EXHIBIT D

FUSS & O'NEILL

Exhibit K

Proactive by Design

GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION MANAGEMENT

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VIA EMAIL

May 12, 2016
File No. 05.0045803.00

Edward N. Sailer
Sailer Environmental, Inc.
One Orchard Park Road
P.O. Box 21
Madison, CT 06443

Re: Interpretation of CSIA Data
171 Lombardy Street
Brooklyn, New York
Reference no. 795.02

Dear Ted:

GZA GeoEnvironmental, Inc. (GZA) is pleased to provide Sailer Environmental, Inc. (Sailer) this interpretation of compound specific isotope analysis (CSIA) data collected at 171 Lombardy Street, Brooklyn, New York (Site). CSIA was performed on samples collected from groundwater adjacent to the Site which contains chlorinated ethenes (tetrachloroethene (PCE) and trichloroethene (TCE)). Site specific CSIA data is also available for soil samples collected on the Site. This memorandum:

1. Provides an interpretation of the Site CSIA data;
2. Provides suggestions for further Site investigation; and
3. Recommends an expert consultant who is willing to work with Sailer to design the additional site investigation, analyze samples, and interpret data.

BACKGROUND

GZA understands that unsaturated soil at the Site is contaminated with PCE and TCE to approximately 22 feet below ground surface (bgs). Groundwater is approximately 47 feet bgs. PCE concentrations in Site soil have been reported up to 8,770 milligrams per kilogram (mg/kg). 2013 samples of groundwater in shallow and deep New York State Department of Environmental Conservation (NYSDEC) monitoring wells DEC-080 and DEC-080D (located adjacent to the Site) contained 1,100 (DEC-080) and 9,400 (DEC-080D) micrograms per liter (µg/L) of PCE. A CSIA report provided to NYSDEC identifies DEC-080 and DEC-080D as impacted by PCE Source 7.

Sailer collected three shallow (4 and 1.5 feet bgs) soil samples (B2, IN2-T, and IN6-T) in October and November 2015 and sent them to Pace Analytical (Pittsburgh, Pennsylvania) for two-dimensional (2D-) CSIA of carbon and chlorine in PCE. GZA has compared these Site soil data to CSIA groundwater data from Meeker Avenue Plume PCE Source 7, located adjacent to the Site on the western border. The Meeker Avenue

Plume data were provided to NYSDEC by ZymaX Forensics (formerly in Escondido, California[1]) on 29 April 2013.

In industrial and urban areas, multiple sources of the same contaminant frequently occur. This is particularly true for releases of chlorinated solvents. The ratio of stable isotopes in PCE varies, depending on the isotope ratio in the feed stock used for PCE synthesis and on the particular chemical process used to manufacture the material. The isotopic fractionation values of carbon ($^{13}C/^{12}C$) and chlorine ($^{37}Cl/^{35}Cl$) for PCE can vary from one manufacturer to another and also between different production batches produced by the same manufacturer. Different spills of PCE may have different isotopic "signatures" that can be used to associate a plume of contamination in ground water with a particular spill. CSIA has been used successfully at a variety of sites to distinguish between contaminant releases which occurred at different times and places at complex spill sites. This knowledge can be used to identify the parties that were responsible for the contamination, and CSIA has been accepted as one line of evidence in litigation[2].

SITE DATA COMPARED TO NYSDEC PCE SOURCE 7

This section provides GZA's opinion regarding the Site CSIA data compared to NYSDEC PCE Source 7, based on our review of these reports:

1. 171 Lombardy St. - Phase II Site Investigation;
2. Sailer 17730 (Site CSIA laboratory report); and
3. ZymaX Forensic Report (CSIA forensic evaluation of the Meeker Ave. Plume, which includes data from PCE Source 7).

The Site soil has detections of PCE down to 20 feet bgs (maximum of 7.8 µg/kg at boring S1-B), but the highest concentrations are in shallow soil (maximum of 8,700 mg/kg at 1.5 feet bgs, boring IN6-T). Groundwater is approximately 47 feet bgs. Samples from shallow and deep NYSDEC monitoring wells adjacent to the Site (February and March 2013) contained PCE groundwater concentrations of 1,100 µg/L (DEC-080) and 9,400 µg/L (DEC-080D). Soil samples collected by NYSDEC during construction of monitoring well DEC-080D were analyzed for volatile organic compounds and results indicated that shallow soil contained 11,000 mg/kg PCE from 0.5 to 2 feet bgs, and 1,100 mg/kg PCE from 5 to 6 feet bgs. Deeper soil data were not available, but PID (photoionization detector) readings in the boring for DEC-080D were non-detect at 25 feet bgs.

Three Site soil samples, with PCE concentrations of 37, 394, and 8,700 mg/kg, had $\delta^{13}C$ of -30.19, -30.62, and -28.55‰; and $\delta^{37}Cl$ of -2.51, -2.43, and -2.33‰. $\delta^{13}C$ and $\delta^{37}Cl$ are the carbon and chlorine stable isotope ratios, respectively, in units of parts per thousand or "per mill" (‰). "δ" is delta, or "del".

[1] ZymaX Forensics is now part of Pace Analytical.

[2] Hunkeler, Daniel, Rainer U. Meckenstock, Barbara Sherwood-Lollar, Torsten C. Schmidt, and John T. Wilson. 2008. A guide for assessing biodegradation and source identification of organic ground water contaminants using compound specific isotope analysis (CSIA). Ada, Oklahoma: USEPA Office of Research and Development, National Risk Management Research Laboratory.

Adjacent groundwater samples, with PCE concentrations of 1,100 µg/L (shallow) and 9,400 µg/L (deep), had $\delta^{13}C$ of -27.6 and -27.5‰; and $\delta^{37}Cl$ of -1.7 and -1.8‰. Analytical error for samples that are run under similar conditions typically exhibits a total uncertainty of approximately ±0.5‰ for $\delta^{13}C$ and approximately ±0.7‰ for $\delta^{37}Cl$. **Table 1** illustrates the potential variations in CSIA data due to analytical uncertainties.

It is possible that the differences in chlorine isotopic signatures between Site PCE and PCE Source 7 are due to analytical uncertainty. The different carbon isotope signatures, however, suggest that Site PCE may be from a different source than PCE Source 7, within a 90% confidence interval (Student's t-test comparison).

Generally, there is little significant isotopic fractionation caused by transport and partitioning (*e.g.*, volatilization or dissolution) processes. PCE degradation, however, does cause significant isotopic fractionation. The difference in isotopic signatures between PCE in Site soil and PCE in adjacent groundwater monitoring wells DEC-080 and DEC-080D (PCE Source 7) could be caused by fractionation due to degradation. However, we believe this is unlikely because: 1) PCE biotic and abiotic degradation are aqueous processes, and not anticipated to occur in unsaturated soil; 2) PCE $\delta^{13}C$ values for both Site and NYSDEC samples are within the range of known manufactured PCE carbon stable isotopic ratios (-23 to -38‰); and 3) PCE biodegradation intermediates TCE and *cis*-1,2-dichloroethene (cDCE) were not detected above the method reporting limit in the sample from deep monitoring well DEC-080D, while shallow monitoring well DEC-080 contained only 13 µg/L TCE and no reportable cDCE.

Table 1. Potential variations in CSIA data due to analytical uncertainties.

	DEC-080D	**DEC-080**	**B2**	**IN2-T**	**IN6-T**
Matrix	**Off-site Groundwater**	**Off-site Groundwater**	**Site Soil**	**Site Soil**	**Site Soil**
$\delta^{13}C$ (‰)	**-27.5**	**-27.6**	**-30.19**	**-30.62**	**-28.55**
$\delta^{13}C$ + 0.5‰	-27.0	-27.1	-29.69	-30.12	-28.05
$\delta^{13}C$ - 0.5‰	-28.0	-28.1	-30.69	-31.12	-29.05
	DEC-080D	**DEC-080**	**B2**	**IN2-T**	**IN6-T**
$\delta^{37}Cl$ (‰)	**-1.8**	**-1.7**	**-2.51**	**-2.43**	**-2.33**
$\delta^{37}Cl$ + 0.7‰	-1.1	-1.0	-1.81	-1.73	-1.63
$\delta^{37}Cl$ - 0.7‰	-2.5	-2.4	-3.21	-3.13	-3.03

RECOMMENDATIONS FOR ADDITIONAL SITE INVESTIGATION

GZA suggests additional site investigation based on: 1) the vertical distance between Site contaminated soil and NYSDEC contaminated groundwater; and 2) the difference in isotopic signatures between Site CSIA data and available CSIA data from NYSDEC PCE Source 7. The design of the sampling strategy should be based on a conceptual model of the Site that considers potential contaminant migration pathways in addition to evaluating PCE concentrations and isotopic signatures at different depths and locations. 2D- or 3D-CSIA[3] of several PCE samples from the Site and NYSDEC PCE Source 7 should be performed at the same laboratory to minimize analytical uncertainties and provide enough data for a robust statistical evaluation.

EXPERT CONSULTANT RECOMMENDATION

While we would be very pleased to continue working with Sailor on this important project, due to the potential financial and regulatory implications for your client, and the reputations of the experts likely to be retained by NYSDEC, you and your client may wish to consider using an internationally recognized technical expert in CSIA interpretation.

GZA has, briefly and anonymously, discussed the Site data with Dr. Orfan Shouakar-Stash of the University of Waterloo and Isotope Tracer Technologies, Inc. (IT2), Waterloo, Ontario, Canada. Dr. Shouakar-Stash is an internationally known isotope hydrogeochemist. His qualifications are available at http://www.it2isotopes.com/index-3.html. Dr. Shouakar-Stash is willing to help you design the additional site investigation, analyze samples, and interpret data. In the interest of anonymity, we did not discuss expert witness testimony; however, this role is typical for someone with his expertise. If you are interested, please contact Dr. Shouakar-Stash at orfan@it2isotopes.com, 519-886-5555.

GZA sincerely appreciates the opportunity to be of service to Sailer on this important project. Should you have any questions or require additional information, please do not hesitate to contact the undersigned.

Sincerely yours,

GZA GEOENVIRONMENTAL, INC.

Karen Kinsella

Karen Kinsella, Ph.D.
Technical Specialist

Kathleen Cyr, P.G., P.E., LEP
Principal

Tanya Justham, M.S.
Consultant/Reviewer

[3] 3D-CSIA measures hydrogen stable isotope ratios as well as carbon and chlorine.