



**Memo To:** Rob McIntyre, R.E.T, Access Consulting Group

**From:** S. Keesey, B.Sc., Access Consulting Group

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P.Biol., CEPIT, Access Consulting Group

**Date:** June 29, 2004

**Subject: Detonation of Picric Acid Container at Elsa Townsite**

**Background:**

During a preliminary hazardous materials investigation of the Elsa Townsite on May 19<sup>th</sup> by Dan Cornett and Scott Keesey from Access Consulting Group (ACG), Ken Nordin of Laberge Environmental Services (LES) and Glenn Mickie of General Waste, a 4 oz. container of picric acid (trinitrophenol) was identified in the collection of assay chemicals stored in the First Aid building (Fig. 1). A once common assay chemical, picric acid in its liquid state is relatively stable with minimal risk associated with handling and storage. In a dry or desiccated state however, picric acid is highly explosive (TDG Class 1.1) and rapid combustion can be triggered simply by physical or electrostatic shock due to shaking or opening of container. The contents of the container in Elsa were fully desiccated, and as such deemed an immediate priority for disposal.

On June 15<sup>th</sup>, Scott Keesey packed and labelled the container in Styrofoam packing and isolated it from the main chemical storage area (Fig. 2 and 3). The item was placed in an empty cupboard that was labelled and signed with warning placards (Fig. 4). The lock on the front entrance was changed and Scott retained the only key. This entrance was also signed with warning placards (Fig. 5) and the site staff was instructed to refrain from entering the building or using heavy machinery in the vicinity of the structure.

On June 21<sup>st</sup>, Scott Keesey and Rob McIntyre spoke with Bob Scott at the Workman's Compensation Board regarding a disposal course of action and were instructed to contact the RCMP Explosives Disposal Unit (EDU), who would handle the issue exclusively. Constable Wayne Gork of the Whitehorse RCMP detachment was contacted on the same day at 11:30 am, and after recording details of the nature and location of the substance informed Scott that the commanding sergeant would be in contact later in the week.

Sergeant Randy Fraser contacted ACG on June 24 to confirm details and coordinate the disposal event. It was determined in this conversation that the fully desiccated state of the substance warranted immediate on site disposal by the EDU. Criteria for a detonation site were discussed, and arrangements were made for Scott to accompany Sgt. Fraser and Const. Gork via RCMP fixed-wing aircraft to Mayo on Monday, June 28. Scott and Rob then discussed potential detonation sites and concerns regarding fire potential, public access and building integrity. A priority list of sites was established.

### **Disposal Activities:**

The RCMP twin-otter aircraft departed Whitehorse at 9:00 am on June 28 and arrived in Mayo at 10:15. Const. Rene Bouchard of the Mayo attachment escorted us to the Elsa village where a brief tour of the site was followed by a meeting with the Ewing Transport site maintenance staff. After reviewing the potential detonation sites, an alternate site immediately below the transport garage was chosen (Fig. 6) due to the protection provided by the surrounding steep gravel walls, the lack of vegetation and the close proximity to the substance of concern. The Ewing tanker truck was filled with water, manned and parked in front of the transport garage as a fire precaution. Jeremy Germaine and Grant Ewing were provided with signage (Fig. 7) and took positions on Highway 11 approximately 200 m on either side of the site, which was adjacent to the roadway. They were requested to stop all traffic when instructed by radio. Jake Beckley was stationed at the west entrance to the Elsa Townsite as a further public safety precaution. All site staff were also instructed to turn off all radios on site, and to turn off handheld radios when requested, as these devices have been known to trigger the detonation devices once they are live.

The detonation lines were set from the site to a secure location approximately 150 m to the west by Const. Gork. Scott admitted Sgt. Fraser to the First Aid building and returned to the safe detonation site with Const. Bouchard. Sgt. Fraser placed the container in sawdust within a small Rubbermaid tub, and walked it to the detonation site. He opted not to use their bomb suit due to the hot air temperature and the potential for tripping on the steep road down to the site. The container was removed from the Styrofoam packing, doused with a small amount of gasoline as an accelerant and wired with a detonator. Upon detonation the magnitude and colour of the percussion indicated significant volatility, exceeding the expectations of the EDU. The impact residue and depression confirmed the volatile nature of the picric acid. Free traffic movement was reinstated and the stand-by tanker truck was released for resumption of lime slurry transportation.

The return travel to Mayo and Whitehorse was uneventful, and the EDU was highly complimentary of the actions taken by ACG and Ewing Transport leading up to and including the detonation.



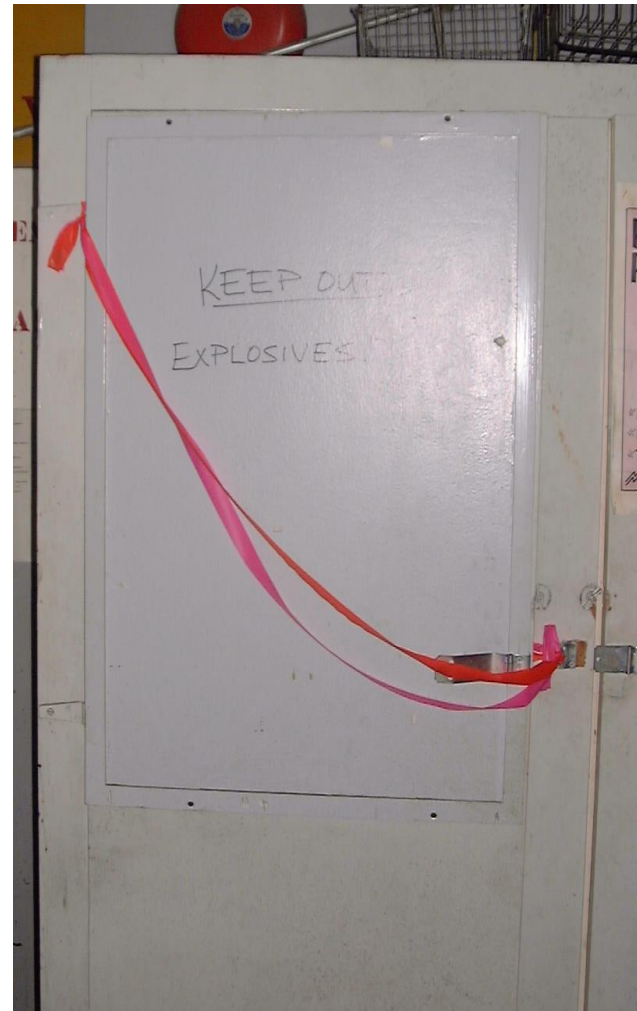
**Fig. 1 – Container of picric acid (trinitrophenol) in assay lab chemical storage in First Aid building.**



**Fig. 2 – Contained and labelled picric acid container.**



**Fig. 3 – First Aid building at Elsa Townsite, with explosive hazard identified and door locked.**



**Fig. 4 – Signed and flagged cabinet in First Aid building containing packaged Picric Acid container.**





**Fig. 5 – Ewing Transport employees with highway signage for traffic control.**



**Fig. 6 – From left: Const. R. Bouchard (Mayo RCMP detachment), J. Beckley and J. Germaine (Ewing Transport), S. Keesey (ACG), R. Fraser (Whitehorse RCMP EDU), G. Ewing (Ewing Transport), and Const. W. Gork (Whitehorse RCMP EDU).**



**Fig. 7 – Sgt. R. Fraser walking picric acid container to detonation site.**



**Fig. 8 – Sgt. R. Fraser preparing detonation wiring.**





**Fig. 9 – Sgt. R. Fraser inspecting site after detonation.**