William J. Muldoon
Site Manager
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ConocoPhillips Company
P.O. Box 30198
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ConocoPhillips

April 3, 2007

Ms. Laura Alvey
Groundwater Remediation Program
Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

Overnight Delivery - DHL

RE: January 2007 Groundwater Monitoring Results
Yale Tank Farm Release Site
Billings, Montana

Dear Ms. Alvey:

Attached is a report summarizing results of the recent low-water groundwater monitoring activities conducted in January 2007 at the ConocoPhillips Yale Tank Farm Release Site located in Billings, Montana. A groundwater sample was taken from monitor well M-9 and analyzed for volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbons (EPH). No MDEQ RBSLs were exceeded during this monitoring event.

The Yale Tank Farm Seminoe Pipe Line petroleum release was discovered in 1993. The release resulted from a small hole in the pipeline through which an undetermined volume of mixed refined fuel products was released. Free product recovery operations implemented after discovery of the release resulted in the recovery of approximately 200 barrels of light non-aqueous phase liquids (LNAPL). An additional 20 barrels of LNAPL had been recovered by 1996 and approximately 85 barrels of LNAPL were estimated to have been removed through excavation of impacted soil at that time.

During May 2004, additional petroleum hydrocarbon impacted soils were excavated from a former product recovery trench. The site was then put on an annual monitoring schedule, and the previous monitoring event was conducted during high-water conditions in May 2006. Results of the May 2006 event indicated that all petroleum hydrocarbon concentrations were below MDEQ RBSLs and ConocoPhillips recommended that the site be closed. MDEQ's response was that a low-water monitoring event be conducted to confirm the May 2006 findings. The low-water event occurred in January 2007.

In light of the extensive remedial activities conducted at the site and the fact that no MDEQ WQB-7 groundwater standards were exceeded during the high-water May 2006 or low-water January 2007 monitoring events, ConocoPhillips respectfully requests that the MDEQ grant *No Further Action* status for the Yale Tank Farm release site.

Please call me at 406-255-2672 if you have any questions regarding the enclosed report.

Sincerely,

William J. Muldoon

William J. Muldoon

Enc.
Cc: DLT, Maxim

April 2, 2007

Mr. William J. Muldoon
Site Manager-Western Region
Risk Management and Remediation
ConocoPhillips Company
P.O. Box 30198
Billings, MT 59107-0198

SUBJECT: January 2007 Low-Water Groundwater Monitoring Results
Yale Tank Farm Release Site
Billings, Montana
ConocoPhillips Site No. 6567
Tetra Tech Project No. 9731075A.100

Dear Mr. Muldoon:

This letter summarizes results of groundwater monitoring activities conducted by Tetra Tech during January 2007 at the Yale Tank Farm release site in Billings, Montana (Figure 1). This work was conducted in general accordance with Maxim's work plan for low-water monitoring activities (Tetra Tech, 2006).

The site has been on an annual monitoring schedule and the previous monitoring event was conducted during May 2006 (Maxim, 2006). Results of the May 2006 monitoring event indicated that all petroleum hydrocarbon concentrations were below Montana Department of Environmental Quality (MDEQ) Risk-Based Screening Levels (RBSLs; MDEQ, 2003) and Tetra Tech recommended that the site be closed. A subsequent email from Ms. Laura Alvey of the MDEQ requested that an additional low-water monitoring event be conducted to confirm the May 2006 findings (MDEQ, 2006).

Activities conducted during the January 2007 low-water groundwater monitoring event are as follows:

- Depth to groundwater was measured in monitoring wells M-1, M-2 and M-9.
- Field parameters, consisting of dissolved oxygen (DO), oxidation-reduction potential (ORP), temperature and pH, were measured in well M-9. A groundwater sample and a duplicate sample were collected from well M-9 in accordance with the methods described on the attached groundwater sampling logs (Attachment A).
- The groundwater sample collected from well M-9 was submitted for laboratory analysis of volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbons (EPH) using Massachusetts Department of Environmental Protection (MDEP) methods (Attachment B).

Tetra Tech
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618 South 25th Street, Billings, MT 59101
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All measuring, sampling, packaging, shipping and documentation were completed in accordance with Tetra Tech's standard operating procedures, and all field activities were conducted in accordance with a site-specific health and safety plan (HASP) updated for 2007 monitoring activities. Lancaster Laboratories of Lancaster, Pennsylvania provided laboratory services.

GROUNDWATER ELEVATIONS

Depth to groundwater measurements ranged from approximately 6.8 and 10.3 feet at the Yale Tank Farm site during January 2007 (Table 1). As all wells are completed with aboveground protectors extending approximately three feet above ground surface, groundwater was approximately three to seven feet below ground surface (bgs) during January 2007. Groundwater elevations decreased by amounts ranging from approximately 0.7 to 3.2 feet across the site between May 2006 and January 2007 (Table 1).

The potentiometric surface map (Figure 2) indicates that groundwater flowed across the Yale Tank Farm site toward the southeast under a gradient of approximately 0.68 percent during January 2007. The January 2007 flow direction is consistent with those observed during recent monitoring events, but the gradient is approximately double that observed during spring monitoring events (Maxim, 2004, 2005 and 2006).

GROUNDWATER ANALYTICAL DATA

A groundwater sample and a duplicate were collected from well M-9, as requested by the MDEQ (MDEQ, 2006). This monitoring event was conducted to evaluate the site under low-water conditions. Results of this event are presented below.

VPH analytes were below laboratory analytical detection limits during January 2007 (Table 2, Attachment B). While EPH screen total extractable hydrocarbons (TEH) were detected in the sample from well M-9 at a concentration greater than the MDEQ fractionation threshold, none of the EPH fractions exceeded analytical detection limits during January 2007 (Table 3). Neither MDEQ RBSLs nor MDEQ ceiling concentrations (MDEQ, 2003) were exceeded during the January 2007 monitoring event.

A duplicate sample was collected from well M-9 for QA/QC purposes, and the results were evaluated using relative percent difference (RPD) according to MDEP criteria (MDEP, 1998a and 1998b). No analyte exceeded its QA/QC criterion (RPD>50%). Details of the duplicate sample QA/QC evaluation are presented in Attachment C.

All internal Lancaster Laboratories QA/QC criteria were met, and all samples were shipped and received in accordance with standard QA/QC criteria (see Attachment C). All samples were received by the laboratory in satisfactory condition, the cooler temperature was received within the acceptable temperature range of 2°C±, and all samples were adequately preserved to a pH of ≤ 2. All analyses or original extractions were conducted within method-specific holding times.

SUMMARY

The data generated during the January 2007 groundwater monitoring event at the Yale Tank Farm Release site may be summarized as follows:

- Groundwater elevations decreased by amounts ranging from approximately 0.7 to 3.2 feet across the site between the May 2006 and January 2007 monitoring events.
- Groundwater flow across the site was toward the southeast under a gradient of approximately 0.68 percent during January 2007. The January 2007 flow direction is consistent with those observed during recent monitoring events, but the gradient is approximately double that observed during spring monitoring events.
- No analyte exceeded MDEQ RBSLs or ceiling concentrations during the May 2006 or January 2007 monitoring events. Only two analytes exceeded MDEQ RBSLs during the 2005 monitoring event, and these decreased to levels well below the RBSLs during the 2006 event.
- Petroleum hydrocarbon concentrations have decreased substantially in all wells over several years of monitoring as a result of various remedial actions. Concentrations are now below MDEQ RBSLs in all monitoring wells.
- The January 2007 monitoring event represents the second consecutive event with all petroleum hydrocarbon concentrations below MDEQ RBSLs and confirms that petroleum hydrocarbon impacts are absent under low groundwater conditions as requested by the MDEQ.

RECOMMENDATIONS

Based on the data summarized above, no further remedial action appears necessary at the site. We therefore recommend that closure of the site be requested from the MDEQ.

Please call us at 406-248-9161 if you have any questions about this report or any aspect of the project.

Sincerely,

Tetra Tech

David L. Tyler, P.G.
Project Manager

Brian H. McHugh, P.G.
Office Manager

DLT/rr

Figures
- Figure 1 - Site Location Map
- Figure 2 - Potentiometric Surface Map, January 18, 2007

Tables
- Table 1 - Groundwater Elevation Data
- Table 2 - Volatile Petroleum Hydrocarbon Concentrations in Groundwater
- Table 3 - Extractable Petroleum Hydrocarbon Concentrations in Groundwater

Attachment A: Groundwater Sampling Logs
Attachment B: Laboratory Analytical Reports
Attachment C: QA/QC Evaluation

(in two copies) n\typing\Env-fac\9731075A\YTF 2007 GMR Text.doc

REFERENCES

Maxim, 2004. May 2004 Groundwater Monitoring Summary, Yale Tank Farm Release Site, Billings, Montana, Maxim Technologies, Billings, Montana, October 1.

Maxim, 2005. May 2005 Groundwater Monitoring Summary, Yale Tank Farm Release Site, Billings, Montana, Maxim Technologies, Billings, Montana, September 27.

Maxim, 2006. May 2006 Groundwater Monitoring Summary, Yale Tank Farm Release SIte, Billings, Montana, Maxim Technologies, Billings, Montana, August 31.

MDEP, 1998a. Method for Determination of Volatile Petroleum Hydrocarbons (VPH), Massachusetts Department of Environmental Protection, January.

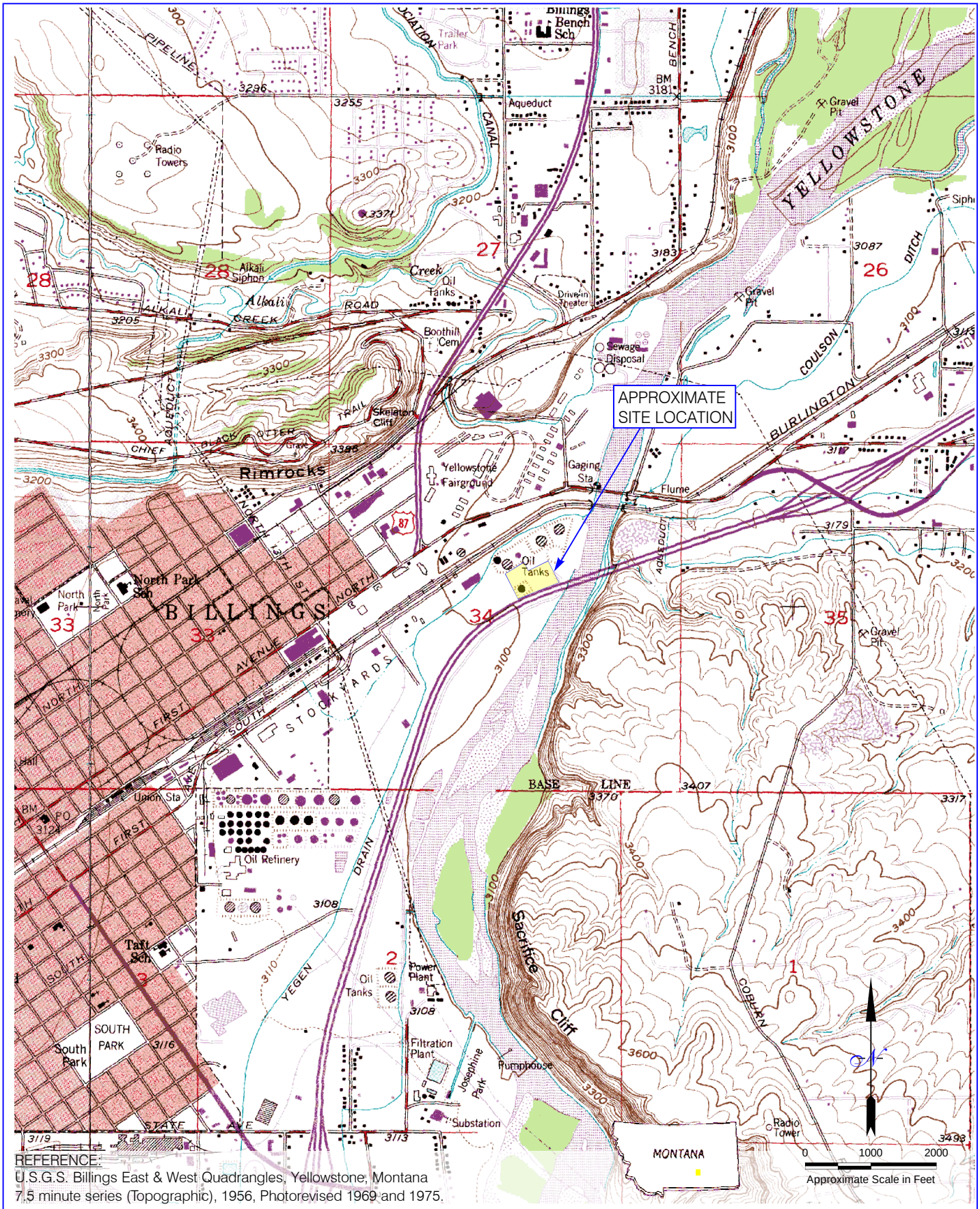
MDEP, 1998b. Method for Determination of Extractable Petroleum Hydrocarbons (EPH), Massachusetts Department of Environmental Protection, January.

MDEQ, 2003. *Montana Tier 1 Risk-Based Corrective Action Guidance for Petroleum Releases,* Montana Department of Environmental Quality, Helena, MT, October

MDEQ, 2006. Email correspondence from Ms. Laura Alvey of MDEQ to Mr. Bill Muldoon of ConocoPhillips. September 11.

Tetra Tech, 2006. January 2007 Low-Water Groundwater Monitoring Work Plan, Yale Tank Farm Release, Billings, Montana. Tetra Tech, Billings, Montana. December 11.

FIGURES



REFERENCE:
U.S.G.S. Billings East & West Quadrangles, Yellowstone, Montana
7.5 minute series (Topographic), 1956, Photorevised 1969 and 1975.

	SITE LOCATION MAP Yale Tank Farm Yellowstone County, Montana	DATE: 01/17/2007	DRAWN BY: MGK
		REVIEWED: PEL	APPROX. SCALE: 1"=2000'
		PROJ. NO.: 9731075A.100	FIGURE NO.: 1

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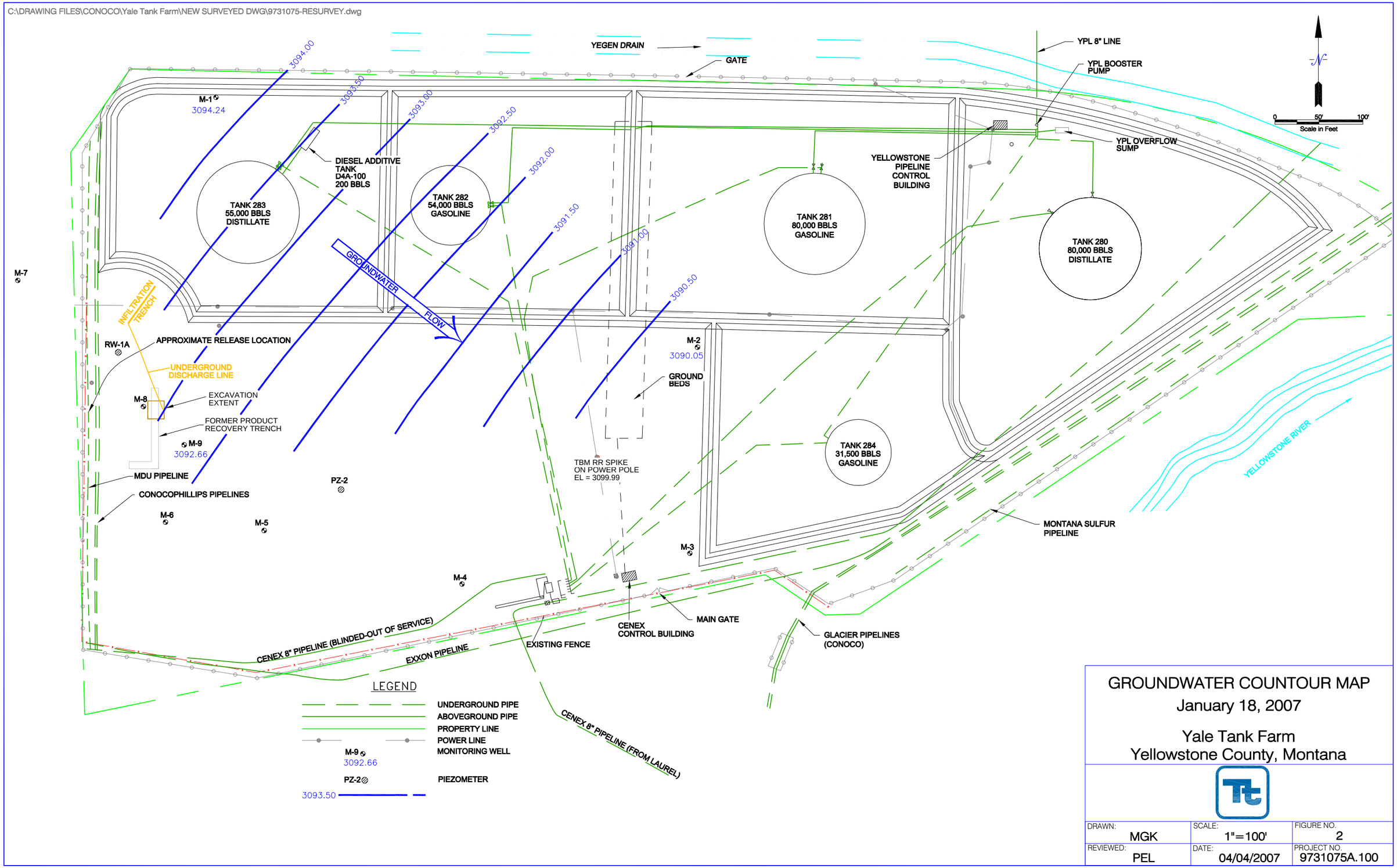

GROUNDWATER COUNTOUR MAP

January 18, 2007

Yale Tank Farm
Yellowstone County, Montana

DRAWN: MGK	SCALE: 1"=100'	FIGURE NO. 2
REVIEWED: PEL	DATE: 04/04/2007	PROJECT NO. 9731075A.100

TABLES

Table 1
Groundwater Elevation Data
Yale Tank Farm
Billings, Montana

Well ID and Casing Elevation[1]	Date	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation [(1)] (corrected for free product)[(2)] (feet amsl)[(1)]	Groundwater Elevation Difference from Previous Event (feet)	Observations
M-1	04/23/93	5.81	0.00	993.86	NA	
999.67	08/19/93	4.85	0.00	994.82	0.96	
	10/25/93	5.05	0.00	994.62	-0.20	
	11/29/93	5.49	0.00	994.18	-0.44	
	03/10/94	5.98	0.00	993.69	-0.49	
	06/14/94	4.90	0.00	994.77	1.08	
	09/16/94	5.30	0.00	994.37	-0.40	
	12/13/94	5.81	0.00	993.86	-0.51	
	03/10/95	6.21	0.00	993.46	-0.40	
	06/07/95	4.71	0.00	994.96	1.50	
	09/27/95	5.35	0.00	994.32	-0.64	O, E, ppt
	12/12/95	5.73	0.00	993.94	-0.38	O, E, ppt
	03/18/96	5.85	0.00	993.82	-0.12	O, E, ppt
	07/15/96	4.80	0.00	994.87	1.05	O, E, ppt
	11/19/96	5.85	0.00	993.82	-1.05	O, E, ppt
	01/29/97	5.89	0.00	993.78	-0.04	O, E, ppt
	04/23/97	5.86	0.00	993.81	0.03	O, ppt
	07/31/97	5.11	0.00	994.56	0.75	O
	11/01/97	5.91	0.00	993.76	-0.80	O,E, ppt
	05/22/98	5.11	0.00	994.56	0.80	O,E
	11/30/98	5.64	0.00	994.03	-0.53	O
	05/26/99	5.52	0.00	994.15	0.12	
	11/12/99	6.03	0.00	993.64	-0.51	
	05/18/00	5.81	0.00	993.86	0.22	
	11/02/00	6.33	0.00	993.34	-0.52	
	05/14/01	7.55	0.00	992.12	-1.22	
3101.07	05/09/02	6.58	0.00	3094.49	-0.97	
	06/28/02	5.91	0.00	3095.16	0.67	
	05/22/03	6.43	0.00	3094.64	-0.52	
	05/04/04	6.51	0.00	3094.56	-0.08	
	05/31/05	5.94	0.00	3095.13	0.57	
	05/31/06	6.14	0.00	3094.93	-0.20	
	01/18/07	6.83	0.00	3094.24	-0.69	
M-2	04/23/93	8.96	0.00	990.25	NA	
999.21	08/19/93	7.33	0.00	991.88	1.63	
	10/25/93	8.47	0.00	990.74	-1.14	
	11/29/93	8.64	0.00	990.57	-0.17	
	03/10/94	8.97	0.00	990.24	-0.33	
	06/14/94	7.12	0.00	992.09	1.85	
	09/16/94	8.72	0.00	990.49	-1.60	
	12/13/94	9.03	0.00	990.18	-0.31	
	03/10/95	9.11	0.00	990.10	-0.08	
	06/07/95	5.88	0.00	993.33	3.23	
	09/27/95	8.10	0.00	991.11	-2.22	
	12/12/95	8.84	0.00	990.37	-0.74	O
	03/18/96	8.69	0.00	990.52	0.15	
	07/15/96	5.56	0.00	993.65	3.13	Fe
	11/19/96	8.76	0.00	990.45	-3.20	O, E
	01/29/97	8.63	0.00	990.58	0.13	O, E, Fe
	04/23/97	8.54	0.00	990.67	0.09	O
	07/31/97	6.71	0.00	992.50	1.83	
	11/01/97	8.80	0.00	990.41	-2.09	
	05/22/98	7.98	0.00	991.23	0.82	
	11/30/98	9.24	0.00	989.97	-1.26	
	05/26/99	6.83	0.00	992.38	2.41	
	11/12/99	9.48	0.00	989.73	-2.65	
	05/18/00	8.80	0.00	990.41	0.68	
	11/02/00	9.60	0.00	989.61	-0.80	
	05/14/01	10.87	0.00	988.34	-1.27	
3100.33	05/09/02	9.72	0.00	3090.61	-1.15	
	06/28/02	6.97	0.00	3093.36	2.75	
	05/22/03	8.84	0.00	3091.49	-1.87	
	05/04/04	9.82	0.00	3090.51	-0.98	
	05/31/05	7.20	0.00	3093.13	2.62	
	05/31/06	7.09	0.00	3093.24	0.11	
	01/18/07	10.28	0.00	3090.05	-3.19	

Table 1
Groundwater Elevation Data
Yale Tank Farm
Billings, Montana

Well ID and Casing Elevation[1]	Date	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation [(1)] (corrected for free product)[(2)] (feet amsl)[(1)]	Groundwater Elevation Difference from Previous Event (feet)	Observations
M-3	04/23/93	9.43	0.00	989.39	NA	
998.82	08/19/93	7.71	0.00	991.11	1.72	
	10/25/93	8.77	0.00	990.05	-1.06	
	11/29/93	9.35	0.00	989.47	-0.58	
	03/10/94	9.53	0.00	989.29	-0.18	
	06/14/94	7.46	0.00	991.36	2.07	
	09/16/94	9.52	0.00	989.30	-2.06	
	12/13/94	9.64	0.00	989.18	-0.12	
	03/10/95	9.63	0.00	989.19	0.01	
	06/07/95	5.29	0.00	993.53	4.34	
	09/27/95	8.76	0.00	990.06	-3.47	
	12/12/95	9.50	0.00	989.32	-0.74	O, Fe
	03/18/96	9.12	0.00	989.70	0.38	
	07/15/96	5.54	0.00	993.28	3.58	O
	11/19/96	9.15	0.00	989.67	-3.61	O,E
	01/29/97	9.22	0.00	989.60	-0.07	O, E
	04/23/97	8.93	0.00	989.89	0.29	
	07/31/97	6.99	0.00	991.83	1.94	
	11/01/97	9.25	0.00	989.57	-2.26	
	05/22/98	7.54	0.00	991.28	1.71	
	11/30/98	9.85	0.00	988.97	-2.31	
	05/26/99	6.55	0.00	992.27	3.30	
	11/12/99	10.03	0.00	988.79	-3.48	
	05/18/00	9.18	0.00	989.64	0.85	
	11/02/00	10.07	0.00	988.75	-0.89	
	05/14/01	11.50	0.00	987.32	-1.43	
3099.94	05/09/02	10.12	0.00	3089.82	-1.38	
	06/28/02	6.75	0.00	3093.19	3.37	
	05/22/03	9.11	0.00	3090.83	-2.36	
	05/04/04	10.31	0.00	3089.63	-1.20	
	05/31/05	7.05	0.00	3092.89	3.26	
	05/31/06	6.84	0.00	3093.10	0.21	
M-4	04/23/93	7.65	0.00	990.39	NA	
998.04	08/19/93	5.55	0.00	992.49	2.10	
	10/25/93	6.75	0.00	991.29	-1.20	
	11/29/93	7.34	0.00	990.70	-0.59	
	03/10/94	8.05	0.00	989.99	-0.71	
	06/14/94	5.58	0.00	992.46	2.47	
	09/16/94	7.64	0.00	990.40	-2.06	
	12/13/94	7.95	0.00	990.09	-0.31	
	03/10/95	8.19	0.00	989.85	-0.24	
	06/07/95	6.72	0.00	991.32	1.47	
	09/27/95	6.90	0.00	991.14	-0.18	O, Fe
	12/12/95	7.84	0.00	990.20	-0.94	O, Fe
	03/18/96	7.77	0.00	990.27	0.07	O, Fe
	07/15/96	4.03	0.00	994.01	3.74	O, Fe
	11/19/96	7.39	0.00	990.65	-3.36	O,E, Bio
	01/29/97	7.21	0.00	990.83	0.18	O,E, Bio, Fe
	04/23/97	6.99	0.00	991.05	0.22	O, Fe
	07/31/97	4.65	0.00	993.39	2.34	O
	11/01/97	7.21	0.00	990.83	-2.56	O, Fe
	05/22/98	6.54	0.00	991.50	0.67	O
	11/30/98	7.77	0.00	990.27	-1.23	O
	05/26/99	5.51	0.00	992.53	2.26	O
	11/12/99	7.97	0.00	990.07	-2.46	O
998.28	02/11/00	8.45	0.00	989.83	-0.24	O
	05/18/00	7.23	0.00	991.05	1.22	O
	11/02/00	8.16	0.00	990.12	-0.93	
	05/14/01	9.62	0.00	988.66	-1.46	
3099.18	05/09/02	8.30	0.00	3090.88	-1.32	
	06/28/02	5.46	0.00	3093.72	2.84	
	05/22/03	7.36	0.00	3091.82	-1.90	
	05/04/04	8.33	0.00	3090.85	-0.97	
	05/31/05	5.78	0.00	3093.40	2.55	
	05/31/06	5.77	0.00	3093.41	0.01	

Table 1
Groundwater Elevation Data
Yale Tank Farm
Billings, Montana

Well ID and Casing Elevation[1]	Date	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation [(1)] (corrected for free product)[(2)] (feet amsl)[(1)]	Groundwater Elevation Difference from Previous Event (feet)	Observations
M-5	04/23/93	8.17	0.00	991.50	NA	
999.67	08/19/93	6.23	0.00	993.44	1.94	S
	10/25/93	7.23	0.00	992.44	-1.00	
	11/29/93	7.75	0.01	991.92	-0.52	
	03/10/94	8.21	1.00	991.66	-0.26	
	06/14/94	8.21	1.42	991.74	0.08	
	09/16/94	10.40	5.25	990.32	-1.42	
	12/13/94	10.02	0.50	989.75	-0.57	
	03/10/95	10.25	3.33	990.09	0.34	
	06/07/95	5.43	1.17	994.47	4.39	
	09/27/95	9.68	0.90	990.17	-4.30	O, Fe
	12/12/95	13.09	0.01	986.58	-3.59	O, Fe
	03/18/96	14.41	0.00	985.26	-1.32	S, O, Fe
995.97	07/15/96	7.44	0.00	988.53	3.27	S, O, Fe
	11/19/96	7.80	0.00	988.17	-0.36	S, O, E, Bio
	01/29/97	7.44	0.00	988.53	0.36	S, O, E, Bio, Fe
	04/23/97	5.27	0.01	990.70	2.17	O, Fe
	07/31/97	5.51	0.01	990.46	-0.24	O
	05/22/98	5.04	0.00	990.93	0.47	S, O
	11/30/98	5.94	0.00	990.03	-0.90	S, O
	05/26/99	4.52	0.00	991.45	1.42	S, O
	11/12/99	6.15	0.00	989.82	-1.63	S, O
997.48	02/11/00	6.50	0.00	990.98	1.16	S, O
	05/18/00	5.70	0.00	991.78	0.80	S, O
	11/02/00	6.35	0.00	991.13	-0.65	O,ppt
	05/14/01	6.86	0.00	990.62	-0.51	O,ppt
3098.61	05/09/02	6.57	0.00	3092.04	-0.29	O,ppt
	06/28/02	4.38	0.00	3094.23	2.19	O,ppt
	05/22/03	5.82	0.00	3092.79	-1.44	O,ppt
	05/04/04	6.51	0.00	3092.10	-0.69	O,ppt
	05/31/05	4.65	0.00	3093.96	1.86	
	05/31/06	4.79	0.00	3093.82	-0.14	ppt
M-6	04/23/93	8.19	0.00	991.89	NA	
1000.08	08/19/93	6.30	0.00	993.78	1.89	
	10/25/93	7.29	0.00	992.79	-0.99	S
	11/29/93	7.76	0.00	992.32	-0.47	
	03/10/94	8.48	0.00	991.60	-0.72	
	06/14/94	6.92	0.00	993.16	1.56	
	09/16/94	8.38	0.00	991.70	-1.46	
	12/13/94	8.42	0.00	991.66	-0.04	
	03/10/95	8.76	0.00	991.32	-0.34	
	06/07/95	6.27	0.00	993.81	2.49	
	09/27/95	7.60	0.00	992.48	-1.33	O, Fe
	12/12/95	8.53	0.00	991.55	-0.93	O, Fe
	03/18/96	8.58	0.00	991.50	-0.05	O, Fe
	07/15/96	5.02	0.00	995.06	3.56	O, Fe
	11/19/96	7.88	0.00	992.20	-2.86	O, E
	01/29/97	7.53	0.00	992.55	0.35	O, E
	04/23/97	7.47	0.00	992.61	0.06	O
	07/31/97	5.44	0.00	994.64	2.03	O
	10/31/97	7.72	0.00	992.36	-2.28	S, Mud/silt to 7.8 ft.
	05/22/98	NM	NA	NA	NA	Mud/silt to 6.9 ft.
	11/30/98	NM	NA	NA	NA	Mud/silt to 6.4 ft.
	05/26/99	NM	NA	NA	NA	Mud/silt to 6.7 ft.
	11/12/99	8.27	0.00	991.81	NA	
	02/11/00	8.54	0.00	991.54	-0.27	
	05/18/00	8.02	0.00	992.06	0.52	
	11/02/00	8.60	0.00	991.48	-0.58	
	05/14/01	8.81	0.00	991.27	-0.21	
3101.2	05/09/02	8.71	0.00	3092.49	-0.10	
	06/28/02	6.82	0.00	3094.38	1.89	
	05/22/03	8.90	0.00	3092.30	-2.08	
	05/04/04	dry	NA	NA	NA	
	05/31/05	dry	NA	NA	NA	
	05/31/06	dry	NA	NA	NA	

Table 1
Groundwater Elevation Data
Yale Tank Farm
Billings, Montana

Well ID and Casing Elevation[1]	Date	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation [(1)] (corrected for free product)[(2)] (feet amsl)[(1)]	Groundwater Elevation Difference from Previous Event (feet)	Observations
M-7	04/23/93	7.69	0.00	993.76	NA	
1001.45	08/19/93	6.33	0.00	995.12	1.36	S
	10/25/93	6.97	0.00	994.48	-0.64	
	11/29/93	7.27	0.00	994.18	-0.30	
	03/10/94	7.88	0.00	993.57	-0.61	
	06/14/94	6.44	0.00	995.01	1.44	
	09/16/94	7.12	0.00	994.33	-0.68	
	12/13/94	7.76	0.00	993.69	-0.64	
	03/10/95	8.08	0.00	993.37	-0.32	
	06/07/95	6.33	0.00	995.12	1.75	
	09/27/95	7.06	0.00	994.39	-0.73	
	12/12/95	7.31	0.00	994.14	-0.25	O, Fe
	03/18/96	7.18	0.00	994.27	0.13	O, Fe
	07/15/96	5.67	0.00	995.78	1.51	O, Fe
	11/19/96	7.60	0.00	993.85	-1.93	O,E
	01/29/97	7.45	0.00	994.00	0.15	O,E
	04/23/97	7.21	0.00	994.24	0.24	O
	07/31/97	5.81	0.00	995.64	1.40	O
	11/01/97	7.39	0.00	994.06	-1.58	O, Fe
	05/22/98	7.01	0.00	994.44	0.38	O
	11/30/98	7.52	0.00	993.93	-0.51	
	05/26/99	7.14	0.00	994.31	0.38	
	11/12/99	7.69	0.00	993.76	-0.55	
	02/11/00	7.81	0.00	993.64	-0.12	O
	05/18/00	7.62	0.00	993.83	0.19	
	11/02/00	8.01	0.00	993.44	-0.39	
	05/14/01	9.25	0.00	992.20	-1.24	
3102.58	05/09/02	8.28	0.00	3094.30	-0.97	
	06/28/02	7.31	0.00	3095.27	0.97	
	05/22/03	7.94	0.00	3094.64	-0.63	
	05/04/04	8.23	0.00	3094.35	-0.29	
	05/31/05	7.41	0.00	3095.17	0.82	
	05/31/06	7.52	0.00	3095.06	-0.11	
M-8	05/09/02	10.00	0.00	3093.13	NA	
3103.13	06/28/02	8.51	0.00	3094.62	1.49	
	05/22/03	9.46	0.00	3093.67	-0.95	
	05/04/04	9.88	0.00	3093.25	-0.42	
	05/31/05	8.70	0.00	3094.43	1.18	
	05/31/06	8.86	0.00	3094.27	-0.16	
M-9	05/04/04	8.99	0.00	3092.88		O,ppt
3101.87	05/31/05	7.65	0.00	3094.22	1.34	
	05/31/06	7.80	0.00	3094.07	-0.15	
	01/18/07	9.21	0.00	3092.66	-1.41	
RW-1A	11/19/96	8.82	0.00	993.06	NA	O,E
1001.88	01/29/97	8.48	0.00	993.40	0.34	O,E
	04/23/97	8.45	0.00	993.43	0.03	O
	07/31/97	6.87	0.00	995.01	1.58	O
	10/31/97	8.62	0.00	993.26	-1.75	S, O
	05/22/98	8.25	0.00	993.63	0.37	
	11/30/98	8.96	0.00	992.92	-0.71	
	05/26/99	8.26	0.00	993.62	0.70	
	11/12/99	9.01	0.00	992.87	-0.75	
	05/18/00	8.85	0.00	993.03	0.16	
	11/02/00	NM	NA	NA	NA	
3103.02	05/09/02	NM	NA	NA	NA	
	06/28/02	NM	NA	NA	NA	
	05/22/03	NM	NA	NA	NA	
	05/04/04	NM	NA	NA	NA	
	05/31/05	NM	NA	NA	NA	
	05/31/06	8.61	0.00	3094.41		

Table 1
Groundwater Elevation Data
Yale Tank Farm
Billings, Montana

Well ID and Casing Elevation[1]	Date	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation [(1)] (corrected for free product)[(2)] (feet amsl)[(1)]	Groundwater Elevation Difference from Previous Event (feet)	Observations
PZ-1	03/10/94	6.62	0.00	992.59	NA	
999.21	06/14/94	5.54	0.00	993.67	1.08	
	09/16/94	6.38	0.00	992.83	-0.84	
	12/13/94	6.69	0.00	992.52	-0.31	
	03/10/95	7.09	0.00	992.12	-0.40	
	06/07/95	4.96	0.00	994.25	2.13	
	09/27/95	6.03	0.00	993.18	-1.07	
	12/12/95	6.63	0.00	992.58	-0.60	S, O
	03/18/96	6.43	0.00	992.78	0.20	S, O, ppt
	07/15/96	3.73	0.00	995.48	2.70	
	11/19/96	6.57	0.00	992.64	-2.84	
	01/29/97	6.22	0.00	992.99	0.35	O, E, ppt
	04/23/97	6.11	0.00	993.10	0.11	O
	07/31/97	4.40	0.00	994.81	1.71	O
	10/31/97	6.34	0.00	992.87	-1.94	O, ppt
	05/22/98	5.99	0.00	993.22	0.35	O
	11/30/98	6.63	0.00	992.58	-0.64	
	05/26/99	5.87	0.00	993.34	0.76	
	11/12/99	6.97	0.00	992.24	-1.10	ppt
	02/11/00	6.98	0.00	992.23	-0.01	O, ppt
	05/18/00	6.58	0.00	992.63	0.40	
	11/02/00	7.02	0.00	992.19	-0.44	O
	05/14/01	8.23	0.00	990.98	-1.21	O
3100.34	05/09/02	7.30	0.00	3093.04	0.25	
	06/28/02	5.81	0.00	3094.53	1.49	
	05/22/03	6.42	0.00	3093.92	-0.61	
	05/04/04	7.20	0.00	3093.14	-0.78	
	Piezometer Abandoned					
PZ-2	03/10/94	7.58	0.01	990.49	NA	
998.07	06/14/94	5.28	0.01	992.79	2.30	
	09/16/94	6.98	0.00	991.09	-1.70	
	12/13/94	7.26	0.00	990.81	-0.28	
	03/10/95	7.53	0.00	990.54	-0.27	S
	06/07/95	5.83	0.00	992.24	1.70	S
	09/27/95	6.27	0.00	991.80	-0.44	
	12/12/95	7.50	0.01	990.57	-1.23	
	03/18/96	7.43	0.00	990.64	0.07	S
	07/15/96	4.16	0.00	993.91	3.27	
	07/15/96	6.78	0.00	991.29	-2.62	
	01/29/97	6.22	0.00	991.85	0.56	
	04/23/97	6.25	0.01	991.82	-0.03	
	07/31/97	4.30	0.00	993.77	1.95	
	11/01/97	6.47	0.00	991.60	-2.17	S
	05/22/98	5.73	0.00	992.34	0.74	
	11/30/98	6.77	0.00	991.30	-1.04	
	05/26/99	5.40	0.00	992.67	1.37	
	11/12/99	7.09	0.00	990.98	-1.69	S, O
	02/11/00	7.44	0.00	990.63	-0.35	S, O
	05/18/00	6.36	0.00	991.71	1.08	S, O, ppt
	11/02/00	7.29	0.00	990.78	-0.93	O, ppt
	05/14/01	8.44	0.00	989.63	-1.15	O, ppt
3099.39	05/09/02	7.53	0.00	3091.86	-0.91	
	06/28/02	5.38	0.00	3094.01	2.15	
	05/22/03	6.77	0.00	3092.62	-1.39	
	05/04/04	7.49	0.00	3091.90	-0.72	
	05/31/05	5.68	0.00	3093.71	1.81	
	05/31/06	5.76	0.00	3093.63	-0.08	

NOTES:

(1) Measured point surveyed relative to an arbitrary benchmark through May 2001. All wells surveyed relative to USGS datum August 9, 2002, after which elevations are above mean sea level

(2) Corrected for product specific gravity of = 0.8

NM = not measured

NA = not applicable

S = Sheen with product thickness less than 0.01

O = hydrocarbon odor

E = suspended or emulsified product

Fe = suspended iron (yellow or orange tint)

ppt = black sulfide precipitate and/or hydrogen sulfide odor

Table 2
Volatile Petroleum Hydrocarbon (VPH) Data
Yale Tank Farm
Billings, Montana
(Concentrations in micrograms per liter)

Well ID	Date	TPH	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	C_5 - C_8 Aliphatics	C_9 - C_{12} Aliphatics	C_9 - C_{10} Aromatics
MDEQ RBSL[A]		**NE**	**5**	**1,000**	**700**	**10,000**	**NE**	**30**	**100**	**400**	**400**	**50**
M-1	04/23/93	13,000	0.5	62	43	190	295.5	NA	NA	NA	NA	NA
	08/19/93	2,900	3.0	16	18	39	76.0	NA	NA	NA	NA	NA
	11/29/93	18,000	<2.0	14	24	21	59.0	NA	NA	NA	NA	NA
	03/10/94	2,000	<1.0	18	19	4	41.0	NA	NA	NA	NA	NA
	06/14/94	900	54	290	160	570	1074	NA	NA	NA	NA	NA
	09/16/94	7,000	<25	<25	<25	<25	0.0	NA	NA	NA	NA	NA
	12/13/94	3,000	1.0	<1	1.0	<1	2.0	NA	NA	NA	NA	NA
	03/10/95	3,000	<1	<1	19	3.0	22.0	NA	NA	NA	NA	NA
	06/07/95	NA	3.0	57	170	240	470.0	NA	NA	NA	NA	NA
	09/27/95	8,100	<0.5	<0.5	17	<0.5	17.0	NA	NA	NA	NA	NA
	12/14/95	6,600	1.9	<0.5	2.2	<0.5	4.1	NA	NA	NA	NA	NA
	03/18/96	FP	FP	FP	FP	FP	NA	NA	NA	NA	NA	NA
	07/15/96	7,600	2.0	<0.5	29	98	129.0	NA	NA	NA	NA	NA
	11/19/96	NA	<1	<1	<1	<1	0.0	NA	NA	NA	NA	NA
	01/29/97	NA	<2.5	<2.5	<2.5	<2.5	0.0	NA	NA	NA	NA	NA
	04/23/97	NA	1.3	<0.5	<0.5	<0.5	1.3	NA	NA	NA	NA	NA
	07/31/97	NA	<1.2	<1.2	<1.2	<1.2	0.0	NA	NA	NA	NA	NA
	10/31/97	NA	1	<1	23	<1	24.0	NA	NA	NA	NA	NA
	05/26/98	NA	<1.2	<1.2	<1.2	<1.2	0.0	NA	NA	NA	NA	NA
	11/30/98	NA	<1.0	<1.0	6.1	<1.0	6.1	NA	NA	NA	NA	NA
M-2	04/23/93	1,500	<0.5	<0.5	<0.5	<1.0	<2.5	NA	NA	NA	NA	NA
	08/19/93	<500	<0.5	<0.5	<0.5	<0.5	<2	NA	NA	NA	NA	NA
	11/29/93	<500	<1.0	<1.0	3.0	<3.0	3.0	NA	NA	NA	NA	NA
	03/10/94	800	<1.0	<1.0	1.0	<3.0	1.0	NA	NA	NA	NA	NA
	06/14/94	700	<1.0	<1.0	<1.0	<3.0	<6	NA	NA	NA	NA	NA
	09/16/94	2,000	<1.0	<1.0	<1.0	<1.0	<4	NA	NA	NA	NA	NA
	12/13/94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	03/10/95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	06/07/95	NA	<1	<1	<1	<3	<6	NA	NA	NA	NA	NA
	09/27/95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/14/95	2,800	22.0	<0.5	<0.5	<0.5	22.0	NA	NA	NA	NA	NA
	07/15/96	610	<1	<1	<1	<3	<6	NA	NA	NA	NA	NA
	01/29/97	NA	26.0	<0.5	<0.5	<0.5	26.0	NA	NA	NA	NA	NA
	07/31/97	NA	<0.5	<0.5	<0.5	<0.5	<2	NA	NA	NA	NA	NA

Table 2
Volatile Petroleum Hydrocarbon (VPH) Data
Yale Tank Farm
Billings, Montana
(Concentrations in micrograms per liter)

Well ID	Date	TPH	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	C_5 - C_8 Aliphatics	C_9 - C_{12} Aliphatics	C_9 - C_{10} Aromatics
MDEQ RBSL[A]		**NE**	**5**	**1,000**	**700**	**10,000**	**NE**	**30**	**100**	**400**	**400**	**50**
M-3	04/23/93	820	<0.5	<0.5	1.2	2.5	3.7	NA	NA	NA	NA	NA
	08/19/93	500	<0.5	<0.5	<0.5	<0.5	<2	NA	NA	NA	NA	NA
	11/29/93	700	<1.0	<1.0	<1.0	<3.0	<3	NA	NA	NA	NA	NA
	03/10/94	600	<1.0	<1.0	1.0	<3.0	1.0	NA	NA	NA	NA	NA
	06/14/94	<500	<1.0	<1.0	<1.0	<3.0	<6	NA	NA	NA	NA	NA
	09/16/94	1,000	<1.0	<1.0	<1.0	<1.0	<4	NA	NA	NA	NA	NA
	12/13/94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	03/10/95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	06/07/95	NA	<1	<1	<1	<3	<6	NA	NA	NA	NA	NA
	09/27/95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/14/95	1,300	<0.5	<0.5	<0.5	<0.5	<2	NA	NA	NA	NA	NA
	07/15/96	890	<0.5	<0.5	<0.5	<0.5	<2	NA	NA	NA	NA	NA
	01/29/97	NA	<0.5	<0.5	<0.5	<0.5	<2	NA	NA	NA	NA	NA
	07/31/97	NA	<0.5	<0.5	<0.5	<0.5	<2	NA	NA	NA	NA	NA
M-4	04/23/93	15,000	<0.5	0.7	1.1	3.8	5.6	NA	NA	NA	NA	NA
	08/19/93	1,000	0.5	<0.5	<0.5	<0.5	0.5	NA	NA	NA	NA	NA
	11/29/93	7,000	<1.0	<1.0	<1.0	<3.0	<6	NA	NA	NA	NA	NA
	03/10/94	2,000	<1.0	<1.0	<1.0	<3.0	<6	NA	NA	NA	NA	NA
	06/14/94	600	<1.0	<1.0	<1.0	<3.0	<6	NA	NA	NA	NA	NA
	09/16/94	1,000	<1.0	<1.0	<1.0	<1.0	<4	NA	NA	NA	NA	NA
	03/10/95	1,000	<1	<1	<1	<3	<6	NA	NA	NA	NA	NA
	06/07/95	NA	<1	2.0	1.0	<3	3.0	NA	NA	NA	NA	NA
	09/27/95	1,800	<0.5	<0.5	1.1	<0.5	1.1	NA	NA	NA	NA	NA
	12/14/95	1,600	<0.5	<0.5	<0.5	<0.5	<2	NA	NA	NA	NA	NA
	03/18/96	1,100	<0.5	<0.5	<0.5	0.6	0.6	NA	NA	NA	NA	NA
	07/15/96	1,600	<0.5	<0.5	<0.5	<0.5	<2	NA	NA	NA	NA	NA
	11/19/96	NA	<0.5	<0.5	<0.5	<0.5	<2	NA	NA	NA	NA	NA
	01/29/97	NA	1.0	<0.5	<0.5	<0.5	1.0	NA	NA	NA	NA	NA
	04/23/97	NA	41	<0.5	<0.5	<0.5	41.0	NA	NA	NA	NA	NA
	07/31/97	NA	2.2	<0.5	<0.5	<0.5	2.2	NA	NA	NA	NA	NA
	11/01/97	NA	2	<0.5	<0.5	<0.5	2.0	NA	NA	NA	NA	NA
	05/26/98	NA	1.4	<0.5	<0.5	<0.5	1.4	NA	NA	NA	NA	NA
	11/30/98	NA	<1.0	<1.0	<1.0	<1.0	<4	NA	NA	NA	NA	NA
	06/10/99	NA	<1	<1	1	<3	1.0	<2	6	<4000	<50	48
	02/11/00	890	<1	<1	2	<3	2.0	<2	<2	<240	<210	54
	05/14/01	52	<0.5	<0.5	0.65	<0.5	0.65	<2	1.3	<20	<20	<20
	05/14/01	67	<0.5	<0.5	0.65	<0.5	0.65	<2	1.3	<20	<20	23
	05/09/02	45	<0.5	<0.5	0.68	<0.5	0.68	<2	1.3	<20	<20	<20
	05/22/03	<200	<1	<1	<1	<3	<6	<2	<2	<100	<100	<20
	05/04/04	<200	<1	<1	1	<3	1.0	<2	<5	<100	<100	<20
	05/31/05	41.5 J	<0.5	<0.5	<0.5	<1	<2.5	<2	1.18 J	<50	23.6 J	<20
	05/31/06	46.4 J	<0.5	<0.5	<0.5	1.38 J	1.38 J	<2	1.61 J	<50	<20	<20

Table 2
Volatile Petroleum Hydrocarbon (VPH) Data
Yale Tank Farm
Billings, Montana
(Concentrations in micrograms per liter)

Well ID	Date	TPH	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	C_5 - C_8 Aliphatics	C_9 - C_{12} Aliphatics	C_9 - C_{10} Aromatics
MDEQ RBSL[A]		**NE**	**5**	**1,000**	**700**	**10,000**	**NE**	**30**	**100**	**400**	**400**	**50**
M-5	04/23/93	13,000	<0.5	<0.5	<0.5	<1.0	<2.5	NA	NA	NA	NA	NA
	08/19/93	35,000	<0.5	<0.5	<0.5	<0.5	<2	NA	NA	NA	NA	NA
	11/29/93	21,000	12	<1.0	<1.0	<3.0	12.0	NA	NA	NA	NA	NA
	03/17/94	NA	<1	<1	<1	<3.0	<6	NA	NA	NA	NA	NA
	06/14/94	NA	56	<1	4	23	83.0	NA	NA	NA	NA	NA
	09/16/94	NA	91	1.0	9	16	117.0	NA	NA	NA	NA	NA
	01/04/95	NA	131	<1	2	<3.0	133.0	NA	NA	NA	NA	NA
	03/10/95	NA	130	68	19	61	278.0	NA	NA	NA	NA	NA
	06/07/95	NA	28	<1	3	5	36.0	NA	NA	NA	NA	NA
	09/27/95	NA	54	1.2	4.8	6.5	66.5	NA	NA	NA	NA	NA
	11/27/95	NA	30	2.0	<1	<3	32.0	NA	NA	NA	NA	NA
	12/14/95	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	02/02/96	NA	560	34	23	47	664.0	NA	NA	NA	NA	NA
	03/18/96	1,900	570	12	72	110	764.0	NA	NA	NA	NA	NA
	07/15/96	11,000	220	<0.5	39	20	279.0	NA	NA	NA	NA	NA
	11/19/96	NA	190	<2.5	<2.5	3.1	193.1	NA	NA	NA	NA	NA
	01/29/97	NA	230	<5.0	32	<5.0	262.0	NA	NA	NA	NA	NA
	04/23/97	NA	100	<1.2	13	<1.2	113.0	NA	NA	NA	NA	NA
	07/31/97	NA	71	<1.2	2.7	<1.2	73.7	NA	NA	NA	NA	NA
	11/01/97	NA	94	<2.5	<2.5	<2.5	94.0	NA	NA	NA	NA	NA
	05/26/98	NA	6.6	<0.5	<0.5	<0.5	6.6	NA	NA	NA	NA	NA
	11/30/98	NA	2.4	<1.0	<1.0	<1.0	2.4	NA	NA	NA	NA	NA
	06/10/99	NA	<1	<1	<1	<3	<6	<2	<2	<240	<60	59
	06/10/99	NA	<1	<1	<1	<3	<6	<2	6	<240	<60	70
	02/11/00	1,500	<1	<1	1	<3	<6	<2	5	<240	<100	90
	02/11/00	3,900	<1	<1	<1	<3	<6	<2	5	<240	<100	73
	05/18/00	14,000	<1	<1	1	<3	1.0	<2	6	<240	<100	87
	11/02/00	85	<0.5	<0.5	<0.5	<0.5	<2.0	<2	4.2	<20	<20	20
	05/14/01	79	<0.5	<0.5	<0.5	<0.5	<2.0	<2	4	<20	<20	<20
	06/28/02	67	<0.5	<0.5	<0.5	<0.5	<2.0	<2	3.2	<20	<20	<20
	05/22/03	<200	<1	<1	<1	<3	<6	<2	7	<100	<100	<20
	05/04/04	<200	<1	<1	<1	<3	<6	<2	9	<100	<100	<20
	05/31/05	<20	<0.5	<0.5	<0.5	<1	<2.5	<2	<1	<50	<20	<20
	05/31/06	<20	<0.5	<0.5	<0.5	<1	<2.5	<2	2.28 J	<50	<20	<20

Table 2
Volatile Petroleum Hydrocarbon (VPH) Data
Yale Tank Farm
Billings, Montana
(Concentrations in micrograms per liter)

Well ID	Date	TPH	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	C_5 - C_8 Aliphatics	C_9 - C_{12} Aliphatics	C_9 - C_{10} Aromatics
MDEQ RBSL[A]		**NE**	**5**	**1,000**	**700**	**10,000**	**NE**	**30**	**100**	**400**	**400**	**50**
M-6	04/23/93	1,100	<0.5	<0.5	<0.5	<1.0	<2.5	NA	NA	NA	NA	NA
	08/19/93	500	140	0.7	0.7	<0.5	141.4	NA	NA	NA	NA	NA
	11/29/93	<500	<1.0	<1.0	<1.0	<3.0	<6	NA	NA	NA	NA	NA
	03/10/94	1,000	<1.0	<1.0	<1.0	<3.0	<6	NA	NA	NA	NA	NA
	06/14/94	<500	580	<1.0	3	<3.0	583.0	NA	NA	NA	NA	NA
	09/16/94	<500	93	<1.0	1	<1.0	94.0	NA	NA	NA	NA	NA
	01/04/95	1,000	131	<1.0	<1.0	<3.0	131.0	NA	NA	NA	NA	NA
	03/10/95	1,000	160	<1	<1	<3	160.0	NA	NA	NA	NA	NA
	06/07/95		360	<1	1	<3	361.0	NA	NA	NA	NA	NA
	09/27/95	740	28	<0.5	<0.5	<0.5	28.0	NA	NA	NA	NA	NA
	12/14/95	1,400	210	590	<0.5	<0.5	800.0	NA	NA	NA	NA	NA
	03/18/96	2,000	190	65	850	1900	3005	NA	NA	NA	NA	NA
	07/15/96	950	64	<0.5	8.3	3.8	76.1	NA	NA	NA	NA	NA
	11/19/96	NA	570	20	100	<12	690.0	NA	NA	NA	NA	NA
	01/29/97	NA	890	<25	130	<25	1020.0	NA	NA	NA	NA	NA
	04/23/97	NA	1100	<1.2	90	<1.2	1190.0	NA	NA	NA	NA	NA
	07/31/97	NA	4.9	<0.5	<0.5	<0.5	4.9	NA	NA	NA	NA	NA
	11/01/97	Well Obstructed, Not Sampled										
	06/10/99	Well Obstructed, Not Sampled										
	02/11/00	<540	<1	<1	<1	<3	<6	<2	<2	<240	<100	<50
	05/18/00	690	<1	<1	<1	<3	<6	<2	<2	<240	<100	<60
	11/03/00	39	<0.5	<0.5	<0.5	<0.5	<2	<2	<1	35	<20	<20
	05/14/01	38	1.1	<0.5	<0.5	<0.5	1.1	<2	<1	39	<20	<20
	06/28/02	32	<0.5	<0.5	<0.5	<0.5	<2.0	<2	<1	27	<20	<20
	05/22/03	<200	<1	<1	<1	<3	<6	<2	<2	<100	<100	<20
	05/04/04	Dry										
	05/31/05	Dry										
	05/31/06	Dry										

Table 2
Volatile Petroleum Hydrocarbon (VPH) Data
Yale Tank Farm
Billings, Montana
(Concentrations in micrograms per liter)

Well ID	Date	TPH	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	C_5 - C_8 Aliphatics	C_9 - C_{12} Aliphatics	C_9 - C_{10} Aromatics
MDEQ RBSL[A]		**NE**	**5**	**1,000**	**700**	**10,000**	**NE**	**30**	**100**	**400**	**400**	**50**
M-7	04/23/93	56,000	<0.5	<0.5	1.6	9.8	11.4	NA	NA	NA	NA	NA
	08/19/93	500	<0.5	<0.5	<0.5	<0.5	<2	NA	NA	NA	NA	NA
	11/29/93	33,000	<1.0	<1.0	<1.0	<3.0	<6	NA	NA	NA	NA	NA
	03/10/94	8,000	<1.0	<1.0	<1.0	8	8.0	NA	NA	NA	NA	NA
	06/14/94	4,800	<1.0	<1.0	<1.0	<3.0	<6	NA	NA	NA	NA	NA
	09/16/94	3,000	<1.0	<1.0	<1.0	<3.0	<6	NA	NA	NA	NA	NA
	12/13/94	2,000	<1.0	<1.0	<1.0	<1.0	<4	NA	NA	NA	NA	NA
	03/10/95	3,000	<1	<1	<1	<3	<6	NA	NA	NA	NA	NA
	06/07/95	NA	<1	<1	<1	<3	<6	NA	NA	NA	NA	NA
	09/27/95	10,000	<0.5	<0.5	<0.5	<0.5	<2	NA	NA	NA	NA	NA
	12/14/95	11,000	<0.5	<0.5	<0.5	<0.5	<2	NA	NA	NA	NA	NA
	03/18/96	4,900	<0.5	<0.5	<0.5	<0.5	<2	NA	NA	NA	NA	NA
	07/15/96	3,000	<0.5	<0.5	<0.5	<0.5	<2	NA	NA	NA	NA	NA
	10/11/96	NA	<0.5	<0.5	<0.5	<0.5	<2	NA	NA	NA	NA	NA
	04/23/97	NA	<0.5	<0.5	<0.5	<0.5	<2	NA	NA	NA	NA	NA
	07/31/97	NA	<0.5	<0.5	<0.5	<0.5	<2	NA	NA	NA	NA	NA
	11/01/97	NA	<0.5	<0.5	<0.5	<0.5	<2	NA	NA	NA	NA	NA
	05/26/98	NA	<0.5	<0.5	<0.5	<0.5	<2	NA	NA	NA	NA	NA
	11/30/98	NA	<1.0	<1.0	<1.0	<1.0	<4	NA	NA	NA	NA	NA
	06/10/99	NA	<1	<1	<1	<3	<6	<2	<2	<240	<60	40
	02/11/00	<530	<1	<1	<1	<3	<6	<2	<2	<240	<100	<50
	06/28/02	23	<0.5	<0.5	<0.5	<0.5	<2.0	<2	<1	<20	<20	<20
	05/22/03	<200	<1	<1	<1	<3	<6	<2	<2	<100	<100	<20
	05/04/04	<200	<1	<1	<1	<3	<6	<2	<5	<100	<100	<20
	05/31/05	<20	<0.5	<0.5	<0.5	<1	<2.5	<2	<1	<50	<20	<20
	05/31/06	25	<0.5	<0.5	<0.5	<1	<2.5	<2	<1	<50	<20	<20
M-8	06/28/02	110	3.7	<0.5	4.0	4.7	12.4	<2.0	1.0	49	<20	34
	06/28/02	100	3.5	<0.5	3.8	4.5	11.8	<2.0	1.1	49	<20	23
	05/22/03	<200	2	<1	<1	<3	2.0	<2	<2	<100	<100	<20
	05/22/03 D	<200	3	<1	2	<3	5.0	<2	<2	<100	<100	<20
	05/04/04	<200	1	<1	<1	<3	1.0	<2	<5	<100	<100	<20
	05/04/04 D	<200	2	<1	<1	<3	2.0	<2	<5	<100	<100	<20
	05/31/05	<20	0.8 J	<0.5	<0.5	<1	0.8 J	<2	<1	<50	<20	<20
	05/31/05 D	<20	1.0 J	<0.5	<0.5	<1	1.0 J	<2	<1	<50	<20	<20
	05/31/06	<20	<0.5	<0.5	<0.5	<1	<2.5	<2	<1	<50	<20	<20
M-9	05/04/04	<200	<1	<1	<1	<3	<6	<2	<5	<100	<100	<20
	05/31/05	22 J	**8.5**	<0.5	<0.5	<1	8.5	<2	<1	<50	<20	<20
	05/31/06	<20	<0.5	<0.5	<0.5	<1	<2.5	<2	<1	<50	<20	<20
	5/31/06 D	<20	<0.5	<0.5	<0.5	<1	<2.5	<2	<1	<50	<20	<20
	01/18/07	<20	<0.5	<0.5	<0.5	<1	<2.5	<2	<1	<50	<20	<20
	1/18/07 D	<20	<0.5	<0.5	<0.5	<1	<2.5	<2	<1	<50	<20	<20

Table 2
Volatile Petroleum Hydrocarbon (VPH) Data
Yale Tank Farm
Billings, Montana
(Concentrations in micrograms per liter)

Well ID	Date	TPH	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	C_5 - C_8 Aliphatics	C_9 - C_{12} Aliphatics	C_9 - C_{10} Aromatics
MDEQ RBSL[A]		**NE**	**5**	**1,000**	**700**	**10,000**	**NE**	**30**	**100**	**400**	**400**	**50**
RW1-1A	11/19/96	NA	<1	3	35	38	76.0	NA	NA	NA	NA	NA
PZ-1	01/29/97	NA	**6,700**	590	560	410	8260.0	NA	NA	NA	NA	NA
	04/23/97	NA	**5,700**	580	480	820	7580.0	NA	NA	NA	NA	NA
	07/31/97	NA	**350**	74	51	130	605.0	NA	NA	NA	NA	NA
	11/01/97	NA	**5,700**	880	600	1400	8580.0	NA	NA	NA	NA	NA
	05/26/98	NA	**2,800**	390	320	560	4070.0	NA	NA	NA	NA	NA
	11/30/98	NA	**1,700**	140	380	450	2670.0	NA	NA	NA	NA	NA
	06/10/99	NA	**2,500**	160	540	360	3560.0	<30	<30	**2,940**	100	**1,300**
	02/11/00	3,800	**2,200**	140	350	230	2920.0	<10	32	**2,800**	<100	**1,000**
	05/18/00	3,800	**2,100**	63	340	89	2592.0	<10	<10	**1,600**	<100	**650**
	05/18/00	3,500	**2,100**	65	340	91	2596.0	<10	<10	**1,100**	<100	**650**
	11/02/00	4,400	**1,600**	93	290	110	2093.0	<20	22	**1,800**	210	**490**
	05/14/01	3,800	**1,100**	31	170	52	1353.0	<2	14	**2,100**	380	**300**
	06/28/02	840	**220**	<1.2	18	3.6	241.6	<5	7.1	**450**	<50	**97**
	05/22/03	1,800	**680**	25	42	93	840	<2	11	**860**	<100	**140**
	05/04/04	1,300	**260**	5	73	30	368	<2	4	**850**	<100	**110**
PZ-2	06/10/99	NA	<1	<1	2	<3	2.0	<2	15	<240	80	**200**
	02/11/00	1,900	<1	<1	2	<3	2.0	<2	15	<240	<100	**230**
	05/18/00	800	<1	<1	2	<3	2.0	<2	15	<240	<100	**200**
	11/02/00	1,800	<0.5	<0.5	2.3	4.6	6.9	<2	59	30	320	**610**
	05/14/01	340	<0.5	<0.5	1.6	1.4	3.0	<2	14	32	62	**110**
	06/28/02	480	<0.5	<0.5	1.0	1.9	2.9	<2	16	<20	76	**140**
RW-4	03/17/94	NA	<1	<1	<1	90	90.0	NA	NA	NA	NA	NA
	06/14/94	NA	360	380	51	340	1131.0	NA	NA	NA	NA	NA
	09/16/94	NA	540	110	81	146	877.0	NA	NA	NA	NA	NA
	12/13/94	NA	4,290	1,200	420	650	6560.0	NA	NA	NA	NA	NA
	03/10/95	NA	480	310	62	320	1172.0	NA	NA	NA	NA	NA
	06/07/95	NA	360	380	51	340	1131.0	NA	NA	NA	NA	NA
	09/27/95	FP	FP	FP	FP	FP	NA	NA	NA	NA	NA	NA

Table 2
Volatile Petroleum Hydrocarbon (VPH) Data
Yale Tank Farm
Billings, Montana
(Concentrations in micrograms per liter)

Well ID	Date	TPH	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	C_5 - C_8 Aliphatics	C_9 - C_{12} Aliphatics	C_9 - C_{10} Aromatics
MDEQ RBSL[A]		**NE**	**5**	**1,000**	**700**	**10,000**	**NE**	**30**	**100**	**400**	**400**	**50**
RW-5	05/12/94	NA	<1	<1	<1	<3	<6	NA	NA	NA	NA	NA
	05/31/94	NA	<1	<1	<1	<3	<6	NA	NA	NA	NA	NA
	06/14/94	NA	<1	<1	<1	<3	<6	NA	NA	NA	NA	NA
	09/16/94	NA	1.0	<1	<1	1.0	2.0	NA	NA	NA	NA	NA
	12/13/94	NA	2.0	<1	<1	<1	2.0	NA	NA	NA	NA	NA
	03/10/95	NA	<1	<1	<1	<3	<6	NA	NA	NA	NA	NA
	09/27/95	NA	1.6	<0.5	0.6	<0.5	2.2	NA	NA	NA	NA	NA
Effluent[B]	03/17/94	NA	<1	<1	4.0	<3	4.0	NA	NA	NA	NA	NA
	06/14/94	NA	<1	<1	<1	<3	<6	NA	NA	NA	NA	NA
	09/16/94	NA	<1	<1	<1	<3	<6	NA	NA	NA	NA	NA
	12/13/94	NA	<1	<1	<1	<3	<6	NA	NA	NA	NA	NA
	03/10/95	NA	<1	<1	8.0	9.0	17.0	NA	NA	NA	NA	NA
	06/07/95	NA	11.0	<1	4.0	6.0	21.0	NA	NA	NA	NA	NA
	09/27/95	NA	6.5	<1	1.3	0.9	8.7	NA	NA	NA	NA	NA
	11/27/95	NA	<1	<1	<1	<3	<6	NA	NA	NA	NA	NA
	02/02/96	NA	22	2.0	2.3	2.0	28.3	NA	NA	NA	NA	NA
	03/18/96	NA	7.6	<0.5	1.1	2.4	11.1	NA	NA	NA	NA	NA
	07/15/96	NA	0.8	<0.5	<0.5	<0.5	0.8	NA	NA	NA	NA	NA

NOTES:
A: RBSL, Risk-Based Screening Level, *Montana Tier 1 Risk-Based Corrective Action Guidance for Petroleum Releases* , Montana Department of Environmental Quality, Helena, MT, October, 2003.
B: Effluent from a pump and treat water treatment unit that operated at the site from 1993 to 1996.
NE: RBSL not established.
J: Value is between method detection limit and practical quantitation limit and is considered an estimated concentration.
Bold text indicates exceedance of *Risk Based Screening Levels* .
NA: Parameter not analyzed.
Prior to the 2/11/00 monitoring event, samples were analyzed for BTEX according to EPA Method 602 or 8020. Since the 2/11/00 monitoring event, samples have been analyzed for volatile petroleum hydrocarbons (VPH) according to Massachusetts DEQ Method.
D = duplicate

Table 3
Extractable Petroleum Hydrocarbon (EPH) Data
Yale Tank Farm
Billings, Montana
(Concentrations in micrograms per liter)

Well ID	Date	Montana Extractable Petroleum Hydrocarbon (EPH) Screen[B]	Total Extractable Hydrocarbons (TEH) (Unadjusted)	Acenaphthene	Anthracene	Benzo[a]antrhacene	Benzo[b]fluoranthene	Benzo[k]fluroanthene	Benzo[a]pyrene	Chrysene	Dibenzo[a,h]anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Pyrene	C_9-C_{18} Aliphatics	C_{19}-C_{36} Aliphatics	C_{11}-C_{22} Aromatics
MDEQ RBSL[A]		**300[C]**	**NE**	**420**	**2,100**	**0.48**	**0.48**	**4.79**	**0.048**	**48**	**0.048**	**280**	**280**	**0.044**	**100**	**960**	**400**	**1,000**	**300**
M-4	6/10/1999	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	200	NA
	2/11/2000	NA	890	<21	<21	<10	<21	<21	<10	<21	<10	<10	<21	<21	<21	<21	<210	<420	<260
	5/14/2001	NA	520	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/14/2001	NA	520	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/9/2002	NA	<520	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/22/2003	NA	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/4/2004	NA	710	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<190	<190	<190
	5/31/2005	2,200	1,500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<60	<100	**1,500**
	5/31/2006	1,500	84	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	34	<48	50
M-5	6/10/1999	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	230	<50	NA
	2/11/2000	NA	4,500	<21	<21	<10	<21	<21	<10	<21	<10	<10	<21	<21	<21	<21	<210	<420	<260
	2/11/2000	NA	3,900	<21	<21	<10	<21	<21	<10	<21	<10	<10	<21	<21	<21	<21	<210	<420	<260
	5/18/2000	NA	14,000	<10	<10	<10	<10	<10	<20	<10	<20	<10	<10	<10	<10	<10	<204	<407	320
	11/2/2000	NA	<500	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<500	<500	<500
	5/14/2001	NA	2,300	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<510	<510	<510
	5/9/2002	NA	1,100	72	72	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<520	<520	<520
	5/22/2003	NA	3,800	<16	<16	<16	<16	<16	<16	<16	<16	<16	<16	<16	<16	<16	<220	<220	<220
	5/4/2004	NA	2,200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<200	<200	<200
	5/13/2005	1,800	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	41	<50	<40
	5/31/2006	2,200	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	160	<48	110
M-6	6/10/1999	NA	well obstructed; not sampled																
	2/11/2000	NA	<540	<21	<21	<11	<21	<21	<11	<21	<11	<11	<21	<21	<21	<21	<240	<430	<250
	5/18/2000	NA	690	<10	<10	<10	<10	<10	<20	<10	<20	<10	<10	<10	<10	<10	<200	<400	<270
	11/3/2000	NA	<500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/14/2001	NA	<510	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/9/2002	NA	<520	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/22/2003	NA	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/4/2004	Dry																	
	5/31/2005	Dry																	
	5/31/2006	Dry																	
M-7	6/10/1999	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<50	NA
	2/11/2000	NA	<530	<21	<21	<10	<21	<21	<10	<21	<10	<10	<21	<21	<21	<21	<210	<420	<260
	5/22/2003	NA	1,100	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<200	<200	<200
	5/4/2004	NA	800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<190	<190	48J
	5/31/2005	4,300	140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	55	<50	81
	5/31/2006	1,900	35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35	<48	<38

Table 3
Extractable Petroleum Hydrocarbon (EPH) Data
Yale Tank Farm
Billings, Montana
(Concentrations in micrograms per liter)

Well ID	Date	Montana Extractable Petroleum Hydrocarbon (EPH) Screen[B]	Total Extractable Hydrocarbons (TEH) (Unadjusted)	Acenaphthene	Anthracene	Benzo[a]antrhacene	Benzo[b]fluoranthene	Benzo[k]fluroanthene	Benzo[a]pyrene	Chrysene	Dibenzo[a,h]anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Pyrene	C_9-C_{18} Aliphatics	C_{19}-C_{36} Aliphatics	C_{11}-C_{22} Aromatics
MDEQ RBSL[A]		**300[C]**	**NE**	**420**	**2,100**	**0.48**	**0.48**	**4.79**	**0.048**	**48**	**0.048**	**280**	**280**	**0.044**	**100**	**960**	**400**	**1,000**	**300**
M-8	5/9/2002	NA	<520	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/9/2002	NA	<510	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/22/2003	NA	<480	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/22/2003 D	NA	<480	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/4/2004	NA	280	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/4/2004 D	NA	220	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/31/2005	980	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30	<50	<40
	5/31/05 D	780	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30	<50	<40
	5/31/2006	860	35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35	<48	<38
M-9	5/4/2004	NA	220	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/31/2005	940	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30	<50	<40
	5/31/2006	930	34	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	34	<48	<38
	5/31/2006 D	890	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29	<48	<38
	1/18/2007	880	<30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<31	<52	<42
	1/18/07 D	800	<30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<29	<49	<39
PZ-1	6/10/1999	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	26	<10	390	<50	NA
	2/11/2000	NA	3,800	<21	<21	<10	<21	<21	<10	<21	<10	<10	<21	<21	<21	<21	<210	<420	<260
	5/18/2000	NA	3,800	<10	<10	<10	<10	<10	<20	<10	<20	<10	<10	<10	<10	<10	<200	<410	<250
	5/18/2000	NA	3,500	<10	<10	<10	<10	<10	<20	<10	<20	<10	<10	<10	<10	<10	<210	<410	<260
	11/2/2000	NA	740	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	**610**	<500	<500
	5/14/2001	NA	3,900	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	**940**	<500	<500
	5/9/2002	NA	1,900	68	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<520	<520	<520
	5/22/2003	NA	3,700	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<200	<200	<200
	5/4/2004	NA	2,300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<190	<190	48J
	Piezometer abandoned																		
PZ-2	6/10/1999	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	**4,600**	940	NA
	2/11/2000	NA	1,900	<21	<21	<11	<21	<21	<11	<21	<11	<11	<21	<21	<21	<21	**700**	<420	<260
	5/18/2000	NA	8,000	<10	<10	<10	<10	<10	<20	<10	<20	<10	<10	<10	<10	<10	<200	<410	<410
	11/2/2000	NA	10,000	<10	<10	<10	<10	<10	<10	<10	<10	<10	34	<10	<10	<10	**7,400**	**1,100**	**1,800**
	5/14/2001	NA	1,900	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<510	<510	<510
	5/9/2002	NA	5,300	23	<10	<10	<10	<10	<10	<10	<10	<10	19	<10	<10	<10	**2,600**	<520	<520

NOTES:
A: RBSL, Risk-Based Screening Level,*Montana Tier 1 Risk-Based Corrective Action Guidance for Petroleum Release*:, Montana Department of Environmental Quality, Helena, MT, October, 2003.
B: MT EPH Screen Values were not reported prior to 2005, however, this is the basis for analyzing EPH fractions..
C: 300 ug/L is the EPH Fractionation trigger concentration, not an RBSL.
All units in micrograms per liter (ug/L)
NA: analysis not conducted; MDEQ requires EPH fractionation analysis only when the TEH concentration exceeds 1,000 ug/L.
Bold text indicates exceedance of*Risk Based Screening Levels*.
Prior to the 2/11/00 monitoring event, samples were analyzed for diesel range organics (DRO) according to EPA Method 8015. Since the 2/11/00 monitoring event, samples have been analyzed for extractable petroleum hydrocarbons (EPH) according to Massachusetts DEQ Method.
D = duplicate

ATTACHMENT A

GROUNDWATER SAMPLING LOGS

CONOCOPHILLIPS, INC. - GROUNDWATER SAMPLING LOG

Project: YALE TANK FARM Sample Date: 1/18/07 Sample Time: 1102 SC Well ID: M-9

Personnel: SC Weather: CLEAR - 20°F

Casing Diameter/Type: 2" PVC Measuring Point Description: NTH

Well Depth (feet below measuring point): 22.63 Depth to Water 9.21 ft water

Screen: Depth to Product —

J-TUBE: YES or NO If yes indicate the depth below static water the tube was raised to Before Sampling:

WELL EVACUATION

Method: [ ] Mechanical Bailer, [ ] Galvanized Bailer, [ ] PVC Bailer, [ ] Disp. Polyethylene Bailer, [ ] SST Bailer, [ ] Submersible Pump, [ ] Low Flow, [X] Peri Pump

13.42 Ft. water x 0.163 gal. /ft * = one casing volume 2.2 gals. x 3 = purge volume 6.6 gals.

SCH 40 Pipe * 2" well = 0.163 gal./ft. 4" well = 0.653 gal./ft. 6" well = 1.469 gal./ft. 8" well = 2.611 gal./ft. Any Well C feet in radius = 3.14 x $R^2$4

Water Quality: CLOUDY ODOR: YES or NO SHEEN: YES or NO

Comments:

EVACUATION DATA

Time	Gallons	Temperature	pH	SC	ORP	DO
1048	START					
1050	1	10.8	7.37	1292	-114.9	0.47
1052	2	11.1	7.25	1291	-117.2	0.37
1054	3	11.2	7.19	1278	-120.4	0.31
1056	4	11.3	7.17	1274	-122.9	0.27
1058	5	11.3	7.15	1270	-124.5	0.24
1100	6	11.3	7.14	1268	-125.7	0.22
1102	SAMPLE					

WELL SAMPLING

Sampling Method: [ ] Disposable Poly Bailer, [ ] Submersible Pump, [ ] Low Flow, [X] Peri Pump Sample Type: [X] Natural, [ ] Duplicate, [ ] Field Blank

	Parameter	Sample Container	Preservative
[ ]	BTEX	(2) 40 ml VOA	Hydrochloric acid
[ ]	MTBE	Extracted from BTEX VOA	Hydrochloric acid
[ ]	GRO as Gasoline	(2) 40 ml VOA	Hydrochloric acid
[ ]	DRO as Diesel	(2) 1-liter amber glass	Sulfuric acid
[ ]	Methane	(2) 40 ml VOA	None
[ ]	Sulfate	(1) 250 ml poly plastic	None
[ ]	HACH	(1) 1-liter poly plastic	None
[ ]	Lead	(1) 125 ml poly plastic	Nitric acid
[X]	VPH	(3) 40 ml VOA	Hydrochloric acid
[X]	EPH	(2) 1-liter amber glass	Hydrochloric acid
[ ]	PAHs	(2) 1-liter amber glass	None
[ ]	VOC'S	(4) 40 ml VOA	Hydrochloric acid

Filtered: [ ] Yes, [ ] No

IBI's

[ ]	Sulfate	(1) 125 ml poly plastic	Sulfuric
[ ]	Sulfide	(1) 125 ml poly plastic	None
[ ]	Nitrate	(1) 125 ml poly plastic	None
[ ]	Methane/Ethane/Ethane	(1) 125 ml poly plastic	Sulfide
[ ]	Iron,Manganese	(1) 125 ml poly plastic	Nitric

Filtered: [ ] Yes, [ ] No

Laboratory: [ ] Quanterra: [ ] Microseps, [ ] STL, [ ] Northern Analytical [ ] Gulf Coast: Other LANCASTER Chain-of-Custody: [X] Yes, [ ] No

Meter	Serial No.	Calibration Date
pH	OAKTON	1/18/07
SC	OAKTON	
ORP	OAKTON	
DO	YSI550	

Decontamination

Potable Water:	Yes [X]	No [ ]	Nitric Acid:	Yes [ ]	No [X]
Liquinox:	Yes [X]	No [ ]	DI Water:	Yes [X]	No [ ]
Methanol:	Yes [X]	No [ ]			

Comments:

CONOCOPHILLIPS, INC. - GROUNDWATER SAMPLING LOG

Project: YALE TANK FARM Sample Date: 1/18/07 Sample Time: 1102 Well ID: DUP M-9 M-D

Personnel: SE Weather: CLEAR - 20°F

Casing Diameter/Type: 2" PVC Measuring Point Description: NTH

Well Depth (feet below measuring point): _____ Depth to Water _____ ft water

Screen: _____ Depth to Product _____

J-TUBE: YES or NO If yes indicate the depth below static water the tube was raised to Before Sampling: _____

WELL EVACUATION

Method: [ ] Mechanical Bailer, [ ] Galvanized Bailer, [ ] PVC Bailer, [ ] Disp. Polyethylene Bailer, [ ] SST Bailer, [ ] Submersible Pump, [ ] Low Flow, [X] Peri Pump

_____ Ft. water x _____ gal. /ft " = one casing volume _____ gals. x 3 = purge volume _____ gals.

SCH 40 Pipe " 2" well = 0.163 gal./ft. 4" well = 0.653 gal./ft. 6" well = 1.469 gal./ft. 8" well = 2.611 gal./ft. Any Well C feet in radius = 3.14 x $R^2$4

Water Quality: _____ ODOR: YES or NO SHEEN: YES or NO

Comments: _____

EVACUATION DATA

Time	Gallons	Temperature	pH	SC	ORP	DO
SEE M-9 FOR FIELD PARAMETERS						

WELL SAMPLING

Sampling Method: [ ] Disposable Poly Bailer, [ ] Submersible Pump, [ ] Low Flow, [X] Peri Pump _____ Sample Type: [X] Natural, [ ] Duplicate, [ ] Field Blank

	Parameter	Sample Container	Preservative	
[ ]	BTEX	(2) 40 ml VOA	Hydrochloric acid	
[ ]	MTBE	Extracted from BTEX VOA	Hydrochloric acid	
[ ]	GRO as Gasoline	(2) 40 ml VOA	Hydrochloric acid	
[ ]	DRO as Diesel	(2) 1-liter amber glass	Sulfuric acid	
[ ]	Methane	(2) 40 ml VOA	None	
[ ]	Sulfate	(1) 250 ml poly plastic	None	
[ ]	HACH	(1) 1-liter poly plastic	None	
[ ]	Lead	(1) 125 ml poly plastic	Nitric acid	Filtered: [ ] Yes, [ ] No
[X]	VPH	(3) 40 ml VOA	Hydrochloric acid	
[X]	EPH	(2) 1-liter amber glass	Hydrochloric acid	
[ ]	PAHs	(2) 1-liter amber glass	None	
[ ]	VOC'S	(4) 40 ml VOA	Hydrochloric acid	

IBI's

[ ]	Sulfate	(1) 125 ml poly plastic	Sulfuric	
[ ]	Sulfide	(1) 125 ml poly plastic	None	
[ ]	Nitrate	(1) 125 ml poly plastic	None	
[ ]	Methane/Ethene/Ethane	(1) 125 ml poly plastic	Sulfide	
[ ]	Iron,Manganese	(1) 125 ml poly plastic	Nitric	Filtered: [ ] Yes, [ ] No

Laboratory: [ ] Quantera: [ ] Microseeps, [ ] STL, [ ] Northern Analytical [ ] Gulf Coast: Other LANCASTER Chain-of-Custody: [X] Yes, [ ] No

Meter	Serial No.	Calibration Date
pH	OAKTON	1/18/07
SC	OAKTON	
ORP	OAKTON	
DO	YSI 550	

Decontamination

Potable Water:	Yes [X]	No [ ]	Nitric Acid:	Yes [ ]	No [X]
Liquinox:	Yes [X]	No [ ]	DI Water:	Yes [X]	No [ ]
Methanol:	Yes [X]	No [ ]			

Comments: _____

ATTACHMENT B

LABORATORY ANALYTICAL REPORTS

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

ConocoPhillips
PO Box 2200
Bartlesville OK 74005

RECEIVED
MAR 0 8 2007

Prepared by:

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

SAMPLE GROUP

The sample group for this submittal is 1022287. Samples arrived at the laboratory on Friday, January 19, 2007. The PO# for this group is 4507595716 and the release number is KINGER.

Client Description	Lancaster Labs Number
M-9 Grab Water Sample	4962477
M-D Grab Water Sample	4962478
Trip Blank Water Sample	4962479

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO	Tetra Tech, Inc	Attn: David Tyler
1 COPY TO	Data Package Group	

Lancaster Laboratories

Questions? Contact your Client Services Representative
Barbara A Weyandt at (717) 656-2300

Respectfully Submitted,

Melissa A McSermott
Senior Chemist

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4962477

M-9 Grab Water Sample
Site# 6567
Yale Tank Farm, MT

Collected:01/18/2007 11:02 by SE

Account Number: 11288

Submitted: 01/19/2007 09:40
Reported: 02/28/2007 at 16:29
Discard: 03/31/2007

ConocoPhillips
PO Box 2200
Bartlesville OK 74005

96567 SDG#: BMT21-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Units	Dilution Factor
05968	MTEPH Screen Water	n.a.	880.	300.	300.	ug/l	1
05869	MT-VPH Waters						
05877	Total Purgeable Hydrocarbons	n.a.	N.D.	20.0	100.	ug/l	1
05943	Xylenes (total)	1330-20-7	N.D.	1.00	10.0	ug/l	1
05993	Benzene	71-43-2	N.D.	0.5	1.00	ug/l	1
05994	Toluene	108-88-3	N.D.	0.5	5.00	ug/l	1
05995	Ethylbenzene	100-41-4	N.D.	0.5	5.00	ug/l	1
05996	Methyl t-butyl ether	1634-04-4	N.D.	2.00	5.00	ug/l	1
05997	Naphthalene	91-20-3	N.D.	1.00	5.00	ug/l	1
05998	C5-C8 Aliphatic Hydrocarbons	n.a.	N.D.	50.0	100.	ug/l	1
05999	C9-C12 Aliphatic Hydrocarbons	n.a.	N.D.	20.0	100.	ug/l	1
06002	C9-C10 Aromatic Hydrocarbons	n.a.	N.D.	20.0	100.	ug/l	1
06003	Unadjusted C5-C8 Aliphatics	n.a.	N.D.	50.0	100.	ug/l	1
06004	Unadjusted C9-C12 Aliphatics	n.a.	N.D.	20.0	100.	ug/l	1

The concentrations of individual target analytes and the surrogate standard have been subtracted from the concentrations of the appropriate hydrocarbon ranges as specified by the method.
Elution ranges for the target analytes are listed below:
benzene, toluene, methyl t-butyl ether - C5-C8 aliphatics
ethyl benzene, m,p-xylenes, o-xylene - C9-C12 aliphatics

Significant modifications to the method are listed below:
The surrogate standard for the VPH analysis is a,a,a-trifluorotoluene for both the PID and FID. This compound elutes in the C5-C8 range. 1-Chloro-3-fluorobenzene is also used as an internal standard for the PID and elutes in the C5-C8 range. The use of the internal standard, surrogate standard that elute in the specified aliphatic or aromatic ranges is a significant modification. The peak areas for these standards are subtracted from the area for the specific ranges before the concentrations are calculated. This process has been validated in our laboratory and has produced acceptable data in the MA Round Robin study. Sample preservation met requirements (pH </= 2).

The table below lists the risk based screening levels (RBSL) used by the state of Montana. The limits are from the Tier 1 Groundwater RBSLs and Standards table. These limits are posted on the Montana DEQ web site (www.deq.state.mt.us). The limits were last updated October 2003.

Analyte Name	RBSL (ug/l)
Xylenes	10000
Benzene	5
Toluene	1000

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax. 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4962477

M-9 Grab Water Sample
Site# 6567
Yale Tank Farm, MT

Collected:01/18/2007 11:02 by SE

Account Number: 11288

Submitted: 01/19/2007 09:40
Reported: 02/28/2007 at 16:29
Discard: 03/31/2007

ConocoPhillips
PO Box 2200
Bartlesville OK 74005

96567 SDG#: BMT21-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Units	Dilution Factor
	Ethylbenzene	700					
	MTBE	30					
	Naphthalene	100					
	C5-C8 Aliphatics	350					
	C9-C12 Aliphatics	1000					
	C9-C10 Aromatics	100					
05944	MT EPH Water						
05945	C9 to C18 Aliphatics	n.a.	N.D.	31.	31.	ug/l	1
05946	C19 to C36 Aliphatics	n.a.	N.D.	52.	52.	ug/l	1
05947	C11 to C22 Aromatics	n.a.	N.D.	42.	42.	ug/l	1
05948	Total Extractable Hydrocarbons	n.a.	N.D.	30.	30.	ug/l	1

The surrogate standard for the aliphatic hydrocarbons is 1-chloro-octadecane.
The surrogate standard for the aromatic hydrocarbons is ortho-terphenyl.
The EPH fractionation surrogate is 2-fluorobiphenyl.
Significant modifications to the method are listed below:
Ultrasonic extraction, as described in SW-846 method 3550B, was used for soils.
Fractionation of the aliphatic and aromatic hydrocarbons was performed using a reduced size silica gel column with reduced elution volumes.
An alternate elution solvent was used as defined in SW-846 method 3630C for the aliphatic fraction. This fractionation technique has been validated in our laboratory and was used to produce acceptable data for the MA Round Robin study of the EPH method. A single EPH fractionation surrogate, 2-fluorobiphenyl, rather than a mixture of 2-fluorobiphenyl and 2-bromo-naphthalene was used. Both compounds elute in the aromatic fraction.
The table below lists the risk based screening levels (RBSL) used by the state of Montana. The limits are from the Tier 1 Groundwater RBSLs and Standards table. These limits are posted on the Montana DEQ web site (www.deq.state.mt.us) which was last updated October 2003.

Analyte name	RBSL (ug/l)
C9 to C18 Aliphatics	400
C19 to C36 Aliphatics	1000
C11 to C22 Aromatics	300

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

*=This limit was used in the evaluation of the final result

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4962477

M-9 Grab Water Sample
Site# 6567
Yale Tank Farm, MT

Collected:01/18/2007 11:02 by SE

Account Number: 11288

Submitted: 01/19/2007 09:40
Reported: 02/28/2007 at 16:29
Discard: 03/31/2007

ConocoPhillips
PO Box 2200
Bartlesville OK 74005

96567 SDG#: BMT21-01

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
05968	MTEPH Screen Water	MT DEQ	1	01/23/2007 13:01	Robert Brown	1
05869	MT-VPH Waters	MA DEP VPH mod/SW-846 8021B	1	01/22/2007 21:52	K. Robert Caulfeild-James	1
05944	MT EPH Water	MT DEQ MA EPH	1	01/26/2007 20:32	Sarah M Snyder	1
05944	MT EPH Water	MT DEQ MA EPH	1	01/26/2007 21:24	Sarah M Snyder	1
00497	Silica Gel Fractionation MA HC	SW-846 3630C modified	1	01/26/2007 12:05	Denise L Trimby	1
07326	EPH Water Extraction	MT DEQ MA EPH	1	01/22/2007 09:00	Denise L Trimby	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4962478

M-D Grab Water Sample
Site# 6567
Yale Tank Farm, MT

Collected:01/18/2007 11:02 by SE

Account Number: 11288

Submitted: 01/19/2007 09:40
Reported: 02/28/2007 at 16:29
Discard: 03/31/2007

ConocoPhillips
PO Box 2200
Bartlesville OK 74005

D6567 SDG#: BMT21-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Units	Dilution Factor
05968	MTEPH Screen Water	n.a.	800.	300.	300.	ug/l	1
05869	MT-VPH Waters						
05877	Total Purgeable Hydrocarbons	n.a.	N.D.	20.0	100.	ug/l	1
05943	Xylenes (total)	1330-20-7	N.D.	1.00	10.0	ug/l	1
05993	Benzene	71-43-2	N.D.	0.5	1.00	ug/l	1
05994	Toluene	108-88-3	N.D.	0.5	5.00	ug/l	1
05995	Ethylbenzene	100-41-4	N.D.	0.5	5.00	ug/l	1
05996	Methyl t-butyl ether	1634-04-4	N.D.	2.00	5.00	ug/l	1
05997	Naphthalene	91-20-3	N.D.	1.00	5.00	ug/l	1
05998	C5-C8 Aliphatic Hydrocarbons	n.a.	N.D.	50.0	100.	ug/l	1
05999	C9-C12 Aliphatic Hydrocarbons	n.a.	N.D.	20.0	100.	ug/l	1
06002	C9-C10 Aromatic Hydrocarbons	n.a.	N.D.	20.0	100.	ug/l	1
06003	Unadjusted C5-C8 Aliphatics	n.a.	N.D.	50.0	100.	ug/l	1
06004	Unadjusted C9-C12 Aliphatics	n.a.	N.D.	20.0	100.	ug/l	1

The concentrations of individual target analytes and the surrogate standard have been subtracted from the concentrations of the appropriate hydrocarbon ranges as specified by the method.
Elution ranges for the target analytes are listed below:
benzene, toluene, methyl t-butyl ether - C5-C8 aliphatics
ethyl benzene, m,p-xylenes, o-xylene - C9-C12 aliphatics

Significant modifications to the method are listed below:
The surrogate standard for the VPH analysis is a,a,a-trifluorotoluene for both the PID and FID. This compound elutes in the C5-C8 range. 1-Chloro-3-fluorobenzene is also used as an internal standard for the PID and elutes in the C5-C8 range. The use of the internal standard, surrogate standard that elute in the specified aliphatic or aromatic ranges is a significant modification. The peak areas for these standards are subtracted from the area for the specific ranges before the concentrations are calculated. This process has been validated in our laboratory and has produced acceptable data in the MA Round Robin study.
Sample preservation met requirements (pH </= 2).

The table below lists the risk based screening levels (RBSL) used by the state of Montana. The limits are from the Tier 1 Groundwater RBSLs and Standards table. These limits are posted on the Montana DEQ web site (www.deq.state.mt.us). The limits were last updated October 2003.

Analyte Name	RBSL (ug/l)
Xylenes	10000
Benzene	5
Toluene	1000

*=This limit was used in the evaluation of the final result

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4962478

M-D Grab Water Sample
Site# 6567
Yale Tank Farm, MT

Collected:01/18/2007 11:02 by SE

Account Number: 11288

Submitted: 01/19/2007 09:40
Reported: 02/28/2007 at 16:29
Discard: 03/31/2007

ConocoPhillips
PO Box 2200
Bartlesville OK 74005

D6567 SDG#: BMT21-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Units	Dilution Factor
	Ethylbenzene	700					
	MTBE	30					
	Naphthalene	100					
	C5-C8 Aliphatics	350					
	C9-C12 Aliphatics	1000					
	C9-C10 Aromatics	100					
05944	MT EPH Water						
05945	C9 to C18 Aliphatics	n.a.	N.D.	29.	29.	ug/l	1
05946	C19 to C36 Aliphatics	n.a.	N.D.	49.	49.	ug/l	1
05947	C11 to C22 Aromatics	n.a.	N.D.	39.	39.	ug/l	1
05948	Total Extractable Hydrocarbons	n.a.	N.D.	30.	30.	ug/l	1

The surrogate standard for the aliphatic hydrocarbons is 1-chloro-octadecane.
The surrogate standard for the aromatic hydrocarbons is ortho-terphenyl.
The EPH fractionation surrogate is 2-fluorobiphenyl.
Significant modifications to the method are listed below:
Ultrasonic extraction, as described in SW-846 method 3550B, was used for soils.
Fractionation of the aliphatic and aromatic hydrocarbons was performed using a reduced size silica gel column with reduced elution volumes.
An alternate elution solvent was used as defined in SW-846 method 3630C for the aliphatic fraction. This fractionation technique has been validated in our laboratory and was used to produce acceptable data for the MA Round Robin study of the EPH method. A single EPH fractionation surrogate, 2-fluorobiphenyl, rather than a mixture of 2-fluorobiphenyl and 2-bromo-naphthalene was used. Both compounds elute in the aromatic fraction.
The table below lists the risk based screening levels (RBSL) used by the state of Montana. The limits are from the Tier 1 Groundwater RBSLs and Standards table. These limits are posted on the Montana DEQ web site (www.deq.state.mt.us) which was last updated October 2003.

Analyte name	RBSL (ug/l)
C9 to C18 Aliphatics	400
C19 to C36 Aliphatics	1000
C11 to C22 Aromatics	300

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

*=This limit was used in the evaluation of the final result

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PO Box 12425
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717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4962478

M-D Grab Water Sample
Site# 6567
Yale Tank Farm, MT

Collected:01/18/2007 11:02 by SE

Account Number: 11288

Submitted: 01/19/2007 09:40
Reported: 02/28/2007 at 16:29
Discard: 03/31/2007

ConocoPhillips
PO Box 2200
Bartlesville OK 74005

D6567 SDG#: BMT21-02

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
05968	MTEPH Screen Water	MT DEQ	1	01/23/2007 13:55	Robert Brown	1
05869	MT-VPH Waters	MA DEP VPH mod/SW-846 8021B	1	01/22/2007 22:34	K. Robert Caulfeild-James	1
05944	MT EPH Water	MT DEQ MA EPH	1	01/26/2007 22:17	Sarah M Snyder	1
05944	MT EPH Water	MT DEQ MA EPH	1	01/26/2007 23:10	Sarah M Snyder	1
00497	Silica Gel Fractionation MA HC	SW-846 3630C modified	1	01/26/2007 12:05	Denise L Trimby	1
07326	EPH Water Extraction	MT DEQ MA EPH	1	01/22/2007 09:00	Denise L Trimby	1

*=This limit was used in the evaluation of the final result

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717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4962479

Trip Blank Water Sample
Site# 6567
Yale Tank Farm, MT

Collected:01/18/2007

Account Number: 11288

Submitted: 01/19/2007 09:40
Reported: 02/28/2007 at 16:29
Discard: 03/31/2007

ConocoPhillips
PO Box 2200
Bartlesville OK 74005

T6567 SDG#: BMT21-03TB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Units	Dilution Factor
05869	MT-VPH Waters						
05877	Total Purgeable Hydrocarbons	n.a.	N.D.	20.0	100.	ug/l	1
05943	Xylenes (total)	1330-20-7	N.D.	1.00	10.0	ug/l	1
05993	Benzene	71-43-2	N.D.	0.5	1.00	ug/l	1
05994	Toluene	108-88-3	N.D.	0.5	5.00	ug/l	1
05995	Ethylbenzene	100-41-4	N.D.	0.5	5.00	ug/l	1
05996	Methyl t-butyl ether	1634-04-4	N.D.	2.00	5.00	ug/l	1
05997	Naphthalene	91-20-3	N.D.	1.00	5.00	ug/l	1
05998	C5-C8 Aliphatic Hydrocarbons	n.a.	N.D.	50.0	100.	ug/l	1
05999	C9-C12 Aliphatic Hydrocarbons	n.a.	N.D.	20.0	100.	ug/l	1
06002	C9-C10 Aromatic Hydrocarbons	n.a.	N.D.	20.0	100.	ug/l	1
06003	Unadjusted C5-C8 Aliphatics	n.a.	N.D.	50.0	100.	ug/l	1
06004	Unadjusted C9-C12 Aliphatics	n.a.	N.D.	20.0	100.	ug/l	1

The concentrations of individual target analytes and the surrogate standard have been subtracted from the concentrations of the appropriate hydrocarbon ranges as specified by the method.
Elution ranges for the target analytes are listed below:
benzene, toluene, methyl t-butyl ether - C5-C8 aliphatics
ethyl benzene, m,p-xylenes, o-xylene - C9-C12 aliphatics

Significant modifications to the method are listed below:
The surrogate standard for the VPH analysis is a,a,a-trifluorotoluene for both the PID and FID. This compound elutes in the C5-C8 range. 1-Chloro-3-fluorobenzene is also used as an internal standard for the PID and elutes in the C5-C8 range. The use of the internal standard, surrogate standard that elute in the specified aliphatic or aromatic ranges is a significant modification. The peak areas for these standards are subtracted from the area for the specific ranges before the concentrations are calculated. This process has been validated in our laboratory and has produced acceptable data in the MA Round Robin study.
Sample preservation met requirements (pH </= 2).

The table below lists the risk based screening levels (RBSL) used by the state of Montana. The limits are from the Tier 1 Groundwater RBSLs and Standards table. These limits are posted on the Montana DEQ web site (www.deq.state.mt.us). The limits were last updated October 2003.

Analyte Name	RBSL (ug/l)
Xylenes	10000
Benzene	5
Toluene	1000
Ethylbenzene	700

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4962479

Trip Blank Water Sample
Site# 6567
Yale Tank Farm, MT

Collected:01/18/2007

Account Number: 11288

Submitted: 01/19/2007 09:40
Reported: 02/28/2007 at 16:29
Discard: 03/31/2007

ConocoPhillips
PO Box 2200
Bartlesville OK 74005

T6567 SDG#: BMT21-03TB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Units	Dilution Factor
	MTBE	30					
	Naphthalene	100					
	C5-C8 Aliphatics	350					
	C9-C12 Aliphatics	1000					
	C9-C10 Aromatics	100					

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
05869	MT-VPH Waters	MA DEP VPH mod/SW-846 8021B	1	01/22/2007 21:10	K. Robert Caulfeild-James	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Quality Control Summary

Client Name: ConocoPhillips
Reported: 02/28/07 at 04:29 PM

Group Number: 1022287

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

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 070200008A	Sample number(s): 4962477-4962478								
C9 to C18 Aliphatics	N.D.	30.	30.	ug/l	58	58	40-140	0	50
C19 to C36 Aliphatics	N.D.	50.	50.	ug/l	63	59	40-140	5	50
C11 to C22 Aromatics	N.D.	40.	40.	ug/l	72	62	40-140	15	50
MTEPH Screen Water	N.D.	300.	300.	ug/l					
Batch number: 07022A01A	Sample number(s): 4962477-4962479								
Total Purgeable Hydrocarbons	N.D.	20.0	100.	ug/l	90	88	70-130	2	50
Xylenes (total)	N.D.	1.00	10.0	ug/l	93	90	70-130	3	50
Benzene	N.D.	0.5	1.00	ug/l	87	84	70-130	4	50
Toluene	N.D.	0.5	5.00	ug/l	91	88	70-130	3	50
Ethylbenzene	N.D.	0.5	5.00	ug/l	92	89	70-130	3	50
Methyl t-butyl ether	N.D.	2.00	5.00	ug/l	86	84	70-130	2	50
Naphthalene	N.D.	1.00	5.00	ug/l	78	81	70-130	4	50
C5-C8 Aliphatic Hydrocarbons	N.D.	50.0	100.	ug/l	92	90	70-130	2	50
C9-C12 Aliphatic Hydrocarbons	N.D.	20.0	100.	ug/l	84	84	70-130	0	50
C9-C10 Aromatic Hydrocarbons	N.D.	20.0	100.	ug/l	93	91	70-130	3	50
Unadjusted C5-C8 Aliphatics	N.D.	50.0	100.	ug/l	90	88	70-130	2	50
Unadjusted C9-C12 Aliphatics	N.D.	20.0	100.	ug/l	89	88	70-130	2	50

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: MT EPH Water
Batch number: 070200008A

	1-Chloro-octadecane	Orthoterphenyl	2-Fluorobiphenyl	1-chlorooctadecane
4962477	70	72	91	78
4962478	61	65	94	71
Blank	70	72	86	82
LCS	61	73	96	
LCSD	58	64	97	
Limits:	40-140	40-140	40-140	40-140

Analysis Name: MT-VPH Waters
Batch number: 07022A01A

	Trifluorotoluene-P	Trifluorotoluene-F
4962477	102	113

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

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Lancaster Laboratories

Quality Control Summary

Client Name: ConocoPhillips
Reported: 02/28/07 at 04:29 PM

Group Number: 1022287

Surrogate Quality Control

4962478	102	114
4962479	99	111
Blank	100	109
LCS	102	112
LCSD	100	112
Limits:	70-130	70-130

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

Lancaster Laboratories, Inc.
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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

ConocoPhillips Analysis Request/Chain of Custody

Lancaster Laboratories

05184

For Lancaster Laboratories use only
Acct. #: 11288 Group #: 1022581 Sample #: 4964277-79
SCR#: 38113

Site #: C567 WNO #:
Site Address: 418 S. 25TH STREET BILLINGS, MT
ConocoPhillips PM: WILLIAM MURPHY Company Code:
PO# Core Work Order#: 4507595716 Total Lab Budget:
Consultant/Office: TETRA TECH INC / BILLINGS
Consultant Prj. Mgr: DAVE TYLER
Consultant Phone #: 406-248-9161 Fax #: 248-9282
Sampler SHANE EWERT

Analyses Requested — List total number of containers in the box under each analysis.

Preservation Codes

Preservative Codes: H = HCl, T = Thiosulfate, N = HNO_3, B = NaOH, S = H_2SO_4, O = Other

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water (☐ Potable ☐ NPDES)	Oil ☐ Air ☐	VPH	EPH SCREEN	Remarks
M-9	1/18/07	1102	X			X		X	X	
M-D	1/18/07	1102	X			X		X	X	
TRIP BLANK										
TEMP BLANK										

Turnaround Time Requested in Business Days (TAT) (please circle):
STD. TAT 5 day 48 hour 24 hour other

Reporting Requirements (please circle)
NJ Reduced NY ASP Cat. A Raw Data Diskette NY ASP Cat. B Full Type I Other

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	1-11-07	1345	[signature]	1/18/07	0855
[signature]	1/18/07	1600			
			[signature]	1/19/07	0940

Relinquished by Commercial Carrier: UPS FedEx Other
Temperature Upon Receipt 13° C°

ATTACHMENT C

QA/QC EVALUATION

QUALITY ASSURANCE/QUALITY CONTROL EVALUATION
JANUARY 2007 LOW-WATER GROUNDWATER MONITORING EVENT
YALE TANK FARM RELEASE, EAST LAUREL, MONTANA

Quality control/quality assurance (QA/QC) evaluation includes investigation of the adherence to standard procedures for shipping and analyzing as outlined by the Massachusetts Department of Environmental Protection (MDEP, 1998a and 1998b) as well as discussion of the precision of analyses.

Handling of samples was performed in accordance with Maxim SOPs for sampling and shipping, which are aligned with the MDEP criteria. Samples were collected using proper bottles and preservatives, shipped on ice and received within the temperature and pH ranges specified. Approximately 23 hours after sampling, samples were received by Lancaster in satisfactory condition, within the specified temperature range of 2°C±, and all samples were adequately preserved to a pH of ≤2. All analyses were performed within the required holding time for VPH and EPH procedures.

A trip blank was shipped with the groundwater samples and analyzed for VPH using the MDEP Method. The trip blank did not contain detectable concentrations of VPH analytes.

Maxim collected a duplicate sample from well M-9 for analysis of VPH and EPH. Evaluation of duplicate samples was done using Relative Percent Difference (RPD) following method criteria specified by the Massachusetts Department of Environmental Protection (MDEP 1998a and 1998b). RPD is defined as the difference between the natural and duplicate results divided by the mean. For VPH and EPH analyses, results are considered to be estimates when the RPD is greater than 50 percent (MDEP, 1998a and 1998b). In the event that an analyte is detected in only one of the natural-duplicate pair, the PQL for concentrations below detection is used in the QA/QC evaluation. No analyte exceeded the RPD criterion of 50 percent between the natural and duplicate samples.

The internal QA/QC evaluation conducted by Lancaster did not identify any QA/QC action item. All internal QC is considered compliant.