WINZLER & KELLY
CONSULTING ENGINEERS

Ref: 00-1428-03204

January 11, 2005

Ms. Leanne Schroyer, R.E.H.S
Humboldt County Division of Environmental Health
100 H Street, Suite 100
Eureka, California 95501

Re: Well Installation and First Quarterly Monitoring Report for December 2004 at Blue Lake Forest Products, 1619 Glendale Drive, Arcata, CA, LOP# 12196

Dear Ms. Schroyer:

Winzler & Kelly Consulting Engineers (Winzler & Kelly) has prepared this letter on behalf of Blue Lake Forest Products to report the results of the well installation and first quarterly monitoring at the above referenced site. This letter describes field activities and results of soil samples collected during the well installation preformed on November 24 and 25, 2004, as well as groundwater level measurements, gradient calculations and groundwater sampling and analysis performed on December 2 and 3, 2004.

In November 2004, monitoring well installation was performed in accordance with the January 2004 *Workplan for the Soil Remediation at the Former Underground Storage Tank Area for USTs #2, 3, and 4.* The objective of the work proposed in the workplan was to remove, to the extent possible, impacted soil associated with the apparent release of petroleum from the three 10,000-gallon underground diesel storage tanks (USTs) formerly located at the site, and install four monitoring wells in the vicinity of the excavation to monitor the effectiveness of the remediation activities. The results of the soil remediation activities were submitted in the *Report of Findings for Soil Remediation*, December 2004. A quarterly groundwater monitoring program was implemented in December 2004 to assess changes in groundwater conditions over time.

The project location is shown on Figures 1 and 2 in Appendix A. Monitoring well locations are shown on Figure 3 in Appendix A. Analytical results for soil and groundwater samples collected can be found summarized in Tables 1 and 2 in Appendix B. Laboratory results and chains-of-custody are included in Appendix C. Each well was constructed as proposed in the Workplan and as shown on the well logs included in Appendix D. Field activities were performed in accordance with the Winzler & Kelly Standard Operating Procedures included in Appendix E.

Monitoring Well Construction

On November 24 and 25, 2004, four (4) Monitoring Wells, MW-11, MW-12, MW-13, and MW-14, were installed. Diamond Core Drilling of Redding, CA (C57 License #512406), performed drilling equipment operation and installation of all the wells. A Winzler & Kelly field technician performed sampling and oversight during well installation.

A truck-mounted hollow stem auger drill rig was used to install the wells, and a 2-inch split spoon sampler was used to collect the soil samples in stainless steel soil tubes, at intervals of five feet from the surface, to a depth of 25 feet. Soil stratigraphy was described according to the Unified Soil Classification System (USCS) by a Winzler & Kelly field scientist. Soil color was described according to Munsell Color Charts. Soil drill cuttings generated were stored in labeled 55-gallon DOT approved drums and secured on site. There were eight (8) drums of cuttings generated. The cuttings will be disposed of in an appropriate and approved manner.

Soil samples selected for laboratory analysis were covered with sheets of Teflon® and plastic end caps. Immediately after collection, soil samples were labeled, logged on a chain-of-custody form, individually placed in zipper locking plastic storage bags, and placed in an iced cooler for transport to the project laboratory. Soil samples were transported to North Coast Laboratory, a State-certified laboratory, for analysis. Soil samples collected during installation of monitoring wells were analyzed for the following:

- Total Petroleum Hydrocarbons as Diesel (TPH-D) and Total Petroleum Hydrocarbons as Motor Oil (TPH-MO) with silica gel cleanup by EPA Method 3550/GCFID/8015B
- Total Petroleum Hydrocarbons as Gasoline (TPH-G) by EPA Method 5035/GCFID/8015B
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) and Methyl Tertiary Butyl Ether (MTBE) by EPA Method 5035/8021B

Groundwater monitoring wells MW-11, MW-12, MW-13, and MW-14 were constructed with 2-inch diameter, schedule 40 PVC, factory slotted screen with 0.010-inch slots from 25 feet below ground surface (bgs) to 5 feet bgs. Threaded PVC riser was installed from the screen to within 6-inches of the surface. The well annulus was filled with # 2/12 Monterey washed silica sand. The filter pack was placed through the hollow stem augers from the base of the screen to 6 inches above the top of the screen. The surface seal for each well consists of 6 inches of hydrated bentonite and cement grout to the surface. Each well was completed with a traffic-rated, flush mounted well box and a locking well cap. The construction of groundwater monitoring wells MW-11, MW-12, MW-13, and MW-14 is described on the well logs, contained in Appendix D.

All non-disposable sampling equipment was decontaminated with Alconox detergent and water between sampling intervals. New stainless steel sleeves were used for each sample. Decontamination rinsate was placed in a 55-gallon steel drum, which remains at the site pending disposal arrangements.

Well Development and Survey

Not less than 72 hours after the monitoring wells were constructed, a Winzler & Kelly field technician developed the new groundwater monitoring wells in accordance with Winzler and Kelly's Standard Operating Procedures (SOP), to remove fine grained sediment from the well

casings and filter packs. The well was alternately surged and bailed until most fine grained sediment had been removed. The total volume of water removed during well development for MW-11, MW-12, MW-13 was approximately 50 gallons each, and approximately 40 gallons for MW-14. The water generated by the December developing and purging activities is stored onsite in labeled 55-gallon steel DOT drums. There are currently four drums 4/5 full, and one drum ½ full. These drums will be disposed of in an approved manner pending approval and disposal arrangements.

Top of casing elevation were surveyed for the new wells to facilitate calculation of groundwater gradient. The top of casing elevation and locations were surveyed according to the State of California, Geotracker requirements. This data was submitted to the state Geotracker web site on January 9, 2005, and is contained on Table 3, Appendix B.

Well Sampling

Winzler & Kelly obtained water samples from wells MW-11, MW- 12, MW-13, and MW-14 for laboratory analysis on December 2 and 3, 2004. Depth to water measurements for all three site monitoring wells is presented in Table 3, contained in Appendix B. All monitoring well purging and sampling was performed in accordance with Winzler & Kelly Standard Operating Procedures (Appendix E). As standard procedure, measurements of temperature, conductivity, and pH of purge water from each well are made to verify that equilibrium has been attained prior to sampling. After purging at least three wetted casing volumes of water from each monitoring well, water level was allowed to recover to at least 80% of its pre-purge level before sampling. Groundwater monitoring wells were sampled within 24 hours of purging.

As part of the quarterly groundwater monitoring program, groundwater samples collected from the four site monitoring wells were analyzed for the following:

- Total Petroleum Hydrocarbons as Gasoline (TPH-G) by EPA Method 8260B
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) and the five fuel oxygenates, Methyl Tertiary Butyl Ether (MTBE), Di-isopropyl Ether (DIPE), Ethyl Tertiary Butyl Ether (ETBE), Tertiary Amyl Methyl Ether (TAME), Tertiary Butyl Alcohol (TBA) by EPA Method 8260B
- Total Petroleum Hydrocarbons as Diesel (TPH-D) with silica gel cleanup by EPA Method 3510/3630/GCFID/8015B
- Dissolved lead by EPA Method 200.8

The water samples were labeled and stored in a cooler on ice and delivered within 24 hours of sampling to North Coast Laboratory, a state certified analytical laboratory.

Groundwater Gradient

The depth to groundwater was measured to the nearest 0.01 foot in all four wells on December 2, 2004. The groundwater depth was measured with a water/product indicator probe. Groundwater

elevations are shown on Table 3 (Appendix B). The elevation above mean sea level of the groundwater at each well, and the magnitude and direction of the groundwater gradient were calculated. The groundwater gradient is shown on Table 4 (Appendix B) and on Figure 4 (Appendix A). On December 2, 2004, the gradient direction was south at 180.0° Azimuth with a magnitude of 1.29 feet per 100 feet.

Soil Analytical Results

The analytical results from the soil samples collected on November 24 and 25, 2004, during installation of monitoring wells are summarized in Table 1 in Appendix B. The laboratory reports and chain of custody documentation are included in Appendix C.

Soil samples collected from Monitoring Well MW-11 were below laboratory detection limits for all tested constituents.

The soil sample collected from Monitoring Well MW-12 at a depth of 15 ft contained TPH-D, TPH-MO, and TPH-G at concentrations of 4,100 parts per million (ppm), 950 ppm, and 130 ppm, respectively.

The sample collected from 20.5 ft contained TPH-D and TPH-G at concentrations of 11 ppm and 4.0 ppm. The soil sample collected from Monitoring Well MW-12 at a depth of 25 ft contained TPH-D, TPH-MO, and TPH-G at concentrations of 2,700 ppm, 690 ppm, and 8.9 ppm, respectively. All other tested constituents at these depths had concentrations below laboratory detection limits. The soil samples collected at a depth of 5 ft and 10 ft bgs in Monitoring Well MW-12 reported concentrations below the laboratory detection limit for all tested constituents.

The samples collected from Monitoring Well MW-13 at a depth of 6 ft, 12 ft, and 20 ft reported concentrations below the laboratory detection limit for all tested constituents. The soil sample collected from Monitoring Well MW-13 at a depth of 15 ft bgs contained TPH-D, TPH-MO, and TPH-G at concentrations of 610 ppm, 150 ppm, and 170 ppm, respectively, and below laboratory detection limits for all other tested constituents. The soil sample from MW-13 at 25 ft contained TPH-D at a concentration of 6.5 ppm and below laboratory detection limits for all other tested constituents.

Monitoring Well MW-14 reported contamination at 5 ft, 10 ft, and 25 ft bgs. The sample collected from 5 ft bgs from MW-14 had TPH-D and TPH-G at concentrations of 20 ppm and 3.5 ppm. The samples collected from 10 and 25 ft bgs from MW-14 had TPH-D concentrations of 1.1 ppm and 3.5 ppm, respectively.

Laboratory analytical results for the soil samples collected during installation of MW-11, MW-12, MW-13, and MW-14 will be submitted electronically to the State Water Resources Control Board Geotracker System when the EDF Geotracker results are provided by the Laboratory.

Ground Water Analytical Results

The results of the water sample analyses are summarized in Table 2 in Appendix B. The laboratory reports and chain of custody documentation are included in Appendix C.

Of the four wells sampled, two wells contained TPH-D and TPH-G concentrations above laboratory detection limits. The groundwater sample collected from Monitoring Well MW-12 on December 3, 2004 contained TPH-D and TPH-G at concentrations of 5,700 parts per billion (ppb) and 280 ppb. All other tested constituents for MW-12 were below laboratory detection limits.

The groundwater sample collected from well MW-13 on December 3, 2004 contained TPH-D and TPH-G at concentrations of 580 ppb and 220 ppb. All other tested constituents for MW-13 were below laboratory detection limits.

The samples collected from MW-11 and MW-14 were below the method detection limits for all analytes tested.

Laboratory analytical results for the groundwater samples collected on December 2 and 3, 2004 from MW-11, MW-12, MW-13, and MW-14 will be submitted electronically to the State Water Resources Control Board Geotracker System when the EDF Geotracker results are provided by the Laboratory.

Quality Assurance/Quality Control (QA/QC)

QA/QC for field activities was provided by adherence to the Winzler & Kelly Standard Operating Procedures (see Appendix D).

A trip blank was submitted to the laboratory along with the December 3, 2004 samples, however it was not analyzed as the samples from wells MW-11 and MW-14 were below detection limits for all analytes tested.

Laboratory QA/QC was provided by lab analysis of a Method Blank, which is used to exclude false-positive analysis, and by Laboratory Control Spikes & Duplicates (LCS & LCSD), which evaluate the percentage recovery of known analyte spikes. The LCS and LCSD were above the upper acceptance limits for diesel. There were no detectable levels of the analyte in the samples: therefore the data were accepted. The Method Blank reported results were within acceptable limits.

In regards to the analysis of the soil samples collected from the installation of monitoring wells the laboratory provided the following notes:

> "Some reporting limits for BTEX were raised for samples MW-12-20.5 and MW-12-25 due to matrix interference."

"Samples MW-13-15 and MW-12-15 were diluted and the reporting limits for BTEX raised additionally due to matrix interference. These samples also had results reported as ND with a dilution due to matrix interference."

"Samples MW-13-15, MW-12-15, MW-14-5, MW-14-10, MW-14-25, MW-12-15, MW-12-20.5, and MW-12-25 contain material similar to degraded or weathered diesel oil."

"Samples MW-13-15, MW-13-25, and MW-12-25 do not have the typical pattern of fresh motor oil. The material is lighter than motor oil. However, the results reported represent the amount of material on the motor oil range."

"Samples MW-13-15, MW-14-5, MW-12-15, MW-12-20.5, and MW-12-25 do not present a peak pattern consistent with that of gasoline. The peak elute toward the end of the gasoline range. In our judgment the material appears to be a product heavier than gasoline. Due to the difference in the purging efficiencies of these heavier materials the results may be varied. The reported results represent the amount of material in the gasoline range."

In regards to the analysis of the groundwater samples collected from the monitoring wells the laboratory provided the following notes:

"Sample MW-12 and MW-13 do not present a peak pattern consistent with that of gasoline. The peaks elute towards the end of the gasoline range. In our judgment the material appears to be a product heavier than gasoline. Due to the difference in the purging efficiencies of these heavier materials the results may be variable. The reported results represent the amount of material in the gasoline range."

"Sample MW-12 and MW-13 contain material similar to degraded or weathered diesel oil."

Conclusions

- Four groundwater monitoring well (MW-11, MW-12, MW-13, and MW-14) were constructed to monitor groundwater conditions within the vicinity of the former UST location. Soil samples collected during construction wells from MW-12, MW-13, and MW-14 contained TPH-D, TPH-MO, and TPH-G. The soil sample from MW-12 at 15 ft bgs had a concentration of 4,100 ppm of TPH-D, 950 ppm of TPH-MO, and 130 ppm of TPH-G. The soil sample from MW-12 at 25 ft bgs had a concentration of 2,700 ppm of TPH-D, 690 ppm of TPH-MO, and 8.9 ppm of TPH-G. The soil sample from MW-12 at 20.5 ft bgs had a concentration of 11 ppm of TPH-D and 4.0 ppm of TPH-G.

Soil samples collected during the construction of MW-13 had contaminates at 15 and 25 ft bgs. The soil sample collected from MW-13 at 15 bgs had a concentration of 610 ppm of TPH-D, 150 ppm of TPH-MO, and 170 ppm of TPH-G. The soil sample collected from MW-13 at a depth of 25 ft bgs had a concentration of 6.5 ppm of TPH-D.

Soil samples collected during the construction of MW-14 contained 1.1 ppm and 3.5 ppm of TPH-D at 10 and 25 ft bgs. All other tested constituents for MW-14 were below laboratory detection limits.

Soil samples collected from MW-11 were below laboratory detection limits for all tested constituents.

- Groundwater gradient was calculated to be 1.29 feet per 100 feet at 180.0° Azimuth during the December 2004 sampling event;

- Results of analysis of groundwater samples collected from each of the four onsite groundwater monitoring wells during the December 2004 sampling event, indicate that concentrations of all tested constituents were below laboratory detection limits for MW-11 and MW-14.

  The groundwater sample obtained from monitoring well MW-12 contained 5,700 ppb of TPH-D and 280 ppb of TPH-G. Groundwater sample from MW-13 contained 580 ppb of TPH-D and 220 ppb of TPH-G. All other tested constituents for MW-12 and MW-13 were below laboratory detection limits.

Recommendations

Based on the data presented this report, Winzler & Kelly recommends the following:

- Quarterly groundwater monitoring and reporting activities should be continued through a total of four sampling events or one hydrologic cycle;
- Quarterly groundwater monitoring program should include the monitoring of four installed wells for TPH-G/BTEX and TPH-D/MO. None of the fuel oxygenates (MTBE, TBA, DIPE, ETBE, TAME) nor dissolved lead were detected in any of the groundwater samples and should be removed from the monitoring program. ;
- Upon completion of a total of four quarterly groundwater monitoring events, a monitoring program summary report should be prepared, evaluating the affect of soil remediation on water quality and providing recommendations for the next step toward environmental regulatory site closure;
- A Sensitive Receptor Survey should also be prepared for a radius of 500-feet north and 1,000 feet south of Tank Hold #2-4.

- Soil cuttings from the installation of monitoring wells MW-11 and MW-14 should be spread onsite in a method to prevent site runoff.
- Soil cuttings from the installation of monitoring wells MW-12 and MW-13 should be disposed of at an appropriately licensed facility.
- The development and purge water from wells MW-11 and MW-14 should be spread onsite in a method to prevent site runoff.
- The development and purge water from wells MW-12 and MW-13 should be disposed of at an appropriately licensed facility.

Please do not hesitate to contact either Patrick Kaspari or Colleen Ellis if you have any questions.

Sincerely,
WINZLER & KELLY

Prepared by:

Colleen Ellis
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Reviewed by:

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Enclosure:

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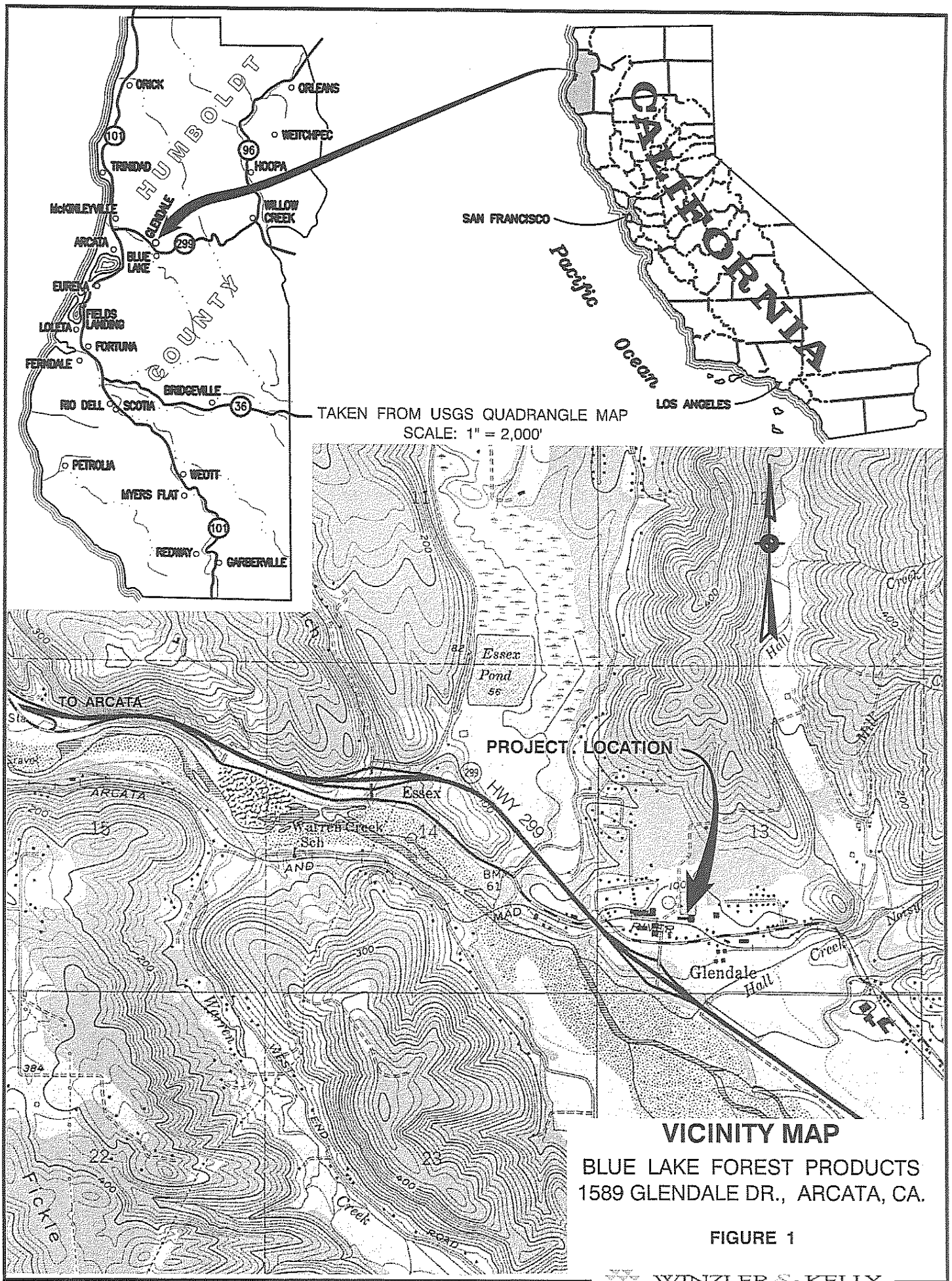
c: Dan Aalfs, P.O. Box 2159, McKinleyville, CA 95519
Gary Johnston, 1325 G Street, Eureka, CA 95501

Appendix A
Figures



VICINITY MAP

BLUE LAKE FOREST PRODUCTS
1589 GLENDALE DR., ARCATA, CA.

FIGURE 1

WINZLER & KELLY

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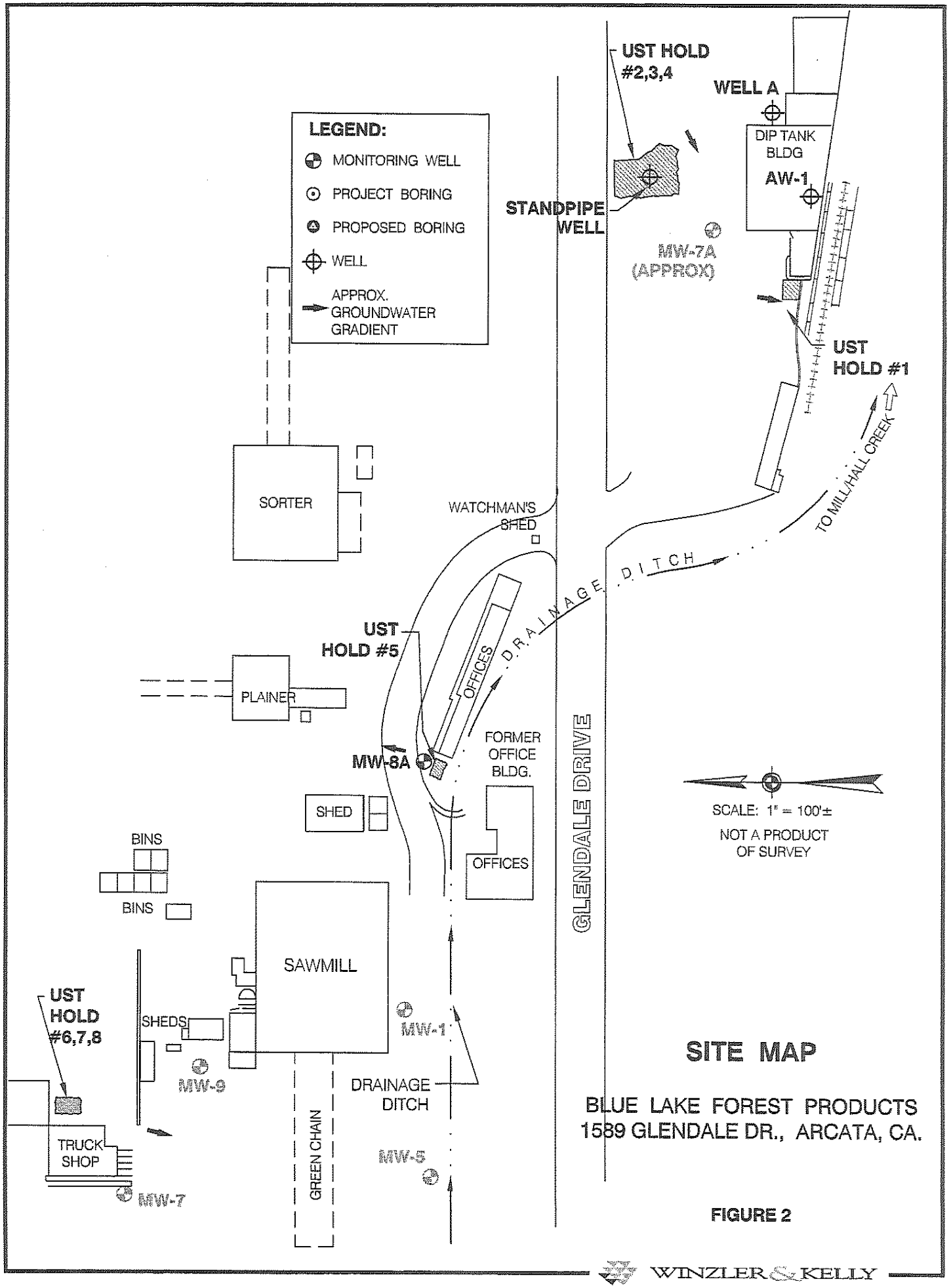

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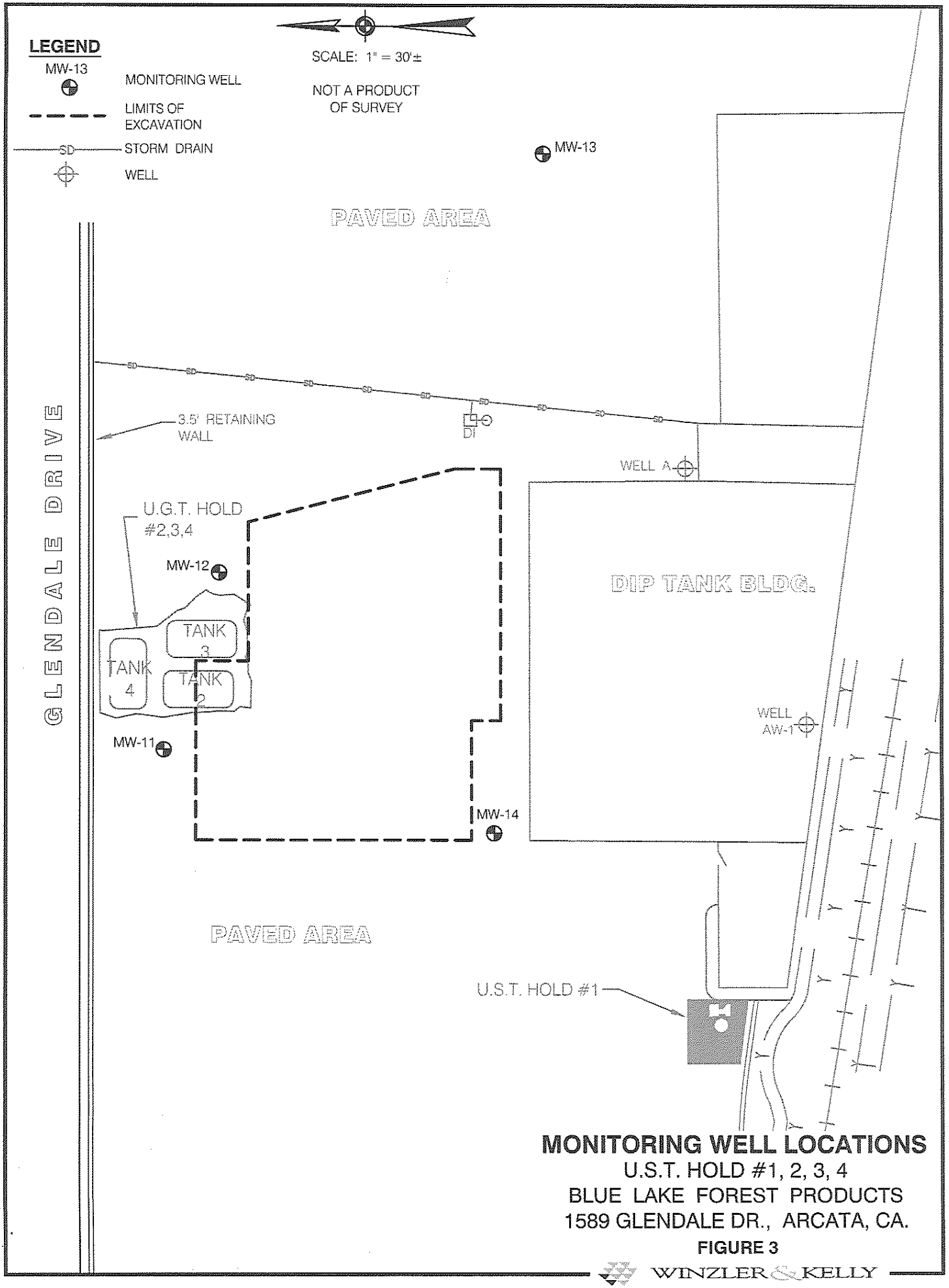

MONITORING WELL LOCATIONS
U.S.T. HOLD #1, 2, 3, 4
BLUE LAKE FOREST PRODUCTS
1589 GLENDALE DR., ARCATA, CA.
FIGURE 3

WINZLER & KELLY

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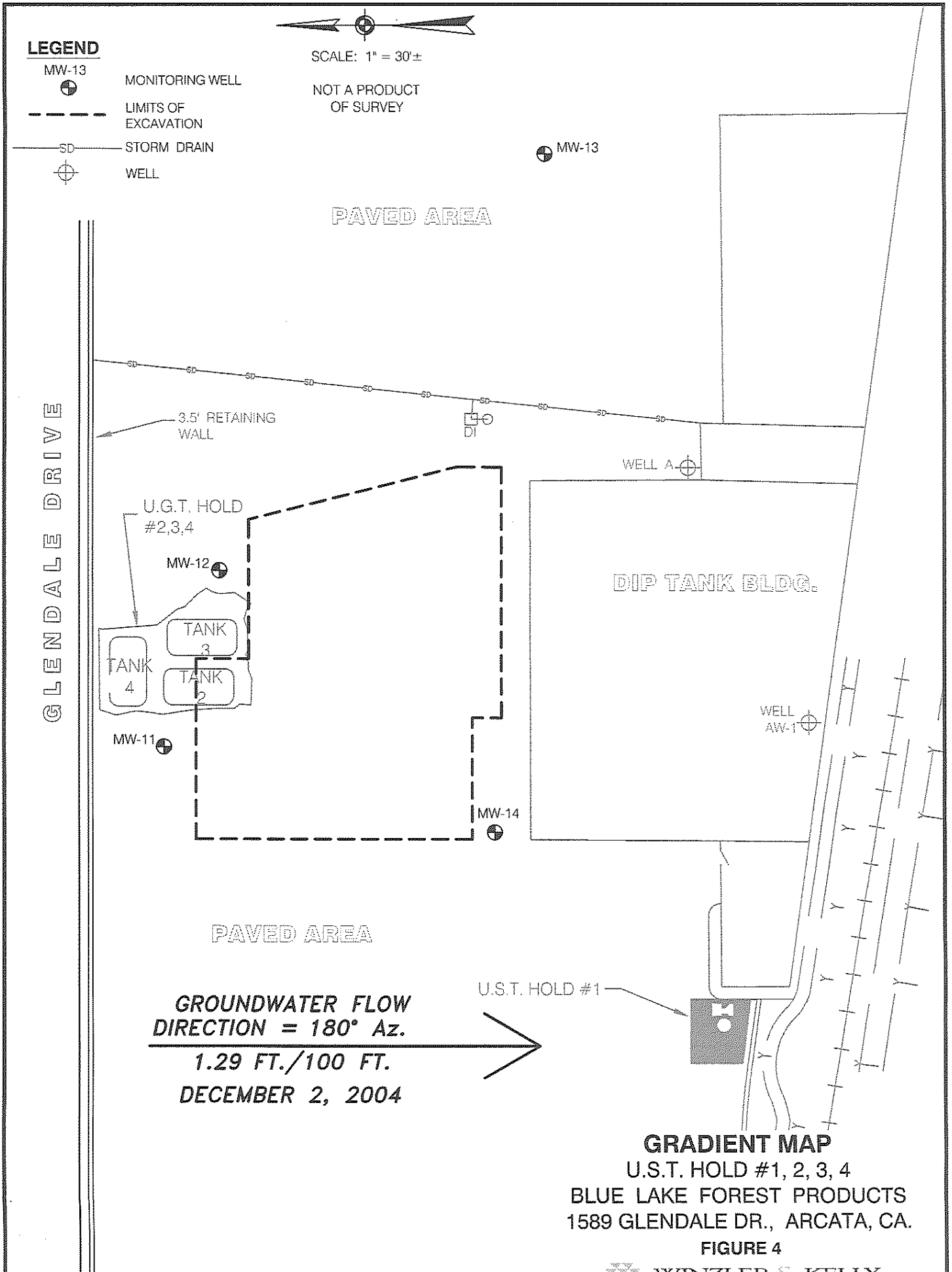

GRADIENT MAP
U.S.T. HOLD #1, 2, 3, 4
BLUE LAKE FOREST PRODUCTS
1589 GLENDALE DR., ARCATA, CA.
FIGURE 4

WINZLER & KELLY

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Appendix B
Tables

TABLE 1
HISTORIC SOIL ANALYTICAL RESULTS - UST Hold #1, 2, 3, 4
BLUE LAKE FOREST PRODUCTS

Boring	Date	Sample Interval (ft)	TPH-D: Silica Gel Clean-up / Pre-cleaned. (ppm)	TPH-MO (ppm)	TPH-G (ppm)	MTBE (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	m,p Xylene (ppm)	"o" Xylene (ppm)
B-1A#	Apr-90	6' - 6.5'	**930**	NA	NA	NA	<0.01	**0.36**	< 0.01	< 0.01^	NA
B-1B#		11' - 11.5'	<10	NA	NA	NA	< 0.01	**0.051**	< 0.01	< 0.01^	NA
B-1C#		16'-16.5'	<10	NA	NA	NA	< 0.01	**0.125**	< 0.01	< 0.01^	NA
B-1D#		21' - 21.5'	**13**	NA	NA	NA	< 0.01	**0.22**	< 0.01	< 0.01^	NA
B-2A#	Apr-90	6' - 6.5'	**110**	NA	NA	NA	<0.01	**0.20**	< 0.01	< 0.01^	NA
B-2B#		11' - 11.5'	**43**	NA	NA	NA	< 0.01	**0.26**	< 0.01	< 0.01^	NA
B-2C#		16'-16.5'	**23**	NA	NA	NA	< 0.01	**0.135**	< 0.01	< 0.01^	NA
B-2D#		21' - 21.5'	<10	NA	NA	NA	< 0.01	< 0.01	< 0.01	< 0.01^	NA
B-3A#	Apr-90	6' - 6.5'	**14**	NA	NA	NA	<0.01	<0.01	<0.01	<0.01^	NA
B-3B#		NO RECOVERY									
B-3C#		16'-16.5'	**140**	NA	NA	NA	< 0.01	**0.056**	<0.01	<0.01^	NA
B-3D#		21'-21.5'	**370**	NA	NA	NA	< 0.01	< 0.01	<0.01	<0.01^	NA
B-3E#		25' - 25.5'	**35**	NA	NA	NA	< 0.01	**0.023**	<0.01	<0.01^	NA
B-4A#	Apr-90	6' - 6.5'	**48**	NA	NA	NA	<0.01	<0.01	<0.01	< 0.01^	NA
B-4B#		11' - 11.5'	**33**	NA	NA	NA	< 0.01	< 0.01	< 0.01	< 0.01^	NA
B-4C#		16' - 16.5'	<10	NA	NA	NA	< 0.01	< 0.01	< 0.01	< 0.01^	NA
B-4D#		NO RECOVERY									
MW-7A#	Apr-90	6' - 6.5'	**210**	NA	NA	NA	<0.01	**0.052**	< 0.01	< 0.01^	NA
MW-7B#		11' - 11.5	<10	NA	NA	NA	< 0.01	**0.021**	< 0.01	< 0.01^	NA
MW-7C#		16'-16.5'	<10	NA	NA	NA	< 0.01	**0.24**	< 0.01	< 0.01^	NA
MW-7D#		21' - 21.5'	<10	NA	NA	NA	< 0.01	**0.18**	< 0.01	<0.01^	NA
MW-7E#		26' - 26.5'	<10	NA	NA	NA	< 0.01	**0.022**	< 0.01	<0.01^	NA
MW-7F#		31' - 31.5'	<10	NA	NA	NA	< 0.01	**0.11**	< 0.01	<0.01^	NA
B1-1	Jun-00	5' - 5.5'	< 1.0 [4]	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		7.5' - 8.0'	< 1.0	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B1-2	Jun-00	5' - 5.5'	**1.8 / 1.4** [2]	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		10' -10 5'	**1.3 / 1.6** [2]	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B1-3	Jun-00	5' - 5.5'	< 1.0 [5]	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		9' - 9.5'	**1.3 / 1.1** [2]	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B1-4	Jun-00	5' - 5.5'	< 1.0	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		9' - 9.5'	< 1.0	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		10.5' - 11'	< 1.0	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B2-1	Jun-00	3.5' - 4'	**3,300 / 5,400** [1,3]	NA	**910** [6]	< 5.0 [8]	< 0.50 [8]	< 0.50 [8]	< 4.0 [8]	< 4.0 [8]	< 7.0 [8]
		9.5' - 10'	**1,800 / 3,100** [1,3]	NA	**52** [6]	< 0.25 [8]	< 0.025 [8]	< 0.025 [8]	< 0.20 [8]	< 0.10 [8]	< 0.50 [8]
		12.5' - 13'	**1,900 / 3,700** [1,3]	NA	**360** [6]	< 5.0 [8]	< 0.50 [8]	< 0.50 [8]	< 0.50 [8]	< 0.50 [8]	< 1.5 [8]
		18.5' - 19'	**1,100 / 2,000** [1,3]	NA	**94** [6]	< 0.50 [8]	< 0.050 [8]	< 0.050 [8]	< 0.20 [8]	< 0.050 [8]	< 0.50 [8]
		22.5' - 23'	**2.6 / 4.7** [1]	NA	**4.3** [6]	< 0.050	< 0.0050	< 0.0050	< 0.010 [7]	< 0.010 [7]	< 0.020 [7]
B2-2	Jun-00	5' - 5.5'	**770 / 1,600** [1,3]	NA	**230** [6]	< 2.5 [8]	< 0.25 [8]	< 0.25 [8]	< 1.0 [8]	< 0.70 [8]	< 2.5 [8]
		10' - 10.5	< 1.0	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		14.5' - 15'	< 1.0 [5]	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		19.5' - 20'	< 1.0 [5]	NA	**2.8** [6]	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B2-3	Jun-00	4.5' - 5.0'	< 1.0	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		9.5' - 10'	< 1.0	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		14.5' - 15'	< 1.0	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050

Cont.

TABLE 1
HISTORIC SOIL ANALYTICAL RESULTS - UST Hold #1, 2, 3, 4
BLUE LAKE FOREST PRODUCTS

TABLE 1 (Cont.)

Boring	Date	Sample Interval (ft)	TPH-D: Silica Gel Clean-up / Pre-cleaned. (ppm)	TPH-MO (ppm)	TPH-G (ppm)	MTBE (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	m,p Xylene (ppm)	"o" Xylene (ppm)
B2-4	Jun-00	4.5' - 5.0'	< 1.0	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		9.5' - 10'	< 1.0	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		14.5' - 15'	**190 / 370** [1,3]	NA	**72** [6]	< 0.50 [8]	< 0.050 [8]	< 0.050 [8]	< 0.20 [8]	< 0.20 [8]	< 0.20 [8]
		18.5' - 19'	**2.7 / 3.8** [1]	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B2-5	Jun-00	4.5' - 5.0'	**1.8 / 2.5** [1]	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		9.5' - 10'	< 1.0	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		11.5' - 12'	< 1.0	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		16' - 16.5'	**3.0 / 4.2** [1]	NA	**3.7** [6]	< 0.050	< 0.050	< 0.050	< 0.050	< 0.0050	< 0.010 [7]
		18.5' - 19'	**44 / 50** [1,9]	NA	**14** [6]	< 0.050	< 0.050	< 0.050	< 0.020 [7]	< 0.20 [7]	< 0.10 [7]
B2-6	Jun-00	4.5 - 5.0'	**42** [1]	NA	**11** [6]	< 0.050	< 0.0050	< 0.0050	< 0.020 [7]	< 0.020 [7]	< 0.050 [7]
		10' -10.5'	**3,400 /** [1,9]	NA	**510** [6]	< 5.0 [8]	< 0.50 [8]	< 0.50 [8]	< 1.6 [8]	< 1.6 [8]	< 3.0 [8]
		15' - 15.5'	**2600** [9]	NA	**490** [6]	< 5.0 [8]	< 0.50 [8]	< 0.50 [8]	<1.2 [8]	<1.2 [8]	<2.0 [8]
		15.5' - 16'	< 1.0 [5]	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		19.5' - 20'	< 1.0	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B2-7	Jun-00	4.5' - 5.0'	**970** [9]	NA	**180** [6]	< 1.2 [8]	< 0.12 [8]	< 0.12 [8]	< 0.40 [8]	< 0.40 [8]	< 0.90 [8]
		10' - 10.5'	**12**	NA	**3.4** [6]	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		12' - 12.5'	< 1.0 [5]	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		19.5' - 20'	< 1.0	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B2-8	Jun-00	4.5' - 5.0'	**6.5**	NA	**16** [6]	< 0.050	< 0.0050	< 0.0050	0.10 [7]	0.10 [7]	0.20 [7]
		5.5' - 6.0'	**400** [9]	NA	**520** [6]	< 5.0 [8]	< 0.50 [8]	< 0.50 [8]	< 3.0 [8]	< 3.0 [8]	< 5.0 [8]
		10.5' - 11'	< 1.0	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		15' - 15.5'	< 1.0	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		19.5' - 20'	< 1.0	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B2-9	Aug-03	5	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		5 (DUP)	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		10	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		15	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		20	< 1.0	NA	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B2-10	Aug-03	5	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		10	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		15	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		20	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B2-12	Aug-03	5	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		10	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		15	**150**	NA	**21**	< 0.050	< 0.0050	< 0.012	< 0.10	< 0.020	< 0.10
		20	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B2-12A	Aug-03	5	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		10	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		15	**8.5**	NA	**120**	< 1.0	< 0.10	< 0.10	< 0.50	< 0.10	< 0.80
		20	**900**	NA	**3.0**	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.015

Cont.

TABLE 1
HISTORIC SOIL ANALYTICAL RESULTS - UST Hold #1, 2, 3, 4
BLUE LAKE FOREST PRODUCTS

TABLE 1 (Cont.)

Boring		Sample Interval (ft)	TPH-D: Silica Gel Clean-up / Pre-cleaned. (ppm)	TPH-MO (ppm)	TPH-G (ppm)	MTBE (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	m,p Xylene (ppm)	"o" Xylene (ppm)
B2-12B	Aug-03	10	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		15	**5.0**	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		20	**600**	NA	**23**	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.010	< 0.040
B2-12C	Aug-03	5	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		10	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		15	**170**	NA	**13**	< 0.050	< 0.0050	< 0.0050	< 0.020	< 0.010	< 0.030
		20	**180**	NA	**9.9**	< 0.050	< 0.0050	< 0.0050	< 0.010	< 0.0050	< 0.020
B2-13	Aug-03	5	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		10	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		15	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		20	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B2-13A	Aug-03	5	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		10	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		15	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
		20	<1.0	NA	<1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
MW-11-5	Nov-04	5	< 1.0	< 10	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
MW-11-10		10	< 1.0	< 10	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
MW-11-15		15	< 1.0	< 10	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
MW-11-20		20	< 1.0	< 10	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
MW-11-25		25	< 1.0	< 10	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
MW-12-5.5	Nov-04	5.5	< 1.0	< 10	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
MW-12-10		10	< 1.0	< 10	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
MW-12-15		15	**4,100** [1]	**950** [10]	**130** [6]	< 1.0 [8]	< 0.10 [8]	< 0.10 [8]	< 0.50 [8]	< 0.50 [8]	< 0.50 [8]
MW-12-20.5		20.5	**11** [1]	< 10	**4.0** [6]	< 0.050	< 0.0050	< 0.0050	< 0.010 [7]	< 0.010 [7]	< 0.010 [7]
MW-12-25		25	**2,700** [1]	**690** [10]	**8.9** [6]	< 0.050	< 0.0050	< 0.0050	< 0.050 [7]	< 0.050 [7]	< 0.050 [7]
MW-13-6	Nov-04	6	< 1.0	< 10	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
MW-13-12		12	< 1.0	< 10	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
MW-13-15		15	**610** [1]	**150** [10]	**170** [5]	< 1.0 [8]	< 0.10 [8]	< 0.10 [8]	< 0.50 [8]	< 0.50 [8]	< 0.50 [8]
MW-13-20		20	< 1.0	< 10	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
MW-13-25		25	**6.5** [1]	< 10	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
MW-14-5	Nov-04	5	**20** [1]	< 10	**3.5** [6]	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
MW-14-10		10	**1.1** [1]	< 10	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
MW-14-15.5		15.5	< 1.0	< 10	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
MW-14-22		22	< 1.0	< 10	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
MW-14-25		25	**3.5** [1]	< 10	< 1.0	< 0.050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050

TPH-D by EPA 8015, BTEX by EPA Method 8020.

^ Total Xylenes by EPA Method 8020.

TPH-Diesel analysis by EPA 3550/GCFID using a silica gel clean-up, however, due to low surrogate recovery in many such analysis, a "pre-cleaned" standard TPH-D analysis was also performed, as denoted in results as [w/ silica gel / "pre-cleaned"]. All diesel results

TPH-Gas analysis by EPA 8021B/5035.

1 Sample contains material similar to degraded or weathered diesel

2 Contained material in the diesel range of molecular weights and beyond. Suggests presence of oil heavier than diesel

3 Surrogate could not be quantified due to sample dilution.

4 Contained material beyond diesel range, suggests presence of an oil heavier than diesel, the amount of which was not included in the reported result.

5 The low surrogate recovery may be due to matrix interference.

6 Sample does not have the typical pattern of fresh gasoline, result reported represents the amount of material in gasoline range.

7 Some reporting limits raised due to matrix interference.

8 Samples diluted and the reporting limits raised additionally due to matrix interference.

9 The surrogate sample could not be quantified due to matrix

10 Sample does not have the typical pattern of fresh motor oil. The material is lighter than motor oil. However, the result reported represents the amount of material in the motor oil range.

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
BLUE LAKE FOREST PRODUCTS

Sample	Date	TPH-Diesel (ppb)	TPH-Gas (ppb)	MTBE Methyl tert-butyl ether (ppb)	TBA Tert-butyl alcohol	DIPE Di-isopropyl ether	ETBE Ethyl tert-butyl ether	Benzene (ppb)	TAME Tert-amyl methyl ether	Toluene (ppb)	Ethyl-Benzene (ppb)	m,p Xylene (ppb)	"o" Xylene (ppb)	Lead (ppb)
MW-11	12/2/04	< 50 [2]	< 50	< 1.0	< 10	< 1.0	< 1.0	< 0.50	< 1.0	< 0.50	< 0.50	< 0.50	< 0.50	< 5
MW-12	12/3/04	**5700** [1, 2]	**280** [3]	< 1.0	< 10	< 1.0	< 1.0	< 0.50	< 1.0	< 0.50	< 0.50	< 0.50	< 0.50	< 5
MW-13	12/3/04	**580** [1, 2]	**220** [3]	< 1.0	< 10	< 1.0	< 1.0	< 0.50	< 1.0	< 0.50	< 0.50	< 0.50	< 0.50	< 5
MW-14	12/3/04	< 50 [2]	< 50	< 1.0	< 10	< 1.0	< 1.0	< 0.50	< 1.0	< 0.50	< 0.50	< 0.50	< 0.50	< 5

Notes:

1 Sample contains material similar to degraded or weathered diesel oil.

2 The laboratory control sample (LCS) and the laboratory control sample duplicate (LCSD) recoveries were above the upper acceptance limit for diesel.
These recoveries indicate that the sample results may be erroneously high. There were no detectable levels of the analyte in the samples; therefore, the data were accepted.

3 Samples do not present a peak pattern consitant with that of gasoline. The peaks elute toward the end of the gasoline range.
The material appears to be a product heavier than gasoline. The reported results represent the amount of material in the gasoline range.

TABLE 3
GROUNDWATER ELEVATION
BLUE LAKE FOREST PRODUCTS

Monitoring Well ID	MW-11		MW-12		MW-13		MW-14	
Well Location	northing	easting	northing	easting	northing	easting	northing	easting
	40.89993	-124.01589	40.89991	-124.01738	40.89973	-124.01534	40.89970	-124.01593
Original TOC (ft MSL)	91.47		91.52		91.19		91.71	
	DTW	GW ELEV	DTW	GW ELEV	DTW	GW ELEV	DTW	GW ELEV
DATE	(ft bgs)	(ft MSL)	(ft bgs)	(ft MSL)	(ft bgs)	(ft MSL)	(ft bgs)	(ft MSL)
2-Dec-04	10.28	81.19	10.49	81.03	11.00	80.19	11.59	80.12

TABLE 4
GROUNDWATER GRADIENT
BLUE LAKE FOREST PRODUCTS

Date of Data Collection	*Groundwater Flow Direction*	*Degrees Azimuth*	*Slope in Feet Per 100 Feet*
2-Dec-04	**south**	180.00	1.29

Appendix C
Laboratory Reports and Chain-Of-Custody

NORTH COAST
LABORATORIES LTD.

RECEIVED
DEC 13 2004
WK-EUREKA

December 10, 2004

Winzler and Kelly
633 Third Street
Eureka, CA 95501

Attn: Colleen Ellis

Order No.: 0411538
Invoice No.: 46704
PO No.:

ELAP No. 1247-Expires July 2006

RE: 00142803-204, BLFP-Well Installation

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	MW-13-6
02A	MW-13-12
03A	MW-13-15
04A	MW-13-20
05A	MW-13-25
06A	MW-11-5
07A	MW-11-10
08A	MW-11-15
09A	MW-11-20
10A	MW-11-25
11A	MW-14-5
12A	MW-14-10
13A	MW-14-15.5
14A	MW-14-22
15A	MW-14-25
16A	MW-12-5.5
17A	MW-12-10
18A	MW-12-15
19A	MW-12-20.5
20A	MW-12-25
21A	BLFP-RINSE WATER
21B	BLFP-RINSE WATER

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Laboratory Supervisor(s) | QA Unit | Jesse G. Chaney, Jr. Laboratory Director

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Carbon Ranges:
TPH as Diesel covers the carbon range C12-C22.

TPH as Gasoline covers the carbon range C6-C14.

BTEX - Soil:
Some reporting limits were raised for samples MW-12-20.5 and MW-12-25 due to matrix interference.

Samples MW-13-15 and MW-12-15 were diluted and the reporting limits were raised additionally due to matrix interference. These samples also had results reported as ND with a dilution due to matrix interference.

BTEX - Water:
The laboratory control sample duplicate (LCSD) recovery was below the lower acceptance limit for MTBE. The laboratory control sample (LCS) recovery was within acceptance limits; therefore, the data were accepted.

The relative percent difference (RPD) for the laboratory control samples was above the upper acceptance limit for MTBE. This indicates that the results could be variable. Since there were no detectable levels of analyte in the sample, the data were accepted.

TPH as Diesel/Motor Oil with Silica Gel Cleanup - Soil:
Samples MW-13-15, MW-13-25, MW-14-5, MW-14-10, MW-14-25, MW-12-15, MW-12-20.5 and MW-12-25 contain material similar to degraded or weathered diesel oil.

Samples MW-13-15, MW-12-15 and MW-12-25 do not have the typical pattern of fresh motor oil. The material is lighter than motor oil. However, the results reported represent the amount of material in the motor oil range.

TPH as Diesel/Motor Oil with Silica Gel Cleanup - Water:
Sample BLFP-RINSE WATER contains material similar to degraded or weathered diesel oil.

Sample BLFP-RINSE WATER does not have the typical pattern of fresh motor oil. The material is lighter than motor oil. However, the results reported represent the amount of material in the motor oil range.

TPH as Gasoline - Soil:
Samples MW-13-15,MW-14-5, MW-12-15, MW-12-20.5 and MW-12-25 do not present a peak pattern consistent with that of gasoline. The peaks elute towards the end of the gasoline range. In our

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judgement the material appears to be a product heavier than gasoline. Due to the differences in the purging efficiency of these heavier materials the result may be variable. The reported results represent the amount of material in the gasoline range.

TPH as Gasoline - Water:
Sample BLFP-RINSE WATER does not present a peak pattern consistent with that of gasoline. The reported result represents the amount of material in the gasoline range.

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Date: 10-Dec-04
WorkOrder: 0411538

ANALYTICAL REPORT

Client Sample ID: MW-13-6 **Received:** 11/24/04 **Collected:** 11/22/04 11:40
Lab ID: 0411538-01A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	12/2/04	12/3/04
Benzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Toluene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Ethylbenzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
m,p-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
o-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Surrogate: Cis-1,2-Dichloroethylene	100	71.8-135	% Rec	1.0	12/2/04	12/3/04

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	ND	1.0	µg/g	1.0	11/29/04	11/30/04
TPHC Motor Oil	ND	10	µg/g	1.0	11/29/04	11/30/04

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas	ND	1.0	µg/g	1.0	12/2/04	12/3/04

Client Sample ID: MW-13-12 **Received:** 11/24/04 **Collected:** 11/22/04 11:55
Lab ID: 0411538-02A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	12/2/04	12/3/04
Benzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Toluene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Ethylbenzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
m,p-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
o-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Surrogate: Cis-1,2-Dichloroethylene	95.9	71.8-135	% Rec	1.0	12/2/04	12/3/04

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	ND	1.0	µg/g	1.0	11/29/04	11/30/04
TPHC Motor Oil	ND	10	µg/g	1.0	11/29/04	11/30/04

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas	ND	1.0	µg/g	1.0	12/2/04	12/3/04

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Date: 10-Dec-04
WorkOrder: 0411538

ANALYTICAL REPORT

Client Sample ID: MW-13-15 **Received:** 11/24/04 **Collected:** 11/22/04 12:10
Lab ID: 0411538-03A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	1.0	µg/g	20	12/2/04	12/3/04
Benzene	ND	0.10	µg/g	20	12/2/04	12/3/04
Toluene	ND	0.10	µg/g	20	12/2/04	12/3/04
Ethylbenzene	ND	0.50	µg/g	20	12/2/04	12/3/04
m,p-Xylene	ND	0.50	µg/g	20	12/2/04	12/3/04
o-Xylene	ND	0.50	µg/g	20	12/2/04	12/3/04
Surrogate: Cis-1,2-Dichloroethylene	110	71.8-135	% Rec	20	12/2/04	12/3/04

Test Name: TPH as Diesel/Motor Oil w/ Silica Gel Cleanup **Reference:** EPA 3550/3630/GCFID(LUFT)/8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	610	25	µg/g	25	12/1/04	12/9/04
TPHC Motor Oil	150	10	µg/g	1.0	12/1/04	12/9/04

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas	170	20	µg/g	20	12/2/04	12/3/04

Client Sample ID: MW-13-20 **Received:** 11/24/04 **Collected:** 11/22/04 12:40
Lab ID: 0411538-04A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	12/2/04	12/3/04
Benzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Toluene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Ethylbenzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
m,p-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
o-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Surrogate: Cis-1,2-Dichloroethylene	107	71.8-135	% Rec	1.0	12/2/04	12/3/04

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	ND	1.0	µg/g	1.0	11/29/04	11/30/04
TPHC Motor Oil	ND	10	µg/g	1.0	11/29/04	11/30/04

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas	ND	1.0	µg/g	1.0	12/2/04	12/3/04

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Client Sample ID: MW-13-25 **Received:** 11/24/04 **Collected:** 11/22/04 12:55
Lab ID: 0411538-05A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	12/2/04	12/3/04
Benzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Toluene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Ethylbenzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
m,p-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
o-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Surrogate: Cis-1,2-Dichloroethylene	109	71.8-135	% Rec	1.0	12/2/04	12/3/04

Test Name: TPH as Diesel/Motor Oil w/ Silica Gel Cleanup **Reference:** EPA 3550/3630/GCFID(LUFT)/8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	6.5	1.0	µg/g	1.0	12/1/04	12/9/04
TPHC Motor Oil	ND	10	µg/g	1.0	12/1/04	12/9/04

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas	ND	1.0	µg/g	1.0	12/2/04	12/3/04

Client Sample ID: MW-11-5 **Received:** 11/24/04 **Collected:** 11/22/04 15:20
Lab ID: 0411538-06A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	12/2/04	12/3/04
Benzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Toluene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Ethylbenzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
m,p-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
o-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Surrogate: Cis-1,2-Dichloroethylene	97.5	71.8-135	% Rec	1.0	12/2/04	12/3/04

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	ND	1.0	µg/g	1.0	11/29/04	11/30/04
TPHC Motor Oil	ND	10	µg/g	1.0	11/29/04	11/30/04

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas	ND	1.0	µg/g	1.0	12/2/04	12/3/04

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Client Sample ID: MW-11-10 **Received:** 11/24/04 **Collected:** 11/22/04 15:40
Lab ID: 0411538-07A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	12/2/04	12/3/04
Benzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Toluene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Ethylbenzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
m,p-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
o-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Surrogate: Cis-1,2-Dichloroethylene	103	71.8-135	% Rec	1.0	12/2/04	12/3/04

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	ND	1.0	µg/g	1.0	11/29/04	11/30/04
TPHC Motor Oil	ND	10	µg/g	1.0	11/29/04	11/30/04

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas	ND	1.0	µg/g	1.0	12/2/04	12/3/04

Client Sample ID: MW-11-15 **Received:** 11/24/04 **Collected:** 11/22/04 15:50
Lab ID: 0411538-08A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	12/2/04	12/3/04
Benzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Toluene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Ethylbenzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
m,p-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
o-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Surrogate: Cis-1,2-Dichloroethylene	102	71.8-135	% Rec	1.0	12/2/04	12/3/04

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	ND	1.0	µg/g	1.0	11/29/04	11/30/04
TPHC Motor Oil	ND	10	µg/g	1.0	11/29/04	11/30/04

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas	ND	1.0	µg/g	1.0	12/2/04	12/3/04

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Client Sample ID: MW-11-20 **Received:** 11/24/04 **Collected:** 11/22/04 16:15
Lab ID: 0411538-09A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	12/2/04	12/3/04
Benzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Toluene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Ethylbenzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
m,p-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
o-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Surrogate: Cis-1,2-Dichloroethylene	100	71.8-135	% Rec	1.0	12/2/04	12/3/04

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	ND	1.0	µg/g	1.0	11/29/04	11/30/04
TPHC Motor Oil	ND	10	µg/g	1.0	11/29/04	11/30/04

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas	ND	1.0	µg/g	1.0	12/2/04	12/3/04

Client Sample ID: MW-11-25 **Received:** 11/24/04 **Collected:** 11/22/04 16:50
Lab ID: 0411538-10A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	12/2/04	12/3/04
Benzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Toluene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Ethylbenzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
m,p-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
o-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Surrogate: Cis-1,2-Dichloroethylene	104	71.8-135	% Rec	1.0	12/2/04	12/3/04

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	ND	1.0	µg/g	1.0	11/29/04	11/30/04
TPHC Motor Oil	ND	10	µg/g	1.0	11/29/04	11/30/04

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas	ND	1.0	µg/g	1.0	12/2/04	12/3/04

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Client Sample ID: MW-14-5 **Received:** 11/24/04 **Collected:** 11/23/04 12:10
Lab ID: 0411538-11A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	12/2/04	12/6/04
Benzene	ND	0.0050	µg/g	1.0	12/2/04	12/6/04
Toluene	ND	0.0050	µg/g	1.0	12/2/04	12/6/04
Ethylbenzene	ND	0.0050	µg/g	1.0	12/2/04	12/6/04
m,p-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/6/04
o-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/6/04
Surrogate: Cis-1,2-Dichloroethylene	96.6	71.8-135	% Rec	1.0	12/2/04	12/6/04

Test Name: TPH as Diesel/Motor Oil w/ Silica Gel Cleanup **Reference:** EPA 3550/3630/GCFID(LUFT)/8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	20	1.0	µg/g	1.0	12/1/04	12/9/04
TPHC Motor Oil	ND	10	µg/g	1.0	12/1/04	12/9/04

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas	3.5	1.0	µg/g	1.0	12/2/04	12/6/04

Client Sample ID: MW-14-10 **Received:** 11/24/04 **Collected:** 11/23/04 12:40
Lab ID: 0411538-12A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	12/2/04	12/3/04
Benzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Toluene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Ethylbenzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
m,p-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
o-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Surrogate: Cis-1,2-Dichloroethylene	113	71.8-135	% Rec	1.0	12/2/04	12/3/04

Test Name: TPH as Diesel/Motor Oil w/ Silica Gel Cleanup **Reference:** EPA 3550/3630/GCFID(LUFT)/8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	1.1	1.0	µg/g	1.0	12/1/04	12/9/04
TPHC Motor Oil	ND	10	µg/g	1.0	12/1/04	12/9/04

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas	ND	1.0	µg/g	1.0	12/2/04	12/3/04

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Client Sample ID: MW-14-15.5 **Received:** 11/24/04 **Collected:** 11/23/04 13:10
Lab ID: 0411538-13A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	12/2/04	12/3/04
Benzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Toluene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Ethylbenzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
m,p-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
o-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Surrogate: Cis-1,2-Dichloroethylene	101	71.8-135	% Rec	1.0	12/2/04	12/3/04

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	ND	1.0	µg/g	1.0	11/29/04	11/30/04
TPHC Motor Oil	ND	10	µg/g	1.0	11/29/04	11/30/04

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas	ND	1.0	µg/g	1.0	12/2/04	12/3/04

Client Sample ID: MW-14-22 **Received:** 11/24/04 **Collected:** 11/23/04 13:40
Lab ID: 0411538-14A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	12/2/04	12/3/04
Benzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Toluene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Ethylbenzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
m,p-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
o-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Surrogate: Cis-1,2-Dichloroethylene	105	71.8-135	% Rec	1.0	12/2/04	12/3/04

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	ND	1.0	µg/g	1.0	11/29/04	11/30/04
TPHC Motor Oil	ND	10	µg/g	1.0	11/29/04	11/30/04

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas	ND	1.0	µg/g	1.0	12/2/04	12/3/04

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ANALYTICAL REPORT

Client Sample ID: MW-14-25 **Received:** 11/24/04 **Collected:** 11/23/04 14:10
Lab ID: 0411538-15A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	12/2/04	12/3/04
Benzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Toluene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Ethylbenzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
m,p-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
o-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Surrogate: Cis-1,2-Dichloroethylene	117	71.8-135	% Rec	1.0	12/2/04	12/3/04

Test Name: TPH as Diesel/Motor Oil w/ Silica Gel Cleanup **Reference:** EPA 3550/3630/GCFID(LUFT)/8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	3.5	1.0	µg/g	1.0	12/1/04	12/9/04
TPHC Motor Oil	ND	10	µg/g	1.0	12/1/04	12/9/04

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas	ND	1.0	µg/g	1.0	12/2/04	12/3/04

Client Sample ID: MW-12-5.5 **Received:** 11/24/04 **Collected:** 11/23/04 9:00
Lab ID: 0411538-16A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	12/2/04	12/3/04
Benzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Toluene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Ethylbenzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
m,p-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
o-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Surrogate: Cis-1,2-Dichloroethylene	102	71.8-135	% Rec	1.0	12/2/04	12/3/04

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	ND	1.0	µg/g	1.0	11/29/04	11/30/04
TPHC Motor Oil	ND	10	µg/g	1.0	11/29/04	11/30/04

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas	ND	1.0	µg/g	1.0	12/2/04	12/3/04

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Client Sample ID: MW-12-10 **Received:** 11/24/04 **Collected:** 11/23/04 9:30
Lab ID: 0411538-17A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	12/2/04	12/3/04
Benzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Toluene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Ethylbenzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
m,p-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
o-Xylene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Surrogate: Cis-1,2-Dichloroethylene	106	71.8-135	% Rec	1.0	12/2/04	12/3/04

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	ND	1.0	µg/g	1.0	11/29/04	11/30/04
TPHC Motor Oil	ND	10	µg/g	1.0	11/29/04	11/30/04

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas	ND	1.0	µg/g	1.0	12/2/04	12/3/04

Client Sample ID: MW-12-15 **Received:** 11/24/04 **Collected:** 11/23/04 9:50
Lab ID: 0411538-18A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	1.0	µg/g	20	12/2/04	12/3/04
Benzene	ND	0.10	µg/g	20	12/2/04	12/3/04
Toluene	ND	0.10	µg/g	20	12/2/04	12/3/04
Ethylbenzene	ND	0.50	µg/g	20	12/2/04	12/3/04
m,p-Xylene	ND	0.50	µg/g	20	12/2/04	12/3/04
o-Xylene	ND	0.50	µg/g	20	12/2/04	12/3/04
Surrogate: Cis-1,2-Dichloroethylene	101	71.8-135	% Rec	20	12/2/04	12/3/04

Test Name: TPH as Diesel/Motor Oil w/ Silica Gel Cleanup **Reference:** EPA 3550/3630/GCFID(LUFT)/8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	4,100	100	µg/g	100	12/1/04	12/9/04
TPHC Motor Oil	950	250	µg/g	25	12/1/04	12/9/04

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas	130	20	µg/g	20	12/2/04	12/3/04

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Date: 10-Dec-04
WorkOrder: 0411538

ANALYTICAL REPORT

Client Sample ID: MW-12-20.5 **Received:** 11/24/04 **Collected:** 11/23/04 10:15
Lab ID: 0411538-19A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	12/2/04	12/3/04
Benzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Toluene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Ethylbenzene	ND	0.010	µg/g	1.0	12/2/04	12/3/04
m,p-Xylene	ND	0.010	µg/g	1.0	12/2/04	12/3/04
o-Xylene	ND	0.010	µg/g	1.0	12/2/04	12/3/04
Surrogate: Cis-1,2-Dichloroethylene	113	71.8-135	% Rec	1.0	12/2/04	12/3/04

Test Name: TPH as Diesel/Motor Oil w/ Silica Gel Cleanup **Reference:** EPA 3550/3630/GCFID(LUFT)/8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	11	1.0	µg/g	1.0	12/1/04	12/9/04
TPHC Motor Oil	ND	10	µg/g	1.0	12/1/04	12/9/04

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas	4.0	1.0	µg/g	1.0	12/2/04	12/3/04

Client Sample ID: MW-12-25 **Received:** 11/24/04 **Collected:** 11/23/04 10:45
Lab ID: 0411538-20A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	12/2/04	12/3/04
Benzene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Toluene	ND	0.0050	µg/g	1.0	12/2/04	12/3/04
Ethylbenzene	ND	0.050	µg/g	1.0	12/2/04	12/3/04
m,p-Xylene	ND	0.050	µg/g	1.0	12/2/04	12/3/04
o-Xylene	ND	0.050	µg/g	1.0	12/2/04	12/3/04
Surrogate: Cis-1,2-Dichloroethylene	117	71.8-135	% Rec	1.0	12/2/04	12/3/04

Test Name: TPH as Diesel/Motor Oil w/ Silica Gel Cleanup **Reference:** EPA 3550/3630/GCFID(LUFT)/8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	2,700	100	µg/g	100	12/1/04	12/9/04
TPHC Motor Oil	690	100	µg/g	10	12/1/04	12/9/04

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas	8.9	1.0	µg/g	1.0	12/2/04	12/3/04

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Date: 10-Dec-04
WorkOrder: 0411538

ANALYTICAL REPORT

Client Sample ID: BLFP-RINSE WATER **Received:** 11/24/04 **Collected:** 11/23/04 9:00
Lab ID: 0411538-21A

Test Name: TPH as Diesel/Motor Oil w/ Silica Gel Cleanup **Reference:** EPA 3510/3630/GCFID(LUFT)/8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	4,200	500	µg/L	10	12/1/04	12/9/04
TPHC Motor Oil	950	170	µg/L	1.0	12/1/04	12/8/04

Client Sample ID: BLFP-RINSE WATER **Received:** 11/24/04 **Collected:** 11/23/04 9:00
Lab ID: 0411538-21B

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	3.0	µg/L	1.0		12/2/04
Benzene	ND	0.50	µg/L	1.0		12/2/04
Toluene	ND	0.50	µg/L	1.0		12/2/04
Ethylbenzene	ND	0.50	µg/L	1.0		12/2/04
m,p-Xylene	ND	0.50	µg/L	1.0		12/2/04
o-Xylene	ND	0.50	µg/L	1.0		12/2/04
Surrogate: Cis-1,2-Dichloroethylene	97.8	85-115	% Rec	1.0		12/2/04

Test Name: TPH as Gasoline **Reference:** EPA 3510/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas	100	50	µg/L	1.0		12/2/04

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Date: 10-Dec-04

CLIENT: Winzler and Kelly
Work Order: 0411538
Project: 00142803-204, BLFP-Well Installation

QC SUMMARY REPORT

Method Blank

Sample ID **MB-12564** Batch ID: **12564** Test Code: **BTXES** Units: **µg/g** Analysis Date **12/3/04 2:36:48 AM** Prep Date **12/2/04**
Client ID: Run ID: **ORGC8_041202B** SeqNo: **468323**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	ND	0.050									
Benzene	ND	0.0050									
Toluene	ND	0.0050									
Ethylbenzene	ND	0.0050									
m,p-Xylene	ND	0.0050									
o-Xylene	ND	0.0050									
Cis-1,2-Dichloroethylene	1.06	0.10	1.00	0	106%	72	135	0			

Sample ID **MB-120104** Batch ID: **R32260** Test Code: **BTXEW** Units: **µg/L** Analysis Date **12/1/04 8:46:26 PM** Prep Date
Client ID: Run ID: **ORGC8_041201B** SeqNo: **468101**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	ND	3.0									
Benzene	ND	0.50									
Toluene	ND	0.50									
Ethylbenzene	ND	0.50									
m,p-Xylene	ND	0.50									
o-Xylene	ND	0.50									
Cis-1,2-Dichloroethylene	0.903	0.10	1.00	0	90.3%	85	115	0			

Sample ID **MB-12557** Batch ID: **12557** Test Code: **SGTPDMS** Units: **µg/g** Analysis Date **12/8/04 10:10:17 PM** Prep Date **12/1/04**
Client ID: Run ID: **ORGC5_041208C** SeqNo: **468921**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel	0.8005	1.0									J
TPHC Motor Oil	ND	10									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Winzler and Kelly
Work Order: 0411538
Project: 00142803-204, BLFP-Well Installation

QC SUMMARY REPORT
Method Blank

Sample ID **MB-12561** Batch ID: **12561** Test Code: **SGTPDMW** Units: **µg/L** Analysis Date **12/8/04 9:39:02 PM** Prep Date **12/1/04**
Client ID: Run ID: **ORGC5_041208B** SeqNo: **468913**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel	43.19	50									J
TPHC Motor Oil	ND	170									

Sample ID **MB-12564** Batch ID: **12564** Test Code: **TPHCGS** Units: **µg/g** Analysis Date **12/3/04 2:36:48 AM** Prep Date **12/2/04**
Client ID: Run ID: **ORGC8_041202A** SeqNo: **468281**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas	0.3784	1.0									J

Sample ID **MB-120104** Batch ID: **R32253** Test Code: **TPHCGW** Units: **µg/L** Analysis Date **12/1/04 8:46:26 PM** Prep Date
Client ID: Run ID: **ORGC8_041201A** SeqNo: **468011**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas	ND	50									

Sample ID **MB-12543** Batch ID: **12543** Test Code: **TPHDMS** Units: **µg/g** Analysis Date **11/30/04 2:08:00 PM** Prep Date **11/29/04**
Client ID: Run ID: **ORGC7_041130A** SeqNo: **467176**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel	0.6580	1.0									J
TPHC Motor Oil	ND	10									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

North Coast Laboratories, Ltd.

Date: 10-Dec-04

CLIENT: Winzler and Kelly
Work Order: 0411538
Project: 00142803-204, BLFP-Well Installation

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID **LCS-12564** Batch ID: **12564** Test Code: **BTXES** Units: **µg/g** Analysis Date **12/2/04 10:39:01 PM** Prep Date **12/2/04**
Client ID: Run ID: **ORGC8_041202B** SeqNo: **468320**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	0.3929	0.050	0.400	0	98.2%	75	124	0			
Benzene	0.05309	0.0050	0.0500	0	106%	80	128	0			
Toluene	0.05546	0.0050	0.0500	0	111%	85	126	0			
Ethylbenzene	0.05299	0.0050	0.0500	0	106%	80	126	0			
m,p-Xylene	0.1047	0.0050	0.100	0	105%	84	130	0			
o-Xylene	0.05084	0.0050	0.0500	0	102%	84	125	0			
Cis-1,2-Dichloroethylene	1.14	0.10	1.00	0	114%	72	135	0			

Sample ID **LCSD-12564** Batch ID: **12564** Test Code: **BTXES** Units: **µg/g** Analysis Date **12/2/04 11:13:03 PM** Prep Date **12/2/04**
Client ID: Run ID: **ORGC8_041202B** SeqNo: **468321**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	0.3838	0.050	0.400	0	96.0%	75	124	0.393	2.33%	15	
Benzene	0.05160	0.0050	0.0500	0	103%	80	128	0.0531	2.83%	15	
Toluene	0.05307	0.0050	0.0500	0	106%	85	126	0.0555	4.39%	15	
Ethylbenzene	0.05149	0.0050	0.0500	0	103%	80	126	0.0530	2.87%	15	
m,p-Xylene	0.1008	0.0050	0.100	0	101%	84	130	0.105	3.81%	15	
o-Xylene	0.04917	0.0050	0.0500	0	98.3%	84	125	0.0508	3.34%	15	
Cis-1,2-Dichloroethylene	1.10	0.10	1.00	0	110%	72	135	1.14	3.28%	15	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Winzler and Kelly
Work Order: 0411538
Project: 00142803-204, BLFP-Well Installation

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID **LCS-04709** Batch ID: **R32260** Test Code: **BTXEW** Units: **µg/L** Analysis Date **12/1/04 5:54:11 PM** Prep Date
Client ID: Run ID: **ORGC8_041201B** SeqNo: **468099**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	41.43	3.0	40.0	0	104%	85	115	0			
Benzene	5.256	0.50	5.00	0	105%	85	115	0			
Toluene	5.315	0.50	5.00	0	106%	85	115	0			
Ethylbenzene	5.283	0.50	5.00	0	106%	85	115	0			
m,p-Xylene	10.48	0.50	10.0	0	105%	85	115	0			
o-Xylene	5.258	0.50	5.00	0	105%	85	115	0			
Cis-1,2-Dichloroethylene	1.08	0.10	1.00	0	108%	85	115	0			

Sample ID **LCSD-04709** Batch ID: **R32260** Test Code: **BTXEW** Units: **µg/L** Analysis Date **12/2/04 3:35:01 AM** Prep Date
Client ID: Run ID: **ORGC8_041201B** SeqNo: **468110**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	33.45	3.0	40.0	0	83.6%	85	115	41.4	21.3%	15	SR
Benzene	5.022	0.50	5.00	0	100%	85	115	5.26	4.55%	15	
Toluene	4.988	0.50	5.00	0	99.8%	85	115	5.32	6.36%	15	
Ethylbenzene	5.006	0.50	5.00	0	100%	85	115	5.28	5.39%	15	
m,p-Xylene	9.943	0.50	10.0	0	99.4%	85	115	10.5	5.28%	15	
o-Xylene	4.894	0.50	5.00	0	97.9%	85	115	5.26	7.18%	15	
Cis-1,2-Dichloroethylene	1.02	0.10	1.00	0	102%	85	115	1.08	5.87%	15	

Sample ID **LCS-12557** Batch ID: **12557** Test Code: **SGTPDMS** Units: **µg/g** Analysis Date **12/8/04 7:02:47 PM** Prep Date **12/1/04**
Client ID: Run ID: **ORGC5_041208C** SeqNo: **468919**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel	7.021	1.0	10.0	0	70.2%	27	118	0			
TPHC Motor Oil	12.59	10	20.0	0	63.0%	38	117	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Winzler and Kelly
Work Order: 0411538
Project: 00142803-204, BLFP-Well Installation

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Sample ID **LCSD-12557** Batch ID: **12557** Test Code: **SGTPDMS** Units: **µg/g** Analysis Date **12/8/04 7:34:05 PM** Prep Date **12/1/04**
Client ID: Run ID: **ORGC5_041208C** SeqNo: **468920**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel	6.597	1.0	10.0	0	66.0%	27	118	7.02	6.22%	15	
TPHC Motor Oil	12.22	10	20.0	0	61.1%	38	117	12.6	2.99%	15	

Sample ID **LCS-12561** Batch ID: **12561** Test Code: **SGTPDMW** Units: **µg/L** Analysis Date **12/8/04 6:31:38 PM** Prep Date **12/1/04**
Client ID: Run ID: **ORGC5_041208B** SeqNo: **468912**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel	437.9	50	500	0	87.6%	42	96	0			
TPHC Motor Oil	594.6	170	1,000	0	59.5%	52	103	0			

Sample ID **LCS-12564-G** Batch ID: **12564** Test Code: **TPHCGS** Units: **µg/g** Analysis Date **12/3/04 12:21:03 AM** Prep Date **12/2/04**
Client ID: Run ID: **ORGC8_041202A** SeqNo: **468278**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas	9.991	1.0	10.0	0	99.9%	94	140	0			

Sample ID **LCSD-12564-G** Batch ID: **12564** Test Code: **TPHCGS** Units: **µg/g** Analysis Date **12/3/04 12:55:00 AM** Prep Date **12/2/04**
Client ID: Run ID: **ORGC8_041202A** SeqNo: **468279**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas	10.61	1.0	10.0	0	106%	94	140	9.99	6.05%	15	

Sample ID **LCS-04710** Batch ID: **R32253** Test Code: **TPHCGW** Units: **µg/L** Analysis Date **12/1/04 7:03:24 PM** Prep Date
Client ID: Run ID: **ORGC8_041201A** SeqNo: **468009**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas	491.2	50	500	0	98.2%	81	126	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Winzler and Kelly
Work Order: 0411538
Project: 00142803-204, BLFP-Well Installation

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID **LCSD-04710** Batch ID: **R32253** Test Code: **TPHCGW** Units: **µg/L** Analysis Date **12/2/04 4:08:49 AM** Prep Date
Client ID: Run ID: **ORGC8_041201A** SeqNo: **468019**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas	481.4	50	500	0	96.3%	81	126	491	2.01%	15	

Sample ID **LCS-12543** Batch ID: **12543** Test Code: **TPHDMS** Units: **µg/g** Analysis Date **11/30/04 12:17:53 PM** Prep Date **11/29/04**
Client ID: Run ID: **ORGC7_041130A** SeqNo: **467173**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel	9.693	1.0	10.0	0	96.9%	85	153	0			
TPHC Motor Oil	24.07	10	20.0	0	120%	76	133	0			

Sample ID **LCSD-12543** Batch ID: **12543** Test Code: **TPHDMS** Units: **µg/g** Analysis Date **11/30/04 12:36:08 PM** Prep Date **11/29/04**
Client ID: Run ID: **ORGC7_041130A** SeqNo: **467174**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel	9.783	1.0	10.0	0	97.8%	85	153	9.69	0.929%	15	
TPHC Motor Oil	23.46	10	20.0	0	117%	76	133	24.1	2.58%	15	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

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Chain of Custody

0411538

LABORATORY NUMBER:

Attention: Colleen Ellis
Results & Invoice to: Winzler & Kelly
Address:
Phone:
Copies of Report to:
Sampler (Sign & Print): Colleen Ellis

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION

Project Number:
Project Name:
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	ANALYSIS: GIBTEX/MO	ANALYSIS: Diesel silica gel	CONTAINER	PRESERVATIVE
	MW-13-6	11/22/04	11:40	SOIL	X	X		
	MW-13-12	↓	11:55	↓	X	X		
	MW-13-15	↓	12:10	↓	X	X		
	MW-13-20	↓	12:40	↓	X	X		
	MW-13-25	↓	12:55	↓	X	X		
	MW-11-5	↓	3:20	↓	X	X		
	MW-11-10	↓	3:40	↓	X	X		
	MW-11-~~15~~ 15	↓	3:50	↓	X	X		
	MW-11-20	↓	4:15	↓	X	X		
	MW-11-25	↓	4:50	↓	X	X		

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

geotracker

Cold, intact

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Colleen Ellis	11/24/04	K. Thompson	11/24/04 1100
	10:20		
	11:00		

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 0411538

Attention: Colleen Ellis
Results & Invoice to: Winzler & Kelly
Address:
Phone:
Copies of Report to:
Sampler (Sign & Print): Colleen Ellis

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION

Project Number: 00142803 – 204
Project Name: BLFP – well installation
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: Gilbert/MO	ANALYSIS: Discord silva (NE)
	MW-14-5	11/24	12:10	SOIL		13	X	X
	MW-14-10	11/24/04	12:40			13	X	X
	MW-14-15.5		1:10				X	X
	MW-14-22		1:40				X	X
	MW-14-25		2:10				X	X
	MW-12-5.5		9:00				X	X
	MW-12-10		9:30				X	X
	MW-12-15		9:50				X	X
	~~MW-12-20~~ MW-12-20.5		10:15				X	X
	MW-12-25		10:45				X	X

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Colleen Ellis	11/24/04 11:00	[illegible]	11/24/04 1100

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

*MATRIX: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

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Chain of Custody

0411538

LABORATORY NUMBER:

Attention: Colleen Ellis
Results & Invoice to: Winzler & Kelly
Address:
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Copies of Report to:
Sampler (Sign & Print): Colleen Ellis

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION

Project Number:
Project Name:
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	ANALYSIS	CONTAINER	PRESERVATIVE
	BLFP-Rinse water	11/24/04 23	9:00	water	G/BTEX/MO D-silica gel		

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Colleen Ellis	11/24/04 11:00	[signature]	11/24/04 1100

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.

December 17, 2004

Winzler and Kelly
633 Third Street
Eureka, CA 95501

Attn: Colleen Ellis

RE: 00142803 204, BLFP

Order No.: 0412051
Invoice No.: 46856
PO No.:

ELAP No. 1247-Expires July 2006

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	MW-11
01B	MW-11
01C	MW-11
02A	MW-12
02B	MW-12
02C	MW-12
03A	MW-13
03B	MW-13
03C	MW-13
04A	MW-14
04B	MW-14
04C	MW-14

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

All solid results are expressed on a wet-weight basis unless otherwise noted.

RECEIVED
DEC 20 2004
WK - EUREKA

REPORT CERTIFIED BY

Laboratory Supervisor(s) | QA Unit | Jesse G. Chaney, Jr. Laboratory Director

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Printed on Recycled Paper

North Coast Laboratories, Ltd. **Date:** *17-Dec-04*

CLIENT: Winzler and Kelly
Project: 00142803 204, BLFP
Lab Order: 0412051

CASE NARRATIVE

All samples submitted for a silica gel cleanup were initially analyzed for diesel. The samples showing no detectable levels of the analyte were not subjected to the cleanup procedure.

Dissolved Lead:
The samples were sub-contracted for the dissolved lead analyses to another certified laboratory.

TPH as Diesel with Silica Gel Cleanup:
Sample MW-12 and MW-13 contains material similar to degraded or weathered diesel oil.

TPH as Diesel:
The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recoveries were above the upper acceptance limit for diesel. These recoveries indicate that the sample results may be erroneously high. There were no detectable levels of the analyte in the samples; therefore, the data were accepted.

Gasoline Componets/Additives:
Samples MW-12 and MW-13 do not present a peak pattern consistent with that of gasoline. The peaks elute towards the end of the gasoline range. In our judgement the material appears to be a product heavier than gasoline. Due to the differences in the purging efficiency of these heavier materials the result may be variable. The reported results represent the amount of material in the gasoline range.

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Date: 17-Dec-04
WorkOrder: 0412051

ANALYTICAL REPORT

Client Sample ID: MW-11 **Received:** 12/2/04 **Collected:** 12/1/04 13:50
Lab ID: 0412051-01A

Test Name: TPH as Diesel **Reference:** EPA 3510/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	ND	50	µg/L	1.0	12/9/04	12/10/04
Surrogate: N-Tricosane	79.0	27.6-107	% Rec	1.0	12/9/04	12/10/04

Client Sample ID: MW-11 **Received:** 12/2/04 **Collected:** 12/1/04 13:50
Lab ID: 0412051-01C

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1.0		12/9/04
Tert-butyl alcohol (TBA)	ND	10	µg/L	1.0		12/9/04
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		12/9/04
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		12/9/04
Benzene	ND	0.50	µg/L	1.0		12/9/04
Tert-amyl methyl ether (TAME)	ND	1.0	µg/L	1.0		12/9/04
Toluene	ND	0.50	µg/L	1.0		12/9/04
Ethylbenzene	ND	0.50	µg/L	1.0		12/9/04
m,p-Xylene	ND	0.50	µg/L	1.0		12/9/04
o-Xylene	ND	0.50	µg/L	1.0		12/9/04
Surrogate: 1,4-Dichlorobenzene-d4	96.6	80.8-139	% Rec	1.0		12/9/04

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	ND	50	µg/L	1.0		12/9/04

Client Sample ID: MW-12 **Received:** 12/2/04 **Collected:** 12/2/04 11:00
Lab ID: 0412051-02A

Test Name: TPH as Diesel with Silica Gel Cleanup **Reference:** EPA 3510/3630/GCFID(LUFT)/8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	5,700	50	µg/L	1.0	12/10/04	12/13/04
Surrogate: N-Tricosane	65.8	34-145	% Rec	1.0	12/10/04	12/13/04

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Date: 17-Dec-04
WorkOrder: 0412051

ANALYTICAL REPORT

Client Sample ID: MW-12 **Received:** 12/2/04 **Collected:** 12/2/04 11:00
Lab ID: 0412051-02C

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1.0		12/9/04
Tert-butyl alcohol (TBA)	ND	10	µg/L	1.0		12/9/04
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		12/9/04
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		12/9/04
Benzene	ND	0.50	µg/L	1.0		12/9/04
Tert-amyl methyl ether (TAME)	ND	1.0	µg/L	1.0		12/9/04
Toluene	ND	0.50	µg/L	1.0		12/9/04
Ethylbenzene	ND	0.50	µg/L	1.0		12/9/04
m,p-Xylene	ND	0.50	µg/L	1.0		12/9/04
o-Xylene	ND	0.50	µg/L	1.0		12/9/04
Surrogate: 1,4-Dichlorobenzene-d4	95.0	80.8-139	% Rec	1.0		12/9/04

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	280	50	µg/L	1.0		12/9/04

Client Sample ID: MW-13 **Received:** 12/2/04 **Collected:** 12/2/04 11:40
Lab ID: 0412051-03A

Test Name: TPH as Diesel with Silica Gel Cleanup **Reference:** EPA 3510/3630/GCFID(LUFT)/8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	580	50	µg/L	1.0	12/10/04	12/13/04
Surrogate: N-Tricosane	66.5	34-145	% Rec	1.0	12/10/04	12/13/04

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Date: 17-Dec-04
WorkOrder: 0412051

ANALYTICAL REPORT

Client Sample ID: MW-13 **Received:** 12/2/04 **Collected:** 12/2/04 11:40
Lab ID: 0412051-03C

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1.0		12/9/04
Tert-butyl alcohol (TBA)	ND	10	µg/L	1.0		12/9/04
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		12/9/04
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		12/9/04
Benzene	ND	0.50	µg/L	1.0		12/9/04
Tert-amyl methyl ether (TAME)	ND	1.0	µg/L	1.0		12/9/04
Toluene	ND	0.50	µg/L	1.0		12/9/04
Ethylbenzene	ND	0.50	µg/L	1.0		12/9/04
m,p-Xylene	ND	0.50	µg/L	1.0		12/9/04
o-Xylene	ND	0.50	µg/L	1.0		12/9/04
Surrogate: 1,4-Dichlorobenzene-d4	96.4	80.8-139	% Rec	1.0		12/9/04

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	220	50	µg/L	1.0		12/9/04

Client Sample ID: MW-14 **Received:** 12/2/04 **Collected:** 12/2/04 14:15
Lab ID: 0412051-04A

Test Name: TPH as Diesel **Reference:** EPA 3510/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel	ND	50	µg/L	1.0	12/9/04	12/10/04
Surrogate: N-Tricosane	73.9	27.6-107	% Rec	1.0	12/9/04	12/10/04

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Date: 17-Dec-04
WorkOrder: 0412051

ANALYTICAL REPORT

Client Sample ID: MW-14
Lab ID: 0412051-04C

Received: 12/2/04 **Collected:** 12/2/04 14:15

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1.0		12/9/04
Tert-butyl alcohol (TBA)	ND	10	µg/L	1.0		12/9/04
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		12/9/04
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		12/9/04
Benzene	ND	0.50	µg/L	1.0		12/9/04
Tert-amyl methyl ether (TAME)	ND	1.0	µg/L	1.0		12/9/04
Toluene	ND	0.50	µg/L	1.0		12/9/04
Ethylbenzene	ND	0.50	µg/L	1.0		12/9/04
m,p-Xylene	ND	0.50	µg/L	1.0		12/9/04
o-Xylene	ND	0.50	µg/L	1.0		12/9/04
Surrogate: 1,4-Dichlorobenzene-d4	98.1	80.8-139	% Rec	1.0		12/9/04

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	ND	50	µg/L	1.0		12/9/04

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North Coast Laboratories, Ltd.

Date: 17-Dec-04

CLIENT: Winzler and Kelly
Work Order: 0412051
Project: 00142803 204, BLFP

QC SUMMARY REPORT

Method Blank

Sample ID **MB 120804** Batch ID: **R32324** Test Code: **8260OXYW** Units: **µg/L** Analysis Date **12/9/04 9:07:00 AM** Prep Date
Client ID: Run ID: **ORGCMS3_041209A** SeqNo: **469018**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	1.0									
Tert-butyl alcohol (TBA)	ND	10									
Di-isopropyl ether (DIPE)	ND	1.0									
Ethyl tert-butyl ether (ETBE)	ND	1.0									
Benzene	0.1311	0.50									J
Tert-amyl methyl ether (TAME)	ND	1.0									
Toluene	ND	0.50									
Ethylbenzene	0.2224	0.50									J
m,p-Xylene	ND	0.50									
o-Xylene	0.1734	0.50									J
1,4-Dichlorobenzene-d4	0.861	0.10	1.00	0	86.1%	81	139	0			

Sample ID **MB 120804** Batch ID: **R32328** Test Code: **GASW-MS** Units: **µg/L** Analysis Date **12/9/04 9:07:00 AM** Prep Date
Client ID: Run ID: **ORGCMS3_041209B** SeqNo: **469088**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	32.69	50									J

Sample ID **MB-12616** Batch ID: **12616** Test Code: **SGTPHDW** Units: **µg/L** Analysis Date **12/13/04 11:34:08 AM** Prep Date **12/10/04**
Client ID: Run ID: **ORGC5_041213A** SeqNo: **469683**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel	ND	50									
N-Tricosane	33.9	0.10	50.0	0	67.8%	34	145	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Winzler and Kelly
Work Order: 0412051
Project: 00142803 204, BLFP

QC SUMMARY REPORT

Method Blank

Sample ID **MB-12610** Batch ID: **12610** Test Code: **TPHDIW** Units: **µg/L** Analysis Date **12/10/04 6:38:47 AM** Prep Date **12/9/04**

Client ID: Run ID: **ORGC7_041210A** SeqNo: **469315**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel	ND	50									
N-Tricosane	45.7	0.10	50.0	0	91.3%	28	107	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

North Coast Laboratories, Ltd.

Date: 17-Dec-04

CLIENT: Winzler and Kelly
Work Order: 0412051
Project: 00142803 204, BLFP

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID **LCS-04723** Batch ID: **R32324** Test Code: **8260OXYW** Units: **µg/L** Analysis Date **12/8/04 12:47:00 PM** Prep Date
Client ID: Run ID: **ORGCMS3_041209A** SeqNo: **469015**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	19.56	1.0	20.0	0	97.8%	80	120	0			
Tert-butyl alcohol (TBA)	271.3	10	400	0	67.8%	25	162	0			
Di-isopropyl ether (DIPE)	18.94	1.0	20.0	0	94.7%	80	120	0			
Ethyl tert-butyl ether (ETBE)	19.80	1.0	20.0	0	99.0%	77	120	0			
Benzene	19.75	0.50	20.0	0	98.7%	78	117	0			
Tert-amyl methyl ether (TAME)	18.10	1.0	20.0	0	90.5%	64	136	0			
Toluene	19.48	0.50	20.0	0	97.4%	80	120	0			
Ethylbenzene	18.53	0.50	20.0	0	92.7%	80	120	0			
m,p-Xylene	40.43	0.50	40.0	0	101%	80	120	0			
o-Xylene	19.56	0.50	20.0	0	97.8%	80	120	0			
1,4-Dichlorobenzene-d4	1.00	0.10	1.00	0	100%	81	139	0			

Sample ID **LCSD-04723** Batch ID: **R32324** Test Code: **8260OXYW** Units: **µg/L** Analysis Date **12/8/04 1:12:00 AM** Prep Date
Client ID: Run ID: **ORGCMS3_041209A** SeqNo: **469016**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	19.70	1.0	20.0	0	98.5%	80	120	19.6	0.723%	20	
Tert-butyl alcohol (TBA)	279.8	10	400	0	70.0%	25	162	271	3.09%	20	
Di-isopropyl ether (DIPE)	18.87	1.0	20.0	0	94.3%	80	120	18.9	0.388%	20	
Ethyl tert-butyl ether (ETBE)	19.78	1.0	20.0	0	98.9%	77	120	19.8	0.110%	20	
Benzene	19.49	0.50	20.0	0	97.4%	78	117	19.8	1.33%	20	
Tert-amyl methyl ether (TAME)	18.36	1.0	20.0	0	91.8%	64	136	18.1	1.41%	20	
Toluene	19.26	0.50	20.0	0	96.3%	80	120	19.5	1.14%	20	
Ethylbenzene	18.20	0.50	20.0	0	91.0%	80	120	18.5	1.82%	20	
m,p-Xylene	39.89	0.50	40.0	0	99.7%	80	120	40.4	1.34%	20	
o-Xylene	19.36	0.50	20.0	0	96.8%	80	120	19.6	1.06%	20	
1,4-Dichlorobenzene-d4	1.00	0.10	1.00	0	100%	81	139	1.00	0.175%	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Winzler and Kelly
Work Order: 0412051
Project: 00142803 204, BLFP

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID **LCS-04724** Batch ID: **R32328** Test Code: **GASW-MS** Units: **µg/L** Analysis Date **12/8/04 2:28:00 AM** Prep Date
Client ID: Run ID: **ORGCMS3_041209B** SeqNo: **469085**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	994.5	50	1,000	0	99.5%	80	120	0			

Sample ID **LCSD-04724** Batch ID: **R32328** Test Code: **GASW-MS** Units: **µg/L** Analysis Date **12/8/04 2:53:00 AM** Prep Date
Client ID: Run ID: **ORGCMS3_041209B** SeqNo: **469086**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	971.0	50	1,000	0	97.1%	80	120	994	2.39%	20	

Sample ID **LCS-12616** Batch ID: **12616** Test Code: **SGTPHDW** Units: **µg/L** Analysis Date **12/13/04 10:09:45 AM** Prep Date **12/10/04**
Client ID: Run ID: **ORGC5_041213A** SeqNo: **469681**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel	355.2	50	500	0	71.0%	33	92	0			
N-Tricosane	38.7	0.10	50.0	0	77.3%	34	145	0			

Sample ID **LCSD-12616** Batch ID: **12616** Test Code: **SGTPHDW** Units: **µg/L** Analysis Date **12/13/04 10:38:02 AM** Prep Date **12/10/04**
Client ID: Run ID: **ORGC5_041213A** SeqNo: **469682**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel	380.9	50	500	0	76.2%	33	92	355	7.00%	13	
N-Tricosane	40.7	0.10	50.0	0	81.4%	34	145	38.7	5.08%	11	

Sample ID **LCS-12610** Batch ID: **12610** Test Code: **TPHDIW** Units: **µg/L** Analysis Date **12/10/04 5:05:56 AM** Prep Date **12/9/04**
Client ID: Run ID: **ORGC7_041210A** SeqNo: **469312**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel	632.6	50	500	0	127%	80	120	0			S
N-Tricosane	48.4	0.10	50.0	0	96.7%	28	107	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Winzler and Kelly
Work Order: 0412051
Project: 00142803 204, BLFP

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Sample ID **LCSD-12610** Batch ID: **12610** Test Code: **TPHDIW** Units: **µg/L** Analysis Date **12/10/04 5:24:33 AM** Prep Date **12/9/04**
Client ID: Run ID: **ORGC7_041210A** SeqNo: **469313**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel	640.8	50	500	0	128%	80	120	633	1.29%	15	S
N-Tricosane	49.6	0.10	50.0	0	99.2%	28	107	48.4	2.55%	15	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 041251

Attention: Colleen Ellis
Results & Invoice to: Winzler & Kelly
Address: 633 Third St.
Eureka, CA
Phone: (707) 443-8326
Copies of Report to:
Sampler: Holly Vaduvro Holly Vaduvro
Sampler (Sign & Print): Colleen Ellis colleen ellis

PROJECT INFORMATION
Project Number: 00142803 204
Project Name: BLFP
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	ANALYSIS	CONTAINER	PRESERVATIVE
	MW-11	12/1/04	1350	H_2O	TPH-D Silica Gel	1 liter amber	HCl
	MW-12	12/2/04	1100				
	MW-13	12/2/04	1140				
	MW-14	12/2/04	1415				
	QCTB	12/2/04	14:40				
					Metals Dissolved	1 pt poly	HNO3

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☑ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
Please submit in Geotracker format
Global ID #:
—will call it in later

TPH-D Silica Gel only if detected

Evidence of cooling – Sample Temp. = 6.0C

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Colleen Ellis	12/2/04 14:55	Amanda Bouck 12/2/04	14:55

SAMPLE DISPOSAL
☑ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.

___ URGENT
✓ PRIORITY
___ ROUTINE

FACSIMILE TRANSMISSION

DATE 12/23/04

TO:
NAME: Wenzlick & Kelly
LOCATION:

ATTN: Colleen Ellis
FAX:
PHONE:

FROM:
NAME: NORTH COAST LABORATORIES
LOCATION: 5680 WEST END RD
ARCATA, CA 95521-9202
FROM: Jonna
FAX: (707) 822-6831
PHONE: (707) 822-4649

Total number of pages including cover sheet 6

If you have any problems receiving this message,
please call our telephone number above.

INSTRUCTIONS/MESSAGE:

head results for 00142803 204, BLFP

IMPORTANT NOTE

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BSK ANALYTICAL LABORATORIES

Loretta Tomlin
North Coast Laboratories
5620 West End Rd.
Arcata, CA 95521

Certificate of Analysis

ELAP Certificate #1180

Report Issue Date: 12/23/2004

BSK Submission #: 2004121198
BSK Sample ID #: 530956

Project ID: Project Desc:
Submission Comments:
Sample Type: Liquid
Sample Description: 0412051-01B, MW-11 Dissolved
Sample Comments:

Date Sampled: 12/01/2004
Time Sampled: 1350
Date Received: 12/16/2004

Inorganics

Analyte	Method	Result	Units	PQL	Dilution	DLR	Prep Date	Analysis Date
Lead (Pb)	EPA 200.8	ND	µg/L	5	1	5	12/20/2004	12/21/2004

mg/L: Milligrams/Liter (ppm)
mg/Kg: Milligrams/Kilogram (ppm)
µg/L: Micrograms/Liter (ppb)
µg/Kg: Micrograms/Kilogram (ppb)
%Rec: Percent Recovered (surrogates)

PQL: Practical Quantitation Limit
DLR: Detection Limit for Reporting : PQL x Dilution
ND: None Detected at DLR

H: Analyzed outside of hold time
P: Preliminary result
S: Suspect result. See Case Narrative for comments.
E: Analysis performed by External laboratory. See External Laboratory Report attachments.

Report Authentication Code:

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, in CA 800-877-8310 Fax 559-485-6935

BSK ANALYTICAL LABORATORIES

Loretta Tomlin
North Coast Laboratories
5620 West End Rd.
Arcata, CA 95521

Certificate of Analysis

ELAP Certificate #1180

Report Issue Date: 12/23/2004

BSK Submission #: 2004121198
BSK Sample ID #: 530957
Project ID: Project Desc:
Submission Comments:
Sample Type Liquid
Sample Description 0412051-02B, MW-12 Dissolved
Sample Comments:

Date Sampled: 12/02/2004
Time Sampled: 1100
Date Received: 12/16/2004

Inorganics

Analyte	Method	Result	Units	PQL	Dilution	DLR	Prep Date	Analysis Date
Lead (Pb)	EPA 200.8	ND	µg/L	5	1	5	12/20/2004	12/21/2004

mg/L: Milligrams/Liter (ppm)
mg/Kg: Milligrams/Kilogram (ppm)
µg/L: Micrograms/Liter (ppb)
µg/Kg: Micrograms/Kilogram (ppb)
%Rec: Percent Recovered (surrogates)

PQL: Practical Quantitation Limit
DLR: Detection Limit for Reporting : PQL x Dilution
ND: None Detected at DLR

H: Analyzed outside of hold time
P: Preliminary result
S: Suspect result. See Case Narrative for comments.
E: Analysis performed by External laboratory. See External Laboratory Report attachments.

Report Authentication Code:

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

BSK ANALYTICAL LABORATORIES

Loretta Tomlin
North Coast Laboratories
5620 West End Rd.
Arcata, CA 95521

Certificate of Analysis

ELAP Certificate #1180

Report Issue Date: 12/23/2004

BSK Submission #: 2004121198
BSK Sample ID #: 530958

Project ID: Project Desc:
Submission Comments:
Sample Type: Liquid
Sample Description: 0412051-03B, MW-13 Dissolved
Sample Comments:

Date Sampled: 12/02/2004
Time Sampled: 1140
Date Received: 12/16/2004

Inorganics

Analyte	Method	Result	Units	PQL	Dilution	DLR	Prep Date	Analysis Date
Lead (Pb)	EPA 200.8	ND	µg/L	5	1	5	12/20/2004	12/21/2004

mg/L: Milligrams/Liter (ppm)
mg/Kg: Milligrams/Kilogram (ppm)
µg/L: Micrograms/Liter (ppb)
µg/Kg: Micrograms/Kilogram (ppb)
%Rec. Percent Recovered (surrogates)

PQL: Practical Quantitation Limit
DLR: Detection Limit for Reporting : PQL x Dilution
ND: None Detected at DLR

H: Analyzed outside of hold time
P: Preliminary result
S: Suspect result. See Case Narrative for comments.
E: Analysis performed by External laboratory. See External Laboratory Report attachments.

Report Authentication Code:

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

BSK ANALYTICAL LABORATORIES

Loretta Tomlin
North Coast Laboratories
5620 West End Rd.
Arcata, CA 95521

Certificate of Analysis

ELAP Certificate #1180

Report Issue Date: 12/23/2004

BSK Submission #: 2004121198
BSK Sample ID #: 530959

Project ID: Project Desc:
Submission Comments:
Sample Type: Liquid
Sample Description: 0412051-04B, MW-14 Dissolved
Sample Comments:

Date Sampled: 12/02/2004
Time Sampled: 1415
Date Received: 12/16/2004

Inorganics

Analyte	Method	Result	Units	PQL	Dilution	DLR	Prep Date	Analysis Date
Lead (Pb)	EPA 200.8	ND	µg/L	5	1	5	12/20/2004	12/21/2004

mg/L: Milligrams/Liter (ppm)
mg/Kg: Milligrams/Kilogram (ppm)
µg/L: Micrograms/Liter (ppb)
µg/Kg: Micrograms/Kilogram (ppb)
%Rec: Percent Recovered (surrogates)

PQL: Practical Quantitation Limit
DLR: Detection Limit for Reporting : PQL x Dilution
ND: None Detected at DLR

H: Analyzed outside of hold time
P: Preliminary result
S: Suspect result. See Case Narrative for comments.
E: Analysis performed by External laboratory. See External Laboratory Report attachments.

Report Authorization Code:

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

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5680 West End Road · Arcata · CA 95521-9202
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Chain of Custody

P. 1 of 1

LABORATORY NUMBER: 04/2051

Attention: Colleen Ellis
Results & Invoice to: Winzler & Kelly
Address: 633 Third St.
Eureka, CA
Phone: (707) 443-8326
Copies of Report to:
Sampler: Holly Vadurro Holly Vadurro
Sampler (Sign & Print): Colleen Ellis Colleen Ellis

PROJECT INFORMATION
Project Number: 00142803 204
Project Name: BLFP
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*
	MW-11	12/1/04	1350	H_2O
	MW-12	12/2/04	1100	
	MW-13	12/2/04	1140	
	MW-14	12/2/04	1415	
	QCTB	12/2/04	14:40	

ANALYSIS	CONTAINER	PRESERVATIVE
TPH-D w/Silica	1 Lamber	HCl
BTEX, 5 days	9	
Dissolved Pb	2	

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5-7 Day
☑ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: / /
Final Report: FAX ☐ Verbal ☐ By: / /

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
Please submit in Geotracker format.
Global ID #:
- will call it in later

TPH-D Silica Gel only if detected

Evidence of cooling - Sample Temp. = 6.0°C

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Colleen Ellis	12/04/04 14:55	Amanda Bout 12/2/04	14:55

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

Appendix D
Field Notes and Boring Logs

BORING LOG

PROJ. NAME: BLUE LAKE FOREST PRODUCTS		PROJECT NO.: 00142803.204	Sheet 1 of 1
METHOD OF DRILL: HOLLOW STEM AUGER		LOCATION: BLFP	
SAMPLER: SPLIT SPOON	OD: 2.0" ID: 1.5"	LOGGED BY: C. ELLIS	BORING #: MW-11
BORING DIAMETER: 9.0"		DATE STARTED: 11/22/04	TIME: 3:15 PM
DRILLING CO.: DIAMOND CORE DRILLING		DATE COMPLETED: 11/22/04	TIME: 5:00 PM
C57 LIC. #: 512406		TOTAL DEPTH OF BORING: 25.0 ft.	
DRILLER: JEREMY & JOHN		DEPTH TO GROUNDWATER: 14.0 ft.	
HAMMER WGT.: 120 lbs.	HAMMER DROP: 30 inches	SURFACE CONDITIONS: CONCRETE	

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
						6" CONCRETE.						FLUSH MOUNTED TRAFFIC BOX W/ LOCKING WELL CAP
1–2					CL	SILTY CLAY.	2.5Y 5/6	DRY	LOOSE/SOFT			CEMENT GROUT 0.0'-3.0'
3–4					GC	CLAYEY, PEBBLE/SILT/SAND						2" BLANK PVC WELL CASING 0.0'-5.0'
5		X	21	MW-11-5						0.5		BENTONITE SEAL 3.0'-4.0'
6		X	31									
		X	39									
7–9					GC	GRAVEL, POORLY SORTED, SUBROUNDED, 20% CLAY						
10		X	21	MW-11-10			2.5Y 4/4	MOIST	SOFT	0.6		
11		X	31			CLAYEY SANDY GRAVEL W/ SUBROUNDED, & FRACTURED PEBBLES/COBBLES						
		X	28									
12–13					CL							
14								WET	SOFT			GROUNDWATER @ 14.0' bgs
					GC							
15		X	10	MW-11-15		CLAY; 15% SILT, FRACTURED GRAVELS	2.5Y 5/6	MOIST	HARD	0.5		
		X	11									
16		X	24		CL							
17						CLAY; HIGH PLASTICITY	5PB 4/1					
18–19					GC							LONESTAR #2/12 SAND 4.0'-25.0'
20		X	17	MW-11-20		80% COARSE SAND/ANGULAR, 10% CLAY, 10% COARSE GRAVEL, SUBROUNDED	2.5YR 5/6	WET	SOFT	0.4		2" 20-SLOT PVC WELL SCREEN 5.0'-20.0'
		X	36									
21		FOR	5 50									
22					SM	50% FINE SAND, 45% SILT, 5% CLAY, LOW PLASTICITY	2.5YR 5/6					
23												
24		X	19		GC	45% FINE GRAVEL, 25% COARSE SAND, 10% MED. SAND, 10% CLAY, 5% FINE SAND, 5% COARSE GRAVEL, IRON STAINING.	10YR 5/6					
25		FOR	5 50	MW-11-25						0.8		

WINZLER & KELLY
CONSULTING ENGINEERS

BORING LOG

PROJ. NAME: BLUE LAKE FOREST PRODUCTS		PROJECT NO.: 00142803.204	Sheet 1 of 1
METHOD OF DRILL: HOLLOW STEM AUGER		LOCATION: BLFP	
SAMPLER: SPLIT SPOON	OD: 2.0" ID: 1.5"	LOGGED BY: C. ELLIS	BORING #: MW-12
BORING DIAMETER: 9.0"		DATE STARTED: 11/23/04	TIME: 8:40 AM
DRILLING CO.: DIAMOND CORE DRILLING		DATE COMPLETED: 11/23/04	TIME: 11:00 AM
C57 LIC. #: 512406		TOTAL DEPTH OF BORING: 25.0 ft.	
DRILLER: JEREMY & JOHN		DEPTH TO GROUNDWATER: 15.0 ft.	
HAMMER WGT.: 120 lbs.	HAMMER DROP: 30 inches	SURFACE CONDITIONS: CONCRETE	

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
						8" CONCRETE.						FLUSH MOUNTED TRAFFIC BOX W/ LOCKING WELL CAP
1–3					CL	SILTY CLAY, M. PLASTICITY	2.5Y 5/6	DAMP	LOOSE/ V SOFT			CEMENT GROUT 0.0'-3.0'
4												2" BLANK PVC WELL CASING 0.0'-5.0'
5–9		X X X	5 9 13	MW-12-5.5	CL	SILTY CLAY, M. PLASTICITY, 60% SILT, 30% CLAY, 10% FINE SAND, ROUNDED	2.5Y 5/6	MOIST	SOFT			BENTONITE SEAL 3.0'-4.0'
10–13		X X X	20 25 33	MW-12-10	GM	5% CLAY, 15% SILT, 40% COARSE SAND, 20% FINE SAND, 20% SUBROUNDED PEBBLES	10YR 5/6	MOIST	SOFT/ LOOSE			
14–16		X X X	15 13 16	MW-12-15	GC	20% CLAY, 15% SILT, 25% FINE SAND, 40% ROUNDED PEBBLES MEDIUM PLASTICITY	10B 4/1	WET	SOFT/ LOOSE	3.8		STRONG ODOR-SOIL GROUNDWATER @ 15.0' bgs
17–18												LONESTAR #2/12 SAND 4.0'-25.0'
19–21		X X X	7 19 34	MW-12-20.5		50% ANGULAR PEBBLES, 10% CLAY, 10% SILT, 30% SAND MEDIUM/COARSE	2.5Y 5/6	WET	SOFT			2" 20-SLOT PVC WELL SCREEN 5.0'-20.0'
22–23					CL	CLAY/COARSE SAND, 5% SMALL GRAVEL	10YR 4/6, 5B 4/1 30%					ODOR
24–25		X X X	35 47 37	MW-12-25	GC	30% GRAVEL, 30% COARSE SAND, 20% MED. SAND, ROUNDED, 20% CLAY	10YR 4/6		FIRM			

WINZLER & KELLY
CONSULTING ENGINEERS

BORING LOG

PROJ. NAME: BLUE LAKE FOREST PRODUCTS	PROJECT NO.: 00142803.204	Sheet 1 of 1
METHOD OF DRILL: HOLLOW STEM AUGER	LOCATION: BLFP TANK HOLD #2, 3, 4	
SAMPLER: SPLIT SPOON OD: 2.0" ID: 1.5"	LOGGED BY: C. ELLIS	BORING #: MW-13
BORING DIAMETER: 9.0"	DATE STARTED: 11/22/04	TIME: 11:40 AM
DRILLING CO.: DIAMOND CORE DRILLING	DATE COMPLETED: 11/22/04	TIME: 1:30 PM
C57 LIC. #: 512406	TOTAL DEPTH OF BORING: 25.0 ft.	
DRILLER: JEREMY & JOHN	DEPTH TO GROUNDWATER: 15.0 ft.	
HAMMER WGT.: 120 lbs. HAMMER DROP: 30 inches	SURFACE CONDITIONS: CONCRETE	

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
						ASPHALT						FLUSH MOUNTED TRAFFIC BOX W/ LOCKING WELL CAP
1–2–3–4					CL	SILTY CLAY, M. PLASTICITY, FEW PEBBLES	7.5Y 4/6	MOIST	V SOFT			CEMENT GROUT 0.0'-3.0'; 2" BLANK PVC WELL CASING 0.0'-5.0'; BENTONITE SEAL 3.0'-4.0'
5–6–7–8		X X X	7 13 21	MW-13-6	CL	SANDY CLAY	7.5Y 5/6	MOIST	V SOFT			
9–10		4"	50		SC	CLAYEY SAND W/ COBBLES	2.5Y 5/6	DRY	FIRM			NOTE-HIT ROCK, NO SAMPLE TAKEN (4" ROCK).
11–12–13–14		X X X	18 26 24	MW-13-12	SC	SANDY CLAY, PEBBLES	2.5R 5/4	DRY	FIRM			
15–16–17–18–19		X X X	15 13 28	MW-13-15	SC	SAND W/ CLAY	2.5Y 5/6 10B 5/1	WET				GROUNDWATER @ 15.0' bgs, STRONG ODOR; LONESTAR #2/12 SAND 4.0'-25.0'; 2" 20-SLOT PVC WELL SCREEN 5.0'-20.0'
20–21–22–23		X X X	14 31 49	MW-13-20	GC	PEBBLES 35-40%, FRACTURED, 1/2" OR LESS, GRAVEL, SAND, SILT, CLAY	10YR 5/6	WET	SOFT			NO ODOR
24–25		X X X	13 22 35	MW-13-25	GC	GRAVELLY CLAYEY SAND, 10-15% PEBBLES, 20% SAND, CLAY & SILT	10YR 5/8	WET	SOFT			

WINZLER & KELLY
CONSULTING ENGINEERS

BORING LOG

PROJ. NAME: BLUE LAKE FOREST PRODUCTS		PROJECT NO.: 00142803.204	Sheet 1 of 1
METHOD OF DRILL: HOLLOW STEM AUGER		LOCATION: BLFP	
SAMPLER: SPLIT SPOON OD: 2.0" ID: 1.5"		LOGGED BY: C. ELLIS	BORING #: MW-14
BORING DIAMETER: 9.0"		DATE STARTED: 11/23/04	TIME: 11:40 AM
DRILLING CO.: DIAMOND CORE DRILLING		DATE COMPLETED: 11/23/04	TIME: 2:30 PM
C57 LIC. #: 512406		TOTAL DEPTH OF BORING: 25.0 ft.	
DRILLER: JEREMY & JOHN		DEPTH TO GROUNDWATER: 22.0 ft.	
HAMMER WGT.: 120 lbs.	HAMMER DROP: 30 inches	SURFACE CONDITIONS: CONCRETE	

DEPTH	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL DESCRIPTION
					8" CONCRETE					FLUSH MOUNTED TRAFFIC BOX W/ LOCKING WELL CAP
1–2				CL	35% CLAY, M. PLASTICITY, 40% COARSE/MEDIUM SAND, 15% SILT, 10% ANGULAR, SMALL GRAVELS	10YR 3/3	MOIST	SOFT		CEMENT GROUT 0.0'–3.0'
3–4				GC	5% CLAY, 50% ROUNDED & SUBROUNDED GRAVELS, 10% SILT, 35% SAND, COBBLES 3.5" FRACTURED & ROUNDED					2" BLANK PVC WELL CASING 0.0'–5.0'
5	X 3"	41 50	MW-14-5			2.5Y 5/6	MOIST	LOOSE	1.9	BENTONITE SEAL 3.0'–4.0'
6–9				CL						
10	X	18	MW-14-10		10% CLAY, 40% SAND, 50% GRAVEL, LARGER=FRACTURED, SMALL=ROUNDED	2.5Y 5/4=60%, 5/6=40%	MOIST	LOOSE	0.3	
11–13	X X	28 20								
14					90% CLAY, HIGH PLASTICITY, 10% SILT					
15	X	15	MW-14-15.5			10B 4/1	MOIST	PACKED/ FIRM	0.2	
16–17	X X	18 27		CH						
18										LONESTAR #2/12 SAND 4.0'–25.0'
19										2" 20-SLOT PVC WELL SCREEN 5.0'–20.0'
20	X	8	NO SAMPLE							
21	X X	9 8		ML/SW						
22	X	9	MW-14-22		40% CLAY, 50% SILT, 10% SAND, MED PLASTICITY, W/ LARGE PIECES OF WOOD	10B 3/1	WET	V SOFT	0.2	GROUNDWATER @ 22.0' bgs. NO ODOR
23	X X	11 28				2.5Y 4/3	WET	RUNNY		
24					50% SILT, 20% SAND, 30% CLAY, FEW PIECES OF GRAVEL, VERY SATURATED.	10YR 4/6	WET	HARD		
25	4"	50	MW-14-25	SW	WELL SORTED 90% ROUNDED SAND. SMALL GRAINED, 10% SILT.					

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(707) 443-8326 / FAX (707) 444-8330

By CE Date 11/22/04 Client BLFP Sheet No. 1 of 1

Subject well installation Job No. 00142803.204

10:00 arrived on site w/ Pat and Diamond Core
discussed well locations and access to proposed location
of MW-14. Diamond core said it would be hard to
get to that well. and Gary is placing fill behind
building. Decision was made to move MW-14
infront of building, south of excavation.
Guy from quarry came over w/ a pencil dick and broke up concrete
11:40 Started MW-13 at 11:40 Completed. 3:00 around MW location
MW-13
8 bags of sand
went down 24 ft 11 inches

set up decom. cell. - washed equipment
contained water and transfered to drum.

3:00
3:15 started MW-11
drilled down to 25 feet. - took all necessary samples
placed sand down hole - got dark
Diamond Core decided to leave rest of drill down in hole
and will fill w/ Bentonite in the morning
7 1/2 bags of sand

5:30 left site

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By CE Date 11/24/04 Client BZFP Sheet No. ____ of ____

Subject well installation Job No. 00142903 204

7:00 arrived onsite
preparing to pour cement around MW-11 & MW-14.

11:30 completed wells
closed and labeled drums.
cleaned up site.

12:00 took samples to Northcoast lab.

All together 28.5 bags of sand
17 bags of concrete.

Diamond Core did not fill in cement around well A.

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DISSOLVED OXYGEN MEASUREMENT FORM

PROJECT NAME: Blue Lake Forest Products
PROJECT NUMBER: 00 1428 03 204

TODAY'S DATE: 12/1/04
FIELD PERSONNEL: HV, CE

Well No.	High Range (D.O. > 3 mg/L)		Low Range (D.O. < 3 mg/L)		Comments
	~~No. of Drops~~ TIME	~~D.O. Conc. (mg/L)~~ =(No. of Drops) x (1 mg/L)	No. of Drops	D.O. Conc. (mg/L) =(No. of Drops) x (0.2 mg/L)	
		INITAL H2O Level	TOTAL DEPTH	Depth of H2O Column	
MW-12	1053	10.49	24.74	14.25	6 24.74 10.49 14.25 ~ 2.4 gal
MW-11	1100	10.28	25.20	14.82	4.10 25.20 10.28 14.82
MW-14	11:02	11.59	25.17	13.58	4.10 25.17 11.59 13.58
MW-13	1104	11.00	24.68	13.68	24.68 11.00 13.68

Weather Conditions Today:

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WELL SAMPLING DATA SHEET

PROJECT NAME: BLFP
PROJECT NUMBER: 00142603 204
WELL DESIGNATION: MW-11

PROJECT DATE: 12/1/04
SAMPLER: CE
SAMPLE NUMBER: MW-11

CONDITION OF WELL HEAD/VAULT/CAP & LOCK:

A. TOP OF CASING ELEVATION: _____
B. DEPTH OF GROUNDWATER (initial): 10.28
C. DEPTH OF WELL: ~~24.74~~ 25 MEASURED 25.20
D. HEIGHT OF WATER COLUMN (C-B): ~~14.25~~ 14.82
E. GROUNDWATER ELEVATION (A-B): _____

25.20
10.28
14.82

2
15
x 4
60

CASING DIAMETER: 2" ✓ 3" _____ 4" _____ OTHER: _____

CALCULATED WELL VOLUME: D X V = 14.25 x 0.163 = ~2.5 gal.
= 2.32

Volume (V) of 2" well – 0.163 gal/ft
Volume (V) of 4" well – 0.653 gal/ft

ODOR no SHEEN no FLOATING PRODUCT THICKNESS no

PUMP TYPE: POLY BAILER ✓ STAINLESS BAILER _____
ELECTRIC _____ OTHER _____

TIME	GALLONS PURGED	NO. OF WELL VOLUMES	PH	TEMPERATURE (°F or °C)	CONDUCTIVITY (mmhos/cm or µmhos/cm)	TURBIDITY (NTU or visual)
1510	42.5	18.32	7.13	17.3°C	0.21 mS	cloudy
1520	43.0	18.5	6.99	16.0°C	0.11 mS	"
1528	43.5	18.75	6.80	15.8°C	0.10 mS	Slightly cloudy
1530	44.0	~19.0	6.69	15.7°C	0.10 mS	" "

RECHARGE RATE (qualitative): _____

SAMPLER TYPE: TEFLON BAILER _____ ACRYLIC BAILER _____ DISPOSABLE BAILER ✓

SAMPLES COLLECTED: PRESERVED VOA'S _____ UNPRESERVED VOA'S _____
PRESERVED LITERS _____ UNPRESERVED LITERS _____
500 ml PLASTIC BOTTLE WITH PRESERVATIVE FOR METALS:
FILTERED _____ UNFILTERED _____
OTHER _____

COMMENTS: @ sampled after well development approximately ~42 gallons of surging & purging

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WELL SAMPLING DATA SHEET

PROJECT NAME: BLFP
PROJECT NUMBER: 00 142803 204
WELL DESIGNATION: MW-12

PROJECT DATE: 12/2/03
SAMPLER: HV
SAMPLE NUMBER: MW-12

CONDITION OF WELL HEAD/VAULT/CAP & LOCK:

A. TOP OF CASING ELEVATION:
B. DEPTH OF GROUNDWATER (initial): 10.49
C. DEPTH OF WELL: 25 MEASURED 24.74
D. HEIGHT OF WATER COLUMN (C-B): 14.25
E. GROUNDWATER ELEVATION (A-B):

CASING DIAMETER: 2" ✓ 3"____ 4"____ OTHER:____

CALCULATED WELL VOLUME: D X V = 14.25 x 0.163 = 2.32 gal
Volume (V) of 2" well – 0.163 gal/ft
Volume (V) of 4" well – 0.653 gal/ft

ODOR yes SHEEN yes FLOATING PRODUCT THICKNESS no

PUMP TYPE: POLY BAILER ✓ STAINLESS BAILER____
ELECTRIC ✓ OTHER____

TIME	GALLONS PURGED	NO. OF WELL VOLUMES	PH	TEMPERATURE (°F or °C)	CONDUCTIVITY (mmhos/cm or µmhos/cm)	TURBIDITY (NTU or visual)
0940	~50	21.5	6.76	15.3°C	0.25 mS	cloudy
0950	50.5	21.75	6.91	16.6°C	0.21 mS	
0955	52.5	22.5	6.59	17.0°C	0.24	
1005						

RECHARGE RATE (qualitative):

SAMPLER TYPE: TEFLON BAILER____ ACRYLIC BAILER____ DISPOSABLE BAILER____

SAMPLES COLLECTED: PRESERVED VOA'S____ UNPRESERVED VOA'S____
PRESERVED LITERS____ UNPRESERVED LITERS____
500 ml PLASTIC BOTTLE WITH PRESERVATIVE FOR METALS:
FILTERED____ UNFILTERED____
OTHER____

COMMENTS: sampled after development, surged and purg

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WELL SAMPLING DATA SHEET

PROJECT NAME: BLFP
PROJECT NUMBER: 00142803 204
WELL DESIGNATION: MW-13

PROJECT DATE: 12/2/04
SAMPLER: HV
SAMPLE NUMBER: MW-13

CONDITION OF WELL HEAD/VAULT/CAP & LOCK:

A. TOP OF CASING ELEVATION: _____
B. DEPTH OF GROUNDWATER (initial): 11.0
C. DEPTH OF WELL: 25 MEASURED 24.68
D. HEIGHT OF WATER COLUMN (C-B): 13.68
E. GROUNDWATER ELEVATION (A-B): _____

CASING DIAMETER: 2" ✓ 3" _____ 4" _____ OTHER: _____

CALCULATED WELL VOLUME: D X V = 13.68 x .163 = 2.23
Volume (V) of 2" well – 0.163 gal/ft
Volume (V) of 4" well – 0.653 gal/ft

ODOR yes SHEEN no FLOATING PRODUCT THICKNESS no

PUMP TYPE: POLY BAILER _____ ELECTRIC ✓ STAINLESS BAILER _____ OTHER _____

TIME	GALLONS PURGED	NO. OF WELL VOLUMES	PH	TEMPERATURE (°F or °C)	CONDUCTIVITY (mmhos/cm or µmhos/cm)	TURBIDITY (NTU or visual)
11:15	50	22.42	6.31	15.4°C	0.14 mS	cloudy
11:25	51.5	23.10	6.24	16.9°C	0.12 mS	"
11:30	53.0	23.77	6.15	16.5°C	0.13 mS	"

RECHARGE RATE (qualitative): _____

SAMPLER TYPE: TEFLON BAILER _____ ACRYLIC BAILER _____ DISPOSABLE BAILER ✓

SAMPLES COLLECTED:
PRESERVED VOA'S 3 UNPRESERVED VOA'S _____
PRESERVED LITERS _____ UNPRESERVED LITERS 1
500 ml PLASTIC BOTTLE WITH PRESERVATIVE FOR METALS:
FILTERED _____ UNFILTERED 1
OTHER 2

COMMENTS: _____

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WELL SAMPLING DATA SHEET

PROJECT NAME: BLFP
PROJECT NUMBER: 00 1456 03 204
WELL DESIGNATION: MW-14

PROJECT DATE: 12/2/04
SAMPLER: CE
SAMPLE NUMBER: MW-14

CONDITION OF WELL HEAD/VAULT/CAP & LOCK:

A. TOP OF CASING ELEVATION: _____
B. DEPTH OF GROUNDWATER (initial): 11.59
C. DEPTH OF WELL: 25 MEASURED 25.17
D. HEIGHT OF WATER COLUMN (C-B): 13.58
E. GROUNDWATER ELEVATION (A-B): _____

CASING DIAMETER: 2" ✓ 3" _____ 4" _____ OTHER: _____

CALCULATED WELL VOLUME: D X V = 13.58 X 0.163 = 2.21
Volume (V) of 2" well – 0.163 gal/ft
Volume (V) of 4" well – 0.653 gal/ft

ODOR yes slight SHEEN no FLOATING PRODUCT THICKNESS no

PUMP TYPE: POLY BAILER _____ ELECTRIC ✓ STAINLESS BAILER _____ OTHER _____

TIME	GALLONS PURGED	NO. OF WELL VOLUMES	PH	TEMPERATURE (°F or °C)	CONDUCTIVITY (mmhos/cm or µmhos/cm)	TURBIDITY (NTU or visual)
	45		6.04	15.5°C	0.42	
			6.01	15.4°C	0.26	
			5.95	15.3°C	0.29	

RECHARGE RATE (qualitative): _____

SAMPLER TYPE: TEFLON BAILER _____ ACRYLIC BAILER _____ DISPOSABLE BAILER ✓

SAMPLES COLLECTED:
PRESERVED VOA'S ✓ UNPRESERVED VOA'S _____
PRESERVED LITERS ✓ UNPRESERVED LITERS _____
500 ml PLASTIC BOTTLE WITH PRESERVATIVE FOR METALS:
FILTERED _____ UNFILTERED ✓
OTHER _____

COMMENTS: _____

Appendix E
W&K Standard Operating Procedures

WINZLER & KELLY CONSULTING ENGINEERS

STANDARD OPERATING PROCEDURES
for
MONITORING WELL DEVELOPMENT

1. Objective

To establish accepted procedures for conducting well development prior to purging and sampling activities in accordance with standard practices by engineering professionals.

2. Background

Following the installation of a monitoring well, it is necessary to develop the well in order to adequately remove the silt and clay (fines) from the filter pack material and in the immediate proximity of the well, in order to minimize the infiltration of fines throughout the life of the monitoring well.

3. Personnel Required and Responsibilities

Project Manager: The Project Manager (PM) is responsible for ensuring that field personnel have been trained in the use of these procedures and for verifying that the development procedures are performed in compliance with this SOP. At a minimum, the PM will maintain contact with the client or contractor involved, will be available by phone during the field activities and will review field notes for completeness.

Field Geologist/Field Engineer/Soil Scientist/Technician: The field staff person assigned to the project is responsible for complying with this SOP. Responsibilities include preparation for field activities, ensuring equipment is in working order and clean prior to the field event, providing adequate field documentation of events, observations, readings, measurements, volume of water, and overall development activities.

4. Equipment Required

- Tool Box
- Disposable gloves
- Decontamination supplies
- Water Level Meter/tape and paste/other device
- Measuring tape
- Indelible marker/Drum labels
- Surge Block
- Development pump and hoses OR bailers and line
- Several 5-gallon buckets with 1 gallon increments noted
- 55-gallon drums or other water storage facility
- Well Development Forms

5. Procedure

After completion of monitoring well installation, and no sooner than 48 hours following emplacement of the well seals, the well shall be developed as described below. Prior to

insertion in any well, all equipment will either be decontaminated or will be deemed clean, or previously un-used, by the manufacturer.

- Open all monitoring wells at the site and allow to equilibrate approximately 15 minutes. Denote time and visual observations regarding well access, condition, security, etc. in log book.
- Obtain initial depth to groundwater level readings from the point of survey mark, or from the North side of the top of the PVC casing, if no point of survey mark is present. Readings will be measured to the nearest 0.01 foot. Denote time and readings in log book and on forms provided.
- Obtain depth to casing bottom for each well. Readings will be measured to the nearest 0.01 foot. Denote readings in log book, and compare with boring log information.
- Calculate the volume of standing water in each monitoring well. Denote the volume calculated for each well in log book and/or on forms provided.
- Alternate surging/swabbing of the screened interval and purging of the water:
  - Surging/Swabbing: Using either a surge block, the purge pump, or a heavy bailer, swab the screened portion of the well by lowering the surge equipment to the bottom of the well, rapidly raising and lowering the equipment in 2-foot intervals in a plunger-like fashion. This should force water in and out of the screened interval. Repeat the surge/swab at least 10 times at each 2-foot interval. Then swab the next two-foot screened interval. Follow each round of surging by purging.
  - Purging: Following each round of surging of the screened interval, the well shall be purged of water. Be sure to lower the bailer to the bottom of the well in order to "grab" the silts and clays which have settled to the bottom of the well. If a well has a large portion of fines, then the purging may be performed only using a bailer, since silts and clays can cause malfunction in the pumps.
- **Please note, to develop the entire screened interval, water must be present over the entire length of screen. In wells with little water or with very poor recharge, distilled water may be added to the well to ensure adequate development of the well. If water is added, the volume of water added must be documented, and the water being used should be sampled for the presence of contaminants.**
- Continue the process until the entire screened interval has been adequately swabbed and purge water is relatively clear of fine material.
- Contain all purge water in the drums or other containers provided. Denote the date, time and origin of the water on the containers. Include calculation of the volume of water removed from each well and observations of the presence of sediments and color/odor of water, etc., in the log book and on the forms provided.
- Obtain final depth to groundwater level readings from the point of survey mark, or from the North side of the top of the PVC casing, if not point of survey mark is present. Readings will be measured to the nearest 0.01 foot. Denote time and readings in log book and on forms provided.
- Conduct final decontamination procedures of any field equipment that is not disposable.
- Close and secure each well upon completion of field activities. Ensure that all water storage containers are closed and secured and that the site is clean.

WINZLER & KELLY CONSULTING ENGINEERS

STANDARD OPERATING PROCEDURES
for
MONITOR WELL PURGING AND SAMPLING ACTIVITIES

1.0 OBJECTIVE

To establish accepted procedures for the purging and sampling groundwater from monitoring wells, to ensure that representative samples of formation water are collected by accepted methods.

1.1 Background

To obtain a representative groundwater sample from monitor wells, it is necessary to remove (purge) stagnant water from within and near the well prior to sampling. In general, three to seven casing volumes must be removed from the well prior to sampling, to provide a representative sample. Wells may be sampled after purging less than the minimum three volumes if well recharge rates are beyond reasonable time constraints. The specific method of well purging will be decided on a case by case basis, or as required by project specifications.

1.2 Personnel Required and Responsibilities

Project Manager: The Project Manager (PM) is responsible for ensuring that field personnel have been trained in the use of these procedures and for verifying that monitoring well purging and sampling activities are performed in compliance with these SOP's.

Field Technician: The Field Technician is responsible for complying with these SOP's, including the purging and sampling of monitor wells, the safe containerization of extracted waters, the documentation of field procedures, and the handling of samples..

2.0 WELL PURGING ACTIVITIES

2.1 Equipment Required

- Bottom-filling bailer, suction air pump, air-lift pump, gas operated (bladder) pump, submersible pump, or other pumping device
- pH meter
- Conductivity/Temperature Meter
- Water Level Indicator
- Well Sampling Data Sheet
- Indelible marker
- Disposable gloves
- Containers to hold extracted water (as required)
-

2.2. Purging Procedure

Prior to groundwater sampling, each monitoring well will be purged as described below. Prior to insertion into each well, all equipment will be either decontaminated (following W&K Decontamination procedures) or will be deemed clean or previously unused by the manufacturer.

- Open all monitoring wells to be purged and allow to equilibrate 5 to 15 minutes. Record time and visual observations regarding well access, condition, security, etc. in log book.
- Obtain depth to groundwater level readings according to Winzler & Kelly Standard Operating Procedures for Groundwater Level measurements and Free Phase Hydrocarbon Measurements. Record time and readings on the Well Level Measurement Data Sheet.
- Calculate the volume of standing water in each monitoring well. Record the volume calculated for each well on the Well Sampling Data Sheet.
- Begin purging the well by removing water from the well and collecting in a calibrated container (i.e., 5-gallon bucket marked in 1-gallon increments). The depth, or interval, from which the water is being purged should be noted on the data sheet.
- Obtain readings of field parameters (pH, conductivity, temperature, and turbidity) and make visual observations of color/odor/turbidity at selected intervals (i.e., every gallon, every five gallons, etc.) throughout the purging process. Depending on the calculated volume and the expected number of gallons to be purged, a minimum of five readings should be collected. Record the time, readings, and visual comments on the Purge Data Sheet.
- Continue purging until at least three (minimum) to four well volumes have been removed and the field parameters stabilize to within:

pH	≈0.1
conductivity	≈10%
turbidity	≈10%
temperature	≈1°

  Do not exceed seven well volumes.
- Obtain a final depth to groundwater level measurement prior to collection of the groundwater sample and note the reading and time on the Well Level Measurement Data Sheet. Be sure that the measurement probe has been thoroughly decontaminated prior to insertion into each well. Note any qualitative comments regarding recharge rate of each well, and calculate the percent of the original water column that has recovered at the time of the final depth measurement. It is ideal to attain a minimum of 80% water level recovery prior to sampling, if time constraints allow. Very slow recharge rates may not allow purging the minimum three volumes or 80% recovery; lesser volumes may be used for sampling, as needed and documented.
- Collect a groundwater sample following the directions below under Section 3.0.

- Containerize all purge water and decontamination water in 55-gallon drums. Use yellow indelible markers (storeroom supply) to label all drums on the side with date, contents, origin and other pertinent information. Avoid marking the tops of drums with black marker, such marks are temporary and will soon fade/rust. Note the number, condition and location of drums on site in the field notes.

3.0 WELL SAMPLING ACTIVITIES

3.1 Equipment Required

- Disposable bailer (previously unused) *
- Bottom emptying device (sampling port)
- Monofilament nylon line (min 40-lb test)
- Monitor Well Purge & Sample Data Sheets
- Sample containers (preserved, as required) - provided by the laboratory
- Sample labels
- Indelible marker
- Disposal gloves
- Decontamination soap (Alconox)
- Distilled water for equipment decontamination.

*A variety of sampling techniques are available for the collection of groundwater samples. Except where otherwise required, W&K only utilizes disposable polyethylene bailers to collect groundwater samples.

3.2. Sampling Procedure

Prior to collecting a groundwater sample from a monitoring well, each well must be properly purged in accordance with W&K's SOP for Monitoring Well Purging Activities (See Section 2.0 above), including the measurement of the final water level and documentation of recharge.

- Water from the desired screen interval will be collected by lowering the previously unused disposable, polyethylene, bottom-filling bailer into the well.
- When bailer is completely full, carefully retract the bailer from the well casing.
- Using a previously unused, new, bottom-emptying device, to minimize agitation of the water, transfer the water from the bailer to the sample containers.
- When sampling for volatile constituents (VOA's), the water samples will be collected in 40-ml glass vials (preserved as required by the analyses requested). Precautions will be taken to prevent capturing air bubbles in the vials.
- Upon filling, each vial will be immediately capped with a Teflon septum and plastic screw cap. The vial will be checked for air bubbles by inverting and gently tapping the vial. If any bubbles are visible, the vial will be refilled and confirmed to be free of any air bubbles.

- At a minimum, all samples will be labeled with the following information:

Sample ID	Date and Time Sample Collected
Location	Sampler's Initials
Project Number	Analyses Requested

- Sample information will be documented on the Chain-of-Custody form.
- All samples will be placed in an ice chest, chilled to a temperature of 4°C. The ice chest will remain in the custody of the sampler until it is transferred to the courier service for delivery at the analytical laboratory for analyses. Any and all transfer of sample custody must be documented on the Chain-of-Custody form with the name, signature, affiliation, date and time of the persons releasing and receiving custody of the samples.
- Upon completion of the sampling activities, each well shall be closed and secured by replacing the well cap and securing the lock.
- Dispose of gloves, bailers, bottom-emptying devices, and bailing line after each use.