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Innovative Strategies for Environmental and Natural Resource Management

February 19, 2004

Eastman Kodak Company
Corporate and Regulatory Legal Staff
Legal Department
343 State Street
Rochester, New York 14650-0217

Attention: Mr. Elliott Stern

Report
Supplemental Phase II Field Investigation
Former Qualex Photofinishing Facility
21249 72nd Avenue South
Kent, Washington

Dear Mr. Stern:

GEOLOGICA Inc. is pleased to submit this report, which presents the results and conclusions of supplemental subsurface environmental Investigation conducted at the above-referenced property located in Kent, Washington.

The work was conducted in general accordance with our proposal dated September 17, 2003. It has been our pleasure to prepare this report for your use. If you have any questions, please do not hesitate to contact us at 415-597-7883.

Very truly yours,

GEOLOGICA INC.

Brian F. Aubry, R.G., C.E.G., C.Hg.
Principal

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Report

Supplemental Phase II Field Investigation
Former Qualex Photofinishing Facility
21249 72nd Avenue South
Kent, Washington

1 Introduction and Purpose

GEOLOGICA INC. (GEOLOGICA) is pleased to submit this report summarizing the results of a supplemental Phase II field investigation performed at the former Qualex, Inc., (Qualex) photofinishing facility located at 21249 72nd Avenue South in Kent, Washington. The purpose of this work was to further assess the source and extent of potential groundwater quality impacts related to the former use of the property as a photofinishing facility. The work was conducted in general accordance with our proposal dated September 17, 2003.

2 Background

A Phase I Environmental Site Assessment (ESA) and limited Phase II ESA were conducted at the site by GEOLOGICA (2003a and 2003b). The following sections summarize the findings of this previous work.

2.1 Site Location and Physical Description

The property is located at 21249 72nd Avenue South in the City of Kent, in King County, Washington near the intersection of South 212th Street and 72nd Avenue South as shown on the **Site Location Map, Figure 1**.

The site was a Kodak Processing Laboratory (KPL) property ("the property"), leased and occupied until October 2002 for photofinishing purposes. The site is generally flat and situated at an elevation of approximately 185 ft mean sea level (MSL) sloping very gently to the south. Based on studies performed at the site and at nearby sites, the property is generally underlain by a heterogeneous assemblage of alluvial gravelly sands, silts, and clays to depths up to 100 feet. Based on wells installed near the site, the depth to first groundwater is reportedly 5 to 10 feet below ground surface (bgs). Groundwater within ¼-mile has reportedly been measured to flow to the northeast. However, no site-specific groundwater information was identified regarding depth or flow direction prior to completing Phase II field activities.

2.2 Site History

The building was reportedly constructed in approximately 1984 and was the first permanent structure on the property. Prior to site development, the property was open marshland, though it may have been used for agricultural purposes at some point. The first tenant was reportedly Flow Industries, Inc, a manufacturer of water jet cutting and drilling tools, who used the space for offices and as a research laboratory. Samilian Foto occupied the site in 1990. Qualex acquired Samilian in 1992. Qualex operated an

amateur overnight processing lab at the property until its closure in 1999. Approximately 4 to 6 months later, the lab was reopened as a Kodak Professional Laboratory (KPL). Operationally, the two labs were very similar. However, the original Qualex lab was strictly a "develop and print" overnight processing lab that did no enlargements and, in general, did not service professional photographic customers.

2.3 Site Photofinishing Operations

Photo processing operations at the site included the C-41 color negative film process, the E-6 color slide process, the RA-4 color paper processes, black & white negative and paper processing, and the KLAB color slide process. In general, exposed, unprocessed, photographic film was received from customers and processed through standard C-41 chemicals to make developed negatives. The chemicals used in these processes were purchased from Eastman Kodak Company (Kodak) as liquid concentrates, were mixed in the Chemical Mixing Area with water to create process-strength solutions, and were pumped to holding tanks elevated on racks.

Photofinishing chemicals were gravity fed to the film and paper processors by above-ground pipelines, with the exception of a number of mini-lab units for which chemicals were delivered by hand totes. Non silver-bearing wastewaters from the processors and mini-labs were pumped directly to the sanitary sewer, via overhead or above-ground pipelines. Silver bearing wastewaters from the processors were pumped via overhead lines to the Silver Recovery Area for silver reclamation followed by effluent discharge to the sanitary sewer in a subgrade sewer line, which passed through a Trap Tank. The Trap Tank also served as a wastewater discharge sampling point.

2.4 Previous Environmental Investigations

2.4.1 GEOLOGICA Phase I ESA (2003)

GEOLOGICA conducted a Phase I ESA at the site in May 2003 in general accordance with ASTM standards (GEOLOGICA, 2003). The Phase I ESA identified the following recognized environmental conditions (RECs) at the property related to onsite current and historical operations:

- A wastewater effluent line which led to the sanitary sewer leaked immediately upstream of a sub-grade Trap Tank. Line repairs in February 2000 indicated that soil adjacent to the line was saturated with wastewater effluent. It appeared that the line had been leaking for an indefinite period of time.

- The floor of a compressor room was heavily stained with compressor oil. Oil-containing condensate was evidently routed into a floor drain within the compressor room. The floor drain fed into the effluent line described above.

- It appeared that prior to the upgrade of the plumbing and sump systems at the site in about 1999, floor trenches were located in processing areas of the facility. These trenches were reportedly "dry trenches" which housed PVC piping that routed process wastewater to the sewer and to Silver Recovery. Also in 1999, floor drains, which had been located in several areas of the plant, were evidently plugged. Thus, in the past it

appears that a system of subgrade trenches and piping was present at the facility in the processing areas, the Chemical Mixing Area, and the Silver Recovery Area.

► Based on available information, there are several known and suspected environmental contamination sites located within ¼ mile of the property. However, a review of available regulatory information did not indicate direct evidence that nearby sites have significantly impacted soil or groundwater beneath the property.

2.4.2 GEOLOGICA Phase II ESA (2003)

To further investigate potential impacts to soil and groundwater beneath the former Qualex facility, a Phase II Subsurface Investigation was performed at the site. Work was conducted in two field episodes in March 2003 and July 2003, respectively. The scope of work is summarized below.

March 2003 Field Program

A total of five (5) shallow soil borings were advanced for sample collection using direct push exploration techniques. Four (4) shallow soil borings (S-1 through S-4) were advanced inside the building to assess subsurface soil and groundwater quality conditions in areas of potential spills and release of photofinishing compounds. Three (3) of the borings were advanced in the vicinity of the wastewater effluent line Trap Tank in the Maintenance Shop where industrial sewer line leaks had been documented. A temporary monitoring well for collection of a groundwater sample was installed in one of the borings (S-3). One (1) boring (S-4) was advanced near the floor drain in the compressor room, where the floor was heavily oil stained. One (1) additional shallow soil boring (B-1) was advanced outside the building to assess local background soil quality conditions.

A total of ten (10) soil samples from 5 (five) sampling locations and one (1) groundwater sample from the temporary monitoring well location S-3 were collected for analytical testing. Four (4) soil samples collected inside the building (S-1-4', S-2-2', S-3-8', and S-4-3') were analyzed for pH, Nitrate and sulfate, Total cyanide, volatile organic compounds (VOCs) by EPA 8260, Gasoline, diesel and motor oil by EPA 8015 and 17 priority metals. The background soil sample collected outside the building, (B-1-6'), was analyzed for all the parameters in the above list except for VOCs, gasoline, diesel and motor oil. All soil sample results are presented on a wet weight basis. The groundwater sample collected from the temporary monitoring well completed in boring S-3 was analyzed for pH, Nitrate and sulfate, Total cyanide, VOCs by EPA 8260, Gasoline, diesel, and motor oil by EPA 8015 and 17 priority metals.

July 2003 Field Program

Following review of the results of analyses of soil samples and groundwater grab sample collected during the March 2003 field event, GEOLOGICA recommended installing and sampling a permanent groundwater monitoring well inside the building beneath the Trap Tank Area in the Maintenance shop. With the concurrence of Qualex, a geologist from GEOLOGICA returned to the site in July 2003 to supervise installation, development,

and sampling of a permanent monitoring well (MW-1) at the location of direct push exploration boring and temporary monitoring well S-3.

A groundwater sample collected on July 24, 2003 from the permanent monitoring well MW-1 completed at the location of boring S-3 was analyzed for pH, Nitrate and sulfate, Total cyanide, VOCs by EPA 8260, Gasoline, diesel, and motor oil by EPA 8015 and 17 priority metals.

Phase II ESA Results

The Phase II soil and groundwater sampling and analytical investigation indicated the presence of relatively low levels of silver and sulfate, and slightly lowered pH in soil beneath the site. Where possible, concentrations of constituents detected in soil and groundwater were compared to Washington state regulatory criteria and/or the federal EPA Region 9 PRGs to evaluate their significance.

- None of the soil sample chemical testing results exceeded state or federal cleanup levels.
- Lower concentrations of most analytes detected in groundwater were observed in the monitoring well MW-1 sample compared to the borehole grab sample S-3. This was thought to be the result of better hydraulic contact with the surrounding formation afforded by the monitoring well sand pack and development, and/or natural seasonal variability between the March and July 2003 sampling events.
- Petroleum hydrocarbons were detected in groundwater samples from well MW-1 at concentrations below MTCA Method A levels. The analytical laboratory quantified the hydrocarbons using diesel and motor oil standards. This was probably related to discharge of oil containing compressor condensate to the sewer line and Trap Tank, where leakage was documented.
- Arsenic was detected in groundwater samples from S-3/MW-1 at concentrations of 23 to 97 ug/l, above the MTCA Method A cleanup level of 5 ug/l. Arsenic was not identified as a chemical used on the site as part of photofinishing operations. However, arsenic is naturally occurring in soil at low concentrations and can be solublized under reducing conditions. Iron and manganese are relatively insoluble in groundwater at the near neutral pH (6.57) observed at the site unless an oxygen deficient, reducing condition prevails. The presence of elevated concentrations of dissolved iron (63,000 ug/l) and manganese (2,300 ug/l) in the MW-1 sample indicated that site groundwater is strongly reducing. The presence of low concentrations of petroleum hydrocarbons in groundwater near MW-1 may contribute to creation of this reducing condition by providing "food" for microorganisms. Consequently, the arsenic concentrations observed in groundwater samples collected at the site were most likely the result of dissolution of natural soil arsenic. The soil-water partitioning coefficient of arsenic, 29 liter/kg (WAC 173-340-90, Table 747-3), is high enough that low concentrations of arsenic are unlikely to migrate with groundwater. A review of maps maintained by the King County GIS

Selenium Toner

Center indicated that no drinking water supply wells are located within ¼ mile of the site.

- Selenium was detected in both the S-3 and MW-1 groundwater samples. The selenium concentration in the monitoring well sample, 54 ug/l, was slightly above the EPA MCL of 50 ug/l. Selenium is naturally occurring in soil at low concentrations. The selenium detection did not appear to be a significant risk to human health or the environment.

3 Purpose of Supplemental Phase II Investigation

The purpose of additional well installation and sampling in December 2003 was to attempt to confirm that arsenic and selenium detections previously identified in groundwater samples collected near the former Tank Trap do not extend offsite and do not pose significant risk to human health and the environment.

4 Scope of Work

The following tasks were performed:

- Task 1- Preliminary activities including procurement of subcontractors, utility clearance, necessary permits, concrete coring, etc.
- Task 2 - Advancement/drilling and completion of four (4) ground water monitoring wells outside the building to a depth of approximately fifteen (15) feet. The purpose of the new monitoring wells was to determine the local ground water flow direction and to evaluate ground water quality upgradient and downgradient of the existing well MW-1 that is located inside the building.
- Task 3 – Sampling of the interior well MW-1 and the four newly installed exterior monitoring wells.
- Task 3 – Testing five groundwater samples and a quality control duplicate sample for the following parameters:
    - Arsenic (EPA Method 200.7/6020, ICP/MS)
    - Selenium (EPA Method 200.7/6020, ICP/MS)
    - Iron (EPA Method 200.7/6010)
    - Manganese (EPA Method 200.7/6010)
    - Total Petroleum Hydrocarbons quantified as diesel and motor oil (EPA 8015 modified)

  All samples for metals analysis were filtered in the field using a dedicated 0.45 micron in-line filter cartridge.

- Task 4 –Preparation of a Phase II Environmental Site Assessment (ESA) report summarizing the methodologies and results of the investigation.

5 Field Methodologies and Procedures

This section describes: drilling, soil sample collection, and groundwater grab sample collection activities and procedures; and monitoring well installation and sampling procedures.

5.1 Supplemental Monitoring Well Installation

Additional monitoring well installation and groundwater sampling activities were completed between December 17 and 22, 2003. A GEOLOGICA hydrogeologist was present during all field activities and was responsible for: maintaining a boring log of each well boring; making detailed observations of site activities; and providing technical assistance. All soil samples were classified according to the Unified Soil Classification System (USCS). All field activities were completed under the direct supervision of GEOLOGICA'S Certified Hydrogeologist, Brian Aubry.

5.1.1 Drilling and Well Installation

Monitoring well installation was performed by Cascade Drilling of Woodinville, Washington, using a Mobile B-51 drilling rig and 8-inch hollow stem augers. Four monitoring wells, designated as MW-2, MW-3, MW-4, and MW-5 were advanced to depths of 16.5 feet bgs. Boring logs and well completion diagrams are presented in **Appendix A**. Monitoring well locations are shown on **Figure 2**.

Prior to drilling, Underground Service Alert (USA) was notified to identify existing underground public utilities in the vicinity of the property. A private utility locator, Applied Professional Services, Inc. of North Bend, WA cleared each boring location on the property. No obstructions were identified at the monitoring well locations.

The monitoring wells were completed with seven feet of 0.010-inch slot Schedule 40 PVC screen and eight feet of blank casing set between depths of 8 and 15 feet bgs. The annular space around the well screen was backfilled with a filter pack consisting of #2-12 Monterey Silica Sand emplaced to approximately 2 foot above the top of the slotted screen. Bentonite pellets were placed to within about 2.0 feet of the ground surface and hydrated as the seal. A flush mounted "Christy box" well vault was installed with a cement apron at the ground surface. Well construction details are summarized in **Table 1**.

5.1.2 Monitoring Well Survey

A Washington-licensed surveyor, Touma Engineers & Land Surveyors, of Kent, WA, was engaged to survey the elevations and locations of the newly installed and existing site monitoring wells. The locations of the monitoring wells were surveyed relative to the southwest corner of the Qualex building. The elevation of the top of the PVC casing of each well was surveyed relative to the top of PVC casing of monitoring well MW-3. The elevation of monitoring well MW-3 was set to 100 feet.

5.1.3 Groundwater Elevation Monitoring

The groundwater levels in the site monitoring wells were measured using an electronic well sounder prior to sampling on December 22, 2003 and again on January 21, 2004. Depth to groundwater and calculated groundwater elevations are listed in Table 1.

5.2 Well development and Sampling

The new monitoring wells were developed on December 18, 2003 using a high capacity MasterFlex Peristaltic pump with dedicated polyethylene tubing. Approximately 9 to 12 gallons of groundwater were purged from each well during development. Development continued until turbidity visibly decreased and specific conductance, temperature, and pH of the produced water stabilized. The five site monitoring wells were sampled on December 22, 2003. A quality control duplicate sample was collected at well MW-1 and labeled MW-6. Field parameters were measured during a second purging event, immediately prior to sampling. A Hanna water quality meter was used to monitor stabilization of field parameters before sample collection. Samples for dissolved metals analysis were filtered in the field using a dedicated 0.45-micron in-line filter.

5.3 Groundwater Analytical Testing

The groundwater samples collected from wells MW-1 through MW-5 were stored in an ice-chest cooled with bagged ice and shipped via FedEx under standard EPA chain of custody procedures to Sequoia Analytical in Petaluma, California for chemical analysis. The six groundwater samples were analyzed for TPH-g, d, mo using EPA Method 8015m, as well as arsenic, selenium, iron, and manganese using EPA Methods 6010B and 6020.

5.4 Investigation-Derived Waste Management

Well development and purge water and soil cuttings from monitoring well installation were contained in separate DOT-approved 55-gallon steel drums pending receipt of laboratory analytical testing results.

6 Results of Field and Laboratory Testing

The results of the December 2003 Field Program are discussed in the following sections.

6.1 Subsurface Conditions

6.1.1 Soil Conditions

Borings located inside the building encountered approximately 1-foot of pea gravel (fill) overlying dense silty sand that graded to sandy silt below a depth of 6 feet bgs. Borings advanced outside the building encountered approximately 1-foot of sandy gravel (fill) overlying silty sand with interbedded silt at borings MW-3 and MW-4, south of the building. Borings advanced on the east (MW-5) and west (MW-2) sides of the building encountered approximately 1-foot of sandy gravel (fill) overlying silty sand to depths of 10.5 to 15.5 feet bgs. The silty sand was in tum underlain by poorly graded sand and gravel at the more northerly boring locations.

6.1.2 Groundwater Conditions

Groundwater was encountered at depths of 5 to 10 feet bgs in December 2003 and January 2003. Groundwater elevation contour maps and the inferred groundwater flow direction are presented on **Figures 2 and 3**. A northeasterly to southeasterly groundwater flow direction was observed in both monitoring events. Shallow site groundwater appears to be strongly influenced by local recharge features potentially including landscaping and/or stormwater drains. The easterly flow component is directed toward Miller Creek, east of the site. Monitoring well MW-3 appeared to be the most upgradient monitoring well in December 2003. However, groundwater elevation and flow direction may vary seasonally.

6.2 Groundwater Analytical Testing Results

Groundwater analytical testing results from the temporary well (S-3) sampled in March 2003 and the permanent well (MW-1) sampled in July 2003, as well as results of sampling the five site monitoring wells in December 2003 are summarized in **Table 2**. Laboratory analytical testing reports are presented in **Appendix B**. The following sections discuss testing results for each set of parameters tested.

6.2.1 Total Petroleum Hydrocarbons

Motor oil and diesel range organics were detected in the groundwater sample collected from well MW-1 at concentrations ranging from 330 to 470 ug/l. Motor oil range organics were not detected in a split duplicate sample from well MW-1 or any of the other monitoring wells above a method reporting limit of 250 ug/l. Conversely, diesel range organics were detected at concentrations ranging from 64 to 470 ug/l, in groundwater samples collected from monitoring wells MW-1, MW-2, MW-4, and MW-5. The distribution of TPH diesel concentrations in the December 2003 groundwater samples is schematically illustrated on **Figure 4**. Gasoline range organics were not detected in any of the groundwater samples.

6.2.2 Metals

Arsenic and selenium levels were analyzed in the groundwater samples. Additionally, to evaluate redox conditions in groundwater beneath the site, the groundwater samples were analyzed for dissolved iron and manganese. Arsenic was detected in two of the monitoring wells at concentrations of 11ug/l in MW-2 and 26 and 28 ug/l in the primary and duplicate samples from well MW-1. Arsenic was not detected above a method reporting limit of 5 ug/l in groundwater samples from MW-3, MW-4, or MW-5. The distribution of arsenic concentrations in the December 2003 groundwater samples is schematically illustrated on **Figure 4**. Selenium was not detected in any of the groundwater samples above a method reporting limit of 16 ug/l.

Iron was detected in the groundwater samples at concentrations ranging from 5300 ug/l in well MW-3 to 67,000 ug/l in well MW-1. The iron concentrations exceed the Federal Secondary MCL of 300 ug/l based on esthetic qualities. Manganese was detected in the groundwater samples at concentrations ranging from 1900 ug/l in well MW-5 to 3700 ug/l in well MW-2. The manganese concentrations exceed the Federal Secondary MCL of 50 ug/l based on esthetic qualities. Manganese concentrations in wells MW-2 and MW-4 also exceed the MTCA Method B groundwater protection level.

7 Discussion

7.1 REDOX Environment

Strong reducing conditions were indicated in site groundwater. This conclusion is based on:

- Low dissolved oxygen concentrations ranging from 0.2 to 0.8 mg/L in site monitoring wells (**Table 2**), indicative of anaerobic conditions;
- Hydrogen sulfide odor was noted during sampling of wells MW-1 and MW-2. Hydrogen sulfide is produced by the microbial transformation of sulfate in groundwater under reducing conditions;
- High dissolved iron and manganese concentrations in site monitoring wells. Iron and manganese are sparingly soluble in groundwater above pH 5 unless reducing conditions are present.

7.2 Petroleum Hydrocarbon Distribution and Fate in Groundwater

As shown on **Figure 4**, petroleum hydrocarbon quantified as diesel was detected at higher concentrations in monitoring wells MW-1 and MW-2, which are located near the former compressor room (southwest corner of former Qualex facility) where oil staining was observed during the Phase I ESA site visit. However, none of the petroleum hydrocarbon concentrations detected in the December 2003 site groundwater samples exceed MTCA Method A cleanup levels.

The highest dissolved iron concentrations were observed in wells MW-1 and MW-2. These wells also exhibited the highest TPH concentrations. This may be the result of

the activity of iron-reducing bacteria feeding on dissolved hydrocarbon. However, testing for petroleum degrading bacteria was outside the scope of work for this investigation. Compressor equipment that could have contributed to the petroleum hydrocarbon impacts observed in site groundwater was removed in October 2002. Consequently, natural attenuation processes including advection, dispersion, partitioning to soil and microbial transformation are expected to gradually reduce petroleum hydrocarbon concentrations in groundwater.

7.3 Source and Significance of Metals Detections in Groundwater

The source of selenium detections in groundwater samples collected from the temporary well S-3 in March 2003 and the July 2003 sample from well MW-1 remains unknown. Selenium was not detected in groundwater samples collected in December 2003 above a method reporting limit of 16 ug/l, which is below state and federal drinking water limits. Selenium does not appear to be a site concern with respect to human health and the environment.

The only arsenic detections in groundwater samples collected from site monitoring wells in December 2003 were in wells MW-1 and MW-2. Significantly, arsenic was not detected in background well MW-3 or downgradient wells MW-4 and MW-5. This indicates that arsenic is not migrating offsite in groundwater. The arsenic detections in samples collected in December 2003 ranged from 11 to 28 ug/l, slightly exceeding both the MTCA Method A cleanup level of 5 ug/l and the Federal drinking water MCL of 10 ug/l that becomes effective in January 2006. As noted previously, arsenic was not identified as a chemical used on the site as part of photofinishing operations. However, arsenic is naturally occurring in soil at low concentrations and can be solubilized under reducing conditions identified at the site. The fact that the arsenic detections in groundwater are co-located with the highest TPH diesel and dissolved iron concentrations supports this interpretation.

8 Conclusions and Recommendations

TPH as diesel was detected in four of the five site monitoring wells sampled in December 2003. However, none of the petroleum hydrocarbon concentrations detected in the December 2003 site groundwater samples exceed MTCA Method A cleanup levels. Because the only known source of petroleum hydrocarbon on-site, the air compressors and associated hydraulic oil formerly located in the southwest corner of the building near the present locations of monitoring wells MW-1 and MW-2 were removed in October 2002, concentrations of petroleum hydrocarbons detected in groundwater are expected to decrease with time. With the gradual reduction in petroleum hydrocarbon concentrations, the conditions which appear to be stimulating localized solubilization of naturally occurring soil arsenic are also expected to abate. Consequently we expect that both petroleum hydrocarbon and arsenic concentrations will decline with time. Arsenic concentrations are currently still elevated above MTCA Method A cleanup levels in wells MW-1 and MW-2 but do not extend offsite. Selenium concentrations in the December 2003 groundwater samples were all below the MTCA

Method A cleanup levels. The variable concentrations of arsenic and selenium detected in these two wells may reflect seasonal variability.

To evaluate seasonal variability in concentrations of constituents of concern and to verify that natural attenuation of both petroleum hydrocarbons and arsenic is occurring, we recommend sampling the five site monitoring wells in three additional quarterly sampling events. The groundwater samples should be analyzed for petroleum hydrocarbons (TPH-d,mo), arsenic, and selenium. Groundwater elevation and dissolved oxygen concentration should also be monitored quarterly.

9 References

Ecology, 2003, Model Toxics Control Act Cleanup Regulation, Chapter 173-340 WAC.

Environ, 1991, *Environmental Due Diligence Review.*

GEOLOGICA, 2003a, *Report, Phase I Environmental Site Assessment, Kodak Processing Lab (KPL), 21249 72nd Avenue South, Kent, Washington*, prepared for NPEC, Inc., May 29, 2003.

GEOLOGICA, 2003b, *Report, Phase II Subsurface Environmental Investigation, Former Qualex Photofinishing Facility, 21249 72nd Avenue South, Kent, Washington*, prepared for NPEC, Inc., September 2, 2003.

Table 1
Qualex - Kent, WA
December 2003/January 2004 Field Program

Monitoring Well Construction and Groundwater Elevation Data Summary

						December 18, 2003		January 21, 2004	
Well	Easting, ft	Northing, ft	Reference Point Elevation, ft	Casing Diameter, in	Screen Interval, ft bgs	Depth to Groundwater, ft	Groundwater Elevation, ft	Depth to Groundwater, ft	Groundwater Elevation, ft
MW-1	9985.68	10032.37	102.57	1	5 - 14	9.92	92.65	9.87	92.70
MW-2	9934.92	9993.43	102.16	2	8 - 15	9.42	92.74	9.39	92.77
MW-3	10035.34	9994.35	100.00	2	8 - 15	7.20	92.80	6.97	93.03
MW-4	10037.13	10213.54	98.64	2	8 - 15	6.26	92.38	6.29	92.35
MW-5	9913.37	10208.72	98.05	2	8 - 15	5.35	92.70	5.36	92.69

Notes:
1) Southwest corner of Qualex building assigned coordinates of 10000, 10000.
2) Elevations referenced to top of PVC casing of well MW-3.

Table 2
Qualex - Kent, WA
January 2004

Groundwater Quality Data Summary

				Previous Data - Trap Tank Area			New Data - Monitoring Well Samples						
Method	Analyte	Units	Method Reporting Limit (MRL)	Temporary Well S-3	Permanent Well MW-1		MW-1	MW-2	MW-3	MW-4	MW-5	MTCA Cleanup Levels (1)	EPA Drinking Water MCL[2]
Sample Date				3/24/2003	7/24/2003	Reanalysis	12/18/2003	12/18/2003	12/18/2003	12/18/2003	12/18/2003		
8260B	VOCs	ug/l	10 - 100	*	*	-	-	-	-	-	-	Various	-
EPA 8015	Motor Oil Range Organics	ug/l	250	420	320	-	<250/330	<250	<250	<250	<250	500	-
	Diesel Range Organics	ug/l	50	**580**	430	-	350/470	340	<50	87	64	**500**	-
	Gasoline Range Organics	ug/l	50	<50	<50	-	-	-	-	-	-	800	-
EPA	Antimony	ug/l	5	<5	<24	-	-	-	-	-	-	6.4(B)	6
6010/7000	Arsenic	ug/l	5 - 100	**97**	**21J**	**23**	**28/26**	**11**	<5	<5	<5	5	50
	Barium	ug/l	10	86	39	-	-	-	-	-	-	1120(B)	2000
	Beryllium	ug/l	1 - 4	<4	<0.16	-	-	-	-	-	-	32(B)	4
	Cadmium	ug/l	1 - 10	4.9	<2.1	-	-	-	-	-	-	5	5
	Chromium (Total)	ug/l	10	<10	2.9J	-	-	-	-	-	-	50	100
	Cobalt	ug/l	7	7.1	<2.8	-	-	-	-	-	-	-	-
	Copper	ug/l	10	<10	<2.6	-	-	-	-	-	-	592(B)	1300
	Iron	ug/L	300	-	**53000**	-	**53000/67000**	**59000**	**5300**	**29000**	**55000**	-	**300(7)**
	Lead	ug/l	3 - 75	<3	<18	-	-	-	-	-	-	15	15
	Manganese	ug/L	10	-	**2300**	-	**2000/2200**	**3700**	**2100**	**2700**	**1900**	**2240(B)**	**50(7)**
	Mercury	ug/l	0.2	<0.2	0.22	-	-	-	-	-	-	2	2
	Molybdenum	ug/l	20	<20	<7.8	-	-	-	-	-	-	80(B)	-
	Nickel	ug/l	10 - 30	230	24J	-	-	-	-	-	-	320(B)	-
	Selenium	ug/l	5 - 100	**170**	<16	**54**	<16/<16	<16	<16	<16	<16	80(B)	**50**
	Silver	ug/l	1	<1	<2.8	-	-	-	-	-	-	80(B)	100(7)
	Thalium	ug/l	2 - 100	<2	<16	-	-	-	-	-	-	1.12(B)	2
	Vanadium	ug/l	10	39	15	-	-	-	-	-	-	112(B)	-
	Zinc	ug/l	20	34	14J	-	-	-	-	-	-	4800(B)	5000(7)
EPA 330.0	Nitrate as N	mg/l	1	<1	<1	-	-	-	-	-	-	1.6(B)	10
EPA 330.0	Sulfate as SO4	mg/l	1	<1	<5	-	-	-	-	-	-	-	250(7)
EPA 335.4	Total Cyanide	mg/l	0.005	<0.005	<0.005	-	-	-	-	-	-	0.32(B)	0.2(9)
EPA 150.1	pH (field & lab)	mg/l	0.1	6.57	6.6	-	-	-	-	7.2	7.4	-	6.5 - 8.5(7)
	Dissolved Oxygen (field)	mg/l	0.1	-	-	-	0.4	0.6	0.8	0.5	0.2	-	-

Notes:

1) Model Toxics Control Act (MTCA) Cleanup Regulation Chapter 173-340 WAC Method A Cleanup Levels for unrestricted land use. Washington State Washington State Department of Ecology Toxics Cleanup Program (2001).
2) EPA (2001) Maximum Contaminant Levels (MCLs)/National Primary Drinking Water Standards, March 2001.
3) * = Not detected at the Method Reporting Limit.
4) B = Method A cleanup level not identified, MTCA Method B cleanup level for groundwater protection used.
5) - = not analyzed or not available.
6) National Secondary Drinking Water Regulation for cosmetic and/or aesthetic effects.
7) Value is for Free cyanide. Total cyanide may not be representative of free cyanide.

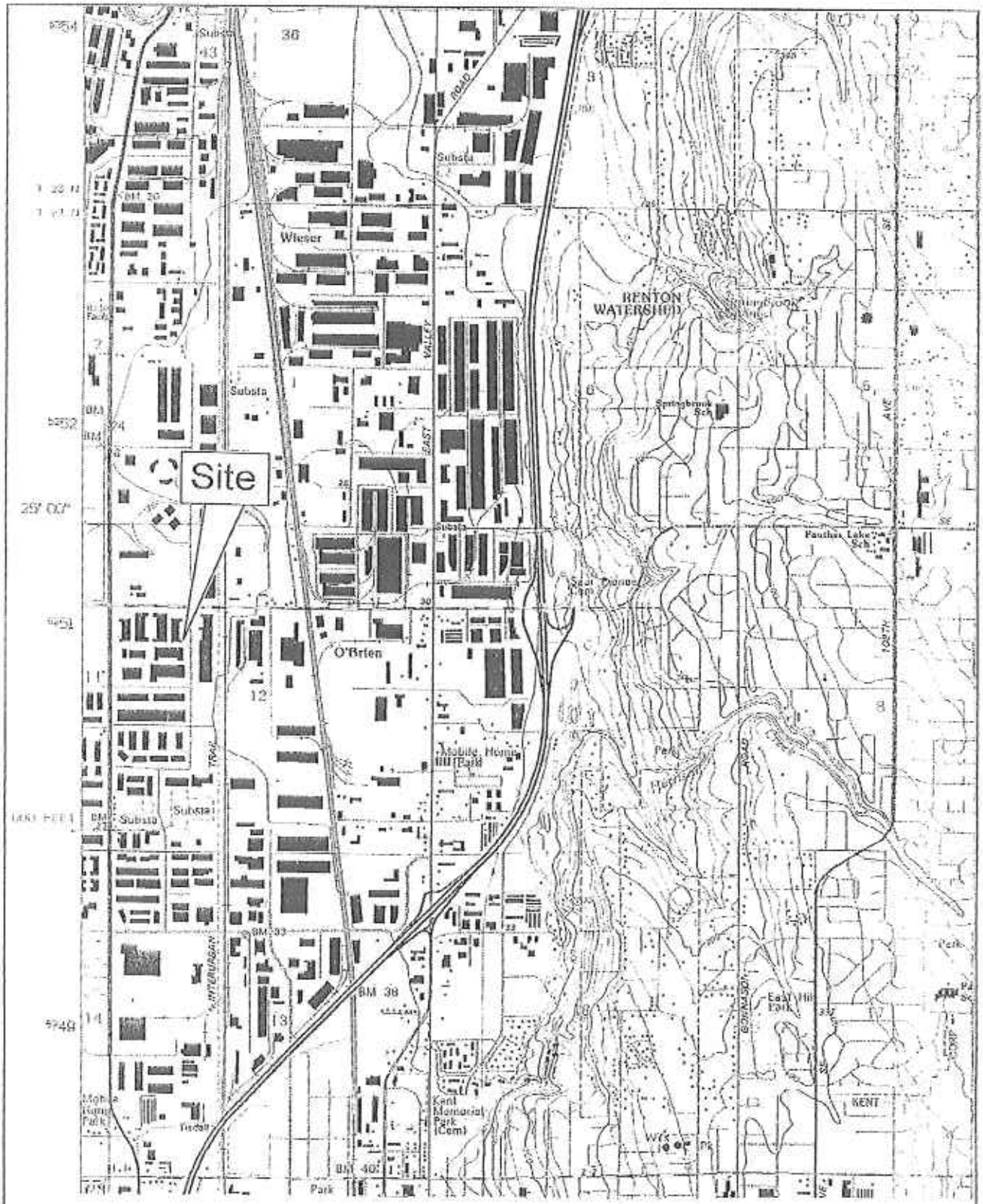
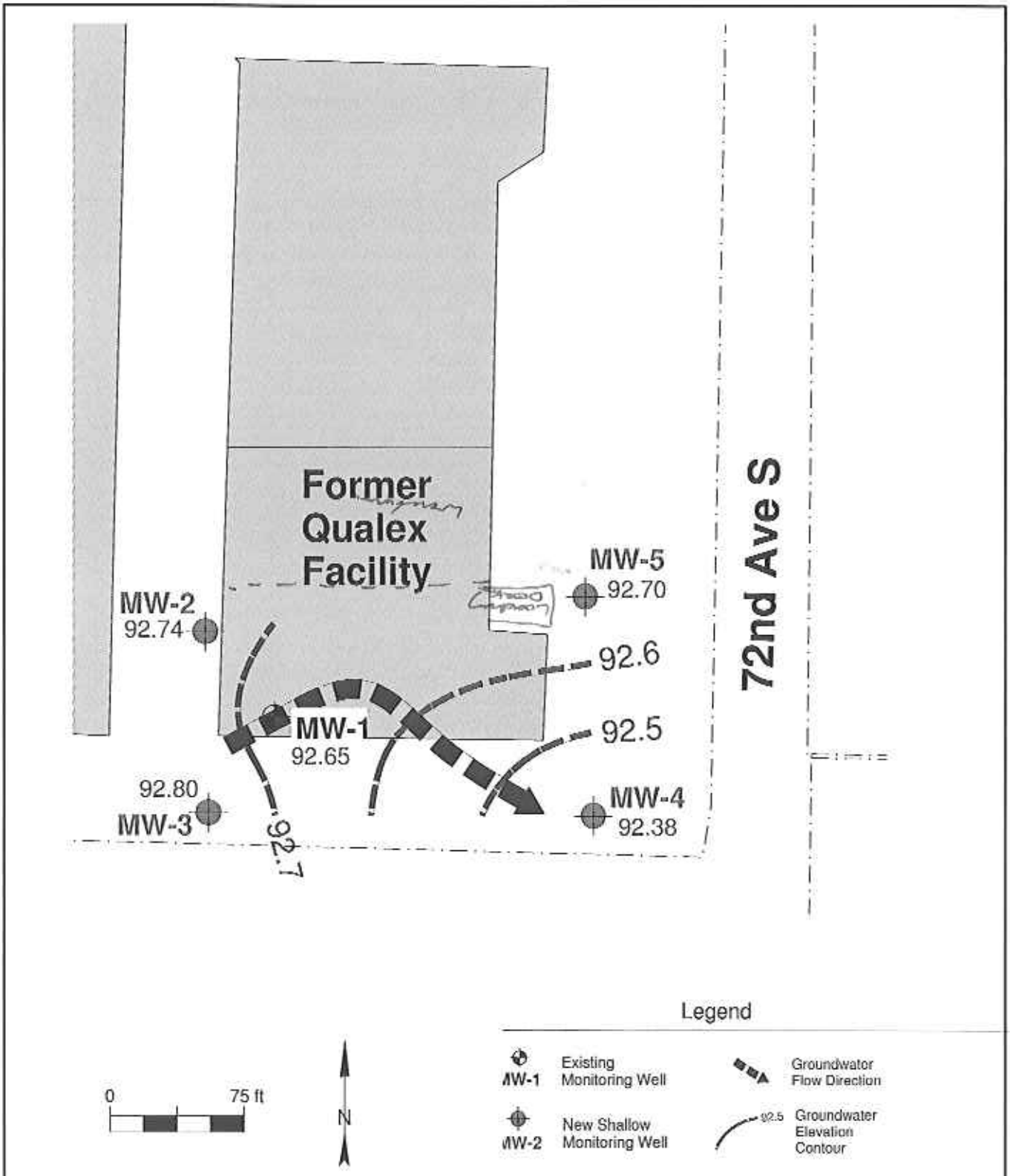
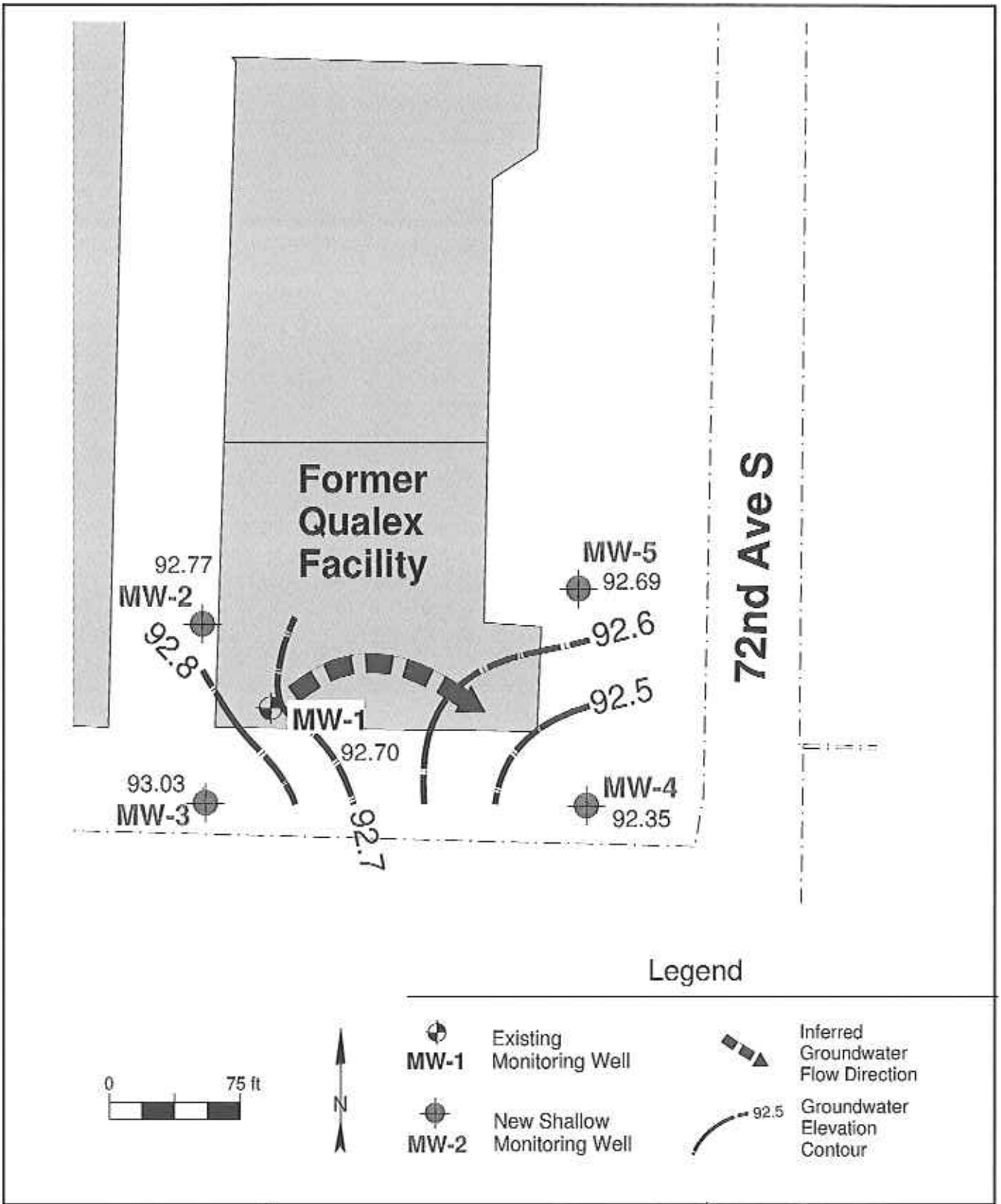


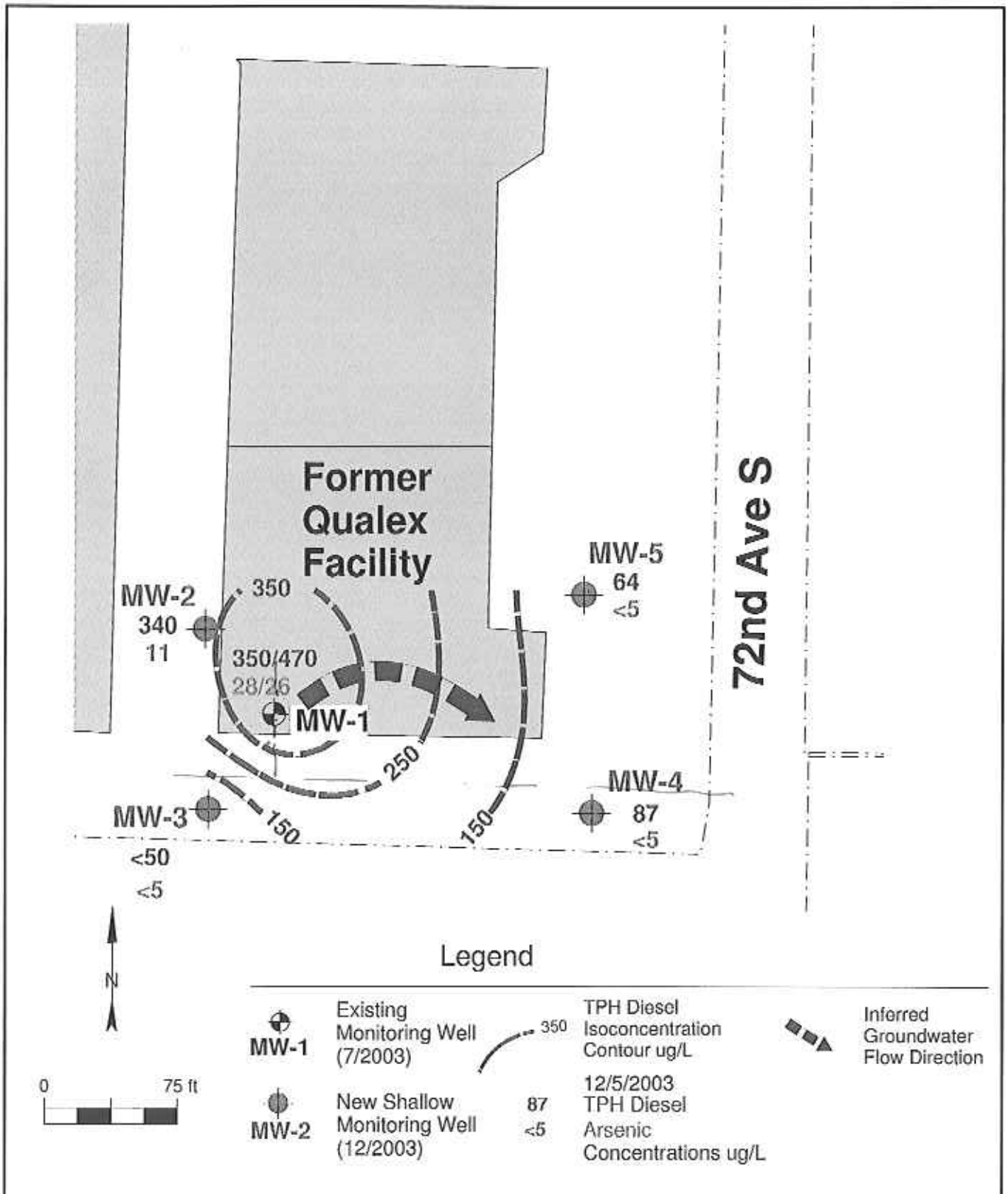
Figure 1 Site Location Map
Qualex site
21249 72nd Avenue So.
Kent, Washington



geologica 594 Howard St, Suite 400 San Francisco, CA 94105	**Former Qualex Photofinishing Facility** **21249 72nd Ave S** **Kent, Washington**	**Figure 2** **Groundwater Elevation Contours December 2003**



geologica 594 Howard St, Suite 400 San Francisco, CA 94105	**Former Qualex Photofinishing Facility** **21249 72nd Ave S** **Kent, Washington**	**Figure 3** **Groundwater Elevation Contours January 2004**



geologica 594 Howard St, Suite 400 San Francisco, CA 94105	**Former Qualex Photofinishing Facility** **21249 72nd Ave S** **Kent, Washington**	**Figure 4** **December 2003** **TPH Diesel and Arsenic Distribution**

GEOLOGICA INC.
Boring Log
594 Howard St, Suite 400
San Francisco, CA 98105

Boring/Well Number: MW-2

Page 1 of 1

Project Number:	Date Started: 12/17/2003
Project Name: Qualex - Kent	Date Completed: 12/17/2003
Site Location: 21249 72nd Ave S, Kent, WA	Casing Type/Diameter: 2" sched. 40, flush-threaded PVC
Boring Location: behind building	Screen Type/Slot: 7' machine-slotted 0.010 in. PVC
Drilling Method: HSA	Gravel/Sand Pack Type: Monterey #2-12 silica sand
Sampling Method: D&M sampler; 300 lb hammer	Grout Type/Quantity: medium Purogold bentonite chips
Boring Diameter: 8"	Depth to Water: 9.35 ft below TOC
Logged by: Dan Matthews	Elevation of Top of PVC Casing:
Drilling Contractor: Cascade Drilling	Casing Stickup, ft -0.48 (flush monument)

Remarks: Weather: sunny, mild

PID/OVA (ppm)	Blow Counts	Recovery (inches)	Sample ID.	Depth (ft BGS)	USCS	Lithologic Description
				0		3" asphalt over moist, sandy Gravel
				1		
				2		
				3		
				4		
				5		
	9				SM/	Moist to damp, brown, loose, sandy SILT/silty fine SAND with
	5	12"	S-1	6	ML	few gravel
	12			7		
				8		
				9		
				10		
	8					
	8	18"	S-2	11	SW	Damp, dark gray, loose, fine SAND with trace silt and few
	8			12		organics
				13		
				14		
				15		
	7					
	8	18"	S-3	16	SW	Wet, loose, fine to medium SAND; 1" silt lense at 16.3 ft
	9					

Well Completion Diagram: Concrete; Mod. Bentonite Chips; 2" PVC Casing; #2-12 Monterey Sand; 0.010" Slotted PVC Screen

Bottom of hole at 16.5 ft below ground surface on 12/17/2003.

Figure A-1

GEOLOGICA INC.
Boring Log
594 Howard St, Suite 400
San Francisco, CA 98105

Boring/Well Number: MW-3

Page 1 of 1

Project Number:	Date Started: 12/17/2003
Project Name: Qualex - Kent	Date Completed: 12/17/2003
Site Location: 21249 72nd Ave S, Kent, WA	Casing Type/Diameter: 2" sched. 40, flush-threaded PVC
Boring Location: southwest corner of building	Screen Type/Slot: 7' machine-slotted 0.010 in. PVC
Drilling Method: HSA	Gravel/Sand Pack Type: Monterey #2-12 silica sand
Sampling Method: D&M sampler; 300 lb hammer	Grout Type/Quantity: medium Puregold bentonite chips
Boring Diameter: 8"	Depth to Water: 7.25 ft below TOC
Logged by: Dan Matthews	Elevation of Top of PVC Casing:
Drilling Contractor: Cascade Drilling	Casing Stickup, ft -0.5 (flush monument)

Remarks: Weather: sunny, mild

PID/OVA (ppm)	Blow Counts	Recovery (inches)	Sample ID.	Depth (ft BGS)	USCS	Lithologic Description
				0		3" asphalt over dry to moist, sandy Gravel
				1		
				2		
				3		
				4		
				5		
	5				SM/	Damp, gray, loose, fine SAND with some SILT, few organics
	5	18"	S-1	6	ML	
	4					
				7		
				8		
				9		
				10		
	6					
	7	18"	S-2	11	SM	As above, damp to wet
	5					
				12		
				13		
				14		
				15		
	6					
	11	18"	S-3	16	ML	Wet, gray, medium stiff to stiff, very fine sandy SILT
	12				SM	Wet, gray, loose, slightly silty, fine SAND

Well Completion Diagram: Concrete; Med. Bentonite Chips; 2" PVC Casing; #2-12 Monterey Sand; 0.010" Slotted PVC Screen

Bottom of hole at 16.5 ft below ground surface on 12/17/2003.

Figure A-2

GEOLOGICA INC.
Boring Log
594 Howard St, Suite 400
San Francisco, CA 98105

Boring/Well Number: MW-4

Page 1 of 1

Project Number:	Date Started: 12/17/2003
Project Name: Qualex - Kent	Date Completed: 12/17/2003
Site Location: 21249 72nd Ave S, Kent, WA	Casing Type/Diameter: 2" sched. 40, flush-threaded PVC
Boring Location: southeast corner of building	Screen Type/Slot: 7' machine-slotted 0.010 in. PVC
Drilling Method: HSA	Gravel/Sand Pack Type: Monterey #2-12 silica sand
Sampling Method: D&M sampler; 300 lb hammer	Grout Type/Quantity: medium Puregold bentonite chips
Boring Diameter: 8"	Depth to Water: 6.07 ft below TOC
Logged by: Dan Matthews	Elevation of Top of PVC Casing:
Drilling Contractor: Cascade Drilling	Casing Stickup, ft -0.48 (flush monument)

Remarks: Weather: sunny, mild

PID/OVA (ppm)	Blow Counts	Recovery (inches)	Sample ID.	Depth (ft BGS)	USCS	Lithologic Description	Well Completion Diagram
				0		3" asphalt over moist, sandy Gravel	Concrete
				1			
				2			Med. Bentonite Chips
				3			
				4			2" PVC Casing
				5			
	5				SM	Moist to damp, dark gray, loose to medium dense, trace silt to silty, fine SAND	
	3	18"	S-1	6			
	2						#2-12 Monterey Sand
				7			
				8			
				9			
				10			
	11						0.010" Slotted PVC Screen
	16	18"	S-2	11	ML	Damp, gray SILT	
	15				SM	Wet, dark gray, loose to medium dense, slighty silty to silty, fine SAND	
				12			
				13			
				14			
				15			
	9						
	5	18"	S-3	16			
	5				ML	Damp, dark gray, medium stiff, SILT with trace organics	

Bottom of hole at 16.5 ft below ground surface on 12/17/2003.

Figure A-3

GEOLOGICA INC.
Boring Log
594 Howard St, Suite 400
San Francisco, CA 98105

Boring/Well Number: MW-5

Page 1 of 1

Project Number:	Date Started: 12/17/2003
Project Name: Qualex - Kent	Date Completed: 12/17/2003
Site Location: 21249 72nd Ave S, Kent, WA	Casing Type/Diameter: 2" sched. 40, flush-threaded PVC
Boring Location: southeast corner of building	Screen Type/Slot: 7' machine-slotted 0.010 in. PVC
Drilling Method: HSA	Gravel/Sand Pack Type: Monterey #2-12 silica sand
Sampling Method: D&M sampler; 300 lb hammer	Grout Type/Quantity: medium Puregold bentonite chips
Boring Diameter: 8"	Depth to Water: 5.27 ft below TOC
Logged by: Dan Matthews	Elevation of Top of PVC Casing:
Drilling Contractor: Cascade Drilling	Casing Stickup, ft -0.32 (flush monument)

Remarks: Weather: sunny, mild

PID/OVA (ppm)	Blow Counts	Recovery (inches)	Sample ID.	Depth (ft BGS)	USCS	Lithologic Description	Well Completion Diagram
				0		3" asphalt over wet, sandy Gravel	Concrete
				1			
				2			Med. Bentonite Chips
				3			
				4			2" PVC Casing
				5			
	4				SM	Moist to damp, dark gray, loose, slightly silty to silty fine SAND	
	7	18"	S-1	6		with few gravel and wood chips	
	7						
				7			#2-12 Monterey Sand
				8			
				9			
				10			
	7						0.010" Slotted PVC Screen
	11	18"	S-2	11		Wet, trace organics	
	11						
				12			
				13			
				14			
				15			
	6						
	7	18"	S-3	16	SP		
	6					Wet, dark gray, loose, fine to medium SAND with few organics	

Bottom of hole at 16.5 ft below ground surface on 12/17/2003.

Figure A-4

Sequoia
Analytical

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16 January, 2004

Brian Aubry
Geologica Inc.
594 Howard St., Suite 400
San Francisco, CA 94105

RE: QUALEX
Work Order: P312615

Enclosed are the results of analyses for samples received by the laboratory on 12/23/03 12:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Angelee Carl

Angelee Carl
Project Manager

CA ELAP Certificate #2374

Sequoia Analytical

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Geologica Inc.	Project: QUALEX	P312615
594 Howard St., Suite 400	Project Number: Kent, WA	**Reported:**
San Francisco CA, 94105	Project Manager: Brian Aubry	01/16/04 16:27

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	P312615-01	Water	12/22/03 10:45	12/23/03 12:15
MW-2	P312615-02	Water	12/22/03 11:50	12/23/03 12:15
MW-3	P312615-03	Water	12/22/03 12:50	12/23/03 12:15
MW-4	P312615-04	Water	12/22/03 09:00	12/23/03 12:15
MW-5	P312615-05	Water	12/22/03 09:55	12/23/03 12:15
MW-6	P312615-06	Water	12/22/03 10:50	12/23/03 12:15

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Geologica Inc.	Project: QUALEX	P312615
594 Howard St., Suite 400	Project Number: Kent, WA	**Reported:**
San Francisco CA, 94105	Project Manager: Brian Aubry	01/16/04 16:27

Extractable Hydrocarbons by EPA 8015B

Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (P312615-01) Water Sampled: 12/22/03 10:45 Received: 12/23/03 12:15									
Diesel Range Organics (C10-C28)	**0.35**	0.048	mg/l	1	3120724	12/29/03	12/30/03	EPA 8015B-SVOA	
Motor Oil Range Organics (C24-C36)	ND	0.24	"	"	"	"	"	"	
Surrogate: Octacosane		*42 %*	*50-150*		"	"	"	"	*S-LIM*
MW-1 (P312615-01RE1) Water Sampled: 12/22/03 10:45 Received: 12/23/03 12:15									**HT-RE**
Diesel Range Organics (C10-C28)	**0.37**	0.050	mg/l	1	4010212	01/14/04	01/16/04	EPA 8015B-SVOA	
Motor Oil Range Organics (C24-C36)	ND	0.25	"	"	"	"	"	"	
Surrogate: Octacosane		*65 %*	*50-150*		"	"	"	"	
MW-2 (P312615-02) Water Sampled: 12/22/03 11:50 Received: 12/23/03 12:15									
Diesel Range Organics (C10-C28)	**0.34**	0.048	mg/l	1	3120724	12/29/03	01/13/04	EPA 8015B-SVOA	
Motor Oil Range Organics (C24-C36)	ND	0.24	"	"	"	"	"	"	
Surrogate: Octacosane		*53 %*	*50-150*		"	"	"	"	
MW-3 (P312615-03) Water Sampled: 12/22/03 12:50 Received: 12/23/03 12:15									
Diesel Range Organics (C10-C28)	ND	0.048	mg/l	1	3120724	12/29/03	12/30/03	EPA 8015B-SVOA	
Motor Oil Range Organics (C24-C36)	ND	0.24	"	"	"	"	"	"	
Surrogate: Octacosane		*73 %*	*50-150*		"	"	"	"	
MW-4 (P312615-04) Water Sampled: 12/22/03 09:00 Received: 12/23/03 12:15									
Diesel Range Organics (C10-C28)	**0.087**	0.048	mg/l	1	3120724	12/29/03	12/30/03	EPA 8015B-SVOA	
Motor Oil Range Organics (C24-C36)	ND	0.24	"	"	"	"	"	"	
Surrogate: Octacosane		*56 %*	*50-150*		"	"	"	"	
MW-5 (P312615-05) Water Sampled: 12/22/03 09:55 Received: 12/23/03 12:15									
Diesel Range Organics (C10-C28)	**0.064**	0.048	mg/l	1	3120724	12/29/03	01/13/04	EPA 8015B-SVOA	
Motor Oil Range Organics (C24-C36)	ND	0.24	"	"	"	"	"	"	
Surrogate: Octacosane		*53 %*	*50-150*		"	"	"	"	

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Geologica Inc.	Project: QUALEX	P312615
594 Howard St., Suite 400	Project Number: Kent, WA	**Reported:**
San Francisco CA, 94105	Project Manager: Brian Aubry	01/16/04 16:27

Extractable Hydrocarbons by EPA 8015B

Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-6 (P312615-06) Water Sampled: 12/22/03 10:50 Received: 12/23/03 12:15									
Diesel Range Organics (C10-C28)	**0.082**	0.048	mg/l	1	3120724	12/29/03	12/30/03	EPA 8015B-SVOA	
Motor Oil Range Organics (C24-C36)	ND	0.24	"	"	"	"	"	"	
Surrogate: Octacosane		*36 %*	*50-150*		"	"	"	"	*S-LIM*
MW-6 (P312615-06RE1) Water Sampled: 12/22/03 10:50 Received: 12/23/03 12:15									**HT-RE**
Diesel Range Organics (C10-C28)	**0.47**	0.050	mg/l	1	4010212	01/14/04	01/16/04	EPA 8015B-SVOA	
Motor Oil Range Organics (C24-C36)	**0.33**	0.25	"	"	"	"	"	"	
Surrogate: Octacosane		*86 %*	*50-150*		"	"	"	"	

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Geologica Inc.	Project: QUALEX	P312615
594 Howard St., Suite 400	Project Number: Kent, WA	Reported:
San Francisco CA, 94105	Project Manager: Brian Aubry	01/16/04 16:27

Dissolved Metals by EPA 6000/7000 Series Methods

Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (P312615-01) Water	**Sampled: 12/22/03 10:45**	**Received: 12/23/03 12:15**							
Arsenic	**28**	5.0	ug/l	1	3120771	01/06/04	01/12/04	EPA 6020	
Iron	**63000**	300	"	"	"	"	01/06/04	EPA 6010B	
Manganese	**2000**	15	"	"	"	"	"	"	
Selenium	ND	100	"	"	"	"	"	"	
MW-2 (P312615-02) Water	**Sampled: 12/22/03 11:50**	**Received: 12/23/03 12:15**							
Arsenic	**11**	5.0	ug/l	1	3120771	01/06/04	01/12/04	EPA 6020	
Iron	**59000**	300	"	"	"	"	01/06/04	EPA 6010B	
Manganese	**3700**	15	"	"	"	"	"	"	
Selenium	ND	100	"	"	"	"	"	"	
MW-3 (P312615-03) Water	**Sampled: 12/22/03 12:50**	**Received: 12/23/03 12:15**							
Arsenic	ND	5.0	ug/l	1	3120771	01/06/04	01/12/04	EPA 6020	
Iron	**5300**	300	"	"	"	"	01/06/04	EPA 6010B	
Manganese	**2100**	15	"	"	"	"	"	"	
Selenium	ND	100	"	"	"	"	"	"	
MW-4 (P312615-04) Water	**Sampled: 12/22/03 09:00**	**Received: 12/23/03 12:15**							
Arsenic	ND	5.0	ug/l	1	3120771	01/06/04	01/12/04	EPA 6020	
Iron	**29000**	300	"	"	"	"	01/06/04	EPA 6010B	
Manganese	**2700**	15	"	"	"	"	"	"	
Selenium	ND	100	"	"	"	"	"	"	
MW-5 (P312615-05) Water	**Sampled: 12/22/03 09:55**	**Received: 12/23/03 12:15**							
Arsenic	ND	5.0	ug/l	1	3120771	01/06/04	01/12/04	EPA 6020	
Iron	**55000**	300	"	"	"	"	01/06/04	EPA 6010B	
Manganese	**1900**	15	"	"	"	"	"	"	
Selenium	ND	100	"	"	"	"	"	"	

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Geologica Inc.	Project: QUALEX	P312615
594 Howard St., Suite 400	Project Number: Kent, WA	**Reported:**
San Francisco CA, 94105	Project Manager: Brian Aubry	01/16/04 16:27

Dissolved Metals by EPA 6000/7000 Series Methods

Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-6 (P312615-06) Water	**Sampled: 12/22/03 10:50**	**Received: 12/23/03 12:15**							
Arsenic	**26**	5.0	ug/l	1	3120771	01/06/04	01/12/04	EPA 6020	
Iron	**67000**	300	"	"	"	"	01/06/04	EPA 6010B	
Manganese	**2200**	15	"	"	"	"	"	"	
Selenium	ND	100	"	"	"	"	"	"	

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Geologica Inc.	Project: QUALEX	P312615
594 Howard St., Suite 400	Project Number: Kent, WA	**Reported:**
San Francisco CA, 94105	Project Manager: Brian Aubry	01/16/04 16:27

Extractable Hydrocarbons by EPA 8015B - Quality Control
Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3120724 - EPA 3510C										
Blank (3120724-BLK1)				Prepared: 12/29/03 Analyzed: 12/30/03						
Diesel Range Organics (C10-C28)	ND	0.050	mg/l							
Motor Oil Range Organics (C24-C36)	ND	0.25	"							
Surrogate: Octacosane	*0.0374*		"	*0.0500*		*75*	*50-150*			
Laboratory Control Sample (3120724-BS1)				Prepared: 12/29/03 Analyzed: 12/30/03						
Diesel Range Organics (C10-C28)	0.784	0.050	mg/l	1.00		78	49-102			
Surrogate: Octacosane	*0.0445*		"	*0.0500*		*89*	*50-150*			
Laboratory Control Sample Dup (3120724-BSD1)				Prepared: 12/29/03 Analyzed: 12/30/03						
Diesel Range Organics (C10-C28)	0.657	0.050	mg/l	1.00		66	49-102	18	20	
Surrogate: Octacosane	*0.0389*		"	*0.0500*		*78*	*50-150*			
Batch 4010212 - EPA 3510C										
Blank (4010212-BLK1)				Prepared: 01/14/04 Analyzed: 01/16/04						
Diesel Range Organics (C10-C28)	ND	0.050	mg/l							
Motor Oil Range Organics (C24-C36)	ND	0.25	"							
Surrogate: Octacosane	*0.0220*		"	*0.0500*		*44*	*50-150*			*S-LIM*
Laboratory Control Sample (4010212-BS1)				Prepared: 01/14/04 Analyzed: 01/16/04						
Diesel Range Organics (C10-C28)	0.734	0.050	mg/l	1.00		73	49-102			
Surrogate: Octacosane	*0.0322*		"	*0.0500*		*64*	*50-150*			
Laboratory Control Sample Dup (4010212-BSD1)				Prepared: 01/14/04 Analyzed: 01/16/04						
Diesel Range Organics (C10-C28)	0.685	0.050	mg/l	1.00		68	49-102	7	20	
Surrogate: Octacosane	*0.0297*		"	*0.0500*		*59*	*50-150*			

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Geologica Inc.	Project: QUALEX	P312615
594 Howard St., Suite 400	Project Number: Kent, WA	**Reported:**
San Francisco CA, 94105	Project Manager: Brian Aubry	01/16/04 16:27

Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control

Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3120771 - EPA 3005A										
Blank (3120771-BLK1)				Prepared: 12/30/03 Analyzed: 01/12/04						
Arsenic	ND	5.0	ug/l							
Iron	ND	300	"							
Manganese	ND	15	"							
Selenium	ND	100	"							
Laboratory Control Sample (3120771-BS1)				Prepared: 01/06/04 Analyzed: 01/12/04						
Arsenic	539	5.0	ug/l	500		108	80-120			
Iron	5200	300	"	5000		104	80-120			
Manganese	492	15	"	500		98	80-120			
Selenium	480	100	"	500		96	80-120			
Matrix Spike (3120771-MS1)	**Source: P312604-01**			Prepared & Analyzed: 01/06/04						
Iron	3440	300	ug/l	5000	330	62	80-120			QM-07
Manganese	557	15	"	500	400	31	80-120			QM-07
Selenium	307	100	"	500	ND	61	80-120			QM-07
Matrix Spike (3120771-MS2)	**Source: P312615-01**			Prepared: 01/06/04 Analyzed: 01/12/04						
Arsenic	508	5.0	ug/l	500	28	96	80-120			
Iron	67900	300	"	5000	63000	98	80-120			
Manganese	2500	15	"	500	2000	100	80-120			
Selenium	483	100	"	500	ND	97	80-120			
Matrix Spike Dup (3120771-MSD1)	**Source: P312604-01**			Prepared & Analyzed: 01/06/04						
Iron	3480	300	ug/l	5000	330	63	80-120	1	20	QM-07
Manganese	565	15	"	500	400	33	80-120	1	20	QM-07
Selenium	302	100	"	500	ND	60	80-120	2	20	QM-07
Matrix Spike Dup (3120771-MSD2)	**Source: P312615-01**			Prepared: 01/06/04 Analyzed: 01/12/04						
Arsenic	507	5.0	ug/l	500	28	96	80-120	0.2	20	
Iron	68400	300	"	5000	63000	108	80-120	0.7	20	
Manganese	2520	15	"	500	2000	104	80-120	0.8	20	
Selenium	472	100	"	500	ND	94	80-120	2	20	

Sequoia Analytical

1455 McDowell Blvd, North Ste D
Petaluma, CA 94954
(707) 792-1865
FAX (707) 792-0342
www.sequoialabs.com

Geologica Inc.	Project: QUALEX	P312615
594 Howard St., Suite 400	Project Number: Kent, WA	**Reported:**
San Francisco CA, 94105	Project Manager: Brian Aubry	01/16/04 16:27

Notes and Definitions

HT-RE	This sample was re-extracted beyond the EPA recommended holding time. The results may still be useful for their intended purpose.
QM-07	The spike recovery was outside control limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
S-LIM	The surrogate recovery was outside control limits. The result may still be useful for its intended purpose.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

SEQUOIA ANALYTICAL
CHAIN OF CUSTODY

☐ 885 Jarvis Drive • Morgan Hill, CA 95037 • (408) 776-9600 • FAX (408) 782-6308
☒ 1455 N. McDowell Blvd, Suite D. • Petaluma, CA 94954 • (707) 792-1865 • FAX (707) 792-0342
☐ 819 Striker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600 • FAX (916) 921-0100
☐ 404 N. Wiget Lane • Walnut Creek, CA 94598 • (925) 988-9600 • FAX (925) 988-9673

Company Name: Geologica, Inc		Project: Qualex - Kent, WA	
Mailing Address: 653 Bell St #A		Billing Address (if different):	
City: Edmonds	State: WA Zip Code: 98020		
Telephone: 206-799-5726	Fax #:	P.O. #:	
Report To: Dan Matthews	E-mail Address: dwmatthews@verizon.net	QC Data: ☒ Level II (standard) ☐ Level III ☐ Level IV	
Sampler: DWM	Date / Time Results Required:	Sequoia's Work Order #	

Turnaround Time:
☒ 10-15 Working Days (Standard TAT)
☐ 7 Working Days
☐ 5 Working Days
☐ 72 Hours
☐ 48 Hours
☐ 24 Hours
☐ 2-8 Hours

MANDATORY:
☐ SDWA (Drinking Water)
☐ CWA (Waste Water)
☐ RCRA (Hazardous Waste)
☐ Other

ANALYSES REQUESTED (Please provide method)

Client Sample I.D.	Date / Time Sampled	Matrix Desc.	# of Cont.	Container Type	Sequoia's Sample #	TPH-d, mo	arsenic *	selenium *	manganese *	iron *	Comments/ Temp.(if required)
1. MW-1	12/22/03 10:45	Water	3	glass/poly	P312645-1	X	X	X	X	X	
2. MW-2	12-22-03 11:50	↓		↓	-2	X	X	X	X	X	* Field filtered
3. MW-3	12-22-03 12:50				-3	X	X	X	X	X	
4. MW-4	12/22/03 09:00				-4	X	X	X	X	X	EXCEL deliverable
5. MW-5	12/22/03 09:55				-5	X	X	X	X	X	
6. MW-6	12/22/03 10:50				-6	X	X	X	X	X	
7.											
8.											
9.											
10.											

COOLER CUSTODY SEALS INTACT ☐
NOT INTACT ☐
COOLER TEMPERATURE 5.7 °c
4.0

Relinquished by / Co.: Daniel W. Matthews	Received by / Co.:	Date / Time / Temp.:
Relinquished by / Co.: Geologica	Received by / Co.: Sequoia	Date / Time / Temp.: 12/23/03 @ 1215
Relinquished by / Co.:	Received by / Co.:	Date / Time / Temp.:
Relinquished by / Co.:	Received by / Co.:	Date / Time / Temp.:

Were Samples Received in Good Condition? ☐ Yes ☐ No Samples on Ice? ☐ Yes ☐ No Method of Shipment: _____ Page ___ of ___

White: Sequoia Yellow: Sequoia Pink: Client

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: Geologica
REC. BY (PRINT) AA
WORKORDER: P312615

DATE Received at Lab: 12/23/15
TIME Received at Lab: 1215
LOG IN DATE: 12/23/15

(Drinking water) for regulatory purposes: YES/NO
(Wastewater) for regulatory purposes: YES/NO

CIRCLE THE APPROPRIATE RESPONSE	LAB SAMPLE #	#	CLIENT ID	DESCRIPTION	SAMPLE MATRIX	DATE SAMPLED	CONDITION (ETC.)
1. Custody Seal(s) Present / (Absent) Intact / Broken*			MW-1	Diss HNO3 2x1L	W	12/22/15	
2. Chain-of-Custody (Present) / Absent*			2				
3. Traffic Reports or Packing List: Present / (Absent)			3				
4. Airbill: (Airbill) / Sticker Present / (Absent)			4				
5. Airbill #: 794368350649			5				
6. Sample Labels: (Present) / Absent			6				
7. Sample IDs: (Listed) / Not Listed on Chain-of-Custody							
8. Sample Condition: (Intact) / Broken* / Leaking*							
9. Does information on custody reports, traffic reports and sample labels agree? (Yes) / No*							
10. Sample received within hold time: (Yes) / No*							
11. Proper Preservatives used: (Yes) / No*							
12. Temp Rec. at Lab: 5.7, 4.0 (Acceptance range for samples requiring thermal pres.:4+/-2°C) (Yes) / No*							

*If Circled, contact Project Manager and attach record of resolution.