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

March 3, 2010

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

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SCOTT A. RUTHERFORD, P.E.
BRICK SMITH, P.E.
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HEATHER S. ALDERMAN
DAVID L. WALKER

RE: November 2009 Quarterly Monitoring and Limited Subsurface Assessment 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 November 2009 Quarterly Monitoring and Limited Subsurface Assessment Report for the above-referenced site. Please read the attached report for a summary of the groundwater-sampling activities performed at the site in November 2009 and well installations in September 2009. If you have any questions or require additional information, please contact us.

Sincerely,
PARAGON CONSULTING GROUP, INC.



Amy Weber, P.E.
Project Engineer

ADW/DMR:adw1



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

enc: November 2009 Quarterly Monitoring and Limited Subsurface Assessment 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)
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March 3, 2010

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

RE: November 2009 Quarterly Monitoring and Limited Subsurface Assessment 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

Machii-Ross Petroleum Company:

The purpose of this report is to summarize the results of the November 2009 quarterly sampling event and well installations 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, 4 and 5 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 effect 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 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.

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. ASSESSMENT ACTIVITIES

In September 2009, two (2) pilot test wells, SVE-1 and SP-1, were completed at the site by Paragon to obtain information regarding potential petroleum hydrocarbon contamination and for future pilot testing activities. The approximate locations of the wells are shown on Figure 3 attached to this letter. Soil-vapor extraction (SVE) well SVE-1 and air-sparge well SP-1 were installed at the site on September 3, 2009 to depths of approximately 5.0 and 13.5 feet below ground surface (bgs), respectively. A brief description of the stratigraphy and groundwater observations for the subject site is found in the following sections.

2.1 Site Stratigraphy

Descriptions of the soils encountered in the soil borings are provided on the logs which are attached to this letter. Field logs of the soil borings were prepared by Paragon's field representative. The logs contain visual and tactual classifications of the materials encountered during drilling, as well as the driller's interpretation of subsurface conditions based on drilling resistance. The descriptions of the soils encountered in the borings are in general accordance with the attached General Notes. The final logs included in this report represent an interpretation of the field logs. The stratification boundaries shown on the enclosed logs represent the approximate locations of changes in soil types; in-situ, the transition of materials may be gradual.

Based on the assessment activities completed at the site, the subsurface soil conditions can be generally described as follows. Silty very fine sand with trace clay was observed in SVE-1 from below surface materials to approximately three (3) feet bgs. Silty very fine sand was observed from approximately three (3) feet bgs to the bottom of the boring at approximately five (5) feet bgs. Very fine sand with some silt was observed in SP-1 from below surface materials to approximately 11.5 feet bgs. Silty very fine sand was observed in SP-1 from approximately 11.5 feet bgs to the bottom of the boring at approximately 13.5 feet bgs.

Soil samples were collected from various intervals in borings SVE-1 and SP-1. Soil samples collected from SVE-1 and SP-1 were screened in the field with a photoionization detector

(PID) using ambient temperature headspace analysis (ATHA) to aid in evaluating possible volatile organic contamination at the site. The ATHA procedure consisted of placing the soil samples in Ziplock bags such that the bags were approximately one-third full. The sample was allowed to equilibrate with the container headspace for approximately 15 minutes. The probe of the PID was then used to pierce the bag and the maximum observed reading was recorded. The ATHA results are summarized in Table 1 attached to this letter. As seen from Table 1, PID readings ranged from not observed in the parts per million (ppm) range to 87 ppm in the soil samples screened from SVE-1 and SP-1. The PID readings are a qualitative indicator of petroleum hydrocarbon contamination and should not be construed as a quantitative analyses of contamination. Soil samples were selected for analysis based on ATHA results as well as olfactory, visual and field observations. The soil samples were placed in glass jars with Teflon seals and transported under standard chain-of-custody procedures to Technology Laboratory, Inc. (TLI) in Fort Collins for laboratory analyses.

2.2 Groundwater Observations

Groundwater elevation data for the site is summarized in Table 2 which is attached to this report. As seen from Table 2, groundwater was observed in wells PMW-1 through PMW-6 and TB-1 through TB-5 to range from approximately 3.3 to 9.2 feet below the top of casings on November 2, 2009. Free-phase product was not observed in monitoring wells TB-1 through TB-5 and PMW-1 through PMW-6 on November 2, 2009.

A piezometric surface diagram for groundwater elevations observed during the November 2009 sampling event is attached to this report as Figure 3. The November 2009 piezometric surface was estimated using the Surfer[®] software distributed by Golden Software based on groundwater table measurements in wells TB-1 through TB-5 and PMW-1 through PMW-6. As seen from Figure 3, the general groundwater flow direction appeared to be towards the south/southwest in the north portion of the site and relatively flat in the central and southern portions of the site on November 2, 2009. The hydraulic gradient observed at the site on November 2, 2009 was estimated to range from approximately 0.002 to 0.03. The groundwater flow directions observed in May, August and November 2009 appear 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. SOIL AND GROUNDWATER SAMPLE ANALYTICAL RESULTS

Soil and groundwater sample results are discussed in the following sections. The approximate locations of the monitoring wells are shown on Figures 4 and 5 attached to this letter.

3.1 Soil Sample Analytical Results

Soil samples selected for analysis from SVE-1 and SP-1 were transported under standard Paragon chain-of-custody procedures to TLI for laboratory analyses. Soil samples analyzed from SVE-1 and SP-1 were submitted to TLI for benzene-toluene-ethylbenzene-xylenes (BTEX) and total volatile petroleum hydrocarbons (TVPH) analyses using EPA Method 8260B and total extractable petroleum hydrocarbons (TEPH) analysis using EPA Method 8015B. The approximate locations of the monitoring wells are shown on Figure 4 attached to this letter. The analytical results for soil samples collected from the site are summarized in Table 3 attached to this letter. A copy of the laboratory report is also attached to this letter.

The BTEX, TVPH and TEPH concentrations were not observed above their respective laboratory detection limits in the soil samples analyzed from SVE-1 and SP-1. As seen from Table 3, the COGCC Concentration Levels for BTEX are 0.17, 85, 100 and 175 milligrams per kilogram (mg/Kg), respectively. The COGCC Concentration Level for both TVPH and TEPH is 500 mg/Kg. The BTEX, TVPH and TEPH concentrations observed in soil samples analyzed from SVE-1 and SP-1 were not observed above the COGCC Concentration Levels.

3.2 Groundwater Sample Analytical Results

Information collected during the November 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.

3.2.1 Field Data

Groundwater temperature, electrical conductance and pH measurements were performed on November 2, 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 November 2, 2009. DO monitoring results are summarized in Table 4 attached to this letter. As seen from Table 4, DO concentrations were observed to range from approximately 0.4 to 1.4 milligrams per liter (mg/L) during the November 2009 sampling episode. In general, DO measurements appeared to be relatively lower in groundwater samples exhibiting relatively higher BTEX concentrations in November 2009.

3.2.2 Groundwater Analytical Results

Groundwater samples collected from monitoring wells TB-1 through TB-5 and PMW-1 through PMW-6 on November 2, 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 4 attached to this letter. The approximate locations of TB-1 through TB-5 and PMW-1 through PMW-6 are shown on Figure 5 attached to this letter. The TLI laboratory report is also attached to this letter.

Relatively high benzene concentrations were observed in the groundwater samples collected from TB-2, TB-3 and TB-4 on November 2, 2009. Moderate benzene concentrations were also observed in the groundwater samples collected from TB-1 and TB-5 in November 2009. Relatively high xylenes concentrations were also observed in the groundwater samples collected from TB-1, TB-2 and TB-5 in November 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 November 2, 2009.

In general, the BTEX concentrations observed in the groundwater samples collected from TB-1, TB-2 and TB-5 in November 2009 increased compared to previous sample results. The benzene concentration observed in the groundwater sample collected from TB-3 in November 2009 increased compared to previous sample results while toluene, ethylbenzene and xylenes concentrations in that sample remained similar to previous sample results. In general, the BTEX concentrations observed in the groundwater sample collected from TB-4 in November 2009 decreased compared to previous sample results. BTEX concentrations observed in the groundwater samples collected from PMW-1 through PMW-6 in November 2009 remained similar to previous sample results.

As seen from Table 4, the COGCC Concentration Levels for BTEX in groundwater are 5.0, 560, 700 and 1,400 micrograms per liter ($\mu\text{g/L}$), respectively. As seen from Table 4, the

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

4. CONCLUSIONS AND RECOMMENDATIONS

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

1. Soil-vapor extraction well SVE-1 and air-spargе well SP-1 were installed at the site on September 3, 2009 to depths of approximately 5.0 and 13.5 feet below bgs, respectively.
2. Groundwater was observed in wells PMW-1 through PMW-6 and TB-1 through TB-5 to range from approximately 3.3 to 9.2 feet below the top of casings on November 2, 2009. Free-phase product was not observed in monitoring wells TB-1 through TB-5 and PMW-1 through PMW-6 on November 2, 2009.
3. The general groundwater flow direction appeared to be towards the south/southwest in the north portion of the site and relatively flat in the central and southern portions of the site on November 2, 2009. The hydraulic gradient observed at the site on November 2, 2009 was estimated to range from approximately 0.002 to 0.03. The groundwater flow directions observed in May, August and November 2009 appear 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.
4. The BTEX, TVPH and TEPH concentrations were not observed above their respective laboratory detection limits in the soil samples analyzed from SVE-1 and SP-1. The BTEX, TVPH and TEPH concentrations observed in soil samples analyzed from SVE-1 and SP-1 were not observed above the COGCC Concentration Levels.

5. DO concentrations were observed to range from approximately 0.4 to 1.4 mg/L during the November 2009 sampling episode. In general, DO measurements appeared to be relatively lower in groundwater samples exhibiting relatively higher BTEX concentrations in August 2009.
6. The benzene concentrations observed in the groundwater samples collected from TB-1 through TB-5 on November 2, 2009 exceeded the COGCC Concentration Level. The xylenes concentrations observed in the groundwater samples collected from TB-1, TB-2 and TB-5 on November 2, 2009 exceeded the COGCC Concentration Level. BTEX concentrations observed in the groundwater samples collected from PMW-1 through PMW-6 on November 2, 2009 were not observed above the COGCC Concentration Levels.
7. There appears to be a correlation between the contaminant concentrations and groundwater elevation fluctuations observed in wells at the site.
8. The extent of groundwater contamination observed in groundwater samples collected from the site in November 2009 appears to be bracketed.

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. Soil-vapor extraction (SVE) and air-sparge pilot testing was scheduled for September 2009. However, groundwater levels have risen significantly in the last year and that testing should be postponed until water levels drop.

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.

 3/3/10
Amy D. Weber, P.E.
Colorado No. 37665


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

ADW/DMR:adwl

enc: Figure 1 - General Location Diagram
Figure 2 - Vicinity Map
Figure 3 - Piezometric Surface Diagram
Figure 4 - Soil Sample Results Diagram
Figure 5 - Groundwater Sample Results Diagram
Table 1 - Summary of Field ATHA Results
Table 2 - Summary of Groundwater Elevation Data
Table 3 - Summary of Soil Sample Results
Table 4 - Summary of Water Quality Results
Boring Logs and General Notes
Laboratory Reports

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

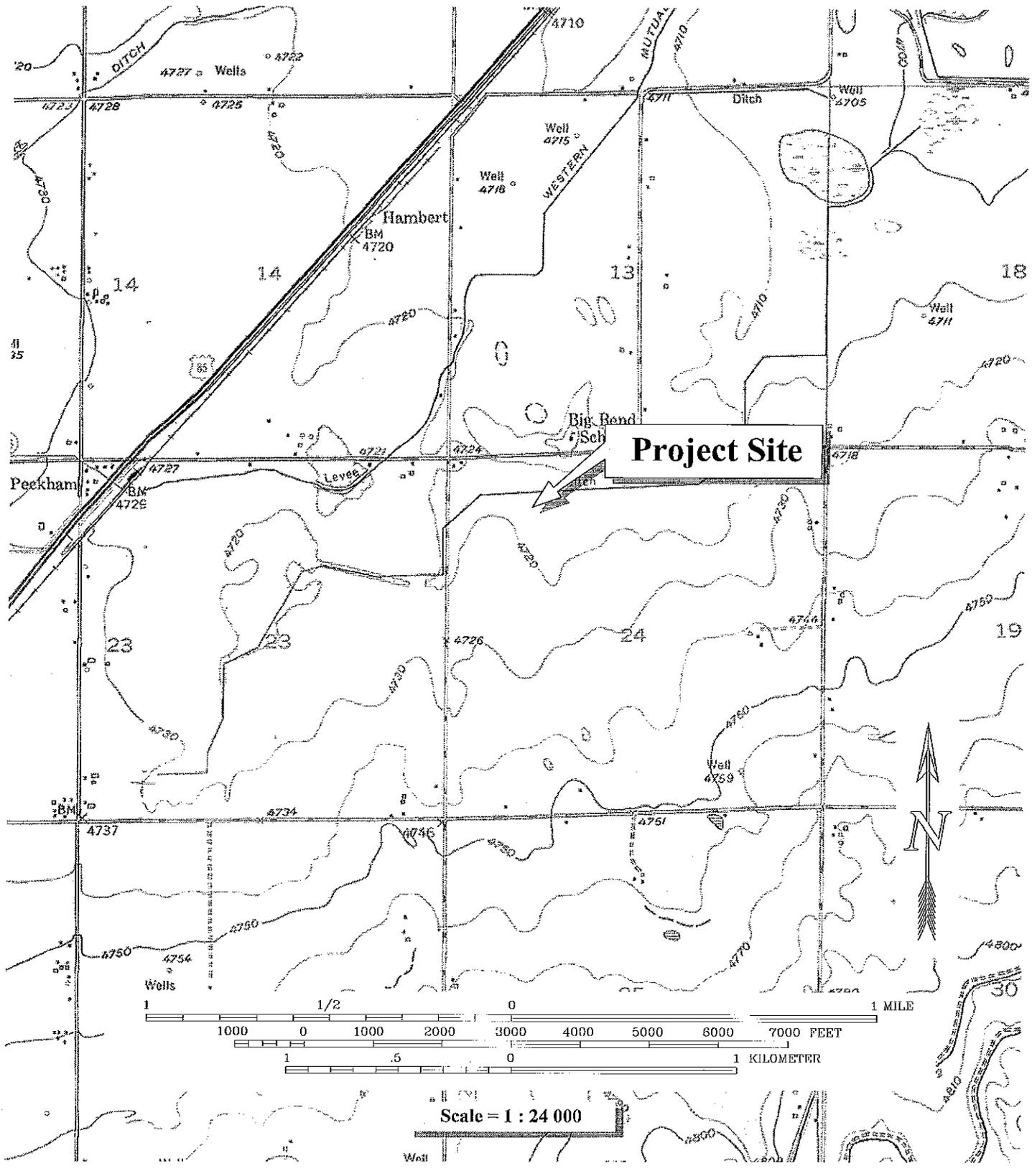
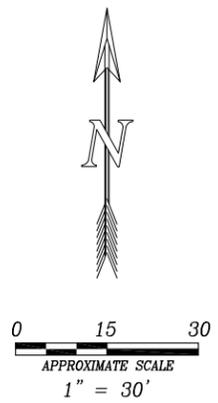
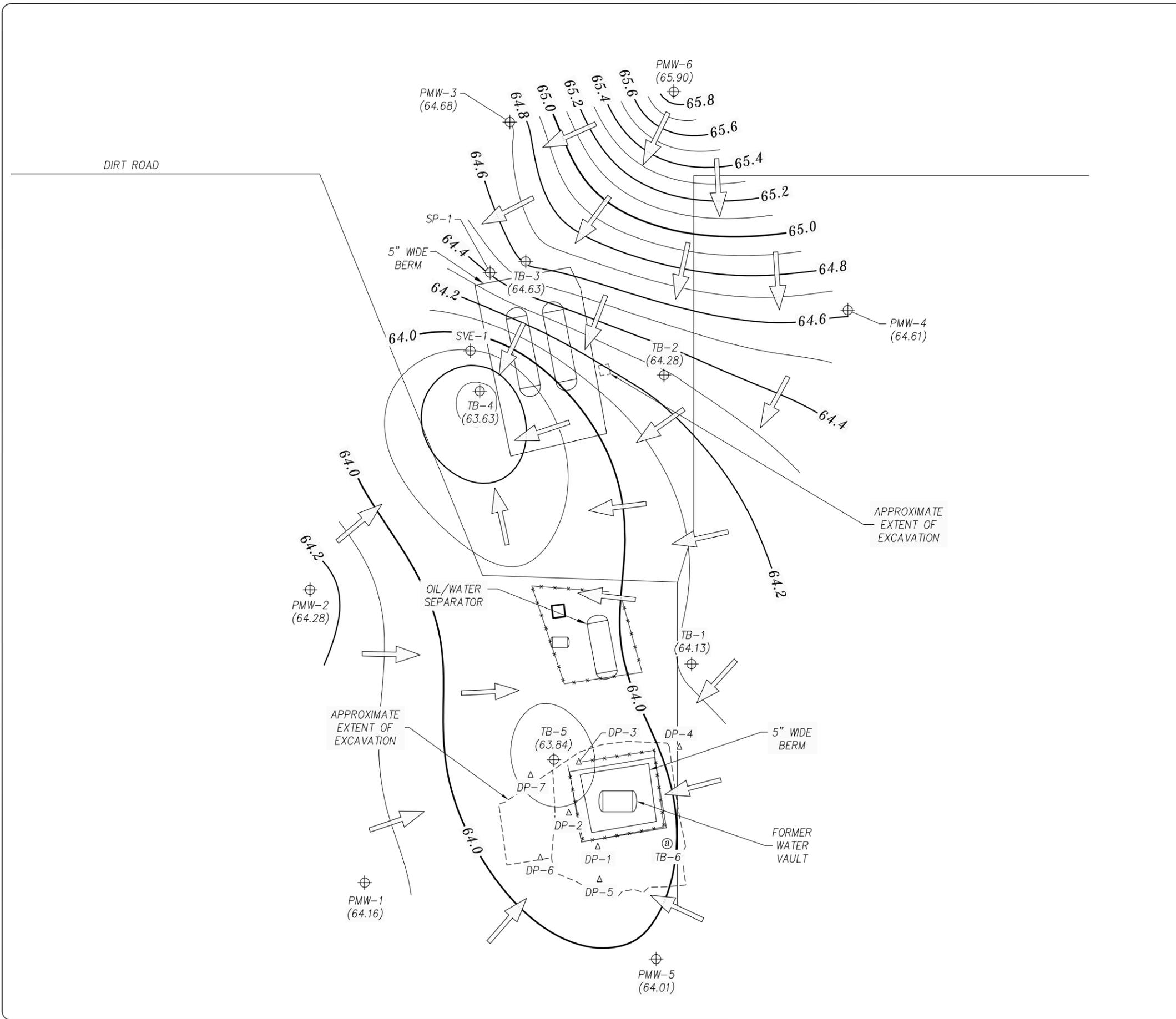


Figure 2 Vicinity Map
 Segal Tank Battery
 County Road 44, Weld County, Colorado
 Project No. 1006006 June 2007 Drawn by PJH(06fig2)



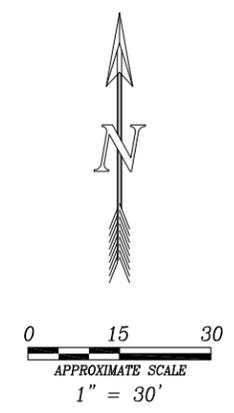
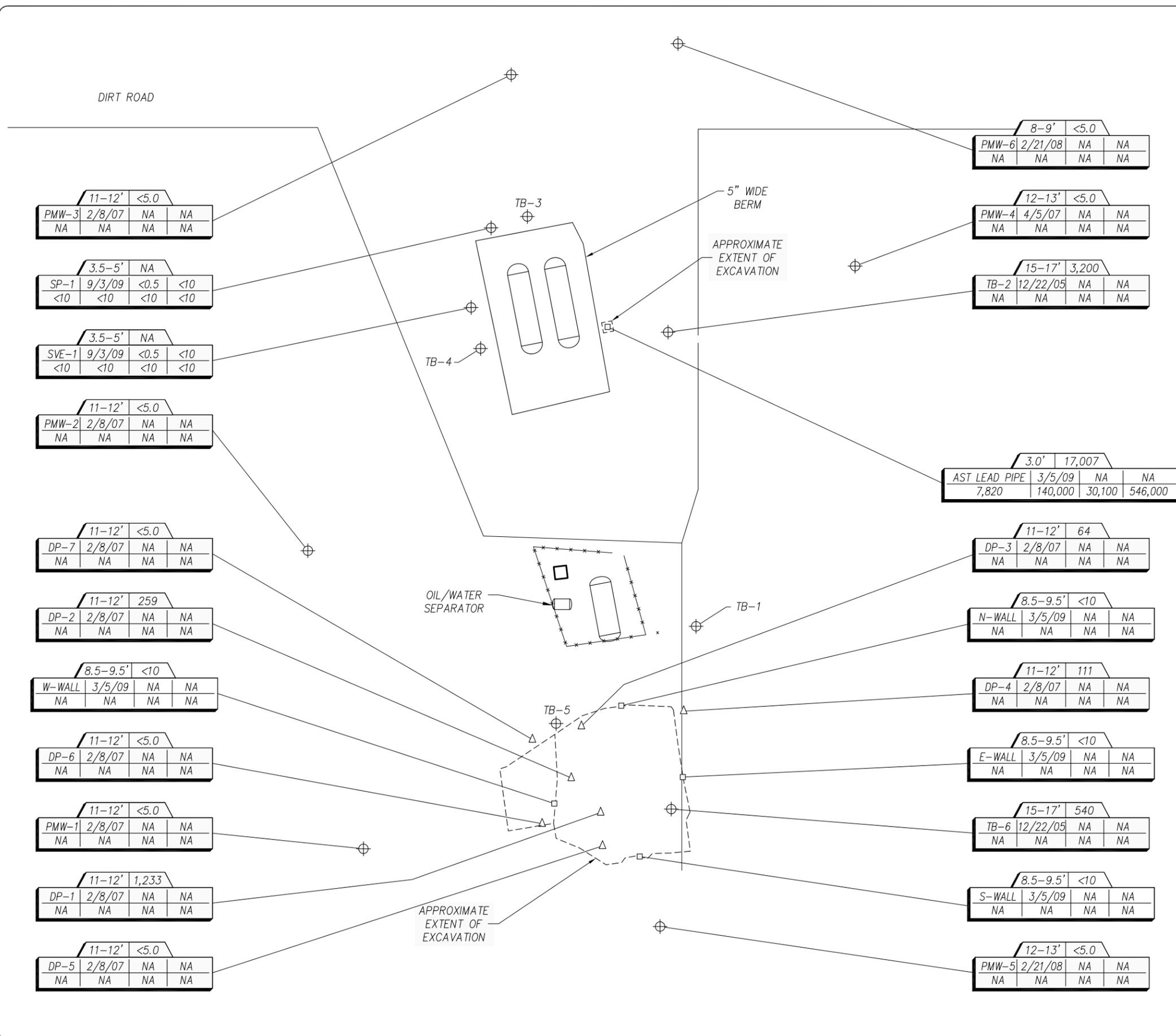
Legend

- ⊕ APPROXIMATE LOCATION OF ABANDONED/DESTROYED MONITORING WELL
- ⊕ APPROXIMATE LOCATION OF MONITORING WELL
- △ APPROXIMATE LOCATION DIRECT-PUSH BORING
- ← ESTIMATED DIRECTION OF GROUNDWATER FLOW
- 64.4 — 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-2, PMW-3, PMW-4, PMW-5, PMW-6, TB-1, TB-2, TB-3, TB-4, AND TB-5 ON NOVEMBER 2, 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: 5px;">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: 06nov09
Checked by: ADW		Date: Nov 2009
Approved by: DMR		Sheet No:



Legend

- APPROXIMATE LOCATION OF SOIL SAMPLE
- ⊕ APPROXIMATE LOCATION OF MONITORING WELL
- △ APPROXIMATE LOCATION DIRECT-PUSH BORING

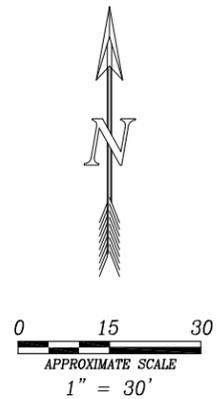
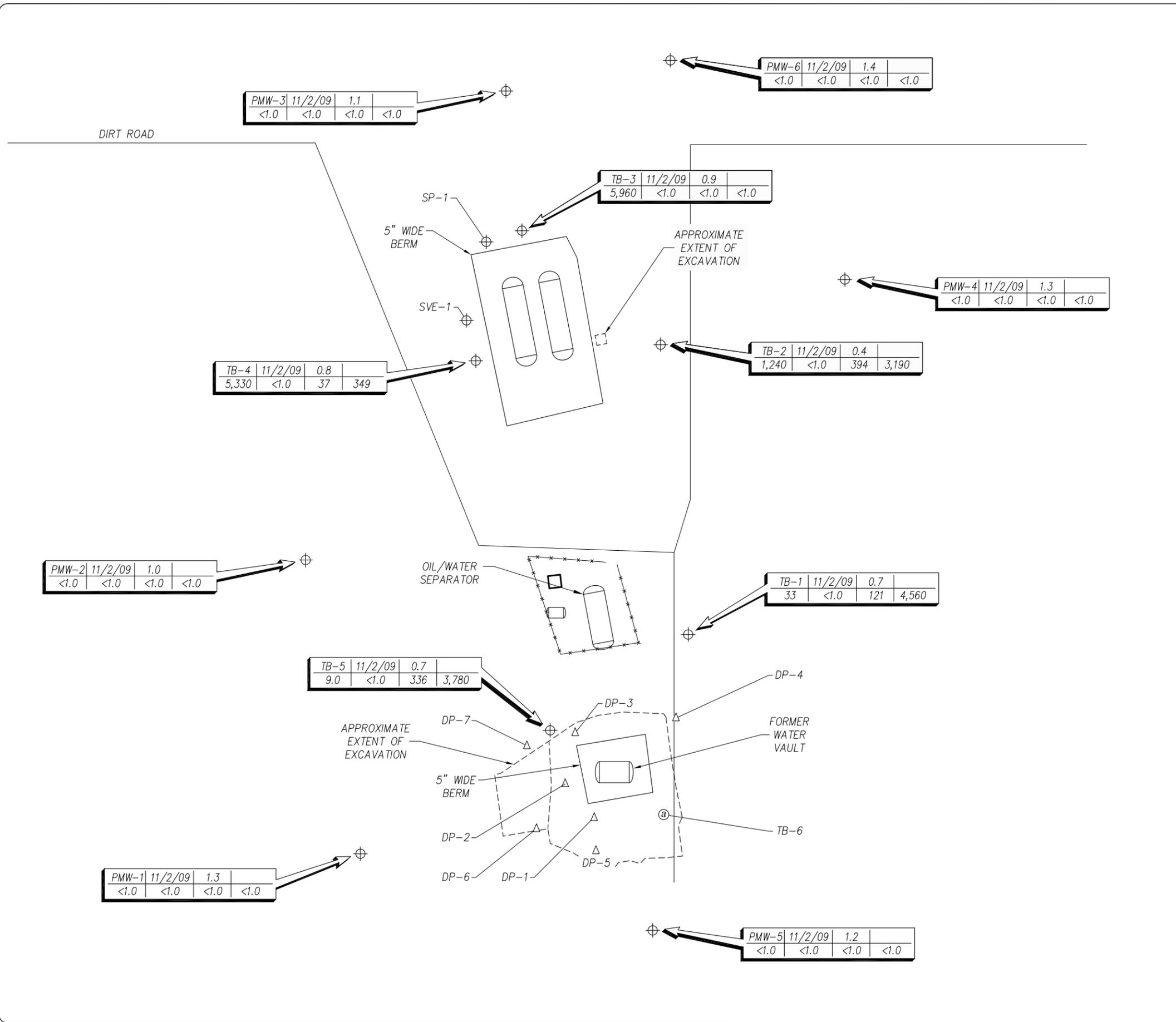
APPROX. SAMPLE DEPTH		TRPH		
SAMPLE NAME	SAMPLE DATE	TPH-GRO	TPH-DRO	
WHERE:	B	T	E	X

B = BENZENE CONCENTRATION IN $\mu\text{g}/\text{Kg}$.
 T = TOLUENE CONCENTRATION IN $\mu\text{g}/\text{Kg}$.
 E = ETHYLBENZENE CONCENTRATION IN $\mu\text{g}/\text{Kg}$.
 X = TOTAL XYLENES CONCENTRATION IN $\mu\text{g}/\text{Kg}$.
 TPH-GRO = TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS CONCENTRATION IN mg/Kg .
 TPH-DRO = TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS CONCENTRATION IN mg/Kg .
 TRPH = TOTAL RECOVERABLE PETROLEUM HYDROCARBONS CONCENTRATION IN mg/Kg .
 NA = NOT ANALYZED.

NOTE: SOIL SAMPLES TB-2-1 AND TB-6-1 WERE COLLECTED BY A.G. WASSENAAR, INC.

Figure 4
Soil Sample Results Diagram
Segal Tank Battery
County Road 44
Weld County, Colorado

Project Mgr: ADW	<div style="font-size: 2em; font-weight: bold; margin-bottom: 5px;">PARAGON</div> <div style="font-weight: bold; margin-bottom: 5px;">Consulting Group</div> <div style="font-size: 0.8em;">Environmental Engineering and Geohydrology</div> <div style="font-size: 0.8em;">1103 Oak Park Drive #110</div> <div style="font-size: 0.8em;">Fort Collins, Colorado 80525</div>	Project No: 1006006
Designed by:		Scale: As Shown
Drawn by: PJH		File No: 06soil
Checked by: ADW		Date: Nov 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			
NAME	DATE	DO	
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 5
Groundwater Quality Results Diagram
Segal Tank Battery
County Road 44
Weld County, Colorado

Project Mngr: ADW	PARAGON 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: 06w1109
Checked by: ADW		Date: Nov 2009
Approved by: DMR		Sheet No:

TABLE 1
SUMMARY OF FIELD ATHA 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	Approximate Sample Depth (ft)	PID Reading (ppm as organic vapor in air)
TB-1	12/23/05	Surface to 2.0	3.
TB-1	12/23/05	5.0 to 7.0	2.
TB-1	12/23/05	10 to 12	4.
TB-2	12/23/05	Surface to 2.0	62.
TB-2	12/23/05	5.0 to 7.0	557.
TB-2	12/23/05	10 to 12	2,162.
TB-2	12/23/05	15 to 17	733.
TB-3	12/23/05	Surface to 2.0	16.
TB-3	12/23/05	5.0 to 7.0	18.
TB-3	12/23/05	10 to 12	73.
TB-4	12/23/05	Surface to 2.0	4.
TB-4	12/23/05	5.0 to 7.0	14.
TB-4	12/23/05	10 to 12	140.
TB-5	12/23/05	Surface to 2.0	4.
TB-5	12/23/05	5.0 to 7.0	22.
TB-5	12/23/05	10 to 12	649.
TB-6	12/23/05	Surface to 2.0	43.
TB-6	12/23/05	5.0 to 7.0	639.
TB-6	12/23/05	10 to 12	499.
TB-6	12/23/05	15 to 17	NM
DP-1	02/08/07	3.0 to 4.0	ND
DP-1	02/08/07	7.0 to 8.0	ND
DP-1	02/08/07	8.5 to 9.5	386.
DP-1	02/08/07	11 to 12	1,704.
DP-2	02/08/07	3.0 to 4.0	ND
DP-2	02/08/07	7.0 to 8.0	ND
DP-2	02/08/07	10 to 11	89.
DP-2	02/08/07	11 to 12	661.
DP-2	02/08/07	15 to 16	864.*
DP-3	02/08/07	3.0 to 4.0	ND
DP-3	02/08/07	7.0 to 8.0	ND
DP-3	02/08/07	9.0 to 10	ND
DP-3	02/08/07	11 to 12	305.
DP-3	02/08/07	13 to 14	146.
DP-3	02/08/07	15 to 16	1,002.*
DP-4	02/08/07	3.0 to 4.0	ND
DP-4	02/08/07	7.0 to 8.0	ND
DP-4	02/08/07	9.5 to 10	ND
DP-4	02/08/07	11 to 12	497.
DP-4	02/08/07	13 to 14	101.

Notes:

1. Approximate sample locations are shown on Figure 3.
2. ATHA = Ambient Temperature Headspace Analysis.
3. PID = Photoionization Detector.
4. ppm = parts per million.
5. ATHA results are a qualitative indicator of petroleum hydrocarbon contamination and should not be interpreted as a quantitative indicator of contamination.
6. A **Bold** value indicates a sample that was submitted for laboratory analyses.
7. ND = Not observed in the parts per million range.
8. * = Soil samples not submitted for laboratory analyses since those samples appeared to be in the water table observed while drilling.
9. Samples TB-2-1 and TB-6-1 were collected by A.G. Wassenaar, Inc.

TABLE 1
SUMMARY OF FIELD ATHA 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	Approximate Sample Depth (ft)	PID Reading (ppm as organic vapor in air)
DP-5	02/08/07	3.0 to 4.0	ND
DP-5	02/08/07	7.0 to 8.0	ND
DP-5	02/08/07	11 to 12	ND
DP-5	02/08/07	15 to 16	296.*
DP-6	02/08/07	3.0 to 4.0	ND
DP-6	02/08/07	7.0 to 8.0	ND
DP-6	02/08/07	11 to 12	ND
DP-6	02/08/07	14 to 15	84.*
DP-7	02/08/07	3.0 to 4.0	ND
DP-7	02/08/07	7.0 to 8.0	ND
DP-7	02/08/07	11 to 12	ND
DP-7	02/08/07	15 to 16	61.*
PMW-1	02/08/07	3.0 to 4.0	ND
PMW-1	02/08/07	7.0 to 8.0	ND
PMW-1	02/08/07	11 to 12	ND
PMW-1	02/08/07	15 to 16	ND
PMW-1	02/08/07	19 to 20	ND
PMW-2	02/08/07	3.0 to 4.0	ND
PMW-2	02/08/07	7.0 to 8.0	ND
PMW-2	02/08/07	11 to 12	ND
PMW-2	02/08/07	15 to 16	ND
PMW-2	02/08/07	19 to 20	ND
PMW-3	02/08/07	3.0 to 4.0	ND
PMW-3	02/08/07	7.0 to 8.0	ND
PMW-3	02/08/07	11 to 12	ND
PMW-3	02/08/07	14 to 15	ND
PMW-4	04/05/07	3.0 to 4.0	ND
PMW-4	04/05/07	7.0 to 8.0	ND
PMW-4	04/05/07	11 to 12	ND
PMW-4	04/05/07	12 to 13	ND
PMW-4	04/05/07	14 to 15	ND
PMW-5	02/21/08	3.0 to 4.0	ND
PMW-5	02/21/08	7.0 to 8.0	ND
PMW-5	02/21/08	11 to 12	ND
PMW-5	02/21/08	12 to 13	ND
PMW-5	02/21/08	15 to 16	ND
PMW-5	02/21/08	19 to 20	ND

Notes:

1. Approximate sample locations are shown on Figure 3.
2. ATHA = Ambient Temperature Headspace Analysis.
3. PID = Photoionization Detector.
4. ppm = parts per million.
5. ATHA results are a qualitative indicator of petroleum hydrocarbon contamination and should not be interpreted as a quantitative indicator of contamination.
6. A **Bold** value indicates a sample that was submitted for laboratory analyses.
7. ND = Not observed in the parts per million range.
8. * = Soil samples not submitted for laboratory analyses since those samples appeared to be in the water table observed while drilling.
9. Samples TB-2-1 and TB-6-1 were collected by A.G. Wassenaar, Inc.
10. Due to a malfunctioning PID, ATHA was not performed on soil samples collected from PMW-6.

TABLE 1
SUMMARY OF FIELD ATHA 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	Approximate Sample Depth (ft)	PID Reading (ppm as organic vapor in air)
SVE-1	09/03/09	3.5 to 5.0	87
SP-1	09/03/09	3.5 to 5.0	ND
SP-1	09/03/09	9.0 to 10.5	NR

Notes:

1. Approximate sample locations are shown on Figure 3.
2. ATHA = Ambient Temperature Headspace Analysis.
3. PID = Photoionization Detector.
4. ppm = parts per million.
5. ATHA results are a qualitative indicator of petroleum hydrocarbon contamination and should not be interpreted as a quantitative indicator of contamination.
6. A **Bold** value indicates a sample that was submitted for laboratory analyses.
7. ND = Not observed in the parts per million range.
8. * = Soil samples not submitted for laboratory analyses since those samples appeared to be in the water table observed while drilling.
9. Samples TB-2-1 and TB-6-1 were collected by A.G. Wassenaar, Inc.
10. Due to a malfunctioning PID, ATHA was not performed on soil samples collected from PMW-6.
11. NM = Not Measured.
12. NR = No Recovery.

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA

(Page 1 of 2)

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 ELEVATION DATA

(Page 2 of 2)

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: August 5, 2009</u>												
Depth to Water (feet)	5.19	NM	4.67	4.96	5.29	AB	8.49	8.23	7.79	8.01	10.07	7.45
Groundwater Elevation (feet)	63.15	NM	63.25	63.13	63.15	AB	63.17	NM	63.32	63.04	63.11	63.89
<u>Date Measured: September 29, 2009</u>												
Depth to Water (feet)	NM	4.40	3.59	3.93	NM	AB	NM	NM	NM	NM	NM	NM
Groundwater Elevation (feet)	NM	63.22	64.33	64.16	NM	AB	NM	NM	NM	NM	NM	NM
<u>Date Measured: November 2, 2009</u>												
Depth to Water (feet)	4.21	3.34	3.29	4.46	4.60	AB	7.50	7.09	6.43	6.44	9.17	5.44
Groundwater Elevation (feet)	64.13	64.28	64.63	63.63	63.84	AB	64.16	64.28	64.68	64.61	64.01	65.90

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 3
SUMMARY OF SOIL SAMPLE 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 Location	Approximate Depth (Feet)	Sample Date	TRPH (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylenes (mg/Kg)	TVPH (mg/Kg)	TEPH (mg/Kg)
TB-2-1	15 to 17	12/22/05	3,200.	NA	NA	NA	NA	NA	NA
TB-6-1	15 to 17	12/22/05	540.	NA	NA	NA	NA	NA	NA
PMW-1	11 to 12	02/08/07	<5.0	NA	NA	NA	NA	NA	NA
PMW-2	11 to 12	02/08/07	<5.0	NA	NA	NA	NA	NA	NA
PMW-3	11 to 12	02/08/07	<5.0	NA	NA	NA	NA	NA	NA
DP-1	11 to 12	02/08/07	1,233.	NA	NA	NA	NA	NA	NA
DP-2	11 to 12	02/08/07	259.	NA	NA	NA	NA	NA	NA
DP-3	11 to 12	02/08/07	64.	NA	NA	NA	NA	NA	NA
DP-4	11 to 12	02/08/07	111.	NA	NA	NA	NA	NA	NA
Colorado Oil and Gas Conservation Commission Concentration Levels			1,000.	0.17	85.	100.	175.	500.	500.

Notes:

1. Approximate sample locations are shown on Figure 4.
2. TRPH = Total Recoverable Petroleum Hydrocarbons.
3. mg/Kg = micrograms per kilogram.
4. µg/Kg = micrograms per kilogram.
5. Concentration Levels for soils are described in Table 910-1 of Series 900 of the Colorado Oil & Gas Conservation Commission Rules and Regulations established April 1, 2009.
6. **Bold** indicates an exceedance of the Allowable Concentrations.
7. Samples TB-2-1 and TB-6-1 were collected by A.G. Wassenaar, Inc.
8. NA = Not Analyzed.
9. NR = Not Regulated.
10. TVPH = Total Volatile Petroleum Hydrocarbons.
11. TEPH = Total Extractable Petroleum Hydrocarbons.
12. Bold TRPH values exceeded the former Colorado Oil and Gas Conservation Commission Allowable Concentration prior to April 1, 2009.

PARAGON

TABLE 3
SUMMARY OF SOIL SAMPLE 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 Location	Approximate Depth (Feet)	Sample Date	TRPH (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylenes (mg/Kg)	TVPH (mg/Kg)	TEPH (mg/Kg)
DP-5	11 to 12	02/08/07	<5.0	NA	NA	NA	NA	NA	NA
DP-6	11 to 12	02/08/07	<5.0	NA	NA	NA	NA	NA	NA
DP-7	11 to 12	02/08/07	<5.0	NA	NA	NA	NA	NA	NA
PMW-4	12 to 13	04/05/07	<5.0	NA	NA	NA	NA	NA	NA
PMW-5	12 to 13	02/21/08	<5.0	NA	NA	NA	NA	NA	NA
PMW-6	8.0 to 9.0	02/21/08	<5.0	NA	NA	NA	NA	NA	NA
N. Wall	8.5 to 9.5	03/05/09	<10.	NA	NA	NA	NA	NA	NA
S. Wall	8.5 to 9.5	03/05/09	<10.	NA	NA	NA	NA	NA	NA
E. Wall	8.5 to 9.5	03/05/09	<10.	NA	NA	NA	NA	NA	NA
Colorado Oil and Gas Conservation Commission Concentration Levels			1,000.	0.17	85.	100.	175.	500.	500.

Notes:

1. Approximate sample locations are shown on Figure 4.
2. TRPH = Total Recoverable Petroleum Hydrocarbons.
3. mg/Kg = micrograms per kilogram.
4. µg/Kg = micrograms per kilogram.
5. Concentration Levels for soils are described in Table 910-1 of Series 900 of the Colorado Oil & Gas Conservation Commission Rules and Regulations established April 1, 2009.
6. **Bold** indicates an exceedance of the Allowable Concentrations.
7. Samples TB-2-1 and TB-6-1 were collected by A.G. Wassenaar, Inc.
8. NA = Not Analyzed.
9. NR = Not Regulated.
10. TVPH = Total Volatile Petroleum Hydrocarbons.
11. TEPH = Total Extractable Petroleum Hydrocarbons.
12. **Bold** TRPH values exceeded the former Colorado Oil and Gas Conservation Commission Allowable Concentration prior to April 1, 2009.

PARAGON

TABLE 3
SUMMARY OF SOIL SAMPLE 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 Location	Approximate Depth (Feet)	Sample Date	TRPH (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylenes (mg/Kg)	TVPH (mg/Kg)	TEPH (mg/Kg)
W. Wall	8.5 to 9.5	03/05/09	<10.	NA	NA	NA	NA	NA	NA
AST Lead Pipe	3.0	03/05/09	17,007.	7.82	140.	30.1	546.	NA	NA
SVE-1	3.5 to 5.0	09/03/09	NA	<0.01	<0.01	<0.01	<0.01	<0.5	<10.
SP-1	3.5 to 5.0	09/03/09	NA	<0.01	<0.01	<0.01	<0.01	<0.5	<10.
Colorado Oil and Gas Conservation Commission Concentration Levels			1,000.	0.17	85.	100.	175.	500.	500.

Notes:

1. Approximate sample locations are shown on Figure 4.
2. TRPH = Total Recoverable Petroleum Hydrocarbons.
3. mg/Kg = micrograms per kilogram.
4. µg/Kg = micrograms per kilogram.
5. Concentration Levels for soils are described in Table 910-1 of Series 900 of the Colorado Oil & Gas Conservation Commission Rules and Regulations established April 1, 2009.
6. **Bold** indicates an exceedance of the Allowable Concentrations.
7. Samples TB-2-1 and TB-6-1 were collected by A.G. Wassenaar, Inc.
8. NA = Not Analyzed.
9. NR = Not Regulated.
10. TVPH = Total Volatile Petroleum Hydrocarbons.
11. TEPH = Total Extractable Petroleum Hydrocarbons.
12. Bold TRPH values exceeded the former Colorado Oil and Gas Conservation Commission Allowable Concentration prior to April 1, 2009.

TABLE 4
SUMMARY OF GROUNDWATER QUALITY ANALYTICAL RESULTS
 (Page 1 of 4)

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	550.	36.	360.	4,100.	NM
TB-1	05/11/06	DRY	DRY	DRY	DRY	NM
TB-1	04/09/07	1,734.	2.7	586.	4,636.	0.6
TB-1	03/28/08	41.	<0.5	14.	105.	0.8
TB-1	06/10/08	700.	<0.5	244.	1,423.	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	35.	<1.	18.	46.	0.8
TB-1	08/05/09	<1.	<1.	<1.	<1.	1.0
TB-1	11/02/09	33.	<1.	121.	4,560.	0.7
TB-2	12/23/05	1,900.	92.	850.	11,000.	NM
TB-2	05/11/06	DRY	DRY	DRY	DRY	NM
TB-2	04/09/07	1,150.	2.6	533.	2,097.	0.7
TB-2	03/28/08	1,321.	<0.5	374.	3,858.	0.7
TB-2	06/10/08	1,336.	<0.5	495.	5,263.	0.9
TB-2	09/13/08	897.	<0.5	91.	444.	0.8
TB-2	12/31/08	2,940.	<1.	328.	3,110.	0.6
TB-2	05/12/09	1,340.	<1.	447.	5,380.	0.9
TB-2	08/05/09	1,130.	<1.	140.	778.	0.7
TB-2	11/02/09	1,240.	<1.	394.	3,190.	0.4
TB-3	12/23/05	180.	17.	400.	6,100.	NM
TB-3	05/11/06	DRY	DRY	DRY	DRY	NM
TB-3	04/09/07	373.	2.7	247.	1,470.	0.8
TB-3	03/28/08	129.	<0.5	76.	474.	NM
TB-3	06/10/08	2,179.	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	14,500.	<1.	<1.	25.	0.8
TB-3	05/12/09	3,070.	<1.	338.	2,920.	0.4
TB-3	08/05/09	30.	<1.	<1.	9.	1.1
TB-3	11/02/09	5,960.	<1.	<1.	<1.	0.9
COGCC Concentration Levels		5.	560.	700.	1,400.	NR

Notes:

1. Approximate sample locations are shown on Figure 5.
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 4
SUMMARY OF GROUNDWATER QUALITY ANALYTICAL RESULTS
 (Page 2 of 4)

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-4	12/23/05	DRY	DRY	DRY	DRY	NM
TB-4	05/11/06	DRY	DRY	DRY	DRY	NM
TB-4	04/09/07	11,398.	27.	218.	2,159.	0.8
TB-4	03/28/08	6,366.	327.	370.	4,947.	NM
TB-4	06/10/08	3,767.	55.	293.	3,916.	0.7
TB-4	09/13/08	8,592.	<0.5	568.	8,177.	0.6
TB-4	12/31/08	10,900.	<1.	320.	7,860.	0.6
TB-4	05/12/09	3,460.	<1.	180.	4,590.	0.4
TB-4	08/05/09	6,750.	<1.	162.	3,110.	0.5
TB-4	11/02/09	5,330.	<1.	37.	349.	0.8
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-5	08/05/09	<1.	<1.	<1.	<1.	1.1
TB-5	11/02/09	9.	<1.	336.	3,780.	0.7
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.					
COGCC Concentration Levels		5.	560.	700.	1,400.	NR

Notes:

1. Approximate sample locations are shown on Figure 5.
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 4
SUMMARY OF GROUNDWATER QUALITY ANALYTICAL RESULTS
 (Page 3 of 4)

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-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-1	08/05/09	<1.	<1.	<1.	<1.	1.0
PMW-1	11/02/09	<1.	<1.	<1.	<1.	1.3
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-2	08/05/09	<1.	<1.	<1.	<1.	1.2
PMW-2	11/02/09	<1.	<1.	<1.	<1.	1.0
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
PMW-3	08/05/09	<1.	<1.	<1.	<1.	2.1
PMW-3	11/02/09	<1.	<1.	<1.	<1.	1.1
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-4	08/05/09	<1.	<1.	<1.	<1.	1.5
PMW-4	11/02/09	<1.	<1.	<1.	<1.	1.3
COGCC Concentration Levels		5.	560.	700.	1,400.	NR

Notes:

1. Approximate sample locations are shown on Figure 5.
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 4
SUMMARY OF GROUNDWATER QUALITY ANALYTICAL RESULTS
 (Page 4 of 4)

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-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-5	08/05/09	<1.	<1.	<1.	<1.	2.2
PMW-5	11/02/09	<1.	<1.	<1.	<1.	1.2
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
PMW-6	08/05/09	<1.	<1.	<1.	<1.	2.0
PMW-6	11/02/09	<1.	<1.	<1.	<1.	1.4
COGCC						
Concentration Levels		5.	560.	700.	1,400.	NR

Notes:

1. Approximate sample locations are shown on Figure 5.
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.

GENERAL NOTES DRILLING AND EXPLORATION

DRILLING & SAMPLING SYMBOLS:

SS : Split Spoon - 1" I.D., 2" O.D., unless otherwise noted
 ST : Thin-Walled Tube - 2" O.D., unless otherwise noted
 PA : Power Auger
 HA : Hand Auger
 DB : Diamond Bit = 4", N, B
 AS : Auger Sample
 HS : Hollow Stem Auger
 WB : Wash Bore

PS : Piston Sample
 WS : Wash Sample
 FT : Fish Tail Bit
 RB : Rock Bit
 BS : Bulk Sample
 PM : Pressure Meter
 DC : Dutch Cone
 DP : Direct Push

Penetration Test: Blows per foot of a 140 pound hammer falling 30 inches on a 2-inch O.D. split spoon, except where noted.

WATER LEVEL MEASUREMENT SYMBOLS:

WL : Water Level
 WCI : Wet Cave in
 DCI : Dry Cave in
 AB : After Boring

WS : While Sampling
 WD : While Drilling
 BCR : Before Casing Removal
 ACR : After Casting Removal

Water levels indicated on the boring logs are the levels measured in the borings at the time indicated. In pervious soils, the indicated levels may reflect the location of groundwater. In low permeability soils, the accurate determination of groundwater levels is not possible with only short term observations.

DESCRIPTIVE SOIL CLASSIFICATION:

Soil Classification is based on the Unified Soil Classification system and the ASTM Designations D-2487 and D-2488. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; they are described as: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are described as: clays, if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse grained soils are defined on the basis of their relative in-place density and fine grained soils on the basis of their consistency. Example: Lean clay with sand, trace gravel, stiff (CL); silty sand, trace gravel, medium dense (SM).

CONSISTENCY OF FINE-GRAINED SOILS:

Unconfined Compressive

Strength, Qu, psf	Consistency
< 500	Very Soft
500 - 1,000	Soft
1,001 - 2,000	Medium
2,001 - 4,000	Stiff
4,001 - 8,000	Very Stiff
8,001 -16,000	Very Hard

N-Blows/ft.

0-3
4-9
10-29
30-49
50-80
80+

RELATIVE DENSITY OF COARSE-GRAINED SOILS:

Relative Density

Very Loose
Loose
Medium Dense
Dense
Very Dense
Extremely Dense

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Term(s) (of Components Also Present in Sample)	Percent of Dry Weight
Trace	< 15
With	15 - 29
Modifier	> 30

GRAIN SIZE TERMINOLOGY

Major Component of Sample

Size Range

RELATIVE PROPORTIONS OF FINES

Descriptive Term(s) (of Components Also Present in Sample)	Percent of Dry Weight
Trace	< 5
With	5 - 12
Modifier	> 12

Boulders	Over 12 in. (300mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75mm)
Sand	#4 to #200 sieve(4.75mm to 0.075mm)
Silt or Clay	Passing #200 Sieve (0.075mm)

UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests^A

				Soil Classification	
				Group Symbol	Group Name ^B
Coarse-Grained Soils more than 50% retained on No. 200 sieve	Gravels more than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels Less than 5% fines ^C	$Cu \geq 4$ and $1 \leq Cc \leq 3^E$	GW	Well-graded gravel ^F
		Gravels with Fines more than 12% fines ^C	$Cu < 4$ and/or $1 > Cc > 3^E$	GP	Poorly graded gravel ^F
			Fines classify as ML or MH	GM	Silty gravel,G,H
	Sands 50% or more of coarse fraction passes No. 4 sieve	Clean Sands Less than 5% fines ^E	Fines classify as CL or CH	GC	Clayey gravel ^{F,G,H}
			$Cu \geq 6$ and $1 \leq Cc \leq 3^E$	SW	Well-graded sand ^I
		Sands with Fines more than 12% fines ^D	$Cu < 6$ and/or $1 > Cc > 3^E$	SP	Poorly graded sand ^I
Fines classify as ML or MH	SM		Silty sand ^{G,H,I}		
Fine-Grained Soils 50% or more passes the No. 200 sieve	Silt and Clays Liquid limit less than 50	inorganic	$PI > 7$ and plots on or above "A" line ^J	CL	Lean clay ^{K,L,M}
		organic	$PI < 4$ or plots below "A" line ^J	ML	Silt ^{K,L,M}
			$\frac{\text{Liquid limit - oven dried}}{\text{Liquid limit - not dried}} < 0.75$	OL	Organic clay ^{K,L,M,N}
	Silt and Clays Liquid limit 50 or more	inorganic	PI plots on or above "A" line	CH	Fat clay ^{K,L,M}
			PI lots below "A" line	MH	Elastic Silt ^{K,L,M}
		organic	$\frac{\text{Liquid limit - oven dried}}{\text{Liquid limit - not dried}} < 0.75$	OH	Organic clay ^{K,L,M,P}
Highly organic soils		Primarily organic matter, dark in color, and organic odor		PT	Peat

^ABased on the material passing the 3-in. (75-mm) sieve

^BIf field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

^CGravels with 5 to 12% fines require dual symbols:
 GW-GM well-graded gravel with silt
 GW-GC well-graded gravel with clay
 GP-GM poorly graded gravel with silt
 GP-GC poorly graded gravel with clay

^DSands with 5 to 12% fines require dual symbols:
 SW-SM well-graded sand with silt
 SW-SC well-graded sand with clay
 SP-SM poorly graded sand with silt
 SP-SC poorly graded sand with clay

$$C_u = \frac{D_{60}}{D_{10}} \quad C_c = \frac{D_{30}^2}{D_{10} \times D_{60}}$$

^EIf soil contains $\geq 15\%$ sand, add "with sand" to group name.

^GIf fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

^HIf fines are organic, add "with organic fines" to group name.

^IIf soil contains $\geq 15\%$ gravel, add "with gravel" to group name.

^JIf Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

^KIf soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel", whichever is predominant.

^LIf soil contains $\geq 30\%$ plus No. 200 predominantly sand, add "sandy" to group name.

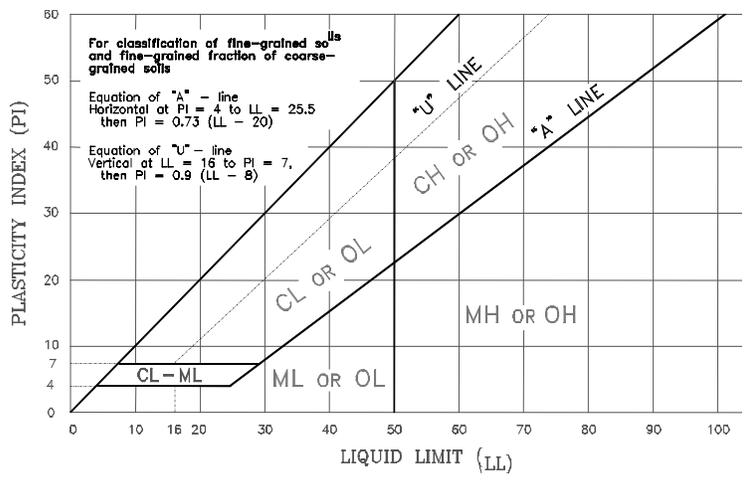
^MIf soil contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name.

^N $PI \geq 4$ and plots on or above "A" line.

^O $PI < 4$ or plots below "A" line.

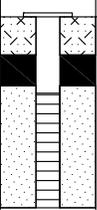
^P PI plots on or above "A" line.

^Q PI plots below "A" line.



Log of Boring No. SVE-1

CLIENT Machii Ross	SITE ADDRESS
SITE NAME Segal Tank Battery	County Road 44 Weld County, Colorado

GRAPHIC LOG	DESCRIPTION	WELL DETAIL	SAMPLES					TESTS	
			DEPTH (FT.)	USCS SYMBOL	NUMBER	TYPE	RECOVERY	SPT-N BLOWS/FT	ATHA RESULTS (PPM)
	TOP OF CASING (TOC) GROUND SURFACE ELEV.								
5.0	Silty Very Fine Sand Trace Clay Brown					HS			
	Silty Very Fine Sand Gray Some Hydrocarbon Odor		5	1	SS	16"	6	87	X
	Bottom of Boring		10						
			15						
			20						
			25						
			30						

The stratification lines represent the approximate boundary lines between rock types; in-situ the transition may be gradual.

BOREHOLE DIA. 8.5"
WELL DIA. 2.0"

WATER LEVEL OBSERVATIONS		PARAGON	BORING STARTED 9/3/09	
WL	▽ Dry		BORING COMPLETED 9/3/09	
WL			RIG CME-75	LOGGED BCW
WL			APPROVED ADW	JOB# 1006006



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

Sampled: 09/03/09

Received: 09/04/09

Sample ID: SP-1 3.5-5'

Project No.: 1006006

Laboratory ID: 9040-01

Matrix: Soil

<u>CAS Number</u>	<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Method</u>	<u>Date Analyzed</u>
71-43-2	Benzene	< 0.01	mg/Kg	EPA-8260B	09/04/09
108-88-3	Toluene	< 0.01	mg/Kg	EPA-8260B	09/04/09
100-41-4	Ethylbenzene	< 0.01	mg/Kg	EPA-8260B	09/04/09
1330-20-7	Total Xylenes	< 0.01	mg/Kg	EPA-8260B	09/04/09
N/A	DRO (TEPH)	< 10.0	mg/Kg	EPA-8015B	09/04/09
N/A	GRO (TVPH)	< 0.5	mg/Kg	EPA-8260B	09/04/09

QA/QC SURROGATE RECOVERIES

<u>Compound</u>	<u>% Recovery</u>	<u>% Rec. Limits</u>
Dibromofluoromethane	99	68-120
Toluene-d8	101	81-128
Bromofluorobenzene	93	70-113

Todd Rhea



TECHNOLOGY LABORATORY, INC.

CENTRE PROFESSIONAL PARK

1012 Centre Avenue
Fort Collins, Colorado 80526
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CERTIFICATE OF ANALYSIS

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

Sampled: 09/03/09

Received: 09/04/09

Sample ID: SVE-1 3.5-5'

Project No.: 1006006

Laboratory ID: 9040-02

Matrix: Soil

<u>CAS Number</u>	<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Method</u>	<u>Date Analyzed</u>
71-43-2	Benzene	< 0.01	mg/Kg	EPA-8260B	09/04/09
108-88-3	Toluene	< 0.01	mg/Kg	EPA-8260B	09/04/09
100-41-4	Ethylbenzene	< 0.01	mg/Kg	EPA-8260B	09/04/09
1330-20-7	Total Xylenes	< 0.01	mg/Kg	EPA-8260B	09/04/09
N/A	DRO (TEPH)	< 10.0	mg/Kg	EPA-8015B	09/04/09
N/A	GRO (TVPH)	< 0.5	mg/Kg	EPA-8260B	09/04/09

QA/QC SURROGATE RECOVERIES

<u>Compound</u>	<u>% Recovery</u>	<u>% Rec. Limits</u>
Dibromofluoromethane	98	68-120
Toluene-d8	101	81-128
Bromofluorobenzene	97	70-113

Todd Rea



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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: 11/02/09

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>
9419-01	TB-1	11/02/09	11/05/09	0.033	< 0.001	0.121	4.56
9419-02	TB-2	11/02/09	11/03/09	1.24	< 0.001	0.394	3.19
9419-03	TB-3	11/02/09	11/05/09	5.96	< 0.001	< 0.001	< 0.001
9419-04	TB-4	11/02/09	11/03/09	5.33	< 0.001	0.037	0.349
9419-05	TB-5	11/02/09	11/05/09	0.009	< 0.001	0.336	3.78
9419-06	PMW-1	11/02/09	11/04/09	< 0.001	< 0.001	< 0.001	< 0.001
9419-07	PMW-2	11/02/09	11/04/09	< 0.001	< 0.001	< 0.001	< 0.001
9419-08	PMW-3	11/02/09	11/04/09	< 0.001	< 0.001	< 0.001	< 0.001
9419-09	PMW-4	11/02/09	11/04/09	< 0.001	< 0.001	< 0.001	< 0.001
9419-10	PMW-5	11/02/09	11/04/09	< 0.001	< 0.001	< 0.001	< 0.001
9419-11	PMW-6	11/02/09	11/04/09	< 0.001	< 0.001	< 0.001	< 0.001

BTEX Method:

EPA-8260B



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CERTIFICATE OF ANALYSIS

QA/QC SURROGATE RECOVERY

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

Date Received: 11/02/09

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>
9419-01	TB-1	98	100	98
9419-02	TB-2	97	98	99
9419-03	TB-3	96	100	99
9419-04	TB-4	97	99	99
9419-05	TB-5	99	101	100
9419-06	PMW-1	97	101	100
9419-07	PMW-2	96	101	98
9419-08	PMW-3	96	102	101
9419-09	PMW-4	97	103	100
9419-10	PMW-5	96	100	100
9419-11	PMW-6	97	103	99