STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF MINING, LAND AND WATER

LAND USE PERMIT APPLICATION
AS 38.05.850

Applicants must complete all sections of this application. In addition, applicants proposing:

- the use of the uplands and non marine waters must also complete the Supplemental Questionnaire for Use of Uplands and Non Marine Waters accompanying this application;
- off-road travel must also complete the Supplemental Questionnaire for Off-Road Travel accompanying this application; and/or
- the use of tide and submerged lands must also complete the Supplemental Questionnaire for Use of Marine Waters accompanying this application.

Other items that must accompany the completed application are:

- **a (non-refundable)** $100 application filing fee;
- a 1:250,000 or 1:63,360 scale USGS map showing the location of the proposed activity;
- additional items identified and required in any supplemental questionnaire(s) to this application;
- an Alaska Coastal Management Questionnaire if the proposed use is within the Coastal Zone; and
- additional pages if more space is necessary to answer the questions completely.

Completed Land Use Permit Applications should be mailed to one of the following offices:

Public Information Center
550 W. 7th Ave, Suite 1260
Anchorage, AK 99501
(907) 269-8400

Public Information Center
3700 Airport Way
Fairbanks, AK 99709
(907) 451-2705

MLW Information Office
P.O. Box 111020
Juneau, AK 99811-1020
(907) 465-3400

LAS # 30729

Applicant Information:

University of Alaska
Applicant Name — Date of birth

Doing Business As — Contact Person — EIN

P.O.Box 755280 | Fairbanks | AK | 99775-5280 | desiegfried@alaska.edu
Mailing Address with City, State and Zip — Email Address

( ) Home Phone | (907) 450-8133 Work Phone | ( ) Cell Phone | (907) 450-8131 FAX

If you are applying for a corporation, give the following information:

Name, address and place of incorporation: N.A.

Is the corporation qualified to do business in Alaska? **Yes [ ] No [ ]. If yes**, provide name, address and phone number of resident agent:

Type of User, Select one: **[ ]** Private non-commercial (personal use) **[ ]** Commercial Recreation or Tourism

[x] Public Non-profit including Federal, State, Municipal Government Agency **[ ]** Other commercial or industrial

Duration of Project:
The proposed activity will require the use of state land for: **(Check one)**

[ ] a single term of less than one year. **Beginning month:** February **Ending month:** January

[ ] a multi year term for up to 5 years. **Beginning year:** 2016 **Ending year:** 2026

If multi year and seasonal, circle months of use in each year. **Jan., Feb., Mar., Apr., May, Jun., Jul., Aug., Sept., Oct., Nov., Dec.**

Project Location

Latitude/Longitude or UTM: _____ or

_____ Section: _____, Township: _____, Range: _____, Meridian: See attached file

(The spaces below are to be used if the boundaries of the proposed project cross section lines.)

_____ Section: _____, Township: _____, Range: _____, Meridian: _____

_____ Section: _____, Township: _____, Range: _____, Meridian: _____

Proposed project will require the use of up to 1.75 acres. (Add additional sheets as necessary)

Project Description - Describe in detail your intended use of state land. (State land also includes all tide and submerged lands beneath coastal waters and all shorelands beneath other navigable water bodies of the state.) Discuss development and activities. (Attach additional pages as necessary.)

The selected sites will be used for study of permafrost degradation and thermokarst development as a part of a research project of the International Arctic Research Center in the University of Alaska Fairbanks. Our research activities include followings.

--- Measurements of micrometeorological factors, which affect permafrost stability, such as air and ground, or water temperature, soil moisture, methane and carbon dioxide fluxes.

--- Samplings of near-surface frozen/unfrozen ground, ice, vegetation (small amount) and water in thaw lakes

--- Transportation between sampling or measurement sites in the selected study area will be by aircrafts, boats or snowmachines.

Should a portion of the permitted area be closed to the general public? **Yes [ ] No [X]**. **If yes**, explain which portion and provide justification for exclusive use:

Site Description - Briefly describe the current condition of the proposed site of use, noting any trash, garbage, debris or signs of possible site contamination (If significant, we recommend you provide pictures to establish initial conditions):

The selected area is tundra in the North Slope partly experienced recent wild fires and/or permafrost degradation. Most part of the area is currently free from anthropogenic disturbance, but there are some surface disturbance probably by winter traffics for mining activities or geophysical surveys performed earlier. The exact locations of the research areas were submitted as candidates. The location could be shifted within the the indicated section, township, and range as after reconnaissance trips.

Are there improvements or materials on the site now? **Yes [ ] No [X]** **If yes**, briefly describe the improvements, their approximate value, and who owns them (We recommend you provide pictures of improvements):

Site Description continued - Describe the natural vegetation --- ground cover, trees, shrubs --- and any proposed changes. Describe the location of any estuarine, riparian, or wetlands and any noticeable animal use of area.

Ground surface consists mainly of tussock vegetation colonies, wetlands with mosses, and sedges.

Site Access - Describe how you plan to access the site, and your mode of transportation.

Access to the sites will be by snow machines or fixed-wing aircraft in snow-covered seasons, and by helicopters or boats in summer.

If your access is by aircraft, specify the type and size of aircraft:

R44 helicopter in summer / de Havilland Beaver in snow-covered seasons

To access the site, the aircraft is equipped with **floats [ ] wheels [ ] skis [x]**.

Number of people

1. Indicate the number of employees and supervisors who will be working on the site. 2 - 8
2. Indicate the number of customers who will be using the site per year or season. 0
3. Indicate the number of days the site will be used per year or season. 14

Environmental Risk / Hazardous Substances - In the course of your proposed activity will you generate, use, store, transport, dispose of, or otherwise come in contact with toxic and/or hazardous materials, and/or hydrocarbons? **Yes[ ] No[ ]**. **If yes**, please describe:

We are planning to use fuel for engine qugers, generators, and outboard motors.

The types and volumes of fuel or other hazardous substances present or proposed:

Up to 3 gallons of unleaded gasolin for engine augers, generators, and outboard motors.

The specific storage location(s):

N. A.

The spill plan and prevention methods:

We will use secondary containment for any fuel.

In case of accidental spill of the fuel, we will immediately report to EHS and ADEC.

Environmental Risk/Hazardous Substances (continued) - If you plan to use either above or below ground storage containers (like tanks, drums, or other containers) for hazardous material storage, answer the following questions for each container:

Where will the container be located? N/A

What will be stored in the container? N/A

What will be the container's size in gallons? N/A

Give a description of any secondary containment structure, including volume in gallons, the type of lining material, and configuration:

Will the container be tested for leaks? **Yes[ ] No[ ]**

Will the container be equipped with leak detection devices? **Yes[ ] No[ ]. If no**, describe: N/A

Do you have any reason to suspect, or do you know if the site may have been previously contaminated? **Yes[ ] No[ ]. If yes**, please explain: N/A

Date Stamp: 11/17/15

Signature of Applicant or Authorized Representative — Title: Real Prop Spec II

AS 38.05.035(a) authorizes the director to decide what information is needed to process an application for the sale or use of state land and resources. This information is made part of the state public record and becomes public information under AS 09.25.110 and 09.25.120 (unless the information qualifies for confidentiality under AS 38.05.035(a)(9) and confidentiality is requested.) Public information is open to inspection by you or any member of the public. A person who is the subject of the information may challenge its accuracy or completeness under AS 44.99.310, by giving a written description of the challenged information, the changes needed to correct it, and a name and address where the person can be reached. False statements made in an application for a benefit is punishable under AS 11.56.210.

Land Use Permit Application Supplemental Questionnaire for:
Off Road Travel

Answer the following questions if your proposed activity includes off-road travel.

Terrain Factor. Circle the following terrain type(s) that best describes your route of travel:

- Wetlands
- Open, non-tundra or wetland areas.
- Rivers or other water bodies.
- Wooded areas with trees of 6" or greater diameter (at breast height).
- Tundra areas.

Vehicles and Weight. List the number and kinds of vehicles to be used for motorized travel, the weight of each vehicle and the weight of each trailer or sled (including loaded weight) to be carried by that vehicle:

Up to three snowmachines weighing about 500 lbs with sleds of max. 200 lbs of equipment will be used for 1-2 times field trips in snow-covered spring season.

One or two inflatable boats with 2.3 hp outboat motors is planned to use in summer access to the research sites.

Mileage.

- State the average total miles traveled in one round trip: 350 miles
- State the number of trips proposed: 4

Season Factor. Proposed date(s) of travel will be: **From:** March 1 **To:** Oct 31

Stream and Water Body Crossings. - Note who you contacted in the ADF&G, Division of Habitat:

Date:_____ Person: _____

Fuel and Hazardous Substance Factor. The volume of fuel and hazardous substances to be used is the total volume (in gallons) to be carried on one vehicle and any trailers or sleds that vehicle is towing.

- Maximum volume of fuel (in gallons) that is being transported by one vehicle and any trailers or sleds it is towing: 20 gallons.
- Hazardous substances other than fuel:

  Substance N. A.

  Substance _____

- Do you have an Oil Discharge Prevention and Contingency Plan approved by the Alaska Department of Environmental Conservation? **Yes[ ] No[X]**
- Do you have either a trained spill response team or a contract with a spill response company? **Yes[ ] No[X]**

Land Use Permit Application Supplemental Questionnaire for:
Use of Uplands and Non Marine Waters

To be completed to provide more detailed information about projects or activities requiring the use of state owned uplands and non marine waters. All site development details identified in this section must be represented graphically in the scaled drawings on Page 4 of the supplement.

Temporary Structures – **1)** Describe all temporary improvements (including buildings, tent platforms, out-buildings, docks, floats, and floating facilities), including their dimensions and building materials. **2)** Label improvements to be maintained on a year round basis as year round. **Note:** Seasonal improvements must be completely dismantled and removed or stored on or before the end of authorized terms of use.

Two tents with dimension of 10' x 10' will be built during research trips. About 30 Miniature data loggers with temperature or moisture sensors will be installed into frozen ground (Year-round).

Distance structures including pit privies will be located from the ordinary highwater mark of the nearest freshwater body (lake, stream, river, etc), or the mean high water mark of a saltwater body: _____

Harvest of Non-Timber Related Forest Products – Please list the type and quantity of each non-timber related forest product (berries, ferns, willow, mushrooms, birch bark, etc.) to be harvested for commercial use:

N. A.

Contact the DNR Division of Forestry to obtain authorizations for the harvest of small trees.

Motorized Equipment - List mechanized/motorized equipment to be used, including type, size, purpose, and number of each.

35cc and/or 50cc engine augers will be used for coring frozen ground. One inflatable boat with 2.3 hp outboat motor for the water sampling on thaw lakes.

Storage and Parking - If you plan to store items or park boats, vehicles and/or heavy equipment on the site, describe complete the following:

Describe and give dimensions of long term and short term parking and or storage areas. N. A.

Is parking or storage planned to take place on filled tidelands. **Yes[ ] No[ ]**

Does storage involve structures or materials floating in a waterbody? **Yes[ ] No[ ]** If yes, describe. _____

Storage and Parking (continued)

Number of disassembled tent frames _____ Number of tent platforms _____

List and describe items that are large and difficult to transport. Include dimensions:

Will barrel(s) or an equivalent type of storage container be used? **Yes[ ] No[ ]** If using something other than barrels for storage containers, describe the alternative container.

Describe any measures you plan to take to minimize drips or spills from leaking vehicles or equipment.

Water / Wastewater

Water Supply – Describe the water supply and proposed use.

Water of up to 10 gallons for domestic use in campl site will be brought from Toolik Lake Research Station or nearby facilities.

Wastewater – Describe the wastewater type and quantity and proposed method of wastewater disposal: (for the marine environment, also describe the proposed gray and black water systems or out fall pipeline.

Non-toxic waste as food waste and trash will be minimized and all wast will be hauled out.

Waste – Describe the types of waste that will be generated on-site, including solid waste, the source of the waste, and the method of waste disposal, i.e. pit privy, or self-contained system, or outfall line; indicate distance from the nearest waterbody.

All solid waste, including sanitary waste, will be hauled out.

Animal Use

Will there be any use of animals (horses, llamas, dogs, etc.)? **Yes[ ] No[ ]**

Will there be commercial use of the animals (horseback rides, packing, dog sled rides, etc.)? **Yes[ ] No[ ]** If yes, please explain:

N. A.

Dismantle, Removal, Restoration Plan – Provide a plan for dismantling and removing temporary structures. Include method and timeline for total site restoration:

Near-surface soil, peat, lake water, and vegetation will be collected as samples for the research. For 35cc and/or 50cc engine augers will be used for coring frozen ground. As our engine augers are small, there will be small surface disturbance at the coring site (less than 1 square meter), and diameters of resulting bore holes will be less than 3 inches. Up to 10 sampling points will be selected for the proposed research sites. Coring depth will be 1-15m depending on sediment status. All measurement equipment will be removed from the site at the end of permitted project term. Every effort will be invested to minimize any surface or subsurface disturbance.

SHORT TERM (PORTABLE) COMMERCIAL RECREATION CAMPS: Identify commercial recreation activity/activities for which short term (portable) camps **will be** established to accommodate employees and clients, and provide a general description of the location(s) (e.g. guide use area, game management sub-unit, river, stream, lake, etc.) where the recreational activity/activities and short term (portable) camp use will occur.

___ **Big Game Guiding: (List up to 3 Guide Use Areas.)** _____

___ **Sportfishing (List river corridors, lakes, etc.)** _____

___ **Boating/Rafting/Kayaking: (List river corridors, lakes, etc.)** _____

___ **Other Recreation: (Type and general geographic description.)** _____

- Identify any State of Alaska Refuge, Sanctuary and/or Critical Habitat Area where short term (portable) camps will be used.

Will activities include "day use" of state land managed under the Haines State Forest Management Plan? Yes ___ No ___

Location Name		Project Investigator	WGS84		Area of land to be covered in permit	Legal Description				Instrumentation	Activities Conducted at Site
Station ID	Station Name		Latitude	Longitude		M	T	R	Section		
DNR_1	P_7	Go Iwahana	-150.729742	68.962886	0.25 acres	Umiat	T.5.S	R.6.E	33	Up to 5 locations are selected in each section and ground monitoring system will be installed in boreholes. A mobile micrometerological tripod will be installed during summer seasons (up to 3 months) at a single station at a time, and migrate amonge the sites. Please see details about the micrometeorological and ground monitoring systems below.	Topographic survey, permafrost/vegetation sampling, and mesurements of micrometeorological and ground status. Ground monitoring will be year-around at selected locations. Micrometeolorogical monitoring will be cunducted during snow-free period of the year at 2-3 sites per year.
DNR_2	P_8	Go Iwahana	-150.984373	69.38806511	0.25 acres	Umiat	T.1.S	R.5.E	5		
DNR_3	P_9	Go Iwahana	-150.866183	69.56757712	0.25 acres	Umiat	T.3.N	R.5.E	34		
DNR_4	P_10	Go Iwahana	-151.321518	69.80321891	0.25 acres	Umiat	T.5.N	R.3.E	11		
DNR_5	P_12	Go Iwahana	-150.296115	70.04127735	0.25 acres	Umiat	T.8.N	R.7.E	13		
DNR_6	P_13	Go Iwahana	-150.1881	69.74657021	0.25 acres	Umiat	T.5.N	R.8.E	32		
DNR_7	P_14	Go Iwahana	-149.712173	68.97309839	0.25 acres	Umiat	T.5.S	R.10.E	27		

Micrometeorological mesurement tripod (3 m): datalogger, sensors (soil temperature, moisture, radiation, raingauge, water level, methane/CO2 analyzer, anemometer), solar panel, 40Ah battery double-sheltered by glassfiber/plastic boxes.

Ground monitoring system: miniture datalogger powered by dry cell or button batteries in weather-proof shelter covered by secondary containment, sensors (soil temperature, moisture), interval camera,