

HIP - 112

**MONITORING
REPORTS**

YEAR(S):

2008

Jones, Brad A., EMNRD

From: Jones, Brad A., EMNRD
Sent: Wednesday, December 03, 2008 10:17 AM
To: 'Ford, Michael'; Price, Wayne, EMNRD
Cc: Holcomb, Danny; Wright, B.S.; Olan, Noel; Promchotikul, Pitinan; Chapman, Harold; Williams, Robert
Subject: HIP-112 OCD Review of Post Hydrostatic Test Water Analyses - WBD CO2 Transmission Line

Mike,

I have reviewed the test results of the hydrostatic test water and they satisfy the conditions set forth in the approved permit and application. The explanation and justifications provided for the elevated concentrations for fluoride and iron are acceptable. Please implement best management practices and erosion control measures when releasing the water. Also, please comply with the application and the conditions of your permit (HIP-112) for on-site discharge.

This approval does not relieve Hess of responsibility should its operation result in pollution of surface water, ground water, or the environment. In addition, NMOCD approval does not relieve Hess of responsibility for compliance with other federal, state or local regulations.

Brad A. Jones

Environmental Engineer

Environmental Bureau

NM Oil Conservation Division

1220 S. St. Francis Drive

Santa Fe, New Mexico 87505

E-mail: brad.a.jones@state.nm.us

Office: (505) 476-3487

Fax: (505) 476-3462

From: Ford, Michael [mailto:MFord@hess.com]
Sent: Tuesday, December 02, 2008 9:08 AM
To: Jones, Brad A., EMNRD
Cc: Holcomb, Danny; Wright, B.S.; Olan, Noel; Promchotikul, Pitinan; Chapman, Harold; Williams, Robert
Subject: Post Hydrostatic Test Water Analyses - WBD CO2 Transmission Line
Importance: High

Brad,

I received a complete copy of the West Bravo Dome (WBD) Carbon Dioxide (CO2) Transmission Line post hydrostatic test water analyses from Hall Environmental Labs yesterday. A copy of the analyses is available in the attached PDF file. A radioactivity analysis was not done on the post-test water as the pre-test water showed very low concentrations and radioactivity (combined Radium 226 & Radium 228) would not increase as a result of the hydrostatic test.

With the exception of fluoride and iron concentrations, compliance with the New Mexico standards is shown. The pre-test fluoride concentration was 2.9 mg/l. The post-test fluoride concentration was essentially the same at 3.0 mg/l. EPA's current drinking water standards maximum allowable fluoride concentration is 4.0 mg/l. The pre-test iron concentration was non-detectable. The post-test iron concentration was 6.5 mg/l. The increase in iron concentration is attributable to

minor amounts of rust being present in the steel pipe that would have been picked up as part of the hydrostatic test process. This amount of iron should not cause any health concerns as part of the discharge process.

Please review the test results at your earliest convenience and advise of your approval or disapproval for the test water to be discharged.

Please contact me if you have any questions regarding this information.

Mike Ford
Environmental Advisor
Hess Corporation
Phone: 713-609-4204
Mobile: 713-829-6076

<<Post Test Water Analyses.pdf>>

This inbound email has been scanned by the MessageLabs Email Security System.

Jones, Brad A., EMNRD

From: Ford, Michael [MFord@hess.com]
Sent: Tuesday, December 02, 2008 9:08 AM
To: Jones, Brad A., EMNRD
Cc: Holcomb, Danny; Wright, B.S.; Olan, Noel; Promchotikul, Pitinan; Chapman, Harold; Williams, Robert
Subject: Post Hydrostatic Test Water Analyses - WBD CO2 Transmission Line
Attachments: Post Test Water Analyses.pdf
Importance: High

Brad,

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With the exception of fluoride and iron concentrations, compliance with the New Mexico standards is shown. The pre-test fluoride concentration was 2.9 mg/l. The post-test fluoride concentration was essentially the same at 3.0 mg/l. EPA's current drinking water standards maximum allowable fluoride concentration is 4.0 mg/l. The pre-test iron concentration was non-detectable. The post-test iron concentration was 6.5 mg/l. The increase in iron concentration is attributable to minor amounts of rust being present in the steel pipe that would have been picked up as part of the hydrostatic test process. This amount of iron should not cause any health concerns as part of the discharge process.

Please review the test results at your earliest convenience and advise of your approval or disapproval for the test water to be discharged.

Please contact me if you have any questions regarding this information.

Mike Ford
Environmental Advisor
Hess Corporation
Phone: 713-609-4204
Mobile: 713-829-6076

<<Post Test Water Analyses.pdf>>

This inbound email has been scanned by the MessageLabs Email Security System.



COVER LETTER

Monday, December 01, 2008

Michael Ford
Hess Corporation
HCR 72 Box 30
Mosquero, NM 87733
TEL: (575) 650-0316
FAX

RE: Hess West Bravo Dome

Order No.: 0811022

Dear Michael Ford:

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 11/4/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX



Hall Environmental Analysis Laboratory, Inc.

Date: 01-Dec-08

CLIENT: Hess Corporation
Lab Order: 0811022
Project: Hess West Bravo Dome
Lab ID: 0811022-01

Client Sample ID: #1
Collection Date: 11/3/2008 9:56:00 AM
Date Received: 11/4/2008
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 504.1: EDB						Analyst: JAT
1,2-Dibromoethane	ND	0.010		µg/L	1	11/7/2008 12:24:06 PM
Surr: 1,2,3-Trichloropropane	92.7	54.9-135		%REC	1	11/7/2008 12:24:06 PM
EPA METHOD 8082: PCB'S						Analyst: JMP
Aroclor 1016	ND	1.0		µg/L	1	11/7/2008 5:07:41 AM
Aroclor 1221	ND	5.0		µg/L	1	11/7/2008 5:07:41 AM
Aroclor 1232	ND	1.0		µg/L	1	11/7/2008 5:07:41 AM
Aroclor 1242	ND	1.0		µg/L	1	11/7/2008 5:07:41 AM
Aroclor 1248	ND	1.0		µg/L	1	11/7/2008 5:07:41 AM
Aroclor 1254	ND	1.0		µg/L	1	11/7/2008 5:07:41 AM
Aroclor 1260	ND	1.0		µg/L	1	11/7/2008 5:07:41 AM
Surr: Decachlorobiphenyl	70.0	23.9-124		%REC	1	11/7/2008 5:07:41 AM
Surr: Tetrachloro-m-xylene	68.4	28.1-139		%REC	1	11/7/2008 5:07:41 AM
EPA METHOD 8310: PAHS						Analyst: DMF
Naphthalene	ND	2.0		µg/L	1	11/11/2008 5:52:41 AM
1-Methylnaphthalene	ND	2.0		µg/L	1	11/11/2008 5:52:41 AM
2-Methylnaphthalene	ND	2.0		µg/L	1	11/11/2008 5:52:41 AM
Acenaphthylene	ND	2.5		µg/L	1	11/11/2008 5:52:41 AM
Acenaphthene	ND	5.0		µg/L	1	11/11/2008 5:52:41 AM
Fluorene	ND	0.80		µg/L	1	11/11/2008 5:52:41 AM
Phenanthrene	ND	0.60		µg/L	1	11/11/2008 5:52:41 AM
Anthracene	ND	0.60		µg/L	1	11/11/2008 5:52:41 AM
Fluoranthene	ND	0.30		µg/L	1	11/11/2008 5:52:41 AM
Pyrene	ND	0.30		µg/L	1	11/11/2008 5:52:41 AM
Benz(a)anthracene	ND	0.070		µg/L	1	11/11/2008 5:52:41 AM
Chrysene	ND	0.20		µg/L	1	11/11/2008 5:52:41 AM
Benzo(b)fluoranthene	ND	0.10		µg/L	1	11/11/2008 5:52:41 AM
Benzo(k)fluoranthene	ND	0.070		µg/L	1	11/11/2008 5:52:41 AM
Benzo(a)pyrene	ND	0.070		µg/L	1	11/11/2008 5:52:41 AM
Dibenz(a,h)anthracene	ND	0.070		µg/L	1	11/11/2008 5:52:41 AM
Benzo(g,h,i)perylene	ND	0.080		µg/L	1	11/11/2008 5:52:41 AM
Indeno(1,2,3-cd)pyrene	ND	0.080		µg/L	1	11/11/2008 5:52:41 AM
Surr: Benzo(e)pyrene	56.6	44.8-104		%REC	1	11/11/2008 5:52:41 AM
EPA METHOD 300.0: ANIONS						Analyst: SLB
Fluoride	3.0	0.10		mg/L	1	11/4/2008 1:37:44 PM
Chloride	51	1.0		mg/L	10	11/4/2008 1:55:08 PM
Nitrogen, Nitrate (As N)	1.3	0.10		mg/L	1	11/4/2008 1:37:44 PM
Sulfate	73	0.50		mg/L	1	11/4/2008 1:37:44 PM
EPA METHOD 7470: MERCURY						Analyst: SNV

Qualifiers: * Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: 01-Dec-08

CLIENT: Hess Corporation
Lab Order: 0811022
Project: Hess West Bravo Dome
Lab ID: 0811022-01

Client Sample ID: #1
Collection Date: 11/3/2008 9:56:00 AM
Date Received: 11/4/2008
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 7470: MERCURY						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	11/18/2008 5:10:11 PM
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: NMO
Aluminum	0.030	0.020		mg/L	1	12/1/2008 11:21:19 AM
Barium	0.021	0.010		mg/L	1	12/1/2008 11:21:19 AM
Boron	0.25	0.040		mg/L	1	12/1/2008 11:21:19 AM
Cadmium	ND	0.0020		mg/L	1	12/1/2008 11:21:19 AM
Chromium	ND	0.0060		mg/L	1	12/1/2008 11:21:19 AM
Cobalt	ND	0.0060		mg/L	1	12/1/2008 11:21:19 AM
Copper	ND	0.0060		mg/L	1	12/1/2008 11:21:19 AM
Iron	6.5	0.50		mg/L	10	12/1/2008 11:25:51 AM
Lead	ND	0.0050		mg/L	1	12/1/2008 11:21:19 AM
Manganese	0.19	0.0020		mg/L	1	12/1/2008 11:21:19 AM
Molybdenum	ND	0.0080		mg/L	1	12/1/2008 11:21:19 AM
Nickel	ND	0.010		mg/L	1	12/1/2008 11:21:19 AM
Silver	ND	0.0050		mg/L	1	12/1/2008 11:21:19 AM
Zinc	ND	0.020		mg/L	1	12/1/2008 11:21:19 AM
EPA METHOD 8260B: VOLATILES						Analyst: HL
Benzene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
Toluene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
Ethylbenzene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
Naphthalene	ND	2.0		µg/L	1	11/5/2008 2:42:52 AM
1-Methylnaphthalene	ND	4.0		µg/L	1	11/5/2008 2:42:52 AM
2-Methylnaphthalene	ND	4.0		µg/L	1	11/5/2008 2:42:52 AM
Acetone	ND	10		µg/L	1	11/5/2008 2:42:52 AM
Bromobenzene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
Bromodichloromethane	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
Bromoform	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
Bromomethane	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
2-Butanone	ND	10		µg/L	1	11/5/2008 2:42:52 AM
Carbon disulfide	ND	10		µg/L	1	11/5/2008 2:42:52 AM
Carbon Tetrachloride	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
Chlorobenzene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
Chloroethane	ND	2.0		µg/L	1	11/5/2008 2:42:52 AM
Chloroform	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
Chloromethane	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM

Qualifiers: * Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

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H Holding times for preparation or analysis exceeded
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Hall Environmental Analysis Laboratory, Inc.

Date: 01-Dec-08

CLIENT: Hess Corporation
 Lab Order: 0811022
 Project: Hess West Bravo Dome
 Lab ID: 0811022-01

Client Sample ID: #1
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 Date Received: 11/4/2008
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: HL
2-Chlorotoluene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
4-Chlorotoluene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
cis-1,2-DCE	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/5/2008 2:42:52 AM
Dibromochloromethane	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
Dibromomethane	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
1,1-Dichloroethane	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
1,1-Dichloroethene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
1,2-Dichloropropane	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
1,3-Dichloropropane	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
2,2-Dichloropropane	ND	2.0		µg/L	1	11/5/2008 2:42:52 AM
1,1-Dichloropropene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
Hexachlorobutadiene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
2-Hexanone	ND	10		µg/L	1	11/5/2008 2:42:52 AM
Isopropylbenzene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
4-Isopropyltoluene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	11/5/2008 2:42:52 AM
Methylene Chloride	ND	3.0		µg/L	1	11/5/2008 2:42:52 AM
n-Butylbenzene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
n-Propylbenzene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
sec-Butylbenzene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
Styrene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
tert-Butylbenzene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/5/2008 2:42:52 AM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
trans-1,2-DCE	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
Trichlorofluoromethane	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/5/2008 2:42:52 AM
Vinyl chloride	ND	1.0		µg/L	1	11/5/2008 2:42:52 AM
Xylenes, Total	ND	1.5		µg/L	1	11/5/2008 2:42:52 AM

Qualifiers: * Value exceeds Maximum Contaminant Level
 E Estimated value
 J Analyte detected below quantitation limits
 ND Not Detected at the Reporting Limit
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 MCL Maximum Contaminant Level
 RL Reporting Limit

Page 3 of 6

Hall Environmental Analysis Laboratory, Inc.

Date: 01-Dec-08

CLIENT: Hess Corporation
Lab Order: 0811022
Project: Hess West Bravo Dome
Lab ID: 0811022-01

Client Sample ID: #1
Collection Date: 11/3/2008 9:56:00 AM
Date Received: 11/4/2008
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: HL
Surr: 1,2-Dichloroethane-d4	85.6	68.1-123		%REC	1	11/5/2008 2:42:52 AM
Surr: 4-Bromofluorobenzene	107	53.2-145		%REC	1	11/5/2008 2:42:52 AM
Surr: Dibromofluoromethane	89.5	68.5-119		%REC	1	11/5/2008 2:42:52 AM
Surr: Toluene-d8	88.7	64-131		%REC	1	11/5/2008 2:42:52 AM
EPA METHOD 9067: TOTAL PHENOLICS						Analyst: JMP
Phenolics, Total Recoverable	ND	2.5		µg/L	1	11/13/2008
SM4500-H+B: PH						Analyst: KMS
pH	8.78	0.1		pH units	1	11/6/2008
SM 2540C: TDS						Analyst: KMB
Total Dissolved Solids	390	40		mg/L	1	11/4/2008

Qualifiers:

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- E Estimated value
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- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: 01-Dec-08

CLIENT: Hess Corporation
 Lab Order: 0811022
 Project: Hess West Bravo Dome
 Lab ID: 0811022-02

Client Sample ID: Trip Blank
 Collection Date:
 Date Received: 11/4/2008
 Matrix: TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 504.1: EDB						Analyst: JAT
1,2-Dibromoethane	ND	0.010		µg/L	1	11/7/2008 12:36:40 PM
Surr: 1,2,3-Trichloropropane	94.6	54.9-135		%REC	1	11/7/2008 12:36:40 PM
EPA METHOD 8260B: VOLATILES						Analyst: HL
Benzene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
Toluene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
Ethylbenzene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
Naphthalene	ND	2.0		µg/L	1	11/5/2008 3:11:32 AM
1-Methylnaphthalene	ND	4.0		µg/L	1	11/5/2008 3:11:32 AM
2-Methylnaphthalene	ND	4.0		µg/L	1	11/5/2008 3:11:32 AM
Acetone	ND	10		µg/L	1	11/5/2008 3:11:32 AM
Bromobenzene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
Bromodichloromethane	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
Bromoform	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
Bromomethane	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
2-Butanone	ND	10		µg/L	1	11/5/2008 3:11:32 AM
Carbon disulfide	ND	10		µg/L	1	11/5/2008 3:11:32 AM
Carbon Tetrachloride	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
Chlorobenzene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
Chloroethane	ND	2.0		µg/L	1	11/5/2008 3:11:32 AM
Chloroform	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
Chloromethane	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
2-Chlorotoluene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
4-Chlorotoluene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
cis-1,2-DCE	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/5/2008 3:11:32 AM
Dibromochloromethane	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
Dibromomethane	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
1,1-Dichloroethane	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
1,1-Dichloroethene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
1,2-Dichloropropane	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
1,3-Dichloropropane	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM

Qualifiers: * Value exceeds Maximum Contaminant Level
 E Estimated value
 J Analyte detected below quantitation limits
 ND Not Detected at the Reporting Limit
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 MCL Maximum Contaminant Level
 RL Reporting Limit

Page 5 of 6

Hall Environmental Analysis Laboratory, Inc.

Date: 01-Dec-08

CLIENT: Hess Corporation
 Lab Order: 0811022
 Project: Hess West Bravo Dome
 Lab ID: 0811022-02

Client Sample ID: Trip Blank
 Collection Date:
 Date Received: 11/4/2008
 Matrix: TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: HL
2,2-Dichloropropane	ND	2.0		µg/L	1	11/5/2008 3:11:32 AM
1,1-Dichloropropene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
Hexachlorobutadiene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
2-Hexanone	ND	10		µg/L	1	11/5/2008 3:11:32 AM
Isopropylbenzene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
4-Isopropyltoluene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	11/5/2008 3:11:32 AM
Methylene Chloride	ND	3.0		µg/L	1	11/5/2008 3:11:32 AM
n-Butylbenzene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
n-Propylbenzene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
sec-Butylbenzene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
Styrene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
tert-Butylbenzene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/5/2008 3:11:32 AM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
trans-1,2-DCE	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
Trichlorofluoromethane	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/5/2008 3:11:32 AM
Vinyl chloride	ND	1.0		µg/L	1	11/5/2008 3:11:32 AM
Xylenes, Total	ND	1.5		µg/L	1	11/5/2008 3:11:32 AM
Surr: 1,2-Dichloroethane-d4	86.7	68.1-123		%REC	1	11/5/2008 3:11:32 AM
Surr: 4-Bromofluorobenzene	104	53.2-145		%REC	1	11/5/2008 3:11:32 AM
Surr: Dibromofluoromethane	89.7	68.5-119		%REC	1	11/5/2008 3:11:32 AM
Surr: Toluene-d8	89.4	64-131		%REC	1	11/5/2008 3:11:32 AM

Qualifiers: * Value exceeds Maximum Contaminant Level
 E Estimated value
 J Analyte detected below quantitation limits
 ND Not Detected at the Reporting Limit
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 MCL Maximum Contaminant Level
 RL Reporting Limit



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800-735-4489 • 406-252-6325 • 406-252-6069 fax • ell@energylab.com

LABORATORY ANALYTICAL REPORT

Client: Hall Environmental
Project: 0811022
Lab ID: B08110326-001
Client Sample ID: 0811022-01G & I, #1

Report Date: 11/10/08
Collection Date: 11/03/08 09:56
Date Received: 11/05/08
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
INORGANICS							
Cyanide, Total	ND	mg/L		0.005		Kelada mod	11/06/08 15:53 / kjp
METALS, TOTAL							
Arsenic	0.002	mg/L		0.001		SW6020	11/08/08 02:33 / aje
Selenium	0.004	mg/L		0.001		SW6020	11/08/08 02:33 / aje
Uranium	0.005	mg/L		0.001		SW6020	11/08/08 02:33 / aje

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hall Environmental
Project: 0811022

Report Date: 11/10/08
Work Order: B08110328

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: Kelada mod			Analytical Run: AUTOAN201-B_081106A						
Sample ID: ICV-1	Initial Calibration Verification Standard								11/06/08 12:31
Cyanide, Total	0.144	mg/L	0.0050	96	90	110			
Method: Kelada mod			Batch: R120430						
Sample ID: LFB-2	Laboratory Fortified Blank								11/06/08 12:33
Cyanide, Total	0.103	mg/L	0.0050	103	90	110			
Sample ID: MBLK-3	Method Blank								11/06/08 12:34
Cyanide, Total	ND	mg/L	0.003						
Sample ID: B08110342-001DMS	Sample Matrix Spike								11/06/08 15:40
Cyanide, Total	0.107	mg/L	0.0050	107	90	110			
Sample ID: B08110342-001DMSD	Sample Matrix Spike Duplicate								11/06/08 16:10
Cyanide, Total	0.123	mg/L	0.0050	123	90	110			S
Method: SW8020			Batch: 35716						
Sample ID: MB-35716	Method Blank								11/07/08 23:54
Arsenic	0.0002	mg/L	4E-05						
Selenium	ND	mg/L	0.0001						
Uranium	2E-05	mg/L	2E-06						
Sample ID: LCS5-35716	Laboratory Control Sample								11/08/08 00:01
Arsenic	0.482	mg/L	0.0050	96	85	115			
Selenium	0.436	mg/L	0.0050	87	85	115			
Uranium	0.500	mg/L	0.0010	100	85	115			
Sample ID: B08110252-001BDIL	Serial Dilution								11/08/08 00:49
Arsenic	0.00710	mg/L	0.0050		0	0			10 N
Selenium	ND	mg/L	0.011		0	0	0		10
Uranium	0.000930	mg/L	0.0010		0	0			10 N
Sample ID: B08110326-001BMS5	Sample Matrix Spike								11/08/08 02:40
Arsenic	0.491	mg/L	0.0050	98	75	125			
Selenium	0.442	mg/L	0.0050	88	75	125			
Uranium	0.516	mg/L	0.0010	102	75	125			
Sample ID: B08110326-001BMSD5	Sample Matrix Spike Duplicate								11/08/08 02:46
Arsenic	0.500	mg/L	0.0050	99	75	125	1.7		20
Selenium	0.444	mg/L	0.0050	88	75	125	0.4		20
Uranium	0.506	mg/L	0.0010	100	75	125	2		20

Qualifiers:

RL - Analyte reporting limit.

N - The analyte concentration was not sufficiently high to calculate a RPD for the serial dilution test.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.



QA/QC Summary Report

Client: Hall Environmental

Project: 0811022

Report Date: 11/10/08

Work Order: B08110326

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020					Analytical Run: ICPMS204-B_081107B				
Sample ID: QCS-ME080514B,080814 Initial Calibration Verification Standard					11/07/08 22:52				
Arsenic	0.0507	mg/L	0.0010	101	90	110			
Selenium	0.0516	mg/L	0.0010	103	90	110			
Uranium	0.0186	mg/L	0.00030	93	90	110			
Sample ID: ICSA Interference Check Sample A					11/07/08 23:12				
Arsenic	5.62E-05	mg/L	0.0010						
Selenium	9.26E-05	mg/L	0.0010						
Uranium	7.67E-05	mg/L	0.00030						
Sample ID: ICSAB Interference Check Sample AB					11/07/08 23:19				
Arsenic	0.0130	mg/L	0.0010	130	70	130			
Selenium	0.0116	mg/L	0.0010	115	70	130			
Uranium	2.12E-05	mg/L	0.00030		0	0			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC SUMMARY REPORT

Client: Hess Corporation
Project: Hess West Bravo Dome

Work Order: 0811022

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 300.0: Anions									
Sample ID: 0811022-01EMSD		MSD							
Nitrogen, Nitrate (As N)	3.606	mg/L	0.10	93.6	83.8	112	2.02	20	
Sample ID: MB		MBLK							
Fluoride	ND	mg/L	0.10						
Chloride	ND	mg/L	0.10						
Nitrogen, Nitrate (As N)	ND	mg/L	0.10						
Sulfate	ND	mg/L	0.50						
Sample ID: LCS		LCS							
Fluoride	0.1156	mg/L	0.10	23.1	90	110			S
Chloride	0.9604	mg/L	0.10	19.2	90	110			S
Nitrogen, Nitrate (As N)	0.4966	mg/L	0.10	19.8	90	110			S
Sulfate	1.957	mg/L	0.50	19.6	90	110			S
Sample ID: 0811022-01EMS		MS							
Nitrogen, Nitrate (As N)	3.534	mg/L	0.10	90.7	83.8	112			
Method: EPA Method 9067: Total Phenolics									
Sample ID: MB-17604		MBLK							
Phenolics, Total Recoverable	ND	µg/L	2.5						
Sample ID: LCS-17604		LCS							
Phenolics, Total Recoverable	24.37	µg/L	2.5	122	51.7	133			
Sample ID: LCSD-17604		LCSD							
Phenolics, Total Recoverable	23.32	µg/L	2.5	117	51.7	133	4.43	0	
Method: EPA Method 504.1: EDB									
Sample ID: MB-17577		MBLK							
1,2-Dibromoethane	ND	µg/L	0.010						
Sample ID: LCS-17577		LCS							
1,2-Dibromoethane	0.09400	µg/L	0.010	94.0	70	130			
Sample ID: LCSD-17577		LCSD							
1,2-Dibromoethane	0.09300	µg/L	0.010	93.0	70	130	1.07	13.5	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Hess Corporation
 Project: Hess West Bravo Dome

Work Order: 0811022

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8082: PCB's

Sample ID: MB-17554

MBLK

Batch ID: 17554 Analysis Date: 11/7/2008 1:51:04 AM

Aroclor 1016	ND	µg/L	1.0
Aroclor 1221	ND	µg/L	5.0
Aroclor 1232	ND	µg/L	1.0
Aroclor 1242	ND	µg/L	1.0
Aroclor 1248	ND	µg/L	1.0
Aroclor 1254	ND	µg/L	1.0
Aroclor 1260	ND	µg/L	1.0

Sample ID: LCS-17554

LCS

Batch ID: 17554 Analysis Date: 11/7/2008 2:40:06 AM

Aroclor 1016	3.534	µg/L	1.0	70.7	27.4	132
Aroclor 1260	4.090	µg/L	1.0	81.8	33.6	97.7

Sample ID: LCSD-17554

LCSD

Batch ID: 17554 Analysis Date: 11/7/2008 3:29:13 AM

Aroclor 1016	3.134	µg/L	1.0	62.7	27.4	132	12.0	45.7
Aroclor 1260	3.696	µg/L	1.0	73.9	33.6	97.7	10.1	30

Qualifiers:

E	Estimated value.	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Hess Corporation
Project: Hess West Bravo Dome

Work Order: 0811022

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb

MBLK

Batch ID: R31010 Analysis Date: 11/4/2008 8:58:07 AM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
1,2,4-Trimethylbenzene	ND	µg/L	1.0
1,3,5-Trimethylbenzene	ND	µg/L	1.0
1,2-Dichloroethane (EDC)	ND	µg/L	1.0
1,2-Dibromoethane (EDB)	ND	µg/L	1.0
Naphthalene	ND	µg/L	2.0
1-Methylnaphthalene	ND	µg/L	4.0
2-Methylnaphthalene	ND	µg/L	4.0
Acetone	ND	µg/L	10
Bromobenzene	ND	µg/L	1.0
Bromodichloromethane	ND	µg/L	1.0
Bromoform	ND	µg/L	1.0
Bromomethane	ND	µg/L	1.0
2-Butanone	ND	µg/L	10
Carbon disulfide	ND	µg/L	10
Carbon Tetrachloride	ND	µg/L	1.0
Chlorobenzene	ND	µg/L	1.0
Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0
Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0
1,1-Dichloroethane	ND	µg/L	1.0
1,1-Dichloroethene	ND	µg/L	1.0
1,2-Dichloropropane	ND	µg/L	1.0
1,3-Dichloropropane	ND	µg/L	1.0
2,2-Dichloropropane	ND	µg/L	2.0
1,1-Dichloropropene	ND	µg/L	1.0
Hexachlorobutadiene	ND	µg/L	1.0
2-Hexanone	ND	µg/L	10
Isopropylbenzene	ND	µg/L	1.0
4-Isopropyltoluene	ND	µg/L	1.0

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Hess Corporation
Project: Hess West Bravo Dome

Work Order: 0811022

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb

MBLK

Batch ID: R31010 Analysis Date: 11/4/2008 8:58:07 AM

4-Methyl-2-pentanone	ND	µg/L	10
Methylene Chloride	ND	µg/L	3.0
n-Butylbenzene	ND	µg/L	1.0
n-Propylbenzene	ND	µg/L	1.0
sec-Butylbenzene	ND	µg/L	1.0
Styrene	ND	µg/L	1.0
tert-Butylbenzene	ND	µg/L	1.0
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0
Tetrachloroethene (PCE)	ND	µg/L	1.0
trans-1,2-DCE	ND	µg/L	1.0
trans-1,3-Dichloropropene	ND	µg/L	1.0
1,2,3-Trichlorobenzene	ND	µg/L	1.0
1,2,4-Trichlorobenzene	ND	µg/L	1.0
1,1,1-Trichloroethane	ND	µg/L	1.0
1,1,2-Trichloroethane	ND	µg/L	1.0
Trichloroethene (TCE)	ND	µg/L	1.0
Trichlorofluoromethane	ND	µg/L	1.0
1,2,3-Trichloropropane	ND	µg/L	2.0
Vinyl chloride	ND	µg/L	1.0
Xylenes, Total	ND	µg/L	1.5

Sample ID: b5

MBLK

Batch ID: R31010 Analysis Date: 11/4/2008 8:57:35 PM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
1,2,4-Trimethylbenzene	ND	µg/L	1.0
1,3,5-Trimethylbenzene	ND	µg/L	1.0
1,2-Dichloroethane (EDC)	ND	µg/L	1.0
1,2-Dibromoethane (EDB)	ND	µg/L	1.0
Naphthalene	ND	µg/L	2.0
1-Methylnaphthalene	ND	µg/L	4.0
2-Methylnaphthalene	ND	µg/L	4.0
Acetone	ND	µg/L	10
Bromobenzene	ND	µg/L	1.0
Bromodichloromethane	ND	µg/L	1.0
Bromoform	ND	µg/L	1.0
Bromomethane	ND	µg/L	1.0
2-Butanone	ND	µg/L	10
Carbon disulfide	ND	µg/L	10
Carbon Tetrachloride	ND	µg/L	1.0
Chlorobenzene	ND	µg/L	1.0
Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Hess Corporation
 Project: Hess West Bravo Dome

Work Order: 0811022

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: b5

MBLK

Batch ID: R31010 Analysis Date: 11/4/2008 8:57:35 PM

Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0
1,1-Dichloroethane	ND	µg/L	1.0
1,1-Dichloroethene	ND	µg/L	1.0
1,2-Dichloropropane	ND	µg/L	1.0
1,3-Dichloropropane	ND	µg/L	1.0
2,2-Dichloropropane	ND	µg/L	2.0
1,1-Dichloropropene	ND	µg/L	1.0
Hexachlorobutadiene	ND	µg/L	1.0
2-Hexanone	ND	µg/L	10
Isopropylbenzene	ND	µg/L	1.0
4-Isopropyltoluene	ND	µg/L	1.0
4-Methyl-2-pentanone	ND	µg/L	10
Methylene Chloride	ND	µg/L	3.0
n-Butylbenzene	ND	µg/L	1.0
n-Propylbenzene	ND	µg/L	1.0
sec-Butylbenzene	ND	µg/L	1.0
Styrene	ND	µg/L	1.0
tert-Butylbenzene	ND	µg/L	1.0
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0
Tetrachloroethene (PCE)	ND	µg/L	1.0
trans-1,2-DCE	ND	µg/L	1.0
trans-1,3-Dichloropropene	ND	µg/L	1.0
1,2,3-Trichlorobenzene	ND	µg/L	1.0
1,2,4-Trichlorobenzene	ND	µg/L	1.0
1,1,1-Trichloroethane	ND	µg/L	1.0
1,1,2-Trichloroethane	ND	µg/L	1.0
Trichloroethene (TCE)	ND	µg/L	1.0
Trichlorofluoromethane	ND	µg/L	1.0
1,2,3-Trichloropropane	ND	µg/L	2.0
Vinyl chloride	ND	µg/L	1.0
Xylenes, Total	ND	µg/L	1.5

Sample ID: 100ng Ics

LCS

Batch ID: R31010 Analysis Date: 11/4/2008 9:55:28 AM

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Hess Corporation
 Project: Hess West Bravo Dome

Work Order: 0811022

Analyte	Result	Units	√PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 100ng lcs

LCS

Batch ID: R31010

Analysis Date: 11/4/2008 9:55:28 AM

Benzene	20.51	µg/L	1.0	103	88	116			
Toluene	22.12	µg/L	1.0	111	82.9	112			
Chlorobenzene	21.47	µg/L	1.0	107	71.4	133			
1,1-Dichloroethene	22.34	µg/L	1.0	112	97.9	140			
Trichloroethene (TCE)	20.45	µg/L	1.0	102	90.5	112			

Sample ID: 100ng lcs

LCS

Batch ID: R31010

Analysis Date: 11/4/2008 9:54:55 PM

Benzene	21.84	µg/L	1.0	109	88	116			
Toluene	19.42	µg/L	1.0	97.1	82.9	112			
Chlorobenzene	22.66	µg/L	1.0	113	71.4	133			
1,1-Dichloroethene	23.24	µg/L	1.0	116	97.9	140			
Trichloroethene (TCE)	22.07	µg/L	1.0	110	90.5	112			

Qualifiers:

E Estimated value
 J Analyte detected below quantitation limits
 R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 S Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Hess Corporation
Project: Hess West Bravo Dome

Work Order: 0811022

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8310: PAHs

Sample ID: MB-17560

MBLK

Batch ID: 17560 Analysis Date: 11/11/2008 1:11:25 AM

Naphthalene	ND	µg/L	2.0
1-Methylnaphthalene	ND	µg/L	2.0
2-Methylnaphthalene	ND	µg/L	2.0
Acenaphthylene	ND	µg/L	2.5
Acenaphthene	ND	µg/L	5.0
Fluorene	ND	µg/L	0.80
Phenanthrene	ND	µg/L	0.60
Anthracene	ND	µg/L	0.60
Fluoranthene	ND	µg/L	0.30
Pyrene	ND	µg/L	0.30
Benz(a)anthracene	ND	µg/L	0.070
Chrysene	ND	µg/L	0.20
Benzo(b)fluoranthene	ND	µg/L	0.10
Benzo(k)fluoranthene	ND	µg/L	0.070
Benzo(a)pyrene	ND	µg/L	0.070
Dibenz(a,h)anthracene	ND	µg/L	0.070
Benzo(g,h,i)perylene	ND	µg/L	0.080
Indeno(1,2,3-cd)pyrene	ND	µg/L	0.080

Sample ID: LCS-17560

LCS

Batch ID: 17560 Analysis Date: 11/11/2008 1:42:38 AM

Naphthalene	56.26	µg/L	2.0	70.3	31.5	90.7
1-Methylnaphthalene	59.22	µg/L	2.0	73.8	32.5	93.3
2-Methylnaphthalene	61.12	µg/L	2.0	76.4	32.8	89.6
Acenaphthylene	61.13	µg/L	2.5	76.2	37.8	92.4
Acenaphthene	65.76	µg/L	5.0	82.2	38.6	93.9
Fluorene	5.370	µg/L	0.80	67.0	38	95.5
Phenanthrene	3.190	µg/L	0.60	79.4	32.9	107
Anthracene	3.140	µg/L	0.60	78.1	35.2	98.3
Fluoranthene	6.210	µg/L	0.30	77.4	36.4	104
Pyrene	6.070	µg/L	0.30	75.7	37.1	102
Benz(a)anthracene	0.6100	µg/L	0.070	76.1	33.7	101
Chrysene	3.120	µg/L	0.20	77.6	35.2	96.1
Benzo(b)fluoranthene	0.8100	µg/L	0.10	80.8	33.6	94.2
Benzo(k)fluoranthene	0.4000	µg/L	0.070	80.0	25.4	110
Benzo(a)pyrene	0.4100	µg/L	0.070	81.7	26.9	102
Dibenz(a,h)anthracene	0.8000	µg/L	0.070	79.8	40.7	92.1
Benzo(g,h,i)perylene	0.7700	µg/L	0.080	72.0	24.3	109
Indeno(1,2,3-cd)pyrene	1.620	µg/L	0.080	77.3	42.6	99.9

Sample ID: LCSD-17560

LCSD

Batch ID: 17560 Analysis Date: 11/11/2008 2:13:54 AM

Naphthalene	46.77	µg/L	2.0	58.5	31.5	90.7	18.4	32.1
1-Methylnaphthalene	48.33	µg/L	2.0	60.3	32.5	93.3	20.3	32.7
2-Methylnaphthalene	50.60	µg/L	2.0	63.3	32.8	89.6	18.8	34
Acenaphthylene	49.50	µg/L	2.5	61.7	37.8	92.4	21.0	38.8
Acenaphthene	53.21	µg/L	5.0	66.5	38.6	93.9	21.1	38.6
Fluorene	4.280	µg/L	0.80	53.4	38	95.5	22.6	29.3

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Hess Corporation
 Project: Hess West Bravo Dome

Work Order: 0811022

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8310: PAHs									
Sample ID: LCSD-17560	LCSD		Batch ID: 17560		Analysis Date: 11/11/2008 2:13:54 AM				
Phenanthrene	2.540	µg/L	0.60	63.2	32.9	107	22.7	25	
Anthracene	2.540	µg/L	0.60	63.2	35.2	98.3	21.1	23.9	
Fluoranthene	5.180	µg/L	0.30	64.6	36.4	104	18.1	15.7	R
Pyrene	4.920	µg/L	0.30	61.3	37.1	102	20.9	15.3	R
Benz(a)anthracene	0.5000	µg/L	0.070	62.3	33.7	101	19.8	19	R
Chrysene	2.550	µg/L	0.20	63.4	35.2	96.1	20.1	16.6	R
Benzo(b)fluoranthene	0.6700	µg/L	0.10	66.9	33.6	94.2	18.9	21.7	
Benzo(k)fluoranthene	0.3200	µg/L	0.070	64.0	25.4	110	22.2	19.4	R
Benzo(a)pyrene	0.3400	µg/L	0.070	67.7	26.9	102	18.7	16.7	R
Dibenz(a,h)anthracene	0.6500	µg/L	0.070	64.9	40.7	92.1	20.7	17.3	R
Benzo(g,h,i)perylene	0.6300	µg/L	0.080	58.0	24.3	109	20.0	18	R
Indeno(1,2,3-cd)pyrene	1.310	µg/L	0.080	61.9	42.6	99.9	21.2	17.7	R

Method: EPA Method 7470: Mercury

Sample ID: MBLK-17670

MBLK

Batch ID: 17670 Analysis Date: 11/18/2008 5:06:31 PM

Mercury ND mg/L 0.00020

Sample ID: LCS1-17670

LCS

Batch ID: 17670 Analysis Date: 11/18/2008 5:08:21 PM

Mercury 0.004837 mg/L 0.00020 96.7 80 120

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Hess Corporation
Project: Hess West Bravo Dome

Work Order: 0811022

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA 6010B: Total Recoverable Metals									
Sample ID: MB-17684		MBLK			Batch ID: 17684	Analysis Date: 12/1/2008 11:15:16 AM			
Aluminum	ND	mg/L	0.020						
Barium	ND	mg/L	0.010						
Boron	ND	mg/L	0.040						
Cadmium	ND	mg/L	0.0020						
Chromium	ND	mg/L	0.0060						
Cobalt	ND	mg/L	0.0060						
Copper	ND	mg/L	0.0060						
Iron	ND	mg/L	0.050						
Lead	ND	mg/L	0.0050						
Manganese	ND	mg/L	0.0020						
Molybdenum	ND	mg/L	0.0080						
Nickel	ND	mg/L	0.010						
Silver	0.005315	mg/L	0.0050						
Zinc	ND	mg/L	0.020						
Sample ID: LCS-17684		LCS			Batch ID: 17684	Analysis Date: 12/1/2008 11:18:35 AM			
Aluminum	0.4738	mg/L	0.020	94.1	80	120			
Barium	0.4521	mg/L	0.010	90.4	80	120			
Boron	0.4875	mg/L	0.040	97.5	80	120			
Cadmium	0.4711	mg/L	0.0020	94.2	80	120			
Chromium	0.4625	mg/L	0.0060	92.5	80	120			
Cobalt	0.4599	mg/L	0.0060	92.0	80	120			
Copper	0.4683	mg/L	0.0060	93.7	80	120			
Iron	0.4685	mg/L	0.050	93.7	80	120			
Lead	0.4538	mg/L	0.0050	90.1	80	120			
Manganese	0.4531	mg/L	0.0020	90.6	80	120			
Molybdenum	0.4761	mg/L	0.0080	95.2	80	120			
Nickel	0.4424	mg/L	0.010	88.5	80	120			
Silver	0.4683	mg/L	0.0050	92.6	80	120			B
Zinc	0.4550	mg/L	0.020	91.0	80	120			
Method: SM 2540C: TDS									
Sample ID: MB-17551		MBLK			Batch ID: 17551	Analysis Date: 11/4/2008			
Total Dissolved Solids	ND	mg/L	20						
Sample ID: LCS-17551		LCS			Batch ID: 17551	Analysis Date: 11/4/2008			
Total Dissolved Solids	1008	mg/L	20	101	80	120			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name HESS

Date Received:

11/4/2008

Work Order Number 0811022

Received by: NJM

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name Client drop-off

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐ Not Shipped ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☒	No ☐
Water - Preservation labels on bottle and cap match?	Yes ☒	No ☐	N/A ☐
Water - pH acceptable upon receipt?	Yes ☒	No ☐	N/A ☐

Container/Temp Blank temperature?

1°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

