DOT&PF Explosives & Avalanche Mitigation Training and Testing Program

Land Use Permit (LUP) Narrative

Applicant / Contact

Agency: Alaska Department of Transportation & Public Facilities (DOT&PF) – Statewide Avalanche Program

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Project Title & Summary

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DOT&PF Explosives & Avalanche Mitigation Training and Testing Program – DNR Material Sites

Project Summary:

The Alaska DOT&PF proposes to conduct controlled explosive training and testing at designated DNR material sites. Activities will include instruction and practical training in the safe handling and use of packaged ANFO, cast boosters, detonating cord, electric and non-electric detonators, and ignitors, as well as operational procedures for non-explosive gas-based avalanche control systems. All activities will be conducted under the supervision of the DOT&PF Blaster-in-Charge and will follow manufacturer SDS/TDS and industry best practices (IME SLP-17; CIL guidance).

These trainings support DOT&PF's statewide avalanche safety program by ensuring qualified personnel can safely perform explosive and non-explosive avalanche mitigation operations near highway corridors. The LUP covers the use of DNR material sites for short-term, controlled training and testing activities throughout the year.

Project Locations

Designated Material Sites (DNR Managed):

1. Seward Highway MP 42 — Material Site

Latitude / Longitude: 60.591572 deg, -149.546973 deg

Ownership: DNR (DOT&PF permitted use)

2. Seward Highway MP 49 — Material Site

Latitude / Longitude: 60.683256 deg, -149.477869 deg

Ownership: DNR (DOT&PF permitted use)

3. Richardson Highway MP 74 — Material Site

Latitude / Longitude: 61.564552 deg, -145.307274 deg

Ownership: DNR (DOT&PF permitted use)

Each material site is a previously disturbed area historically used for highway construction or maintenance material extraction. Sites were selected for isolation, direct access to DOT&PF-maintained roadways, and the absence of nearby residences or structures, making them appropriate for safe, controlled training and testing activities.

Project Description

Purpose:

Provide DOT&PF personnel practical, hands-on training in avalanche mitigation using both explosive and non-explosive systems; reinforce safe handling, priming, initiation, and disposal practices to sustain competent statewide operations.

Scope of Work:

- Up to three training events per year (two winter, one summer), each up to 3 days.

- Instruction and practice in: handling/storage/transport per ATF & IME SLP-17; packaged ANFO (Austinite) and cast-booster priming; detonating cord usage; electric and non-electric detonator procedures; gas-based RACS setup and stand-off procedures; safety briefings, range setup, post-blast inspection, and dud management per IME / manufacturer guidance.

Typical Quantities & Limits:

Small inventories on site (generally < 200 lb total) removed daily no long-term storage. Live detonations will not exceed 10 lb ANFO or 10 lb PETN-equivalent/booster material per shot.

Supervision & Safety:

All operations under the DOT&PF Blaster-in-Charge. Only trained, authorized personnel handle explosives; electric circuits routed/protected and tested as required.

Environmental Considerations:

Work confined to previously disturbed material sites. Minimal ground disturbance; all noticeable explosive residues, packaging, and casings will be collected and removed after each event. Coordination with DNR and local emergency services will occur prior to each event.

Materials / Equipment Expected on Site

Explosives & Initiation Systems:

- Packaged ANFO (Austinite series)

- Cast boosters (various sizes)

- Detonating cord (A-Cord 50-gr, heavy-duty variants)

- Electric & non-electric detonators

- Crimp-on and pull-wire ignitors

Non-Explosive Systems:

- Mobile gas-based RACS (Boom-Whoosh style or equivalent)

Storage & Transport:

- ATF-compliant day-use magazines attended at all times; detonators segregated.

- Transportation in accordance with DOT&PF explosive transportation regulations.

Support Equipment:

- Training signage, safety barriers, radio communications, first-aid and fire-response kits.

Quantities:

- On-site inventory < 200 lb; live detonations ≤ 10 lb per shot.

Schedule / Frequency

5 year permit with an annual schedule

Annual Schedule:

- Winter (Nov–Apr): up to 2 events

- Summer (May–Oct): up to 1 event

- Event length: up to 3 days (setup + demobilization)

- Dates and frequency are subject to change; the above is the maximum annual schedule.

- Weather cancellations/postponements will be coordinated with DNR.

Advance Notice / Coordination:

DOT&PF will notify DNR before each event with proposed dates, BIC contact, estimated quantities, and a site map. DOT&PF will coordinate with emergency services and post advisories when closures are required.

Recordkeeping:

DOT&PF will retain blast logs, manifests, misfire reports, and after-action notes and make them available to DNR or other AHJs upon request.

Traffic Management & Closures

Traffic Control & Public Safety:

DOT&PF will implement full or partial road closures when public roadways fall within planned standoff/exclusion zones. Closure extents set by the Blaster-in-Charge using IME SLP-17 and manufacturer guidance.

Duration / Reopening:

Closures remain until the Blaster-in-Charge issues an all-clear following post-blast inspection. Typical duration: < 1 hour per operation.

Coordination & Notifications:

Closures coordinated with DOT&PF Maintenance & Operations, DNR land manager, and local emergency services. Advance public notification and temporary signage will be

implemented if a road closure is required (511, advisories, radio); “Training in Progress – Road Closed” signage posted at access points.

Access Control During Closures:

Spotters stationed at closure ends; only authorized personnel enter safety perimeter; continuous radio communication maintained. Traffic reopens after BIC confirms safety.

Safety & Operational Controls

Supervision & Oversight:

All activities under the DOT&PF Blaster-in-Charge (BIC) with final authority.

Personnel & Training:

Only qualified DOT&PF personnel handle explosives. Support staff/observers remain outside exclusion zones.

PPE:

Personnel entering the critical work area will wear appropriate PPE for the operation and conditions.

Safety Zones & Exclusion Areas:

Before any blasting operations the area will be checked and clear before operations begin.

Safety per IME SLP-17 and manufacturer guidance; RACS airblast considerations included. If roadways intersect these zones, closures per Section 7 apply.

Communications & Command:

BIC will designate a single operational radio channel. Commands (“fire”, “all clear”) repeated and acknowledged by all.

Misfire & Dud Response:

Misfires follow IME/ATF/manufacturer guidance; approach only after a minimum 1-hour wait and system rendered safe. Duds neutralized/disposed and logged.

Incident Response & Reporting:

Incidents/near-misses result in immediate shutdown, area security, DNR and DOT&PF Safety notification, and written reporting.

Post-Event Review:

Debrief and safety review documenting lessons learned and corrective actions.

Storage & Magazine Management

Day-Use Magazines & Continuous Supervision:

All explosives will be stored in day-use magazines on site and attended at all times by the BIC or authorized attendant. No explosives will be left unattended on site; no unattended on-site storage permitted.

Magazines Remain in Transport Vehicle:

Day-use magazines shall remain in the vehicle that transported them while on site and will not be moved off the transport vehicle. This ensures unused explosives are returned to the originating transport magazine at day's end and removed from site.

Magazine Siting & Security:

Vehicles parked in designated magazine area within DNR material site boundaries; placement meets IME SLP-17 separation guidance. Magazines secured with approved locks; detonators segregated per ATF.

Inventory & Access Logs:

BIC/attendant maintains real-time access log; issues/returns recorded immediately. Daily end-of-day inventories verified; unused explosives returned to originating transport magazine.

Inspections:

Day-use magazines visually inspected before first use each day and continuously monitored. Any tamper/damage reported and corrected.

Transportation Compliance:

Transport between sites follows DOT&PF explosive transport regulations; detonators transported separately in secured containers; all transport under direct supervision.

End-of-Day / End-of-Event:

BIC completes final inventory, secures unused explosives, and removes them from site. No explosives remain overnight unless attended by BIC/authorized attendant.

Attachments

- Site maps (MP 42, MP 49, MP 74) with proposed access and training zones

- SDS/TDS for Austinite (ANFO), cast boosters, detonating cord, electric/non-electric detonators, ignitors, and RACS manufacturer guidance

Seward Highway MP 42 — Material Site

Latitude / Longitude: 60.591572 deg, -149.546973 deg


Seward Hwy MP 42
Explosive training area
Access
N
1000 ft

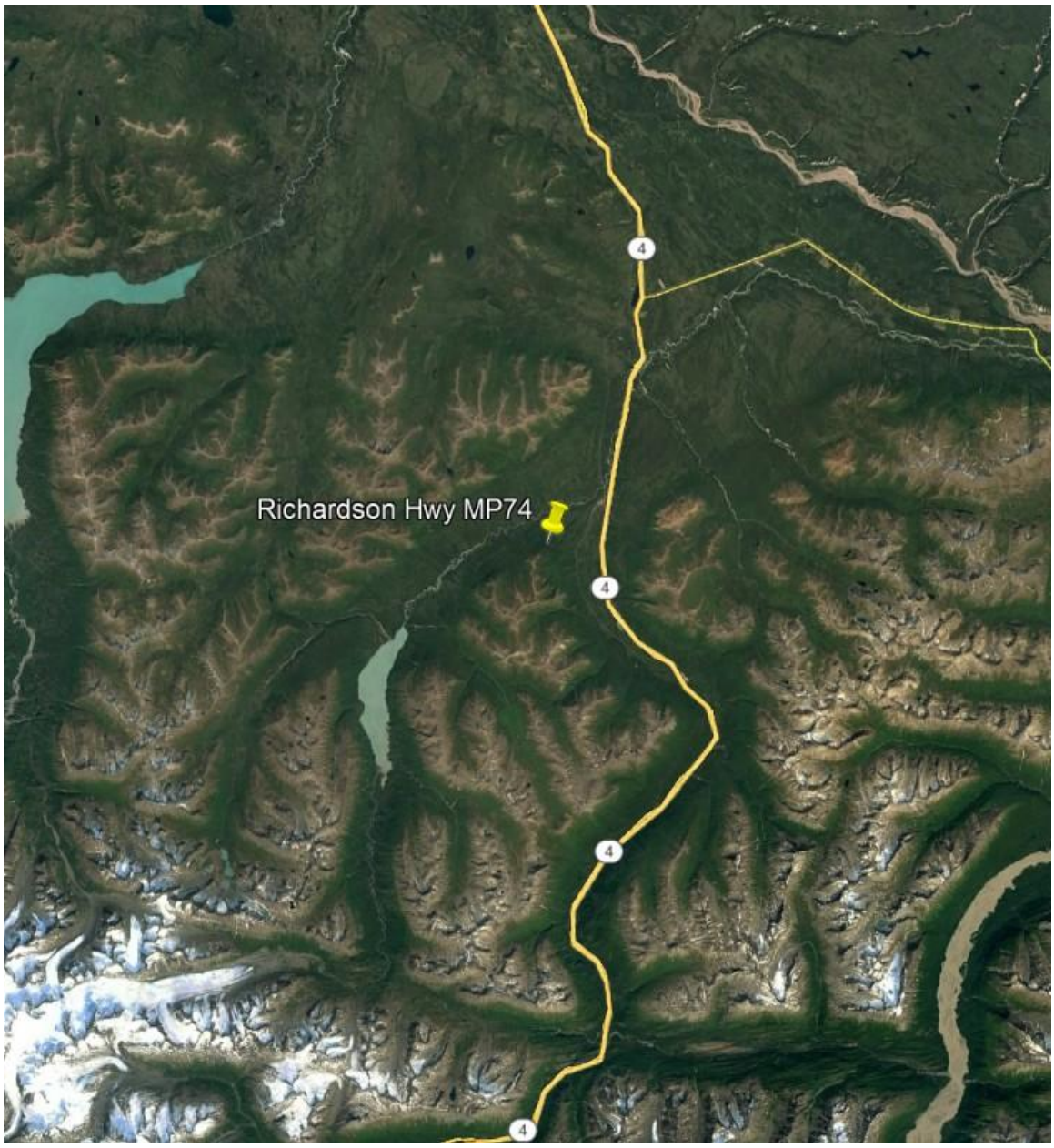
Seward Highway MP 49 — Material Site

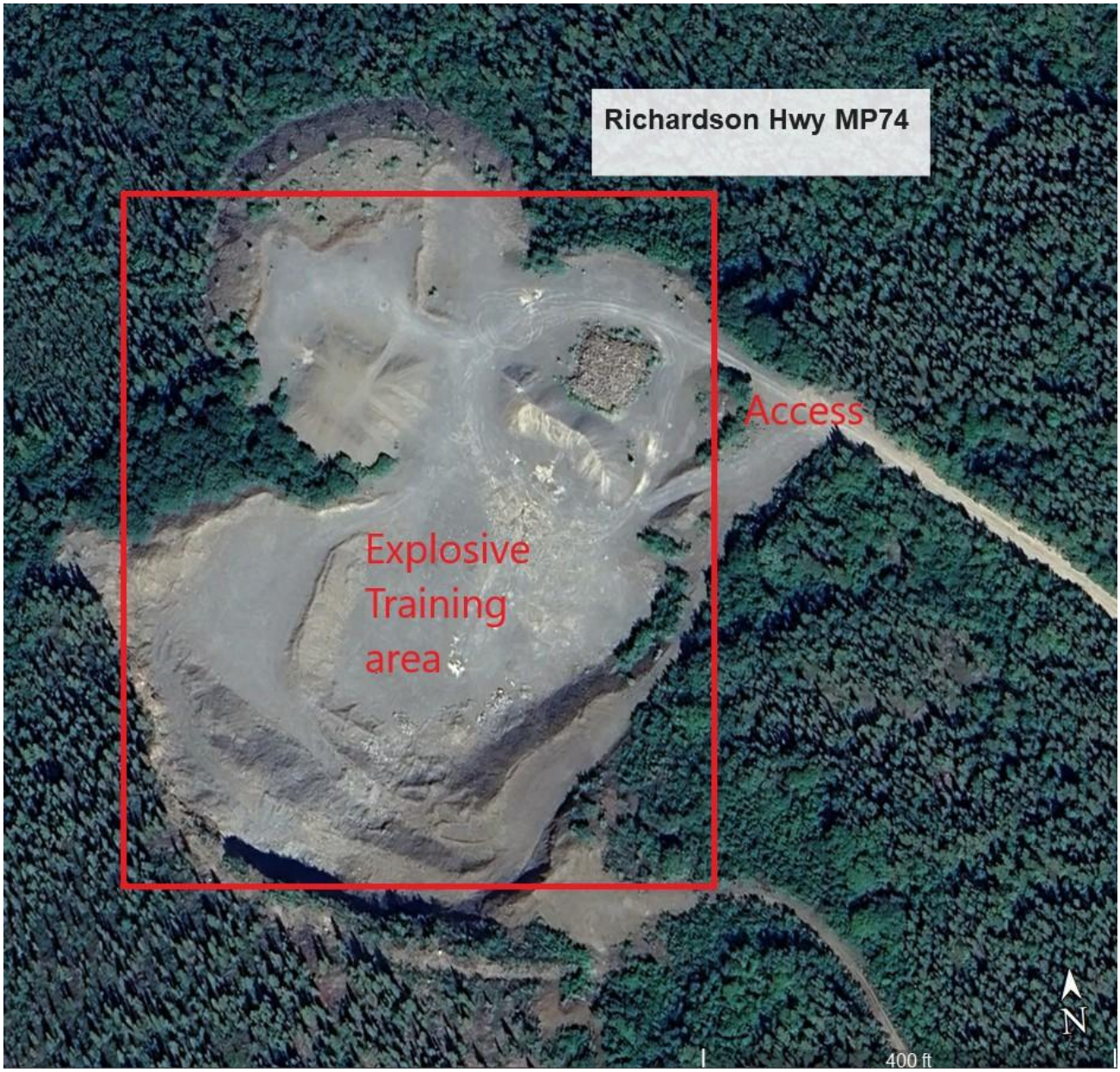
Latitude / Longitude: 60.683256 deg, -149.477869 deg


Seward Hwy MP 49
Access
Explosive
Training
Area
Access
N
1000 ft

Richardson Highway MP 74 — Material Site

Latitude / Longitude: 61.564552 deg, -145.307274 deg




Richardson Hwy MP74
Access
Explosive
Training
area
N
400 ft