ALEXCO

2012 Mine Wall Testing Plan

March 2013

Table of Contents

1 Introduction 1

2 Methods 2

3 Results 3

3.1 Calcium Correlation 3
3.2 Sulphur Correlation 4
3.3 Lead Correlation 5
3.4 Zinc Correlation 6
3.5 NP:MPA Correlation 7

4 Discussion 8

5 Recommendations 10

LIST OF TABLES

Table 1 Calcium Statistics 3

Table 2 Sulphur Statistics....................4

Table 3 Lead Statistics 5

Table 4 Zinc Statistics....................6

Table 5 NP:MPA Statistics....................7

Table 6 Annual Mean Pb/Zn Values....................8

LIST OF FIGURES

Figure 1 Ca % Comparison 3

Figure 2 S % Comparison 4

Figure 3 Pb ppm Comparison 5

Figure 4 Zn ppm Comparison....................6

Figure 5 NP:MPA Comparison 7

LIST OF APPENDICES

APPENDIX A 2012 MINE WALL SAMPLES

1 INTRODUCTION

Mine wall testing was undertaken for underground development completed during 2012 in accordance to the Mine Wall Testing Plan submitted in 2008 under the Water Use Licence QZ07-078. The sampling was done in a systematic way by a team of Alexco Resource Corp. geologists. The sampling was done every 10 linear meters of development and the samples were analyzed with ICP OES by ALS Chemex Labs out of Vancouver, B.C. One sample every 40 linear meters was also analyzed with Acid Base Accounting (ABA) using the lab procedures outlined in the Mine Wall Testing Plan. A total of 39 samples were taken. All of the 39 samples were analyzed with ICP OES and 11 of these samples were also analyzed with ABA.

2 METHODS

The method of sampling selected by the team of geologists was a linear chip sample along one of the ribs (mine wall). Prior to sampling, the mine walls were washed down with water to limit the effects of contamination. These samples varied in that they were taken perpendicular to the orientation of the metamorphic fabric to best represent what the geochemical characteristics of the excavated mine wall are. These samples were an average of 4kg.

Sample locations were measured from underground survey points and marked on the mine wall with spray paint. All data was recorded into a database and sample locations were also recorded into an Auto-Cad drawing of the mine.

The mine wall samples were graphed and compared to the composite samples from the Waste Rock Management Plan (WRMP) taken during excavation in order to assess what, if any, geochemical changes have occurred within the rocks and if those changes can lead to a prediction of the long-term geochemical rock characterization.

The sampling method of the samples taken for the Waste Rock Management Plan (WRMP) is outlined in Water Use Licence QZ07-078 along with the compositing procedures and schedule. The composites generally represent 10-12m of linear development and are comprised of multiple samples taken during the excavation. For each ~10m representing a composite sample, a Correlation ID was assigned to that sample. Due to the variability of these composites lengths, a 1:1 comparison is difficult between this data set (WRMP) and the Mine Wall Testing Plan (MWTP) data set. In cases where no MWTP samples fell within the area of the composite sample, no Correlation ID was assigned to that sample. There was an average of 1.5 MWTP samples for every WRMP composite sample. In some cases more than one MWTP sample was correlated to an individual WRMP composite sample due to the spacial overlap of the samples. In the analysis of geochemical data in this report, WRMP composite samples that paired two MWTP samples were treated as two separate samples to more accurately weight the composites. Due to a lab omission, ICP data was not available for three of the WRMP samples, however the ABA data and S% (Leco) was substituted in place of the S% (ICP).

Due to the infrequency of ABA analysis on both data sets, there were 7 sets of samples that directly correlate the acid base accounting characteristics over time.

3 RESULTS

3.1 CALCIUM CORRELATION

Calcium correlation between MWTP samples and WRMP samples as shown in Figure 1 do not vary significantly between the two datasets indicating there is very little change in the neutralizing potential of the excavated mine workings over a 6-9 month period. Several individual WRMP composite samples have been correlated to multiple MWTP samples. Table 1 shows the summary statistics of the two calcium (ICP) datasets. Both datasets have a mean/median value > 0.75%. The mean value of calcium decreased over the lag time by 0.2%.

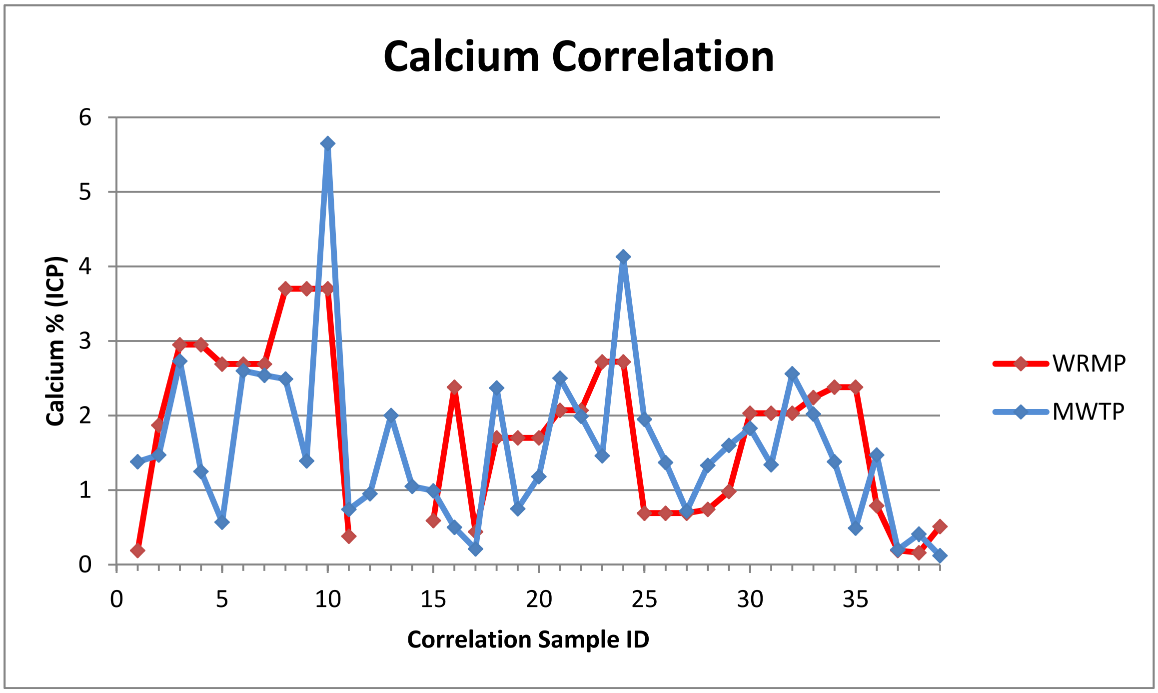

Figure 1 Ca % Comparison

Table 1 Calcium Statistics

Ca % MWTP 2012		Ca % WRMP 2012	
Mean	1.58	Mean	1.78
Median	1.38	Median	2.03
Standard Deviation	1.09	Standard Deviation	1.08
Range	5.53	Range	3.54
Minimum	0.12	Minimum	0.16
Maximum	5.65	Maximum	3.70
# of samples	39	# of samples	36

3.2 SULPHUR CORRELATION

A comparison of sulphur between the MWTP samples and the WRMP samples as shown in Figure 2 shows the correlation between the two datasets and the change in the maximum acid generating potential of the excavated mine workings over a 6-9 month period. Table 2 shows the summary statistics for the two sulphur (ICP) datasets. Both datasets have a mean/median value <1.5%. The change in the mean value of sulphur over the 6-9 month lag time was -10%. Four samples in the MWTP dataset has an S% >1.5% and can be classified as P-AML based on sulphur alone. These section of underground workings was previously classified as P-AML based on the geochemical criteria in the WRMP. The higher variability of sulphur in the MWTP dataset is most likely due to point sampling along the walls as opposed to a compositing of several samples which would tend to smooth out the variability amongst individual samples.

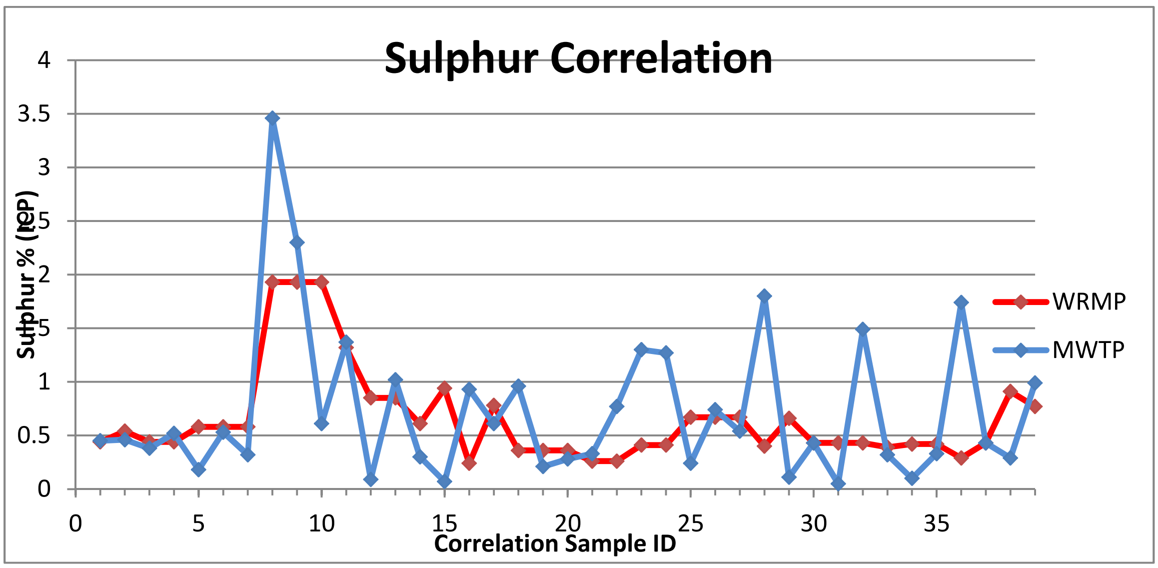

Figure 2 S % Comparison

Table 2 Sulphur Statistics

S % MWTP 2012		S % WRMP 2012	
Mean	0.73	Mean	0.65
Median	0.46	Median	0.44
Standard Deviation	0.70	Standard Deviation	0.43
Range	3.41	Range	1.69
Minimum	0.05	Minimum	0.24
Maximum	3.46	Maximum	1.93
# of samples	39	# of samples	39

3.3 LEAD CORRELATION

A comparison of the lead values in the MWTP and WRMP samples shows a much closer correlation than in the 2011 data. Figure 3 is a log plot of the lead values for both datasets. There is a general trend showing similarly elevated levels of lead in both corresponding datasets corresponding to development in accesses directly adjacent to the mineralized vein. In 10 of 36 samples the MWTP dataset is higher than the WRMP samples. The mean lead values for the WRMP samples as shown in Table 3 are 2.7 times higher than the MWTP samples. This is the opposite relationship between the datasets than was seen in 2011, where the MWTP samples were 3.3 times higher than the WRMP samples.

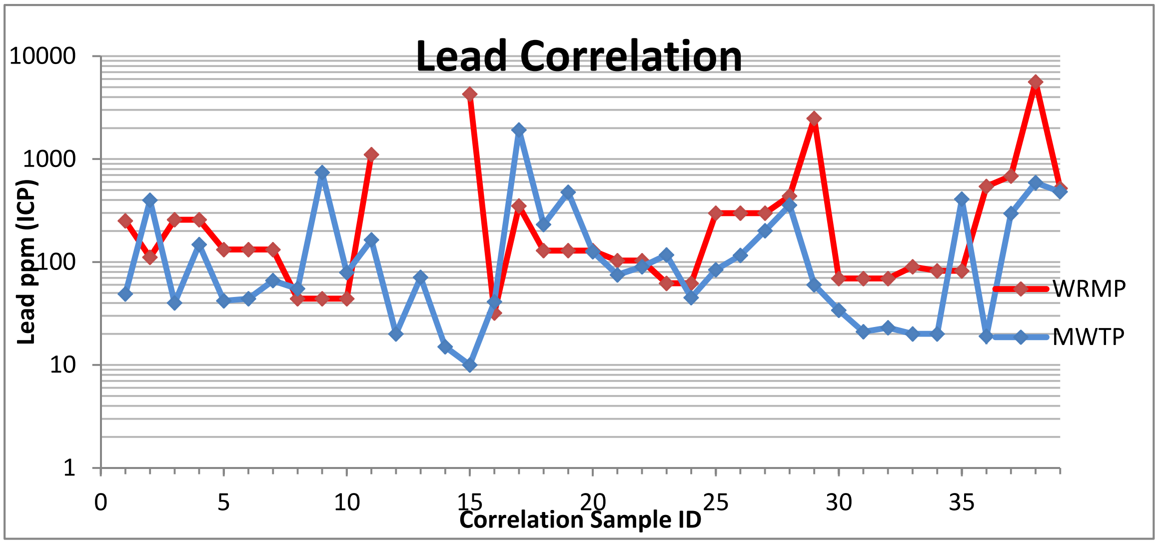

Figure 3 Pb ppm Comparison

Table 3 Lead Statistics

Pb ppm MWTP 2012		Pb ppm WRMP 2012	
Mean	200	Mean	542
Standard Error	54	Standard Error	196
Median	75	Median	131
Standard Deviation	335	Standard Deviation	1178
Range	1910	Range	5578
Minimum	10	Minimum	32
Maximum	1920	Maximum	5610
# of samples	39	# of samples	36

3.4 ZINC CORRELATION

Similar to the lead correlation, the zinc MWTP samples also shows a good correlation to the corresponding WRMP samples (Figure 4). The mean value of the WRMP samples is 1.6 times higher than the MWTP samples (Table 4). Again, this is opposite to the 2011 dataset where the mean zinc value of MWTP samples was 1.2 times higher than the mean WRMP samples.

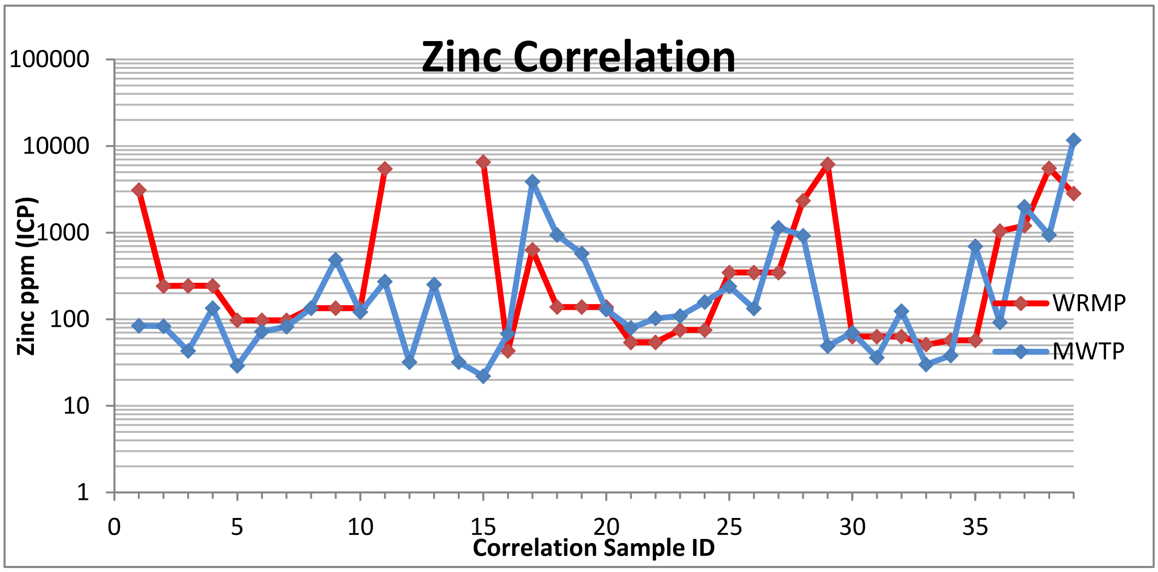

Figure 4 Zn ppm Comparison

Table 4 Zinc Statistics

Zn ppm MWTP 2012		Zn ppm WRMP 2012	
Mean	669	Mean	1063
Standard Error	311	Standard Error	316
Median	121	Median	138
Standard Deviation	1945	Standard Deviation	1898
Range	11678	Range	6467
Minimum	22	Minimum	43
Maximum	11700	Maximum	6510
# of samples	39	# of samples	36

3.5 NP:MPA CORRELATION

ABA analysis of the two datasets had 7 correlative sets of MWTP and WRMP sample pairs. 3 of the 7 samples show a decrease in the NP:MPA ratio over the 6-9 month time lag (Figure 5), however this is most likely due to variability in the samples rather than a chemical reaction of oxidation and neutralization. There was an increase of 0.48% in the mean calcium value of the MWTP samples and an increase of 0.1% in the mean sulphur value of the MWTP (Table 5).

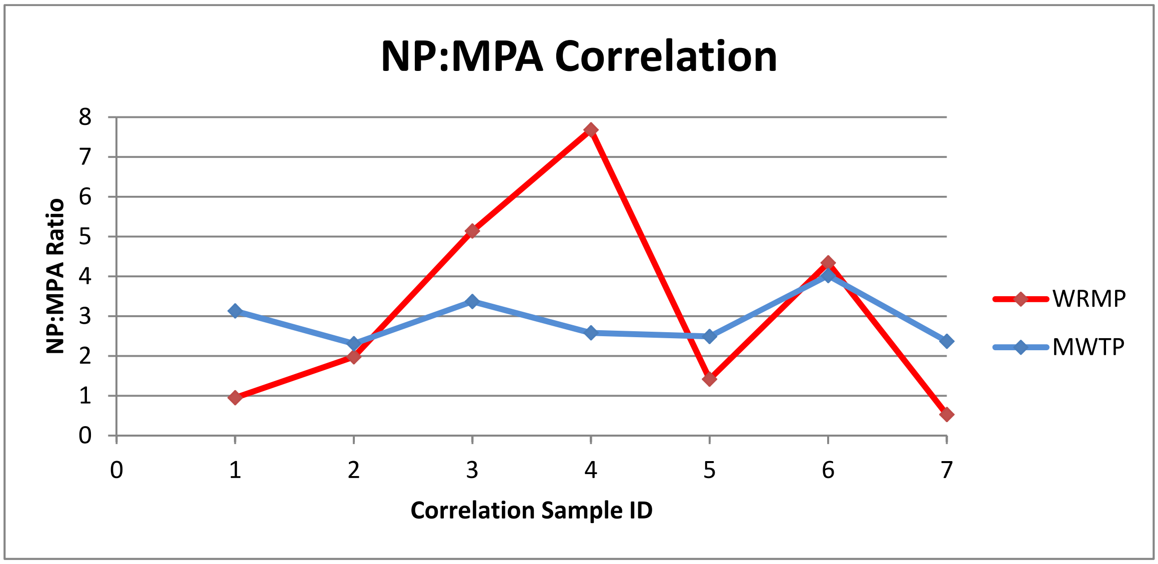

Figure 5 NP:MPA Comparison

Table 5 NP:MPA Statistics

Category	MWTP	WRMP
Mean NP:MPA	2.895	3.15
Mean Ca%	1.621	1.14
Mean S%	0.666	0.56
# of samples	7	7

4 DISCUSSION

The comparison of the geochemical data collected from the two datasets works well for Pb and Zn since each composite or sample was routinely analyzed using ICP. The comparison of NP:MPA ratio is much more problematic due to the slightly differing frequencies of ABA analysis that was conducted on each sample set. The increase in the mean S% value and the mean Ca% value in the MWTP samples indicates that the variability between the two sample sets are too great to gain statistical insight into any changes in the NP:MPA ratio over time.

Table 6 Annual Mean Pb/Zn Values

Sample Dataset	Mean Pb (ppm)	Mean Zn (ppm)
2010 WRMP	15	86
2010 MWTP	149	216
2011 WRMP	119	407
2011 MWTP	395	463
2012 WRMP	542	1063
2012 MWTP	200	669

Data collected supports the visible observation that there is no significant change in the acid generating potential of the mine wall exposed during excavation over a 6-9 month lag time, most importantly oxidation. Analysis of the datasets shows no change in several key indicators in which oxidation and delayed onset of PAG characteristics would manifest as. Expected trends of oxidation and delayed onset of PAG characteristics would include:

(a) Change in speciation of sulphur from sulphide to sulphate.

(b) Decrease in Ca% via carbonate flushing or oxidation/neutralization

(c) Decrease in NP:MPA ratio

(d) Decrease in paste pH

(e) Decrease in metals (Zn, Pb, Ag) due to metal leaching

Both the Ca% and the S% indicated that there are very minor changes occurring which are most likely due to the different sampling frequencies and type of sampling between the MWTP and the WRMP. There is not enough ABA data available to see any trends developing between the NP:MPA ratio.

There were several areas within the mine where wall sampling could not be conducted due to shotcrete application for additional ground support. These areas were typically areas where graphitic schist packages were encountered and areas directly adjacent to the mineralized vein fault.

As discussed in the 2012 Waste Rock Management Plan, the contamination of samples which was seen in 2011 has been reduced and mitigated. Ongoing monitoring and refinements to the sampling procedures and preparation procedures will continue.

5 RECOMMENDATIONS

Due to the results obtained in 2009-2012 and a full review of the data collected, it is recommended that changes to the Mine Wall Testing Plan should be made. The proposed changes would consist of:

(1) Additional testing of samples taken in the WRMP sampling program which would consist of kinetic testing of crushed reject portion of the sample in a field barrel. Quarterly samples of the leachate collected from the field barrel tests would be analyzed for a variety of parameters, not limited to pH, electrical conductivity, suphate, bicarbonate, and various metals. Opening and closing ABA/ICP analysis on the bulk sample would be conducted in order to determine the geochemical composition and maximum potential for ML-ARD, which would aid in the interpretation of the influence of local environmental conditions on the weathering of the waste rock and give site geologists and environmental planners better data over a longer period for closure planning than the current Mine Wall Testing Plan.

(2) Discontinuation of the Mine Wall Testing Plan as the data collected to date shows no significant changes to both Calcium and Sulphur have occurred over the 6-9 month lag from the time of excavation. With the discontinuation of the Mine Wall Testing Plan, visual inspection of all excavation completed by Alexco Resource Corp. over the life of the mine should be conducted, documented, and submitted annually. Inspections would be conducted by trained site geologists and would consist of visibly inspecting all mine walls for signs of oxidation. If at some point in time there is a change in the state of oxidation, local sampling of the mine wall should be conducted and the sample sent out for geochemical analysis. Due to increasing contamination from production mining, results obtained from any further testing of the mine wall in development headings will most likely be erroneous in both lead and zinc, as well as in sulphur as the lead and zinc is predominantly in the form of PbS and ZnS. This increase in sulphur due to contamination would have an impact on any results obtained from further ABA and ICP data collected.

APPENDIX A

2012 MINE WALL SAMPLES

Dataset	Cert. #	Heading	Correlation	Correlation	Correlation	SAMPLE	Classification	Classification	Year	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Th	Ti	Tl	U	V	W	Zn
			Rounds	Sample	ID	ID	Field	Geochem		ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
MWTP	WH13026354	BK MWTP 720ACC	R29-32	E812848	1	E816220			2012	0.5	1	5	260	<0.5	<2	1.38	0.7	2	275	6	1.07	<10	0.24	10	0.31	142	3	0.04	12	300	49	0.45	<5	2	44	<20	0.1	<10	<10	25	<10	84
MWTP	WH13026354	BK MWTP 720ACC	R26-28	E872250	2	E816221			2012	2.8	0.87	<5	200	<0.5	<2	1.47	1	3	278	8	1.12	<10	0.22	10	0.4	133	3	0.03	12	360	398	0.46	<5	2	46	<20	0.08	<10	<10	24	<10	83
MWTP	WH13026354	BK MWTP 720ACC	R22-25	E872249	3	E816222			2012	0.7	0.58	12	120	<0.5	<2	2.73	0.7	2	261	8	0.78	<10	0.13	10	0.23	92	7	0.02	11	410	40	0.38	<5	1	64	<20	0.06	<10	<10	15	<10	43
MWTP	WH13026354	BK MWTP 720ACC	R19-21	E872249	4	E816223			2012	1.4	0.68	10	180	<0.5	<2	1.25	1.7	1	289	9	0.68	<10	0.12	10	0.05	83	8	0.03	11	350	148	0.52	<5	1	34	<20	0.07	<10	<10	31	<10	134
MWTP	WH13026354	BK MWTP 720ACC	R15-18	E806375	5	E816224			2012	<0.5	0.34	<5	90	<0.5	<2	0.57	<0.5	2	242	4	0.41	<10	0.06	<10	0.04	38	3	0.01	7	160	42	0.18	<5	1	15	<20	0.05	<10	<10	10	<10	29
MWTP	WH13026354	BK MWTP 720ACC	R12-14	E806375	6	E816225			2012	<0.5	1.28	5	230	<0.5	<2	2.6	0.8	3	217	7	1.05	<10	0.27	10	0.3	158	3	0.06	12	410	44	0.53	<5	3	97	<20	0.09	<10	<10	28	<10	72
MWTP	WH13026354	BK MWTP 720ACC	R9-11	E806375	7	E816226			2012	0.8	0.76	<5	110	<0.5	<2	2.54	1.1	1	250	5	0.76	<10	0.16	10	0.25	150	6	0.03	8	610	66	0.32	<5	1	55	<20	0.06	<10	<10	14	<10	82
MWTP	WH13026354	BK MWTP 720ACC	R5-8	E812849	8	E816227			2012	0.6	6.41	14	970	1.8	<2	2.49	0.7	12	194	50	4.68	20	2.07	20	1.19	264	17	0.25	65	340	55	3.46	<5	14	301	<20	0.28	<10	<10	149	<10	134
MWTP	WH13026354	BK MWTP 720ACC	R2-5	E812849	9	E816228			2012	6.6	7.63	43	360	2.1	<2	1.39	5	14	195	40	3.97	20	2.38	20	0.85	506	4	0.22	56	700	739	2.3	10	15	204	<20	0.43	<10	<10	160	<10	486
MWTP	WH13026354	BK MWTP 720ACC	R1	E812849	10	E816229			2012	0.6	1.57	17	300	<0.5	<2	5.65	1.4	3	230	9	0.91	<10	0.37	10	0.14	170	3	0.1	14	370	79	0.61	<5	3	246	<20	0.11	<10	<10	30	<10	121
MWTP	WH13026354	BK MWTP 810ACC	R25-30	E806374	11	E816230			2012	1.3	5.4	18	850	1.4	<2	0.74	2.5	11	281	41	3.1	10	1.4	30	0.45	391	8	0.15	46	470	164	1.37	<5	11	111	<20	0.27	<10	<10	117	<10	272
MWTP	WH13026354	BK MWTP 810ACC	R22-25	E806373	12	E816231			2012	<0.5	0.63	<5	120	<0.5	<2	0.95	<0.5	2	236	4	0.74	<10	0.11	10	0.14	113	3	0.02	7	170	20	0.09	<5	1	22	<20	0.06	<10	<10	15	<10	32
MWTP	WH13026354	BK MWTP 810ACC	R18-21	E806373	13	E816232			2012	0.5	4.02	5	880	1.1	<2	2	2.8	6	192	20	2.29	10	1.14	20	0.6	186	2	0.17	31	530	71	1.02	<5	8	197	<20	0.21	<10	<10	80	<10	252
MWTP	WH13026354	BK MWTP 810ACC	R13-17	E806372	14	E816233			2012	<0.5	0.88	<5	360	<0.5	<2	1.05	<0.5	3	220	7	0.89	<10	0.25	10	0.22	167	5	0.06	11	250	15	0.3	<5	2	56	<20	0.08	<10	<10	21	<10	32
MWTP	WH13026354	BK MWTP 810ACC	810RMK	E806364	15	E816234			2012	<0.5	0.59	<5	110	<0.5	<2	0.99	<0.5	1	255	3	0.56	<10	0.15	10	0.13	131	5	0.02	7	150	10	0.07	<5	1	22	<20	0.06	<10	<10	13	<10	22
MWTP	WH13026354	BK MWTP 870ACC	R1-4	E815039	16	E816235			2012	0.9	1.81	7	360	<0.5	<2	0.5	0.7	3	237	13	1.25	<10	0.49	10	0.17	65	4	0.05	20	160	41	0.93	<5	3	32	<20	0.14	<10	<10	36	<10	68
MWTP	WH13026354	BK MWTP 900ACC	R5-9	E815007	17	E816236			2012	6.9	2.28	15	290	0.6	<2	0.21	48.7	1	290	42	2.79	<10	0.86	20	0.15	7820	5	0.05	16	320	1920	0.61	6	4	18	<20	0.13	<10	<10	49	<10	3870
MWTP	WH13026354	BK MWTP 770ACC	R22-24	E806361	18	E816603			2012	2.3	2.44	56	530	0.7	<2	2.37	12.7	6	262	27	2.36	10	0.89	10	0.93	1080	18	0.08	31	340	231	0.96	<5	6	112	<20	0.15	<10	10	64	<10	941
MWTP	WH13026354	BK MWTP 770ACC	R19-21	E806361	19	E816604			2012	4	0.93	61	120	<0.5	<2	0.75	7.1	3	360	18	1.32	<10	0.19	10	0.26	739	4	0.03	16	160	476	0.21	5	2	31	<20	0.07	<10	<10	24	<10	573
MWTP	WH13026354	BK MWTP 770ACC	R16-18	E806361	20	E816605			2012	1	0.82	6	180	<0.5	<2	1.18	1.3	3	232	9	0.97	<10	0.19	10	0.21	212	3	0.03	11	220	126	0.28	<5	2	35	<20	0.06	<10	<10	21	<10	129
MWTP	WH13026354	BK MWTP 770ACC	R12-15	E806359	21	E816606			2012	0.7	0.57	6	90	<0.5	<2	2.5	1.1	2	286	6	0.72	<10	0.1	10	0.18	153	6	0.03	8	450	75	0.33	<5	1	55	<20	0.06	<10	<10	12	<10	79
MWTP	WH13026354	BK MWTP 770ACC	R7-11	E806359	22	E816607			2012	0.8	1.01	9	170	<0.5	<2	1.99	1.1	3	326	18	1.3	<10	0.24	10	0.29	194	5	0.05	19	610	90	0.77	<5	2	50	<20	0.08	<10	<10	23	<10	102
MWTP	WH13026354	BK MWTP 770ACC	R4-6	E806358	23	E816608			2012	1.1	2.35	17	440	0.9	<2	1.46	0.9	7	282	26	1.55	10	0.6	10	0.15	120	17	0.12	29	370	117	1.3	<5	4	88	<20	0.18	<10	<10	58	<10	109
MWTP	WH13026354	BK MWTP 770ACC	R1-3	E806358	24	E816609			2012	<0.5	3.94	6	790	1.3	<2	4.13	1.5	7	277	32	2	10	1.13	20	0.44	252	17	0.18	31	280	45	1.27	<5	9	224	<20	0.21	<10	<10	94	<10	158
MWTP	WH13026354	BK MWTP 770RMK	R2-5	E806363	25	E816610			2012	0.5	0.56	11	70	<0.5	<2	1.95	3.1	1	250	4	0.64	<10	0.11	10	0.16	376	6	0.02	8	430	84	0.24	<5	1	43	<20	0.06	<10	<10	10	<10	240
MWTP	WH13026354	BK MWTP 930ACC	R1-5	E806383	26	E816619			2012	1.4	1.41	13	330	<0.5	<2	1.37	1.6	3	195	7	3.08	<10	0.55	10	0.59	5250	5	0.06	16	430	116	0.74	<5	4	48	<20	0.09	<10	<10	32	<10	133
MWTP	WH13026354	BK MWTP 930ACC	R6-11	E806383	27	E816620			2012	2	0.46	12	80	<0.5	<2	0.72	14.1	3	356	13	1.38	<10	0.17	10	0.16	1825	8	0.01	9	350	201	0.54	<5	1	18	<20	0.06	<10	<10	14	<10	1140
MWTP	WH13026354	BK MWTP 930ACC	R12-15	E806385	28	E816621			2012	2.2	5.11	35	400	1.5	<2	1.33	9.9	9	181	40	3.22	10	1.89	20	0.7	2430	5	0.13	45	380	356	1.8	5	10	131	<20	0.25	<10	<10	113	<10	921
MWTP	WH13026354	BK MWTP 930ACC	R15-18	E806384	29	E816622			2012	<0.5	0.54	<5	110	<0.5	<2	1.6	0.5	2	239	6	0.75	<10	0.16	10	0.13	495	3	0.01	10	210	60	0.11	<5	1	31	<20	0.05	<10	<10	15	<10	49
MWTP	WH13026354	BK MWTP 930ACC	R19-22	E815010	30	E816623			2012	<0.5	1.01	<5	290	<0.5	<2	1.83	0.6	3	194	8	1.03	<10	0.25	10	0.23	175	5	0.04	15	310	34	0.43	<5	2	48	<20	0.11	<10	<10	27	<10	70
MWTP	WH13026354	BK MWTP 930ACC	R28-31	E815010	31	E816624			2012	<0.5	0.6	<5	130	<0.5	<2	1.34	<0.5	1	298	5	0.48	<10	0.19	10	0.09	248	7	0.01	7	180	21	0.05	<5	1	19	<20	0.06	<10	<10	15	<10	36
MWTP	WH13026354	BK MWTP 930ACC	R32-35	E815010	32	E816625			2012	<0.5	4.15	11	660	0.9	<2	2.56	0.6	10	221	24	2.69	10	1.16	20	0.94	205	4	0.16	47	420	23	1.49	<5	8	135	<20	0.24	<10	<10	85	<10	124
MWTP	WH13026354	BK MWTP 930ACC	R36-39	E815011	33	E816626			2012	<0.5	0.59	<5	130	<0.5	<2	2.02	<0.5	2	227	4	0.77	<10	0.16	10	0.29	132	5	0.02	11	400	20	0.32	<5	1	65	<20	0.07	<10	<10	11	<10	30
MWTP	WH13026354	BK MWTP 930ACC	930 R45-47	E815012	34	E816627			2012	<0.5	0.62	<5	80	<0.5	<2	1.38	<0.5	1	237	5	0.65	<10	0.09	10	0.11	142	6	0.01	9	180	20	0.1	<5	1	30	<20	0.05	<10	<10	14	<10	38
MWTP	WH13026354	BK MWTP 960ACC	930 R42-44	E815012	35	E816628			2012	1.5	0.39	<5	130	<0.5	<2	0.49	5.7	2	236	4	1.26	<10	0.17	10	0.12	2890	2	0.01	7	330	408	0.33	<5	1	12	<20	0.05	<10	<10	14	<10	694
MWTP	WH13026354	BK MWTP SWMR	R99-102	E806381	36	E816630			2012	<0.5	3.42	5	490	1	2	1.47	<0.5	7	168	22	2.67	10	0.95	20	0.64	187	7	0.12	36	320	19	1.74	<5	7	119	<20	0.18	<10	<10	77	<10	92
MWTP	WH13026354	BK MWTP SWMR	R103-107	E815019	37	E816631			2012	1.5	0.44	13	60	<0.5	<2	0.2	21.6	1	294	9	1.41	<10	0.19	10	0.06	3360	5	0.01	8	330	296	0.43	<5	1	8	<20	0.06	<10	<10	14	<10	1990
MWTP	WH13026354	BK MWTP SWMR	R108-111	E815020	38	E816632			2012	2.1	0.53	<5	140	<0.5	<2	0.41	8.4	1	250	4	1.75	<10	0.21	10	0.12	5030	3	0.02	8	350	590	0.29	<5	1	17	<20	0.07	<10	<10	16	<10	939
MWTP	WH13026354	BK MWTP SWMR	R112-115	E815021	39	E816633			2012	2.9	0.6	111	50	<0.5	2	0.12	164	1	296	40	2.58	<10	0.24	10	0.07	5780	3	0.01	9	290	481	0.99	<5	1	7	<20	0.06	<10	<10	18	10	11700
WRMP	WH11269101	700 ACC Comp	143		1	E812848	PAG	PAG	2011	1.8	0.58	18	50	<0.5	<2	0.19	39.6	2	344	14	2.06	<10	0.22	10	0.08	3750	13	0.01	8	300	251	0.44	<5	1	5	<20	0.07	<10	<10	17	<10	3090
WRMP	WH11269101	700 ACC Comp	835		2	E872250	Non-PAML	Non-PAML	2011	0.8	1.48	11	310	<0.5	<2	1.87	2.9	3	284	8	1.15	<10	0.33	10	0.24	148	11	0.03	14	380	111	0.54	<5	3	60	<20	0.12	<10	<10	34	<10	242
WRMP	WH11269101	700 ACC Comp	958		3	E872249	Non-PAML	Non-PAML	2011	2.6	1.02	11	240	<0.5	<2	2.95	2.9	2	250	10	0.88	<10	0.25	10	0.23	132	12	0.03	19	390	257	0.44	<5	2	63	<20	0.08	<10	<10	27	<10	243
WRMP	WH11269101	700 ACC Comp	958		4	E872249	Non-PAML	Non-PAML	2011	2.6	1.02	11	240	<0.5	<2	2.95	2.9	2	250	10	0.88	<10	0.25	10	0.23	132	12	0.03	19	390	257	0.44	<5	2	63	<20	0.08	<10	<10	27	<10	243
WRMP	WH11269101	700 ACC Comp	988		5	E806375	Non-PAML	Non-PAML	2011	1.1	1.08	5	150	<0.5	<2	2.69	0.9	4	245	7	1.23	<10	0.2	10	0.33	157	8	0.03	15	460	132	0.58	<5	2	65	<20	0.1	<10	<10	22	<10	97
WRMP	WH11269101	700 ACC Comp	988		6	E806375	Non-PAML	Non-PAML	2011	1.1	1.08	5	150	<0.5	<2	2.69	0.9	4	245	7	1.23	<10	0.2	10	0.33	157	8	0.03	15	460	132	0.58	<5	2	65	<20	0.1	<10	<10	22	<10	97
WRMP	WH11269101	700 ACC Comp	988		7	E806375	Non-PAML	Non-PAML	2011	1.1	1.08	5	150	<0.5	<2	2.69	0.9	4	245	7	1.23	<10	0.2	10	0.33	157	8	0.03	15	460	132	0.58	<5	2	65	<20	0.1	<10	<10	22	<10	97
WRMP	WH11269101	700 ACC Comp	952		8	E812849	Non-PAML	PAG	2011	0.5	4.17	25	320	1	<2	3.7	0.5	8	235	29	4.27	10	0.94	10	1.61	1065	17	0.1	61	610	44	1.93	5	8	197	<20	0.22	<10	<10	90	<10	134
WRMP	WH11269101	700 ACC Comp	952		9	E812849	Non-PAML	PAG	2011	0.5	4.17	25	320	1	<2	3.7	0.5	8	235	29	4.27	10	0.94	10	1.61	1065	17	0.1	61	610	44	1.93	5	8	197	<20	0.22	<10	<10	90	<10	134
WRMP	WH11269101	700 ACC Comp	952		10	E812849	Non-PAML	PAG	2011	0.5	4.17	25	320	1	<2	3.7	0.5	8	235	29	4.27	10	0.94	10	1.61	1065	17	0.1	61	610	44	1.93	5	8	197	<20	0.22	<10	<10	90	<10	134
WRMP	WH12026725	810 ACC Comp	795		11	E806374	Non-PAML	PAG	2011	8	1.71	75	580	0.5	5	0.38	67	3	146	42	3.37	<10	0.56	10	0.19	6650	1	0.03	17	290	1105	1.32	<5	3	31	<20	0.1	<10	<10	39	<10	5440
WRMP	WH12026725	810 ACC Comp	823		12	E806373	Non-PAML	PAG	2011																							0.85										
WRMP	WH12026725	810 ACC Comp	823		13	E806373	Non-PAML	PAG	2011																							0.85										
WRMP	WH12026725	810 ACC Comp	635		14	E806372	Non-PAML	Non-PAML	2011																							0.61										
WRMP	WH12026725	810 RMK Comp	163		15	E806364	Non-PAML	PAG	2011	24.8	2.27	67	670	0.6	3	0.59	83.7	5	307	51	3.52	<10	0.77	10	0.25	8350	9	0.1	18	380	4280	0.94	23	4	56	<20	0.13	10	<10	48	<10	6510
WRMP	WH13002751	870 ACC R3-10	944		16	E815039	N-AML	N-AML	2012	<0.5	0.55	<5	90	<0.5	<2	2.38	0.5	1	292	5	0.55	<10	0.13	10	0.1	97	8	0.02	9	190	32	0.24	<5	1	42	<20	0.06	<10	<10	12	<10	43
WRMP	WH12154949	900 ACC R9-10	358		17	E815007	N-AML	PAML	2012	2.2	2.14	28	280	0.7	2	0.44	7.3	3	368	12	2.67	<10	0.77	20	0.2	4810	7	0.04	19	780	350	0.78	<5	4	27	<20	0.1	<10	<10	59	<10	633
WRMP	WH11269101	770 ACC Comp	1026		18	E806361	Non-PAML	Non-PAML	2011	1	0.83	10	190	<0.5	<2	1.7	1.3	2	207	10	1.09	<10	0.18	10	0.26	219	3	0.02	10	220	129	0.36	<5	2	41	<20	0.06	<10	<10	22	<10	138
WRMP	WH11269101	770 ACC Comp	1026		19	E806361	Non-PAML	Non-PAML	2011	1	0.83	10	190	<0.5	<2	1.7	1.3	2	207	10	1.09	<10	0.18	10	0.26	219	3	0.02	10	220	129	0.36	<5	2	41	<20	0.06	<10	<10	22	<10	138
WRMP	WH11269101	770 ACC Comp	1026		20	E806361	Non-PAML	Non-PAML	2011	1	0.83	10	190	<0.5	<2	1.7	1.3	2	207	10	1.09	<10	0.18	10	0.26	219	3	0.02	10	220	129	0.36	<5	2	41	<20	0.06	<10	<10	22	<10	138
WRMP	WH11269101	770 ACC Comp	978		21	E806359	Non-PAML	Non-PAML	2011	0.6	0.55	9	80	<0.5	<2	2.07	0.6	2	234	3	0.66	<10	0.1	10	0.13	130	3	0.02	5	370	103	0.26	<5	1	46	<20	0.07	<10	<10	11	<10	54
WRMP	WH11269101	770 ACC Comp	978		22	E806359	Non-PAML	Non-PAML	2011	0.6	0.55	9	80	<0.5	<2	2.07	0.6	2	234	3	0.66	<10	0.1	10	0.13	130	3	0.02	5	370	103	0.26	<5	1	46	<20	0.07	<10	<10	11	<10	54
WRMP	WH11269101	770 ACC Comp	944		23	E806358	Non-PAML	Non-PAML	2011	0.8	0.49	8	120	<0.5	<2	2.72	0.9	2	193	4	0.77	<10	0.14	10	0.14	159	3	0.02	6	350	62	0.41	<5	1	49	<20	0.05	<10	<10	14	<10	75
WRMP	WH11269101	770 ACC Comp	944		24	E806358	Non-PAML	Non-PAML	2011	0.8	0.49	8	120	<0.5	<2	2.72	0.9	2	193	4	0.77	<10	0.14	10	0.14	159	3	0.02	6	350	62	0.41	<5	1	49	<20	0.05	<10	<10	14	<10	75
WRMP	WH12012391	930 ACC Comp	705		25	E806383	Non-PAML	PAG	2011	1.8	1.14	16	280	<0.5	2	0.69	3.8	3	280	6	1.48	<10	0.4	10	0.21	2180	10	0.03	14	370	298	0.67	<5	2	37	<20	0.09	<10	<10	25	<10	346
WRMP	WH12012391	930 ACC Comp	705		26	E806383	Non-PAML	PAG	2011	1.8	1.14	16	280	<0.5	2	0.69	3.8	3	280	6	1.48	<10	0.4	10	0.21	2180	10	0.03	14	370	298	0.67	<5	2	37	<20	0.09	<10	<10	25	<10	346
WRMP	WH12012391	930 ACC Comp	705		27	E806383	Non-PAML	PAG	2011	1.8	1.14	16	280	<0.5	2	0.69	3.8	3	280	6	1.48	<10	0.4	10	0.21	2180	10	0.03	14	370	298	0.67	<5	2	37	<20	0.09	<10	<10	25	<10	346
WRMP	WH12012391	930 ACC Comp	594		28	E806385	Non-PAML	PAG	2011	2.3	0.77	21	130	<0.5	<2	0.74	29.2	3	338	11	1.89	<10	0.25	10	0.12	3600	12	0.01	12	350	437	0.4	<5	1	18	<20	0.06	<10	<10	16	<10	2340
WRMP	WH12012391	930 ACC Comp	565		29	E806384	PAG	PAG	2011	14.1	0.62	1015	80	<0.5	4	0.98	69.2	3	286	29	11.55	<10	0.18	<10	0.26	37400	9	0.04	7	240	2480	0.66	14	2	20	<20	0.04	<10	<10	14	<10	6140
WRMP	WH12154949	930 ACC R21-34	879		30	E815010	N-AML	N-AML	2012	0.8	1.43	8	270	<0.5	<2	2.03	0.6	3	256	14	1.11	<10	0.35	10	0.27	195	5	0.04	13	320	69	0.43	<5	3	68	<20	0.09	<10	<10	30	<10	63
WRMP	WH12154949	930 ACC R21-34	879		31	E815010	N-AML	N-AML	2012	0.8	1.43	8	270	<0.5	<2	2.03	0.6	3	256	14	1.11	<10	0.35	10	0.27	195	5	0.04	13	320	69	0.43	<5	3	68	<20	0.09	<10	<10	30	<10	63
WRMP	WH12154949	930 ACC R21-34	879		32	E815010	N-AML	N-AML	2012	0.8	1.43	8	270	<0.5	<2	2.03	0.6	3	256	14	1.11	<10	0.35	10	0.27	195	5	0.04	13	320	69	0.43	<5	3	68	<20	0.09	<10	<10	30	<10	63
WRMP	WH12154949	930 ACC R35-41	955		33	E815011	N-AML	N-AML	2012	0.8	0.94	5	180	<0.5	4	2.24	0.5	2	270	8	0.96	<10	0.23	10	0.26	147	4	0.03	12	390	90	0.39	<5	2	75	<20	0.07	<10	<10	20	<10	51
WRMP	WH12154949	930 ACC R42-47	886		34	E815012	N-AML	N-AML	2012	0.6	1.04	<5	190	<0.5	3	2.38	0.6	2	249	7	0.97	<10	0.24	10	0.27	170	5	0.03	12	370	82	0.42	<5	2	75	<20	0.07	<10	<10	22	<10	57
WRMP	WH12154949	930 ACC R42-47	886		35	E815012	N-AML	N-AML	2012	0.6	1.04	<5	190	<0.5	3	2.38	0.6	2	249	7	0.97	<10	0.24	10	0.27	170	5	0.03	12	370	82	0.42	<5	2	75	<20	0.07	<10	<10	22	<10	57
WRMP	WH12012391	SW Main Ramp Comp	943		36	E806381	Non-PAML	PAG	2011	2.3	0.55	7	110	<0.5	<2	0.79	10.7	2	341	6	1.54	<10	0.21	10	0.12	3810	12	0.01	10	470	542	0.29	<5	1	17	<20	0.07	<10	<10	13	<10	1040
WRMP	WH12154949	SWMR R107-109	290		37	E815019	N-AML	PAML	2012	3.5	0.82	19	150	<0.5	<2	0.19	13.3	2	272	13	2.1	<10	0.3	10	0.1	5330	6	0.02	11	360	684	0.43	<5	2	17	<20	0.07	<10	<10	20	<10	1205
WRMP	WH12154949	SWMR R110-112	315		38	E815020	PAML	PAML	2012	29.3	0.75	103	90	<0.5	3	0.16	59.5	2	367	42	2.68	<10	0.28	10	0.09	5110	9	0.01	12	310	5610	0.91	29	2	10	<20	0.06	<10	<10	20	<10	5510
WRMP	WH12154949	SWMR R113-115	349		39	E815021	PAML	PAML	2012	4.1	0.99	3040	160	<0.5	2	0.51	34.9	6	288	22	2.52	<10	0.33	10	0.16	3870	5	0.02	13	340	520	0.77	9	2	20	<20	0.08	<10	<10	23	<10	2830

Dataset	Cert. #	Heading	Correlation	Correlation	Correlation	SAMPLE	Classification	Classification	Year	Fiz_Rate	Acid Potential	nnp	NP	Paste pH	NP_MPA	S (total)
			Rounds	Sample	ID	DESCRIPTION	Field	Geochem			kgCaCO3/t	kg CaCO3/t	kgCaCO3/t	pH	%	%
MWTP	WH13026354	BK MWTP 720ACC	R29-32	E812848	1	E816220			2012	2	13.8	29	43	8.3	3.13	0.44
MWTP	WH13026354	BK MWTP 720ACC	R26-28	E872250	2	E816221			2012							
MWTP	WH13026354	BK MWTP 720ACC	R22-25	E872249	3	E816222			2012							
MWTP	WH13026354	BK MWTP 720ACC	R19-21	E872249	4	E816223			2012							
MWTP	WH13026354	BK MWTP 720ACC	R15-18	E806375	5	E816224			2012	2	5.3	9	14	8.5	2.64	0.17
MWTP	WH13026354	BK MWTP 720ACC	R12-14	E806375	6	E816225			2012							
MWTP	WH13026354	BK MWTP 720ACC	R9-11	E806375	7	E816226			2012							
MWTP	WH13026354	BK MWTP 720ACC	R5-8	E812849	8	E816227			2012							
MWTP	WH13026354	BK MWTP 720ACC	R2-5	E812849	9	E816228			2012	2	76.3	-18	58	7.7	0.76	2.44
MWTP	WH13026354	BK MWTP 720ACC	R1	E812849	10	E816229			2012							
MWTP	WH13026354	BK MWTP 810ACC	R25-30	E806374	11	E816230			2012							
MWTP	WH13026354	BK MWTP 810ACC	R22-25	E806373	12	E816231			2012							
MWTP	WH13026354	BK MWTP 810ACC	R18-21	E806373	13	E816232			2012	3	30.3	40	70	8.5	2.31	0.97
MWTP	WH13026354	BK MWTP 810ACC	R13-17	E806372	14	E816233			2012							
MWTP	WH13026354	BK MWTP 810ACC	810RMK	E806364	15	E816234			2012							
MWTP	WH13026354	BK MWTP 870ACC	R1-4	E815039	16	E816235			2012							
MWTP	WH13026354	BK MWTP 900ACC	R5-9	E815007	17	E816236			2012	2	18.1	0	18	7.7	0.99	0.58
MWTP	WH13026354	BK MWTP 770ACC	R22-24	E806361	18	E816603			2012	3	29.4	70	99	8.5	3.37	0.94
MWTP	WH13026354	BK MWTP 770ACC	R19-21	E806361	19	E816604			2012							
MWTP	WH13026354	BK MWTP 770ACC	R16-18	E806361	20	E816605			2012							
MWTP	WH13026354	BK MWTP 770ACC	R12-15	E806359	21	E816606			2012							
MWTP	WH13026354	BK MWTP 770ACC	R7-11	E806359	22	E816607			2012	3	24.1	38	62	8.4	2.58	0.77
MWTP	WH13026354	BK MWTP 770ACC	R4-6	E806358	23	E816608			2012							
MWTP	WH13026354	BK MWTP 770ACC	R1-3	E806358	24	E816609			2012							
MWTP	WH13026354	BK MWTP 770RMK	R2-5	E806363	25	E816610			2012							
MWTP	WH13026354	BK MWTP 930ACC	R1-5	E806383	26	E816619			2012	2	22.5	34	56	9.7	2.49	0.72
MWTP	WH13026354	BK MWTP 930ACC	R6-11	E806383	27	E816620			2012							
MWTP	WH13026354	BK MWTP 930ACC	R12-15	E806385	28	E816621			2012							
MWTP	WH13026354	BK MWTP 930ACC	R15-18	E806384	29	E816622			2012							
MWTP	WH13026354	BK MWTP 930ACC	R19-22	E815010	30	E816623			2012	2	12.2	37	49	8.8	4.02	0.39
MWTP	WH13026354	BK MWTP 930ACC	R28-31	E815010	31	E816624			2012							
MWTP	WH13026354	BK MWTP 930ACC	R32-35	E815010	32	E816625			2012							
MWTP	WH13026354	BK MWTP 930ACC	R36-39	E815011	33	E816626			2012							
MWTP	WH13026354	BK MWTP 930ACC	930 R45-47	E815012	34	E816627			2012	2	3.4	33	36	8.5	10.47	0.11
MWTP	WH13026354	BK MWTP 960ACC	930 R42-44	E815012	35	E816628			2012							
MWTP	WH13026354	BK MWTP SWMR	R99-102	E806381	36	E816630			2012							
MWTP	WH13026354	BK MWTP SWMR	R103-107	E815019	37	E816631			2012							
MWTP	WH13026354	BK MWTP SWMR	R108-111	E815020	38	E816632			2012	2	8.4	12	20	8.5	2.37	0.27
MWTP	WH13026354	BK MWTP SWMR	R112-115	E815021	39	E816633			2012							
WRMP	WH11269101	700 ACC Comp	143		1	E812848	PAG	PAG	2011	2.00	13.80	-1	13.00	7.6	0.95	0.44
WRMP	WH11269101	700 ACC Comp	835		2	E872250	Non-PAML	Non-PAML	2011							
WRMP	WH11269101	700 ACC Comp	958		3	E872249	Non-PAML	Non-PAML	2011	3.00	13.40	61	74.00	8.2	5.51	0.43
WRMP	WH11269101	700 ACC Comp	958		4	E872249	Non-PAML	Non-PAML	2011	3.00	13.40	61	74.00	8.2	5.51	0.43
WRMP	WH11269101	700 ACC Comp	988		5	E806375	Non-PAML	Non-PAML	2011							
WRMP	WH11269101	700 ACC Comp	988		6	E806375	Non-PAML	Non-PAML	2011							
WRMP	WH11269101	700 ACC Comp	988		7	E806375	Non-PAML	Non-PAML	2011							
WRMP	WH11269101	700 ACC Comp	952		8	E812849	Non-PAML	PAG	2011							
WRMP	WH11269101	700 ACC Comp	952		9	E812849	Non-PAML	PAG	2011							
WRMP	WH11269101	700 ACC Comp	952		10	E812849	Non-PAML	PAG	2011							
WRMP	WH12026725	810 ACC Comp	795		11	E806374	Non-PAML	PAG	2011	3.00	42.50	11	53.50	7.8	1.26	1.36
WRMP	WH12026725	810 ACC Comp	823		12	E806373	Non-PAML	PAG	2011	3.00	26.56	26	52.56	8.1	1.98	0.85
WRMP	WH12026725	810 ACC Comp	823		13	E806373	Non-PAML	PAG	2011	3.00	26.56	26	52.56	8.1	1.98	0.85
WRMP	WH12026725	810 ACC Comp	635		14	E806372	Non-PAML	Non-PAML	2011	3.00	19.06	62	81.06	8.1	4.25	0.61
WRMP	WH12026725	810 RMK Comp	163		15	E806364	Non-PAML	PAG	2011	2.00	26.56	-1	25.56	8.7	0.96	0.85
WRMP	WH13002751	870 ACC R3-10	944		16	E815039	N-AML	N-AML	2012							
WRMP	WH12154949	900 ACC R9-10	358		17	E815007	N-AML	PAML	2012							
WRMP	WH11269101	770 ACC Comp	1026		18	E806361	Non-PAML	Non-PAML	2011	3.00	10.30	43	53.00	8.5	5.14	0.33
WRMP	WH11269101	770 ACC Comp	1026		19	E806361	Non-PAML	Non-PAML	2011	3.00	10.30	43	53.00	8.5	5.14	0.33
WRMP	WH11269101	770 ACC Comp	1026		20	E806361	Non-PAML	Non-PAML	2011	3.00	10.30	43	53.00	8.5	5.14	0.33
WRMP	WH11269101	770 ACC Comp	978		21	E806359	Non-PAML	Non-PAML	2011	3.00	7.80	52	60.00	8.4	7.68	0.25
WRMP	WH11269101	770 ACC Comp	978		22	E806359	Non-PAML	Non-PAML	2011	3.00	7.80	52	60.00	8.4	7.68	0.25
WRMP	WH11269101	770 ACC Comp	944		23	E806358	Non-PAML	Non-PAML	2011							
WRMP	WH11269101	770 ACC Comp	944		24	E806358	Non-PAML	Non-PAML	2011							
WRMP	WH12012391	930 ACC Comp	705		25	E806383	Non-PAML	PAG	2011	2.00	21.56	9	30.56	8.2	1.42	0.69
WRMP	WH12012391	930 ACC Comp	705		26	E806383	Non-PAML	PAG	2011	2.00	21.56	9	30.56	8.2	1.42	0.69
WRMP	WH12012391	930 ACC Comp	705		27	E806383	Non-PAML	PAG	2011	2.00	21.56	9	30.56	8.2	1.42	0.69
WRMP	WH12012391	930 ACC Comp	594		28	E806385	Non-PAML	PAG	2011							0.43
WRMP	WH12012391	930 ACC Comp	565		29	E806384	PAG	PAG	2011	3.00	19.70	208	64.70	8.4	3.28	0.63
WRMP	WH12154949	930 ACC R21-34	879		30	E815010	N-AML	N-AML	2012	2	13.1	44	57	8.7	4.34	0.42
WRMP	WH12154949	930 ACC R21-34	879		31	E815010	N-AML	N-AML	2012	2	13.1	44	57	8.7	4.34	0.42
WRMP	WH12154949	930 ACC R21-34	879		32	E815010	N-AML	N-AML	2012	2	13.1	44	57	8.7	4.34	0.42
WRMP	WH12154949	930 ACC R35-41	955		33	E815011	N-AML	N-AML	2012							
WRMP	WH12154949	930 ACC R42-47	886		34	E815012	N-AML	N-AML	2012							
WRMP	WH12154949	930 ACC R42-47	886		35	E815012	N-AML	N-AML	2012							
WRMP	WH12012391	SW Main Ramp Comp	943		36	E806381	Non-PAML	PAG	2011	2.00	10.90	16	27.00	8.3	2.47	0.35
WRMP	WH12154949	SWMR R107-109	290		37	E815019	N-AML	PAML	2012							
WRMP	WH12154949	SWMR R110-112	315		38	E815020	PAML	PAML	2012	1	28.1	-13	15	6.8	0.53	0.9
WRMP	WH12154949	SWMR R113-115	349		39	E815021	PAML	PAML	2012	2	25	-4	21	8.3	0.84	0.8