STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • 3190 160th Ave SE • Bellevue, WA 98008-5452 • 425-649-7000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

December 24, 2015

Mr. Daniel L. Jacobs
700 Dexter, LLC
1821 Blake Street, Suite 3C
Denver, CO 80202

Re: American Linen – Work to be Performed

Dear Mr. Jacobs:

The Department of Ecology (Ecology) has developed a list of the work that needs to be completed prior to submittal of a draft Remedial Investigation/Feasibility (RI/FS) Study and draft Cleanup Action Plan (CAP) for Ecology review and public comment for the following Site:

- Name: American Linen Supply Co Dexter Ave
- Address: 700 Dexter Avenue North, Seattle, WA 98109
- Facility/Site No.: 3573

The list is included as Enclosure A to this letter. Please note that this list is preliminary as additional items may be required as more information about the Site becomes available.

In an effort to focus the work to be completed at the Site, the following remedial action objectives have been identified:

i) Protect potential current and future receptors against vapor intrusion;
ii) Protect sediment and surface water in Lake Union;
iii) Protect ground water as a source of drinking water;
iv) Prevent further migration of the contaminant plume;
v) Manage contaminated ground water during construction dewatering in the area; and
vi) Insure off-Property impacted areas meet applicable cleanup standards within a reasonable restoration timeframe.

Ecology has determined that given the complexity of the Site, it is appropriate to use Method B to establish cleanup levels. Method B cleanup levels must be developed for soil and shall be as stringent as necessary for environmental protection and human health protection (WAC 173-340-740), which includes consideration of the leaching, direct contact, terrestrial ecological receptors, and the soil vapor pathways. Method B cleanup levels for ground water must be developed and

shall be as stringent as necessary for protection of surface water and human health (WAC 173-340-720), which includes consideration of residential uses and the vapor intrusion pathway. In addition, per WAC 173-340-720 (7) and WAC 173-340-740 (5), adjustments for total site risks must be made to meet the hazard index of one and a total excess cancer risk no greater than one in one hundred thousand.

An evaluation with sufficient empirical evidence to show whether ground water contamination is reaching Lake Union must be submitted to Ecology. Establishment of sediment and surface water cleanup levels and adjustment of the ground water cleanup levels to be protective of those media may be necessary if the evaluation indicates that the groundwater plume is impacting Lake Union.

Additionally, Enclosure B includes a list of other presentation or non-technical issues that Ecology requests be addressed. Enclosure C provides a preliminary list of Ecology prospective purchaser consent decree (PPCD) requirements to facilitate the negotiation of a PPCD for the Site. If you have any questions, please contact me by phone at (425) 649-7058 or e-mail at tamara.cardona-marek@ecy.wa.gov. We would like to meet soon to further discuss the additional work needed. We would also like to have a presentation on derivation of the decay rates discussed in the technical memorandum *Addendum to 700 Dexter Draft Cleanup Action Plan*, dated March 7, 2014.

Sincerely,

T. Cardona

Tamara Cardona, PhD
Toxics Cleanup Program

Enclosures: A – Work Elements
B – Additional report items
C – Preliminary PPCD Requirements

cc: Allyson Bazan, State of Washington
Rodney Brown, Cascadia Law Group
John Funderburk, Sound Earth Strategies

ENCLOSURE A

WORK ELEMENTS

1. **Data Gaps Investigation and Update Remedial Investigation (RI) Report:** Based on the current information at hand, Ecology has identified the following data gaps — please note, this list is preliminary and subject to change. As indicated below, these data gaps should be addressed and incorporated into the updated RI Report:

    a. Section 3.12 of the RI indicates the lateral and vertical extent of tetrachloroethene (PCE)-contaminated soil meeting Washington State's Dangerous Waste criteria had not been defined and the PCE in shallow soil was not bound laterally. These data gaps needs to be filled.

    b. Several soil borings advanced within the property boundaries suggest that the vertical extent of the soil contamination is not fully delineated. Examples of these locations are borings DB-03, DB-07, DB-08, DB-10, DB-12, B-8, and B-9. Many of these boring locations (DB-10, B-8, B-9, and DB-07), are within the area where the highest soil concentrations were observed.

    c. Additional deep wells to evaluate the ground water at sump locations are necessary. A well at Sump 4 to assess the migration of contamination to depth is of particular interest. This well should extend to the base of the deep aquifer. Wells at other sumps need to be considered.

    d. The plume is not sufficiently defined. Please explain and provide diagrams that demonstrate that the plume is bounded laterally and vertically. Additional wells may be needed to bound the plume, particularly after final establishment of ground water cleanup levels. The plume must be bounded by wells with ground water contaminant concentrations below cleanup levels, both vertically and laterally.

    e. Current Site conditions (soil and ground water) need to be documented. Additional borings are needed to assess current soil conditions, after the electrical resistance heating and soil vapor extraction (ERH/SVE), within and below the treated area.

    f. The current remedial investigation report does not consider the ground water to sediment to surface water pathway. Lake Union is approximately 700 feet downgradient of the Site. Ground water concentrations must be protective of these pathways unless it can be demonstrated that the hazardous substances are not likely to reach sediment/surface water. The demonstration must be based on factors other than implementation of a cleanup action at the site. WAC 173-340-720(4)(b)(ii). Please assess the likelihood of ground water contamination reaching Lake Union sediments and surface water. This is an important consideration when setting cleanup levels.

g. The current remedial investigation report does not include the tabulated data on geochemical parameters that demonstrate the reducing conditions of the aquifer. The geochemical parameters data presented in the 2015 Draft Cleanup Action Plan does not list the actual concentrations for the parameters or the number of samples considered. Please include all data collected in table format as well as oxygen, oxidation reduction potential, temperature, and any other field measurements collected that may serve as additional lines of evidence to demonstrate solvent degradation. For the chloride data to be used a measurement of the background chloride concentration is necessary, please provide this data if available. All of this data must be entered in Ecology's Environmental Information Management (EIM) database. Use EPA Publication EPA/600/R-98/128, *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water* as a guidance.

h. Develop a ground water monitoring plan to assess whether the plume is expanding, stable, or shrinking, and to document contaminant concentrations over time. This monitoring plan must include the submission of a report showing geochemical parameters in different areas of the plume plotted as isopleth maps per *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water*.

i. The remedy appears to be focused primarily on the shallow and part of the intermediate aquifers. Provide additional details to show that the proposed remedy will result in the soil and ground water cleanups level being met at the point of compliance for the entire depth of the intermediate and deep aquifers. Please discuss how reasonable efforts will be made to remove contamination sources that act as a source of contamination to groundwater. Please discuss how source containment will be achieved of contamination remaining after reasonable efforts to remove it have been made. Please discuss how ground water containment will be achieved to avoid lateral and vertical expansion of the ground water volume affected by the hazardous substance. See WAC 173-340-360(2)(c)(ii)(A) and (B).

j. The evaluation of the vapor intrusion pathway is incomplete. Approximately fifty percent of ground water records for the Site exceed a ground water screening level protective of the vapor intrusion pathway. Forty percent of these exceedances are from samples collected in the shallow aquifer or the intermediate A zone.

   The three soil gas probes previously installed are not representative of subslab soil vapor. Nearby redevelopment and dewatering activities may cause the plume to show exceedances in areas where there weren't exceedances before. In addition, continuous degradation of the plume will require frequent monitoring that evaluates the vapor intrusion risk of each breakdown product at different locations.

   Vapor intrusion evaluation must be considered on any downgradient properties where ground water concentrations currently exceed the screening levels (i.e. Bucca di Beppo).

Prepare a work plan to evaluate vapor intrusion hazards associated with the Site. This includes vapor hazards at the 700 Dexter Avenue Site associated with contamination remaining after the ERH/SVE treatment and off-site hazards. Subslab monitoring at Seattle's Roy Street Shops must be done, and monitoring during dewatering of the Buca di Beppo property may be necessary. Evaluation of vapor hazards must consider not only current conditions, but likely future conditions of new construction with foundations at or below the water table.

2. **Update Draft Remedial Investigation Report:** Submit an updated Draft Remedial Investigation (RI) Report for Ecology review and approval. The updated RI Report must address the data gaps indicated above and include the following :

    a. Include in the RI Report the following draft Cleanup Action Plan (CAP) appendices, as they are not appropriate for the draft CAP:

        i. Appendix A, Previous Environmental Investigations
        ii. Appendix B, Boring Logs
        iii. Appendix C, Laboratory Reports

3. **Update Draft Feasibility Study:** Submit an updated Draft Feasibility Study (FS) for Ecology review and approval. The following changes need to be made to the updated FS:

    a. Remove the material repeated from the RI Report.

    b. Move CAP Appendix D, Decay Rates and Geochemical Parameters, to the FS.

    c. The identified preliminary cleanup levels must be revised. As described above, Ecology has determined that cleanup levels for this Site should use Method B.

    d. Remove the ERH/SVE from the alternatives in the FS. This work has been completed as an independent remedial action and is not a factor in Ecology's selection of a remedy. Instead, please include a description of this work in the RI Report with the previous environmental reports. The description should meet the requirements for construction documentation in WAC 173-340-400(6)(b). Soil sampling results documenting contaminant concentrations before and after ERH/SVE remediation should also be included in the RI Report to show the impact of the independent remedial action.

    e. Additional alternatives need to be evaluated in the FS.

        i. The disproportionate cost analysis requires alternatives be compared to the most practicable permanent solution. The most practicable permanent solution is a permanent solution, not a solution that is permanent to the maxium extent practicable. A "permanent solution" is defined as a cleanup action in which cleanup standards of WAC 173-340-700 through 173-340-760 can be met without further action being required at the site or any other site

involved with the cleanup action. Please update the FS to include at least one permanent solution as the basis for comparison of all other alternatives.

ii. Alternatives for managing the off property ground water plume need to be developed in addition to Monitored Natural Attenuation. More detail is needed regarding how the off property plume will be monitored to ensure attenuation is occurring at the predicted rates. Use EPA Publication EPA/600/R-98/128, *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water* as a guidance. It must be demonstrated the plume is stable or shrinking or additional actions will need to be taken. Actions to manage the plume when dewatering is occurring also need to be included. The alternatives must allow for additional cleanup actions to be taken if compliance monitoring shows they are necessary.

iii. Prepare alternatives that include implementing a combination of enhanced reductive dechlorination, in situ chemical oxidation, and a permeable reactive barrier (biological as well as zero valent iron) at the property and at the contingency areas.

4. **Pilot Study:** Prepare a report on the pilot study recently completed as an independent remedial action to assess the effectiveness of using edible oil substrate to enhance reductive dechlorination. The report must include:

   a. An evaluation of the ability of the edible oil substrate to penetrate low permeability strata,

   b. Evaluation of the reducing conditions of the aquifer prior and post injection, and

   c. An estimate of the degradation rates in each water bearing zone.

5. **Draft Cleanup Action Plan:**

   a. The Cleanup Action Plan is Ecology's document, with Ecology logos. Therefore, the following changes are needed to ensure a streamlined document without materials belonging to the RI Report /FS:

      i. Move Appendices A, B, C to the RI Report.
      ii. Move Appendix D to the FS.
      iii. Make the Health and Safety plan a stand alone document. Ecology does not approve health and safety plans.
      iv. Remove material repeated from the RI Report/FS.

   b. Cleanup levels will have to be revised as discussed above.

   c. The dCAP states (§6.4.2.1)the point of compliance for ground water is defined as the uppermost level of the saturated zone extending verically to the lowest depth that

potentially could be impacted. Compliance monitoring is a threshold requirement for cleanup actions (WAC 173-340-360(2)(a)). Unless monitoring wells are installed in the building floor, compliance monitoring at the standard point of compliance will not be possible after construction of a building at the Property. Ecology recommends that monitoring wells be included in the lower basement level as part of the building design if the standard point of compliance is used.

d. The compliance monitoring section needs more detail. A quarterly ground water monitoring program must be developed. Additional details include but are not limited to:

   i. Specific contingency actions must be identified with time-bound, specific, measurable criteria for assessing whether a contingent action must be taken.
   ii. Means of monitoring at the ground water point of compliance.
   iii. Means of monitoring the off-property plume and taking contingent actions must be developed for inclusion in the draft CAP.

6. **SEPA**: A SEPA checklist must be submitted to Ecology along with the draft CAP.

7. **Submittals:**

   a. Report on planned additional injection of edible oil – it is Ecology's understanding that 700 Dexter LLC plans to inject additional edible oil on the 700 Dexter property in January 2016. Submit a report documenting the planned independent remedial action.

   b. Report on dewatering activities scheduled at the Buca di Beppo property that describes the planned work and how these activities will be used as part of remediation.

ENCLOSURE B

ADDITIONAL REPORT ITEMS

1. Ecology's Environmental Information System (EIM) database – All data in the reports should be uploaded to EIM at least two weeks prior to report submittal for Ecology review, and preferably with a month of receiving validated data.
   Elevations of all locations should be included.

2. Data Presentation

   a. All reports must meet the General Submittal Requirements of WAC 173-340-840. This includes requirements for legibility and for placing a survey grid on all planimetric maps. Maps should present text in 10-font or larger. Main text should be 12-font. Use of color should consider color-blind readers. Symbols should be large enough to be legible. Data should be plotted on maps where it occurs. Extraneous information not relevant to the subject of the map should not be included on the map.

   b. Draft and final reports should be provided in Adobe Acrobat (.pdf) format. Main text is to be provided in Word as well, so that Word's Review tracking feature can be used. All underlying Excel and other relevant electronic format files should be included in the initial submittal. All data referenced in the report should be uploaded to Ecology's EIM database at least two weeks prior to submittal of draft reports for review, and preferably with a month of receiving validated data.

   c. Include the following maps and diagrams:

      i. Diagram of the ERH/SVE treatment zone overlaid with borings and wells.
      ii. Soil: a map showing contaminant concentrations for the following intervals (concentrations to be plotted on the maps):

         1. Shallow
         2. Intermediate A
         3. Intermediate B
         4. Deep

      iii. Ground water (summed concentrations normalized to cleanup levels to be plotted on the map):

         1. Map plumes in the Shallow, Intermediate A, Intermediate B, and Deep Zones using concentrations of summed chemicals normalized to cleanup levels.
         2. Cross sections showing exceedances of summed chemicals normalized to cleanup levels.

ENCLOSURE C

PRELIMINARY PROSPECTIVE PURCHASER CONSENT DECREE (PPCD) REQUIREMENTS

A meeting with representatives of the purchaser as soon as possible is necessary to discuss these requirements. These requirements are preliminary, and more requirements may be added during development of the PPCD.

1. Laying of the building foundation cannot begin until all active remedial actions which would otherwise be foreclosed by placement of the building foundation are completed. "Active remedial actions" will have to be defined, but they may include installation of a permeable reactive barrier, injection of edible oil substrate, installation of monitoring wells on either side of the barrier, and some level of soil and groundwater monitoring to assess performance of the substrate.

2. The Draft CAP states the foundation will be comprised of several feet of concrete, which will be constructed to act as a permanent vapor barrier to contaminant migration. Additional details are needed to demonstrate that the building will be protected from vapor intrusion potential. Vapor intrusion mitigation in construction of new buildings has five basic components: (1) permeable sub-slab support material (e.g. gravel), (2) venting all sub-slab areas, (3) properly-sized sub-slab and riser piping, (4) a sealed vapor barrier, and (5) if an active system is specified, a properly-sized blower to maintain sufficient negative pressure beneath the slab. See Vapor Intrusion Mitigation in Construction of New Buildings Fact Sheet[1]. An active ventilation system must be considered to ensure optimal performance. The PPCD, or a follow on Engineering Design Report and Plans and Specifications, must contain design specifications that include all of these elements. The design will require Ecology approval. The design specifications should also include quality assurance and quality control requirements for construction and operation and maintenance requirements. Additional details may be identified during development of the PPCD or review of the vapor-intrusion barrier design. A Puget Sound Clean Air Agency permit may be required for the discharge from the vapor barrier system.

3. The Prospective Purchaser will be responsible for maintaining the vapor-barrier system in good working order. Periodic reviews will be conducted by Ecology at least every five years to assess the condition of the system. Ecology may require sampling of the system emissions to assess vapor concentrations.
4. An elevation below which the lower level of the parking garage may not go must be specified. What is the depth, below street level, needed for a two-story parking garage?

---

[1] https://clu-in.org/download/contaminantfocus/vi/vi_mit_new_bldg_fs.pdf

5. Ecology will require all subgrade floors be used only as a parking garage, with positive ventilation suitable for a garage. This provides an additional margin of safety against vapor intrusion that may be warranted for a large office building. As discussed in Enclosure A, additional evaluation of the vapor intrusion pathway at the Site is needed.

6. The Prospective Purchaser will manage contaminated soil excavation and contaminated groundwater dewatering during construction in accordance with an Engineering Design Report approved by Ecology.

7. The Prospective Purchaser will provide access to the entity required to operate and maintain all remedial systems. Remedial systems includes monitoring wells within the Property boundaries, and possibly within the building footprint. The Prospective Purchaser will be responsible for repairing any damage they cause to the wells.