



July 8, 2008

Reference: RFP No. NNA08253597R  
**N218, Demolition of 14 Foot Wind Tunnel, Phase 3.**

**Clarification #2, Corrections, Q&As**

- 1 Question: Is it possible for NASA to issue a sketch or at least a narrative that better describes the path of the conduits that would feed the transformers and go to the control room and to the DC generators and out to where ever it goes. We need to be clear on what portion of the structures are affected.  
Answer: Please refer to Spec. Section 01000 paragraph 1.6. The relevant single line diagram is shown on drawing 218-0700-E14. The following distribution panels can be disconnected and removed to allow early demolition work without affecting the 150 hz power system: 100, 200, 400, R, 1100, 1100A, 900, 600-1, 600-2, 600A, 700L, 700C, 700R.
- 2 Question: Is filling the recessed slabs required under the Base Bid scope?  
Answer: All open pits are to be backfilled with aggregate base or approved crushed concrete.
- 3 Clarification: All VCT flooring, carpetting, and ceramic tile is to be removed to the concrete slab.
- 4 Question: Is a staging area available to downsize and load metals, at the Arc Jet site?  
Answer: Yes. Refer to the attached aerial photo. A gravelled area 60'X100' can be used by the Contractor adjacent to Hunsaker Road. A 12 foot clearance from the adjacent switchgear yard is required. This area is available for one 4 month duration. The Contractor is to protect this area from contamination from metal debris and paint falloff. Refer to Specification section 01000 paragraph 1.6, last paragraph.
- 5 Question: Is the wood floor that is to be salvaged nailed or glued down? If the floor is nailed, is the contractor responsible for removing all of the nails from each board?  
Answer: Refer to Spec. Section 01000 paragraph 2.3. All flooring is T&G and nailed. As specified " All nailing shall be carefully removed, the wood salvaged in full lengths."
- 6 Question: Is parking available on site for contractor's personnel?  
Answer: Yes.
- 7 Question: Is any site orientation required? If so, how long is it?  
Answer: The Contractor is required to provide each employee training and should define all training activities in the contractor's safety plan. Refer to specification Section 01100.
- 8 Question: Do all Contractor employees working on site need to be U.S. citizens?  
Answer: All employees working at Ames need to be U.S. citizens or have resident work permits. All employees working at Ames need to obtain a security pass. Non U.S. citizens should make an application for access to Ames well in advance to allow time for approval of security clearances. The time needed for this varies, depending on each individual application.
- 9 Question: Which gate will the contractor's be required to use during demolition?

Answer: Contractor personnel may use the main gate or the Ellis Street gate. Construction traffic must use Gate 17. Refer to Specification Section 01000 paragraph 3.2. Gate 17 is open during normal working hours; it is not open on weekends nor on Federal Holidays.

- 10 Clarification: Wood Flooring Salvage and disposal. Refer to Specification Section 01000 paragraph 2.3 and to drawing 218-0700-D9, Key Note 2. The bottom of the subfloor planking has been painted with a yellow lead based paint. The painted wood is found at the 2<sup>nd</sup> floor, elevation +14'-2", and the 3<sup>rd</sup> floor, elevation +28'-3" south of the test section. This paint is also on the steel support members. This high level of lead content (16000 mg/kg) classifies this wood as a hazardous waste according to CCR Title 22 and should also be considered a RCRA waste for disposal purposes. Wood (with yellow paint) not salvaged for reuse by NASA, must be disposed of as a hazardous waste. Refer to the attached lab report CRF1114 for reference.
- 11 Clarification: Paint Sample Results for Sphere 5. Refer to Amendment #1. Refer to the attached lab report CRF0499 for paint sampling taken on Sphere 5.

Hunsaker Road

Work  
Area  
60' x 100'

Sphere  
#5

Feet  
0 40 80



8002 E 1/2 N



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ISSI/NASA Ames MS221-10  
NASA Ames MS T20-G  
Moffet Field, CA 94035-1000

Project: N218 Phase 3  
Project Number: 06-27-N110-200  
Project Manager: Armando Jimenez

**CLS Work Order#: CRF1114**  
COC #:

**DRAFT: Conventional Chemistry Parameters by APHA/EPA Methods**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>DRAFT: 062708WoodSample (CRF1114-01) Soil    Sampled: 06/27/08 10:00    Received: 06/27/08 14:45</b>									
Hexavalent Chromium	22000	1000	µg/kg	100	CR05343	06/30/08 10:30	06/30/08 10:30	EPA 7199	

ISSI/NASA Ames MS221-10  
 NASA Ames MS T20-G  
 Moffet Field, CA 94035-1000

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CLS Work Order#: CRF1114  
 COC #:

### DRAFT: Metals by EPA 6000/7000 Series Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>DRAFT: 062708WoodSample (CRF1114-01) Soil Sampled: 06/27/08 10:00 Received: 06/27/08 14:45</b>									
<b>Aluminum</b>	<b>480</b>	20	mg/kg	1	CR05335	06/30/08 08:18	07/01/08 16:12	EPA 6010B	
<b>Antimony</b>	<b>7.7</b>	2.5	"	"	"	"	"	"	"
<b>Arsenic</b>	<b>ND</b>	5.0	"	"	"	"	"	"	"
<b>Barium</b>	<b>8.5</b>	1.0	"	"	"	"	"	"	"
<b>Beryllium</b>	<b>ND</b>	0.25	"	"	"	"	"	"	"
<b>Cadmium</b>	<b>0.73</b>	0.50	"	"	"	"	"	"	"
<b>Calcium</b>	<b>8600</b>	50	"	"	"	"	"	"	"
<b>Chromium</b>	<b>2400</b>	1.0	"	"	"	"	"	"	"
<b>Cobalt</b>	<b>12</b>	1.0	"	"	"	"	"	"	"
<b>Copper</b>	<b>1.7</b>	1.0	"	"	"	"	"	"	"
<b>Iron</b>	<b>180</b>	10	"	"	"	"	"	"	"
<b>Lead</b>	<b>16000</b>	12	"	5	"	"	"	"	"
<b>Magnesium</b>	<b>180</b>	50	"	1	"	"	"	"	"
<b>Manganese</b>	<b>7.2</b>	1.0	"	"	"	"	"	"	"
<b>Molybdenum</b>	<b>4.1</b>	1.0	"	"	"	"	"	"	"
<b>Nickel</b>	<b>ND</b>	1.0	"	"	"	"	"	"	"
<b>Potassium</b>	<b>ND</b>	50	"	"	"	"	"	"	"
<b>Selenium</b>	<b>ND</b>	5.0	"	"	"	"	"	"	"
<b>Silver</b>	<b>ND</b>	0.50	"	"	"	"	"	"	"
<b>Sodium</b>	<b>54</b>	50	"	"	"	"	"	"	"
<b>Strontium</b>	<b>11</b>	5.0	"	"	"	"	"	"	"
<b>Thallium</b>	<b>ND</b>	25	"	"	"	"	"	"	"
<b>Titanium</b>	<b>140</b>	10	"	"	"	"	"	"	"
<b>Vanadium</b>	<b>ND</b>	1.0	"	"	"	"	"	"	"
<b>Zinc</b>	<b>380</b>	1.0	"	"	"	"	"	"	"
<b>Boron</b>	<b>8.7</b>	2.5	"	"	"	"	"	"	"
<b>Tin</b>	<b>4.1</b>	2.5	"	"	"	"	"	"	"

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NASA Ames MS T20-G  
Moffet Field, CA 94035-1000

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CLS Work Order#: CRF1114  
COC #:

**DRAFT: Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch CR05343 - General Prep</b>										
<b>Blank (CR05343-BLK1)</b>										
Prepared & Analyzed: 06/30/08										
Hexavalent Chromium	ND	10	µg/kg							
<b>LCS (CR05343-BS1)</b>										
Prepared & Analyzed: 06/30/08										
Hexavalent Chromium	49.6	10	µg/kg	50.0		99.1	80-120			
<b>LCS Dup (CR05343-BSD1)</b>										
Prepared & Analyzed: 06/30/08										
Hexavalent Chromium	51.6	10	µg/kg	50.0		103	80-120	4.09	20	
<b>Matrix Spike (CR05343-MS1)</b>										
Source: CRF1114-01 Prepared & Analyzed: 06/30/08										
Hexavalent Chromium	26400	1000	µg/kg	5000	22500	77.7	75-125			
<b>Matrix Spike Dup (CR05343-MSD1)</b>										
Source: CRF1114-01 Prepared & Analyzed: 06/30/08										
Hexavalent Chromium	27800	1000	µg/kg	5000	22500	107	75-125	5.35	25	

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**DRAFT: Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch CR05335 - EPA 3050B**

**Blank (CR05335-BLK1)**

Prepared: 06/30/08 Analyzed: 07/01/08

Aluminum	ND	20	mg/kg							
Antimony	ND	2.5	"							
Arsenic	ND	5.0	"							
Barium	ND	1.0	"							
Beryllium	ND	0.25	"							
Cadmium	ND	0.50	"							
Calcium	ND	50	"							
Chromium	ND	1.0	"							
Cobalt	ND	1.0	"							
Copper	ND	1.0	"							
Iron	ND	10	"							
Lead	ND	2.5	"							
Magnesium	ND	50	"							
Manganese	ND	1.0	"							
Molybdenum	ND	1.0	"							
Nickel	ND	1.0	"							
Potassium	ND	50	"							
Selenium	ND	5.0	"							
Silver	ND	0.50	"							
Sodium	ND	50	"							
Strontium	ND	5.0	"							
Thallium	ND	25	"							
Titanium	ND	10	"							
Vanadium	ND	1.0	"							
Zinc	ND	1.0	"							
Boron	ND	2.5	"							
Tin	ND	2.5	"							

ISSI/NASA Ames MS221-10  
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CLS Work Order#: CRF1114  
 COC #:

**DRAFT: Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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**Batch CR05335 - EPA 3050B**

**LCS (CR05335-BS1)**

Prepared: 06/30/08 Analyzed: 07/01/08

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Aluminum	105	20	mg/kg	100	105	75-125			
Antimony	27.9	2.5	"	25.0	112	75-125			
Arsenic	99.0	5.0	"	100	99.0	75-125			
Barium	107	1.0	"	100	107	75-125			
Beryllium	2.60	0.25	"	2.50	104	75-125			
Cadmium	2.91	0.50	"	2.50	116	75-125			
Calcium	510	50	"	500	102	75-125			
Chromium	9.44	1.0	"	10.0	94.4	75-125			
Cobalt	25.8	1.0	"	25.0	103	75-125			
Copper	12.8	1.0	"	12.5	102	75-125			
Iron	48.9	10	"	50.0	97.7	75-125			
Lead	24.8	2.5	"	25.0	99.1	75-125			
Magnesium	515	50	"	500	103	75-125			
Manganese	26.2	1.0	"	25.0	105	75-125			
Molybdenum	27.1	1.0	"	25.0	108	75-125			
Nickel	25.6	1.0	"	25.0	103	75-125			
Potassium	520	50	"	500	104	75-125			
Selenium	102	5.0	"	100	102	75-125			
Silver	2.81	0.50	"	2.50	112	75-125			
Sodium	518	50	"	500	104	75-125			
Strontium	26.4	5.0	"	25.0	106	75-125			
Thallium	99.5	25	"	100	99.5	75-125			
Titanium	106	10	"	100	106	75-125			
Vanadium	26.2	1.0	"	25.0	105	75-125			
Zinc	25.4	1.0	"	25.0	102	75-125			
Boron	129	2.5	"	125	103	75-125			
Tin	108	2.5	"	100	108	75-125			

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**DRAFT: Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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**Batch CR05335 - EPA 3050B**

**LCS Dup (CR05335-BSD1)**

Prepared: 06/30/08 Analyzed: 07/01/08

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Aluminum	100	20	mg/kg	100	100	75-125	4.48	25	
Antimony	25.4	2.5	"	25.0	102	75-125	9.41	25	
Arsenic	94.5	5.0	"	100	94.5	75-125	4.65	25	
Barium	104	1.0	"	100	104	75-125	2.23	25	
Beryllium	2.55	0.25	"	2.50	102	75-125	2.16	25	
Cadmium	2.82	0.50	"	2.50	113	75-125	3.14	25	
Calcium	485	50	"	500	97.0	75-125	5.09	25	
Chromium	9.30	1.0	"	10.0	93.0	75-125	1.44	25	
Cobalt	24.6	1.0	"	25.0	98.3	75-125	4.75	25	
Copper	12.5	1.0	"	12.5	99.8	75-125	2.61	25	
Iron	48.7	10	"	50.0	97.4	75-125	0.277	25	
Lead	23.7	2.5	"	25.0	94.9	75-125	4.37	25	
Magnesium	492	50	"	500	98.5	75-125	4.47	25	
Manganese	25.2	1.0	"	25.0	101	75-125	3.93	25	
Molybdenum	26.7	1.0	"	25.0	107	75-125	1.47	25	
Nickel	24.5	1.0	"	25.0	98.1	75-125	4.44	25	
Potassium	510	50	"	500	102	75-125	2.04	25	
Selenium	97.8	5.0	"	100	97.8	75-125	3.76	25	
Silver	2.44	0.50	"	2.50	97.8	75-125	13.9	25	
Sodium	503	50	"	500	101	75-125	2.84	25	
Strontium	25.8	5.0	"	25.0	103	75-125	2.49	25	
Thallium	90.5	25	"	100	90.5	75-125	9.47	25	
Titanium	103	10	"	100	103	75-125	2.40	25	
Vanadium	25.2	1.0	"	25.0	101	75-125	3.91	25	
Zinc	24.0	1.0	"	25.0	95.8	75-125	5.97	25	
Boron	123	2.5	"	125	98.5	75-125	4.68	25	
Tin	103	2.5	"	100	103	75-125	5.20	25	

ISSI/NASA Ames MS221-10  
 NASA Ames MS T20-G  
 Moffet Field, CA 94035-1000

Project: N218 Phase 3  
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 Project Manager: Armando Jimenez

CLS Work Order#: CRF1114  
 COC #:

**DRAFT: Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch CR05335 - EPA 3050B**

**Matrix Spike (CR05335-MS1)**

Source: CRF1106-01

Prepared: 06/30/08 Analyzed: 07/01/08

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	24600	20	mg/kg	100	24900	NR	75-125			QM-4X
Antimony	9.86	2.5	"	25.0	ND	39.5	75-125			QM-5
Arsenic	85.0	5.0	"	100	ND	85.0	75-125			
Barium	274	1.0	"	100	183	91.1	75-125			
Beryllium	3.47	0.25	"	2.50	0.898	103	75-125			
Cadmium	2.68	0.50	"	2.50	ND	107	75-125			
Calcium	4890	50	"	500	4600	58.6	75-125			QM-4X
Chromium	60.4	1.0	"	10.0	48.0	125	75-125			
Cobalt	42.4	1.0	"	25.0	16.6	103	75-125			
Copper	32.4	1.0	"	12.5	21.6	86.6	75-125			
Iron	21900	10	"	50.0	22600	NR	75-125			QM-4X
Lead	30.0	2.5	"	25.0	8.72	85.0	75-125			
Magnesium	5100	50	"	500	4710	78.0	75-125			
Manganese	834	1.0	"	25.0	1150	NR	75-125			QM-4X
Molybdenum	20.3	1.0	"	25.0	0.710	78.4	75-125			
Nickel	60.0	1.0	"	25.0	34.9	101	75-125			
Potassium	798	50	"	500	409	77.7	75-125			
Selenium	85.8	5.0	"	100	ND	85.8	75-125			
Silver	ND	0.50	"	2.50	ND		75-125			QM-5
Sodium	904	50	"	500	438	93.3	75-125			
Strontium	68.1	5.0	"	25.0	46.4	86.9	75-125			
Thallium	96.5	25	"	100	14.4	82.0	75-125			
Titanium	221	10	"	100	222	NR	75-125			QM-5
Vanadium	88.6	1.0	"	25.0	58.4	121	75-125			
Zinc	60.2	1.0	"	25.0	39.1	84.1	75-125			
Boron	85.7	2.5	"	125	3.26	66.0	75-125			QM-5
Tin	95.0	2.5	"	100	7.50	87.5	75-125			

ISSI/NASA Ames MS221-10  
NASA Ames MS T20-G  
Moffet Field, CA 94035-1000

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COC #:

**DRAFT: Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch CR05335 - EPA 3050B</b>										
<b>Matrix Spike Dup (CR05335-MSD1)</b>										
		<b>Source: CRF1106-01</b>			<b>Prepared: 06/30/08</b>		<b>Analyzed: 07/01/08</b>			
Aluminum	27800	20	mg/kg	100	24900	NR	75-125	12.4	30	QM-4X
Antimony	7.22	2.5	"	25.0	ND	28.9	75-125	31.0	30	QM-5
Arsenic	76.0	5.0	"	100	ND	76.0	75-125	11.2	30	
Barium	278	1.0	"	100	183	95.6	75-125	1.63	30	
Beryllium	3.33	0.25	"	2.50	0.898	97.4	75-125	3.93	30	
Cadmium	2.99	0.50	"	2.50	ND	120	75-125	11.1	30	
Calcium	5020	50	"	500	4600	85.5	75-125	2.71	30	
Chromium	62.3	1.0	"	10.0	48.0	143	75-125	3.01	30	QM-4X
Cobalt	39.2	1.0	"	25.0	16.6	90.5	75-125	7.95	30	
Copper	32.5	1.0	"	12.5	21.6	86.9	75-125	0.0924	30	
Iron	22500	10	"	50.0	22600	NR	75-125	2.84	30	QM-4X
Lead	30.0	2.5	"	25.0	8.72	85.1	75-125	0.0834	30	
Magnesium	4870	50	"	500	4710	32.0	75-125	4.61	30	QM-4X
Manganese	764	1.0	"	25.0	1150	NR	75-125	8.83	30	QM-4X
Molybdenum	18.5	1.0	"	25.0	0.710	71.0	75-125	9.49	30	QM-5
Nickel	58.8	1.0	"	25.0	34.9	96.0	75-125	2.02	30	
Potassium	806	50	"	500	409	79.5	75-125	1.12	30	
Selenium	83.2	5.0	"	100	ND	83.2	75-125	3.08	30	
Silver	ND	0.50	"	2.50	ND		75-125		30	QM-5
Sodium	898	50	"	500	438	92.1	75-125	0.666	30	
Strontium	69.8	5.0	"	25.0	46.4	93.9	75-125	2.54	30	
Thallium	100	25	"	100	14.4	86.0	75-125	4.06	30	
Titanium	224	10	"	100	222	3.00	75-125	1.57	30	QM-5
Vanadium	84.2	1.0	"	25.0	58.4	104	75-125	4.98	30	
Zinc	58.8	1.0	"	25.0	39.1	78.5	75-125	2.35	30	
Boron	75.6	2.5	"	125	3.26	57.8	75-125	12.6	30	QM-5
Tin	95.0	2.5	"	100	7.50	87.5	75-125	0.00	30	

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ISSI/NASA Ames MS221-10  
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### Notes and Definitions

- QM-5 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
- QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

# CALIFORNIA LABORATORY SERVICES

3249 Fitzgerald Road Rancho Cordova, CA 95742

June 13, 2008

CLS Work Order #: CRF0499  
COC #:

Armando Jimenez  
ISSI/NASA Ames MS221-10  
NASA Ames MS T20-G  
Moffet Field, CA 94035-1000

**Project Name: N218 Phase 3**

Enclosed are the results of analyses for samples received by the laboratory on 06/11/08 17:15. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that the results are in compliance both technically and for completeness.

Analytical results are attached to this letter. Please call if we can provide additional assistance.

Sincerely,



James Liang, Ph.D.  
Laboratory Director

CA DOHS ELAP Accreditation/Registration number 1233

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ISSI/NASA Ames MS221-10	Project: N218 Phase 3	
NASA Ames MS T20-G	Project Number: 06-10-N110-100	<b>CLS Work Order #: CRF0499</b>
Moffet Field, CA 94035-1000	Project Manager: Armando Jimenez	COC #:

## Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>061008Sphere5 (CRF0499-01) Soil</b> <b>Sampled: 06/10/08 15:00</b> <b>Received: 06/11/08 17:15</b>									
Hexavalent Chromium	520000	20000	µg/kg	2000	CR04789	06/12/08	06/12/08	EPA 7199	

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ISSI/NASA Ames MS221-10	Project: N218 Phase 3	
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Moffet Field, CA 94035-1000	Project Manager: Armando Jimenez	COC #:

## Metals by EPA 6000/7000 Series Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>061008Sphere5 (CRF0499-01) Soil Sampled: 06/10/08 15:00 Received: 06/11/08 17:15</b>									
Lead	12000	25	mg/kg	10	CR04846	06/13/08	06/13/08	EPA 6010B	

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ISSI/NASA Ames MS221-10	Project: N218 Phase 3	
NASA Ames MS T20-G	Project Number: 06-10-N110-100	<b>CLS Work Order #: CRF0499</b>
Moffet Field, CA 94035-1000	Project Manager: Armando Jimenez	COC #:

## Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch CR04789 - General Prep</b>										
<b>Blank (CR04789-BLK1)</b>				Prepared & Analyzed: 06/12/08						
Hexavalent Chromium	ND	10	µg/kg							
<b>LCS (CR04789-BS1)</b>				Prepared & Analyzed: 06/12/08						
Hexavalent Chromium	48.6	10	µg/kg	50.0		97.2	80-120			
<b>LCS Dup (CR04789-BSD1)</b>				Prepared & Analyzed: 06/12/08						
Hexavalent Chromium	50.2	10	µg/kg	50.0		100	80-120	3.32	20	
<b>Matrix Spike (CR04789-MS1)</b>				Prepared & Analyzed: 06/12/08						
Hexavalent Chromium	686000	20000	µg/kg	100000		686	75-125			QM-4X
<b>Matrix Spike Dup (CR04789-MSD1)</b>				Prepared & Analyzed: 06/12/08						
Hexavalent Chromium	638000	20000	µg/kg	100000		638	75-125		25	QM-4X

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Moffet Field, CA 94035-1000	Project Manager: Armando Jimenez	COC #:

## Metals by EPA 6000/7000 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch CR04846 - EPA 3050B</b>										
<b>Blank (CR04846-BLK1)</b>										
										Prepared & Analyzed: 06/13/08
Lead	ND	2.5	mg/kg							
<b>LCS (CR04846-BS1)</b>										
										Prepared & Analyzed: 06/13/08
Lead	23.9	2.5	mg/kg	25.0		95.6	75-125			
<b>LCS Dup (CR04846-BSD1)</b>										
										Prepared & Analyzed: 06/13/08
Lead	23.8	2.5	mg/kg	25.0		95.1	75-125	0.524	25	
<b>Matrix Spike (CR04846-MS1)</b>										
										Source: CRF0503-01 Prepared & Analyzed: 06/13/08
Lead	50.8	2.5	mg/kg	25.0	28.8	87.9	75-125			
<b>Matrix Spike Dup (CR04846-MSD1)</b>										
										Source: CRF0503-01 Prepared & Analyzed: 06/13/08
Lead	51.4	2.5	mg/kg	25.0	28.8	90.1	75-125	1.08	30	

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Moffet Field, CA 94035-1000	Project Manager: Armando Jimenez	COC #:

## Polychlorinated Biphenyls by EPA Method 8082A - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### Batch CR04790 - LUFT-DHS GCNV

#### Blank (CR04790-BLK1)

Prepared & Analyzed: 06/12/08

Aroclor 1016	ND	20	µg/kg							
Aroclor 1221	ND	20	"							
Aroclor 1232	ND	20	"							
Aroclor 1242	ND	20	"							
Aroclor 1248	ND	20	"							
Aroclor 1254	ND	20	"							
Aroclor 1260	ND	20	"							
Aroclor 1268	ND	20	"							
Surrogate: Decachlorobiphenyl	6.92		"	8.33		83.0	50-150			

#### LCS (CR04790-BS1)

Prepared & Analyzed: 06/12/08

Aroclor 1260	84.3	20	µg/kg	83.3		101	29-131			
Surrogate: Decachlorobiphenyl	7.08		"	8.33		85.0	50-150			

#### LCS Dup (CR04790-BSD1)

Prepared & Analyzed: 06/12/08

Aroclor 1260	85.5	20	µg/kg	83.3		103	29-131	1.40	30	
Surrogate: Decachlorobiphenyl	7.03		"	8.33		84.4	50-150			

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ISSI/NASA Ames MS221-10  
NASA Ames MS T20-G  
Moffet Field, CA 94035-1000

Project: N218 Phase 3  
Project Number: 06-10-N110-100  
Project Manager: Armando Jimenez

**CLS Work Order #: CRF0499**  
COC #:

## Notes and Definitions

- QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

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