

**ASSOCIATION OF CANADA LANDS SURVEYORS
BOARD OF EXAMINERS**

SCHEDULE III / ITEM 1

March 2008

ACTS AND REGULATIONS RELATING TO SURVEYS OF CANADA LANDS

Notice to Candidates:

This examination is based on the e-Edition of the Manual of Instructions for the Survey of Canada Lands.

Note: This examination consists of 8 questions on 3 pages.

Marks

<u>Q. No</u>	<u>Time: 3 hours</u>	<u>Value</u>	<u>Earned</u>
1	<p>As a Canada Lands Surveyor, you are making a resurvey of Lot 7, Group 805, (Indian Reserve) Yukon Territory, Plan 40417 CLSR, 22795 LTO under instructions from the Surveyor General. The original official plan was made by J.B. Walcot DLS in 1948. The parcel has three rectilinear sides each of approximately 2,640 feet in length, with the fourth side being the OHWM of Teslin Lake. The mathematical closure of the three rectilinear boundaries and OHWM traverse on Mr. Walcot's plan is 0.75 feet. Recent experience in retracement of Mr. Walcot's surveys has indicated a consistent average of 1:10,000 agreement with his plan measurements.</p> <p>You have found original Wo. monuments at the southwest and southeast corners of Lot 7 and have restored them with CLS 77 pattern monuments. You have then run a trial line in a northerly direction perpendicularly to the restored southerly boundary, but at the plan distance, you find that construction of a wood-cutting road has destroyed the location of the original monument. Careful excavation in a three foot diameter circle at the theoretical location reveals no remains of a post hole.</p> <p>Mr. Walcot appears to have taken great care to not overcut the boundary lines of Lot 7 and has left a clear trail of blazed pine trees flanking the boundaries. By visual alignment of the narrow lines between the blazes in the southerly and westerly directions from the missing northeast corner monument, you are able to find an intersection point repeatable on numerous determinations within 0.6 feet.</p>		
	a. Describe how you would determine the position for a CLS 77 monument for the northeast corner of Lot 7.	5	
	b. Give your reasoning for your answer in a.	5	
	c. Using the approved abbreviations from the Manual of Instructions, write the notation to be placed in your Plan and Field notes to describe your actions at the northeast corner of Lot 7.	4	
	d. List three options available to you for a bearing statement to appear on your plan and write the precise plan notation for each, supplying any missing information.	6	
	e. Given the potential for regular winter maintenance of the wood-cutting road, describe what precautions you would take to provide best security for the new monument you will place.	4	
	f. What survey procedures do you have available which Mr. Walcot did not have at his disposal?	4	
	g. Compute the semi-major axis of the ellipse showing the 95% confidence region for the positioning of one monument in the survey relative to another.	5	
	h. The survey is required for Settlement Land Parcel C-6B/D described in Appendix A - Settlement Land Descriptions of the Teslin Tlingit Council Final Agreement. What special actions should you take in conducting this survey?	3	

2	<p>A consortium of Canadian oil and gas exploration companies obtains exploration rights under Canadian oil and gas exploration legislation in Grid Area 70°10', 85°30' and in the lands lying immediately south of this Grid Area. As a Canada Lands Surveyor, you have been asked to monument the Grid Area sections along the south boundary of the Grid Area to guide activities on both sides of this line..</p> <p>a. Describe precisely the south boundary of the Grid Area you will monument.</p> <p>b. With a neat labeled sketch to proportionate scale, indicate the Grid Areas and Sections lying on both sides of the line you will monument.</p> <p>c. Including the extremities of the Grid Area line you will establish, how many locations will you be required to monument?</p>	3 4 1	
3	<p>Location posts, known also as legal posts in some legislation, create the original evidence of locations of mineral and placer interests on Canada Lands in Yukon and the Northwest Territories.</p> <p>Draw a neat table with three column headings across the top: Yukon (Mineral), Yukon (Placer) and Northwest Territories, and the following 11 headings for rows down the left hand side:</p> <p>a. Wood post minimum width (inches)</p> <p>b. Wood post minimum height (feet)</p> <p>c. Wood post flatted face dimension (inches)</p> <p>d. Time metal tag affixed (During location or After granted)</p> <p>e. Days to record claim</p> <p>f. Annual representation work value required (dollars)</p> <p>g. Payment of cash in lieu of representation work (Yes or No)</p> <p>h. Maximum area for a claim (acres)</p> <p>i. Number of claims which may be grouped</p> <p>j. Location on a Sunday (Yes or No)</p> <p>k. Governing statute in 2008 (full name)</p> <p>l. Minimum age of locator (years)</p> <p>Fill in your table for a claim located 64 miles from the office of the mining recorder for the mining district in which the claim is situate.</p>	18	
4	<p>On November 19, 2007, Joseph Mills located a single quartz mining claim MILLS in full compliance with the legislation. He established a location line in a 010° direction with posts subsequently determined to be 1,608 feet apart and claimed the full width to the right of his location line. On November 23, 2007, Andrew Piper located a similarly compliant quartz mining claim, HAP, unintentionally covering part of the same area. Piper's location line is subsequently determined to be in a 281° direction and to be 1,492.5 feet long. He had claimed the full width to the right and his location line is found to intersect the location line of MILLS 650.5 feet from the MILLS No. 1 location post.</p> <p>a. Draw a neat sketch to scale showing the configuration of the MILLS and HAP claims.</p> <p>b. Draw the configuration of the HAP claim if the MILLS claim is recorded within the statutory time prescribed.</p> <p>c. Draw the configuration of the HAP claim if the MILLS claim is never recorded.</p>	4 3 3	
5	<p>Give the names and Manual of Instructions abbreviations for four types of legal survey monuments which may be encountered in surveys of Canada Lands</p>	6	

6	<p>The Indian River in Yukon's Klondike goldfields, categorized as a creek for placer mining purposes, flows in a westerly direction and meanders in a very wide valley bottom. An official survey of its creek baseline was made in 1901 but is no longer visible to the untrained eye because of mining activity or overgrowth. In one particular reach of the river, the actual watercourse is approximately 800 feet south of the official baseline.</p> <p>Myrna Bailey locates a Tier 1 Right Limit bench claim in this reach of the river in compliance with legislation and where creek placer claims are in good standing. She mistakenly assumes that the baseline is situated close to the present watercourse and places her legal posts for the MYRNA claim in a line almost parallel to the Indian River and 1,000 feet north of it. Her posts are determined by subsequent survey to be 576.4 feet apart.</p> <p>Draw a neatly dimensioned sketch to scale showing the MYRNA bench claim in relation to the large group of IND 1 to 286 creek claims on Indian River.</p>	5	
7	<p>A rectangular block of commercial land comprising 20 lots is consolidated by legal survey under the Land Titles Act (NWT) into a single parcel in preparation for a shopping centre development. The survey is conducted in a Coordinated Survey Area.</p> <p>a. Using a simple sketch of the block and surrounding area, show the ideal configuration of survey control for making the required connection for the survey.</p> <p>b. Describe the process you will use for determining UTM coordinates for the four principal corners of the block you have monumented.</p> <p>c. The Combined Scale Factor for the area is 0.99970 and the Elevation Scale Factor is 0.99970. Identify two meridians of longitude at which the survey could be situated.</p>	3 3 2	
8	<p>a. To whom must a surrender of lands in a reserve for Indians be made?</p> <p>b. Give the five elements of a tangential circular curve boundary that must be shown on official field notes for a survey made pursuant to <i>the Canada Lands Surveys Act</i>.</p> <p>c. List three situations where a statutory 100 foot strip is deemed reserved to the Crown out of every grant of lands pursuant to the <i>Territorial Lands Act</i>.</p> <p>d. Without making a retracement survey, under what four conditions may a Canada Lands Surveyor adopt the boundary of an official survey that he has personally measured?</p>	1.5 2.5 3 2	
	Total	100	