Corrective Action Request

Number: CAR001
Date: Monday, March 27, 2006
File Name: CAR001.doc

REQUEST

To: Teri White

You are hereby requested to take corrective actions indicated below and as otherwise determined by you (A) to resolve the noted condition and (B) to prevent it from recurring. Your written response is to be returned to the project Quality Assurance Officer or other responsible manager by March 27, 2006.

Condition: The selected laboratory for the Performance Test has slightly different target analyte lists compared to those presented in the original test plan.

Reference Documents: Performance Demonstration Test Plan Tables 5-4 through 5-10, and QAPP Tables 9-2 through 9-8.

Recommended Corrective Actions: Revise tables to reflect the laboratory's actual target analyte lists.

Originator	Date	Approval	Date	Approval	Date
ARE	3-27-06	MB	3/27/06	DA	3.30.06

RESPONSE

Cause of Condition: Each laboratory has specific calibration mixtures that are used for analyses, thus the list of target analytes is slightly different from laboratory to laboratory. The test plan was written with a list of common target analytes. Update is needed to conform to the chosen laboratory's analyte lists.

Resolution: Target analyte lists have been updated.

Prevention: N/A. Situation will recur any time a test plan is written before a specific laboratory has been chosen for the testing.

Affected Documents: Performance Demonstration Test Plan Tables 5-4 through 5-10, and QAPP Tables 9-2 through 9-8. Revised tables attached.

Teresa A White — Signature
3-27-06 — Date

QA Follow-up: Corrective Action Verified on: 3-30-06 (Date) By: ARE

Table 9-2. Summary of Target Volatile Organic Analytes

Volatiles	CAS Number
Acetone	67-64-1
Acrylonitrile	107-13-1
Benzene	71-43-2
Bromobenzene	108-86-1
Bromodichloromethane	75-27-4
Bromochloromethane	74-97-5
Bromoform	75-25-2
Bromomethane	74-83-9
2-Butanone	78-93-3
n-Butylbenzene	104-51-8
sec-Butylbenzene	135-98-8
tert-Butylbenzene	98-06-6
Carbon Disulfide	75-15-0
Carbon Tetrachloride	56-23-5
Chlorobenzene	108-90-7
Chlorodibromomethane	124-48-1
Chloroethane	75-00-3
Chloroform	67-66-3
Chloromethane	74-87-3
2-chlorotoluene	95-49-8
4-chlorotoluene	106-43-4
1,2-Dibromo-3-chloropropane	96-12-8
1,2-Dibromoethane[a]	106-93-4
Dibromomethane	74-95-3
1,2-Dichlorobenzene	95-50-1
1,3-Dichlorobenzene	541-73-1
1,4-Dichlorobenzene	106-46-7
Dichlorodifluoromethane	75-71-8
1,1-Dichloroethane	75-34-3
1,2-Dichloroethane	107-06-2
cis-1,2-Dichloroethene	156-59-2
trans-1,2-Dichloroethene	156-60-5
1,1-Dichloroethene	75-35-4
1,2-Dichloropropane	78-87-5
1,3-Dichloropropane	142-28-9

Table 9-2. Summary of Target Volatile Organic Analytes

Volatiles	CAS Number
2,2-Dichloropropane	594-20-7
cis-1,3-Dichloropropene	10061-01-5
trans-1,3-Dichloropropene	10061-02-6
~~Dicyclopentadiene~~[a]	~~77-73-6~~
1,1-Dichloropropene	563-58-6
Ethylbenzene	100-41-4
~~2-Ethyl-1-methylbenzene~~[a]	~~611-14-3~~
Hexachlorobutadiene	87-68-3
2-Hexanone	591-78-6
Iodomethane	74-88-4
Isopropylbenzene	98-82-8
p-Isopropyltoluene	99-87-6
~~Methyl methacrylate~~[a]	~~80-62-6~~
Methylene Chloride	75-09-2
4-Methyl-2-pentanone	108-10-1
Naphthalene	91-20-3
Propylbenzene[a]	103-65-1
Styrene	100-42-5
1,1,1,2-Tetrachloroethane	630-20-6
1,1,2,2-Tetrachloroethane	79-34-5
Tetrachloroethene	127-18-4
Tetrahydrofuran[a]	109-99-9
~~Triethylamine~~[a]	~~121-44-8~~
Toluene	108-88-3
1,2,3-Trichlorobenzene	87-61-6
1,2,4-Trichlorobenzene	120-82-1
1,1,1-Trichloroethane	71-55-6
1,1,2-Trichloroethane	79-00-5
Trichloroethene	79-01-6
Trichlorofluoromethane	75-69-4
1,2,3-Trichloropropane	96-18-4
1,2,4-Trimethylbenzene[a]	95-63-6
1,3,5-Trimethylbenzene	108-67-8
1,1,2-Trichloro – 1,2,2-trifluoroethane (freon 113)	76-13-1
Vinyl Acetate	108-05-4

Table 9-2. Summary of Target Volatile Organic Analytes

Volatiles	CAS Number
Vinyl Chloride	75-69-4
m & p Xylenes	108-38-3 & 106-42-3
o-xylene	95-47-6
Xylenes (total)	1330-02-7

~~a Reported as a TIC if found~~

Table 9-3. Summary of Target Semivolatile Organic Analytes

Semivolatiles	CAS Number
Acetophenone	98-86-2
Aniline	62-53-3
Benzidine	92-87-5
Benzoic Acid	65-85-0
Benzaldehyde	100-52-7
Benzonitrile	100-47-0
Benzyl alcohol	100-51-6
Bis(2-chloroethoxy) methane	111-91-1
Bis-(2-chloroethyl) ether	111-44-4
Bis(2-ethylhexyl) phthalate	117-81-7
4-Bromophenyl-phenyl ether	101-55-3
Butylbenzylphthalate	85-68-7
Carbazole	86-74-8
4-Chloroaniline	106-47-8
4-Chloro-3-methylphenol	59-50-7
2-Chloronaphthalene	91-58-7
2-Chlorophenol	95-57-8
4-Chlorophenyl-phenyl ether	7005-72-3
Dibenzofuran	132-64-9
Di-n-butylphthalate	84-74-2
1,2-Dichlorobenzene	95-50-1
1,3-Dichlorobenzene	541-73-1
1,4-Dichlorobenzene	106-46-7
3,3'-Dichlorobenzidine	91-94-1
2,4-Dichlorophenol	120-83-2
Diethyl phthalate	84-66-2
2,4-Dimethylphenol	105-67-9
Dimethylphthalate	131-11-3
1,3-Dinitrobenzene	99-65-0
4,6-Dinitro-2-methylphenol	534-52-1
2,4-Dinitrophenol	51-28-5
2,4-Dinitrotoluene	121-14-2
2,6-Dinitrotoluene	606-20-2
Di-n-octyl phthalate	117-84-0
~~1,4-Dioxane~~	~~123-91-1~~

Table 9-3. Summary of Target Semivolatile Organic Analytes

Semivolatiles	CAS Number
Diphenylamine	122-39-4
1,2-Diphenylhydrazine	122-66-7
Hexachlorobenzene	118-74-1
Hexachlorobutadiene	87-68-3
Hexachlorocyclo-pentadiene	77-47-4
Hexachloroethane	67-72-1
Isophrone	78-59-1
2-Methylphenol	95-48-7
3/4-Methylphenol	108-59-4 & 106-44-5
~~Cresol (total)~~	~~108-59-4, 106-44-5, & 95-48-7~~
2-Nitroaniline	88-74-4
3-Nitroaniline	99-09-2
4-Nitroaniline	100-01-6
Nitrobenzene	98-95-3
2-Nitrophenol	88-75-5
4-Nitrophenol	100-02-7
N-Nitrosodiphenylamine	86-30-6
N-Nitrosodimethylamine	62-75-9
N-Nitroso-di-n-propylamine	621-64-7
2,2'-oxybis (1-Chloropropane)	108-60-1
Pentachlorobenzene	82-62-8
Pentachloronitrobenzene	82-68-8
Pentachlorophenol	87-86-5
Phenol	108-95-2
Pyridine	110-86-1
1,2,4,5-Tetrachlorobenzene	95-94-3
1,2,4-Trichlorobenzene	120-82-1
2,4,5-Trichlorophenol	95-95-4
2,4,6-Trichlorophenol	88-06-2

NOTE: Semivolatile PAH compounds not included in this list.

Table 9-4. Summary of Target PAH Analytes

PAH	CAS Number
Acenaphthene	83-32-9
Acenaphthylene	208-96-8
Anthracene	120-12-7
Benzo(a)anthracene	56-55-3
Benzo(b)fluoranthene	205-99-2
Benzo(k)fluoranthene	207-08-9
Benzo(g,h,i)perylene	191-24-2
Benzo(a)pyrene	50-32-8
Benzo(e)pyrene	192-97-2
Chrysene	218-01-9
Dibenzo(a,h)anthracene	53-70-3
Fluoranthene	206-44-0
Fluorene	86-73-7
Indeno(1,2,3-cd)pyrene	193-39-5
2-Methylnaphthalene	91-57-6
Naphthalene	91-20-3
Perylene	
Phenanthrene	85-01-8
Pyrene	129-00-0

Table 9-5. Summary of Target PCB Analytes

PCB	IUPAC	CAS Number
3,4,3',4'-Tetrachlorobiphenyl	77	32598-13-3
3,4,4',5-Tetrachlorobiphenyl		70362-50-4
2,3,4,3',4'-Pentachlorobiphenyl	105	32598-14-4
2,3,4,5,4'-Pentachlorobiphenyl	114	74472-37-0
2,4,5,3',4'-Pentachlorobiphenyl	118	31508-00-6
3,4,5,2',4'-Pentachlorobiphenyl	123	65510-44-3
3,4,5,3',4'-Pentachlorobiphenyl	126	57465-28-8
2,3,4,5,3',4'-Hexachlorobiphenyl	156	38380-98-4
2,3,4,3',4',5'-Hexachlorobiphenyl	157	68782-90-7
2,4,5,3',4',5'-Hexachlorobiphenyl	167	52663-72-6
3,4,5,3',4',5'-Hexachlorobiphenyl	169	32774-16-6
2,3,4,5,3',4',5'-Heptachlorobiphenyl	189	39635-31-9
Total Homologue Groups (Sum to Determine total PCBs)		
Monochlorobiphenyls		
Dichlorobiphenyls		
Trichlorobiphenyls		
Tetrachlorobiphenyls		
Pentachlorobiphenyls		
Hexachlorobiphenyls		
Heptachlorobiphenyls		
Octachlorobiphenyls		
Nonachlorobiphenyls		
Decachlorobiphenyls		

Table 9-6. Summary of Target OCP Analytes

OCP	CAS Number
~~1,2-Dibromo-3-chloropropane~~	~~96-12-8~~
4,4'-DDD	72-54-8
4,4'-DDE	72-55-9
4,4'-DDT	50-29-3
Aldrin	309-00-2
α-BHC	319-84-6
β-BHC	319-85-7
γ-BHC (Lindane)	58-89-9
δ-BHC	319-86-8
Chlorobenzilate	510-15-6
α-Chlordane	5103-71-9
γδ-Chlordane	5103-74-2
Diallate	2303-16-4
Dieldrin	60-57-1
Endosulfan I	959-98-8
Endosulfan II	33213-65-9
Endosulfan sulfate	1031-07-8
Endrin	72-20-8
Endrin aldehyde	7421-93-4
Endrin ketone	53494-70-5
Heptachlor	76-44-8
Heptachlor epoxide	1024-57-3
Methoxychlor	72-43-5

Table 9-7. Summary of Target Dioxin/Furan Analytes

Dioxin/Furan Compounds	CAS Number
2,3,7,8-TCDD	1746-01-6
Total TCDD	NA
2,3,7,8-TCDF	51207-31-9
Total TCDF	NA
1,2,3,7,8-PeCDD	40321-76-4
Total PeCDD	NA
1,2,3,7,8-PeCDF	57117-41-6
2,3,4,7,8-PeCDF	57117-31-4
Total PeCDF	NA
1,2,3,6,7,8-HxCDD	57653-85-7
1,2,3,4,7,8-HxCDD	39227-28-6
1,2,3,7,8,9-HxCDD	19408-74-3
Total HxCDD	NA
1,2,3,6,7,8-HxCDF	57117-44-9
1,2,3,4,7,8-HxCDF	70648-26-9
1,2,3,7,8,9-HxCDF	72918-21-9
2,3,4,6,7,8-HxCDF	60851-34-5
Total HxCDF	NA
1,2,3,4,6,7,8-HpCDD	35822-39-4
Total HpCDD	NA
1,2,3,4,6,7,8-HpCDF	67562-39-4
1,2,3,4,7,8,9-HpCDF	55673-89-7
Total HpCDF	NA
Total OCDD	3268-87-9
Total OCDF	39001-02-0

Table 9-8 Summary of Target Metal Analytes

Metal	CAS Number
Aluminum	7429-90-5
Antimony	7440-36-0
Arsenic	7440-38-2
Barium	7440-39-3
Beryllium	7440-41-7
Cadmium	7440-43-9
Chromium	7440-47-3
Cobalt	7440-48-4
Copper	7440-50-8
Lead	7439-92-1
Manganese	7439-96-5
Mercury	7439-97-6
Nickel	7440-02-0
Selenium	7782-49-2
Silver	7440-22-4
Thallium	7440-28-0
Vanadium	7440-62-2
Zinc	7440-66-6

Corrective Action Request

Number: CAR002
Date: Monday, March 27, 2006
File Name: CAR002.doc

REQUEST

To: Tony Eicher/Bill Schofield (ESS)

You are hereby requested to take corrective actions indicated below and as otherwise determined by you (A) to resolve the noted condition and (B) to prevent it from recurring. Your written response is to be returned to the project Quality Assurance Officer or other responsible manager by March 27, 2006.

Condition: The original test plan calls for an organic surrogate mixture to be added to the spent activated carbon feed. That mixture was specified to contain 1,1,1-Trichloroethane, however the compound is not available because it is an ozone depleting substance.

Reference Documents: Performance Demonstration Test Plan.

Recommended Corrective Actions: Substitute another aliphatic chlorinated compound. Methylene chloride (dichloromethane) is recommended.

ATE	3-27-06	MB	3/27/06	WB	3.30.06
Originator	Date	Approval	Date	Approval	Date

RESPONSE

Cause of Condition: Originally planned aliphatic chlorinated compound is no longer available since it is an ozone depleting substance.

Resolution: Substituted methylene chloride.

Prevention: N/A. Situation could not be avoided. Regulatory changes occurred between the time the plan was prepared and when the test was to be implemented, which precluded the use of the originally planned compound.

Affected Documents: Performance Demonstration Test Plan.

Scott Wentworth for Bill Schofield — 3-27-06
Signature — Date

QA Follow-up: Corrective Action Verified on: 3-30-06 (Date) By: ATE

Corrective Action Request

Number: CAR003
Date: Monday, March 27, 2006
File Name: CAR003.doc

REQUEST

To: Pat Clark (AirTech)

You are hereby requested to take corrective actions indicated below and as otherwise determined by you (A) to resolve the noted condition and (B) to prevent it from recurring. Your written response is to be returned to the project Quality Assurance Officer or other responsible manager by March 27, 2006.

Condition: After conducting preliminary testing at the facility, it is believed that the high moisture content and low particulate matter emissions in the stack gas are not conducive to the use of a Cascade Impactor, which was originally planned for collection of Particle Size Distribution samples.

Reference Documents: Performance Demonstration Test Plan.

Recommended Corrective Actions: Use a Method 5 sampling train equipped with a smooth acetate (or equivalent) filter to collect Particle Size Distribution samples, and perform the analysis using Scanning Electron Microscopy (SEM). This method has been successfully used in other high moisture and/or low particulate emission sources.

ARE	3-27-06	MB	3/27/06	DB	3.30.06
Originator	Date	Approval	Date	Approval	Date

RESPONSE

Cause of Condition: Stack conditions are adverse to obtaining valid results using a Cascade Impactor.

Resolution: Substitute EPA Method 5 using a smooth filter media, with PSD analysis by SEM.

Prevention: N/A.

Affected Documents: Performance Demonstration Test Plan.

	3/29/06
Signature	Date

QA Follow-up: Corrective Action Verified on: 3-30-06 (Date) By: ARE

Corrective Action Request

Number: CAR004
Date: Monday, March 27, 2006
File Name: CAR004.doc

REQUEST

To: Pat Clark (AirTech)

You are hereby requested to take corrective actions indicated below and as otherwise determined by you (A) to resolve the noted condition and (B) to prevent it from recurring. Your written response is to be returned to the project Quality Assurance Officer or other responsible manager by March 27, 2006.

Condition: Pre-Test analytical surrogate spikes are placed on the XAD-2 resin in the various semivolatile organic sampling trains. The laboratory has expressed concern that these materials can be stripped off of the resin unless a very low sample rate is used.

Reference Documents: Performance Demonstration Test Plan; QAPP.

Recommended Corrective Actions: Decrease the sample flow rate for each of the semivolatile organic sampling trains,

ATE	3-27-06	MB	3/27/06		3.30.06
Originator	Date	Approval	Date	Approval	Date

RESPONSE

Cause of Condition: Concern that standard sample flow rate may strip analytical surrogates from the XAD-2 resin in the semivolatile organic sampling trains.

Resolution: Decreases the sample flow rate, such that the sample time is approximately 4 hours per run rather the originally planned 3 hours per run.

Prevention: Plan future tests for a 4 hour sampling run.

Affected Documents: Performance Demonstration Test Plan; QAPP.

	3/29/06
Signature	Date

QA Follow-up: Corrective Action Verified on: 3-30-06 Date By: ATE

Corrective Action Request

Number: CAR005
Date: Monday, March 27, 2006
File Name: CAR005.doc

REQUEST

To: Drew Bolyard (Westates)

You are hereby requested to take corrective actions indicated below and as otherwise determined by you (A) to resolve the noted condition and (B) to prevent it from recurring. Your written response is to be returned to the project Quality Assurance Officer or other responsible manager by March 27, 2006.

Condition: EPA has indicated that a minimum temperature must be established for Hearth 5 in the reactivation furnace. This condition was not anticipated, nor addressed in the Performance Demonstration Test Plan.

Reference Documents: Performance Demonstration Test Plan.

Recommended Corrective Actions: After discussion with EPA, it has been decided that a separate test will be conducted by Westates (outside of the formal PDT test period) where a minimum Hearth 5 temperature will be maintained and the resulting reactivated carbon will be analyzed for organics. No other sampling or analysis is to be conducted for the supplemental test.

Originator	Date	Approval	Date	Approval	Date
AKE	3-27-06	MB	3/27/06	DB	3.30.06

RESPONSE

Cause of Condition: EPA indicated that a minimum Hearth 5 temperature must be established, but this could not be accommodated within the constraints of the approved Performance Test condition.

Resolution: A supplemental test as described above will be conducted to establish a minimum Hearth 5 temperature. The results of this test will be included with the Performance Demonstration Test Report.

Prevention: N/A.

Affected Documents: Performance Demonstration Test Plan and Report.

Signature: Drew Bolyard — Date: 3.29.06

QA Follow-up: Corrective Action Verified on: 3-30-06 (Date) By: AKE

Corrective Action Request

Number: CAR006
Date: Monday, March 27, 2006
File Name: CAR006.doc

REQUEST

To: Drew Bolyard (Westates)

You are hereby requested to take corrective actions indicated below and as otherwise determined by you (A) to resolve the noted condition and (B) to prevent it from recurring. Your written response is to be returned to the project Quality Assurance Officer or other responsible manager by March 30, 2006.

Condition: Several modifications to target operating conditions and anticipated permit limits have been made since approval of the Performance Demonstration Test Plan. Additionally, EPA included with their test plan approval letter a table of information and process data that they wanted included in the report.

Reference Documents: Performance Demonstration Test Plan Tables 4-2 and 7-1. Approval letter, Attachment C.

Recommended Corrective Actions: Operate such that the target operating conditions in the attached revised tables 4-2 and 7-1 are attained. Provide process data and information as in the attached amended Attachment C to the approval letter.

ATE	3-27-06	MB	3/30/06	DB	3.30.06
Originator	Date	Approval	Date	Approval	Date

RESPONSE

Cause of Condition: Miniburn results and further discussions with EPA have resulted in modified operating targets and the addition of two new operating limits. EPA requested specific test data.

Resolution: Operate during the performance test to achieve the modified targets and to demonstrate the additional operating limits. Note that the limit for minimum Hearth #5 temperature is being demonstrated during a separate test. Provide data as requested by EPA.

Prevention: N/A.

Affected Documents: Performance Demonstration Test table 4-2 and 7-1. Approval letter Attachment C. Test report.

Drew Bolyard	3.30.06
Signature	Date

QA Follow-up: Corrective Action Verified on: 3-30-06 (Date) By: ATE

Table 4-2. Performance Test Target Operating Conditions

Parameter	Target
Spent activated carbon feed rate (lb/hr)	2,500 - 3,000
Auxiliary fuel feed rate	As needed to maintain temperature
Total chlorine/chloride feed rate (lb/hr)	75 - 80
Chlorine/chloride (from spent activated carbon) (a)	23 - 24
Chlorine/chloride (from spiking)	51 - 57
Metals feed rates (lb/hr)	
Mercury (from spent activated carbon) (a)	0.0003
Total SVM (Cd + Pb)	0.11
SVM (from spent activated carbon) (a)	0.01
SVM (from spiking)	0.10 as Pb
Total LVM (As + Be + Cr)	0.39
LVM (from spent activated carbon) (a)	0.04
LVM (from spiking)	0.35 as Cr
POHC feed rate (lb/hr)	
Chlorobenzene (from spiking)	33 - 37
Tetrachloroethene (from spiking)	33 - 37
Organic surrogate feed rate (lb/hr)	
Toluene (from spiking)	16 - 18
1,1,1-Trichloroethane (from spiking)	7 - 9
Naphthalene (from spiking)	7 - 9
Ethylene glycol (from spiking)	7 - 9
Hearth #5 temperature (F)	1,650
Afterburner gas temperature (F)	1,750
Venturi scrubber pressure differential (in. w.c.)	≥ 15
Venturi scrubber recycle liquid flow rate (gpm)	70 - 75
Packed bed scrubber recycle liquid flow rate (gpm)	≥ 60
Packed bed scrubber pH	≥ 4
Packed bed scrubber pressure differential (in. w.c.)	0.2
Scrubber blowdown flow rate (gpm)	60
WESP secondary voltage (KVDC)	≥ 14
Stack gas flow rate (acfm)	8,500 - 9,000
Stack gas CO (ppmv, @7%O_2, dry)	≤ 100
Stack gas THC (pmv as propane, @7%O_2, dry)	≤ 10

(a) Based on typical spent activated carbon characteristics. Actual value may vary slightly.

Note: Target conditions are identical for each run. Normal process variations around these targets are expected.

Deleted: 36

Deleted: 35

Deleted:

Formatted: Font: (Default) Arial

Formatted: Font: (Default) Arial

Deleted: 3

Formatted: Font: (Default) Arial

Formatted: Font: (Default) Arial

Deleted: 10,000

Formatted: Font: (Default) Arial

Formatted: Font: (Default) Arial

Table 7-1. Anticipated Permit Conditions		
Control Parameters[a]	Anticipated Permit Limit	Comments[b]
GROUP A1 PARAMETERS		
Maximum spent carbon feed rate (lb/hr)	3000	Block hour AWFCO
Minimum afterburner temperature (°F)	1750	Hourly rolling average AWFCO
Maximum hearth #5 temperature (°F)	1650	Hourly rolling average AWFCO
Minimum hearth #5 temperature (°F)	TBD	Hourly rolling average AWFCO
Minimum venturi scrubber pressure differential (in. w.c.)	15	Hourly rolling average AWFCO
Minimum quench/venturi scrubber total liquid flow rate (gpm)	75	Hourly rolling average AWFCO
Minimum packed bed scrubber pH	4.0	Hourly rolling average AWFCO
Minimum packed bed scrubber liquid flow rate (gpm)	60	Hourly rolling average AWFCO
Minimum wet scrubber blowdown flow rate (gpm)	60	Hourly rolling average AWFCO
Minimum WESP secondary voltage (kVDC)	14	Hourly rolling average AWFCO
Maximum stack gas flow rate acfm	9,000	Hourly rolling average AWFCO
GROUP A2 PARAMETERS		
Maximum stack gas carbon monoxide (ppmvd, @7% oxygen)[c]	100	Hourly rolling average AWFCO
GROUP B PARAMETERS		
Allowable hazardous constituents	All except dioxin wastes and TSCA PCBs	Class 1 POHC demonstrated
Maximum total chlorine and chloride feed rate (lb/hr)	78	12-hour rolling average
Maximum mercury feed rate (lb/hr)	1.9E-03	12-hour rolling average
Maximum semivolatile metal (Cd + Pb) feed rate (lb/hr)	1.0	12-hour rolling average
Maximum low volatility metal (As + Be + Cr) feed rate (lb/hr)	1.2	12-hour rolling average
GROUP C PARAMETERS		
Minimum packed bed scrubber pressure differential (in. w.c.)	0.1	Hourly rolling average

Deleted: 30

Deleted: 10

(a) Group A1 parameters are continuously monitored and recorded, and are interlocked with the automatic waste feed cutoff system. The values for the Group A1 parameters will be based on the performance demonstration test operating conditions.

Group A2 parameters are continuously monitored and recorded, and are interlocked with the automatic waste feed cutoff system. The values for the Group A2 parameters are based on regulatory standards or good operating practice rather than performance demonstration test operating conditions.

Group B parameters are continuously monitored and recorded, but are not interlocked with the automatic waste feed cutoff system. Values for the group B parameters are based on the performance demonstration test operating conditions.

Group C parameters are continuously monitoring and recording, but are not interlocked with the automatic waste feed cutoff system. The values for the Group C parameters are based on manufacturer's specifications and/or operational and safety considerations rather than performance demonstration test operating conditions.

(b) AWFCO = Automatic waste feed cutoff.

(c) AWFCO interlock will not be active during the daily CEM calibration period.

Attachment C
Monitoring Parameters for Air Emissions Test

Operating Condition	AWFCO?	Purpose	Comments	Test Only Data/ Permit Condition
A. Spent carbon feed rate*	Yes	Compliance with 40 CFR 63.1209	Block hourly rolling average	Permit condition
1. Spent carbon feed rate	No	As per EPA guidance document: Handbook: Guidance on Setting Permit Conditions and Reporting Trial Burn Results (EPA/625/6-89/019), Appendix B.2.3	Pounds/minute; instantaneous rate	Test only. Minute average.
B. Residence time	No	Compliance with 40 CFR 63.1206(b)(11) and 1207(f)(1)(ix)	42 minutes	Test only; calculation, not in DCS
1. Rabble arm rotational speed	No	Validate residence time	Per minute	Test only; not in DCS. Will provide manual data.

C. Hearth 1 temperature minimum	No	Compliance with 40 CFR 63.1209(j)(1)/(k)(2)	Hourly rolling average;	Test only. Only minute average available.
1. Instantaneous Hearth 1 temperature	No	Validate Hearth 1 temperature minimum	Instantaneous	Test only.; Only minute averages available
D. Hearth 2 temperature minimum	No	Compliance with 40 CFR 63.1209(j)(1)/(k)(2)	Hourly rolling average	Test only. Only minute average available.
1. Instantaneous Hearth 2 temperature	No	Validate Hearth 2 temperature minimum	Instantaneous	Test only. Only minute average available.
E. Hearth 3 temperature minimum	No	Compliance with 40 CFR 63.1209(j)(1)/(k)(2)	Hourly rolling average	Test only. Only minute average available.
1. Instantaneous Hearth 3 temperature	No	Validate Hearth 3 temperature minimum	Instantaneous	Test only. Only minute average available.
F. Hearth 4 temperature minimum	No	Comply with 40 CFR 63.1209(j)(1)/(k)(2)	Hourly rolling average	Test only. Only minute average available.

1. Instantaneous Hearth 4 temperature	No	Validate Hearth 4 temperature minimum	Instantaneous	Test only. Only minute average available.
G. Hearth 5 temperature minimum	Yes	Compliance with 40 CFR 63.1209(j)(1)/(k)(2)	Hourly rolling average	Permit condition.
1. Instantaneous Hearth 5 temperature	No	Validate Hearth 5 temperature minimum	Instantaneous	Test only. Minute average.
H. Minimum afterburner temperature*	Yes	Compliance with 40 CFR 63.1209(j)(1)(i)	hourly rolling average	Permit condition
1. Minimum afterburner temperature	No	Validate minimum afterburner temperature	Instantaneous	Test only. Minute average.
I. Maximum air speed through the system	No	Compliance with 40 CFR 63.1209(k)(3)(i)	Hourly rolling average; as calculated	Test only. Stack gas flow rate will be provided.
1. Instantaneous maximum air speed through the system	No	Validate maximum air speed through system	Instantaneous; as calculated	Test only. Stack gas flow rate and velocity minute averages will be provided.

N. Maximum temperature at exit of Venturi	No	Compliance with 40 CFR 63 1209(g)(2) and as per EPA guidance document: Handbook: Guidance on Setting Permit Conditions and Reporting Trial Burn Results (EPA/625/6-89/019) Chapter 4, Table 4.4 (example test case)	Instantaneous	Test only. Minute average.
O. Packed bed pH*	Yes		In standard units; Hourly rolling average	Permit condition
P. Minimum scrubber liquid flow rate through packed bed *	Yes		Hourly rolling average	Permit condition
Q. Packed bed differential pressure*	Yes			Permit condition. Minute average
R. Venturi scrubber blowdown rate*	Yes	Compliance with 40 CFR 63.1209(m)(1)(ii)	Hourly rolling average	Permit condition
S. Minimum WESP secondary voltage*	Yes		Hourly rolling average	Permit condition

J. Venturi scrubber differential pressure drop*	Yes		Hourly rolling average	Permit condition
K. Minimum scrubber liquid flow rate through Venturi/Quench*	Yes		Hourly rolling average	Permit condition.
L. Venturi pH to wet scrubber	No	As per required in EPA guidance document: Handbook: Guidance on Setting Permit Conditions and Reporting Trial Burn Results (EPA/625/6-89/019) Chapter 2, Table 2.1	Instantaneous	Test only. Minute average.
M. Venturi Liquid/Gas ratio	No	As per required in EPA guidance document: Handbook: Guidance on Setting Permit Conditions and Reporting Trial Burn Results (EPA/625/6-89/019) Chapter 2, Table 2.1	Instantaneous (See K)	Test only. L/G not in DCS. Can be calculated from stack flow and scrubber liquid flow rate.

T. Maximum stack gas flow rate*	Yes	**10000 ACFM**	Hourly rolling average	Permit condition
U. CO*	Yes		Hourly rolling average	Permit condition. Data corrected to 7% O2
1. CO	No	Validate CO	Instantaneous	Test only. Minute average, raw.
V. Percent O2	No	Validate percent O2	Instantaneous	Test only. Minute average.
X. Total hydrocarbons (strip charts)*	No	Compliance with 40 CFR 63.1209((a)(1)	**< 100 ppm CO or <10 ppm as propane**	Report on daily basis for test only
Y. Isokinetic percent for each train for each run	No	Compliance with 40 CFR 63.1209(j)	At end of each run; provide by next day	Test only. Available from stack test team.
Z. Spiked metals feed rate low volatile metals	No	Compliance with 40 CFR 63.1209(c)	Hourly rolling average; daily during test	Test only. Instantaneous and test run average only. Provided with spiking contractor's report.

1. Spiked metals feed rate low volatile metals	No	Validate spiked metals feed rate low volatile metals	Instantaneous	Test only. Instantaneous and test run average only. Provided with spiking contractor's report.
AA. Spiked metals feed rate semi-volatile metals	No	Compliance with 40 CFR 63.1209(c)	Hourly rolling average; daily during test	Test only. Instantaneous and test run average only. Provided with spiking contractor's report.
1. Spiked metals feed rate semi-volatile metals	No	Validate spiked metals feed rate semi-volatile metals	Instantaneous	Test only. Instantaneous and test run average only. Provided with spiking contractor's report.

BB. Spiked POHC 1 feed rate	No	Compliance with 40 CFR 63.1209(c)	Hourly rolling average; daily during test	Test only. Instantaneous and test run average only. Provided with spiking contractor's report.
1. Spiked POHC 1 feed rate	No	Validate spiked POHC 1 feed rate	Instantaneous	Test only. Instantaneous and test run average only. Provided with spiking contractor's report.
CC. Spiked POHC 2 feed rate	No	Compliance with 40 CFR 63.1209(c)	Hourly rolling average; daily during test	Test only. Instantaneous and test run average only. Provided with spiking contractor's report.

1. Spiked POHC 2 feed rate	No	Validate spiked POHC 2 feed rate	Instantaneous	Test only. Instantaneous and test run average only. Provided with spiking contractor's report.
DD. Spiked organics feed rate	No	Compliance with 40 CFR 63.1209(c)	Hourly rolling average; daily during test	Test only. Instantaneous and test run average only. Provided with spiking contractor's report.
1. Spiked organics feed rate	No	Validate spiked organics feed rate	Instantaneous	Test only. Instantaneous and test run average only. Provided with spiking contractor's report.

EE. Semivolatile metals feed rate*		Compliance with 40 CFR 63.1203	**Provide as soon as available;** 12 hour rolling average; already in Air Emissions Test Plan; include feed metals for a total feed rate	Permit condition.. Test run average to be provided with test report.
1. Semivolatile metals feed rate		Validate semivolatile metals feed rate	**Provide as soon as available;** Hourly rolling average	Test only. Test run average to be provided with test report.

FF. Low volatile metals feed rate*			**Provide as soon as available;** 12 hour rolling average; already in Air Emissions Test Plan	Permit condition. Test run average to be provided with test report.
1. Low volatile metals feed rate		Validate low volatile metals feed rate	**Provide as soon as available;** Hourly rolling average	Test only. Test run average to be provided with test report.

GG. Mercury (MTEC) feed rate*			**Provide as soon as available;** 12 hour rolling average	Permit condition. Test run average to be provided with test report.
1. Mercury (MTEC) feed rate		Validate mercury feed rate	**Provide as soon as available;** Hourly rolling average	Test only. Test run average to be provided with test report.

HH. Total metals feed rates for all 18 risk metals			**Provide as soon as available;** 12 hour rolling average	Permit condition. Test run average to be provided with test report.
1. Total metals feed rates for all 18 risk metals		Validate total metals feed rate	**Provide as soon as available;** Hourly rolling average	Test only. Test run average to be provided with test report.

II. Maximum chlorine/chloride feed rate		As per EPA guidance document: Handbook: Guidance on Setting Permit Conditions and Reporting Trial Burn Results (EPA/625/6-89/019), Section 2.1.6	**Provide as soon as available;** 12 hour rolling average	Permit condition. Test run average to be provided with test report.
1. Maximum chlorine/chloride feed rate			**Provide as soon as available;** Hourly rolling average	Test only. Test run average to be provided with test report.

JJ. Organic feed rate total		Compliance with 40 CFR 63.1209(g)(2) and 40 CFR 63.1209(c)	**Provide as soon as available**	Test only. Test run average for each POHC to be provided with test report.

Corrective Action Request

Number: CAR007
Date: Wednesday, March 29, 2006
File Name: CAR007.doc

REQUEST

To: Pat Clark (AirTech)

You are hereby requested to take corrective actions indicated below and as otherwise determined by you (A) to resolve the noted condition and (B) to prevent it from recurring. Your written response is to be returned to the project Quality Assurance Officer or other responsible manager by March 29, 2006.

Condition: During Run 2 of the Performance Test, the glass probe liner on the M0023A train was broken due to high winds swinging the sampling train as it was being moved from one traverse point to another. The stack sampling crew and regulatory observers noted the break and immediately stopped sampling. Upon investigation, it was found that both pieces of the broken probe liner could be retrieved and that the sampling train leak-checked from the break through the remainder of the train. All parties agreed that there was no impact on sample integrity, so the broken probe pieces were capped, taken to the recovery area and rinsed. The probe liner was replaced and the train was used to complete the sampling run. The rinse from the broken probe liner was combined with the final train rinse to capture the entire sample.

Reference Documents: N/A

Recommended Corrective Actions: Recover the broken probe liner and add the rinses to the rest of the sample. Replace the probe liner and complete the test run.

AJE	3-29-06	MB	3/29/06	[illegible]	3.30.06
Originator	Date	Approval	Date	Approval	Date

RESPONSE

Cause of Condition: Wind caused the train to sway and bind inside the sampling port.

Resolution: Broken liner was recovered and the rinses added to the rest of the sample. Liner was replaced and the run was successfully completed.

Prevention: Attempt to prevent lateral movement of sampling train in high wind.

Affected Documents: N/A.

[signature]	3/30/06
Signature	Date

QA Follow-up: Corrective Action Verified on: 3-30-06 (Date) By: AJE

Corrective Action Request

Number: CAR008
Date: Wednesday, March 29, 2006
File Name: CAR008.doc

REQUEST

To: Drew Bolyard (Westates)

You are hereby requested to take corrective actions indicated below and as otherwise determined by you (A) to resolve the noted condition and (B) to prevent it from recurring. Your written response is to be returned to the project Quality Assurance Officer or other responsible manager by March 30, 2006.

Condition: In order to maximize the stack gas flow rate (minimize the gas residence time) for the performance test, a source of addition al air is needed beyond what is normally supplied by the combustion air fan. The access door on Hearth #2 will be opened to allow additional air to be drawn into the system and to pass through the combustion and air pollution control portions of the system.

Reference Documents: N/A.

Recommended Corrective Actions: No corrective action needed. This serves as documentation that all parties are aware of and approved of the method used for maximizing the gas flow through the system.

Originator	Date	Approval	Date	Approval	Date
AJE	3-29-06	MB	3/29/06	DB	3.30.06

RESPONSE

Cause of Condition: Requirement to maximize the flow of gases through the system (minimize the gas residence time).

Resolution: Allow additional air to be drawn into the system through the access door on Hearth #2.

Prevention: N/A.

Affected Documents: N/A.

Drew Bolyard — Signature

3.30.06 — Date

QA Follow-up: Corrective Action Verified on: 3-30-06 — Date

By: AJE