Metals Data for Reasonable Potential (RP) Analysis

	9/9/2014	10/22/2015	10/26/2015	10/26/2015		WLA Limit	WLA Limit	Max. From	RP
Metal	003 Mg/L	004 Mg/L	002 Mg/L	004 Mg/L	MRL Mg/L	Acute Mg/L	Chronic Mg/L	Data Mg/L	Y/N
T-As	0.0026	0.0018			0.0005	0.100	0.190	0.0026	N
T-Cd	ND	ND			0.0002	0.0087	0.0008	ND	N
T Cr	0.0041	0.0010			0.0005	5.6117	0.268	0.0041	N
T-Cu	0.0053	0.0022			0.0010	0.0517	0.0305	0.0053	Y
T-Pb	0.0042	0.0008			0.0005	0.100	0.0186	0.0042	Y
T-Hg	ND	ND			0.0002	0.00015	0.000012	ND	N
T-Ni	0.0064	0.0025			0.0005	1.5159	0.169	0.0064	N
T-Se	0.0027	0.0015			0.0005	0.020	0.0046	0.0027	Y
T-Ag	ND	ND			0.0005	0.0411	No STD.	ND	N
T-Zn	0.02	ND			0.01	0.3878	0.3878	0.02	N
T-B		0.07	0.14	0.08	0.05	0.750	No STD.	0.14	Y
T-Fe		1.08	0.27	0.65	0.05	1.00	No STD.	1.08	Y
D-Se		0.0009	0.03	0.02	0.0005	0.0200	0.0046	0.03	Y
D-B			0.13	0.07	0.05	0.750	No STD.	0.13	Y

T = total

D = dissolved

WLA = wasteload analysis

MRL = Minimum Reporting Level

ND = None detected down to the MRL

No STD = no standard. Where there is no standard for chronic limits in the wasteload allocation, the acute is used.

Analysis of the above table follows:

1. Compare the maximum value from the data set to the acute and chronic WLA numbers. If there is more than a ten times difference between the two values considering the lowest value from the WLA (usually the chronic value except for arsenic) then there is **no** reasonable potential for exceedance of the water quality standard downstream for that parameter. If there is less than a ten times difference, then there is potential and a reasonable potential analysis must be completed for that specific parameter.
2. If the maximum value from the data set is greater than either of the WLA limits listed in the table there has already been exceedance of the downstream limits/standards and this parameter must be included in the permit with a limit. This is the case for iron which was included in the original permit and will be included in the modification.

3. Where dissolved and total of the same metal are in need of a reasonable potential analysis, this analysis will be done using total metal values which will be sufficient for total metal as well as the dissolved metal.

Conclusion:

A reasonable potential analysis was completed for total copper, lead, selenium and boron. Total selenium acute and chronic permit limits should be included in the permit modification for the NPL. In addition, because not enough metals data has been generated, monitoring for metals data will be included in the permit for all outfalls that discharge. The permittee is required to use the analytical methods that have the lowest detection limits for the metals.

A number of organic compounds were scanned at some of the Outfalls that discharged. All of the parameters scanned were none detected (ND). Based on this data and the permit writers BPJ, it was decided that there should be no organics in any significant concentrations found on this site. Organics were eliminated from further RP concerns.

All of the metals and organic data used in this RP analysis were obtained from samples taken by the Company and analyzed at Chemtech-Ford in Salt Lake City. A complete copy of the data submitted to Alton Coal is included in this RP report.

RP Procedure Output

Facility Name:	**Alton Coal Development, LLC**
Permit Number:	**UT0025992**
Outfall Number:	**001**
Parameter	**Boron**
Distribution	**Default**
Data Units	**mg/L**
Reporting Limit	**0.05**
Significant Figures	**2**
Confidence Interval	**95**

Maximum Reported Effluent Conc.	**0.14**	**mg/L**
Coefficient of Variation (CV)	**0.60**	
RP Multiplier	**3.0**	
Projected Maximum Effluent Conc. (MEC)	**0.42**	**mg/L**

Acute Criterion	**0.75**	**0**
Chronic Criterion	**0.75**	**0**
Human Health Criterion	**0**	**0**

RP for Acute?	**NO**
RP for Chronic?	**NO**
RP for Human Health?	**N/A**

Effluent Data

#		#		#	
1	0.07	41	0	81	0
2	0.14	42	0	82	0
3	0.08	43	0	83	0
4	0	44	0	84	0
5	0	45	0	85	0
6	0	46	0	86	0
7	0	47	0	87	0
8	0	48	0	88	0
9	0	49	0	89	0
10	0	50	0	90	0
11	0	51	0	91	0
12	0	52	0	92	0
13	0	53	0	93	0
14	0	54	0	94	0
15	0	55	0	95	0
16	0	56	0	96	0
17	0	57	0	97	0
18	0	58	0	98	0
19	0	59	0	99	0
20	0	60	0	100	0
21	0	61	0	101	0
22	0	62	0	102	0
23	0	63	0	103	0
24	0	64	0	104	0
25	0	65	0	105	0
26	0	66	0	106	0
27	0	67	0	107	0
28	0	68	0	108	0
29	0	69	0	109	0
30	0	70	0	110	0
31	0	71	0	111	0
32	0	72	0	112	0
33	0	73	0	113	0
34	0	74	0	114	0
35	0	75	0	115	0
36	0	76	0	116	0
37	0	77	0	117	0
38	0	78	0	118	0
39	0	79	0	119	0
40	0	80	0	120	0

RP Procedure Output

Facility Name:	**Alton Coal Development, LLC**
Permit Number:	**UT0025992**
Outfall Number:	**001**
Parameter	**Lead**
Distribution	**Default**
Data Units	**mg/L**
Reporting Limit	**0.005**
Significant Figures	**2**
Confidence Interval	**95**

Maximum Reported Effluent Conc.	**0.0042**	**mg/L**
Coefficient of Variation (CV)	**0.60**	
RP Multiplier	**3.8**	
Projected Maximum Effluent Conc. (MEC)	**0.016**	**mg/L**

Acute Criterion	**0.2151**	**0**
Chronic Criterion	**0.0705**	**0**
Human Health Criterion	**0**	**0**

RP for Acute?	**NO**
RP for Chronic?	**NO**
RP for Human Health?	**N/A**

Effluent Data

#		#		#	
1	0.0042	41	0	81	0
2	0.0008	42	0	82	0
3	0	43	0	83	0
4	0	44	0	84	0
5	0	45	0	85	0
6	0	46	0	86	0
7	0	47	0	87	0
8	0	48	0	88	0
9	0	49	0	89	0
10	0	50	0	90	0
11	0	51	0	91	0
12	0	52	0	92	0
13	0	53	0	93	0
14	0	54	0	94	0
15	0	55	0	95	0
16	0	56	0	96	0
17	0	57	0	97	0
18	0	58	0	98	0
19	0	59	0	99	0
20	0	60	0	100	0
21	0	61	0	101	0
22	0	62	0	102	0
23	0	63	0	103	0
24	0	64	0	104	0
25	0	65	0	105	0
26	0	66	0	106	0
27	0	67	0	107	0
28	0	68	0	108	0
29	0	69	0	109	0
30	0	70	0	110	0
31	0	71	0	111	0
32	0	72	0	112	0
33	0	73	0	113	0
34	0	74	0	114	0
35	0	75	0	115	0
36	0	76	0	116	0
37	0	77	0	117	0
38	0	78	0	118	0
39	0	79	0	119	0
40	0	80	0	120	0

RP Procedure Output

Facility Name:	**Alton Coal Development, LLC**
Permit Number:	**UT0025992**
Outfall Number:	**001**
Parameter	**Copper**
Distribution	**Default**
Data Units	**mg/L**
Reporting Limit	**0.001**
Significant Figures	**2**
Confidence Interval	**95**

Maximum Reported Effluent Conc.	**0.0053**	**mg/L**
Coefficient of Variation (CV)	**0.60**	
RP Multiplier	**3.8**	
Projected Maximum Effluent Conc. (MEC)	**0.02**	**mg/L**

Acute Criterion	**0.0517**	**0**
Chronic Criterion	**0.0305**	**0**
Human Health Criterion	**0**	**0**

RP for Acute?	**NO**
RP for Chronic?	**NO**
RP for Human Health?	**N/A**

Effluent Data

#		#		#	
1	0.0053	41	0	81	0
2	0.0022	42	0	82	0
3	0	43	0	83	0
4	0	44	0	84	0
5	0	45	0	85	0
6	0	46	0	86	0
7	0	47	0	87	0
8	0	48	0	88	0
9	0	49	0	89	0
10	0	50	0	90	0
11	0	51	0	91	0
12	0	52	0	92	0
13	0	53	0	93	0
14	0	54	0	94	0
15	0	55	0	95	0
16	0	56	0	96	0
17	0	57	0	97	0
18	0	58	0	98	0
19	0	59	0	99	0
20	0	60	0	100	0
21	0	61	0	101	0
22	0	62	0	102	0
23	0	63	0	103	0
24	0	64	0	104	0
25	0	65	0	105	0
26	0	66	0	106	0
27	0	67	0	107	0
28	0	68	0	108	0
29	0	69	0	109	0
30	0	70	0	110	0
31	0	71	0	111	0
32	0	72	0	112	0
33	0	73	0	113	0
34	0	74	0	114	0
35	0	75	0	115	0
36	0	76	0	116	0
37	0	77	0	117	0
38	0	78	0	118	0
39	0	79	0	119	0
40	0	80	0	120	0

RP Procedure Output

Facility Name:	**Alton Coal Development, LLC**
Permit Number:	**UT0025992**
Outfall Number:	**001**
Parameter	**Selenium**
Distribution	**Default**
Data Units	**mg/L**
Reporting Limit	**0.0005**
Significant Figures	**2**
Confidence Interval	**95**

Maximum Reported Effluent Conc.	**0.0027**	**mg/L**
Coefficient of Variation (CV)	**0.60**	
RP Multiplier	**3.8**	
Projected Maximum Effluent Conc. (MEC)	**0.01**	**mg/L**

Acute Criterion	**0.02**	**0**
Chronic Criterion	**0.0046**	**0**
Human Health Criterion	**0**	**0**

RP for Acute?	**NO**
RP for Chronic?	**YES**
RP for Human Health?	**N/A**

Effluent Data

#		#		#	
1	0.0027	41	0	81	0
2	0.0015	42	0	82	0
3	0	43	0	83	0
4	0	44	0	84	0
5	0	45	0	85	0
6	0	46	0	86	0
7	0	47	0	87	0
8	0	48	0	88	0
9	0	49	0	89	0
10	0	50	0	90	0
11	0	51	0	91	0
12	0	52	0	92	0
13	0	53	0	93	0
14	0	54	0	94	0
15	0	55	0	95	0
16	0	56	0	96	0
17	0	57	0	97	0
18	0	58	0	98	0
19	0	59	0	99	0
20	0	60	0	100	0
21	0	61	0	101	0
22	0	62	0	102	0
23	0	63	0	103	0
24	0	64	0	104	0
25	0	65	0	105	0
26	0	66	0	106	0
27	0	67	0	107	0
28	0	68	0	108	0
29	0	69	0	109	0
30	0	70	0	110	0
31	0	71	0	111	0
32	0	72	0	112	0
33	0	73	0	113	0
34	0	74	0	114	0
35	0	75	0	115	0
36	0	76	0	116	0
37	0	77	0	117	0
38	0	78	0	118	0
39	0	79	0	119	0
40	0	80	0	120	0