

Water & Soil - Chain of Custody Record & Analytical Service Request



2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (50%) 5 Day (25%) 10 Day - Standard

CAS Project No. D0803590
 CAS Contact:

Company Name & Address (Reporting Information)		Project Name		Analysis Method and/or Analytes		Preservative Code		Preservative Key	
BATTLE 3990 OLD TOWN AVE., C-205 SAN DIEGO, CA 92110		SPL GW MON 4008 Project Number 6486090		Volatile Organics GC/MS 624 <input type="checkbox"/> 8260B <input type="checkbox"/> Oxygenates <input type="checkbox"/> TPH Gas <input type="checkbox"/> TPH Gas 8015B <input type="checkbox"/> BTEX 8021B <input type="checkbox"/> MTBE 8021B <input type="checkbox"/> TPH Diesel 8015B <input type="checkbox"/> (Subcontracted) TPH Diesel Low Level 8015B <input type="checkbox"/> (Subcontracted) TPH FC <input type="checkbox"/> 8015M (Subcontracted) Semi-Volatile Organics GC/MS 625 <input type="checkbox"/> 8270C <input type="checkbox"/> (Subcontracted)		0 (7196)		0 None 1 HCL 2 HNO3 3 H2SO4 4 NaOH 5 Zn Acetate 6 Asc Acid 7 Other	
Project Manager		Project Number		Matrix		Number of Containers		Remarks	
DAVID CONNER Phone 619-726-7311 Fax		P.O. # / Billing Information 214319/BATTLE ATTN: GORDON TOMPKINS 505 KINLA AVE. COLUMBUS, OH 43201		Sampler (Print & Sign) W		1 2 1 1 1		RC LEVEL III MS/MSD RC LEVEL IV DUPLICATE EQUIPMENT BLANK	
Email Address for Result Reporting		Laboratory ID Number	Date Collected	Time Collected	Matrix	Number of Containers			
		MW-14-5	10/29/08	0815	W	1			
		MW-14-4		0851		2			
		MW-14-3		0945		1			
		MW-14-2		1041		1			
		MW-14-1		1120		1			
		DURE-05-4008		-		1			
		EB-07-10/29/08		1100		1			

Report Tier Levels - please select
 Tier I - (Results/Default if not specified) _____
 Tier II - (Results + QC) _____
 Tier III - (Data Validation Package) 10% Surcharge _____
 Tier V - (client specified) _____

EDD required Yes/No _____
 Type: _____

MRL required Yes/No _____
 MPL / POL / J required Yes/No _____

Relinquished by: (Signature) _____ Date: 10/29/08 Time: 12:30
 Relinquished by: (Signature) _____ Date: 10/29/08 Time: 13:10
 Relinquished by: (Signature) _____ Date: _____ Time: _____

Received by: (Signature) _____ Date: 10/29/08 Time: 12:30
 Received by: (Signature) _____ Date: 10/29/08 Time: 13:10
 Received by: (Signature) _____ Date: _____ Time: _____

Project Requirements (MRLs, QAPP)
 Cooler/Blank/Ice/No Ice _____
 Temperature _____ °C

DIVIDER SHEET

ANALYTICAL DATA
FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Battelle
Project Name : JPL Groundwater Monitoring 4Q08
Project Number : G486090
Sample Matrix : WATER

Service Request : P0803590
Date Collected : 10/29/08
Date Received : 10/29/08

Chromium, Hexavalent

Prep Method : None
Analysis Method : 7196A
Test Notes :

Units : mg/L (ppm)
Basis : NA

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-14-5	P0803590-001	0.010	0.006	1	NA	10/29/08 15:10	ND	
MW-14-4	P0803590-002	0.010	0.006	1	NA	10/29/08 15:10	ND	
MW-14-3	P0803590-003	0.010	0.006	1	NA	10/29/08 15:10	ND	
MW-14-2	P0803590-004	0.010	0.006	1	NA	10/29/08 15:10	ND	
MW-14-1	P0803590-005	0.010	0.006	1	NA	10/29/08 15:10	ND	
DUPE-05-4Q08	P0803590-006	0.010	0.006	1	NA	10/29/08 15:10	ND	
EB-07-10/29/08	P0803590-007	0.010	0.006	1	NA	10/29/08 15:10	ND	
Method Blank	P0803590-MB	0.010	0.006	1	NA	10/29/08 15:10	ND	

Approved By

Date :

11/10/08

CAS SR #P0803610

Table of Contents

Cover Letter..... 1

Case Narrative..... 2

Sample Cross-Reference..... 3

Acronym List..... 4

Chain of Custody..... 5

Internal Chain of Custody..... 6

Sample Acceptance Check Form..... 7

Hexavalent Chromium Analytical Data 8-13

Hexavalent Chromium Raw Data..... 14-25

LABORATORY REPORT

November 10, 2008

David Conner
Battelle
3990 Old Town Ave., Suite C-205
San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on October 30, 2008. For your reference, these analyses have been assigned our service request number P0803610.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 29 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.



Sue Anderson
Project Manager

Page
1 of 25

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08 / G486090

CAS Project No: P0803610

CASE NARRATIVE

The samples were received intact under chain of custody on October 30, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08/G486090

Service Request: P0803610

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
P0803610-001	MW-22-5	10/30/08	08:45
P0803610-002	MW-22-4	10/30/08	09:15
P0803610-003	MW-22-3	10/30/08	09:43
P0803610-004	MW-22-2	10/30/08	10:12
P0803610-005	MW-22-1	10/30/08	11:07
P0803610-006	DUPE-06-4Q08	10/30/08	00:00
P0803610-007	EB-08-10/30/08	10/30/08	10:52

Columbia Analytical Services, Inc.

Acronyms

CA LUFT	California DHS LUFT Method
ASTM	American Society for Testing and Materials
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CRDL	Contract Required Detection Limit
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOH or DHS	Department of Health Services
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified Method
MDL	Method Detection Limit
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl <i>tert</i> -Butyl Ether
NA	Not Applicable
NC	Not Calculated
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	<i>Standard Methods for the Examination of Water and Wastewater</i> , 19th Ed., 1995.
SW	<i>Test Methods for Evaluating Solid Waste, Physical/Chemical Methods</i> SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)
VOC	Volatile Organic Compound(s)

Qualifiers

U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
J	The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.
B	Analyte detected in the method blank above MRL (PQL).
E	Estimated; result based on response which exceeded the instrument calibration range.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
D	The reported result is from a dilution.
X	See case narrative.



2655 Park Center Drive, Suite A
 Simi Valley, California 93065
 Phone (805) 526-7161
 Fax (805) 526-7270

Water & Soil - Chain of Custody Record & Analytical Service Request

Requested Turnaround Time in Business Days (Surcharges) please circle
 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard

CAS Project No. P0803610
 CAS Contact:

Company Name & Address (Reporting Information)		Project Name		Analysis Method and/or Analytes		Preservative Code		Preservative Key	
BATTELLE 3990 OLD DUNN AVE., C-205 SAN DIEGO, CA 92110		JPL GW MON 4208 Project Number 648690		0 (2/9) III				0 None 1 HCL 2 HNO3 3 H2SO4 4 NaOH 5 Zn Acetate 6 Asc Acid 7 Other	
Project Manager DAVID CONNER		P.O. # / Billing Information 214319 / BATTERLLE		Volatile Organics G/CMS <input type="checkbox"/> 624 <input type="checkbox"/> 82608 <input type="checkbox"/> Oxygenates <input type="checkbox"/> TPH Gas					
Phone 619-726-7311		ATTN: GERALD TOMPKINS 505 KING AVE. COLUMBUS, OH 43201		TPH Gas 8015B <input type="checkbox"/> BTEX 8021B <input type="checkbox"/> MTRBE 8021B <input type="checkbox"/>					
Email Address for Result Reporting		Sampler (Print & Sign)		TPH Diesel 8015B <input type="checkbox"/> (Subcontracted) TPH Diesel Low Level 8015B <input type="checkbox"/> (Subcontracted)					
Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Matrix	Number of Containers	Remarks			
MW-22-5	1	10/30/08	845	W	1	QC LEAD III			
MW-22-4	2	915	915			DUPLICATE			
MW-22-3	3	943	943			EQUIP. BLANK			
MW-22-2	4	1012	1012						
MW-22-1	5	1107	1107						
DUP-06-4208	6	-	-						
FB-08-10/30/08	7	1052	1052						

Report Tier Levels - please select
 Tier I - (Results/Default if not specified) ___
 Tier II - (Results + QC) ___
 Tier III - (Data Validation Package) 10% Surcharge
 Tier V - (client specified) ___

MRL required Yes (No) No
 MTR / PQL / J required Yes (No) No
 EDD required Yes (No) No
 Type: geo-factory

Relinquished by: (Signature) [Signature] Date: 10/30/08 Time: 12:38
 Relinquished by: (Signature) [Signature] Date: 10/30/08 Time: 13:15
 Relinquished by: (Signature) [Signature] Date: 10/30/08 Time: 13:15

Project Requirements (MRLs, QAPP)
 Cooler / Blank Ice / No Ice
 Temperature 3 °C

DIVIDER SHEET

ANALYTICAL DATA

FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Battelle
Project Name : JPL Groundwater Monitoring 4Q08
Project Number : G486090
Sample Matrix : WATER

Service Request : P0803610
Date Collected : 10/30/08
Date Received : 10/30/08

Chromium, Hexavalent

Prep Method : None
Analysis Method : 7196A
Test Notes :

Units : mg/L (ppm)
Basis : NA

Sample Name	Lab Code	PQL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-22-5	P0803610-001	0.010	1	NA	10/30/08 15:20	ND	
MW-22-4	P0803610-002	0.010	1	NA	10/30/08 15:20	ND	
MW-22-3	P0803610-003	0.010	1	NA	10/30/08 15:20	ND	
MW-22-2	P0803610-004	0.010	1	NA	10/30/08 15:20	ND	
MW-22-1	P0803610-005	0.010	1	NA	10/30/08 15:20	ND	
DUPE-06-4Q08	P0803610-006	0.010	1	NA	10/30/08 15:20	ND	
EB-08-10/30/08	P0803610-007	0.010	1	NA	10/30/08 15:20	ND	
Method Blank	P0803610-MB	0.010	1	NA	10/30/08 15:20	ND	

Approved By  Date : 11/10/08

CAS SR #P0803634

Table of Contents

Cover Letter..... 1

Case Narrative..... 2

Sample Cross-Reference..... 3

Acronym List..... 4

Chain of Custody..... 5

Internal Chain of Custody..... 6

Sample Acceptance Check Form..... 7

Hexavalent Chromium Analytical Data 8-13

Hexavalent Chromium Raw Data..... 14-24

LABORATORY REPORT

November 11, 2008

David Conner
Battelle
3990 Old Town Ave., Suite C-205
San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on October 31, 2008. For your reference, these analyses have been assigned our service request number P0803634.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 24 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.



Sue Anderson
Project Manager

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08 / G486090

CAS Project No: P0803634

CASE NARRATIVE

The samples were received intact under chain of custody on October 31, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08/G486090

Service Request: P0803634

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
P0803634-001	MW-4-5	10/31/08	08:04
P0803634-002	MW-4-4	10/31/08	08:33
P0803634-003	MW-4-3	10/31/08	09:17
P0803634-004	MW-4-2	10/31/08	09:47
P0803634-005	MW-4-1	10/31/08	10:25
P0803634-006	EB-09-10/31/08	10/31/08	10:02

Columbia Analytical Services, Inc.

Acronyms

CA LUFT	California DHS LUFT Method
ASTM	American Society for Testing and Materials
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CRDL	Contract Required Detection Limit
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOH or DHS	Department of Health Services
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified Method
MDL	Method Detection Limit
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl <i>tert</i> -Butyl Ether
NA	Not Applicable
NC	Not Calculated
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	<i>Standard Methods for the Examination of Water and Wastewater</i> , 19th Ed., 1995.
SW	<i>Test Methods for Evaluating Solid Waste, Physical/Chemical Methods</i> SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)
VOC	Volatile Organic Compound(s)

Qualifiers

U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
J	The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.
B	Analyte detected in the method blank above MRL (PQL).
E	Estimated; result based on response which exceeded the instrument calibration range.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
D	The reported result is from a dilution.
X	See case narrative.

Water & Soil - Chain of Custody Record & Analytical Service Request



2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Company Name & Address (Reporting Information) BATELLE 3990 OLD TOWN AVE., C-205 SAN DIEGO, CA 92110		Project Name JPL GW MON 4008		Requested Turnaround Time in Business Days (Surcharges) please circle 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard		CAS Project No. POSO3634	
Project Manager DAVID CONNER		Project Number 6486090		CAS Contact:		Preservative Key 0 None 1 HCL 2 HNO3 3 H2SO4 4 NaOH 5 Zn Acetate 6 Asc Acid 7 Other	
Phone 619-726-7311		Fax		PO. # / Billing Information 24319/BATELLE ATTN: GERALD TOMPKINS 505 KING AVE. COLUMBUS, OH 43201		Remarks MS/MSD, DL LEVEL III EDVIP. BLANK	
Email Address for Result Reporting				Sampler (Print & Sign)			
Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Matrix	Number of Containers	Analysis Method and/or Analytes	
MW-4-5	①	10/31/08	804	W	1	Volatile Organics GC/MS 624 <input type="checkbox"/> 8260B <input type="checkbox"/> Oxygenates <input type="checkbox"/> TPH Gas <input type="checkbox"/>	
MW-4-4	②	11/1/08	833	W	2	TPH Diesel Low Level 8015B <input type="checkbox"/> (Subcontracted) BTEX 8021B <input type="checkbox"/> MTBE 8021B <input type="checkbox"/>	
MW-4-3	③	11/1/08	917	W	1	TPH Gas 8015B <input type="checkbox"/> MTBE 8021B <input type="checkbox"/>	
MW-4-2	④	11/1/08	947	W	1	TPH Diesel 8015B <input type="checkbox"/> (Subcontracted) TPH FC 8015M <input type="checkbox"/> (Subcontracted)	
MW-4-1	⑤	10/31/08	1025	W	1	Semi-Volatile Organics GC/MS 625 <input type="checkbox"/> 8270C <input type="checkbox"/> (Subcontracted)	
EB-09-10/31/08	⑥	10/31/08	1002	W	1	TPH Diesel Low Level 8015B <input type="checkbox"/> (Subcontracted) TPH Gas 8015B <input type="checkbox"/> MTBE 8021B <input type="checkbox"/>	
						Volatile Organics GC/MS 624 <input type="checkbox"/> 8260B <input type="checkbox"/> Oxygenates <input type="checkbox"/> TPH Gas <input type="checkbox"/>	
						TPH Diesel 8015B <input type="checkbox"/> (Subcontracted) TPH FC 8015M <input type="checkbox"/> (Subcontracted)	
						Semi-Volatile Organics GC/MS 625 <input type="checkbox"/> 8270C <input type="checkbox"/> (Subcontracted)	
						TPH Diesel Low Level 8015B <input type="checkbox"/> (Subcontracted) BTEX 8021B <input type="checkbox"/> MTBE 8021B <input type="checkbox"/>	
						TPH Gas 8015B <input type="checkbox"/> MTBE 8021B <input type="checkbox"/>	
						TPH Diesel 8015B <input type="checkbox"/> (Subcontracted) TPH FC 8015M <input type="checkbox"/> (Subcontracted)	
						Semi-Volatile Organics GC/MS 625 <input type="checkbox"/> 8270C <input type="checkbox"/> (Subcontracted)	
						Volatile Organics GC/MS 624 <input type="checkbox"/> 8260B <input type="checkbox"/> Oxygenates <input type="checkbox"/> TPH Gas <input type="checkbox"/>	
						TPH Diesel Low Level 8015B <input type="checkbox"/> (Subcontracted) BTEX 8021B <input type="checkbox"/> MTBE 8021B <input type="checkbox"/>	
						TPH Gas 8015B <input type="checkbox"/> MTBE 8021B <input type="checkbox"/>	
						TPH Diesel 8015B <input type="checkbox"/> (Subcontracted) TPH FC 8015M <input type="checkbox"/> (Subcontracted)	
						Semi-Volatile Organics GC/MS 625 <input type="checkbox"/> 8270C <input type="checkbox"/> (Subcontracted)	
						Volatile Organics GC/MS 624 <input type="checkbox"/> 8260B <input type="checkbox"/> Oxygenates <input type="checkbox"/> TPH Gas <input type="checkbox"/>	

Report Tier Levels - please select
 Tier I - (Results/Default if not specified) _____
 Tier II - (Results + QC) _____
 Tier III - (Data Validation Package) 10% Surcharge _____
 Tier V - (client specified) _____

MRL required Yes/No _____
MDL / PQL / J required Yes/No _____
EDD required Yes/No _____
 Type: grab

Relinquished by: (Signature)
 Relinquished by: (Signature)
 Relinquished by: (Signature)

Date: 10/31/08 **Time:** 11:30
Date: 10/31/08 **Time:** 2:30
Date: _____ **Time:** _____

Received by: (Signature)
 Received by: (Signature)
 Received by: (Signature)

Project Requirements (MRLs, QAPP)
 Cooler / Blank / Ice / No Ice
 Temperature 20C °C

DIVIDER SHEET

ANALYTICAL DATA
FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Battelle
Project Name : JPL Groundwater Monitoring 4Q08
Project Number : G486090
Sample Matrix : WATER

Service Request : P0803634
Date Collected : 10/31/08
Date Received : 10/31/08

Chromium, Hexavalent

Prep Method : None
Analysis Method : 7196A
Test Notes :

Units : mg/L (ppm)
Basis : NA

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-4-5	P0803634-001	0.010	0.006	1	NA	10/31/08 14:20	ND	
MW-4-4	P0803634-002	0.010	0.006	1	NA	10/31/08 14:20	ND	
MW-4-3	P0803634-003	0.010	0.006	1	NA	10/31/08 14:20	ND	
MW-4-2	P0803634-004	0.010	0.006	1	NA	10/31/08 14:20	ND	
MW-4-1	P0803634-005	0.010	0.006	1	NA	10/31/08 14:20	ND	
EB-09-10/31/08	P0803634-006	0.010	0.006	1	NA	10/31/08 14:20	ND	
Method Blank	P0803634-MB	0.010	0.006	1	NA	10/31/08 14:20	ND	

Approved By



Date :

11/11/08

CAS SR #P0803661

Table of Contents

Cover Letter..... 1

Case Narrative..... 2

Sample Cross-Reference..... 3

Acronym List..... 4

Chain of Custody..... 5

Internal Chain of Custody..... 6-7

Sample Acceptance Check Form..... 8-9

Hexavalent Chromium Analytical Data 10-15

Hexavalent Chromium Raw Data..... 16-28

LABORATORY REPORT

November 17, 2008

David Conner
Battelle
3990 Old Town Ave., Suite C-205
San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 4, 2008. For your reference, these analyses have been assigned our service request number P0803661.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 28 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.



Sue Anderson
Project Manager

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08 / G486090

CAS Project No: P0803661

CASE NARRATIVE

The samples were received intact under chain of custody on November 4, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08/G486090

Service Request: P0803661

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
P0803661-001	MW-11-5	11/4/08	07:57
P0803661-002	MW-11-4	11/4/08	08:31
P0803661-003	MW-11-3	11/4/08	09:38
P0803661-004	MW-11-2	11/4/08	10:07
P0803661-005	MW-11-1	11/4/08	11:00
P0803661-006	DUPE-07-4Q08	11/4/08	00:00
P0803661-007	EB-11-11/4/08	11/4/08	10:33

Columbia Analytical Services, Inc.

Acronyms

CA LUFT	California DHS LUFT Method
ASTM	American Society for Testing and Materials
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CRDL	Contract Required Detection Limit
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOH or DHS	Department of Health Services
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified Method
MDL	Method Detection Limit
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl <i>tert</i> -Butyl Ether
NA	Not Applicable
NC	Not Calculated
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	<i>Standard Methods for the Examination of Water and Wastewater</i> , 19th Ed., 1995.
SW	<i>Test Methods for Evaluating Solid Waste, Physical/Chemical Methods</i> SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)
VOC	Volatile Organic Compound(s)

Qualifiers

U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
J	The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.
B	Analyte detected in the method blank above MRL (PQL).
E	Estimated; result based on response which exceeded the instrument calibration range.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
D	The reported result is from a dilution.
X	See case narrative.

DIVIDER SHEET

ANALYTICAL DATA
FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Battelle
Project Name : JPL Groundwater Monitoring 4Q08
Project Number : G486090
Sample Matrix : WATER

Service Request : P0803661
Date Collected : 11/04/08
Date Received : 11/04/08

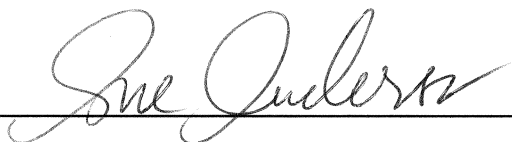
Chromium, Hexavalent

Prep Method : None
Analysis Method : 7196A
Test Notes :

Units : mg/L (ppm)
Basis : NA

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-11-5	P0803661-001	0.010	0.006	1	NA	11/04/08 16:15	ND	
MW-11-4	P0803661-002	0.010	0.006	1	NA	11/04/08 16:15	ND	
MW-11-3	P0803661-003	0.010	0.006	1	NA	11/04/08 16:15	ND	
MW-11-2	P0803661-004	0.010	0.006	1	NA	11/04/08 16:15	ND	
MW-11-1	P0803661-005	0.010	0.006	1	NA	11/04/08 16:15	ND	
DUPE-07-4Q08	P0803661-006	0.010	0.006	1	NA	11/04/08 16:15	ND	
EB-11-11/4/08	P0803661-007	0.010	0.006	1	NA	11/04/08 16:15	ND	
Method Blank	P0803661-MB	0.010	0.006	1	NA	11/04/08 16:15	ND	

Approved By



Date :

11/17/08

CAS SR #P0803680

Table of Contents

Cover Letter..... 1

Case Narrative..... 2

Sample Cross-Reference..... 3

Acronym List..... 4

Chain of Custody..... 5

Internal Chain of Custody..... 6

Sample Acceptance Check Form..... 7

Hexavalent Chromium Analytical Data 8-13

Hexavalent Chromium Raw Data..... 14-26

LABORATORY REPORT

November 17, 2008

David Conner
Battelle
3990 Old Town Ave., Suite C-205
San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 5, 2008. For your reference, these analyses have been assigned our service request number P0803680.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 26 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.



Sue Anderson
Project Manager

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08 / G486090

CAS Project No: P0803680

CASE NARRATIVE

The samples were received intact under chain of custody on November 5, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08/G486090

Service Request: P0803680

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
P0803680-001	MW-24-5	11/5/08	08:06
P0803680-002	MW-24-4	11/5/08	08:45
P0803680-003	MW-24-3	11/5/08	09:25
P0803680-004	MW-24-2	11/5/08	10:26
P0803680-005	MW-24-1	11/5/08	11:01
P0803680-006	DUPE-08-4Q08	11/5/08	00:00
P0803680-007	EB-12-11/5/08	11/5/08	10:48

Columbia Analytical Services, Inc.

Acronyms

CA LUFT	California DHS LUFT Method
ASTM	American Society for Testing and Materials
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CRDL	Contract Required Detection Limit
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOH or DHS	Department of Health Services
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified Method
MDL	Method Detection Limit
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl <i>tert</i> -Butyl Ether
NA	Not Applicable
NC	Not Calculated
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	<i>Standard Methods for the Examination of Water and Wastewater</i> , 19th Ed., 1995.
SW	<i>Test Methods for Evaluating Solid Waste, Physical/Chemical Methods</i> SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)
VOC	Volatile Organic Compound(s)

Qualifiers

U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
J	The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.
B	Analyte detected in the method blank above MRL (PQL).
E	Estimated; result based on response which exceeded the instrument calibration range.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
D	The reported result is from a dilution.
X	See case narrative.

Water & Soil - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A
 Simi Valley, California 93065
 Phone (805) 526-7161
 Fax (805) 526-7270



CAS Project No. 20803680
 CAS Contact:

Requested Turnaround Time in Business Days (Surcharges) please circle
 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard

Company Name & Address (Reporting Information)		Project Name		Analysis Method and/or Analytes		Preservative Code		Preservative Key	
BATTLE 3990 OLD TOWN AVE., C-205 SAN DIEGO, CA 92110		JPL GW MON 4908 Project Number 6486090		0		0		0 None 1 HCL 2 HNO3 3 H2SO4 4 NaOH 5 Zn Acetate 6 Asc Acid 7 Other	
Project Manager DAVID CONNER		P.O. # / Billing Information 24319/BATTELLE ATTN: GERALD TOMPKINS 505 KIML AVE. COLUMBIUS, OH 43201		Semi-Volatile Organics GC/MS TPH FC 8015M (Subcontracted) TPH Diesel 8015B (Subcontracted) TPH Diesel Low Level 8015B (Subcontracted) BTEX 8021B MTRB 8021B TPH Gas 8015B 624 8260B 8260B Oxygenates TPH Gas		Volatile Organics GC/MS TPH Gas 8015B BTEX 8021B MTRB 8021B TPH Diesel 8015B (Subcontracted) TPH Diesel Low Level 8015B (Subcontracted) TPH FC 8015M (Subcontracted) 625 8270C (Subcontracted)		Remarks DUPLICATE EQUIP. BLANK	
Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Matrix	Number of Containers				
MW-24-5	1	11/5/08	806	W	1				
MW-24-4	2	845							
MW-24-3	3	925							
MW-24-2	4	1026							
MW-24-1	5	1101							
DUPS - 08 - 4908	6	-							
EB-12-11/5/08	7	1048							

Report Tier Levels - please select
 Tier I - (Results/Default if not specified) _____
 Tier II - (Results + QC) _____
 Tier III - (Data Validation Package) 10% Surcharge _____
 Tier V - (client specified) _____

EDD required Yes/No: Yes / No
 Type: Exo Tracker

MFL required Yes/No: Yes / No
 MFL / PGL / J required Yes/No: _____

Relinquished by: (Signature) _____ Date: 11/5/08 Time: 11:58
 Relinquished by: (Signature) _____ Date: 11/5/08 Time: 12:47
 Relinquished by: (Signature) _____ Date: _____ Time: _____

Project Requirements (MRLs, GAPP)
 Cooler / Blank / Ice: 3
 Temperature: _____ °C

DIVIDER SHEET

ANALYTICAL DATA
FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Battelle
Project Name : JPL Groundwater Monitoring 4Q08
Project Number : G486090
Sample Matrix : WATER

Service Request : P0803680
Date Collected : 11/05/08
Date Received : 11/05/08

Chromium, Hexavalent

Prep Method : None
Analysis Method : 7196A
Test Notes :

Units : mg/L (ppm)
Basis : NA

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-24-5	P0803680-001	0.010	0.006	1	NA	11/05/08 15:45	ND	
MW-24-4	P0803680-002	0.010	0.006	1	NA	11/05/08 15:45	ND	
MW-24-3	P0803680-003	0.010	0.006	1	NA	11/05/08 15:45	ND	
MW-24-2	P0803680-004	0.010	0.006	1	NA	11/05/08 15:45	ND	
MW-24-1	P0803680-005	0.010	0.006	1	NA	11/05/08 15:45	ND	
DUPE-08-4Q08	P0803680-006	0.010	0.006	1	NA	11/05/08 15:45	ND	
EB-12-11/5/08	P0803680-007	0.010	0.006	1	NA	11/05/08 15:45	ND	
Method Blank	P0803680-MB	0.010	0.006	1	NA	11/05/08 15:45	ND	

Approved By 

Date : 11/17/08

CAS SR #P0803704

Table of Contents

Cover Letter..... 1

Case Narrative..... 2

Sample Cross-Reference..... 3

Acronym List..... 4

Chain of Custody..... 5

Internal Chain of Custody..... 6

Sample Acceptance Check Form..... 7

Hexavalent Chromium Analytical Data 8-13

Hexavalent Chromium Raw Data..... 14-25

LABORATORY REPORT

November 18, 2008

David Conner
Battelle
3990 Old Town Ave., Suite C-205
San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 6, 2008. For your reference, these analyses have been assigned our service request number P0803704.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains _____ pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.



Sue Anderson
Project Manager

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08 / G486090

CAS Project No: P0803704

CASE NARRATIVE

The samples were received intact under chain of custody on November 6, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08/G486090

Service Request: P0803704

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
P0803704-001	MW-25-5	11/6/08	08:40
P0803704-002	MW-25-4	11/6/08	09:13
P0803704-003	MW-25-3	11/6/08	09:45
P0803704-004	MW-25-2	11/6/08	10:15
P0803704-005	MW-25-1	11/6/08	10:44
P0803704-006	EB-13-11/06/08	11/6/08	10:35

Columbia Analytical Services, Inc.

Acronyms

CA LUFT	California DHS LUFT Method
ASTM	American Society for Testing and Materials
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CRDL	Contract Required Detection Limit
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOH or DHS	Department of Health Services
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified Method
MDL	Method Detection Limit
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl <i>tert</i> -Butyl Ether
NA	Not Applicable
NC	Not Calculated
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	<i>Standard Methods for the Examination of Water and Wastewater</i> , 19th Ed., 1995.
SW	<i>Test Methods for Evaluating Solid Waste, Physical/Chemical Methods</i> SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLIC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)
VOC	Volatile Organic Compound(s)

Qualifiers

U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
J	The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.
B	Analyte detected in the method blank above MRL (PQL).
E	Estimated; result based on response which exceeded the instrument calibration range.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
D	The reported result is from a dilution.
X	See case narrative.

Water & Soil - Chain of Custody Record & Analytical Service Request



2655 Park Center Drive, Suite A
 Simi Valley, California 93065
 Phone (805) 526-7161
 Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard

CAS Project No. 08803704
 CAS Contact:

Company Name & Address (Reporting Information)		Project Name		Analysis Method and/or Analytes		Preservative Key	
BATTLE 3990 OLD TOWN AVE., C-205 SAN DIEGO, CA 92110		JPL GW MON 4208 Project Number 6481090		Volatile Organics GC/MS 624 <input type="checkbox"/> 8260B <input type="checkbox"/> Oxygenates <input type="checkbox"/> TPH Gas <input type="checkbox"/> TPH Gas 8015B <input type="checkbox"/> BTX 8021B <input type="checkbox"/> MTBE 8021B <input type="checkbox"/> TPH Diesel 8015B <input type="checkbox"/> (Subcontracted) TPH Diesel Low Level 8015B <input type="checkbox"/> (Subcontracted) TPH FC <input type="checkbox"/> 8015M (Subcontracted) Semi-Volatile Organics GC/MS 625 <input type="checkbox"/> 8270C <input type="checkbox"/> (Subcontracted)		0 None 1 HCL 2 HNO3 3 H2SO4 4 NaOH 5 Zn Acetate 6 Asc Acid 7 Other	
Project Manager		P.O. # / Billing Information		Preservative Code		Remarks	
DAVID CONNER Phone 619-726-7311 Fax		214319/BATTLE ATTN: GERALD TOMPKINS 505 KING AVE. COLUMBUS, OH 43201		(718) [Handwritten]		[Handwritten]	
Email Address for Result Reporting		Sampler (Print & Sign)		Matrix		Number of Containers	
Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Matrix	Number of Containers		
MW-25-5	1	11/06/08	0840	W	7		
MW-25-4	2	0913					
MW-25-3	3	0945					
MW-25-2	4	1015					
MW-25-1	5	1044					
EB-13-1/06/08	6	1035				[Handwritten]	

Report Tier Levels - please select
 Tier I - (Results/Default if not specified) _____
 Tier II - (Results + QC) _____
 Tier III - (Data Validation Package) 10% Surcharge _____
 Tier V - (client specified) _____

MRL required Yes / No _____
 MDY / POI / J required Yes / No _____

EDD required Yes / No _____
 Type: _____

Relinquished by: (Signature) _____ Date: 11/06/08 Time: 12:00
 Relinquished by: (Signature) _____ Date: 11/11/08 Time: 12:45
 Relinquished by: (Signature) _____ Date: _____ Time: _____

Received by: (Signature) _____ Date: 11/06/08 Time: 12:00
 Received by: (Signature) _____ Date: 11/11/08 Time: 12:45
 Received by: (Signature) _____ Date: _____ Time: _____

Project Requirements (MRLs, QAPP) _____
 Cooler/Blank/Ice/No Ice _____
 Temperature _____ °C

DIVIDER SHEET

ANALYTICAL DATA
FOR

Hexavalent Chromium

ANALYSIS

Analytical Report

Client : Battelle
 Project Name : JPL Groundwater Monitoring 4Q08
 Project Number : G486090
 Sample Matrix : WATER

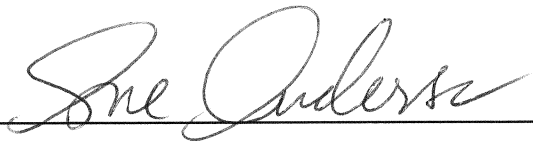
Service Request : P0803704
 Date Collected : 11/06/08
 Date Received : 11/06/08

Chromium, Hexavalent

Prep Method : None
 Analysis Method : 7196A
 Test Notes :

Units : mg/L (ppm)
 Basis : NA

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-25-5	P0803704-001	0.010	0.006	1	NA	11/16/08 14:50	ND	
MW-25-4	P0803704-002	0.010	0.006	1	NA	11/16/08 14:50	ND	
MW-25-3	P0803704-003	0.010	0.006	1	NA	11/16/08 14:50	ND	
MW-25-2	P0803704-004	0.010	0.006	1	NA	11/16/08 14:50	ND	
MW-25-1	P0803704-005	0.010	0.006	1	NA	11/16/08 14:50	ND	
EB-13-11/06/08	P0803704-006	0.010	0.006	1	NA	11/16/08 14:50	ND	
Method Blank	P0803704-MB	0.010	0.006	1	NA	11/16/08 14:50	ND	

Approved By 

Date : 11/18/08

LABORATORY REPORT

November 20, 2008

David Conner
Battelle
3990 Old Town Ave., Suite C-205
San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 7, 2008. For your reference, these analyses have been assigned our service request number P0803721.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 24 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.



Sue Anderson
Project Manager

Client: Battelle CAS Project No: P0803721
Project: JPL Groundwater Monitoring 4Q08 / G486090

CASE NARRATIVE

The samples were received intact under chain of custody on November 7, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08/G486090

Service Request: P0803721

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
P0803721-001	MW-26-2	11/7/08	07:50
P0803721-002	MW-26-1	11/7/08	08:30
P0803721-003	EB-14-11/-7/08	11/7/08	08:17

Columbia Analytical Services, Inc.

Acronyms

CA LUFT	California DHS LUFT Method
ASTM	American Society for Testing and Materials
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CRDL	Contract Required Detection Limit
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOH or DHS	Department of Health Services
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified Method
MDL	Method Detection Limit
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl <i>tert</i> -Butyl Ether
NA	Not Applicable
NC	Not Calculated
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	<i>Standard Methods for the Examination of Water and Wastewater</i> , 19th Ed., 1995.
SW	<i>Test Methods for Evaluating Solid Waste, Physical/Chemical Methods</i> SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)
VOC	Volatile Organic Compound(s)

Qualifiers

U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
J	The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.
B	Analyte detected in the method blank above MRL (PQL).
E	Estimated; result based on response which exceeded the instrument calibration range.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
D	The reported result is from a dilution.
X	See case narrative.

2655 Park Center Drive, Suite A
 Simi Valley, California 93065
 Phone (805) 526-7161
 Fax (805) 526-7270



Company Name & Address (Reporting Information) BATTELLE 3990 OLD TOWN AVE, C-205 SAN DIEGO, CA 92110		Project Name JPL CW MON. 5008 4008		Project Number 6486090		Requested Turnaround Time in Business Days (Surcharges) please circle 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard		CAS Project No. P0003721							
Project Manager DAVID CONNER		P.O. # / Billing Information 214819/BATTELLE ATTN: GERALD TOMPKINS 505 KING AVE. COLUMBUS, OH 43201		Project Name JPL CW MON. 5008 4008		Project Number 6486090		CAS Contact:							
Phone 619-726-7311		Fax		Project Name JPL CW MON. 5008 4008		Project Number 6486090		CAS Contact:							
Email Address for Result Reporting				Sampler (Print & Sign)				Analysis Method and/or Analytes							
Laboratory ID Number		Date Collected		Time Collected		Matrix		Number of Containers		Preservative Code		Preservative Key		Remarks	
MW-26-2		11/07/08		0750		LW		2		0		None		MS/MSD	
MW-26-1		2		0830				1		1		1		EQUIPMENT BLANK	
EB-14-11/07/08		3		0817				1		1		1		EQUIPMENT BLANK	
Client Sample ID		Date Collected		Time Collected		Matrix		Number of Containers		Preservative Code		Preservative Key		Remarks	
MW-26-2		11/07/08		0750		LW		2		0		None		MS/MSD	
MW-26-1		2		0830				1		1		1		EQUIPMENT BLANK	
EB-14-11/07/08		3		0817				1		1		1		EQUIPMENT BLANK	

Project Requirements (MRLs, QAPP)
 EDD required Yes/No: Yes
 Type: Geopicker
 MRL required Yes/No: Yes
 MDL / POL / J required Yes/No: Yes

Report Tier Levels - please select
 Tier I - (Results/Default if not specified)
 Tier II - (Results + QC)
 Tier III - (Data Validation Package) 10% Surcharge
 Tier V - (client specified)

Relinquished by: (Signature)
 Relinquished by: (Signature)
 Relinquished by: (Signature)

Received by: (Signature) [Signature]
 Date: 11/07/08
 Time: 1000

Received by: (Signature) [Signature]
 Date: 11/07/08
 Time: 1105

Cooler/Blank / Ice No Ice 3
 Temperature 3 °C

DIVIDER SHEET

ANALYTICAL DATA
FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Battelle
Project Name : JPL Groundwater Monitoring 4Q08
Project Number : G486090
Sample Matrix : WATER

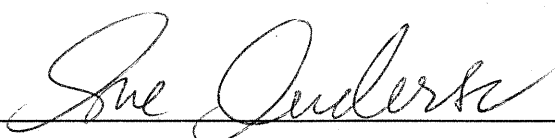
Service Request : P0803721
Date Collected : 11/07/08
Date Received : 11/07/08

Chromium, Hexavalent

Prep Method : None
Analysis Method : 7196A
Test Notes :

Units : mg/L (ppm)
Basis : NA

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-26-2	P0803721-001	0.010	0.006	1	NA	11/07/08 15:05	ND	
MW-26-1	P0803721-002	0.010	0.006	1	NA	11/07/08 15:05	ND	
EB-14-111-7/08	P0803721-003	0.010	0.006	1	NA	11/07/08 15:05	ND	
Method Blank	P0803721-MB	0.010	0.006	1	NA	11/07/08 15:05	ND	

Approved By 

Date : 11/20/08 **9**

CAS SR #P0803736

Table of Contents

Cover Letter..... 1

Case Narrative..... 2

Sample Cross-Reference..... 3

Acronym List..... 4

Chain of Custody..... 5

Internal Chain of Custody..... 6

Sample Acceptance Check Form..... 7

Hexavalent Chromium Analytical Data 8-13

Hexavalent Chromium Raw Data..... 14-24

LABORATORY REPORT

November 24, 2008

David Conner
Battelle
3990 Old Town Ave., Suite C-205
San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 10, 2008. For your reference, these analyses have been assigned our service request number P0803736.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 24 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.



Sue Anderson
Project Manager

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08 / G486090

CAS Project No: P0803736

CASE NARRATIVE

The samples were received intact under chain of custody on November 10, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08/G486090

Service Request: P0803736

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
P0803736-001	MW-23-5	11/10/08	08:00
P0803736-002	MW-23-4	11/10/08	08:24
P0803736-003	MW-23-3	11/10/08	08:52
P0803736-004	MW-23-2	11/10/08	09:18
P0803736-005	MW-23-1	11/10/08	09:43
P0803736-006	EB-15-11/10/08	11/10/08	09:09

Columbia Analytical Services, Inc.

Acronyms

CA LUFT	California DHS LUFT Method
ASTM	American Society for Testing and Materials
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CRDL	Contract Required Detection Limit
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOH or DHS	Department of Health Services
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified Method
MDL	Method Detection Limit
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl <i>tert</i> -Butyl Ether
NA	Not Applicable
NC	Not Calculated
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	<i>Standard Methods for the Examination of Water and Wastewater</i> , 19th Ed., 1995.
SW	<i>Test Methods for Evaluating Solid Waste, Physical/Chemical Methods</i> SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)
VOC	Volatile Organic Compound(s)

Qualifiers

U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
J	The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.
B	Analyte detected in the method blank above MRL (PQL).
E	Estimated; result based on response which exceeded the instrument calibration range.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
D	The reported result is from a dilution.
X	See case narrative.



2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Company Name & Address (Reporting Information) BATTELLE 3990 OLD TOWN AVE., C-205 SAN DIEGO, CA 92110		Project Name JPL G.W. MON. 4808		Requested Turnaround Time in Business Days (Surcharges) please circle 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard		CAS Project No. 90803736	
Project Manager DAVID CONNER		Project Number 6486090		Analysis Method and/or Analytes		CAS Contact:	
Phone 619-726-7311		Fax		Preservative Code		Preservative Key 0 None 1 HCL 2 HNO3 3 H2SO4 4 NaOH 5 Zn Acetate 6 Asc Acid 7 Other	
Email Address for Result Reporting				Sampler (Print & Sign)			
Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Matrix	Number of Containers	Remarks	
MW-23-5	①	11/10/08	0800	W	1	C-III (7196)	
MW-23-4	②	11/10/08	0824		1	X	
MW-23-3	③	11/10/08	0857		1	X	
MW-23-2	④	11/10/08	0916		1	X	
MW-23-1	⑤	11/10/08	0943		1	X	
ED-15-11/10/08	⑥	11/10/08	0909		1	X EQUIPMENT ISLAND	
Volatiles Organics GC/MS 624 <input type="checkbox"/> 8260B <input type="checkbox"/> Oxygenates <input type="checkbox"/> TPH Gas <input type="checkbox"/>		TPH Gas 8015B BTEX 8021B <input type="checkbox"/> MTEB 8021B <input type="checkbox"/>		TPH Diesel 8015B <input type="checkbox"/> (Subcontracted) TPH Diesel Low Level 8015B <input type="checkbox"/> (Subcontracted)		TPH FC <input type="checkbox"/> 8015M (Subcontracted)	
Semi-Volatile Organics GC/MS 625 <input type="checkbox"/> 8270C <input type="checkbox"/> (Subcontracted)		Date: 11/10/08 Time: 11:30 Date: 11/10/08 Time: 12:20 Date: _____ Time: _____					
Report Tier Levels - please select Tier I - (Results/Default if not specified) _____ Tier II - (Results + QC) _____ Tier III - (Data Validation Package) 10% Surcharge _____ Tier V - (client specified) _____		MRL required Yes/No MDL/PQL/J required Yes/No		EDD required Yes/No Type:		Project Requirements (MRLs, QAPP)	
Relinquished by: (Signature) Relinquished by: (Signature) Relinquished by: (Signature)		Received by: (Signature) Received by: (Signature) Received by: (Signature)		Date: 11/10/08 Time: 11:30 Date: 11/10/08 Time: 12:20 Date: _____ Time: _____		Cooler / Blank / Ice / No Ice Temperature 30°C	

DIVIDER SHEET

ANALYTICAL DATA
FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Battelle
Project Name : JPL Groundwater Monitoring 4Q08
Project Number : G486090
Sample Matrix : WATER

Service Request : P0803736
Date Collected : 11/10/08
Date Received : 11/10/08

Chromium, Hexavalent

Prep Method : None
Analysis Method : 7196A
Test Notes :

Units : mg/L (ppm)
Basis : NA

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-23-5	P0803736-001	0.010	0.006	1	NA	11/10/08 16:15	ND	
MW-23-4	P0803736-002	0.010	0.006	1	NA	11/10/08 16:15	ND	
MW-23-3	P0803736-003	0.010	0.006	1	NA	11/10/08 16:15	ND	
MW-23-2	P0803736-004	0.010	0.006	1	NA	11/10/08 16:15	ND	
MW-23-1	P0803736-005	0.010	0.006	1	NA	11/10/08 16:15	ND	
EB-15-11/10/08	P0803736-006	0.010	0.006	1	NA	11/10/08 16:15	ND	
Method Blank	P0803736-MB	0.010	0.006	1	NA	11/10/08 16:15	ND	

Approved By 

Date : 11/24/08

CAS SR #P0803748

Table of Contents

Cover Letter..... 1

Case Narrative..... 2

Sample Cross-Reference..... 3

Acronym List..... 4

Chain of Custody..... 5

Internal Chain of Custody..... 6

Sample Acceptance Check Form..... 7

Hexavalent Chromium Analytical Data 8-13

Hexavalent Chromium Raw Data..... 14-24

LABORATORY REPORT

November 24, 2008

David Conner
Battelle
3990 Old Town Ave., Suite C-205
San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 11, 2008. For your reference, these analyses have been assigned our service request number P0803748.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 24 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.



Sue Anderson
Project Manager

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08 / G486090

CAS Project No: P0803748

CASE NARRATIVE

The samples were received intact under chain of custody on November 11, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08/G486090

Service Request: P0803748

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
P0803748-001	MW-7	11/11/08	09:29
P0803748-002	MW-16	11/11/08	11:14

Columbia Analytical Services, Inc.

Acronyms

CA LUFT	California DHS LUFT Method
ASTM	American Society for Testing and Materials
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CRDL	Contract Required Detection Limit
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOH or DHS	Department of Health Services
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified Method
MDL	Method Detection Limit
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl <i>tert</i> -Butyl Ether
NA	Not Applicable
NC	Not Calculated
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	<i>Standard Methods for the Examination of Water and Wastewater</i> , 19th Ed., 1995.
SW	<i>Test Methods for Evaluating Solid Waste, Physical/Chemical Methods</i> SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)
VOC	Volatile Organic Compound(s)

Qualifiers

U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
J	The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.
B	Analyte detected in the method blank above MRL (PQL).
E	Estimated; result based on response which exceeded the instrument calibration range.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
D	The reported result is from a dilution.
X	See case narrative.

Water & Soil - Chain of Custody Record & Analytical Service Request



2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Company Name & Address (Reporting Information)
BATTELLE
3990 OLD TOWN AVE., C-205
SAN DIEGO, CA 92110

Project Name
JPL GW MON 4908

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard

Project Manager
DAVID CONNER
Phone 619-726-7311
Fax

Project Number
6486090

CAS Project No.
P0803748
CAS Contact:

PO. # / Billing Information
214319/BATTELLE
ATTN: GERALD TOMPKINS
505 KING AVE.
COLUMBUS, OH 43201

Analysis Method and/or Analytes

Preservative Code

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Matrix	Number of Containers	Analysis Method and/or Analytes							Remarks				
						Volatile Organics GC/MS 624 <input type="checkbox"/> 8260B <input type="checkbox"/> Oxygenates <input type="checkbox"/> TPH Gas <input type="checkbox"/>	TPH Gas 8015B BTEX 8021B <input type="checkbox"/> MTBE 8021B <input type="checkbox"/>	TPH Diesel 8015B <input type="checkbox"/> (Subcontracted) TPH Diesel Low Level 8015B <input type="checkbox"/> (Subcontracted)	TPH FC <input type="checkbox"/> 8015M (Subcontracted)	Semi-Volatile Organics GC/MS 625 <input type="checkbox"/> 8270C <input type="checkbox"/> (Subcontracted)	Preservative Code			Preservative Key			
MW-7	1	11/11/08	0929	W	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
MW-16	2	11/14	1114	↓	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Report Tier Levels - please select
 Tier I - (Results/Default if not specified) _____
 Tier II - (Results + QC) _____
 Tier III - (Data Validation Package) 10% Surcharge _____
 Tier V - (client specified) X

MRL required Yes/No: _____
 MDL / PQL / J required Yes/No: _____
 EDD required Yes/No: _____
 Type: Capillary

Relinquished by: (Signature) _____ Date: 11/11/08 Time: 1230
 Relinquished by: (Signature) _____ Date: 11/11/08 Time: 1340
 Relinquished by: (Signature) _____ Date: _____ Time: _____

Received by: (Signature) _____ Date: _____ Time: _____
 Received by: (Signature) _____ Date: _____ Time: _____
 Received by: (Signature) _____ Date: _____ Time: _____

Project Requirements (MRLs, QAPP)
 Cooler/Blank/Ice/No Ice: _____
 Temperature: _____ °C

DIVIDER SHEET

ANALYTICAL DATA
FOR

Hexavalent Chromium

ANALYSIS

Analytical Report

Client : Battelle
Project Name : JPL Groundwater Monitoring 4Q08
Project Number : G486090
Sample Matrix : WATER


Service Request : P0803748
Date Collected : 11/11/08
Date Received : 11/11/08

Chromium, Hexavalent

Prep Method : None
Analysis Method : 7196A
Test Notes :

Units : mg/L (ppm)
Basis : NA

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-7	P0803748-001	0.010	0.006	1	NA	11/11/08 16:00	ND	
MW-16	P0803748-002	0.010	0.006	1	NA	11/11/08 16:00	ND	
Method Blank	P0803748-MB	0.010	0.006	1	NA	11/11/08 16:00	ND	

Approved By 

Date : 11/24/08



CAS SR #P0803764

Table of Contents

Cover Letter..... 1

Case Narrative..... 2

Sample Cross-Reference..... 3

Acronym List..... 4

Chain of Custody..... 5

Internal Chain of Custody..... 6

Sample Acceptance Check Form..... 7

Hexavalent Chromium Analytical Data 8-13

Hexavalent Chromium Raw Data..... 14-25

LABORATORY REPORT

November 24, 2008

David Conner
Battelle
3990 Old Town Ave., Suite C-205
San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 12, 2008. For your reference, these analyses have been assigned our service request number P0803764.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 25 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.



Sue Anderson
Project Manager

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08 / G486090

CAS Project No: P0803764

CASE NARRATIVE

The samples were received intact under chain of custody on November 12, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08/G486090

Service Request: P0803764

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
P0803764-001	MW-10	11/12/08	09:13
P0803764-002	MW-15	11/12/08	10:36

Columbia Analytical Services, Inc.

Acronyms

CA LUFT	California DHS LUFT Method
ASTM	American Society for Testing and Materials
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CRDL	Contract Required Detection Limit
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOH or DHS	Department of Health Services
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified Method
MDL	Method Detection Limit
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl <i>tert</i> -Butyl Ether
NA	Not Applicable
NC	Not Calculated
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	<i>Standard Methods for the Examination of Water and Wastewater</i> , 19th Ed., 1995.
SW	<i>Test Methods for Evaluating Solid Waste, Physical/Chemical Methods</i> SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)
VOC	Volatile Organic Compound(s)

Qualifiers

U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
J	The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.
B	Analyte detected in the method blank above MRL (PQL).
E	Estimated; result based on response which exceeded the instrument calibration range.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
D	The reported result is from a dilution.
X	See case narrative.

Water & Soil - Chain of Custody Record & Analytical Service Request

**2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270**



CAS Project No. P0803764
CAS Contact:

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard

Company Name & Address (Reporting Information)
BATTELLE
3990 OLD TOWN AVE., C-205
SAN DIEGO, CA 92110

Project Name
JPL GW MON 4008

Project Manager
DAVID CONNER

Project Number
6486090

P.O. # / Billing Information
214319 / BATTELLE

ATTN: GERALD TOMPKINS

505 KING AVE.

COLUMBUS, OH 43201

Phone 619-726-7311 Fax

Sampler (Print & Sign)

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Matrix	Number of Containers	Analysis Method and/or Analytes						Preservative Code	Preservative Key	Remarks	
						Volatiles Organics GC/MS 624 <input type="checkbox"/> 8260B <input type="checkbox"/> Oxygenates <input type="checkbox"/> TPH Gas <input type="checkbox"/>	TPH Gas 8015B <input type="checkbox"/> BTEX 8021B <input type="checkbox"/> MTBE 8021B <input type="checkbox"/>	TPH Diesel 8015B <input type="checkbox"/> (Subcontracted)	TPH Diesel Low Level 8015B <input type="checkbox"/> (Subcontracted)	TPH FC 8015M <input type="checkbox"/> (Subcontracted)	Semi-Volatile Organics GC/MS 625 <input type="checkbox"/> 8270C <input type="checkbox"/> (Subcontracted)				
MW-10	1	11/22/08	0913	W	1							0			
MW-15	2	1036		↓	1							X			

Project Requirements (MRLs, QAPP)

EDD required Yes/No Yes/No
Type: Gravel

MRL required Yes/No No
MDL / PQL / J required Yes/No No

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
<u>[Signature]</u>	<u>11/22/08</u>	<u>1200</u>	<u>[Signature]</u>	<u>11/22/08</u>	<u>1200</u>
<u>[Signature]</u>	<u>11/22/08</u>	<u>1235</u>	<u>[Signature]</u>	<u>11/22/08</u>	<u>1235</u>
<u>[Signature]</u>	<u>11/22/08</u>	<u>1235</u>	<u>[Signature]</u>	<u>11/22/08</u>	<u>1235</u>

Cooler Blank / Ice / No Ice 3
Temperature _____ °C

DIVIDER SHEET

ANALYTICAL DATA
FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Battelle
Project Name : JPL Groundwater Monitoring 4Q08
Project Number : G486090
Sample Matrix : WATER

Service Request : P0803764
Date Collected : 11/12/08
Date Received : 11/12/08

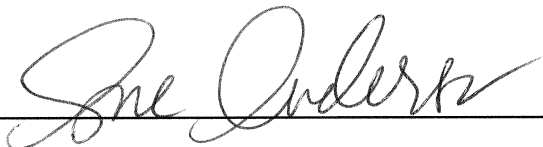
Chromium, Hexavalent

Prep Method : None
Analysis Method : 7196A
Test Notes :

Units : mg/L (ppm)
Basis : NA

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-10	P0803764-001	0.010	0.006	1	NA	11/12/08 16:30	ND	
MW-15	P0803764-002	0.010	0.006	1	NA	11/12/08 16:30	ND	
Method Blank	P0803764-MB	0.010	0.006	1	NA	11/12/08 16:30	ND	

Approved By



Date :



CAS SR #P0803787

Table of Contents

Cover Letter..... 1

Case Narrative..... 2

Sample Cross-Reference..... 3

Acronym List..... 4

Chain of Custody..... 5

Internal Chain of Custody..... 6

Sample Acceptance Check Form..... 7

Hexavalent Chromium Analytical Data 8-13

Hexavalent Chromium Raw Data..... 14-24

LABORATORY REPORT

November 25, 2008

David Conner
Battelle
3990 Old Town Ave., Suite C-205
San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 13, 2008. For your reference, these analyses have been assigned our service request number P0803787.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 24 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.



Sue Anderson
Project Manager

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08 / G486090

CAS Project No: P0803787

CASE NARRATIVE

The samples were received intact under chain of custody on November 13, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08/G486090

Service Request: P0803787

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
P0803787-001	MW-13	11/13/08	09:09
P0803787-002	MW-8	11/13/08	10:59

Columbia Analytical Services, Inc.

Acronyms

CA LUFT	California DHS LUFT Method
ASTM	American Society for Testing and Materials
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CRDL	Contract Required Detection Limit
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOH or DHS	Department of Health Services
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified Method
MDL	Method Detection Limit
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl <i>tert</i> -Butyl Ether
NA	Not Applicable
NC	Not Calculated
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	<i>Standard Methods for the Examination of Water and Wastewater</i> , 19th Ed., 1995.
SW	<i>Test Methods for Evaluating Solid Waste, Physical/Chemical Methods</i> SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)
VOC	Volatile Organic Compound(s)

Qualifiers

U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
J	The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.
B	Analyte detected in the method blank above MRL (PQL).
E	Estimated; result based on response which exceeded the instrument calibration range.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
D	The reported result is from a dilution.
X	See case narrative.

Water & Soil - Chain of Custody Record & Analytical Service Request



2655 Park Center Drive, Suite A
 Simi Valley, California 93065
 Phone (805) 526-7161
 Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard

CAS Project No. 20803787
 CAS Contact:

Company Name & Address (Reporting Information)			Project Name		Analysis Method and/or Analytes				Preservative Key		Remarks
Project Manager			Project Number		Preservative Code				Preservative Key		
BATTLE 390 OLD TOWN AVE., C-205 SAN DIEGO, CA 92110			JPL GW. MON. 4208 Project Number 6486090		Volatile Organics GC/MS <input type="checkbox"/> 624 <input type="checkbox"/> 8260B <input type="checkbox"/> Oxygenates <input type="checkbox"/> TPH Gas TPH Gas 8015B <input type="checkbox"/> BTEX 8021B <input type="checkbox"/> MTE 8021B <input type="checkbox"/> TPH Diesel 8015B <input type="checkbox"/> (Subcontracted) TPH Diesel Low Level 8015B <input type="checkbox"/> (Subcontracted) TPH FC <input type="checkbox"/> 8015M (Subcontracted) Semi-Volatile Organics GC/MS <input type="checkbox"/> 625 <input type="checkbox"/> 8270C <input type="checkbox"/> (Subcontracted)				0 None 1 HCL 2 HNO3 3 H2SO4 4 NaOH 5 Zn Acetate 6 Asc Acid 7 Other		LK 11/13/08 PER CHASE @ 1343 SW
DAVID CONNER Phone 619-726-7311 Fax Email Address for Result Reporting			P.O. # / Billing Information 24319/BATTLE ATTN: GERALD TOMPKINS 505 KING AVE. COLUMBUS, OH 43201		0 (719)						
Email Address for Result Reporting			Sampler (Print & Sign)		Time Collected		Matrix		Number of Containers		
Client Sample ID MW-13 MW-10 MW-8			Date Collected 11/13/08 1059		Date Collected 11/13/08 0909		Matrix W ↓		Number of Containers 1 1		

Report Tier Levels - please select Tier I - (Results/Default if not specified) _____ Tier II - (Results + QC) _____ Tier III - (Data Validation Package) 10% Surcharge <input checked="" type="checkbox"/> Tier V - (client specified) _____		MRL required Yes (No) _____ MDL / PQL required Yes / No _____		EDD required Yes No Type: <u>Greater</u>		Project Requirements (MRLs, QAPP)	
Relinquished by: (Signature) Relinquished by: (Signature) Relinquished by: (Signature)		Received by: (Signature) Received by: (Signature) Received by: (Signature)		Date: 11/13/08 Time: 10:30 Date: 11/13/08 Time: 13:15 Date: _____ Time: _____		Cooler / Blank / Ice / No Ice Temperature _____ °C	

DIVIDER SHEET

ANALYTICAL DATA
FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Battelle
Project Name : JPL Groundwater Monitoring 4Q08
Project Number : G486090
Sample Matrix : WATER

Service Request : P0803787
Date Collected : 11/13/08
Date Received : 11/13/08

Chromium, Hexavalent

Prep Method : None
Analysis Method : 7196A
Test Notes :

Units : mg/L (ppm)
Basis : NA

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-13	P0803787-001	0.010	0.006	1	NA	11/13/08 16:15	0.033	
MW-8	P0803787-002	0.010	0.006	1	NA	11/13/08 16:15	ND	
Method Blank	P0803787-MB	0.010	0.006	1	NA	11/13/08 16:15	ND	

Approved By



Date :



CAS SR #P0803836

Table of Contents

Cover Letter..... 1

Case Narrative..... 2

Sample Cross-Reference..... 3

Acronym List..... 4

Chain of Custody..... 5

Internal Chain of Custody..... 6

Sample Acceptance Check Form..... 7

Hexavalent Chromium Analytical Data 8-13

Hexavalent Chromium Raw Data..... 14-25

LABORATORY REPORT

November 25, 2008

David Conner
Battelle
3990 Old Town Ave., Suite C-205
San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 17, 2008. For your reference, these analyses have been assigned our service request number P0803836.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 25 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.



Sue Anderson
Project Manager

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08 / G486090

CAS Project No: P0803836

CASE NARRATIVE

The samples were received intact under chain of custody on November 17, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the sample(s) at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08/G486090

Service Request: P0803836

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
P0803836-001	MW-01	11/17/08	09:00
P0803836-002	MW-09	11/17/08	10:23

Columbia Analytical Services, Inc.

Acronyms

CA LUFT	California DHS LUFT Method
ASTM	American Society for Testing and Materials
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CRDL	Contract Required Detection Limit
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOH or DHS	Department of Health Services
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified Method
MDL	Method Detection Limit
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl <i>tert</i> -Butyl Ether
NA	Not Applicable
NC	Not Calculated
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	<i>Standard Methods for the Examination of Water and Wastewater</i> , 19th Ed., 1995.
SW	<i>Test Methods for Evaluating Solid Waste, Physical/Chemical Methods</i> SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)
VOC	Volatile Organic Compound(s)

Qualifiers

U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
J	The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.
B	Analyte detected in the method blank above MRL (PQL).
E	Estimated; result based on response which exceeded the instrument calibration range.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
D	The reported result is from a dilution.
X	See case narrative.

DIVIDER SHEET

ANALYTICAL DATA
FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Battelle
Project Name : JPL Groundwater Monitoring 4Q08
Project Number : G486090
Sample Matrix : WATER

Service Request : P0803836
Date Collected : 11/17/08
Date Received : 11/17/08

Chromium, Hexavalent

Prep Method : None
Analysis Method : 7196A
Test Notes :

Units : mg/L (ppm)
Basis : NA

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-01	P0803836-001	0.010	0.006	1	NA	11/17/08 16:15	ND	
MW-09	P0803836-002	0.010	0.006	1	NA	11/17/08 16:15	ND	
Method Blank	P0803836-MB	0.010	0.006	1	NA	11/17/08 16:15	ND	

Approved By



Date :

11/25/08

CAS SR #P0803853

Table of Contents

Cover Letter..... 1

Case Narrative..... 2

Sample Cross-Reference..... 3

Acronym List..... 4

Chain of Custody..... 5

Internal Chain of Custody..... 6

Sample Acceptance Check Form..... 7

Hexavalent Chromium Analytical Data 8-13

Hexavalent Chromium Raw Data..... 14-25

LABORATORY REPORT

November 26, 2008

David Conner
Battelle
3990 Old Town Ave., Suite C-205
San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 18, 2008. For your reference, these analyses have been assigned our service request number P0803853.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 25 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.



Sue Anderson
Project Manager

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08 / G486090

CAS Project No: P0803853

CASE NARRATIVE

The samples were received intact under chain of custody on November 18, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08/G486090

Service Request: P0803853

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
P0803853-001	MW-20-5RS	11/18/08	08:24
P0803853-002	MW-20-4RS	11/18/08	09:46
P0803853-003	MW-20-3RS	11/18/08	10:57
P0803853-004	MW-20-2RS	11/18/08	11:53
P0803853-005	MW-20-1RS	11/18/08	12:54
P0803853-006	EB-16-11/18/08	11/18/08	12:33

Columbia Analytical Services, Inc.

Acronyms

CA LUFT	California DHS LUFT Method
ASTM	American Society for Testing and Materials
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CRDL	Contract Required Detection Limit
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOH or DHS	Department of Health Services
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified Method
MDL	Method Detection Limit
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl <i>tert</i> -Butyl Ether
NA	Not Applicable
NC	Not Calculated
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	<i>Standard Methods for the Examination of Water and Wastewater</i> , 19th Ed., 1995.
SW	<i>Test Methods for Evaluating Solid Waste, Physical/Chemical Methods</i> SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)
VOC	Volatile Organic Compound(s)

Qualifiers

U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
J	The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.
B	Analyte detected in the method blank above MRL (PQL).
E	Estimated; result based on response which exceeded the instrument calibration range.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
D	The reported result is from a dilution.
X	See case narrative.

Water & Soil - Chain of Custody Record & Analytical Service Request

Columbia Analytical Services Inc.
 An Employee - Owned Company
 2655 Park Center Drive, Suite A
 Simi Valley, California 93065
 Phone (805) 526-7161
 Fax (805) 526-7270

CAS Project No. **90803883**
 CAS Contact:

Requested Turnaround Time in Business Days (Surcharges) please circle
 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard

Company Name & Address (Reporting Information) BATTLE 3990 OLD TOWN AVE., C-205 SAN DIEGO, CA 92110		Project Name JPL G.W. MON. 4008			
Project Manager DAVID CONNER		Project Number 6486090			
Phone 619-726-7311		PO. # / Billing Information 214319/BATTLE ATTN:GERALD TOMPKINS 505 KING AVE. COLUMBUS, OH 43201			
Email Address for Result Reporting		Sampler (Print & Sign)			
Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Matrix	Number of Containers
MW-20-5RS	1	11/18/08	0824	W	1
MW-20-4RS	2		0946		
MW-20-3RS	3		1057		
MW-20-2RS	4		1153		
MW-20-1RS	5		1254		
EB-16-11/18/08	6	11/18/08	1233		1
Analysis Method and/or Analytes Preservative Code					
Volatile Organics GC/MS 624 <input type="checkbox"/> 8260B <input type="checkbox"/> Oxygenates <input type="checkbox"/> TPH Gas <input type="checkbox"/>					
TPH Gas 8015B <input type="checkbox"/> MTBE 8021B <input type="checkbox"/>					
TPH Diesel 8015B <input type="checkbox"/> (Subcontracted)					
TPH Diesel Low Level 8015B <input type="checkbox"/> (Subcontracted)					
TPH FC <input type="checkbox"/> 8015M (Subcontracted)					
Semi-Volatile Organics GC/MS 625 <input type="checkbox"/> 8270C <input type="checkbox"/> (Subcontracted)					
Preservative Key 0 None 1 HCL 2 HNO3 3 H2SO4 4 NaOH 5 Zn Acetate 6 Asc Acid 7 Other					
Remarks Equipment Blank					

Report Tier Levels - please select
 Tier I - (Results/Default if not specified) _____
 Tier II - (Results + QC) _____
 Tier III - (Data Validation Package) 10% Surcharge _____
 Tier V - (client specified) X

MRL required Yes No
 MDL / PQL / J required Yes No
 EDD required Yes No
 Type: Spotcheck

Relinquished by: (Signature)	Date: <u>11/18/08</u>	Time: <u>1330</u>	Received by: (Signature)	Date: <u>11/18/08</u>	Time: <u>1405</u>
Relinquished by: (Signature)	Date: <u>11/18/08</u>	Time: <u>1405</u>	Received by: (Signature)	Date: <u>11/18/08</u>	Time: <u>1405</u>
Relinquished by: (Signature)	Date: _____	Time: _____	Received by: (Signature)	Date: _____	Time: _____

Project Requirements (MRLs, QAPP)
 Cooler / Blank Ice No Ice
 Temperature 30C °C

DIVIDER SHEET

ANALYTICAL DATA
FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Battelle
Project Name : JPL Groundwater Monitoring 4Q08
Project Number : G486090
Sample Matrix : WATER

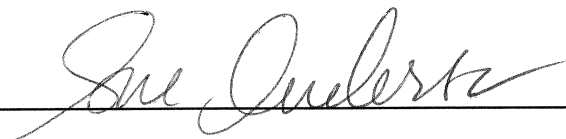
Service Request : P0803853
Date Collected : 11/18/08
Date Received : 11/18/08

Chromium, Hexavalent

Prep Method : None
Analysis Method : 7196A
Test Notes :

Units : mg/L (ppm)
Basis : NA

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-20-5RS	P0803853-001	0.010	0.006	1	NA	11/18/08 16:20	ND	
MW-20-4RS	P0803853-002	0.010	0.006	1	NA	11/18/08 16:20	ND	
MW-20-3RS	P0803853-003	0.010	0.006	1	NA	11/18/08 16:20	ND	
MW-20-2RS	P0803853-004	0.010	0.006	1	NA	11/18/08 16:20	ND	
MW-20-1RS	P0803853-005	0.010	0.006	1	NA	11/18/08 16:20	ND	
EB-16-11/18/08	P0803853-006	0.010	0.006	1	NA	11/18/08 16:20	ND	
Method Blank	P0803853-MB	0.010	0.006	1	NA	11/18/08 16:20	ND	

Approved By 

Date : 11/26/08

CAS SR #P0803815

Table of Contents

Cover Letter..... 1

Case Narrative..... 2

Sample Cross-Reference..... 3

Acronym List..... 4

Chain of Custody..... 5

Internal Chain of Custody..... 6

Sample Acceptance Check Form..... 7

Hexavalent Chromium Analytical Data 8-13

Hexavalent Chromium Raw Data..... 14-24

LABORATORY REPORT

December 2, 2008

David Conner
Battelle
3990 Old Town Ave., Suite C-205
San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 14, 2008. For your reference, these analyses have been assigned our service request number P0803815.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 24 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.



Sue Anderson
Project Manager

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08 / G486090

CAS Project No: P0803815

CASE NARRATIVE

The samples were received intact under chain of custody on November 14, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client: Battelle
Project: JPL Groundwater Monitoring 4Q08/G486090

Service Request: P0803815

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
P0803815-001	MW-5	11/14/08	08:13
P0803815-002	MW-6	11/14/08	09:54

Columbia Analytical Services, Inc.

Acronyms

CA LUFT	California DHS LUFT Method
ASTM	American Society for Testing and Materials
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CRDL	Contract Required Detection Limit
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOH or DHS	Department of Health Services
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified Method
MDL	Method Detection Limit
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl <i>tert</i> -Butyl Ether
NA	Not Applicable
NC	Not Calculated
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	<i>Standard Methods for the Examination of Water and Wastewater</i> , 19th Ed., 1995.
SW	<i>Test Methods for Evaluating Solid Waste, Physical/Chemical Methods</i> SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)
VOC	Volatile Organic Compound(s)

Qualifiers

U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
J	The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.
B	Analyte detected in the method blank above MRL (PQL).
E	Estimated; result based on response which exceeded the instrument calibration range.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
D	The reported result is from a dilution.
X	See case narrative.

Water & Soil - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A
 Simi Valley, California 93065
 Phone (805) 526-7161
 Fax (805) 526-7270



CAS Project No. 20803815
 CAS Contact: _____
 Requested Turnaround Time in Business Days (Surcharges) please circle
 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard

Company Name & Address (Reporting Information) BATELLE 3990 OLD POW AVENUE, C-205 SAN DIEGO, CA 92110	Project Name SPL GW MON. 4808	Project Number 6486090	Requested Turnaround Time in Business Days (Surcharges) please circle				Analysis Method and/or Analytes <u>(962) TO C</u>	Preservative Code	Preservative Key 0 None 1 HCL 2 HNO3 3 H2SO4 4 NaOH 5 Zn Acetate 6 Asc Acid 7 Other	Remarks
			1 Day (100%)	2 Day (75%)	3 Day (50%)	4 Day (35%)				
Project Manager DAVID CONNER Phone 619-726-7311 Fax _____	PO # / Billing Information 2439 / BATELLE ATTN: GERALD TOMPKINS 505 KING AVE. COLUMBUS, OH 43201		SAMPLER (Print & Sign)				TPH Gas 8015B <input type="checkbox"/> BTEX 8021B <input type="checkbox"/> MTBE 8021B <input type="checkbox"/> TPH Diesel 8015B <input type="checkbox"/> (Subcontracted) TPH Diesel Low Level 8015B <input type="checkbox"/> (Subcontracted) TPH FC <input type="checkbox"/> 8015M (Subcontracted) Semi-Volatile Organics GC/MS 625 <input type="checkbox"/> 8270C <input type="checkbox"/> (Subcontracted)	Volatle Organics GC/MS 624 <input type="checkbox"/> 8260B <input type="checkbox"/> Oxygenates <input type="checkbox"/> TPH Gas <input type="checkbox"/>		
619-726-7311	Date Collected	Time Collected	Matrix	Number of Containers	TPH Gas 8015B <input type="checkbox"/>					
MW-5	1	11/14/09	0803	W	2	X				
MW-6	2	↓	0954	↓	1	X				

Report Tier Levels - please select
 Tier I - (Results/Default if not specified) _____
 Tier II - (Results + QC) _____
 Tier III - (Data Validation Package) 10% Surcharge _____
 Tier V - (client specified) _____

MRL required Yes / No _____
 MDL / PCL required Yes / No _____

EDD required Yes / No _____
 Type: _____

Relinquished by (Signature) _____ Date: _____ Time: _____
 Relinquished by (Signature) _____ Date: _____ Time: _____
 Relinquished by (Signature) _____ Date: _____ Time: _____

Received by (Signature) _____ Date: _____ Time: _____
 Received by (Signature) _____ Date: _____ Time: _____
 Received by (Signature) _____ Date: _____ Time: _____

Project Requirements (MRLs, QA/QP)
 Cooler / Blank / Ice _____
 Temperature _____ °C

DIVIDER SHEET

ANALYTICAL DATA FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Battelle
Project Name : JPL Groundwater Monitoring 4Q08
Project Number : G486090
Sample Matrix : WATER

Service Request : P0803815
Date Collected : 11/14/08
Date Received : 11/14/08

Chromium, Hexavalent

Prep Method : None
Analysis Method : 7196A
Test Notes :

Units : mg/L (ppm)
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-5	P0803815-001	0.010	0.006	1	NA	11/14/08 16:15	ND	
MW-6	P0803815-002	0.010	0.006	1	NA	11/14/08 16:15	ND	
Method Blank	P0803815-MB	0.010	0.006	1	NA	11/14/08 16:15	ND	

Approved By



Date :

12/2/08