

July 6, 2010

Mr. Norm Peck
Washington State Department of Ecology
Toxics Cleanup Program
15 West Yakima Avenue, Suite 200
Yakima, Washington 98902-3452

**RE: SUBSURFACE INVESTIGATION WORK PLAN
COLEMAN OIL WENATCHEE FACILITY
3 CHEHALIS STREET EAST, WENATCHEE, WASHINGTON
FARALLON PN: 1001-001**


Dear Mr. Peck:

Farallon Consulting, L.L.C. (Farallon) has prepared this Work Plan on behalf of Coleman Oil Company (Coleman Oil) to describe the scope of work for a subsurface investigation at the Coleman Oil Wenatchee facility at 3 Chehalis Street East in Wenatchee, Washington (herein referred to as the Site). The purpose of the subsurface investigation is to characterize soil and groundwater conditions in the area of a gasoline spill that occurred at the Site on June 2, 2010 and to address the immediate concerns of the Washington State Department of Ecology (Ecology) regarding the potential for migration of gasoline to a deeper groundwater-bearing zone beneath the Site that may be in communication with surface water in the adjacent Columbia River.

The scope of work presented herein is based on the results of the emergency response activities conducted for Coleman Oil by NRC Environmental Services (NRCES) and Environmental Compliance Associated, LLC (ECA) from June 3 through June 10, 2010; a site reconnaissance conducted by Farallon on June 23, 2010; and a meeting between Ecology and Farallon on June 23, 2010. Farallon understands from the June 23, 2010 meeting that Ecology is requiring an initial subsurface investigation to evaluate whether the recent surface spill of gasoline has the potential to migrate to a deeper groundwater-bearing zone beneath the Site that may be in hydraulic communication with surface water in the adjacent Columbia River. This initial phase of investigation is being required by Ecology to complete the Spill Response Program requirements for characterization of an initial release and to transition the Site into the Ecology Voluntary Cleanup Program (VCP). In the event that additional characterization and/or remediation requirements are identified, these issues will be addressed in a separate phase under the VCP, as appropriate.

PROJECT BACKGROUND

Based on discussions with Coleman Oil Plant Manager Mr. Tom Graff, personnel at the Site determined that the disposition of approximately 180 gallons of unleaded gasoline could not be



reconciled after a review of daily inventory records for aboveground storage Tank 15 on the morning of June 2, 2010. An inspection of Tank 15 and associated piping revealed gasoline leaking from a fill valve and flowing onto the concrete ground surface in the valve control box for Tank 15 on the south side of the tank farm. Gasoline was observed also on the ground surface east of the valve control box in an unpaved area between the tank farm containment area and the south-adjacent fuel dispenser island. Coleman Oil personnel immediately stopped the flow of gasoline from the tank to the leaking fill valve, called emergency spill response contractor NRCES to address the spill, and reported the spill to the appropriate regulatory agencies.

According to Mr. Graff, the observed area of the gasoline release was limited to the narrow unpaved area between the tank farm containment area and the adjacent fuel dispenser island. NRCES hand-excavated soil containing gasoline from this area to a depth of approximately 2 feet below ground surface (bgs). Alternatives for excavation of additional material between the tank farm containment area and the adjacent fuel dispenser island were severely limited due to concerns about the structural integrity of the tank farm containment area and the presence of large boulders encountered in the excavation area. A total of approximately 6 cubic yards of soil containing gasoline was excavated from the spill area and temporarily stockpiled on plastic sheeting at the Site. Soil samples collected from the excavation sidewalls and from 1 foot below the base of the excavation indicated that soil containing concentrations of total petroleum hydrocarbons as gasoline-range organics (GRO) and benzene, toluene, ethylbenzene, and xylenes (BTEX) exceeding the Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Method A cleanup levels remain in-place. A summary of the laboratory analytical results for GRO and BTEX in soil is provided in Table 1.

Follow-up characterization was conducted by ECA to evaluate potential migration of gasoline from the release location to areas proximate to the excavation. The characterization included advancement of shallow borings S-1 through S-7 using a Geoprobe drill rig, and deep borings B-1 through B-6 using an air rotary drill rig. The locations of the shallow and deep borings are shown on Figure 1. Discontinuous perched groundwater-bearing intervals of less than 0.5-foot thickness were observed in borings S-3, B-2, B-3, B-4, and B-6 at depths ranging from 12 to 19 feet bgs. However, a contiguous groundwater-bearing zone was not encountered at the Site to the total depth drilled of 20.5 feet bgs.

Concentrations of GRO and BTEX exceeding MTCA Method A cleanup levels were detected in the grab groundwater sample collected from boring S-3 adjacent to the spill area. Benzene was the only compound detected above the MTCA Method A cleanup level in the grab groundwater sample collected from boring B-6 on the north side of the tank farm (Table 2). The analytical results did not detect the presence of GRO or BTEX constituents in the soil samples collected immediately below the perched groundwater-bearing zones at each of these boring locations (Table 1). Benzene was the only compound detected at concentrations exceeding the MTCA Method A cleanup level in soil samples collected from borings S-1, S-2/B-1, and S-5/B-2 at depth intervals between 4 and 11 feet bgs. The analytical results for deeper soil samples collected at these boring locations were reported non-detect for GRO and BTEX. The analytical results for soil samples collected from remaining borings S-4, S-7/B-4, B-3, B-5, and B-6 were

reported non-detect or below the MTCA Method A cleanup levels for GRO and BTEX constituents (Table 1).

The available data indicate that concentrations of GRO and BTEX decrease rapidly in soil both laterally and vertically from the spill area. Although GRO and BTEX were detected in several grab groundwater samples at concentrations exceeding MTCA Method A cleanup levels, these data are not considered representative of groundwater conditions because they were not collected from a properly constructed monitoring well. In addition, the perched groundwater-bearing zones encountered at the Site appear to be discontinuous in nature. Due to the proximity of the Site to the Columbia River, several deeper borings will be advanced to evaluate whether the recent surface spill of gasoline has the potential to migrate to a deeper groundwater-bearing zone beneath the Site that may be in hydraulic communication with surface water in the adjacent Columbia River.

SCOPE OF WORK FOR ADDITIONAL SUBSURFACE INVESTIGATION

Based on the meeting on June 23, 2010, Farallon has developed a scope of work to address Ecology concerns pertaining to the gasoline release. The scope of work includes advancement of three deep borings as described below.

Borings FB-1 and FB-2 will be advanced on the eastern, down-gradient property boundary proximate to prior boring locations B-2 and B-5 (Figure 1). Proposed boring FB-1 will be advanced to a depth slightly deeper than the mean low water level elevation of the adjacent Columbia River. A groundwater monitoring well will be installed at boring location FB-1 to characterize groundwater quality in the anticipated regional groundwater-bearing zone, and to evaluate groundwater flow direction relative to the surface water elevation of the Columbia River. The total depth of proposed boring FB-2, adjacent to boring location B-5, will be based on the stratigraphy and potential groundwater-bearing zone(s) encountered in boring FB-1. A second monitoring well will be installed at boring FB-2 to characterize the deeper groundwater-bearing zone anticipated to be encountered at the boring FB-1 location.

Boring FB-3 will be advanced adjacent to the spill area proximate to prior boring location B-4 (Figure 1). The purpose of boring FB-3 will be to characterize soil and groundwater conditions, if encountered, to a total depth of approximately 40 feet bgs.

The mean low water elevation for the Columbia River Rock Island Reservoir will be acquired using information from the U.S. Geological Survey, the Chelan County Public Utility District, and a local licensed surveyor. This elevation level will be used as the potential maximum depth of the initial proposed groundwater monitoring well at boring location FB-1. The ground surface elevation for the Coleman Oil Wenatchee facility will be estimated by a licensed surveyor to calculate the maximum drilling depth required. If a continuous groundwater-bearing zone is encountered at a depth less than the estimated mean low water level elevation of the Columbia River, the monitoring wells will be installed in this first-encountered groundwater-bearing zone to evaluate groundwater quality and flow direction relative to the Columbia River before monitoring wells are installed in a deeper groundwater-bearing zone.

Boring FB-3 will be advanced to a maximum depth of 40 feet bgs unless visual or olfactory evidence of contamination is noted at 40 feet bgs, in which case the boring will be advanced to the mean low water elevation for the Columbia River Rock Island Reservoir or until a continuous groundwater-bearing zone is encountered, whichever is encountered first. Boring FB-3 will be completed as a monitoring well only if a continuous groundwater-bearing zone is identified above 40 feet bgs or if boring FB-3 is advanced beyond 40 feet bgs and a contiguous groundwater-bearing zone is encountered.


The three deep borings will be advanced using an air rotary drill rig. Air rotary drilling introduces a positive pressure to the bore hole that keeps the structure of the bore hole stable as the boring is advanced to deeper depths. As the boring is drilled a metal casing follows the drill bit down the bore hole. The casing is the same size as the bore hole so little or no annular space is present between the casing and boring wall. Migration of impacted soil or perched water encountered while drilling the bore hole will be negligible because little or no annular space exists between the metal casing and the boring wall. The soil and water generated while drilling the boring will be drawn up through the center of the metal casing and out of the boring. When the groundwater bearing zone is reached a well will be constructed following Washington State well construction methodology.

To construct the groundwater monitoring well the drill bit will be removed from within the metal casing and the well screen and blank polyvinyl chloride (PVC) casing will be placed inside the metal casing. Sand will then be placed down between the metal casing and the well screen and PVC casing while simultaneously removing the metal casing from the boring. The sand will be placed to a minimum height of 1 foot above the top of the screened interval. A bentonite seal will then be installed above the sand pack to just below the ground surface and concrete will be poured to seal and secure the top of the well. The well construction will provide a barrier between impacted soils or perched pockets of water found above the groundwater bearing zone and the groundwater bearing zone.

Soil samples will be collected at 5-foot intervals to classify the soils and monitor for organic vapors and visual or olfactory signs of contamination. The soil samples will be logged in accordance with the Unified Soil Classification System. Soil samples will be collected and retained from each sample interval for potential laboratory analyses for GRO and BTEX constituents. A minimum of one soil sample will be submitted for laboratory analysis for BTEX by U.S. Environmental Protection Agency (EPA) Method 8021 and for GRO by Northwest Method NWTPH-Gx. The sample will be selected based on photoionization detector readings and visual and olfactory observations. If there is no indication of contamination, the sample collected above the water-bearing zone, if present, will be submitted for analysis. All laboratory analyses will be conducted on a standard laboratory turnaround time of 10 business days.

BORING AND MONITORING WELL INSTALLATION

Prior to conducting the drilling activities, Farallon will contact the One Call Utility Notification Center to mark underground utility lines in easements and rights-of-way at the Site. Farallon will contract with Utilities Plus LLC of Yakima, Washington, a private utility location service, to clear the proposed boring locations of underground utilities.



The monitoring wells will be constructed of 2-inch-diameter blank polyvinyl chloride (PVC) casing, flush-threaded to 10 to 15 feet of 0.020-inch slotted well screen. The bottom and the top of the monitoring wells will be fitted with a threaded PVC bottom cap and a locking compression-fit well cap, respectively. The annulus of each monitoring well will be filled with #2/12 silica sand to a minimum height of 1 foot above the top of the screened interval. A bentonite seal with a minimum thickness of 2 feet will be installed above the sand pack. The monitoring wells will be completed at the surface with a flush-mounted, traffic-rated well box set in concrete. Following installation of the monitoring wells, a licensed surveyor will survey the top of each monitoring well casing to an accuracy of 0.01 foot relative to the nearest datum.

The monitoring wells will be developed using a combination of surging, bailing, and pumping until approximately five submerged casing volumes of water have been removed from the well, and the quantity of fine-grained sediment in the extracted water has stabilized.

Groundwater monitoring and sampling of the newly installed monitoring wells will be conducted approximately 48 hours after well development. The locking well cap will be removed from each monitoring well, and groundwater levels will be allowed to equilibrate to atmospheric pressure for at least 15 minutes. The depth to groundwater will be measured in each well to the nearest 0.01 foot using an electronic water-level measuring device to the surveyed location on the top of the well casing. The initial groundwater level measurements will be taken using a water-level meter and oil-water interface probe at each of the monitoring well locations within a 2-hour period. Use of the oil-water interface probe during future monitoring events will only be necessary if light non-aqueous phase liquids (LNAP) are detected during the initial gauging and monitoring activity. Reusable equipment will be decontaminated between uses at each location.

GROUNDWATER MONITORING WELL SAMPLING AND ANALYSIS

Each monitoring well will be purged at a low-flow rate ranging from 100 to 300 milliliters per minute. Temperature, pH, and conductivity will be monitored during purging to determine when stabilization of these parameters occurs. Dissolved oxygen and oxidation-reduction potential also will be measured. Groundwater samples will be collected following stabilization of the temperature, pH, and conductivity parameters. The samples will be collected using a bladder pump directly from the low-flow pump outlet. If the monitoring well is completely dewatered during purging, samples will be collected when sufficient recharge has occurred to allow filling of the sample containers. If the use of a bladder pump is not practical or practicable a disposable bailer will be used. Groundwater samples will be collected if LNAPL is present on the groundwater in order to characterize the LNAPL.

Laboratory-prepared sample containers will be filled directly from the pump outlet or the bailer, with care taken to minimize turbulence. Care will be taken to not handle the seal or lid of the container when the samples are placed into the containers. The containers will be filled to eliminate any headspace and the seal/lid will be secured. The samples will be placed on ice in a cooler under standard chain-of-custody protocols.

The groundwater samples collected will be submitted for laboratory analysis for BTEX by EPA Method 8021 and for GRO by Northwest Method NWTPH-Gx. All laboratory analyses will be conducted on a standard laboratory turnaround time of 10 days.

Measurement of water levels in the groundwater monitoring wells will be conducted on a monthly basis if the groundwater elevations in the monitoring wells are lower than the estimated surface water elevation of the Columbia River (i.e., the Columbia River is losing to groundwater). If groundwater elevations in the monitoring wells are higher than the Columbia River surface water elevation (i.e., the Columbia River is gaining from groundwater), the monitoring frequency will be based on whether there is a potential for GRO and/or BTEX constituents in groundwater at the Site to migrate to the Columbia River.

WASTE HANDLING

Soil cuttings generated during the investigation activities will be temporarily stockpiled on the Site. The soil stockpile will be placed on and covered by plastic sheeting. Groundwater and decontamination wastewater will be temporarily contained in 55-gallon steel drums with secure lids. The laboratory analytical results from the soil stockpile and water drums will be used to profile the waste for transport and disposal at an appropriate transport, storage, and disposal facility in accordance with Washington State Dangerous Waste Regulations, Chapter 173-303 of the Washington Administrative Code (WAC 173-303), and Washington State Solid Waste Handling Standards (WAC 173-350).

REPORTING

Upon receipt of the analytical data, a Subsurface Investigation Report will be prepared, which will include at a minimum:

- A description of field activities;
- Tables summarizing laboratory analytical results;
- Scaled site maps depicting current Site features, the spill area, and investigation locations;
- A comparison of groundwater elevation to the current Columbia River Rock Island Reservoir elevation and the low mean water elevation;
- A comparison of the laboratory analytical results to applicable MTCA cleanup levels; and
- Conclusions based on the results of the field activities.

The Subsurface Investigation Report will be provided to Ecology in draft format for review and comment prior to being finalized. Additional characterization and/or remediation will be addressed in a separate phase under the VCP, as appropriate.

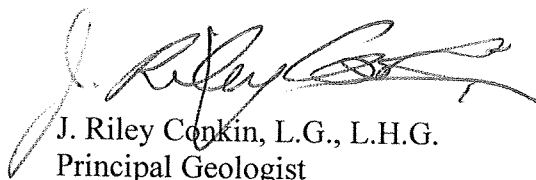
Farallon proposes to initiate the scope of work described herein on July 1, 2010, pending Ecology review and approval. Please contact either of the undersigned at (425) 295-0800 if you have questions regarding this Work Plan or require additional information.

Sincerely,

Farallon Consulting, L.L.C.



Stacy Patterson
Senior Environmental Scientist



J. Riley Conkin, L.G., L.H.G.
Principal Geologist

Attachments: Figure 1, *Site Map*
Table 1, *Soil Analytical Results*
Table 2, *Groundwater Analytical Results*

cc: Jim Cach, Coleman Oil Company
Tom Graff, Coleman Oil Company

SDP/RC:bjj

FIGURES

SUBSURFACE INVESTIGATION WORK PLAN Coleman Oil Wenatchee Facility Wenatchee, Washington

Farallon PN: 1001-001

TABLES

SUBSURFACE INVESTIGATION WORK PLAN Coleman Oil Wenatchee Facility Wenatchee, Washington

Farallon PN: 1001-001

Table 1
Soil Analytical Results
Coleman Oil Wenatchee Facility
Wenatchee, Washington
Farallon PN: 1001-001

Boring	Sample Identification	Sample Date	Sampled By	Depth (feet bgs) ¹	Soil Analytical Results (milligrams per kilogram)				
					GRO ²	Benzene ³	Toluene ³	Ethylbenzene ³	Xylenes ³
S-1	SS-1	6/7/2010	ECA	2.5 - 4	<10	<0.02	<0.10	<0.05	0.45
	SS-2	6/7/2010	ECA	2.5 - 4	30	0.045	0.27	0.19	5.54
	SS-2 Duplicate	6/7/2010	ECA	2.5 - 4	32	0.074	0.39	0.21	5.84
S-2/B-1	SS-5	6/7/2010	ECA	11 - 12	<10	0.034	0.14	<0.05	0.22
	B-1	6/9/2010	ECA	19 - 20	<10	<0.02	<0.10	<0.05	<0.15
S-3	SS-3	6/7/2010	ECA	10 - 11	<10	<0.02	<0.10	<0.05	<0.10
	SS-4	6/7/2010	ECA	11 - 12	185	2.97	8.29	4.52	13.41
	SS-6	6/7/2010	ECA	13 - 15.5	<10	0.23	0.13	<0.05	0.12
	SS-7	6/7/2010	ECA	16.5 - 17	<10	<0.02	<0.10	<0.05	<0.10
S-4	SS-8	6/7/2010	ECA	3.5 - 4	<10	<0.02	<0.10	<0.05	<0.10
	SS-9	6/7/2010	ECA	9 - 12	<10	<0.02	<0.10	<0.05	<0.10
S-5/B-2	SS-10	6/7/2010	ECA	3 - 5	<10	<0.02	<0.10	<0.05	0.25
	SS-11	6/7/2010	ECA	5 - 7	<10	0.055	<0.10	<0.05	<0.10
	SS-11 Duplicate	6/7/2010	ECA	5 - 7	<10	0.097	<0.10	<0.05	<0.10
	S-12	6/7/2010	ECA	11 - 13	<10	<0.02	<0.10	<0.05	<0.10
	B-2	6/9/2010	ECA	13 - 13.5	<10	<0.02	<0.10	<0.05	<0.15
	B-2	6/9/2010	ECA	19.5 - 20	<10	<0.02	<0.10	<0.05	<0.15
S-6	SS-13	6/7/2010	ECA	0 - 3	<10	<0.02	<0.10	<0.05	<0.10
S-7/B-4	SS-14	6/7/2010	ECA	2 - 3	<10	<0.02	<0.10	<0.05	<0.10
	SS-15	6/7/2010	ECA	4 - 4.5	19	<0.02	<0.10	<0.05	0.148
	B4 17½-19'	6/9/2010	ECA	17.5 - 19	<10	<0.02	<0.10	<0.05	<0.15
B-3	B3 16-17'	6/9/2010	ECA	16 - 17	<10	<0.02	<0.10	<0.05	<0.15
	B3 19½ - 20'	6/9/2010	ECA	19.5 - 20	<10	<0.02	<0.10	<0.05	<0.15
B-5	B5 19½-20½'	6/10/2010	ECA	19.5 - 20.5	16	<0.02	<0.10	<0.05	0.14
B-6	B6 10'	6/10/2010	ECA	10	<10	<0.02	<0.10	<0.05	<0.15
	B6 19½-20½'	6/10/2010	ECA	19.5 - 20.5	<10	<0.02	<0.10	<0.05	<0.15
MTCA Method A Cleanup Levels for Soil⁴					30	0.03	7	6	9

Table 1
Soil Analytical Results
Coleman Oil Wenatchee Facility
Wenatchee, Washington
Farallon PN: 1001-001

Boring	Sample Identification	Sample Date	Sampled By	Depth (feet bgs) ¹	Soil Analytical Results (milligrams per kilogram)				
					GRO ²	Benzene ³	Toluene ³	Ethylbenzene ³	Xylenes ³
Excavation									
Base of Excavation	T-1	6/7/2010	NRCES	NR	2260	25.9	112	66.5	195.4
	T-2	6/9/2010	NRCES	1 - below base	64	0.095	0.26	0.28	2.63
	T-3	6/9/2010	NRCES	1.17 - below base	7,400	117	756	154	774
	T-4	6/9/2010	NRCES	1.17 - below base	5,080	85.2	277	55.1	297
Southern Excavation Wall	DR-1	6/9/2010	NRCES	0.67	<10	0.37	0.72	<0.05	0.86
	DR-2	6/9/2010	NRCES	1	1,460	1.56	9.09	5.97	40.3
Northern Excavation Wall	TF-1	6/9/2010	NRCES	0.83	932	0.075	<0.10	1.39	3.55
	TF-2	6/9/2010	NRCES	2	2,020	4.87	39.9	14.8	90.9
	TF-2 Duplicate	6/9/2010	NRCES	2	1,710	4.95	48.6	18.7	96.5
	TF-3	6/9/2010	NRCES	2.25	1,860	0.73	10.1	7.83	75.4
MTCA Method A Cleanup Levels for Soil⁴					30	0.03	7	6	9

NOTES:

Results in **bold** denote concentrations above applicable cleanup levels.

< denotes analyte not detected at or above the reporting limit listed.

¹Depth in feet below ground surface.

²Analyzed by Northwest Method NWTPH-Gx.

³Analyzed by U.S. Environmental Protection Agency Method 8021B.

⁴Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Method A Soil Cleanup Levels for Unrestricted Land Uses, Table 740-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as revised November 2007.

bgs = below ground surface

ECA = Environmental Compliance Associates, LLC

GRO = total petroleum hydrocarbons as gasoline-range organics

NR = not reported

NRCES = NRC Environmental Services

Table 2
Groundwater Analytical Results
Coleman Oil Wenatchee Facility
Wenatchee, Washington
Farallon PN: 1001-001

Boring	Sample Identification	Sample Date	Sampled By	Depth (feet bgs) ¹	Groundwater Analytical Results (micrograms per liter)				
					GRO ²	Benzene ³	Toluene ³	Ethylbenzene ³	Xylenes ³
S-3	WS-1	6/7/2010	NRCES	16	35,000	2,080	3,030	788	3,210
S-3	WS-2	6/7/2010	NRCES	16	21,400	2,410	3,000	380	1,720
	WS-2 Duplicate	6/7/2010	NRCES	16	19,500	2,570	3,010	377	1,690
B-6	B6 12.5'	6/10/2010	ECA	12.5	<100	78.3	<2	<1	<3
	B6 12.5' Duplicate	6/10/2010	ECA	12.5	<100	73.1	<2	<1	<3
MTCA Method A Cleanup Levels for Groundwater					800	5	1,000	700	1,000

NOTES:

Results in **bold** denote concentrations above applicable cleanup levels.

< denotes analyte not detected at or above the reporting limit listed.

¹Depth in feet below ground surface.

²Analyzed by Northwest Method NWTPH-Gx.

³Analyzed by U.S. Environmental Protection Agency Method 8021B.

bgs = below ground surface

ECA = Environmental Compliance Associates, LLC

GRO = total petroleum hydrocarbons as gasoline-range organics

MTCA = Washington State Model Toxics Control Act Cleanup Regulation

NRCES = NRC Environmental Services