

SENT VIA EMAIL (robert.chesson@state.co.us)

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August 25, 2009

Mr. Robert Chesson  
Colorado Oil & Gas Conservation Commission, Department of Natural Resources  
1120 Lincoln Street, Suite 801  
Denver, Colorado 80203

DAVID M. RAU, P.E., BCEE  
SCOTT A. RUTHERFORD, P.E.  
BRICK SMITH, P.E.  
BRAD C. WOHLER  
AMY D. WEBER, P.E.  
HEATHER S. ALDERMAN  
DAVID L. WALKER

RE: May 2009 Quarterly Monitoring Report  
Segal Tank Battery (API Number 05-123-09053)  
NW ¼ of Section 24, Township 4 North, Range 66 West  
County Road 44 and County Road 35  
Weld County, Colorado  
Project Number 1006006

Dear Mr. Chesson:

Enclosed is the May 2009 Quarterly Monitoring Report for the above-referenced site. Please read the attached report for a summary of the groundwater-sampling activities performed at the site in May 2009. If you have any questions or require additional information, please contact us.

Sincerely,  
PARAGON CONSULTING GROUP, INC.



Amy Weber, P.E.  
Project Engineer



David M. Rau, P.E., BCEE  
Principal Engineer

ADW/DMR:adw1

enc: May 2009 Quarterly Monitoring Report

cc: Machii-Ross Petroleum Company  
Mr. Andy Peterson/Peterson Energy Management (via email)  
Melvin Dinner, Esq./Melvin Dinner, P.C. via Howard Boigon, Esq./Hogan & Hartson, LLP (via email)  
Ms. Katy Evans via Andy Peterson/Peterson Energy Management

Machii-Ross Petroleum Company  
2901 28<sup>th</sup> Street, Suite 205  
Santa Monica, California 90405

RE: May 2009 Quarterly Monitoring Report  
Segal Tank Battery (API Number 05-123-09053)  
NW ¼ of Section 24, Township 4 North, Range 66 West  
County Road 44 and County Road 35  
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Machii-Ross Petroleum Company:

The purpose of this report is to summarize the results of the May 2009 quarterly sampling event performed at the subject site by Paragon Consulting Group, Inc. (Paragon). A copy of this report was submitted to the Colorado Oil & Gas Conservation Commission (COGCC). The approximate location of the site is shown on Figures 1 and 2 which are attached to this letter. The approximate locations of the groundwater monitoring wells located at the site are shown on Figures 3 and 4 which are also attached to this report.

## 1. BACKGROUND

Previous site assessment activities are discussed below. The soil and groundwater analytical results in this chapter are compared to the former COGCC Allowable Concentrations in effective prior to April 1, 2009. Series 900 of the COGCC Rules and Regulations were revised and issued on April 1, 2009. Table 910-1 in Series 900 describes Concentration Levels for contaminants in soil and groundwater which are different than the Allowable Concentrations. For work performed after April 1, 2009, contaminant levels are compared to the COGCC Concentration Levels.

Six (6) soil borings, TB-1 through TB-6, were completed at the site in December 2005 by A. G. Wassenaar, Inc. Borings TB-1 through TB-6 were completed as monitoring wells. Soil samples were analyzed from soil borings TB-2 and TB-6 for total recoverable petroleum hydrocarbon (TRPH) analysis. TRPH concentrations were reported at 3,200 milligrams per kilogram (mg/Kg) and 540 mg/Kg in soil samples analyzed from TB-2 and TB-6, respectively. The TRPH concentration observed in the soil sample analyzed from TB-2 exceeded the Allowable Concentration. The TRPH concentration observed in the soil sample analyzed from TB-6 was not observed above the Allowable Concentration. Groundwater samples were collected from monitoring wells TB-1, TB-2, TB-3 and TB-5 on December 23, 2005 for benzene-toluene-ethylbenzene-xylenes (BTEX) analyses. Monitoring wells TB-4 and TB-6 were reportedly observed to dry on December 23, 2005. The benzene

concentrations observed in groundwater samples collected from TB-1, TB-2, TB-3 and TB-5 and the ethylbenzene and xylenes concentrations observed in the groundwater samples collected from TB-2 and TB-5 on December 23, 2005 exceeded the Allowable Concentrations. Remaining BTEX concentrations observed in groundwater samples collected from the site in December 2005 were not observed above the Allowable Concentrations.

In February 2007, three (3) monitoring wells and seven (7) direct-push probes were completed at the site by Paragon Consulting Group, Inc. to obtain information regarding potential petroleum hydrocarbon contamination. An additional monitoring well was installed at the site in April 2007. The TRPH concentration observed in the soil sample analyzed from DP-1 exceeded the Allowable Concentration of 1,000 mg/Kg. The TRPH concentrations observed in soil samples analyzed from PMW-1 through PMW-4 and DP-2 through DP-7 were not observed above the Allowable Concentration. In April 2007, the benzene concentrations observed in the groundwater samples collected from TB-1 through TB-6 and the ethylbenzene and xylenes concentrations observed in the groundwater sample collected from TB-6 exceeded the Allowable Concentrations. Remaining BTEX concentrations observed in groundwater samples collected from TB-1 through TB-6 and PMW-1 through PMW-4 on April 9, 2007 were not observed above the Allowable Concentrations.

In February 2008, two (2) monitoring wells were completed at the site by Paragon to obtain information regarding potential petroleum hydrocarbon contamination. Monitoring wells PMW-5 and PMW-6 were installed at the site on February 21, 2008 to depths ranging from approximately 20 to 22 feet below ground surface. The TRPH concentrations were not observed above the laboratory detection limit of 5.0 mg/Kg in the soil samples analyzed from PMW-5 and PMW-6. The TRPH concentrations observed in soil samples analyzed from PMW-5 and PMW-6 were not observed above the Allowable Concentration of 1,000 mg/Kg. The benzene concentrations observed in the groundwater samples collected from TB-1, TB-2, TB-3, TB-4 and through TB-6 on March 28, 2008 exceeded the Allowable Concentrations. Remaining BTEX concentrations observed in groundwater samples collected from TB-1 through TB-6 and PMW-1 through PMW-6 on March 28, 2008 were not observed above the Allowable Concentrations.

Soil excavation activities were performed near the water vault and near the ASTs in March 2009 and were summarized in the May 4, 2009 Soil Abatement Report. Approximately 684 cubic yards of contaminated soil were excavated and transported to Buffalo Ridge Landfill for disposal. The soil was transported by Bellio Trucking to Waste Management's Buffalo Ridge Landfill in Keenesburg, Colorado. Approximately 120 barrels (5,040 gallons) of groundwater were removed from the water-vault excavation and disposed of at a COGCC-

approved disposal well operated by Conquest Disposal Service. Monitoring well TB-6 was destroyed during excavation activities. The TRPH concentration observed in soil sample AST Lead Pipe collected from the excavation at the outlet of the pipe from the ASTs exceeded the Allowable Concentration. The excavation area could not be safely increased due to the close proximity of a flow line. The TRPH concentrations observed in the remaining soil samples collected from the water-vault excavation were not observed above the Allowable Concentration.

## 2. GEOHYDROLOGY

Groundwater elevations in wells TB-1 through TB-5 and PMW-1, PMW-3, PMW-4, PMW-5 and PMW-6 were measured by Paragon on May 12, 2009. Monitoring well TB-6 was destroyed during excavation activities in March 2009. The groundwater elevation for PMW-2 was inadvertently not recorded on May 12, 2009. Groundwater elevation data for the site is summarized in Table 1 which is attached to this report. Groundwater was observed in wells TB-1 through TB-5 and PMW-1, PMW-3, PMW-4, PMW-5 and PMW-6 to range from approximately 6.5 to 12.0 feet below the top of casings on May 12, 2009. Free-phase product was not observed in monitoring wells TB-1 through TB-5 and PMW-1 through PMW-6 on May 12, 2009.

A piezometric surface diagram for groundwater elevations observed during the May 2009 sampling event is attached to this report as Figure 3. The piezometric surface was estimated using the Surfer<sup>®</sup> software distributed by Golden Software based on groundwater table measurements in wells TB-1 through TB-5 and PMW-1, PMW-3, PMW-4, PMW-5 and PMW-6. As seen from Figure 3, the general groundwater flow direction appeared to be towards the south in the northern portion of the site and towards the east in the central portion of the site. The hydraulic gradient observed at the site on May 12, 2009 was estimated to range from approximately 0.002 to 0.02. The groundwater flow direction observed in May 2009 appears to be different from previous observations. Historically, the groundwater flow direction has been observed towards the north or northwest. It should be noted that local geohydrologic characteristics may change due to variations in precipitation, recharge, stratigraphy or conditions not apparent at the time of sampling. The waterway to the north of the site may be affecting the groundwater flow direction.

### 3. GROUNDWATER QUALITY RESULTS

Information collected during the May 2009 sampling event relative to groundwater quality at the site is summarized below. That information includes temperature, electrical conductance and pH measurements, dissolved oxygen (DO) measurements, and laboratory results.

#### 3.1 Field Data

Groundwater temperature, electrical conductance and pH measurements were performed on May 12, 2009 during purging of wells TB-1 through TB-5 and PMW-1 through PMW-6 prior to collecting groundwater samples for laboratory analysis. Purging of monitoring wells prior to sampling was accomplished using clean disposable bailers. Measurements were recorded during the removal of water from the wells. The wells were considered purged when temperature, electrical conductance, and pH measurements stabilized to within ten (10) percent for three (3) consecutive measurements and a minimum of three (3) well volumes were removed from the well or after the well was purged essentially dry. The wells were allowed to recharge prior to sampling.

DO measurements were performed in wells TB-1 through TB-5 and PMW-1 through PMW-6 on May 12, 2009. DO monitoring results are summarized in Table 2 attached to this letter. As seen from Table 2, DO concentrations were observed to range from approximately 0.4 to 1.4 milligrams per liter (mg/L) during the May 2009 sampling episode. In general, DO measurements appeared to be relatively lower in groundwater samples exhibiting relatively higher BTEX concentrations in May 2009.

#### 3.2 Groundwater Analytical Results

Groundwater samples collected from monitoring wells TB-1 through TB-5 and PMW-1 through PMW-6 on May 12, 2009 were transported under standard chain-of-custody procedures to Technology Laboratory, Inc. (TLI) in Fort Collins, Colorado for BTEX analysis by EPA Method 8260B. Groundwater sample results are summarized in Table 2 attached to this letter. The approximate locations of TB-1 through TB-5 and PMW-1 through PMW-6 are shown on Figure 4 attached to this letter. The TLI laboratory report is also attached to this letter. Relatively high benzene and xylenes concentrations were observed in the groundwater samples collected from TB-2, TB-3 and TB-4 on May 12, 2009. Moderate benzene concentrations were also observed in the groundwater samples collected from TB-1 and TB-5 in May 2009. BTEX concentrations were not observed above the laboratory detection limit of 1.0 micrograms per liter ( $\mu\text{g/L}$ ) in the groundwater samples collected from PMW-1 through PMW-6 on May 12, 2009.

The benzene, ethylbenzene and xylenes concentrations observed in the groundwater samples collected from TB-1 and TB-5 in May 2009 increased compared to previous sample results. The benzene concentrations observed in the groundwater samples collected from TB-2 and TB-3 in May 2009 decreased significantly compared to previous sample results. The ethylbenzene and xylenes concentrations observed in the groundwater samples collected from TB-2 and TB-3 in May 2009 increased compared to previous sample results. BTEX concentrations observed in the groundwater sample collected from TB-4 in May 2009 decreased compared to previous sample results. BTEX concentrations observed in the groundwater samples collected from PM-1 through PMW-6 in May 2009 remained similar to previous sample results.

As seen from Table 2, the benzene concentrations observed in the groundwater samples collected from TB-1 through TB-5 on May 12, 2009 exceeded the COGCC Concentration Level. The xylenes concentrations observed in the groundwater samples collected from TB-2, TB-3 and TB-4 on May 12, 2009 exceeded the COGCC Concentration Level. BTEX concentrations observed in the groundwater samples collected from PMW-1 through PMW-6 on May 12, 2009 were not observed above the Concentration Levels.

#### 4. CONCLUSIONS AND RECOMMENDATIONS

The following conclusions are made based on information obtained during the quarterly sampling event.

1. Groundwater was observed in wells TB-1 through TB-5 and PMW-1 through PMW-6 to range from approximately 6.5 to 12.0 feet below the top of casings on May 12, 2009. Free-phase product was not observed in monitoring wells TB-1 through TB-5 and PMW-1 through PMW-6 on May 12, 2009.
2. The general groundwater flow direction appeared to be towards the south in the north portion of the site and towards the east in the central portion of the site. The hydraulic gradient observed at the site on May 12, 2009 was estimated to range from approximately 0.002 to 0.02. The groundwater flow direction observed in May 2009 appears to be different from previous observations. Historically, the groundwater flow direction has been observed towards the north or northwest. It should be noted that local geohydrologic characteristics may change due to variations in precipitation, recharge, stratigraphy or conditions not apparent at the time of sampling. The waterway to the north of the site may be affecting the groundwater flow direction.

3. DO concentrations were observed to range from approximately 0.4 to 1.4 mg/L during the May 2009 sampling episode. In general, DO measurements appeared to be relatively lower in groundwater samples exhibiting relatively higher BTEX concentrations in May 2009.
4. The benzene concentrations observed in the groundwater samples collected from TB-1 through TB-5 on May 12, 2009 exceeded the COGCC Concentration Level. The xylenes concentrations observed in the groundwater samples collected from TB-2, TB-3 and TB-4 on May 12, 2009 exceeded the Concentration Level. BTEX concentrations observed in the groundwater samples collected from PMW-1 through PMW-6 on May 12, 2009 were not observed above the Concentration Levels. The benzene concentrations observed in the groundwater samples collected from TB-2, TB-3 and TB-4 in May 2009 decreased significantly compared to previous sample results.
5. The extent of groundwater contamination observed in groundwater samples collected from the site in May 2009 does not appear to be bracketed due to the change in groundwater flow direction.

The following recommendations are made based on information obtained during the quarterly sampling event.

1. The groundwater monitoring wells should be sampled on a quarterly basis.
2. Remedial system installation is being considered for the northern portion of the site. Remedial options should be evaluated following the next round of groundwater sampling due to the observed change in groundwater flow direction during this event.

## 5. GENERAL COMMENTS

The analyses and opinions expressed in this report are based on data obtained from the indicated locations along with other information described in the report. The report does not reflect any variations in subsurface geohydrology or contaminant distribution which may occur between sample locations and or across the site. Actual subsurface conditions may vary and may not become evident without further exploration. Due to the dynamic nature of groundwater flow and contaminant migration, subsurface conditions will vary with time.

This report was prepared for the exclusive use of Machii-Ross Petroleum Company for specific application to the subject property and has been prepared in accordance with generally accepted geo-environmental engineering practices. No warranties, either express or implied, are intended or made. In the event that changes in the nature or location of suspected sources of contamination as outlined in this report are observed, the conclusions and recommendations contained in this report shall not be valid unless these changes are reviewed and the opinions of this report are modified and verified in writing by Paragon. If you have questions or require additional information regarding this site, please do not hesitate to contact us.

Sincerely,  
PARAGON CONSULTING GROUP, INC.

 8/25/09  
Amy D. Weber, P.E.  
Colorado No. 37665

  
David M. Rau, P.E., BCEE  
Principal Engineer

ADW/DMR:adw1

enc: Figure 1 - General Location Diagram  
Figure 2 - Vicinity Map  
Figure 3 - Piezometric Surface Diagram  
Figure 4 - Groundwater Sample Results Diagram  
Table 1 - Summary of Groundwater Elevation Data  
Table 2 - Summary of Water Quality Results  
Laboratory Report

cc: Mr. Robert Chesson/Colorado Oil and Gas Conservation Commission (via email)  
Mr. Andy Peterson/Peterson Energy Management (via email)  
Melvin Dinner, Esq./Melvin Dinner, P.C. via Howard Boigon, Esq./Hogan & Hartson,  
LLP (via email)  
Ms. Katy Evans via Mr. Andy Peterson/Peterson Energy Management



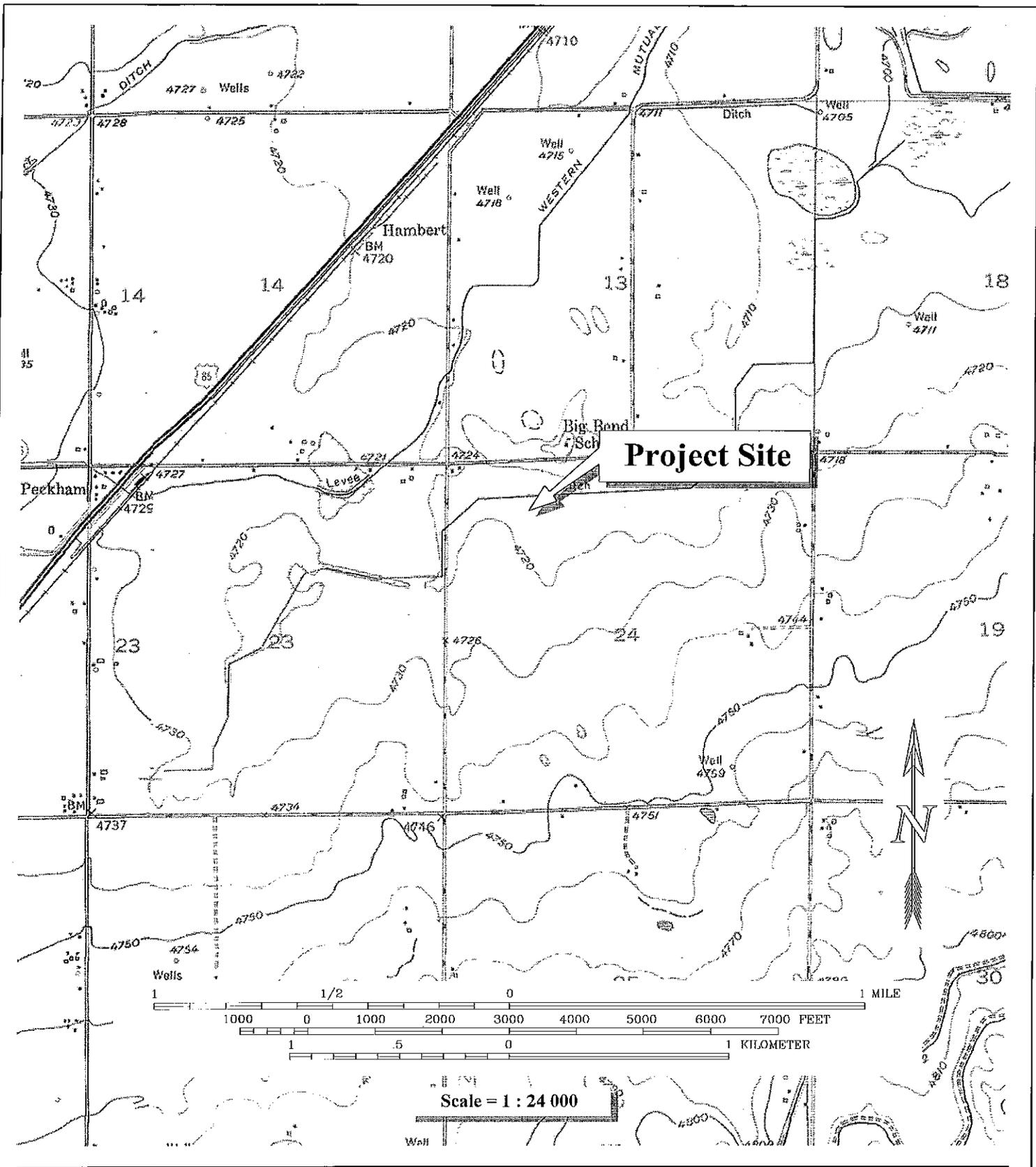
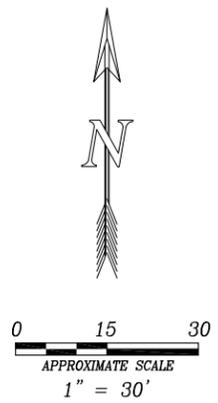
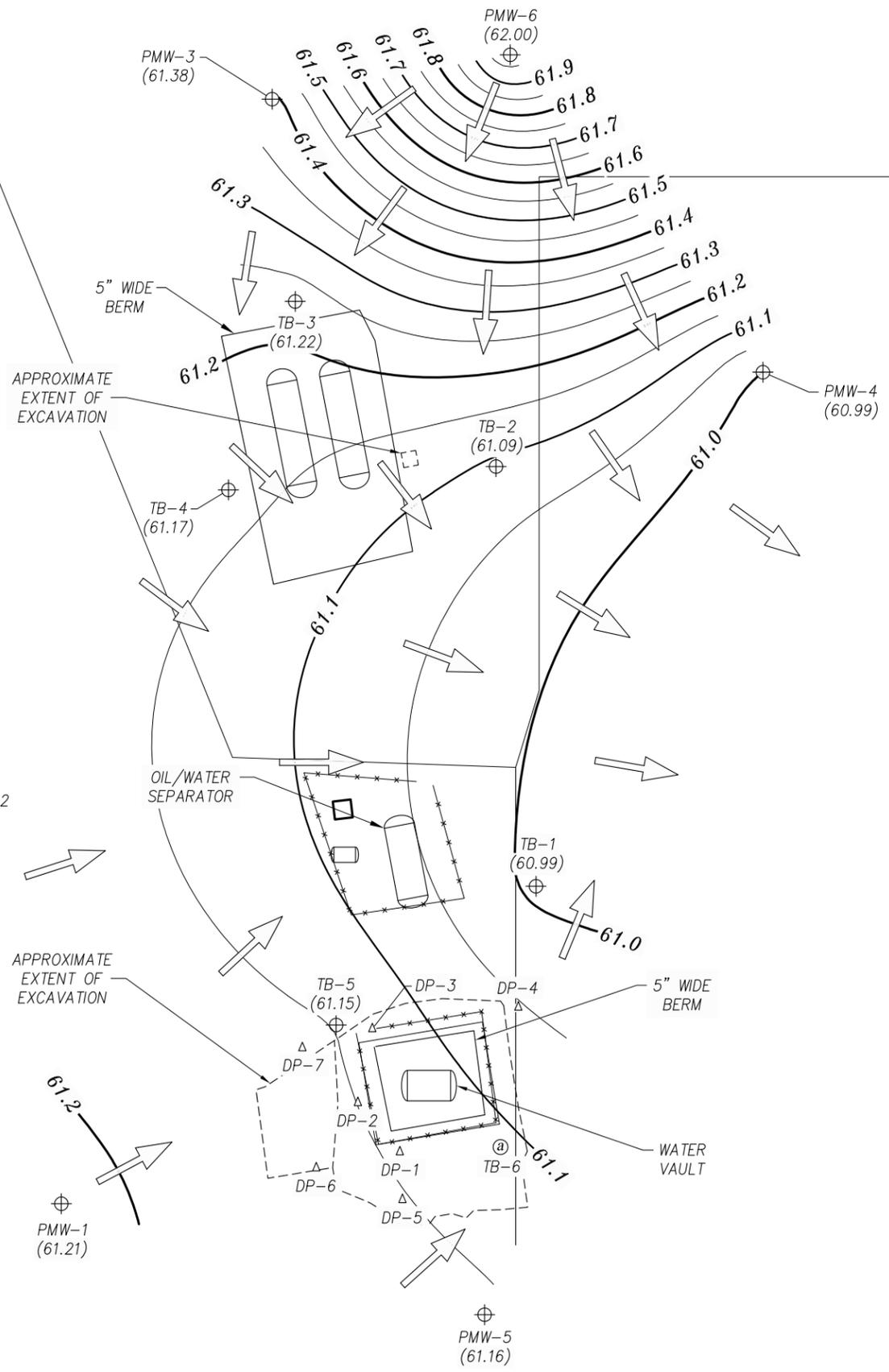


Figure 2 Vicinity Map  
 Segal Tank Battery  
 County Road 44, Weld County, Colorado  
 Project No. 1006006 June 2007 Drawn by PJH(06fig2)

PARAGON



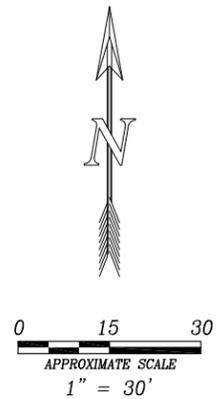
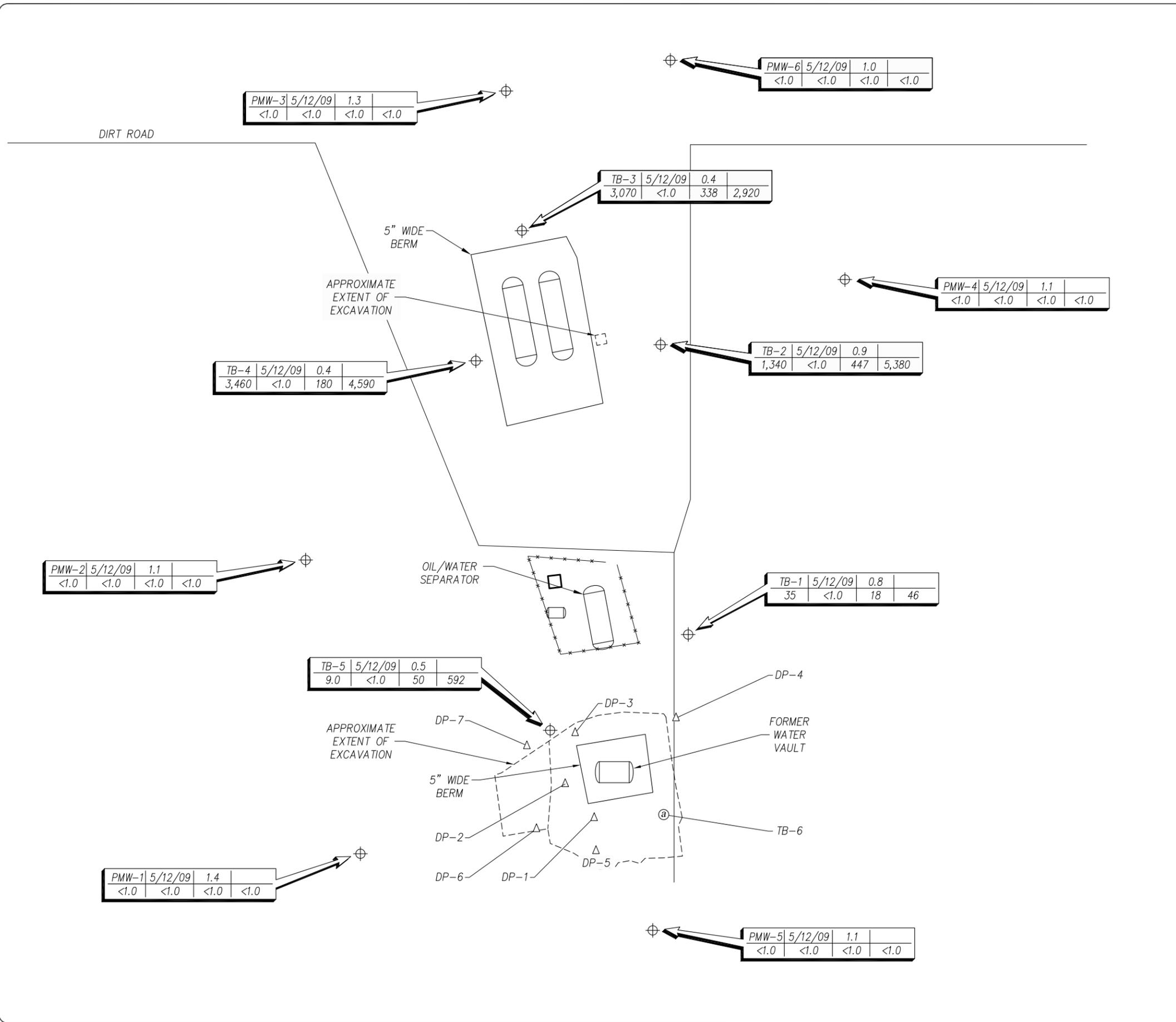
**Legend**

- ⊕ APPROXIMATE LOCATION OF ABANDONED/DESTROYED MONITORING WELL
- ⊕ APPROXIMATE LOCATION OF MONITORING WELL
- △ APPROXIMATE LOCATION DIRECT-PUSH BORING
- ← ESTIMATED DIRECTION OF GROUNDWATER FLOW
- 62.4— ESTIMATED GROUNDWATER ELEVATION IN FEET ABOVE A COMMON DATUM

NOTE: GROUNDWATER CONTOURS WERE ESTIMATED USING THE "SURFER" PROGRAM FROM GOLDEN SOFTWARE BASED ON DATA COLLECTED FROM WELLS PMW-1, PMW-3, PMW-4, PMW-5, PMW-6, TB-1, TB-2, TB-3, TB-4, AND TB-5 ON MAY 12, 2009. ACTUAL CONDITIONS MAY VARY.

**Figure 3**  
**Piezometric Surface Diagram**  
**Segal Tank Battery**  
**County Road 44**  
**Weld County, Colorado**

Project Mngr: ADW	<div style="font-size: 2em; font-weight: bold; margin-bottom: 10px;">PARAGON</div> <div style="font-weight: bold; margin-bottom: 5px;">Consulting Group</div> <div style="font-size: 0.8em;">Environmental Engineering and Geohydrology 1103 Oak Park Drive #110 Fort Collins, Colorado 80525</div>	Project No: 1006006
Designed by:		Scale: As Shown
Drawn by: PJH		File No: 06may09
Checked by: ADW		Date: Jun 2009
Approved by: DMR		Sheet No:



**Legend**

⊙ APPROXIMATE LOCATION OF ABANDONED/ DESTROYED MONITORING WELL

⊕ APPROXIMATE LOCATION OF MONITORING WELL

△ APPROXIMATE LOCATION DIRECT-PUSH BORING

SAMPLE		SAMPLE	
NAME	DATE	DO	X
B	T	E	X

WHERE:

B = BENZENE CONCENTRATION IN µg/L.  
 T = TOLUENE CONCENTRATION IN µg/L.  
 E = ETHYLBENZENE CONCENTRATION IN µg/L.  
 X = TOTAL XYLENES CONCENTRATION IN µg/L.  
 DO = DISSOLVED OXYGEN CONCENTRATION IN mg/L.  
 NM = NOT MEASURED.

**Figure 4**  
**Groundwater Quality Results Diagram**  
**Segal Tank Battery**  
**County Road 44**  
**Weld County, Colorado**

Project Mngr: ADW	<b>PARAGON</b> Consulting Group Environmental Engineering and Geohydrology 1103 Oak Park Drive #110 Fort Collins, Colorado 80525	Project No: 1006006
Designed by:		Scale: As Shown
Drawn by: PJH		File No: 06w0509
Checked by: ADW		Date: Jun 2009
Approved by: DMR		Sheet No:

**TABLE 1  
SUMMARY OF GROUNDWATER ELEVATION DATA**

**PROJECT NAME:** Segal Tank Battery  
**PROJECT LOCATION:** NW 1/4 Section 24, T 4 N, R 66 W, Weld County, Colorado  
**PROJECT NUMBER:** 1006006

Well Name	TB-1	TB-2	TB-3	TB-4	TB-5	TB-6	PMW-1	PMW-2	PMW-3	PMW-4	PMW-5	PMW-6
Casing Elevation (feet)	68.34	67.62	67.92	68.09	68.44	68.59	71.66	71.37	71.11	71.05	73.18	71.34
<u>Date Measured: May 11, 2006</u>												
Depth to Water (feet)	DRY	DRY	DRY	DRY	DRY	DRY	NI	NI	NI	NI	NI	NI
Groundwater Elevation (feet)	DRY	DRY	DRY	DRY	DRY	DRY	NI	NI	NI	NI	NI	NI
<u>Date Measured: July 7, 2006</u>												
Depth to Water (feet)	DRY	DRY	DRY	DRY	DRY	DRY	NI	NI	NI	NI	NI	NI
Groundwater Elevation (feet)	DRY	DRY	DRY	DRY	DRY	DRY	NI	NI	NI	NI	NI	NI
<u>Date Measured: April 9, 2007</u>												
Depth to Water (feet)	11.54	11.04	11.41	11.47	11.55	11.64	14.73	14.64	14.65	14.58	NI	NI
Groundwater Elevation (feet)	56.80	56.58	56.51	56.62	56.89	56.95	56.93	56.73	56.46	56.47	NI	NI
<u>Date Measured: March 28, 2008</u>												
Depth to Water (feet)	9.79	9.37	NM	NM	9.83	10.01	13.06	12.97	13.04	12.90	14.52	13.28
Groundwater Elevation (feet)	58.55	58.25	NM	NM	58.61	58.58	58.60	58.40	58.07	58.15	58.66	58.06
<u>Date Measured: June 10, 2008</u>												
Depth to Water (feet)	8.39	7.97	8.21	8.37	8.64	7.75	11.77	11.87	11.50	11.49	13.35	11.71
Groundwater Elevation (feet)	59.95	59.65	59.71	59.72	59.80	60.84	59.89	59.50	59.61	59.56	59.83	59.63
<u>Date Measured: September 13, 2008</u>												
Depth to Water (feet)	4.07	3.98	4.03	4.44	4.13	4.64	7.68	7.57	7.69	7.47	9.17	7.55
Groundwater Elevation (feet)	64.27	63.64	63.89	63.65	64.31	63.95	63.98	63.80	63.42	63.58	64.01	63.79
<u>Date Measured: December 31, 2008</u>												
Depth to Water (feet)	6.02	5.48	5.80	5.94	6.07	6.22	9.25	9.12	9.06	9.03	10.75	9.02
Groundwater Elevation (feet)	62.32	62.14	62.12	62.15	62.37	62.37	62.41	62.25	62.05	62.02	62.43	62.32
<u>Date Measured: May 12, 2009</u>												
Depth to Water (feet)	7.35	6.53	6.70	6.92	7.29	AB	10.45	NM	9.73	10.06	12.02	9.34
Groundwater Elevation (feet)	60.99	61.09	61.22	61.17	61.15	AB	61.21	NM	61.38	60.99	61.16	62.00

Notes:

1. Approximate well locations are shown on Figure 3.
2. Wells TB-1, TB-2, TB-3, TB-4, TB-5 and TB-6 were installed by A. G. Wassenaar, Inc.
3. NI = Well not installed yet.
4. AB = Well TB-6 was destroyed during excavation activities in March 2009.
5. NM = Not Measured.

**TABLE 2**  
**SUMMARY OF GROUNDWATER QUALITY ANALYTICAL RESULTS**  
 (Page 1 of 3)

**PROJECT NAME:** Segal Tank Battery  
**PROJECT LOCATION:** NW 1/4 Section 24, T 4 N, R 66 W, Weld County, Colorado  
**PROJECT NUMBER:** 1006006

Sample Name	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	Dissolved Oxygen (mg/L)
TB-1	12/23/05	<b>550.</b>	36.	360.	<b>4,100.</b>	NM
TB-1	05/11/06	DRY	DRY	DRY	DRY	NM
TB-1	04/09/07	<b>1,734.</b>	2.7	586.	<b>4,636.</b>	0.6
TB-1	03/28/08	<b>41.</b>	<0.5	14.	105.	0.8
TB-1	06/10/08	<b>700.</b>	<0.5	244.	<b>1,423.</b>	0.9
TB-1	09/13/08	<0.5	<0.5	<0.5	<0.5	0.7
TB-1	12/31/08	<1.	<1.	<1.	<1.	0.9
TB-1	05/12/09	<b>35.</b>	<1.	18.	46.	0.8
TB-2	12/23/05	<b>1,900.</b>	92.	<b>850.</b>	<b>11,000.</b>	NM
TB-2	05/11/06	DRY	DRY	DRY	DRY	NM
TB-2	04/09/07	<b>1,150.</b>	2.6	533.	<b>2,097.</b>	0.7
TB-2	03/28/08	<b>1,321.</b>	<0.5	374.	<b>3,858.</b>	0.7
TB-2	06/10/08	<b>1,336.</b>	<0.5	495.	<b>5,263.</b>	0.9
TB-2	09/13/08	<b>897.</b>	<0.5	91.	444.	0.8
TB-2	12/31/08	<b>2,940.</b>	<1.	328.	<b>3,110.</b>	0.6
TB-2	05/12/09	<b>1,340.</b>	<1.	447.	<b>5,380.</b>	0.9
TB-3	12/23/05	<b>180.</b>	17.	400.	<b>6,100.</b>	NM
TB-3	05/11/06	DRY	DRY	DRY	DRY	NM
TB-3	04/09/07	<b>373.</b>	2.7	247.	<b>1,470.</b>	0.8
TB-3	03/28/08	<b>129.</b>	<0.5	76.	474.	NM
TB-3	06/10/08	<b>2,179.</b>	1.4	127.	884.	0.6
TB-3	09/13/08	2.9	<0.5	<0.5	0.9	0.8
TB-3	12/31/08	<b>14,500.</b>	<1.	<1.	25.	0.8
TB-3	05/12/09	<b>3,070.</b>	<1.	338.	<b>2,920.</b>	0.4
TB-4	12/23/05	DRY	DRY	DRY	DRY	NM
TB-4	05/11/06	DRY	DRY	DRY	DRY	NM
TB-4	04/09/07	<b>11,398.</b>	27.	218.	<b>2,159.</b>	0.8
TB-4	03/28/08	<b>6,366.</b>	327.	370.	<b>4,947.</b>	NM
TB-4	06/10/08	<b>3,767.</b>	55.	293.	<b>3,916.</b>	0.7
TB-4	09/13/08	<b>8,592.</b>	<0.5	568.	<b>8,177.</b>	0.6
TB-4	12/31/08	<b>10,900.</b>	<1.	320.	<b>7,860.</b>	0.6
TB-4	05/12/09	<b>3,460.</b>	<1.	180.	<b>4,590.</b>	0.4
<b>COGCC Concentration Levels</b>		<b>5.</b>	<b>560.</b>	<b>700.</b>	<b>1,400.</b>	<b>NR</b>

Notes:

1. Approximate sample locations are shown on Figure 4.
2. µg/L = micrograms per liter.
3. mg/L = milligrams per liter.
4. COGCC = Colorado Oil & Gas Conservation Commission.
5. COGCC Concentration Levels for groundwater are described in Table 910-1 of Series 900 of the COGCC Rules and Regulations established April 1, 2009.
6. NR = Not Regulated.
7. NM = Not Measured.
8. **Bold** concentrations indicate an exceedance of the COGCC Concentration Levels.
9. Samples were collected by A. G. Wassenaar, Inc. in December 2005.

**TABLE 2**  
**SUMMARY OF GROUNDWATER QUALITY ANALYTICAL RESULTS**  
 (Page 2 of 3)

**PROJECT NAME:** Segal Tank Battery  
**PROJECT LOCATION:** NW 1/4 Section 24, T 4 N, R 66 W, Weld County, Colorado  
**PROJECT NUMBER:** 1006006

Sample Name	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	Dissolved Oxygen (mg/L)
TB-5	12/23/05	950.	40.	840.	11,000.	NM
TB-5	05/11/06	DRY	DRY	DRY	DRY	NM
TB-5	04/09/07	77.	<0.5	93.	2,169.	0.7
TB-5	03/28/08	<0.5	<0.5	<0.5	<0.5	NM
TB-5	06/10/08	16.	<0.5	12.	333.	0.6
TB-5	09/13/08	<0.5	<0.5	<0.5	<0.5	0.7
TB-5	12/31/08	<1.	<1.	<1.	<1.	0.7
TB-5	05/12/09	9.	<1.	50.	592.	0.5
TB-6	12/23/05	230.	<20.	120.	1,630.	NM
TB-6	05/11/06	DRY	DRY	DRY	DRY	NM
TB-6	04/09/07	2,788.	<0.5	1,026.	20,279.	0.7
TB-6	03/28/08	1,153.	<0.5	635.	10,151.	NM
TB-6	06/10/08	1,186.	<0.5	777.	11,368.	0.8
TB-6	09/13/08	697.	<0.5	350.	5,289.	0.4
TB-6	12/31/08	1,410.	2.	795.	8,230.	0.4
TB-6		Well TB-6 was destroyed during excavation activities in March 2009.				
PMW-1	04/09/07	<0.5	<0.5	<0.5	<0.5	1.4
PMW-1	03/28/08	<0.5	<0.5	<0.5	<0.5	1.0
PMW-1	06/10/08	<0.5	<0.5	<0.5	<0.5	1.1
PMW-1	09/13/08	<0.5	<0.5	<0.5	<0.5	1.0
PMW-1	12/31/08	<1.	<1.	<1.	<1.	1.1
PMW-1	05/12/09	<1.	<1.	<1.	<1.	1.4
PMW-2	04/09/07	<0.5	<0.5	<0.5	<0.5	1.2
PMW-2	03/28/08	<0.5	<0.5	<0.5	<0.5	0.9
PMW-2	06/10/08	<0.5	<0.5	<0.5	<0.5	1.1
PMW-2	09/13/08	<0.5	<0.5	<0.5	<0.5	1.1
PMW-2	12/31/08	<1.	<1.	<1.	<1.	1.0
PMW-2	05/12/09	<1.	<1.	<1.	<1.	1.1
PMW-3	04/09/07	<0.5	<0.5	<0.5	<0.5	1.3
PMW-3	03/28/08	<0.5	<0.5	<0.5	<0.5	1.0
PMW-3	06/10/08	<0.5	<0.5	<0.5	<0.5	1.0
PMW-3	09/13/08	<0.5	<0.5	<0.5	<0.5	1.2
PMW-3	12/31/08	<1.	<1.	<1.	<1.	0.9
PMW-3	05/12/09	<1.	<1.	<1.	<1.	1.3
COGCC Concentration Levels		5.	560.	700.	1,400.	NR

Notes:

Notes:

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2. µg/L = micrograms per liter.
3. mg/L = milligrams per liter.
4. COGCC = Colorado Oil & Gas Conservation Commission.
5. COGCC Concentration Levels for groundwater are described in Table 910-1 of Series 900 of the COGCC Rules and Regulations established April 1, 2009.
6. NR = Not Regulated.
7. NM = Not Measured.
8. Bold concentrations indicate an exceedance of the COGCC Concentration Levels.
9. Samples were collected by A. G. Wassenaar, Inc. in December 2005.

**TABLE 2**  
**SUMMARY OF GROUNDWATER QUALITY ANALYTICAL RESULTS**  
 (Page 3 of 3)

**PROJECT NAME:** Segal Tank Battery  
**PROJECT LOCATION:** NW 1/4 Section 24, T 4 N, R 66 W, Weld County, Colorado  
**PROJECT NUMBER:** 1006006

Sample Name	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	Dissolved Oxygen (mg/L)
PMW-4	04/09/07	<0.5	<0.5	<0.5	<0.5	2.3
PMW-4	03/28/08	<0.5	<0.5	<0.5	<0.5	0.8
PMW-4	06/10/08	<0.5	<0.5	<0.5	<0.5	0.9
PMW-4	09/13/08	<0.5	<0.5	<0.5	<0.5	1.0
PMW-4	12/31/08	<1.	<1.	<1.	<1.	0.9
PMW-4	05/12/09	<1.	<1.	<1.	<1.	1.1
PMW-5	03/28/08	<0.5	<0.5	<0.5	<0.5	1.6
PMW-5	06/10/08	<0.5	<0.5	<0.5	<0.5	1.1
PMW-5	09/13/08	<0.5	<0.5	<0.5	<0.5	1.0
PMW-5	12/31/08	<1.	<1.	<1.	<1.	1.3
PMW-5	05/12/09	<1.	<1.	<1.	<1.	1.1
PMW-6	03/28/08	<0.5	<0.5	<0.5	<0.5	1.2
PMW-6	06/10/08	<0.5	<0.5	<0.5	<0.5	1.0
PMW-6	09/13/08	<0.5	<0.5	<0.5	<0.5	1.2
PMW-6	12/31/08	<1.	<1.	<1.	<1.	1.1
PMW-6	05/12/09	<1.	<1.	<1.	<1.	1.0
<b>COGCC</b>						
<b>Concentration Levels</b>		<b>5.</b>	<b>560.</b>	<b>700.</b>	<b>1,400.</b>	<b>NR</b>

**Notes:**

Notes:

1. Approximate sample locations are shown on Figure 4.
2. µg/L = micrograms per liter.
3. mg/L = milligrams per liter.
4. COGCC = Colorado Oil & Gas Conservation Commission.
5. COGCC Concentration Levels for groundwater are described in Table 910-1 of Series 900 of the COGCC Rules and Regulations established April 1, 2009.
6. NR = Not Regulated.
7. NM = Not Measured.
8. **Bold concentrations indicate an exceedance of the COGCC Concentration Levels.**
9. Samples were collected by A. G. Wassenaar, Inc. in December 2005.



# TECHNOLOGY LABORATORY, INC.

CENTRE PROFESSIONAL PARK

1012 Centre Avenue  
Fort Collins, Colorado 80526  
(970) 490-1414

## CERTIFICATE OF ANALYSIS

Paragon Consulting Group, Inc.  
1103 Oak Park Drive  
Fort Collins, CO 80525

Date Received: 05/13/09

Matrix: Water

Project No.: 1006006

<u>Lab ID</u>	<u>Sample ID</u>	<u>Date Sampled</u>	<u>Date Analyzed</u>	<u>Benzene mg/L</u>	<u>Toluene mg/L</u>	<u>Ethylbenzene mg/L</u>	<u>Total Xylenes mg/L</u>
8321-01	TB-1	05/12/09	05/15/09	0.035	< 0.001	0.018	0.046
8321-02	TB-2	05/12/09	05/14/09	1.34	< 0.001	0.447	5.38
8321-03	TB-3	05/12/09	05/14/09	3.07	< 0.001	0.338	2.92
8321-04	TB-4	05/12/09	05/14/09	3.46	< 0.001	0.180	4.59
8321-05	TB-5	05/12/09	05/15/09	0.009	< 0.001	0.050	0.592
8321-06	PMW-1	05/12/09	05/15/09	< 0.001	< 0.001	< 0.001	< 0.001
8321-07	PMW-2	05/12/09	05/14/09	< 0.001	< 0.001	< 0.001	< 0.001
8321-08	PMW-3	05/12/09	05/15/09	< 0.001	< 0.001	< 0.001	< 0.001
8321-09	PMW-4	05/12/09	05/15/09	< 0.001	< 0.001	< 0.001	< 0.001
8321-10	PMW-5	05/12/09	05/15/09	< 0.001	< 0.001	< 0.001	< 0.001
8321-11	PMW-6	05/12/09	05/15/09	< 0.001	< 0.001	< 0.001	< 0.001

BTEX Method:

EPA-8260B

Todd Rhea



# TECHNOLOGY LABORATORY, INC.

CENTRE PROFESSIONAL PARK

1012 Centre Avenue  
Fort Collins, Colorado 80526  
(970) 490-1414

## CERTIFICATE OF ANALYSIS

### QA/QC SURROGATE RECOVERY

Paragon Consulting Group, Inc.  
1103 Oak Park Drive  
Fort Collins, CO 80525

Date Received: 05/13/09

Matrix: Water

Project No.: 1006006

(% Recovery)

<u>Lab ID</u>	<u>Sample ID</u>	Bromofluorobenzene <u>Limits (70-113%)</u>	Dibromofluoromethane <u>Limits (68-120%)</u>	Toluene-d8 <u>Limits (81-128%)</u>
8321-01	TB-1	108	100	90
8321-02	TB-2	110	97	92
8321-03	TB-3	109	96	91
8321-04	TB-4	107	97	92
8321-05	TB-5	91	96	90
8321-06	PMW-1	106	98	89
8321-07	PMW-2	107	101	93
8321-08	PMW-3	105	98	90
8321-09	PMW-4	105	96	90
8321-10	PMW-5	106	98	88
8321-11	PMW-6	105	98	90

Todd Rhea