PRE-DEMOLITION
HAZARDOUS MATERIALS ASSESSMENT
5871 CHURCHILL WAY
JUNEAU, ALASKA

JULY 3, 2012

Prepared for:

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APPENDICES

1.0 EXECUTIVE SUMMARY

This Hazardous Building Materials Investigation (HM) and Assessment Report has been completed by ***NORTECH*** Environmental and Engineering Consultants (***NORTECH***), as an environmental consultant to the Juneau Housing Trust. This Hazardous Building Materials investigation has been prepared to address building conditions prior to demolition, and to identify potential hazardous material and associated regulatory constraints involved with management and/or abatement of materials identified.

Scope of work completed was in accordance with ***NORTECH's*** June 21, 2012 proposal, work plan, and fee estimate. Detailed attention was paid to the identification and quantification of suspect asbestos-containing materials (ACM), lead based paint (LBP), and Polychlorinated Biphenyl's (PCBs) because of their potential impact on the Demolition project and eventual disposal concerns of the debris. The above ground fuel storage tank was also inspected for content and possible leaks and associated petroleum soil contamination (PCS).

The building investigation was limited to representative sampling of major interior and exterior building materials. Samples were collected and analyzed or assessed to identify ACM.

Based on the site inspection, and sample results, the following materials of concern were identified:

- Friable ACM: None
- Non-friable ACM: None in building materials. One roll of asbestos paper identified.
- Mercury-containing fluorescent tubes and thermostats: 10 fluorescent tubes, one compact fluorescent bulb, no mercury-containing thermostats.
- PCS: potentially less than one yard

Mercury containing fluorescent tubes and thermostats will require removal prior to demolition.

The laboratory results for the TCLP sample were below regulatory levels for the eight RCRA metals. Lead based paint was not found on any of the interior or exterior painted surfaces. The waste stream is non-hazardous for lead and should have no impact on the demolition.

All hazardous materials previously identified, identified during this survey, or discovered during demolition, must be handled carefully using appropriate work practices and disposed of properly under applicable federal and state regulatory guidelines. All information about hazardous materials associated with the buildings

should be made available to employees, the demolition contractor and the abatement/demolition workers associated with the demolition project. Project demolition specifications should note these findings, address concerns identified and, where appropriate, require the contractor to submit a work-plan for approval.

2.0 SCOPE OF WORK

NORTECH was contracted by Juneau Housing Trust to accomplish a pre-demolition hazardous building material (HM) assessment and report of the building located at 5871 Churchill Way in Juneau, Alaska. This report has been prepared to address building conditions prior to building demolition, and to identify major potential hazardous material concerns for the project with respect to employee safety and regulatory compliance.

3.0 METHODOLOGY

For the purposes of this investigation, hazardous materials are defined as any material requiring special handling or disposal during demolition. Of particular interest were Asbestos Containing Building Materials (ACBM) and hazardous materials including but not limited to: Mercury containing products or materials, Polychlorinated Biphenyls (PCBs), Lead based paints (LBP), the RCRA 8 (TCLP) metals, and an inspection of the above ground fuel storage tank. Specific attention was given to any materials that might require abatement prior to demolition.

3.1 Asbestos

The hazardous material survey was conducted to comply with the asbestos survey requirements of the Occupational Safety and Health Administration (OSHA) found in 29 CFR 1926. These regulations state that, before authorizing or allowing any construction, demolition, renovation, or remodeling, the owner or owner's agent, or employer, must notify contractors or other persons of the location and quantities of Asbestos Containing Material (ACM) within the work area.

U.S. Environmental Protection Agency National Emissions Standards for Hazardous Air Pollutants (NESHAP) requires a thorough inspection for friable and non-friable ACM by an accredited AHERA inspector prior to any renovation or demolition activity (40 CFR 61.145). NESHAP also requires notification for removal or abatement of regulated quantities of ACM (>260 linear feet, >160 square feet, or >35 cubic feet of regulated asbestos containing material (RACM)).

The sampling collection technique used during the survey generally follows the Asbestos Hazard Emergency Response Act (AHERA) method as defined in 40 CFR 763. Environmental Hazards Services, LLC. of Richmond, Virginia, a National Voluntary Laboratory Accreditation Program-certified laboratory performed asbestos analysis by polarized light microscopy (PLM) according to EPA method 600/R/93/116

to determine the percent concentration by weight as required by the current OSHA standard. Building materials containing 1% or greater asbestos content are considered to be asbestos-containing materials (ACM).

3.2 TCLP Sample Collection Methods

NORTECH conducted a visual inspection and collected a composite sample, representative of all building materials contributing to the demolition waste stream. ***NORTECH*** sent the composite sample to EHS laboratory to be analyzed for levels of potentially harmful landfill leachate by a Toxicity Characteristic Leaching Procedure (TCLP) (EPA SW346, method-1311) analysis to characterize lead within the debris/waste stream. TCLP regulatory concentrations are outlined below.

TCLP Regulatory Concentration Limits-mg/L (ppm)

- Arsenic 5.0
- Barium 100
- Cadmium 1.0
- Chromium 5.0
- Lead 5.0
- Mercury 0.20
- Selenium 1.0
- Silver 5.0

3.3 Lead Based Paint Analysis

Quantification of lead-in-paint was performed according to NIOSH 7702, using a Thermo Fisher NITON XLp-303A (XRF), x-ray fluorescent spectrum analyzer, providing EPA accepted real-time, on-site sample results. A Performance Characteristics Sheet (PCS) for the NITON analyzer is available upon request. The PCS provides supplemental information to be used in conjunction with Chapter 7 of the HUD guidelines. The PCS indicates that substrate corrections are not required for this instrument when operated in accordance with the manufacturer's instructions and HUD guidelines. Environmental Protection Agency/Department of Housing and Urban Development (EPA/HUD) protocol for the inspection of LBP in residential structures was followed.

EPA and HUD Considers paint containing 1.0 mg/cm^2 or 0.5 percent (5,000 ppm) by weight to be lead-based paint (LBP). These guidelines may not be directly applicable to this project, but are a good reference for evaluating the investigation's sample results. Paint with lower concentrations of lead than these thresholds may still pose an OSHA health hazard if mishandled.

3.4 Above Ground Storage Tank Assessment

The aboveground storage tank (AST) located on the south side of the residence was inspected for contents and leaks in accordance with 18 AAC 75. Three soil borings were advanced and soils samples were collected at one foot intervals for field screening analysis. Of these, one soil samples was submitted to SGS Environmental Services (SGS) in Anchorage, AK for analysis of diesel range organics (DRO) by method AK102.

NORTECH uses the headspace method of field screening in general accordance with Section 4 of the ADEC UST Manual and Field Sampling Guidance (the FSG). In general and when necessary, we conduct field screening on a five-foot grid (25 square feet per grid unit) to identify the impacted area. Field screening samples are collected using clean or disposable sampling tools in a sufficient quantity to partially fill (30-50%) a clean zip lock bag (a minimum of eight ounces of soil). The sample bags are then sealed, agitated, labeled, and set aside to develop headspace vapors for a minimum of ten minutes prior to screening with a Gas Alert Micro 5 photoionization detector (PID). A PID analyses vapors for volatile organic compounds (VOCs). After headspace development, the bags are again agitated, and the PID probe is inserted into a small opening in the bag to draw headspace vapors from the center of the space above the soil. ***NORTECH*** records the highest PID reading from each sample in the project field logbook.

3.5 Miscellaneous Hazardous Materials

Visual inspection for hazardous materials was conducted and included identification of all visible smoke detectors, lead acid batteries, mercury thermostats and discarded ballasts or power transformers. The total number of mercury-containing fluorescent bulbs in use or in storage was noted. Any stored, unidentified or flammable liquids, paints, or pressurized containers were also noted in this report.

This hazardous materials survey is developed using Industrial Hygiene hazard analysis principles. Personnel with current Asbestos Hazard Emergency Response Act (AHERA) inspection certifications conducted the asbestos inspection efforts.

4.0 PERSONNEL

NORTECH's Jason Ginter, had overall responsibility for the investigation and managed the overall organization and field execution of the project. Environmental Professional, Tara Richards and Chemist/Staff Professional, Doug Kolwaite, and Environmental Technician Ashley Bruce assisted in conducting the on-site investigation and sampling efforts. Doug has current EPA accreditation as an AHERA Building Inspector (# T-23050-22466) and is HAZWOPER certified. Tara also has current EPA accreditation

as an AHERA Building Inspector (#TBI 21-11-149) is HAZWOPER certified, and is an ADEC qualified sampler. Finally, Ashley has current EPA accreditation as an AHERA Asbestos Supervisor (#TA8-11-210) and is HAZWOPER certified.

5.0 LIMITATIONS

NORTECH provides a level of service that is performed within the standard of care and competence found within this practice and the engineering profession. It must be recognized that limitations in a hazardous material inspection and assessment exists. The data presented in this report should be considered representative of only the time of our inspection. In addition, changes in the condition of the facility can occur with the passing of time, due to natural processes and/or from human activities. ***NORTECH*** has performed the work, made the findings, and proposed the recommendations described in this report in accordance with generally accepted environmental engineering practices using the best technology available.

NORTECH has based its conclusions and recommendations on our current understanding of regulatory policies. The regulations concerning hazardous materials are constantly changing, including the interpretations of regulating agencies. If changes in regulations or their interpretation occur, ***NORTECH*** reserves the right to amend or revise conclusions and/or recommendations.

6.0 FIELD ACTIVITIES

On June 21 and 26, 2012, ***NORTECH*** personnel Doug Kolwaite, Tara Richards, and Ashley Bruce completed a hazardous building materials inspection of the building, located at 5871 Churchill Way in Juneau, Alaska. The building being investigated for this project consists of an abandoned and dilapidated 1536 sq ft two story home built in 1961, with a shed on the west side of the Site. Appendix A, Figures 3 and 4 depict the Site and environmental sample collection locations.

Particular attention was paid to the identification and evaluation of suspect asbestos containing building materials (ACBM), Mercury containing products, and Polychlorinated Biphenyl's (PCBs). A total 25 ACM suspect materials were identified. One composite building material sample was collected for analysis of Lead and the RCRA 8 metals by Toxicity Characteristic Leaching Procedure (TCLP). ***NORTECH*** collected 26 samples from building materials for laboratory analysis. ACM and TCLP samples included: asphalt siding and roofing paper, gypsum wall board, paint, texture, insulation, siding, and joint tape. Fluorescent light fixture ballasts were observed and inspected for the No PCB's label.

NORTECH performed the lead based paint screening on June 26, 2012. We used an XRF to analyze all painted surfaces on the interior and exterior of all Site structures.

NORTECH assessed the AST on June 21, 2012. We advanced three soil borings to a depth of five ft bgs. Field screening petroleum contamination was present from the ground surface to about two ft bgs on the east end of the tank where an improper piping connection was present. One soil sample was submitted to SGS Environmental Services in Anchorage, AK for analysis of diesel range organics (DRO) content by method AK102 to determine contamination concentrations.

NORTECH observed and categorized other potentially hazardous materials in and around the home during the Site work. Outside the home within the subject properties boundaries, ***NORTECH*** identified the following items:

- three 55-gallon steel drums, appearing to have been used for burning. ***NORTECH*** confirmed that both drums are empty,
- Two 5-gallon containers of petroleum liquid and a car battery were identified outside the main entrance to the residence,
- Three, 5-gallon buckets of Chevron Oil and one paint can are present in debris piles on the north side of the home,
- three jugs of antifreeze,
- One propane can,
- One tube of stove gasket cement,
- One bucket of unmarked buckets (potentially hazardous contents),
- Two car batteries,
- One gallon rusted paint/stain can,
- One unmarked white fluid bottle (potentially hazardous contents),
- One buried bottle of gear oil,

Located in the dilapidated shed next to the home, ***NORTECH*** observed:

- One can of Coleman Fuel.
- Ten five gallon gas cans; these cans are empty.
- One open bucket of used oil,
- Two jugs of motor oil,
- One aerosol can,
- Two car batteries,
- One fire extinguisher.

Inside the home ***NORTECH*** observed other hazardous household use materials. The residence itself has two stories and three entrances. The second floor of the home consists of two bedrooms, a bathroom, and an apparent kitchen and living room area. Items identified on the second floor are categorized on a room by room basis. Room number nomenclature is shown on Figures 3 and 4 of Appendix A. Hazardous materials include:

- Room 7, south bedroom:

  - one, six-inch circular fluorescent tube;
  - one, eight-inch circular fluorescent tube;
  - one ballast associated with this light fixture.
- Room 10, kitchen and living area:
  - two, six-inch circular fluorescent tube;
  - two, eight-inch circular fluorescent tube;
  - two, ballasts associated with the light fixtures;
  - one fridge-freezer combination;
  - one small bottle Old English wood oil;
  - one, 12 lb bucket of wall board and joint compound;
  - one, bottle Pert Plus shampoo;
  - one, 17 gram container of wood filler.
- Room 9 north bedroom:
  - one, No-PCB ballast.

The first floor of the residence consists of a stairwell and front entry room, a bathroom, a storage and/or bedroom, a rear entryway utility room, and a shop room with an additional entrance. The majority of household hazardous materials were identified in the shop room (room 6).

- Room 5, stairwell and main entryway:
  - one, six-inch circular fluorescent tube;
  - one, eight-inch circular fluorescent tube;
  - one ballast associated with this light fixture.
- Room 6, shop room:
  - one freezer,
  - two, 10-ft fluorescent bulbs,
  - one, non-PCB containing ballast,
  - one, 5-gallon Atco can,
  - one can vinyl wall covering adhesive,
  - one unlabelled pressurized canister,
  - one jug of cutting oil,
  - two cans Daly English oak stain,
  - one jug charcoal oil,
  - one box of fixall patch,
  - one jug of muriatic acid,
  - five jugs of PVC glue,
  - two dissolved boxes of fertilizer,
  - one jug seam sealing adhesive,
  - one jug concrete accelerator,
  - one jug industrial cleaning soap,
  - one jug Rainex,
  - one jug furnace cement,
  - two cans of tile adhesive,
  - one can motor oil,

  - one jug grease eater,
  - one aerosol,
  - one jug window washer.
- Located in a cabinet in the shop room:
  - four jugs of lubricants,
  - eight cans, unlabelled,
  - one aerosol can,
  - three small cans of paint.
- Room 1, rear entry way and utility room:
  - one roll of asbestos paper,
  - one non-PCB ballast,
  - one fire extinguisher,
  - one aerosol can bug killer,
  - one bottle Mr. Clean cleaner.

7.0 SAMPLE RESULTS

7.1 Asbestos

The summary of ACM samples, description, and results are presented in Table 1 of Appendix C. Twenty-five suspect ACM samples were collected from building materials, with 29 separate laboratory analyses performed. Laboratory analysis did not detect any asbestos in any of the samples submitted.

One item of asbestos was identified during Site assessment. A roll of asbestos paper located in Room 1 will require proper disposal.

7.2 Lead and TCLP Metals

NORTECH personnel collected a composite of building materials from all Site structures to be analyzed for the RCRA 8 metals by TCLP. Laboratory analysis confirmed that all results are below the regulatory limits outlined by the EPA. TCLP sample results are outlined in the table below.

Analyte	Results (mg/L)
Arsenic (As)	0.083
Barium (Ba)	0.24
Cadmium (Cd)	<0.050
Chromium (Cr)	0.062
Lead (Pb)	0.59
Mercury (Hg)	<0.0010
Selenium (Se)	<0.050
Silver (Ag)	<0.050

7.3 Above Ground Storage Tank Assessment

During the AST assessment field screening indicated petroleum contamination is present from the ground surface to about two-ft bgs. One sample was submitted to SGS for laboratory analysis of DRO concentration. Sample CZ-01 contained **3320 mg/kg** (ppm) of DRO; above the ADEC cleanup level of 230 mg/kg. The contaminated soils appear to be less than one yard in volume; however, contamination may be present underneath the foundation of the residence that could not be quantified. Petroleum contaminated soils will require proper disposal.

7.4 Miscellaneous: PCB's and Mercury

An inventory of light fixtures from all floors in the building indicated seven ballasts have labels stating that the ballast "Contains No PCBs". ***NORTECH*** noted 10 mercury containing fluorescent bulbs on the building fixtures. All non-PCB ballasts and mercury containing materials will require proper disposal.

7.5 Other

The hazardous items categorized and listed in Section 6.0, above, were identified by ***NORTECH*** during the assessment. These items and materials will require removal and proper disposal prior to demolition.

8.0 ANALYSIS

Asbestos
Twenty-five suspect ACM samples of building materials were sent to EHS Laboratories in Richmond, Virginia for PLM analysis. Laboratory analysis confirmed that asbestos was not detected in any of the building material samples submitted. One roll of asbestos paper will require proper disposal at a CBJ Household Hazardous Waste Collection event.

PCB's and Mercury

- Ten mercury containing fluorescent bulbs are located in the home: four six-inch and four eight-inch circular fluorescent tubes located in Rooms 5, 7, and 10; two, 10-ft fluorescent bulbs in Room 6.
- Seven ballasts are located in the home with labels stating "Contains No PCBs". Four are located in the second floor, and three are located on the first floor.

9.0 CONCLUSIONS AND RECOMMENDATIONS

The hazardous materials assessment survey was executed to assist in identifying the potential hazards and associated regulatory constraints prior to building demolition, and to identify major potential hazardous materials and associated regulatory constraints involved with management and/or abatement of materials identified. Demolition or abatement projects may require additional sampling to comply with OHSA and RCRA regulatory guidelines.

The assessment survey was completed on June 21, 2012 and yielded the following conclusions and recommendations:

Asbestos Containing Materials (ACM)
Laboratory analysis confirmed that no samples contained asbestos greater than 1%. One roll of asbestos containing paper requires disposal.

Lead
The waste stream is considered to be non-hazardous for lead and the remaining RCRA heavy metals. No lead based paint was located on interior or exterior surfaces.

Other
All hazardous materials previously identified, identified during this survey, or discovered during demolition, including household hazardous materials listed in Section 6.0, above, need to be handled carefully using appropriate work practices and disposed of properly under applicable federal and state regulatory standards. This assessment should be made available to employees, demolition contractors, and abatement/demolition workers associated with the demolition project. Project demolition specifications should note these findings, address concerns identified and, where appropriate, require the contractor to submit a work-plan for approval.

The Juneau landfill does not accept hazardous chemicals. Disposal for the household use chemicals, the bucket of used oil, and fluorescent light bulbs should be coordinated through the City and Borough of Juneau Household Hazardous Waste Disposal event. CBJ's next Household Hazardous Waste Disposal event is scheduled for August 19th, 2012.

10.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

NORTECH is a Fairbanks-based, professional consulting firm, established in 1981, offering environmental engineering, civil engineering, and industrial hygiene consulting services. ***NORTECH*** has offices in Fairbanks, Anchorage and Juneau and has completed numerous Phase I ESAs and other property and/or building inspections across Alaska.

We declare that, to the best of our professional knowledge and belief, we meet the definition of environmental professional as defined in §312.10 of 40 CFR 312. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the site. We have developed and performed all the appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

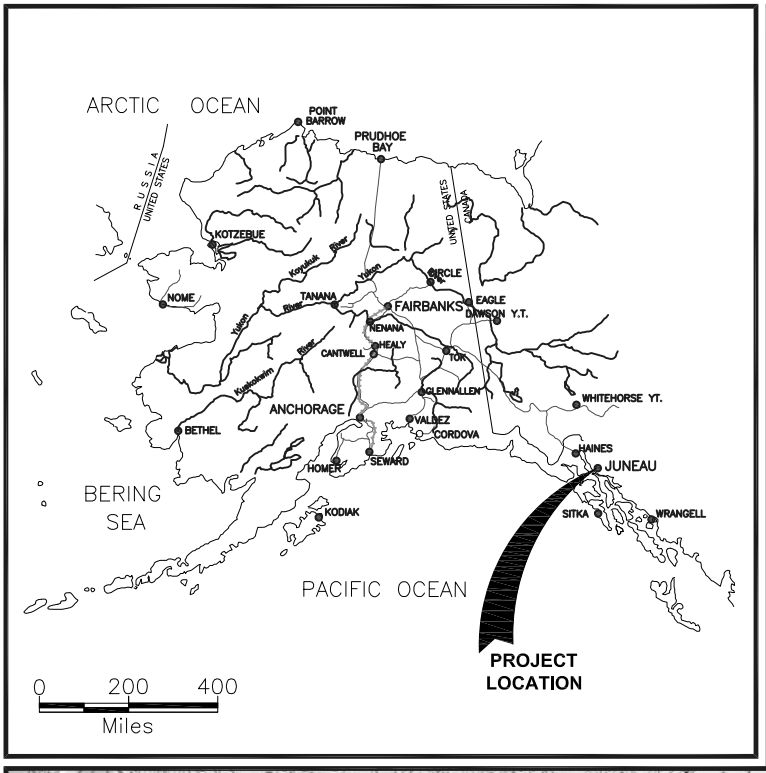
Mr. Jason Ginter is Principal and Juneau Technical Manager for ***NORTECH***. He has completed various hazardous materials investigations providing professional field-screening and sampling. Mr. Ginter is a qualified ADEC field sampler, an AHERA Certified Inspector (T-20065-11607) and is HAZWOPER-certified.

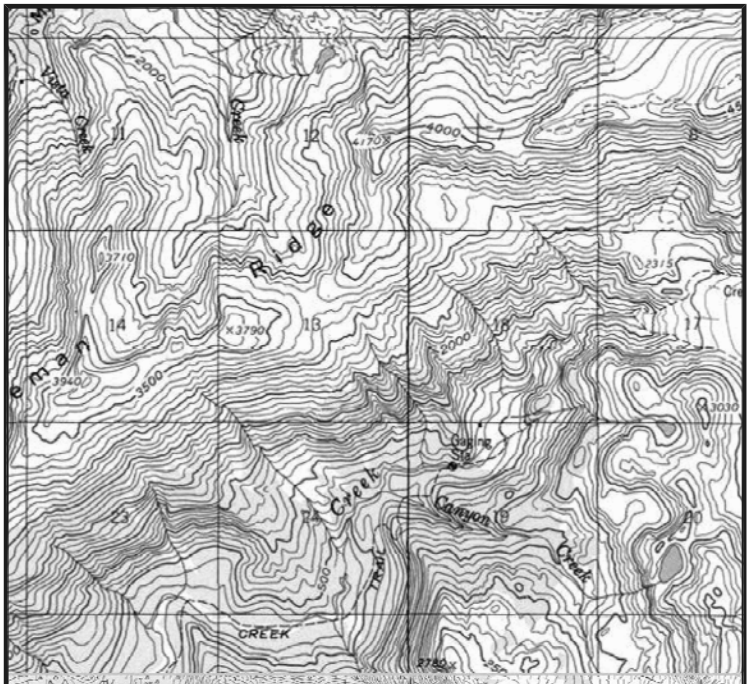
Jason Ginter
Juneau Technical Manager

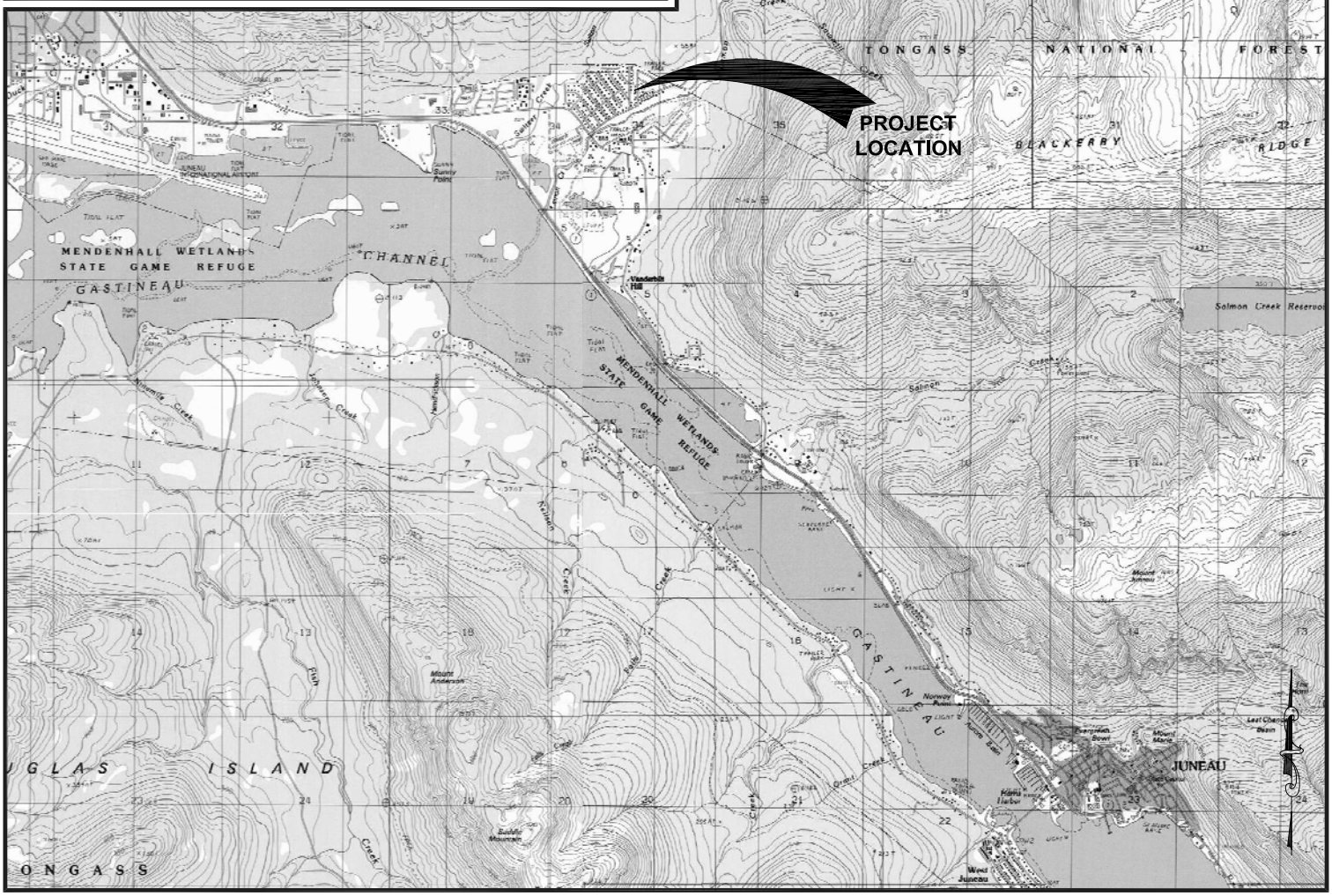
Tara Richards, Environmental Professional for ***NORTECH*** has a B.S. in Geophysical Engineering and has experience conducting property assessments, environmental investigations, groundwater monitoring, laboratory analysis, is an AHERA Certified Inspector (TBI 24-11-149), and is an ADEC Qualified Sampler.

Tara Richards
Environmental Professional

APPENDIX A
Figures







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Location Map
5871 Churchill Way
Juneau, Alaska

SCALE:	1"=1 mile	FIGURE: 1
DESIGN:	TR	
DRAWN:	CMR	
PROJECT NO:	12-1054	
DWG:	121054a	
DATE:	6/28/2012	

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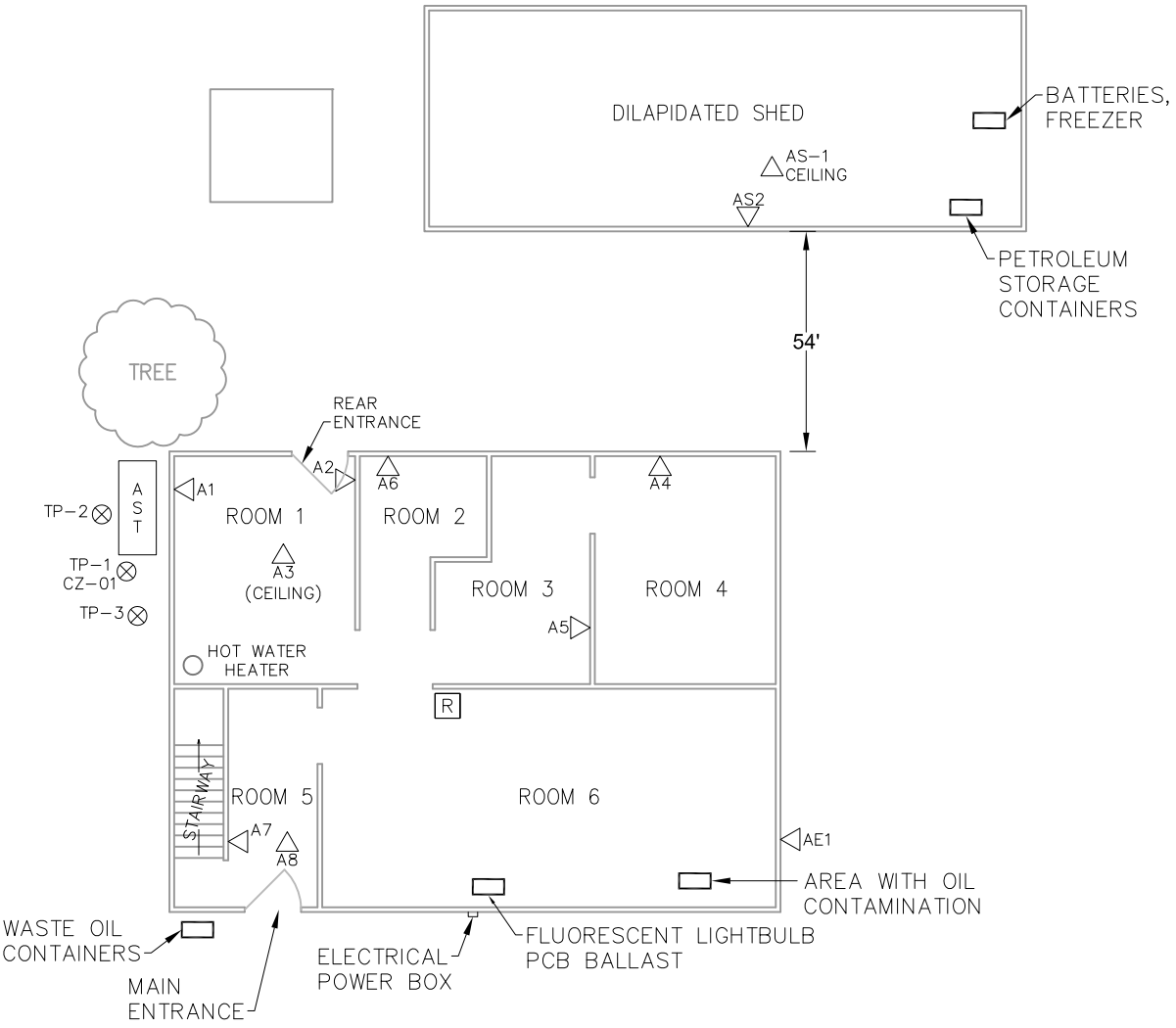
Vicinity Map
5871 Churchill Way
Juneau, Alaska

SCALE: 1" = 100'	FIGURE: 2
DESIGN: TR	
DRAWN: CMR	
PROJECT NO: 12-1054	
DWG: 121054a	
DATE: 6/28/2012	

LEGEND

- ⊗ SOIL BORING LOCATION
- △ BULK SAMPLE LOCATION
- ▭ HAZARDOUS MATERIALS LOCATION OBSERVED
- [R] REFRIGERATOR



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Site Map – First Floor and Outer Buildings
5871 Churchill Way
Juneau, Alaska

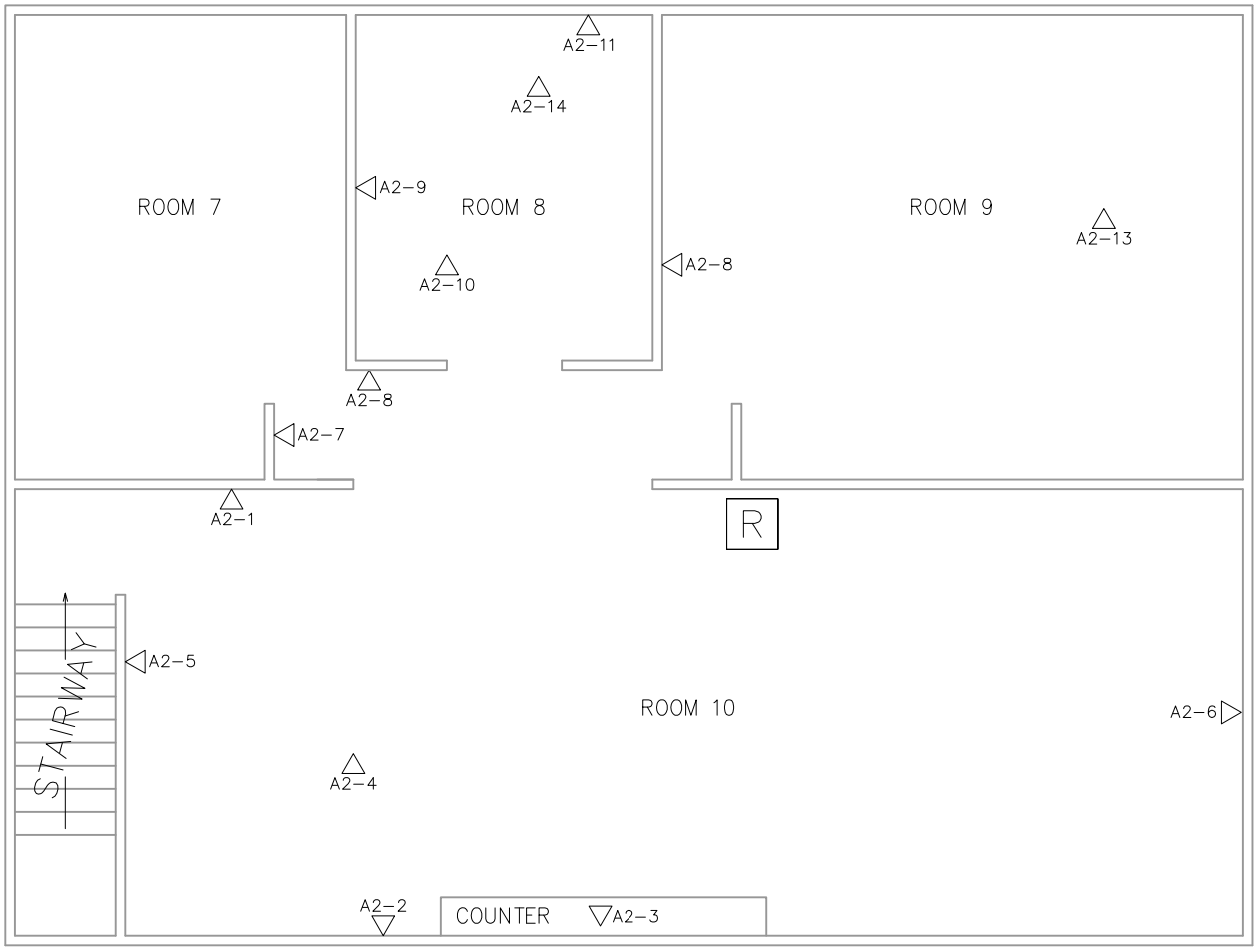
SCALE: 1" = 10'	FIGURE: 3
DESIGN: TR	
DRAWN: CMR	
PROJECT NO: 12-1054	
DWG: 121054a	
DATE: 8/28/2012	

LEGEND

△ BULK SAMPLE LOCATION

▭ HAZARDOUS MATERIALS LOCATION OBSERVED

[R] REFRIGERATOR



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Site Map – Second Floor
5871 Churchill Way
Juneau, Alaska

SCALE: 1" = 5'	FIGURE: 4
DESIGN: TR	
DRAWN: CMR	
PROJECT NO: 12-1054	
DWG: 121054a	
DATE: 8/28/2012	

APPENDIX B
Site Photographs

Photo 1: *Front of residence, showing east side.*

Photo 2: *Rear of residence, showing west side.*

Photo 3: *Large shed.*

Photo 4: *Small shed, underneath tree in backyard.*

Photo 5: *Plastic hazardous materials storage jugs in large shed area.*

Photo 6: *Hazardous materials in large shed area.*

Photo 7: *Used oil in large shed.*

Photo 8: *Large shed is partially constructed of old freezer, potential hazmat.*

Photo 9: *Aboveground fuel storage tank on South side of residence.*

Photo 10: *Improper fuel line connection on AST. Area of soil contamination.*

Photo 11: *Hazardous materials outside of residence.*

Photo 12: *Example of hazardous materials identified inside residence.*

Photo 13: *Residence garage/room 6. Most hazardous materials identified in residence are stored in this room.*

Photo 14: *Hazardous material identified in Room 1. Asbestos paper.*