WORKPLAN FOR SITE ACTIVITIES

Lake Chelan Boat Company

Colony Insurance Claim #208188

1418 West Woodin Avenue

Chelan, Washington

Antea® Group Project No. STCG-422-2
June 19, 2015

Prepared for:
Mr. Jack Raines/Lake Chelan Boat Company
1418 West Woodin Avenue
Chelan, WA 98816

Prepared by:
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June 19, 2015

Mr. Jack Raines
Lake Chelan Boat Company
1418 West Woodin Avenue
Chelan, Washington 98816

Subject: Workplan for Site Activities
Lake Chelan Boat Company
1418 West Woodin Avenue
Chelan, Washington
Antea Group Project No. STCG-422-2
Colony Claim No. 208188

Dear Mr. Raines:

Antea®Group (Antea Group) has prepared this workplan for well installation, groundwater monitoring, and related activities at the above-referenced Site. The investigation is being performed to further investigate soil and groundwater conditions to the east of the property and to determine if migrating contamination may be impacting the Site. The scope of work was requested by the Washington State Department of Ecology (Ecology) during a meeting on March 30, 2015. On the east side of the Site, diesel concentrations remain above the MTCA Method A cleanup level in monitoring well MW-4 and fluctuate above and below in well MW-3. Groundwater has been typically flowing toward the west. Antea Group will use the data to develop a plan to address soil and groundwater impacts at the Site. A map showing the Site location is shown on Figure 1. A detailed map of the Site and surrounding areas is shown on Figure 2.

The work will not commence until Antea Group has received acceptance of this workplan by Colony Insurance and the workplan has been signed by the insured, or the insured's representative, Mr. Tony Stokes.

SCOPE OF WORK

This proposed scope of work includes the following new tasks: 5) Permit acquisition if any of the wells need to be drilled in the City easement; 6) drill three soil borings and complete them as groundwater monitoring wells, and 7) report preparation - well installation. The proposed scope of work includes additional effort in the following

previously approved tasks: 1) perform groundwater monitoring through 2015 (change order); and 2) report preparation – groundwater monitoring (change order).

Task 5 – Permit acquisition

Antea Group will work with the City of Chelan to determine if a permit will need to be acquired from the city prior to drilling due to the proximity to the road. Antea Group will try to position the wells so they are not on the City easement. It may be necessary to move one or more of the wells onto the easement in order to avoid overhead power lines. If necessary, Antea Group will work with the City to obtain the appropriate permit. The attached cost estimate includes the anticipated permit fees as well as Antea Group's time and materials needed to secure the required permit.

Task 6 – Soil Boring/Well Installation

Prior to mobilizing to the site, Antea will prepare a site-specific Health and Safety Plan for the drilling and groundwater sampling tasks. Antea Group proposes to drill three soil borings at the Site. Field observations and soil sampling data will be used to define the extent of the soil impacts. Groundwater monitoring wells will be installed in all three of the borings. We will install these wells in an attempt to define the groundwater plume, or to help determine if potential off site sources are migrating onto the Site. Two of the borings will be installed across the street from MW-3 and MW-4 on the southwest and northeast ends of the flat area noted. The third well will be installed east of MW-3, just before the bike lane. Proposed well locations are included on Figure 2.

To further delineate dissolved hydrocarbons in groundwater, three 2-inch diameter PVC monitoring wells will be installed to a depth of approximately 25 to 30 feet below ground surface (bgs) with 20 foot long 0.010-inch slotted well screen. The wells will be drilled by a licensed driller using a limited access sonic drill rig due to nearby overhead power lines and expected tough drilling and rocks. Prior to drilling, Antea Group will notify One Call (Public Underground Utility Notification) and will contract a private utility locator to delineate and mark the location of underground utilities and other potential subsurface obstructions in the vicinity of the proposed borings. A vac truck with an air knife attachment will be used to remove the first five feet of soil from each of the boring locations to verify that there are no underground utilities in those locations. If underground utilities or other obstacles are encountered during the locating process or air-knifing, the boring location will be moved and the new location will be air-knifed prior to drilling.

Soil samples will be collected in five-foot intervals during drilling using a continuous core sampler. A lithologic description of soil samples will be recorded on a boring log form and each soil sample will be screened with a photo-ionization detector (PID). The soil samples will be collected in accordance with Ecology Method 5035 guidance for the volatile components. Soil samples will be placed in laboratory-supplied glass jars and placed into iced coolers for transport to the laboratory under standard chain-of-custody protocol. Antea Group will submit soil

samples for analyses from above the groundwater interface zone and expects to submit two to three samples per boring.

The wells will be completed with flush-mount monuments and developed to allow representative groundwater samples to be collected. Development water will be contained in 55-gallon drums for transport and disposal at a licensed facility.

All soil cuttings and decontamination water generated during drilling and cleaning activities will be contained in 55-gallon drums for transport and disposal at a licensed facility. One soil sample and one water sample will be collected to characterize the waste for disposal.

Select soil samples will be analyzed for the following parameters:

- Total petroleum hydrocarbons as diesel and oil (TPH-Dx) using Northwest Method NWTPH-Dx;
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) using EPA Method 8021B;
- RCRA Eight Metals (Waste Charaterization).

Following well installation, Antea Group will survey the vertical elevation of all of the new wells. Previously installed wells MW-1 through MW-4 will be re-surveyed during this project.

Task 7 – Reporting - Well Installation

Antea Group will prepare a site investigation/well installation report following drilling of the soil borings and installation of the new wells. The report will include tables summarizing soil and groundwater analytical data, a site map showing well locations, a groundwater contour map, a cross-section map, a discussion of field procedures, field data and analytical results, and a brief evaluation of the data. The report will be suitable for submittal to the Department of Ecology.

Task 1 - Quarterly Groundwater Monitoring (Change Order)

The three new wells (MW-5 through MW-7) will be monitored on a quarterly basis through 2015. The initial groundwater monitoring will take place following well development, but not less than 48 hours after the development procedure. Quarterly monitoring will continue thereafter at approximately three month intervals.
Tasks associated with quarterly groundwater monitoring include:

- Measurement of water level and separate-phase hydrocarbons (SPH), if present;
- Well purging using micro-purge techniques;
- Field measurement of water quality parameters (pH, conductivity, temperature, oxygen reduction potential (ORP), and dissolved oxygen);
- Groundwater sample collection; and
- Sample delivery to the analytical laboratory.

Antea Group will follow proper procedures for cleaning all purging and sampling equipment. Between each well, all equipment which comes in contact with the interior well casing will be decontaminated on-site using an EPA-approved method.

Liquid level measurements will be taken prior to purging and will be reported in 0.01 foot increments. If SPH is observed, the thickness will be measured with an electronic oil/water interface meter. Wells with measurable SPH will not be purged or sampled.

Prior to sampling, a peristaltic pump will be used to micro-purge the well. Water quality parameters (pH, conductivity, temperature, ORP, and dissolved oxygen) will be measured and recorded while purging. If the well is dewatered while purging, the well will be allowed to attain 80% recovery prior to sampling. However, the well will be sampled even if this recovery is not achieved prior to leaving the site. Purge water will be temporarily stored on site in DOT-approved drums. The water will be disposed of in accordance with all appropriate regulations.

Groundwater samples will be collected using a peristaltic pump and dedicated tubing for each well. The groundwater will be decanted into laboratory-supplied containers and each sample bottle will be labeled with the sample identification number, the sample date, the facility name, and the name of the sampler. The samples will be delivered to the analytical laboratory under standard chain-of-custody protocol.

The groundwater samples will be analyzed for the following parameters:

- Total petroleum hydrocarbons as diesel and oil (TPH-Dx) using Northwest Method NWTPH-Dx;
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) using EPA Method 8021B; and
- RCRA Eight metals (waste characterization).

Task 2 – Reporting - Groundwater Monitoring (Change Order)

Antea Group will present a summary of findings of each groundwater monitoring event for the three additional wells within quarterly letter reports. The reports will summarize the results of groundwater monitoring and laboratory analyses. The report will include tables summarizing groundwater monitoring and analytical data, a site map showing well locations and groundwater elevation contours, a site map showing analytical results, a discussion of field procedures, field data and analytical results, and a brief evaluation of the data. The reports will be prepared on a quarterly basis and will be suitable for submittal to Ecology.

SCHEDULE

Antea Group anticipates that the scope of work described herein will be initiated in August 2015. The scope of work proposed herein includes the acquisition of permits, preparation of a site-specific Health and Safety Plan, well installation and reporting, two quarters of additional groundwater monitoring for the new wells, and two quarters of additional groundwater monitoring reporting. Antea Group will complete the scope of work as outlined above on a Time and Material basis in accordance with the terms of the Continuing Services Agreement dated February 9, 2012.

Antea Group appreciates the opportunity to provide environmental services to you. Please call Matthew Miller, Senior Project Manager at 425-498-7722 if you have any questions regarding the scope of work or proposed budget or any matter concerning this site.

Sincerely,

Jaime L. KC
Project Professional
ANTEA GROUP

Matthew Miller, LG
Senior Project Manager
ANTEA GROUP

State of Washington
532
Licensed Geologist
Matthew Miller

Enclosure: Figure 1 Site Location Map
Figure 2 Extended Site Map with Proposed Well Locations

cc:
Ms. Heather Knowlton, The Vertex Companies, Inc., Seattle, Washington (Electronic Copy)
Ms. Carrie Pederson, PLIA, Olympia, Washington (Electronic copy issued by Vertex)
Mr. Nnamdi Madakor, Washington State Department of Ecology, Olympia, WA (Electronic copy issued by PLIA)

Figures

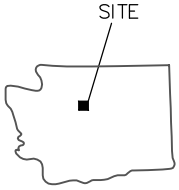
PROJECT NUMBER STCG-422

APPROVED BY

CHECKED BY

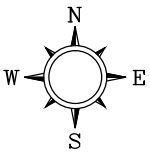
DRAWN BY ICD 04/24/2013

0 1000 2000 SCALE IN FEET



LATITUDE 47D 50M 09S NORTH
LONGITUDE 120D 02M 16S WEST

U.S. GEOLOGICAL SURVEY–2004
7.5 MINUTE QUADRANGLE MAP
CHELAN, WASHINGTON



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LAKE CHELAN BOAT COMPANY

FIGURE 1

SITE LOCATION MAP

1418 WEST WOODIN AVENUE
CHELAN, WASHINGTON

PROJECT NUMBER	STCG-422
APPROVED BY	
CHECKED BY	
DRAWN BY	ICD 6/17/2015
FILENAME	STCG-422_1501_4_1.DWG

DOCK

BUILDING

CONCRETE

LAKE CHELAN

OFFICES

CONCRETE

AST

DRY DOCK

MW-3

MW-2

MW-4

MW-1

GRAVEL PARKING LOT

BIKE LANE

HIGHWAY 97 (WEST WOODIN AVENUE)

PARKING LOT

FLAT AREA

SLOPE

SLOPE

SLOPE

PARKING LOT

PARKING LOT

N

W E

S

LEGEND

MW-1	GROUNDWATER MONITORING WELL (ANTEA GROUP)
	UNOCAL GROUNDWATER MONITORING WELL
	PROPOSED GROUNDWATER MONITORING WELL LOCATION
	POWER/UTILITY POLE
	LIGHT POLE
	SANITARY SEWER MANHOLE
E E	ELECTRIC LINE
S S	SEWER

0 15 30

SCALE IN FEET

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FIGURE 2

EXTENDED SITE MAP WITH PROPOSED WELL LOCATIONS

LAKE CHELAN BOAT COMPANY
1418 WEST WOODIN AVENUE
CHELAN, WASHINGTON