



October 18, 2011

Ms. Tamara Cardona-Marek
Alaska Dept. of Environmental Conservation
610 University Avenue
Fairbanks, Alaska 99709-3643

**Re: North Star Terminal #2
Chlorinated Solvent Site – Well Search and Indoor Air Survey
Fairbanks, Alaska**

Dear Ms. Cardona-Marek,

On behalf of Golden Valley Electric Association (GVEA), SLR International Corp (SLR) is pleased to provide the following letter report detailing the results of a domestic well search and presenting the completed Indoor Air Intrusion Building Survey form for the Battery Energy Storage System (BESS) facility in Fairbanks, Alaska (Figure 1). This report is in response to the Alaska Department of Environmental Conservation (ADEC) letter dated February 24, 2011 (ADEC, 2011).

WELL SEARCH

SLR reviewed the Fairbanks North Star Borough online Property Database in order to identify landowners within a ½-mile radius down-gradient of the BESS facility (Figure 2) based on historic groundwater flow direction (SLR, 2010). Utility Services of Alaska was contacted to document whether those properties are connected to public utilities (Attachment 3). Developed properties were then contacted to inquire whether a domestic groundwater well is located on site. Of the eight developed properties identified, one is not connected to the public water system and uses a domestic well exclusively (MSI Auto Parts and Salvage), and one property uses a domestic well in addition to the public system (Holm Town Nursery). SLR contacted Holm Town Nursery on August 2 and left an additional message on August 3, but was unable to get information on the use of their domestic well.

INDOOR AIR SURVEY

SLR completed Appendix I from *Draft Vapor Intrusion Guidance for Contaminated Sites, July 2009* (ADEC, 2009) for the BESS facility on August 10, 2011. The questionnaire was completed with facility personnel to evaluate the potential for vapor intrusion. A copy of the completed Building Inventory and Indoor Air Sampling Questionnaire is attached to this letter.

The building was built in 1974 and houses GVEA's Battery Energy Storage System. It is a steel frame structure built on a concrete slab foundation. The floor is sealed with epoxy paint. All air movement in the building is controlled by a heating, ventilating, and air conditioning (HVAC) system that controls infiltration and circulates air. The HVAC system is monitored by GVEA personnel to maintain a positive pressure within the structure.



The building is on a public water and sewer system. Floor drains to the public sewer are kept plugged during normal operations.

Glycol and diesel fuel are stored in the boiler room inside the building.

Potential preferential vapor intrusion pathways include expansion joints and minor cracking in the concrete slab floor. Based on SLR's indoor site assessment, there appears to be no significant risk from vapor intrusion pathways because of the small number of potential intrusion pathways and the well-maintained ventilation system installed in the building.

If you have any questions, please contact SLR at (907)452-2252 or Kristen DuBois/GVEA at (907)451-5627.

Sincerely,
SLR International Corp



Leslie Dupuis
Staff Scientist



Carl Benson
Principal Scientist

cc Kristen DuBois/GVEA

Attachments: Figure 1 – Site Location Map
Figure 2 – Well Search Property Map
Property and Well Search Summary
ADEC Building Inventory and Indoor Air Sampling Questionnaire

References: Alaska Department of Environmental Conservation (ADEC), 2011. Letter from ADEC to GVEA requesting additional information on the Energy Coatings/North Star Terminal #2 site. February.

ADEC, 2009. *Draft Vapor Intrusion Guidance for Contaminated Sites*, July.

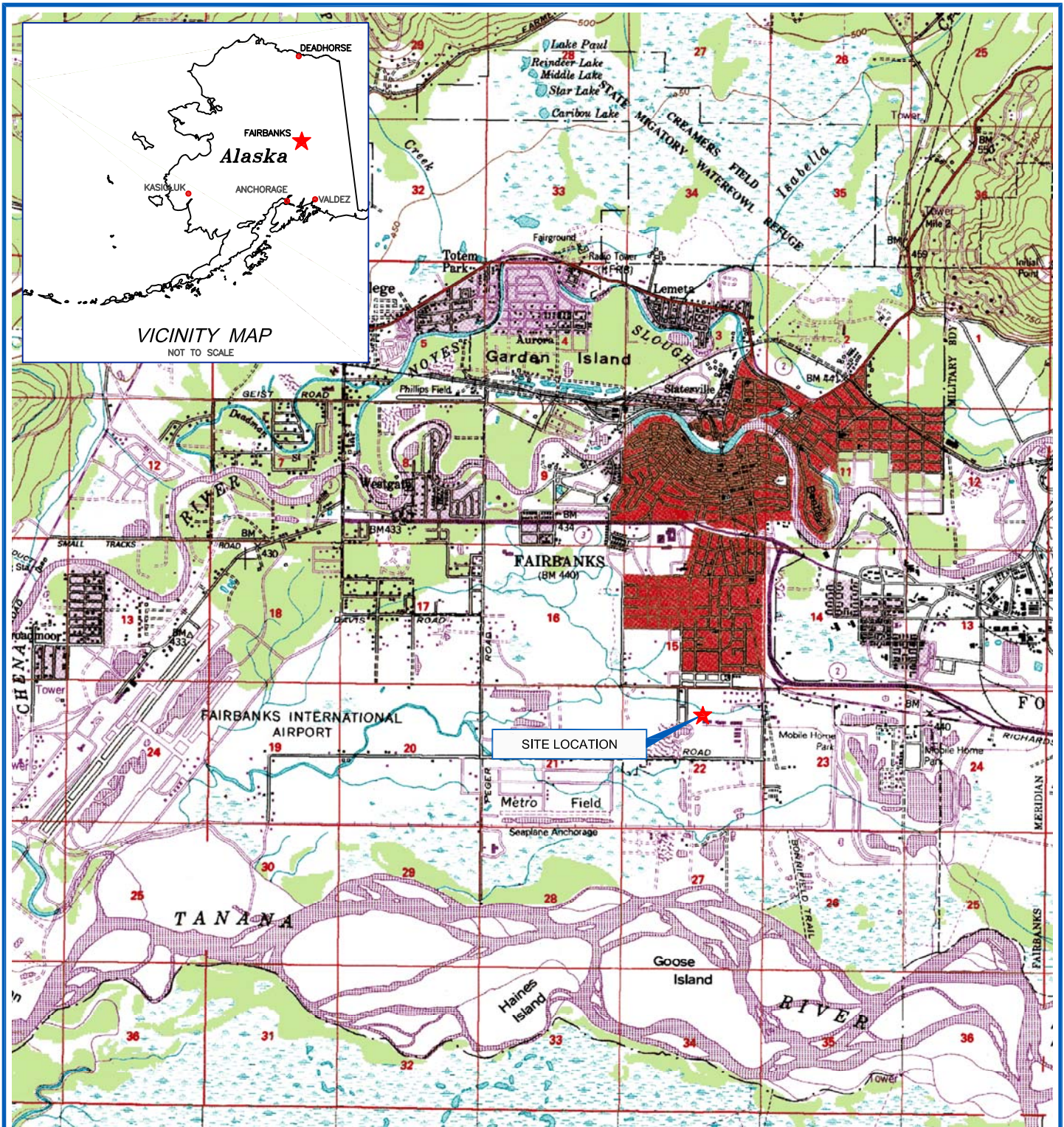
SLR International Corp, 2010. North Star Terminal #2 2010 Groundwater Monitoring Report. January.

ATTACHMENT 1

FIGURE 1 – SITE LOCATION MAP

Golden Valley Electric Association
North Star Terminal #2
Chlorinated Solvent Site

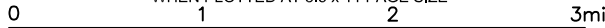
October 2011



REFERENCED FROM : U.S.G.S. TOPO, FAIRBANKS (D-2) QUADRANGLE, 1:63K



SCALE: 1" = 1mi
WHEN PLOTTED AT 8.5 x 11 PAGE SIZE



THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.



GOLDEN VALLEY ELECTRIC ASSOCIATION
P.O. BOX 71249
FAIRBANKS, ALASKA 99707

Report **NORTH STAR TERMINAL #2
CHLORINATED SOLVENT SITE - WELL SEARCH AND
INDOOR AIR SURVEY**

Drawing
SITE LOCATION MAP

Date October 11, 2011

Scale 1" = 1 Miles

Fig. No.

File Name F1 GVEA 11RPT

Project No. 104.00367.11002

1

ATTACHMENT 2

FIGURE 2 – WELL SEARCH PROPERTY MAP

Golden Valley Electric Association
North Star Terminal #2
Chlorinated Solvent Site

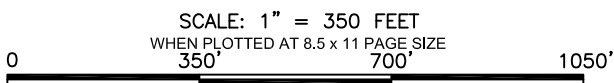
October 2011



REFERENCED FROM FAIRBANKS NORTH STAR BOROUGH'S GEOGRAPHICAL INFORMATION SYSTEM (GIS); <http://gis.co.fairbanks.ak.us/>

LEGEND

- PROPERTY BOUNDARY
- 1/2 MILE RADIUS FROM SOURCE AREA
- SOURCE AREA
- HISTORIC GROUND WATER FLOW DIRECTION



THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

GOLDEN VALLEY ELECTRIC ASSOCIATION
 P.O. BOX 71249
 FAIRBANKS, ALASKA 99707

Report NORTH STAR TERMINAL #2
 CHLORINATED SOLVENT SITE - WELL SEARCH AND
 INDOOR AIR SURVEY

Drawing WELL SEARCH PROPERTY MAP

Date October 12, 2011

Scale 1" = 350'

Fig. No.

File Name F2 GVEA 11RPT

Project No. 104.00367.11002

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ATTACHMENT 3

PROPERTY AND WELL SEARCH SUMMARY

Golden Valley Electric Association
North Star Terminal #2
Chlorinated Solvent Site

October 2011

Property and Well Search Summary

Boys & Girls Home of Alaska (907) 459-4700

3101 Lathrop St

Property Summary: <http://www.co.fairbanks.ak.us/Assessing/propacctsum.aspx?idx=0565920>

Serviced by Golden Heart Utilities water, confirmed there is no well on the property.

Castle Rock Mini Storage (907) 479-1212

1015 – 30th Ave

Property Summary: <http://www.co.fairbanks.ak.us/Assessing/propacctsum.aspx?idx=0527319>

Serviced by Golden Heart Utilities water, confirmed there is no well on the property.

Church of God of Prophecy (COG) (907) 451-8444

1417 – 28th Ave

Property Summary: <http://www.co.fairbanks.ak.us/Assessing/propacctsum.aspx?idx=105643>

Serviced by Golden Heart Utilities water, confirmed there is no well on the property.

Friends Community Church (907) 452-2249

1485 – 30th Ave

Fairbanks, AK

Property Summary: <http://www.co.fairbanks.ak.us/Assessing/propacctsum.aspx?idx=0526088>

Serviced by Golden Heart Utilities water, confirmed there is no well on the property.

Holm Town Nursery (907) 451-8733

1301 – 30th Ave

Fairbanks, AK

Property Summary: <http://www.co.fairbanks.ak.us/Assessing/propacctsum.aspx?idx=0484351>

Serviced by Golden Heart Utilities water, one well is also on the property.

Interior Women's Health (IWH) (907) 479-7701

1626 – 30th Ave

Property Summary: <http://www.co.fairbanks.ak.us/Assessing/propacctsum.aspx?idx=0105848>

Serviced by Golden Heart Utilities water, confirmed there is no well on the property.

MSI Auto Parts and Salvage (907) 452-2695 and (907) 457-2653

1307 – 30th Ave

Property Summary: <http://www.co.fairbanks.ak.us/Assessing/propacctsum.aspx?idx=0529931>

One well is on the property

Nantucket Square Townhomes Development (907) 456-6008

28th and Wilson

Serviced by Golden Heart Utilities water, confirmed there is no well on any of the properties.

References:

Fairbanks North Star Borough Property Database

<http://www.co.fairbanks.ak.us/Assessing/propsearch.aspx>

Utility Services of Alaska, (907) 479-3118

ATTACHMENT 4

ADEC BUILDING INVENTORY AND INDOOR AIR SAMPLING QUESTIONNAIRE

Golden Valley Electric Association
North Star Terminal #2
Chlorinated Solvent Site

October 2011

**ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
BUILDING INVENTORY AND INDOOR AIR SAMPLING QUESTIONNAIRE**

This form should be prepared by a person familiar with indoor air assessments with assistance from a person knowledgeable about the building. Complete this form for each building in which interior samples (e.g., indoor air, crawl space, or subslab soil gas samples) will be collected. Section I of this form should be used to assist in choosing an investigative strategy during workplan development. Section II should be used to assist in identification of complicating factors during a presampling building walkthrough.

Preparer's Name Carl Benson Date/Time Prepared 8/10/2011
 Preparer's Affiliation SLR Phone No. _____
 Purpose of Investigation _____

SECTION I: BUILDING INVENTORY

1. OCCUPANT OR BUILDING PERSONNEL:

Interviewed: Y N

Last Name Hodson First Name Gary
Montelli Pete
 Address _____
 County _____
 Phone No. 460-2672

Number of Occupants/persons at this location unmanned Age of Occupants _____

- Remote Monitoring - Monthly maintenance on operating equipment
Quarterly mechanical inspections

2. OWNER or LANDLORD: (Check if same as occupant)

Interviewed: Y / N

Last Name CUBA First Name _____
 Address _____
 County _____
 Phone No. _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential Industrial School Church Commercial/Multi-use Other _____

If the property is residential, type? (Circle appropriate response) N/A

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other _____

If multiple units, how many? N/A

If the property is commercial, type?

Business Types(s) Industrial / Electrical

Does it include residences (i.e., multi-use)? Y N If yes, how many? N/A

Other characteristics:

Number of floors 1 Building age 37 yrs (built in 1974)

Is the building insulated? Y / N How air tight? Tight / Average / Not Tight

Have occupants noticed chemical odors in the building? Y N

If yes, please describe: N/A

4. AIRFLOW

Use air current tubes, tracer smoke, or knowledge about the building to evaluate airflow patterns and qualitatively describe:

Airflow between floors Single Floor - air movement controlled by HPAK system

Airflow in building near suspected source
One air handler for entire building envelope
Positive pressure maintained in structure - monitored
Air handler maintains 0.3" H₂O positive pressure in structure

Outdoor air infiltration
Only through air handling intakes on South side of structure

Infiltration into air ducts
Controlled by Air Handling System

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

- a. Above grade construction: wood frame log concrete brick Single floor
 constructed on pilings with enclosed air space constructed on pilings with open air space
- b. Basement type: full crawlspace slab-on-grade other _____
- c. Basement floor: concrete dirt stone other _____
- d. Basement floor: unsealed sealed sealed with _____
- e. Foundation walls: poured block stone other Steel
- f. Foundation walls: unsealed sealed sealed with _____
- g. The ^{Basement} basement is: wet damp dry
- h. The basement is: finished unfinished partially finished
- i. Sump present? Y/N drains to sewer service Golden Heat utilities kept plugged when normal operations
- j. Water in sump? Y/N/not applicable

Basement/Lowest level depth below grade 0 (feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

Expansion joints, minor cracking - all covered with epoxy paint on floor

6. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

Type of heating system(s) used in this building: (Circle all that apply - not primary)

- Hot air circulation Heat pump Hot water baseboard
 Space Heaters Stream radiation Radiant floor
 Electric baseboard Wood stove Outdoor wood boiler Other unit heaters

The primary type of fuel used is:

- Natural Gas Fuel Oil Kerosene
 Electric Propane Solar Dual fuel boilers, natural gas is primary fuel
 Wood Coal

Domestic hot water tank fueled by electric

Boiler/furnace located in: Basement Outdoors Main Floor Other _____

Do any of the heating appliances have cold-air intakes? Y/N

Type of air conditioning or ventilation used in this building:

- Central Air Window units Open Windows None

Commercial HVAC Heat-recovery system Passive air system

Are there air distribution ducts present? Y N

Describe the ventilation system in the building, its condition where visible, and the tightness of duct joints. Indicate the locations of air supply and exhaust points on the floor plan.

Good condition, supply ducts on east and west
ends of bldg, two supply ducts in central area
All ^{supply} ducts originate on SE side of building

Is there a radon mitigation system for the building/structure? Y N Date of Installation N/A

Is the system active or passive? Active/Passive

7. OCCUPANCY

Is basement/lowest level occupied? Full-time Occasionally Seldom Almost Never

Level General Use of Each Floor (e.g. family room, bedroom, laundry, workshop, storage)

Basement N/A

1st Floor Industrial - battery storage and operation/maintenance

2nd Floor N/A

3rd Floor N/A

8. WATER AND SEWAGE

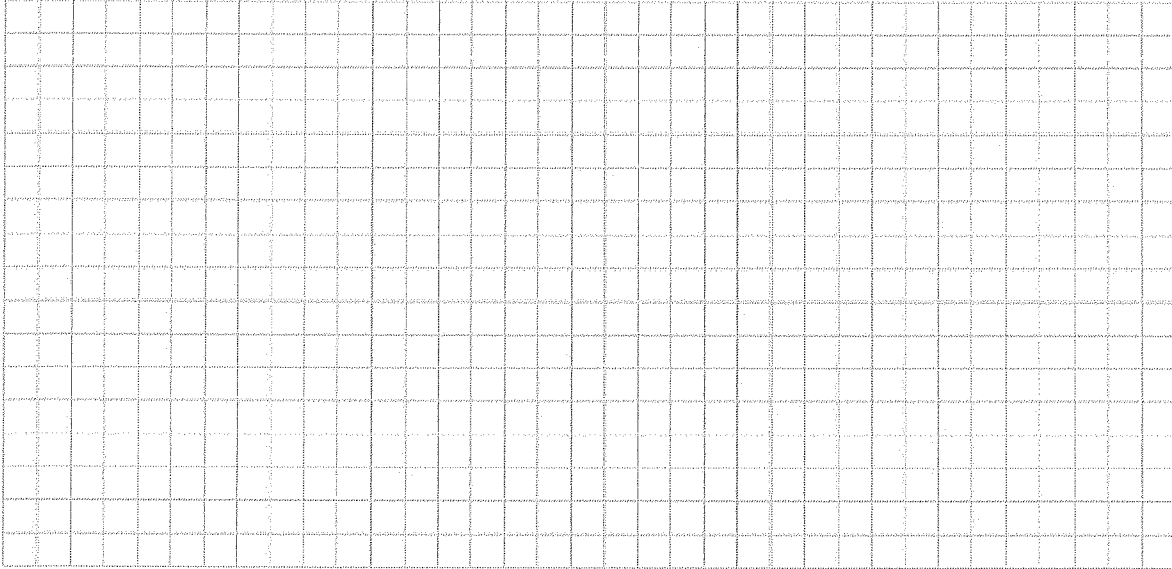
Water Supply: Public Water Drilled Well Driven Well Dug Well Other _____

Sewage Disposal: Public Sewer Septic Tank Leach Field Dry Well Other _____

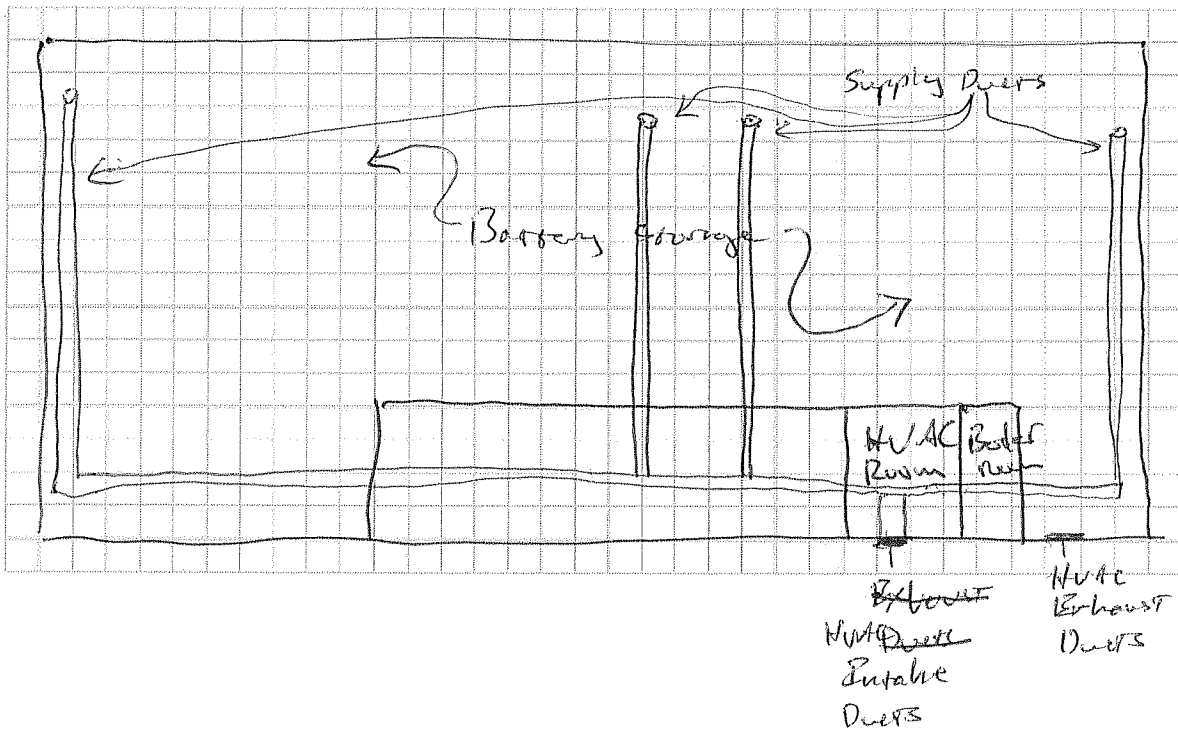
9. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement: *NA*



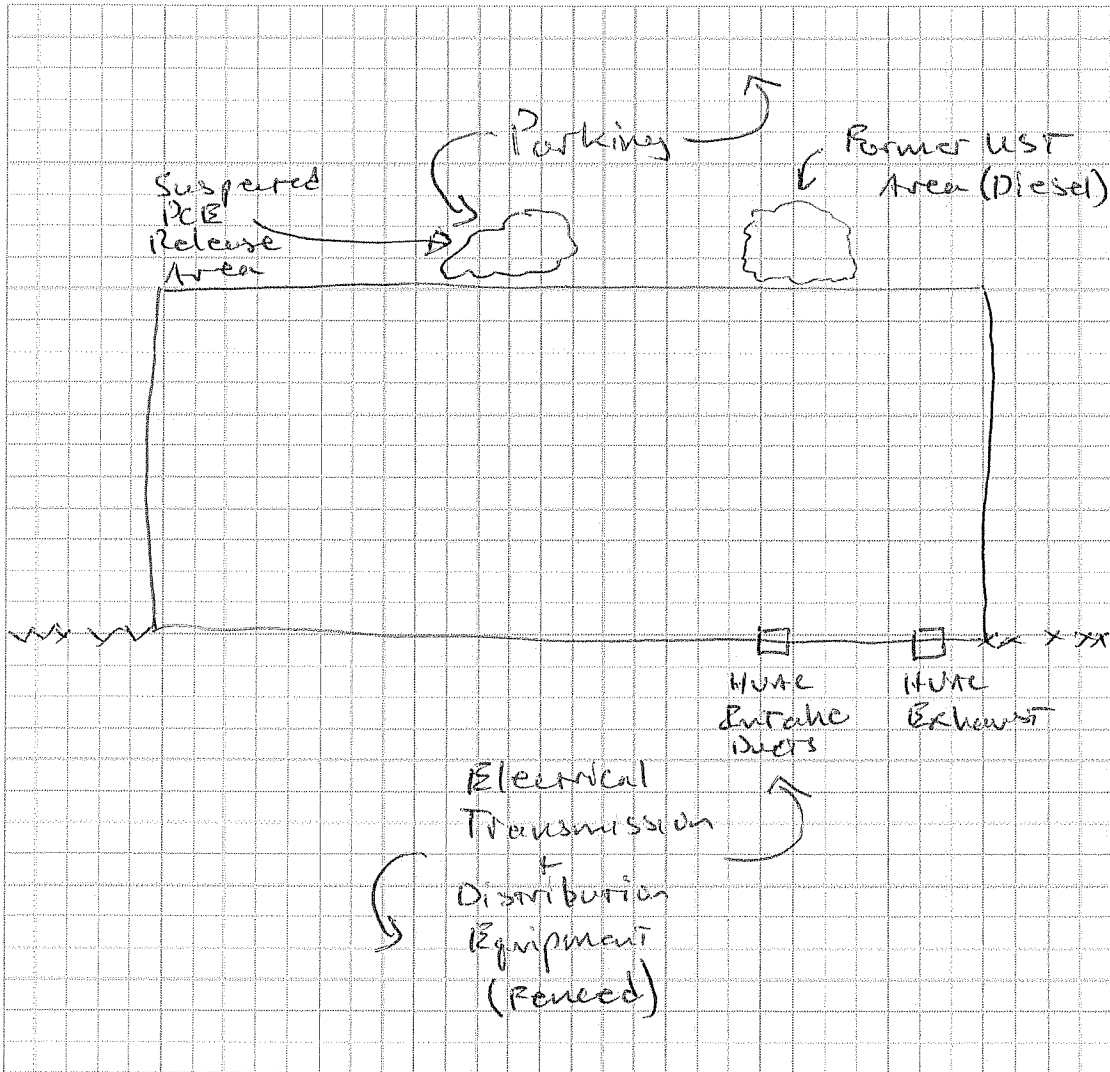
First Floor:



10. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.



SECTION II: INDOOR AIR SAMPLING QUESTIONNAIRE

This section should be completed during a presampling walkthrough. If indoor air sources of COCs are identified and removed, consider ventilating the building prior to sampling. However, ventilation and heating systems should be operating normally for 24 hours prior to sampling.

a) 1. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

- Is there an attached garage? Y N
- Does the garage have a separate heating unit? Y / N / NA
- Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, ATV, car) Y / N / NA
Please specify _____
- Has the building ever had a fire? Y N When? _____
- Is a kerosene or unvented gas space heater present? Y N Where? _____
- Is there a workshop or hobby/craft area? Y N Where & Type _____
- Is there smoking in the building? Y / N How frequently? _____
- Has painting/staining been done in the last 6 months? Y N Where & When? _____
- Is there new carpet, drapes or other textiles? Y N Where & When? _____
- Is there a kitchen exhaust fan? Y / N If yes, where vented? _____
- Is there a bathroom exhaust fan? Y / N If yes, where vented? outside
- Is there a clothes dryer? Y N If yes, is it vented outside? Y / N
- Are cleaning products, cosmetic products, or pesticides used that could interfere with indoor air sampling? Y N
- If yes, please describe NA

- Do any of the building occupants use solvents at work? Y N
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist)

If yes, what types of solvents are used? NA

If yes, are their clothes washed at work? Y / N NA

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

- Yes, use dry-cleaning regularly (weekly) No
- Yes, use dry-cleaning infrequently (monthly or less) Unknown
- Yes, work at a dry-cleaning services

2. **PRODUCT INVENTORY FORM** (For use during building walkthrough)

Make & Model of field instrument used NA

List specific products found in the residence that have the potential to affect indoor air quality:

Location	Product Description	Site (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo ** <u>Y/N</u>
Boiler	Calycal	~100 gal			NA	N
Boiler	Diesel fuel	50 gal			NA	N

* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)**
 ** Photographs of the front and back of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

This form modified from:
 ITRC (Interstate Technology & Regulatory Council). 2007. *Vapor Intrusion Pathway: A Practical Guideline*. VI-1. Washington, D.C.: Interstate Technology & Regulatory Council, Vapor Intrusion Team. www.itrcweb.org.

The Alaska Department of Environmental Conservation's Contaminated Sites Program protects human health and the environment by managing the cleanup of contaminated soil and groundwater in Alaska. For more information, please contact our staff at the Contaminated Site program closest to you:
 Juneau: 907-465-5390 / Anchorage: 907-269-7503
 Fairbanks: 907-451-2153 / Kenai: 907-262-5210