Moisture, Total	Benzo(b)fluoranthene, Total	Mirex, Total	Acid Volatile Sulfides, Total				
323	HxCDD, 1,2,3,7,8,9-, Total	Nonachlor, cis-, Dissolved	PBDE 128, Total	Manganese, Total				
324	OCDF, 1,2,3,4,6,7,8,9-, Total	Fluoride, Not Recorded	PBDE 204, Total	Oxidation-Reduction Potential				
325	HxCDD, 1,2,3,6,7,8-, Total	Indeno(1,2,3-c,d)pyrene, Total	PCB 087, Total	PCB 066, Total				
326	Oxychlorane, Total	Methylnaphthalene, 1-, Dissolved	Dibenzothiophenes, C1-, Total	PCB 189, Particulate				
327	PCB 015, Total	Clay, <0.005 mm	Esfenvalerate/Fenvalerate, Total, Total	PCB 177, Dissolved				
328	Cypermethrin, Total, Total	Biphenyl, Dissolved	PCB 077, Total	PCB 064, Particulate				
329	PCB 148, Total	PCB 056, Particulate	PCB 066, Total	PCB 105, Particulate				
330	PBDE 126, Total	PBDE 100, Total	Gold, Total	Benzo(b)fluoranthene, Dissolved				
331	PBDE 160, Total	Dieldrin, Particulate	OCDF, 1,2,3,4,6,7,8,9-, Total	Perylene, Particulate				

3 3 2	Methoxychlor, Total	Fluoranthene/Pyrenes, C1-, Total	Chrysene, C3-, Total	Methylphenanthrene, 1-, Particulate				
3 3 3	PCB 172, Total	PBDE 007, Total	PCB 148, Total	PBDE 207, Total				
3 3 4	Molybdenum, Total	Ammonias NH3, Total	Dibenzothiophenes, C2-, Total	PCB 027, Dissolved				
3 3 5	PCB 001, Total	Hexachlorobenzene, Particulate	Fluorenes, C2-, Total	Heptachlor Epoxide, Total				
3 3 6	PCB AROCLOR 1248, Total	Total Dissolved Solids, Total	PBDE 119, Total	Pendimethalin, Total				
3 3 7	PCB 169, Total	Acenaphthylene, Total	PCB 126, Total	PCB 156, Dissolved				
3 3 8	PCB 027, Total	Endrin, Particulate	Fenprothrin, Total	PCB 097, Total				
3 3 9	Deltamethrin, Total	Methylnaphthalene, 1-, Total	Dibenzothiophenes, C3-, Total	Fluorescence, Total				
3 4 0	Endosulfan II, Total	PCB 032, Total	Phenanthrene/Anthracene, C4-, Total	Oxygen, Saturation, Total				
3 4 1	PCB 178, Total	PCB 196, Dissolved	Calcium, Total	PCB 044, Total				
3 4 2	PBDE 032, Total	PCB 200, Total	PCB AROCLOR 1248, Total	PCB 056, Total				
3 4 3	Pristane, Total	BOD, Total	PCB 169, Total	PCB 180, Total				
3 4 4	PCB 195/208, Total	PCB 033, Total	Methylfluorene, 1-, Total	Sodium, Dissolved				
3 4 5	PBDE 077, Total	Nitrogen, Total Kjeldahl, Not Recorded	PCB 132/168, Total	PCB 101, Particulate				
3 4 6	PBDE 010, Total	PCB 201, Particulate	E. coli	Fluorene, Total				

3 4 7	PCB 205, Total	Potassium, Dissolved	Granule + Pebble, 2.0 to <64 mm	HCH, delta- Dissolved				
3 4 8	PBDE 198, Total	Benzo(k)fl uoranthene , Total	Naphthal enes, C4- Total	DDT(p,p'), Particulate				
3 4 9	Total Normal, Total	PCB 138, Total	Methyl di benzothio phene, 4- Total	PCB 008, Dissolved				
3 5 0	Uranium, Total	Endosulfan Sulfate, Particulate	PCB 157, Total	PBDE 035, Total				
3 5 1	Deltamet hrin/Tralo methrin, Total	MBAS, Total	Methoxyc hlor, Total	PBDE 075, Total				
3 5 2	Endosulfa n Sulfate, Total	PBDE 140, Total	Sand, 0.075 to <4.75 mm	Perylene, Dissolved				
3 5 3	PBDE 128, Total	PCB 017, Dissolved	PCB 037, Total	Fluorenes, C3- Particulate				
3 5 4	PCB 005/8, Total	PCB 029, Particulate	PCB 132/153/1 68, Total	Cadmium, Total				
3 5 5	PCB 127, Total	Phenanthre ne, Dissolved	Potassiu m, Total	Lead, Dissolved				
3 5 6	PBDE 201, Total	Phenanthre ne/Anthrac ene, C1- Dissolved	Lanthanu m, Total	Benzo(k)fl uoranthene , Dissolved				
3 5 7	PCB 004, Total	Chlordane, cis- Particulate	Gravel, 4.75 to <75 mm	Antimony, Dissolved				
3 5 8	PCB 024, Total	Magnesi um, Dissolved	Endosulfa n I, Total	PCB 066, Particulate				
3 5 9	PBDE 013, Total	PCB 085, Dissolved	Total Normal, Total	Mevinphos , Total				
3 6 0	PBDE 118, Total	Chrysene, Total		PCB 156, Particulate				
3 6 1	Endosulfa n I, Total	Endosulfan I, Dissolved		Diuron, Total				
3 6 2	PCB 204, Total	Heptachlor , Particulate		PCB 132, Particulate				

3 6 3	Piperonyl Butoxide, Total	Nonylphen ol, Total		PCB 138, Particulate				
3 6 4		Pyrene, Total		PCB 187, Particulate				
3 6 5		Pebble, Small 4 to <8 mm		Sodium, Total				
3 6 6		Bicarbonat e, Total		PCB 031, Particulate				
3 6 7		Chlordane, trans- Particulate		HxCDD, 1,2,3,4,7,8- , Total				
3 6 8		Chlorophyl l a, Particulate		Nitrogen, Total, Not Recorded				
3 6 9		Ethylbenze ne, Total		Sulfide, Total, Total				
3 7 0		PCB 133, Total		DDMU(p,p '), Particulate				
3 7 1		Alkalinity as CaCO3, Dissolved		Acenaphth ylene, Total				
3 7 2		Chrysene, Dissolved		Indeno(1,2, 3- c,d)pyrene, Total				
3 7 3		DDT(p,p'), Particulate		Methylnap hthalene, 1-, Total				
3 7 4		Cyfluthrin, total, Total		PCB 008, Total				
3 7 5		PCB 157, Total		PCB 027, Particulate				
3 7 6		Chlorpyrif os, Dissolved		PCB 196, Dissolved				
3 7 7		Endosulfan II, Total		Dibenzothi ophene, Particulate				
3 7 8		DDE(o,p'), Dissolved		Naphthalen es, C4- Total				
3 7 9		Gravel, 4.75 to <75 mm		PCB 044, Particulate				
3 8 0		Fluridone, Total		PCB 132, Dissolved				

3 8 1		OCDF, 1,2,3,4,6,7, 8,9-, Total		Diazinon, Dissolved				
3 8 2		PBDE 207, Total		PCB 017, Dissolved				
3 8 3		PCB 046, Particulate		PCB 029, Particulate				
3 8 4		Nitrogen, Total, Not Recorded		PBDE 028, Particulate				
3 8 5		Naphthalen es, C4- Dissolved		Benzo(a)p yrene, Dissolved				
3 8 6		PCB 028, Particulate		Nonachlor, cis- Particulate				
3 8 7		COD, Total		PCB 206, Particulate				
3 8 8		Benz(a)ant hracenes/C hrysenes, C3-, Total		PCB 097, Particulate				
3 8 9		PCB 103, Total		Benzo(g,h, i)perylene, Total				
3 9 0		PCB 101, Particulate		Chlordane, cis- Dissolved				
3 9 1		Fluorene, Particulate		PCB 153, Particulate				
3 9 2		Dibenz(a,h)anthracen e, Total		Selenium, Dissolved				
3 9 3		PCB 183, Total		Fluorene, Particulate				
3 9 4		PCB 149, Total		Indeno(1,2, 3- c,d)pyrene, Dissolved				
4 0 2		PBDE 049, Total		HCH, alpha- Particulate				
3 9 6		PBDE 066, Total		DDMU(p,p '), Total				
3 9 7		PCB 141, Total		PCB 183, Particulate				

3 9 8		PCB 001, Total		PCB 151, Particulate				
3 9 9		HCH, gamma- Dissolved		Cyfluthrin, total, Total				
4 0 0		Heptachlor , Total		Ash Free Dry Mass, Total				
4 0 1		PCB 151, Total		PCB 046, Particulate				
4 0 2		PCB 209, Particulate		PCB 206, Dissolved				
4 0 3		HxCDD, 1,2,3,7,8,9- , Total		PCB 203, Particulate				
4 0 4		Benzo(b)fl uoranthene , Dissolved		PCB 198, Total				
4 0 5		Naphthalen e, Total		Phytane, Dissolved				
4 0 6		DDMU(p,p '), Total		Phenanthre ne/Anthrac ene, C1- Particulate				
4 0 7		DDD(p,p'), Dissolved		Acenaphth ene, Total				
4 0 8		PCB 056, Dissolved		Benzo(a)p yrene, Particulate				
4 0 9		PCB 153, Total		Biphenyl, Dissolved				
4 1 0		Cyanide, Total		MBAS, Total				
4 1 1		DDE(o,p'), Total		Benz(a)ant hracenes/C hrysenes, C2-, Total				
4 1 2		Nonylphen ol, p- Total		Endosulfan I, Particulate				
4 1 3		PCB 074, Particulate		Heptachlor Epoxide, Particulate				
4 1 4		Nonachlor, cis- Particulate		Oxychlordan e, Total				

4 1 5		Fluoranthene/Pyrenes, C1-, Particulate		Coliform, Fecal				
4 1 6		Iron, Dissolved		DDE(o,p'), Total				
4 1 7		Naphthalenes, C1-, Total		DDE(p,p'), Particulate				
4 1 8		Total Suspended Solids, Total		PCB 110, Particulate				
4 1 9		Phenanthrene/Anthracene, C2-, Particulate		Dieldrin, Particulate				
4 2 0		PCB 066, Total		Acenaphthene, Particulate				
4 2 1		Nonachlor, trans-, Dissolved		Oxadiazon, Dissolved				
4 2 2		Chloroform, Total		PCB 170, Dissolved				
4 2 3		DDT(p,p'), Dissolved		Chlorpyrifos Methyl, Dissolved				
4 2 4		Xylene, o-, Total		PBDE 206, Total				
4 2 5		Phenanthrene, Particulate		Naphthalene, Particulate				
4 2 6		PBDE 155, Total		PCB 194, Particulate				
4 2 7		Calcium, Dissolved		Oxadiazon, Particulate				
4 2 8		PBDE 075, Total		Total Suspended Solids, Volatile				
4 2 9		Chrysene, Particulate		PCB 049, Particulate				
4 3 0		Benz(a)anthracenes/Chrysenes, C1-, Dissolved		Methylnaphthalene, 2-, Particulate				

4 3 1		Propanil, Total		PBDE 138, Total				
4 3 2		Ammonium as N, Total		DDE(o,p'), Particulate				
4 3 3		PBDE 071, Total		Dimethylnaphthalene, 2,6-, Total				
4 3 4		PCB 052, Particulate		PCB 174, Dissolved				
4 3 5		PBDE 181, Total		Boron, Total				
4 3 6		PCB 003, Total		PCB 149, Particulate				
4 3 7		PCB 139, Total		PCB 180, Particulate				
4 3 8		Phenanthrene/Anthracene, C1-, Particulate		Pyrene, Total				
4 3 9		Benzo(e)pyrene, Particulate		PBDE 209, Dissolved				
4 4 0		Acenaphthene, Total		PCB 085, Dissolved				
4 4 1		PBDE 051, Total		PCB 119, Particulate				
4 4 2		DDD(p,p'), Total		Chlordane, cis-, Particulate				
4 4 3		BOD, Not Recorded		Naphthalenes, C3-, Particulate				
4 4 4		Sand, Medium 0.425 to <2.0 mm		Benzo(k)fluoranthene, Total				
4 4 5		Trichloronate, Total		PCB 049, Dissolved				
4 4 6		PBDE 017, Total		PCB 074, Particulate				
4 4 7		DDE(o,p'), Particulate		Methylnaphthalene, 2-, Total				
4 4 4		PCB 031, Particulate		Beryllium, Total				

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449		Benzo(a)pyrene, Dissolved		Diazinon, Particulate				
450		PCB 170, Total		PCB 087, Particulate				
451		Chlordane, cis-, Dissolved		Dibenzothioophenes, C2-, Particulate				
452		Sulfate, Dissolved		PCB 052, Dissolved				
453		Clay, Fine <0.00098 mm		PCB 195, Particulate				
454		Nitrate as N, Dissolved		Benzo(a)pyrene, Total				
455		Anthracene, Particulate		PBDE 017, Total				
456		Benzo(e)pyrene, Dissolved		PCB 052, Particulate				
457		Methomyl, Total		Magnesium, Total				
458		Chromium, Dissolved		Nitrate as N, Dissolved				
459		PCB 203, Total		PCB 095, Dissolved				
460		PCB 089, Dissolved		PCB 174, Particulate				
461		PCB 177, Total		Phenanthrene, Total				
462		HCH, gamma-, Total		Molybdenum, Dissolved				
463		Naphthalenes, C2-, Total		Chlorpyrifos, Particulate				
464		PCB 064, Dissolved		HxCDD, 1,2,3,7,8,9-, Total				
465		Naphthalene, Particulate		PCB 178, Dissolved				

4 6 6	Phenanthrene/Anthracene, C4-, Dissolved	Thiobencarb, Total					
4 6 7	Phytane, Dissolved	Dibenzothioophene, Total					
4 6 8	Nitrate + Nitrite as N, Total	DDE(o,p'), Dissolved					
4 6 9	PCB 180, Total	Chlordane, trans-, Particulate					
4 7 0	PCB 085, Particulate	Bacteroidales, Universal, Total					
4 7 1	Naphthalenes, C4-, Total	Benzo(b)fluoranthene, Total					
4 7 2	Oxadiazon, Dissolved	Chlorpyrifos, Total					
4 7 3	Cyhalothrin, Total lambda-, Total	PCB 170, Particulate					
4 7 4	PCB 157, Particulate	PBDE 032, Total					
4 7 5	Phenanthrene/Anthracene, C3-, Particulate	Anthracene, Particulate					
4 7 6	Benzo(a)pyrene, Particulate	PCB 046, Dissolved					
4 7 7	Heptachlor Epoxide, Dissolved	Perchlorate, Not Recorded					
4 7 8	Methylnaphthalene, 2-, Particulate	Piperonyl Butoxide, Total					
4 7 9	Trimethylnaphthalene, 2,3,5-, Total	PCB 060, Particulate					
4 8 0	Dimethylnaphthalene, 2,6-, Dissolved	PBDE 181, Total					
4 8 1	PBDE 119, Total	Benzo(g,h,i)perylene, Dissolved					

4 8 2		Perylene, Dissolved		Fluoranthene/Pyrenes, C1-, Particulate				
4 8 3		OCDD, 1,2,3,4,6,7, 8,9-, Total		Naphthalenes, C4-, Dissolved				
4 8 4		Color, True		Benzo(e)pyrene, Total				
4 8 5		DDE(p,p'), Particulate		Chloride, Dissolved				
4 8 6		Fluorenes, C3-, Particulate		Dacthal, Total				
4 8 7		HCH, beta-, Dissolved		PCB 018, Dissolved				
4 8 8		PBDE 209, Total		PCB 081, Total				
4 8 9		HxCDF, 1,2,3,6,7,8-, Total		Trimethylnaphthalene, 2,3,5-, Dissolved				
4 9 0		PCB 132, Particulate		Fluoranthene, Total				
4 9 1		Pyrene, Particulate		PBDE 203, Total				
4 9 2		Endosulfan Sulfate, Dissolved		Trimethylnaphthalene, 2,3,5-, Particulate				
4 9 3		Sand, Fine 0.125 to <0.25 mm		Benz(a)anthracenes/ Chrysenes, C4-, Particulate				
4 9 4		PCB 049, Total		Dibenz(a,h)anthracene, Dissolved				
4 9 5		Pristane, Particulate		PCB 137, Dissolved				
4 9 6		Thallium, Total		PCB 141, Dissolved				
4 9 7		Chlordane, trans-, Total		PBDE 071, Total				

4 9 8		Dibenzothiophenes, C2-, Total		Phenanthrene/Anthracene, C4-, Dissolved				
4 9 9		PCB 066, Particulate		Phenanthrene/Anthracene, C1-, Dissolved				
5 0 0		Fluorenes, C2-, Dissolved		Aluminum, Total				
5 0 1		Mevinphos, Total		Benz(a)anthracene, Total				
5 0 2		Nitrogen, Organic, Total		PBDE 012, Total				
5 0 3		PBDE 154, Total		Naphthalenes, C3-, Dissolved				
5 0 4		PCB 046, Dissolved		Phosmet, Total				
5 0 5		Perchlorate, Not Recorded		Anthracene, Total				
5 0 6		Phytane, Particulate		Dibenz(a,h)anthracene, Total				
5 0 7		Piperonyl Butoxide, Total		CPOM				
5 0 8		Nonachlor, trans-, Total		Trimethylnaphthalene, 2,3,5-, Total				
5 0 9		PCB 174, Total		PCB 201, Particulate				
5 1 0		Phenanthrene/Anthracene, C1-, Total		DDT(o,p'), Dissolved				
5 1 1		PCB 158, Particulate		Nitrogen, Total, Total				
5 1 2		PCB 044, Particulate		DDT(o,p'), Particulate				
5 1 3		HxCDD, 1,2,3,4,7,8-, Total		Heptachlor, Total				
5 1 4		PCB 064, Particulate		PCB 141, Particulate				

5 1 5	Phenanthrene/Anthracene, C2-, Dissolved	PCB 203, Dissolved				
5 1 6	Chlorpyrifos, Particulate	Fluorenes, C2-, Dissolved				
5 1 7	PCB 177, Particulate	Naphthalenes, C2-, Dissolved				
5 1 8	PCB 097, Particulate	Fenchlorphos, Total				
5 1 9	PCB 187, Total	Nonachlor, trans-, Particulate				
5 2 0	DDE(p,p'), Dissolved	CDOM, Total				
5 2 1	Dacthal, Dissolved	Sulfate, Dissolved				
5 2 2	Methoxychlor, Particulate	Toluene, Total				
5 2 3	PBDE 028, Dissolved	Naphthalene, Total				
5 2 4	PCB 033, Particulate	PCB 008, Particulate				
5 2 5	PCB 095, Particulate	PCB 033, Particulate				
5 2 6	PCB 148, Total	PCB 089, Particulate				
5 2 7	Perchlorate, Dissolved	HCH, delta-, Particulate				
5 2 8	Fluoranthene, Particulate	PCB 084, Particulate				
5 2 9	PCB 049, Particulate	Density				
5 3 0	PCB 110, Particulate	PCB 044, Dissolved				
5 3 1	Silicate as Si, Dissolved	PCB 018, Particulate				
5 3 2	PCB 118, Particulate	Endrin, Total				

5 3 3		Dibenzothiophenes, C2-, Dissolved		Methomyl, Total				
5 3 4		Methoxychlor, Total		PCB 015, Particulate				
5 3 5		Phenanthrene/Anthracene, C4-, Particulate		PCB 206, Total				
5 3 6		Granule, 2.0 to <4.0 mm		Ammonias NH3, Total				
5 3 7		Aldrin, Dissolved		Ratio of SEM/AVS, Total				
5 3 8		Methoxychlor, Dissolved		PBDE 085, Total				
5 3 9		Methylnaphthalene, 1-, Particulate		HxCDD, 1,2,3,6,7,8-, Total				
5 4 0		PCB 027, Particulate		PCB 157, Total				
5 4 1		PCB 043, Total		Oxychlorane, Particulate				
5 4 2		Dibenzothiophene, Particulate		PCB 085, Total				
5 4 3		Fluorenes, C3-, Total		Atrazine, Total				
5 4 4		Dieldrin, Dissolved		PCB 178, Total				
5 4 5		Silicate as Si, Total		Chrysenes, C2-, Particulate				
5 4 6		Sand, Coarse 0.5 to <1.0 mm		Propanil, Total				
5 4 7		Nitrate as N, Total		PBDE 066, Total				
5 4 8		Barium, Total		Fluorenes, C1-, Total				
5 4 9		Nonachlor, cis-, Total		Methylnaphthalene, 1-, Particulate				

5		HCH, delta- Particulate		PCB 085, Particulate				
5		HpCDF, 1,2,3,4,6,7, 8-, Total		Simazine, Total				
5		Naphthalen es, C1- Particulate		Pristane, Particulate				
5		Nonachlor, trans- Particulate		PCB 103, Total				
5		Nonylphen olethoxylat e, Total		PCB 015, Total				
5		Oxychlord ane, Particulate		PBDE 049, Total				
5		PBDE 028, Particulate		Malathion, Total				
5		Dacthal, Particulate		Chrysene, Total				
5		PCB 099, Particulate		DDD(p,p'), Total				
5		Benz(a)ant hracenes/C hrysenes, C1-, Total		PCB 001, Total				
5		Naphthalen es, C4- Particulate		HCH, gamma- Particulate				
5		PBDE 100, Particulate		PCB 146, Total				
5		PCB 206, Total		PCB 077, Total				
5		PBDE 017, Particulate		PCB 200, Particulate				
5		Secchi Depth		PBDE 190, Total				
5		Total Solids, Total		Fenpropath rin, Total				
5		PCB 146, Particulate		PCB 196, Total				

5 6 7		Phenanthrene/Anthracene, C4-, Total		Salinity, Total				
5 6 8		PCB 128, Particulate		PBDE 028, Total				
5 6 9		Endosulfan II, Dissolved		Chrysenes, C3-, Particulate				
5 7 0		Hexachlorobenzene, Dissolved		Endosulfan I, Total				
5 7 1		PBDE 154, Particulate		PCB 032, Total				
5 7 2		PCB 070, Particulate		PBDE 100, Total				
5 7 3		PCB 126, Total		Phenanthrene/Anthracene, C3-, Particulate				
5 7 4		Selenate as Se, Dissolved		PCB 146, Particulate				
5 7 5		Oxygen, Dissolved, Not Recorded		Chlordane, cis-, Total				
5 7 6		Chlordane, trans-, Dissolved		PCB 028, Dissolved				
5 7 7		Endosulfan I, Total		PCB 031, Dissolved				
5 7 8		PCB 085, Total		Xylene, o-, Total				
5 7 9		HpCDF, 1,2,3,4,7,8,9-, Total		PCB 029, Dissolved				
5 8 0		Molybdenum, Dissolved		Selenium, Total				
5 8 1		PCB 105, Particulate		Total Dissolved Solids, Total				
5 8 2		DDMU(p,p'), Particulate		PBDE 015, Total				
5 8 3		PCB 194, Particulate		Nonachlor, cis-, Total				

5 8 4		Granule + Pebble, 2.0 to <64 mm		Selenate as Se, Dissolved				
5 8 5		Oryzalin, Total		Benz(a)ant hracenes/C hrysenes, C1-, Total				
5 8 6		Phenanthre ne/Anthrac ene, C3- Dissolved		Naphthalen es, C1- Particulate				
5 8 7		PCB 153, Particulate		PBDE 155, Total				
5 8 8		PCB 189, Total		PCB 119, Dissolved				
5 8 9		Fluorenes, C1- Particulate		Phenanthre ne/Anthrac ene, C4- Particulate				
5 9 0		Dibenzothi ophene, Dissolved		Fluoranthe ne/Pyrenes, C1- Dissolved				
5 9 1		Selenium, Dissolved		DDD(o,p'), Total				
5 9 2		Cobalt, Total		Nitrate + Nitrite as N, Not Recorded				
5 9 3		Heptachlor Epoxide, Particulate		Nonachlor, trans- Total				
5 9 4		PCB 187, Particulate		Perylene, Total				
5 9 5		PBDE 047, Particulate		PBDE 037, Total				
5 9 6		PBDE 049, Particulate		PCB 123, Total				
5 9 7		PBDE 066, Particulate		Endosulfan II, Total				
5 9 8		Benz(a)ant hracenes/C hrysenes, C4-, Total		Oxadiazon, Total				
5 9 9		PCB 084, Total		Methylphe nanthrene, 1-, Total				

6 0 0		PCB 151, Particulate		Total Suspended Solids, Fixed				
6 0 1		Dibenzothi ophenes, C3-, Total		PCB 196, Particulate				
6 0 2		PCB 015, Particulate		PBDE 119, Total				
6 0 3		PCB 167, Particulate		PBDE 047, Total				
6 0 4		PCB 170, Particulate		PCB 055, Total				
6 0 5		Acenaphth ene, Particulate		Naphthalen es, C3- Total				
6 0 6		PBDE 153, Particulate		Naled, Total				
6 0 7		PCB 136, Total		Phenanthre ne/Anthrac ene, C1- Total				
6 0 8		Ratio of SEM/AVS, Total		Bolstar, Total				
6 0 9		Sulfide, Total, Total		Fensulfothi on, Total				
6 1 0		PCB 206, Particulate		PCB 089, Dissolved				
6 1 1		PCB 084, Dissolved		PCB 171, Total				
6 1 2		Oxygen, Dissolved, Dissolved		PBDE 153, Total				
6 1 3		Molybdenu m, Total		PCB 082, Total				
6 1 4		Naphthalen es, C1- Dissolved		Carbaryl, Total				
6 1 5		Dioxathion , Total		Chlorpyrif os Methyl, Total				
6 1 6		Benz(a)ant hracene, Dissolved		DDT(p,p'), Total				

6 1 7		PCB 138, Particulate		PCB 157, Dissolved				
6 1 8		PCB 180, Particulate		PBDE 051, Total				
6 1 9		Particulate Organic Carbon, Particulate		PCB 189, Total				
6 2 0		Chlordane, cis-, Total		PCB 015, Dissolved				
6 2 1		PBDE 007, Dissolved		PBDE 025, Total				
6 2 2		PBDE 008, Dissolved		PCB 178, Particulate				
6 2 3		PBDE 085, Particulate		Dibenzothi ophenes, C2-, Dissolved				
6 2 4		PCB 091, Total		Parathion, Methyl, Total				
6 2 5		PCB 171, Total		Fluorenes, C2-, Particulate				
6 2 6		Permethrin , cis-, Total		PCB 137, Total				
6 2 7		PCB 149, Particulate		Naphthalen es, C1-, Total				
6 2 8		HCH, alpha- Dissolved		Diazinon, Total				
6 2 9		PCB 087, Particulate		PCB 064, Dissolved				
6 3 0		PCB 183, Particulate		Chrysenes, C2-, Total				
6 3 1		Benz(a)ant hracenes/C hrysenes, C1-, Particulate		PCB 201, Dissolved				
6 3 2		PCB 004, Total		Phorate, Total				
6 3 3		PCB 045, Total		Dibenzothi ophenes, C3-,				

				Particulate				
6 3 4		Weight, Total		Endrin, Dissolved				
6 3 5		Benz(a)ant hracenes/C hrysenes, C2-, Total		PCB 199, Total				
6 3 6		PCB 017, Particulate		PCB 126, Total				
6 3 7		PCB 064, Total		Trifluralin, Total				
6 3 8		PCB 119, Particulate		Dieldrin, Total				
6 3 9		PCB 199, Particulate		Heptachlor , Particulate				
6 4 0		Prodiamine , Total		PCB 190, Total				
6 4 1		Titanium, Total		Chlordane, trans- Total				
6 4 2		Sulfate, Total		Fluoranthe ne/Pyrenes, C1-, Total				
6 4 3		PCB 174, Particulate		Oryzalin, Total				
6 4 4		Xylene, m/p-, Total		PCB 202, Total				
6 4 5		PCB 141, Particulate		PCB 207, Total				
6 4 6		Barometric Pressure		Naphthalen es, C2- Total				
6 4 7		Antimony, Total		Fluorenes, C1- Dissolved				
6 4 8		PCB 203, Particulate		Dimethoat e, Total				
6 4 9		Dibenz(a,h) anthracen e, Dissolved		PCB 139, Total				
6 5 0		HpCDD, 1,2,3,4,6,7, 8-, Total		Dibenzothi ophenes, C1-, Total				

6 5 1		PBDE 025, Total		PCB 011, Total				
6 5 2		PCB 006, Total		Pseudo- nitzschia				
6 5 3		PCB 077, Total		PCB 042, Total				
6 5 4		PCB 167, Total		Chloride, Total				
6 5 5		PCB 172, Total		PCB 209, Total				
6 5 6		PCB 189, Dissolved		PCB 033, Dissolved				
6 5 7		PCB 200, Particulate		Tokuthion, Total				
6 5 8		Dichlorvos , Total		Nonylphen ol, Total				
6 5 9		Fluorenes, C3- Dissolved		HCH, gamma- Dissolved				
6 6 0		Benz(a)ant hracenes/C hrysenes, C2- Particulate		PBDE 209, Total				
6 6 1		Diazinon, Particulate		PCB 175, Total				
6 6 2		PCB 011, Total		Ethylbenze ne, Total				
6 6 3		PCB 124, Total		Phenanthre ne/Anthrac ene, C2- Dissolved				
6 6 4		Vanadium, Dissolved		Fluorenes, C3-, Total				
6 6 5		Acid Volatile Sulfides, Total		PCB 040, Total				
6 6 6		Strontium, Total		Fluorenes, C3- Dissolved				
6 6 7		Isoxaben, Total		PBDE 197, Total				

6 6 8		PCB 063, Total		Fluridone, Total				
6 6 9		PCB 109, Total		Mirex, Total				
6 7 0		Phorate, Total		Methidathi on, Total				
6 7 1		Endrin, Dissolved		Nitrogen, Organic, Total				
6 7 2		PCB 189, Particulate		PCB 048, Total				
6 7 3		Benz(a)ant hracenes/C hrysenes, C3- Particulate		PCB 159, Total				
6 7 4		Molinate, Total		PCB 208, Total				
6 7 5		OilandGre ase; HEM, Total		Fluorenes, C2-, Total				
6 7 6		Pendimeth alin, Total		PCB 209, Dissolved				
6 7 7		Benzo(b/j/ k)fluoranth ene, Total		Benzo(b/j/ k)fluoranth ene, Total				
6 7 8		Carbonate, Total		PCB 035, Total				
6 7 9		Clomazone , Total		PCB 084, Total				
6 8 0		Fenthion, Total		Mercury, Dissolved				
6 8 1		Mirex, Dissolved		PCB 133, Total				
6 8 2		PCB 035, Total		Phenanthre ne/Anthrac ene, C4- Total				
6 8 3		PCB 157, Dissolved		PCB 025, Total				
6 8 4		PCB 178, Dissolved		PCB 064, Total				

6 8 5		PCB 190, Total		PCB 006, Total				
6 8 6		Tetrachlor vinphos, Total		PBDE 154, Total				
6 8 7		Perylene, Particulate		PCB 067, Total				
6 8 8		Fluorenes, C2-, Total		Phenanthre ne/Anthrac ene, C2-, Total				
6 8 9		Sand, Coarse 2.0 to <4.75 mm		PBDE 079, Total				
6 9 0		Naphthalen e, Dissolved		PCB 205, Total				
6 9 1		Antimony, Dissolved		PCB 024, Total				
6 9 2		Dibenzothi ophenes, C1-, Particulate		Ethoprop, Total				
6 9 3		PCB 207, Particulate		PCB 013, Total				
6 9 4		Diazinon, Dissolved		DDE(p,p'), Total				
6 9 5		PCB 067, Total		Phenanthre ne/Anthrac ene, C3-, Dissolved				
6 9 6		Dibenzothi ophenes, C2-, Particulate		Xylene, m/p-, Total				
6 9 7		PCB 082, Total		PBDE 126, Total				
6 9 8		PCB 089, Particulate		PCB 037, Total				
6 9 9		PCB 196, Total		DDT(o,p'), Total				
7 0 0		PCB 178, Total		Dibenzothi ophenes, C3-, Total				
7 0		PCB 198, Particulate		PCB 114, Total				

1								
7 0 2		Ethoprop, Total		Permethrin , Total, Total				
7 0 3		PBDE 100, Dissolved		Dibenzothi ophenes, C2-, Total				
7 0 4		PCB 081, Total		PBDE 013, Total				
7 0 5		Pseudo- nitzschia		PCB 043, Total				
7 0 6		Fluorenes, C1-, Dissolved		PCB 063, Total				
7 0 7		PCB 123, Total		PCB 164, Total				
7 0 8		PCB 084, Particulate		PCB 200, Total				
7 0 9		Salinity, Dissolved		PCB 026, Total				
7 1 0		Benz(a)ant hracenes/C hrysenes, C4-, Particulate		Tetrachlor vinphos, Total				
7 1 1		Methidathi on, Total		PCB 053, Total				
7 1 2		PCB 182, Total		Phenanthre ne/Anthrac ene, C3-, Total				
7 1 3		Tokuthion, Total		PCB 124, Total				
7 1 4		Vanadium, Total		Vanadium, Dissolved				
7 1 5		Fluoranthe ne/Pyrenes, C1-, Dissolved		Fluorenes, C1-, Particulate				
7 1 6		PCB 195, Particulate		PCB 167, Total				
7 1 7		Domoic Acid, Particulate		PCB 109, Total				

7 1 8		PCB 175, Total		Sand, Coarse 2.0 to <4.75 mm				
7 1 9		PCB 191, Total		OCDF, 1,2,3,4,6,7, 8,9-, Total				
7 2 0		PCB 206, Dissolved		Dibenzothi ophenes, C1-, Dissolved				
7 2 1		PCB 209, Dissolved		Dichlorvos , Total				
7 2 2		Bolstar, Total		PCB 027, Total				
7 2 3		PBDE 008, Particulate		PCB 182, Total				
7 2 4		Phosmet, Total		PCB 059, Total				
7 2 5		PCB 017, Total		PCB 019, Total				
7 2 6		PCB 205, Total		Methoxych lor, Total				
7 2 7		Carbaryl, Total		PBDE 140, Total				
7 2 8		Cyanide, Weak Acid Dissociabl e		HpCDF, 1,2,3,4,6,7, 8-, Total				
7 2 9		Fenchlorph os, Total		PCB 046, Total				
7 3 0		Methamido phos, Total		Fenthion, Total				
7 3 1		PBDE 030, Total		PCB 176, Total				
7 3 2		PBDE 099, Particulate		PCB 004, Total				
7 3 3		PCB 131, Total		PCB 045, Total				
7 3 4		PCB 159, Total		PBDE 099, Total				

7 3 5		Prallethrin, Total		Chrysenes, C1-, Particulate				
7 3 6		Permethrin , Total, Total		PCB 022, Total				
7 3 7		Allethrin, Total		PCB 144, Total				
7 3 8		Cypermeth rin, Total, Total		PCB 016, Total				
7 3 9		PCB 122, Total		PBDE 049, Particulate				
7 4 0		PCB 022, Total		Glyphosate , Total				
7 4 1		PCB 025, Total		PCB 172, Total				
7 4 2		PCB 026, Total		OCDD, 1,2,3,4,6,7, 8,9-, Total				
7 4 3		PCB 037, Total		Benz(a)ant hracenes/C hrysenes, C3-, Total				
7 4 4		PCB 040, Total		PCB 179, Total				
7 4 5		PCB 179, Total		PCB 130, Total				
7 4 6		PCB 016, Total		Tetrachlor oethylene, Total				
7 4 7		PCB 042, Total		PCB 122, Total				
7 4 8		PCB 092, Total		Aldrin, Total				
7 4 9		PCB 199, Total		PCB 134, Total				
7 5 0		Benz(a)ant hracenes/C hrysenes, C3-, Dissolved		PCB 091, Total				
7 5 1		Deltamethr in/Tralome thrin, Total		Naphthalen es, C4-, Particulate				

7 5 2	PCB 053, Total		HpCDD, 1,2,3,4,6,7, 8-, Total				
7 5 3	Chrysenes, C2-, Particulate		PBDE 128, Total				
7 5 4	PCB 013, Total		PCB 136, Total				
7 5 5	PCB 089, Total		PCB 191, Total				
7 5 6	Prometryn, Total		PCB 092, Total				
7 5 7	PCB 178, Particulate		Endrin, Particulate				
7 5 8	PCB 130, Total		Prometryn, Total				
7 5 9	Atrazine, Total		SpecificCo nductivity, Total				
7 6 0	PCB 029, Dissolved		Bicarbonat e, Dissolved				
7 6 1	Dibenzothi ophenes, C3-, Dissolved		Esfenvaler ate/Fenvale rate-2, Total				
7 6 2	PCB 202, Total		Benz(a)ant hracenes/C hrysenes, C4-, Total				
7 6 3	PCB 046, Total		PCB 017, Total				
7 6 4	PCB 176, Total		Gravel, 4.75 to <75 mm				
7 6 5	Dibenzothi ophenes, C1-, Dissolved		Molinate, Total				
7 6 6	Fenpropath rin, Total		PCB 131, Total				
7 6 7	Chrysenes, C3-, Particulate		Dioxathion , Total				
7 6 8	PCB 048, Total		Pebble, Small 4 to <8 mm				

7 6 9	PCB 059, Total		Domoic Acid, Particulate					
7 7 0	PCB 208, Total		Deltamethr in/Tralome thrin, Total					
7 7 1	Esfenvaler ate/Fenvale rate-2, Total		Thallium, Total					
7 7 2	PCB 024, Total		Antimony, Total					
7 7 3	Tin, Total		Endosulfan II, Dissolved					
7 7 4	PBDE 010, Total		Endosulfan II, Particulate					
7 7 5	PCB 134, Total		Methamido phos, Total					
7 7 6	PCB 144, Total		Vanadium, Total					
7 7 7	PCB 164, Total							
7 7 8	PCB 119, Dissolved							
7 7 9	PCB 198, Total							
7 8 0	Permethrin , trans- Total							
7 8 1	TPH as Diesel C8- C21, Total							
7 8 2	Triclopyr, Total							
7 8 3	Benz(a)ant hracenes/C hrysenes, C4- Dissolved							
7 8 4	Bromacil, Total							
7 8 5	Chlorpyrif os Methyl, Dissolved							
7	Naled,							

8 6		Total						
7 8 7		PCB 207, Total						
7 8 8		Bicarbonat e, Dissolved						
7 8 9		Chlorpyrif os Methyl, Total						
7 9 0		PBDE 209, Dissolved						
7 9 1		Chlordene, trans- Total						
7 9 2		PBDE 013, Total						
7 9 3		Tetrachlor oethylene, Total						
7 9 4		PCB 200, Dissolved						
7 9 5		Beryllium, Total						
7 9 6		PCB 055, Total						
7 9 7		Chrysenes, C4- Particulate						
7 9 8		Fensulfothi on, Total						
7 9 9		PCB 114, Total						

Appendix 8: Combined Dry Weight Result Data.

<u>Analyte</u>	<u>SWAMP % Chen and Liu (Left Axis)</u>	<u>NonSWAMP % Chen and Liu (Left Axis)</u>	<u>Total % Chen and Liu (Left Axis)</u>	<u>Total Heuristic</u>	<u>SWAMP Heuristic</u>	<u>NonSWAMP P Heuristic</u>	<u>Supervised I</u>	<u>Supervised II</u>
Acenaphthene, Total	0.4	3.6	4	0.44	0	0.44	3.23	3.23
Acenaphthylene, Total	1.6	4.8	6.4	0.62	0	0.62	1.39	0
Anthracene, Total	2.6	3.2	5.8	1.19	0	1.19	2.06	0
Antimony, Total	1.2	2.2	3.4	0.5	0	0.5	5	4.55
Barium, Total	0.6	1.6	2.2	2.3	0	2.3	0	0
Beryllium, Total	0.8	0	0.8	2.35	0	2.35	0	0
Chlorpyrifos, Total	2.82	5.16	7.98	2.35	0	2.35	5	5
Chromium, Total	0.6	1	1.6	1.98	0.05	1.93	1.89	1.26
Chrysenes, C1-, Total	2	0.4	2.4	1.12	0	1.12	0.84	0.84
DDD(o,p'), Total	1.4	5.8	7.2	1.71	0	1.71	3.08	1.54
DDE(o,p'), Total	0	2.2	2.2	0.93	0	0.93	0	0
DDT(o,p'), Total	1.4	7.6	9	1.95	0	1.95	0	0
DDT(p,p'), Total	1.4	5.4	6.8	1.78	0	1.78	4.35	4.35

Iron, Total	0	0	0	1.5	0	1.5	0	0
Lead, Total	0.2	2	2.2	1.7	0.04	1.65	1.72	0.86
Methyldibenzothio- phenene, 4-, Total	12.6 1	5.41	18 .0 2	1.8	0	1.8	5.56	5.56
Methylfluoranthene, 2-, Total	8.45	0.7	9. 15	1.41	0	1.41	0	0
Methylnaphthalene, 1-, Total	1.4	0	1. 4	1.86	0	1.86	0	0
Methylnaphthalene, 2-, Total	2.4	0.2	2. 6	2.66	0	2.66	1.5	1.47
Methylphenanthrene, 1-, Total	2.2	1.4	3. 6	1.16	0	1.16	2.38	1.19
Naphthalenes, C2-, Total	2.6	2	4. 6	1.48	0	1.48	2.33	2.33
PBDE 100, Total	0	4.8	4. 8	1.75	0	1.75	3.17	3.17
PCB 008, Total	1	7.4	8. 4	0.09	0	0.09	4.17	4.17
PCB 101, Total	5	1.8	6. 8	0.38	0	0.38	2.22	2.22
PCB 110, Total	5.2	4.2	9. 4	0.5	0	0.5	2.27	2.27
PCB 114, Total	0	3.65	3. 65	2.19	0	2.19	0	0
PCB 118, Total	3.8	5.4	9. 2	0.39	0	0.39	3.13	3.13
PCB 128, Total	0.4	5.8	6. 2	0.97	0	0.97	1.82	3.64
PCB 138, Total	7.2	4.4	11 .6	0.05	0	0.05	1.05	0
PCB 149, Total	5.6	3.4	9	0.4	0	0.4	2.38	2.38
PCB 151, Total	1	7.4	8. 4	0.58	0	0.58	0	0

PCB 158, Total	1.8	5.6	7. 4	2.17	0	2.17	1.82	3.64
PCB 170, Total	0.2	5.4	5. 6	0.08	0	0.08	1.75	0
PCB 177, Total	0.6	5.4	6	0.07	0	0.07	0	0
Phenanthren e, Total	1.6	2.2	3. 8	1.21	0	1.21	1.84	1.23
Phenanthren e/Anthracene , C1-, Total	2.4	0.8	3. 2	1.09	0	1.09	0.78	0.78
Phenanthren e/Anthracene , C2-, Total	2	1.6	3. 6	1.36	0	1.36	0.83	0.83
Phenanthren e/Anthracene , C3-, Total	3.2	2.2	5. 4	1.12	0	1.12	0.98	0.98
Phenanthren e/Anthracene , C4-, Total	7	8.4	15 .4	2.04	0	2.04	2.08	2.08
Silver, Total	2	0.8	2. 8	2.32	0	2.32	1.43	1.43

Appendix 9: Combined Wet Weight Results

Analyte	SWAMP % Chen and Liu (Left Axis)	NonSwamp % Chen and Liu (Left Axis)	Total % Chen and Liu (Left Axis)	Total_Heuristic	SWAMP_Heuristic	NonSWAMP_Heuristic	Supervised I	Supervised II
Acenaphthene, Total	0	5.6206089	5.6206089	2.107728337	0	2.107728337	0	0
AFDM_Algae, Particulate	1.4	0.4	1.8	0.974658869	0	0.974658869	1.818181818	1.818181818
Alkalinity as CaCO3, Dissolved	0	0	0	1.758241758	0	1.758241758	0.569259962	0
Aluminum, Dissolved	1.4	0	1.4	0.36809816	0	0.36809816	1.785714286	1.785714286
Aluminum, Total	6.2	1.6	7.8	0.595592615	0	0.595592615	1.41509434	2.358490566
Arsenic, Dissolved	2.4	0.8	3.2	0.752545374	0	0.752545374	2.592592593	1.851851852
Atrazine, Total	3.9506173	5.1851852	9.1358025	4.691358025	0	4.691358025	4.166666667	8.333333333
Benz(a)anthracene, Total	0.2	7.6	7.8	1.353965184	0	1.353965184	4.255319149	4.255319149
Benzo(g,h,i)perylene, Total	0	5.2	5.2	1.346153846	0	1.346153846	1.666666667	3.333333333
BOD, Total	0	2.6755853	2.6755853	1.672240803	0	1.672240803	1.886792453	1.886792453
Cadmium, Total	1.2	3.4	4.6	0.173913043	0	0.173913043	1.5625	1.5625
Calcium, Dissolved	2	0	2	2.050380785	0	2.050380785	0.881057269	0
Chlorophyll a,	0	1.2	1.2	1.744918151	0	1.744918151	1.35135135	2.70270270

Particulate							1	3
Chlorpyrifos, Total	4.2	2.8	7	1.102130786	0	1.102130786	2.08333333	2.08333333
Chromium, Total	1.2	0.2	1.4	0.414569144	0	0.414569144	1.51515151	1.51515151
Clay, <0.0039 mm	0	0	0	0.864304235	0	0.864304235	0.8	0.8
Clay, <0.005 mm	0	0	0	1.606425703	0	1.606425703	0.492610837	0
Clay, Fine <0.00098 mm	0.2688172	0	0.2688172	2.150537634	0	2.150537634	0	0
Coliform, Fecal	0	5.8	5.8	0.189322226	0	0.189322226	1.914992994	1.96170014
CPOM	8.045977	0	8.045977	0.574712644	0	0.574712644	0	0
Dacthal, Total	2.6	4.8	7.4	0.825082508	0	0.825082508	2	4
DDE(p,p'), Total	8.8	10	18.8	1.124648547	0	1.124648547	0	0
Diazinon, Total	13.2	0	13.2	1.085481682	0	1.085481682	4.918032787	8.196721311
Dibenz(a,h)anthracene, Total	0	8.0168776	8.0168776	1.898734177	0	1.898734177	2.272727273	4.545454545
Dibenzothiohenes, C1-, Total	0.9433962	13.6792453	14.6226415	1.41509434	0	1.41509434	1.149425287	2.298850575
Dimethylnaphthalene, 2,6-, Total	0	6.1696658	6.1696658	1.285347044	0	1.285347044	1.492537313	1.492537313
Discharge	0.8	0.6	1.4	1.075514874	0	1.075514874	1.886792453	1.886792453
Electrical Conductivity, Total	0.2	2.4	2.6	1.22032765	0	1.22032765	2.816901408	5.281690141
Fine, <0.0625	0	0	0	0	0	0	4.54545454	0

mm							5	
Fluoranthene/Pyrenes, C1-, Total	0.408 1633	13.46 9387 8	13.87 7551	1.6326 53061	0	1.6326530 61	2.272 72727 3	2.272 72727 3
Fluorene, Total	0	4.435 4839	4.435 4839	1.4112 90323	0	1.4112903 23	0	0
Fluorenes, C1-, Total	0	9.356 7251	9.356 7251	1.1695 90643	0	1.1695906 43	1.923 07692 3	1.923 07692 3
Fluorenes, C2-, Total	1.485 1485	15.34 6534 7	16.83 1683 2	3.4653 46535	0	3.4653465 35	0	0
Fluorenes, C3-, Total	0.502 5126	15.57 7889 4	16.08 0402	2.5125 62814	0	2.5125628 14	3.409 09090 9	2.272 72727 3
Gravel, 4.75 to <75 mm	26.50 6024 1	7.228 9157	33.73 4939 8	1.8072 28916	0	1.8072289 16	4.477 61194	2.985 07462 7
HCH, gamma-, Total	0	3	3	2.2099 44751	0	2.2099447 51	5	5
Iron, Dissolved	1.4	0.4	1.8	2.0186 3354	0	2.0186335 4	1.242 23602 5	1.242 23602 5
Iron, Total	0.8	1	1.8	1.1811 02362	0	1.1811023 62	1.960 78431 4	1.960 78431 4
Lead, Dissolved	3.6	1	4.6	0.5549 94955	0	0.5549949 55	1.826 48401 8	3.652 96803 7
Lead, Total	0.8	1.4	2.2	0.9890 57239	0	0.9890572 39	1.919 38579 7	1.919 38579 7
Magnesium, Total	5.6	1.2	6.8	0.7824 72613	0	0.7824726 13	1.176 47058 8	0.588 23529 4
Manganese, Dissolved	2	0	2	0.7665 50523	0	0.7665505 23	1.619 43319 8	1.619 43319 8
Manganese, Total	4	0.2	4.2	0.5027 4223	0	0.5027422 3	2.631 57894 7	3.007 51879 7
MBAS, Total	3.389 8305	2.259 887	5.649 7175	1.6949 15254	0	1.6949152 54	1.298 70129 9	0

Mercury, Dissolved	7.6	9.8	17.4	0.8264 46281	0	0.8264462 81	4.166 66666 7	8.333 33333 3
Methylnaph thalene, 1- Total	0	5	5	1.6666 66667	0	1.6666666 67	2.597 40259 7	2.597 40259 7
Methylnaph thalene, 2- Total	0	6.432 7485	6.432 7485	1.4619 88304	0	1.4619883 04	2.739 72602 7	2.739 72602 7
Molybdenu m, Dissolved	6.849 3151	0	6.849 3151	2.7397 26027	0	2.7397260 27	5.555 55555 6	5.555 55555 6
Molybdenu m, Total	0	1.4	1.4	2.9783 3935	0	2.9783393 5	2.083 33333 3	5.208 33333 3
Naphthalene , Total	0.564 9718	7.909 6045	8.474 5763	1.9774 0113	0	1.9774011 3	1.315 78947 4	1.315 78947 4
Naphthalene s, C1-, Total	1.515 1515	11.61 6161 6	13.13 1313 1	2.0202 0202	0	2.0202020 2	1.923 07692 3	3.846 15384 6
Naphthalene s, C2-, Total	1.657 4586	12.70 7182 3	14.36 4640 9	2.2099 44751	0	2.2099447 51	2.380 95238 1	2.380 95238 1
Naphthalene s, C3-, Total	0.404 8583	11.33 6032 4	11.74 0890 7	0.8097 16599	0	0.8097165 99	2.298 85057 5	1.149 42528 7
Nickel, Total	0.4	1.2	1.6	0.2288 32952	0	0.2288329 52	1.587 30158 7	1.091 26984 1
Nitrate + Nitrite as N, Dissolved	2	0.2	2.2	0.9298 00093	0	0.9298000 93	1.433 69175 6	1.075 26881 7
Nitrate + Nitrite as N, Not Recorded	10	1.2	11.2	1.2581 16883	0	1.2581168 83	2.560 81946 2	3.841 22919 3
Nitrate as N, Not Recorded	0.2	0.6	0.8	0.3920 17106	0	0.3920171 06	2.002 86123	4.005 72246 1
Nitrogen, Total Kjeldahl, Not Recorded	0.8	0.2	1	1.6759 77654	0	1.6759776 54	1.680 67226 9	4.201 68067 2

Oxadiazon, Total	5.4	6	11.4	0.838926174	0	0.838926174	0	0
PCB 018, Total	0	3	3	1.26146789	0	1.26146789	1.923076923	1.282051282
Perchlorate, Dissolved	2.4390244	0	2.4390244	2.43902439	0	2.43902439	0	0
Phenanthrene, Total	0	6.8	6.8	1.086956522	0	1.086956522	3.773584906	3.773584906
Phenanthrene/Anthracene, C1-, Total	1.0273973	10.9589041	11.9863014	2.397260274	0	2.397260274	2.941176471	1.470588235
Phenanthrene/Anthracene, C2-, Total	1.4925373	16.4179104	17.9104478	0.995024876	0	0.995024876	1.111111111	3.333333333
Potassium, Dissolved	0.9592326	1.4388489	2.3980815	1.678657074	0	1.678657074	1.612903226	0.806451613
Potassium, Total	1	2.4	3.4	1.10323089	0	1.10323089	2.272727273	2.272727273
Sand, 0.0625 to <2.0 mm	0	0	0	0	0	0	0	0.81300813
Sand, Coarse 2.0 to <4.75 mm	17.8988327	3.8910506	21.7898833	3.501945525	0	3.501945525	2.985074627	5.970149254
Sand, Fine 0.075 to <0.425 mm	0	0	0	0.60483871	0	0.60483871	0.966183575	0
Sand, Medium 0.425 to <2.0 mm	0	0	0	2.127659574	0	2.127659574	0.546448087	0
Selenium, Dissolved	3	2.2	5.2	2.837189	0	2.837189	1.612903226	1.612903226
Selenium, Total	0.2	10.4	10.6	0.202287946	0	0.202287946	1.898734177	1.898734177
Silica as SiO ₂ , Dissolved	0.2	0	0.2	1.518100428	0	1.518100428	0.998890122	1.442841287

Silt, 0.0039 to <0.0625 mm	0.4	0.4	0.8	0.1843 31797	0	0.1843317 97	0.813 00813	0.813 00813
Silt, 0.005 to <0.075 mm	0	0	0	0	0	0	0.492 61083 7	1.477 83251 2
Silver, Total	0.4	2	2.4	0.8849 55752	0	0.8849557 52	0	0
Simazine, Total	3.2	6.2	9.4	0.5524 86188	0	0.5524861 88	2.941 17647 1	2.941 17647 1
Sodium, Dissolved	3.6	0.8	4.4	1.0387 81163	0	1.0387811 63	0.806 45161 3	4.838 70967 7
Sodium, Total	3	1.8	4.8	0.6854 53161	0	0.6854531 61	1.149 42528 7	1.149 42528 7
Thallium, Total	36.47 0588 2	11.76 4705 9	48.23 5294 1	2.3529 41176	0	2.3529411 76	6.666 66666 7	0
Total Dissolved Solids, Fixed	3.6	0	3.6	1.3945 85726	0	1.3945857 26	1.757 46924 4	1.581 72232
Total Dissolved Solids, Volatile	2	0	2	1.1560 69364	0	1.1560693 64	1.604 27807 5	1.604 27807 5
Total Organic Carbon, Total	0	1	1	0.5715 84105	0	0.5715841 05	1.480 56755 1	1.110 42566 3
Total Suspended Solids, Fixed	10.8	0.6	11.4	0.9181 96995	0	0.9181969 95	1.459 85401 5	1.459 85401 5
Total Suspended Solids, Volatile	4.8	1.2	6	0.8389 26174	0	0.8389261 74	1.619 43319 8	1.417 00404 9
Vanadium, Dissolved	21.31 1475 4	0	21.31 1475 4	3.2786 88525	0	3.2786885 25	5.555 55555 6	8.333 33333 3
Velocity	0.4	0	0.4	0.0747 25723	0	0.0747257 23	0.638 97763 6	0.319 48881 8

Zinc, Dissolved	1.6	1	2.6	1.3262 59947	0	1.3262599 47	2.469 13580 2	2.469 13580 2
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