

ANALYTICAL RESULTS

Prepared for:

Chevron
5000 State Route 128
HOOVEN OH 45033

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

January 04, 2010

Project: Hooven Barrier Monitoring Network

Samples arrived at the laboratory on Thursday, December 17, 2009. The PO# for this group is 0015039270 and the release number is 50008931. The group number for this submittal is 1175623.

<u>Client Sample Description</u>	<u>Lancaster Labs (LLI) #</u>
BMW-2S,121609 Grab Water	5866796
BMW-2S,121609 Filtered Grab Water	5866797
BMW-2I,121609 Grab Water	5866798
BMW-2I,121609 Filtered Grab Water	5866799
Trip Blank,121609 Water	5866800

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Trihydro Corporation	Attn: Trihydro Database
ELECTRONIC COPY TO	Trihydro Corporation	Attn: Tim Gunn
ELECTRONIC COPY TO	Trihydro Corporation	Attn: Matthew Mitchell

Questions? Contact your Client Services Representative
Katherine A Klinefelter at (717) 656-2300

Respectfully Submitted,



Sarah Snyder
Specialist



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

**Sample Description: BMW-2S,121609 Grab Water
Barrier Monitoring Network**

**LLI Sample # WW 5866796
LLI Group # 1175623
OH**

Project Name: Hooven Barrier Monitoring Network

Collected: 12/16/2009 15:55 by JH

Account Number: 11494

Submitted: 12/17/2009 09:20

Chevron

Reported: 01/04/2010 at 13:24

5000 State Route 128

Discard: 03/06/2010

HOOVEN OH 45033

BMW2S

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles					
	SW-846 8260B		ug/l	ug/l	
06291	Benzene	71-43-2	N.D.	0.5	1
06291	Chlorobenzene	108-90-7	N.D.	0.8	1
06291	Ethylbenzene	100-41-4	N.D.	0.8	1
06291	Toluene	108-88-3	N.D.	0.7	1
06291	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Miscellaneous					
	SW-846 8000B		ug/l	ug/l	
08097	CO2 by Headspace	124-38-9	5,300 J	4,000	1
GC Miscellaneous					
	SW-846 8015B modified		ug/l	ug/l	
07105	Methane	74-82-8	N.D.	5.0	1
Metals					
	SW-846 6010B		mg/l	mg/l	
01750	Calcium	7440-70-2	61.5	0.0702	1
01754	Iron	7439-89-6	N.D.	0.0522	1
01757	Magnesium	7439-95-4	24.1	0.0172	1
07058	Manganese	7439-96-5	0.0093	0.00084	1
01762	Potassium	7440-09-7	3.38	0.239	1
01767	Sodium	7440-23-5	30.2	0.433	1
	SW-846 6010B modified		mg/l	mg/l	
02268	Ferric Iron	n.a.	N.D.	0.052	1
Wet Chemistry					
	EPA 300.0		mg/l	mg/l	
00224	Chloride	16887-00-6	50.4	4.0	20
00228	Sulfate	14808-79-8	43.4	6.0	20
	EPA 351.2		mg/l	mg/l	
00217	Kjeldahl Nitrogen	n.a.	N.D.	0.50	1
	EPA 353.2		mg/l	mg/l	
00220	Nitrate Nitrogen	14797-55-8	2.8	0.040	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	1
	EPA 415.1		mg/l	mg/l	
01550	Total Carbon	n.a.	59.3	2.5	5
06090	Total Inorganic Carbon	n.a.	56.5	2.5	1
00273	Total Organic Carbon	n.a.	2.7	0.50	1
	SM20 2320 B		mg/l as CaCO3	mg/l as CaCO3	
00202	Alkalinity to pH 4.5	n.a.	208	0.46	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	0.46	1

**Sample Description: BMW-2S,121609 Grab Water
Barrier Monitoring Network**

**LLI Sample # WW 5866796
LLI Group # 1175623
OH**

Project Name: Hooven Barrier Monitoring Network

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Chevron

Reported: 01/04/2010 at 13:24

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Discard: 03/06/2010

HOOVEN OH 45033

BMW2S

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Wet Chemistry					
		SM20 3500 Fe B modified	mg/l	mg/l	
08344	Ferrous Iron	n.a.	0.032 J	0.010	1
		SM20 4500 S2 D	mg/l	mg/l	
00230	Sulfide	18496-25-8	N.D.	0.054	1
		SM20 4500NH3 B/C modified	mg/l	mg/l	
00221	Ammonia Nitrogen	7664-41-7	N.D.	0.20	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L093611AA	12/27/2009 10:56	Linda C Pape	1
06291	TCL by 8260 (water)	SW-846 8260B	1	L093611AA	12/27/2009 10:56	Linda C Pape	1
08097	CO2 by Headspace	SW-846 8000B	1	093550001A	12/22/2009 08:34	Dustin A Underkoffler	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	093520016A	12/23/2009 14:48	Dustin A Underkoffler	1
01750	Calcium	SW-846 6010B	1	093551848004	12/26/2009 20:22	Choon Y Tian	1
01754	Iron	SW-846 6010B	1	093551848004	12/26/2009 20:22	Choon Y Tian	1
01757	Magnesium	SW-846 6010B	1	093551848004	12/26/2009 20:22	Choon Y Tian	1
07058	Manganese	SW-846 6010B	1	093551848004	12/26/2009 20:22	Choon Y Tian	1
01762	Potassium	SW-846 6010B	1	093551848004	12/26/2009 20:22	Choon Y Tian	1
01767	Sodium	SW-846 6010B	1	093551848004	12/26/2009 20:22	Choon Y Tian	1
02268	Ferric Iron	SW-846 6010B modified	1	093622268010	12/28/2009 08:55	Jennifer L Moyer	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	093551848004	12/21/2009 23:30	Mirit S Shenouda	1
00224	Chloride	EPA 300.0	1	09365196601A	12/31/2009 15:07	Ashley M Adams	20
00228	Sulfate	EPA 300.0	1	09365196601A	12/31/2009 15:07	Ashley M Adams	20
00217	Kjeldahl Nitrogen	EPA 351.2	1	09354108101A	12/22/2009 19:18	Joseph E McKenzie	1
00220	Nitrate Nitrogen	EPA 353.2	1	09355106102B	12/21/2009 13:33	K. Robert Caulfeild-James	1
00219	Nitrite Nitrogen	EPA 353.2	1	09351105101A	12/17/2009 20:04	Venia B McFadden	1
01550	Total Carbon	EPA 415.1	1	09365049501A	12/31/2009 02:36	James S Mathiot	5
06090	Total Inorganic Carbon	EPA 415.1	1	09365049505A	12/31/2009 04:15	James S Mathiot	1
00273	Total Organic Carbon	EPA 415.1	1	09364049502A	12/30/2009 03:31	James S Mathiot	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09354108101A	12/20/2009 13:15	Carolyn M Mastropietro	1
00202	Alkalinity to pH 4.5	SM20 2320 B	1	09355020201A	12/21/2009 11:26	Geraldine C Smith	1

**Sample Description: BMW-2S,121609 Grab Water
Barrier Monitoring Network**

**LLI Sample # WW 5866796
LLI Group # 1175623
OH**

Project Name: Hooven Barrier Monitoring Network

Collected: 12/16/2009 15:55 by JH

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BMW2S

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00201	Alkalinity to pH 8.3	SM20 2320 B	1	09355020201A	12/21/2009 11:26	Geraldine C Smith	1
08344	Ferrous Iron	SM20 3500 Fe B modified	1	09351834402A	12/17/2009 21:35	Daniel S Smith	1
00230	Sulfide	SM20 4500 S2 D	1	09352023001A	12/18/2009 16:25	Geraldine C Smith	1
00221	Ammonia Nitrogen	SM20 4500NH3 B/C modified	1	09355022101A	12/21/2009 20:30	Luz M Groff	1



Analysis Report

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**Sample Description: BMW-2S,121609 Filtered Grab Water
Barrier Monitoring Network**

**LLI Sample # WW 5866797
LLI Group # 1175623
OH**

Project Name: Hooven Barrier Monitoring Network

Collected: 12/16/2009 15:55 by JH

Account Number: 11494

Submitted: 12/17/2009 09:20

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Discard: 03/06/2010

HOOVEN OH 45033

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals Dissolved			mg/l	mg/l	
07035	Arsenic	7440-38-2	N.D.	0.0072	1
07055	Lead	7439-92-1	N.D.	0.0069	1
07058	Manganese	7439-96-5	0.0076	0.00084	1

General Sample Comments

This sample was field filtered for metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	093551848004	12/26/2009 20:26	Choon Y Tian	1
07055	Lead	SW-846 6010B	1	093551848004	12/26/2009 20:26	Choon Y Tian	1
07058	Manganese	SW-846 6010B	1	093551848004	12/26/2009 20:26	Choon Y Tian	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	093551848004	12/21/2009 23:30	Mirit S Shenouda	1

**Sample Description: BMW-2I,121609 Grab Water
Barrier Monitoring Network**

**LLI Sample # WW 5866798
LLI Group # 1175623
OH**

Project Name: Hooven Barrier Monitoring Network

Collected: 12/16/2009 14:55 by JH

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Discard: 03/06/2010

HOOVEN OH 45033

BMW2I

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles					
	SW-846 8260B		ug/l	ug/l	
06291	Benzene	71-43-2	N.D.	0.5	1
06291	Chlorobenzene	108-90-7	N.D.	0.8	1
06291	Ethylbenzene	100-41-4	N.D.	0.8	1
06291	Toluene	108-88-3	N.D.	0.7	1
06291	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Miscellaneous					
	SW-846 8000B		ug/l	ug/l	
08097	CO2 by Headspace	124-38-9	5,900 J	4,000	1
GC Miscellaneous					
	SW-846 8015B modified		ug/l	ug/l	
07105	Methane	74-82-8	N.D.	5.0	1
Metals					
	SW-846 6010B		mg/l	mg/l	
01750	Calcium	7440-70-2	60.4	0.0702	1
01754	Iron	7439-89-6	N.D.	0.0522	1
01757	Magnesium	7439-95-4	23.5	0.0172	1
07058	Manganese	7439-96-5	0.0628	0.00084	1
01762	Potassium	7440-09-7	3.32	0.239	1
01767	Sodium	7440-23-5	29.4	0.433	1
	SW-846 6010B modified		mg/l	mg/l	
02268	Ferric Iron	n.a.	N.D.	0.052	1
Wet Chemistry					
	EPA 300.0		mg/l	mg/l	
00224	Chloride	16887-00-6	49.5	4.0	20
00228	Sulfate	14808-79-8	45.1	6.0	20
	EPA 351.2		mg/l	mg/l	
00217	Kjeldahl Nitrogen	n.a.	N.D.	0.50	1
	EPA 353.2		mg/l	mg/l	
00220	Nitrate Nitrogen	14797-55-8	2.2	0.040	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	1
	EPA 415.1		mg/l	mg/l	
01550	Total Carbon	n.a.	61.5	2.5	5
06090	Total Inorganic Carbon	n.a.	59.0	2.5	1
00273	Total Organic Carbon	n.a.	2.4	0.50	1
	SM20 2320 B		mg/l as CaCO3	mg/l as CaCO3	
00202	Alkalinity to pH 4.5	n.a.	199	0.46	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	0.46	1

**Sample Description: BMW-2I,121609 Grab Water
Barrier Monitoring Network**

**LLI Sample # WW 5866798
LLI Group # 1175623
OH**

Project Name: Hooven Barrier Monitoring Network

Collected: 12/16/2009 14:55 by JH

Account Number: 11494

Submitted: 12/17/2009 09:20

Chevron

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Discard: 03/06/2010

HOOVEN OH 45033

BMW2I

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Wet Chemistry					
	SM20 3500 Fe B modified		mg/l	mg/l	
08344	Ferrous Iron	n.a.	0.033 J	0.010	1
	SM20 4500 S2 D		mg/l	mg/l	
00230	Sulfide	18496-25-8	N.D.	0.054	1
	SM20 4500NH3 B/C modified		mg/l	mg/l	
00221	Ammonia Nitrogen	7664-41-7	N.D.	0.20	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L093611AA	12/27/2009 11:40	Linda C Pape	1
06291	TCL by 8260 (water)	SW-846 8260B	1	L093611AA	12/27/2009 11:40	Linda C Pape	1
08097	CO2 by Headspace	SW-846 8000B	1	093550001A	12/22/2009 08:43	Dustin A Underkoffler	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	093520016A	12/23/2009 15:16	Dustin A Underkoffler	1
01750	Calcium	SW-846 6010B	1	093551848004	12/26/2009 20:29	Choon Y Tian	1
01754	Iron	SW-846 6010B	1	093551848004	12/26/2009 20:29	Choon Y Tian	1
01757	Magnesium	SW-846 6010B	1	093551848004	12/26/2009 20:29	Choon Y Tian	1
07058	Manganese	SW-846 6010B	1	093551848004	12/26/2009 20:29	Choon Y Tian	1
01762	Potassium	SW-846 6010B	1	093551848004	12/26/2009 20:29	Choon Y Tian	1
01767	Sodium	SW-846 6010B	1	093551848004	12/26/2009 20:29	Choon Y Tian	1
02268	Ferric Iron	SW-846 6010B modified	1	093622268010	12/28/2009 08:55	Jennifer L Moyer	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	093551848004	12/21/2009 23:30	Mirit S Shenouda	1
00224	Chloride	EPA 300.0	1	09365196601A	12/31/2009 15:22	Ashley M Adams	20
00228	Sulfate	EPA 300.0	1	09365196601A	12/31/2009 15:22	Ashley M Adams	20
00217	Kjeldahl Nitrogen	EPA 351.2	1	09354108101A	12/22/2009 19:00	Joseph E McKenzie	1
00220	Nitrate Nitrogen	EPA 353.2	1	09355106102B	12/21/2009 13:39	K. Robert Caulfeild-James	1
00219	Nitrite Nitrogen	EPA 353.2	1	09351105101B	12/17/2009 20:08	Venia B McFadden	1
01550	Total Carbon	EPA 415.1	1	09365049501A	12/31/2009 02:41	James S Mathiot	5
06090	Total Inorganic Carbon	EPA 415.1	1	09365049505A	12/31/2009 04:15	James S Mathiot	1
00273	Total Organic Carbon	EPA 415.1	1	09364049502A	12/30/2009 03:38	James S Mathiot	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09354108101A	12/20/2009 13:15	Carolyn M Mastropietro	1
00202	Alkalinity to pH 4.5	SM20 2320 B	1	09355020201A	12/21/2009 11:26	Geraldine C Smith	1

**Sample Description: BMW-2I,121609 Grab Water
Barrier Monitoring Network**

**LLI Sample # WW 5866798
LLI Group # 1175623
OH**

Project Name: Hooven Barrier Monitoring Network

Collected: 12/16/2009 14:55 by JH

Account Number: 11494

Submitted: 12/17/2009 09:20

Chevron

Reported: 01/04/2010 at 13:24

5000 State Route 128

Discard: 03/06/2010

HOOVEN OH 45033

BMW2I

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00201	Alkalinity to pH 8.3	SM20 2320 B	1	09355020201A	12/21/2009 11:26	Geraldine C Smith	1
08344	Ferrous Iron	SM20 3500 Fe B modified	1	09351834402A	12/17/2009 21:35	Daniel S Smith	1
00230	Sulfide	SM20 4500 S2 D	1	09352023001A	12/18/2009 16:25	Geraldine C Smith	1
00221	Ammonia Nitrogen	SM20 4500NH3 B/C modified	1	09355022101A	12/21/2009 20:30	Luz M Groff	1



Analysis Report

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**Sample Description: BMW-2I,121609 Filtered Grab Water
Barrier Monitoring Network**

**LLI Sample # WW 5866799
LLI Group # 1175623
OH**

Project Name: Hooven Barrier Monitoring Network

Collected: 12/16/2009 14:55 by JH

Account Number: 11494

Submitted: 12/17/2009 09:20

Chevron

Reported: 01/04/2010 at 13:24

5000 State Route 128

Discard: 03/06/2010

HOOVEN OH 45033

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals Dissolved			mg/l	mg/l	
07035	Arsenic	7440-38-2	N.D.	0.0072	1
07055	Lead	7439-92-1	N.D.	0.0069	1
07058	Manganese	7439-96-5	0.0592	0.00084	1

General Sample Comments

This sample was field filtered for metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	093551848004	12/26/2009 20:32	Choon Y Tian	1
07055	Lead	SW-846 6010B	1	093551848004	12/26/2009 20:32	Choon Y Tian	1
07058	Manganese	SW-846 6010B	1	093551848004	12/26/2009 20:32	Choon Y Tian	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	093551848004	12/21/2009 23:30	Mirit S Shenouda	1



Analysis Report

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**Sample Description: Trip Blank, 121609 Water
Barrier Monitoring Network**

**LLI Sample # WW 5866800
LLI Group # 1175623
OH**

Project Name: Hooven Barrier Monitoring Network

Collected: 12/16/2009 16:50

Account Number: 11494

Submitted: 12/17/2009 09:20

Chevron

Reported: 01/04/2010 at 13:24

5000 State Route 128

Discard: 03/06/2010

HOOVEN OH 45033

BMWTB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/l	ug/l	
06291	Benzene	71-43-2	N.D.	0.5	1
06291	Chlorobenzene	108-90-7	N.D.	0.8	1
06291	Ethylbenzene	100-41-4	N.D.	0.8	1
06291	Toluene	108-88-3	N.D.	0.7	1
06291	Xylene (Total)	1330-20-7	N.D.	0.8	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L093611AA	12/27/2009 12:01	Linda C Pape	1
06291	TCL by 8260 (water)	SW-846 8260B	1	L093611AA	12/27/2009 12:01	Linda C Pape	1

Quality Control Summary

 Client Name: Chevron
 Reported: 01/04/10 at 01:24 PM

Group Number: 1175623

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: L093611AA	Sample number(s): 5866796,5866798,5866800							
Benzene	N.D.	0.5	ug/l	105	104	79-120	2	30
Chlorobenzene	N.D.	0.8	ug/l	105	106	80-120	0	30
Ethylbenzene	N.D.	0.8	ug/l	107	106	79-120	1	30
Toluene	N.D.	0.7	ug/l	110	108	79-120	2	30
Xylene (Total)	N.D.	0.8	ug/l	106	105	80-120	1	30
Batch number: 093520016A	Sample number(s): 5866796,5866798							
Methane	N.D.	5.0	ug/l	95		80-120		
Batch number: 093550001A	Sample number(s): 5866796,5866798							
CO2 by Headspace	N.D.	4,000.	ug/l	83		67-124		
Batch number: 093551848004	Sample number(s): 5866796-5866799							
Arsenic	N.D.	0.0072	mg/l	103		89-115		
Calcium	N.D.	0.0702	mg/l	106		90-112		
Iron	N.D.	0.0522	mg/l	104		90-112		
Lead	N.D.	0.0069	mg/l	100		80-120		
Magnesium	0.0179 J	0.0172	mg/l	104		89-110		
Manganese	N.D.	0.00084	mg/l	105		90-110		
Potassium	N.D.	0.239	mg/l	102		85-115		
Sodium	N.D.	0.433	mg/l	100		87-114		
Batch number: 09351105101A	Sample number(s): 5866796							
Nitrite Nitrogen	N.D.	0.015	mg/l	98		90-110		
Batch number: 09351105101B	Sample number(s): 5866798							
Nitrite Nitrogen	N.D.	0.015	mg/l	98		90-110		
Batch number: 09354108101A	Sample number(s): 5866796,5866798							
Kjeldahl Nitrogen	N.D.	0.50	mg/l	108		90-110		
Batch number: 09355106102B	Sample number(s): 5866796,5866798							
Nitrate Nitrogen	N.D.	0.040	mg/l	105		90-110		
Batch number: 09364049502A	Sample number(s): 5866796,5866798							
Total Organic Carbon	N.D.	0.50	mg/l	102		91-113		
Batch number: 09365049501A	Sample number(s): 5866796,5866798							
Total Carbon	0.56 J	0.50	mg/l	104		80-120		
Batch number: 09365196601A	Sample number(s): 5866796,5866798							
Chloride	N.D.	0.20	mg/l	94		90-110		
Sulfate	N.D.	0.30	mg/l	94		89-110		
Batch number: 09351834402A	Sample number(s): 5866796,5866798							
Ferrous Iron	N.D.	0.010	mg/l	101		92-105		

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron Group Number: 1175623
 Reported: 01/04/10 at 01:24 PM

Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: 09352023001A Sulfide	Sample number(s): 5866796, 5866798 N.D.	0.054	mg/l	99		90-110		
Batch number: 09355020201A Alkalinity to pH 4.5	Sample number(s): 5866796, 5866798 N.D.	0.46	mg/l as CaCO ₃	100		98-103		
Batch number: 09355022101A Ammonia Nitrogen	Sample number(s): 5866796, 5866798 N.D.	0.20	mg/l	93	92	85-105	1	5

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
 Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: L093611AA	Sample number(s): 5866796, 5866798, 5866800 UNSPK: 5866796								
Benzene	117		80-126						
Chlorobenzene	115		87-124						
Ethylbenzene	117		71-134						
Toluene	116		80-125						
Xylene (Total)	116		79-125						
Batch number: 093520016A Methane	Sample number(s): 5866796, 5866798 UNSPK: P866101								
	63	80	35-157	10	20				
Batch number: 093550001A CO ₂ by Headspace	Sample number(s): 5866796, 5866798 UNSPK: P865719								
	86	78	15-145	8	20				
Batch number: 093551848004	Sample number(s): 5866796-5866799 UNSPK: P866579 BKG: P866579								
Arsenic	108	109	75-125	1	20	N.D.	N.D.	0 (1)	20
Calcium	34 (2)	19 (2)	75-125	1	20	49.3	48.1	2	20
Iron	101	101	75-125	0	20	N.D.	N.D.	0 (1)	20
Lead	97	97	75-125	0	20	N.D.	N.D.	0 (1)	20
Magnesium	-20 (2)	-57 (2)	75-125	2	20	48.8	47.9	2	20
Manganese	101	101	75-125	0	20	N.D.	N.D.	0 (1)	20
Potassium	104	101	75-125	2	20	0.436 J	0.569	26* (1)	20
Sodium	42 (2)	110 (2)	75-125	2	20	391	394	1	20
Batch number: 09351105101A Nitrite Nitrogen	Sample number(s): 5866796 UNSPK: 5866796 BKG: 5866796								
	94		90-110			N.D.	N.D.	0 (1)	20
Batch number: 09351105101B Nitrite Nitrogen	Sample number(s): 5866798 UNSPK: 5866798 BKG: 5866798								
	97		90-110			N.D.	N.D.	0 (1)	20
Batch number: 09354108101A Kjeldahl Nitrogen	Sample number(s): 5866796, 5866798 UNSPK: 5866798 BKG: 5866798								
	103		90-110			N.D.	N.D.	0 (1)	20
Batch number: 09355106102B Nitrate Nitrogen	Sample number(s): 5866796, 5866798 UNSPK: 5866798 BKG: 5866798								
	87*		90-110			2.2	2.4	6*	2

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron Group Number: 1175623
 Reported: 01/04/10 at 01:24 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
 Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: 09364049502A Total Organic Carbon	105		64-141			1.1	1.1	1 (1)	4
Batch number: 09365049501A Total Carbon	96		72-132			64.7	66.4	3	20
Batch number: 09365196601A Chloride	115*		90-110			10.4	10.2	3	20
Sulfate	107		90-110			N.D.	N.D.	0 (1)	20
Batch number: 09351834402A Ferrous Iron	99	99	66-130	0	6	16.7	16.7	0 (1)	10
Batch number: 09352023001A Sulfide	99	101	69-133	1	18	0.16 J	0.15 J	7 (1)	7
Batch number: 09355020201A Alkalinity to pH 4.5	98	99	64-130	0	2	77.9	77.2	1	4
Alkalinity to pH 8.3						N.D.	N.D.	0 (1)	4
Batch number: 09355022101A Ammonia Nitrogen						14.5	13.4	8*	2

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TCL by 8260 (water)
 Batch number: L093611AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5866796	92	90	92	91
5866798	93	91	94	91
5866800	92	91	94	91
Blank	92	90	93	92
LCS	94	93	97	94
LCSD	95	91	97	93
MS	94	92	93	94
Limits:	80-116	77-113	80-113	78-113

Analysis Name: Volatile Headspace Hydrocarbon
 Batch number: 093520016A
 Propene

5866796	74
5866798	61
Blank	98

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron
Reported: 01/04/10 at 01:24 PM

Group Number: 1175623

Surrogate Quality Control

LCS	96
MS	76
MSD	82

Limits: 42-131

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Analysis Request/ Environmental Services Chain of Custody



For Lancaster Laboratories use only

Acct. # 11494 Group# 1175623 Sample # 5866796-800 **COC #** 225012

Please print. Instructions on reverse side correspond with circled numbers.

temp = 2.4°C

<p>1 Client: <u>Chevron</u> Acct. #: <u>11494</u></p> <p>Project Name#: <u>Barricade II Monitoring Network</u> PWSID # <u>MAJKA1700120</u></p> <p>Project Manager: <u>Doug Lam</u> P.O.#: _____</p> <p>Sampler: <u>John Hill</u> Quote #: _____</p> <p>Name of state where samples were collected: <u>OHIO</u></p>	<p>4</p>	<p>5 Analysis Requested</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="3">Preservation Codes</th> </tr> <tr> <td style="width: 33%; text-align: center;">VOC's 8460 *</td> <td style="width: 33%; text-align: center;">Dissolved As, Pb, Mn *</td> <td style="width: 33%; text-align: center;">MMA</td> </tr> </table>	Preservation Codes			VOC's 8460 *	Dissolved As, Pb, Mn *	MMA	<p>6</p>																																																																																											
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Barrier Monitoring Network Sampling ⁴Q 2009
Analytical Requests for Groundwater
Chevron Cincinnati Facility, Hooven, Ohio

VOLATILE ORGANICS

Benzene
Chlorobenzene
Ethylbenzene
Toluene
Xylenes (total)

DISSOLVED METALS – FIELD FILTERED

Arsenic
Lead
Manganese

MNA PARAMETERS

Alkalinity to pH 4.5
Alkalinity to pH 8.3
Ammonia Nitrogen
Calcium
Carbon Dioxide
Chloride
Iron (II) and Iron (III)
Magnesium
Total Manganese
Methane
Nitrate Nitrogen
Nitrite Nitrogen
Potassium
Sodium
Sulfate
Sulfide
Total Kjeldahl Nitrogen
Total Organic Carbon
Total Inorganic Carbon



Environmental Sample Administration Receipt Documentation Log

Client/Project: Chevron
 Date of Receipt: 12/17/09
 Time of Receipt: 0920
 Source Code: 50-1
 Unpacker Emp. No.: 208

Shipping Container Sealed: YES NO
 Custody Seal Present * : YES NO
 * Custody seal was intact unless otherwise noted in the discrepancy section
 Package: Chilled Not Chilled

Temperature of Shipping Containers							
Cooler #	Thermometer ID	Temperature (°C)	Temp Bottle (TB) or Surface Temp (ST)	Wet Ice (WI) or Dry Ice (DI) or Ice Packs (IP)	Ice Present? Y/N	Loose (L) Bagged Ice (B) or NA	Comments
1	0429975	2.4	TB	WI	Y	L	
2							
3							
4							
5							
6							

Number of Trip Blanks received NOT listed on chain of custody. 0

Paperwork Discrepancy/Unpacking Problems:

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
<u>Da Neslund</u>	<u>12/17/09</u>	<u>0940</u>	Unpacking <u>Storage</u>
<u>Mary Beth Reed</u>	<u>12/17/09</u>	<u>1021</u>	Place in Storage or <u>Entry</u>
			Entry
			Entry

Lancaster Laboratories Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	BMQL	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	MPN	Most Probable Number
IU	International Units	CP Units	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	NTU	nephelometric turbidity units
C	degrees Celsius	F	degrees Fahrenheit
Cal	(diet) calories	lb.	pound(s)
meq	milliequivalents	kg	kilogram(s)
g	gram(s)	mg	milligram(s)
ug	microgram(s)	l	liter(s)
ml	milliliter(s)	ul	microliter(s)
m3	cubic meter(s)	fib >5 um/ml	fibers greater than 5 microns in length per ml
<	less than – The number following the sign is the <u>limit of quantitation</u> , the smallest amount of analyte which can be reliably determined using this specific test.		
>	greater than		
ppm	parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.		

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike amount not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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