

SESSIONAL PAPER No. 13

An inspection also was made of a small lake situated in section 13, township 19, range 4, west of the 5th meridian, with a view to diverting water to Tongueflag and Ings creeks, small tributaries of Highwood river, and so increase the supply of these streams.

It was found impossible to report favourably in this connection, for two reasons: first, it was very doubtful if the available supply would more than replenish the loss from the lake through natural causes; second, the natural overflow drained to Sheep river, and provided the water from the lake could be used for irrigation purposes, it could more readily be applied to hay lands on the flats above that stream.

SCHEDULE of Bench Marks established by Party No. 3 in 1898.

No.	Location.	Remarks.
1	In road survey mound, at N. E. corner of N. W. $\frac{1}{4}$ of Sec. 27, Tp. 19 Range 12, W. of 2nd Mer.	Elevation being 11.51 feet above water in Fishing lake on July 4, 1898. This was placed in connection with dam now finished across the outlet of the lake.
2	In mound at N. E. corner of S. E. $\frac{1}{4}$ of Sec. 19, Tp. 17, Range 13, W. of 2nd Mer.	Elevation 223'39 feet above rail of C. P. R. opposite station at Indian Head. Station house since moved $\frac{1}{4}$ of a mile, or so, west. This B. M. is also 28'90 feet above the top of proposed dam in N. W. $\frac{1}{4}$ of Sec. 20, Tp. 17, Rge. 13, W. of 2nd Mer.
3	In mound at N. E. corner of S. E. $\frac{1}{4}$ of Sec. 32, Tp. 17, Range 13, W. of 2nd Mer.	Elevation 141'35 feet above rail at C. P. R. station at Indian Head, as above. This cannot be guaranteed as absolutely correct.
4	In mound at N. E. corner of N. E. $\frac{1}{4}$ of Sec. 14, Tp. 18, Range 13, W. of 2nd Mer.	Elevation 1'89 feet above rail of C. P. R. at Indian Head, as above.
5	In mound at N. E. corner of S. E. $\frac{1}{4}$ of Sec. 24, Tp. 17, Range 12, W. of 2nd Mer.	Elevation 47.51 feet above proposed top of dam in N. E. $\frac{1}{4}$ of Sec. 24, Tp. 17, Rge. 12, W. of 2nd Mer.
6	In mound at N. E. corner of N. E. $\frac{1}{4}$ of Sec. 14, Tp. 17, Range 12, W. of 2nd Mer.	Elevation 5 feet above proposed dam in Sec. 23, Tp. 17, Rge. 12, W. of 2nd Mer.
7	On top of iron bar in mound at N. E. corner of N. E. $\frac{1}{4}$ of Sec. 36, Tp. 16, Range 8, W. of 2nd Mer.	Elevation 88'72 feet below surface of Pipestone lake in Sec. 8, Tp. 16, Rge. 7, W. of 2nd Mer. (Aug. 6, 1898), and 41.19 feet below level of spring flowing 2 $\frac{1}{2}$ galls. per minute in S. W. $\frac{1}{4}$ of Sec. 31, Tp. 16, Rge. 7, W. of 2nd Mer. This B. M. is also 25'18 feet above rail opposite C.P.R. station at Grenfell; total elevation of Pipestone lake above latter being 113'90 feet. Proposed source of soft water supply to the town of Grenfell is therefore suggested from this lake, and fresh water from the spring above mentioned.
8	On C. P. R. rail over east end of trestle No. 233, over creek in S. E. $\frac{1}{4}$ of Sec. 12, Tp. 17, Range 8, W. of 2nd Mer.	This B. M. is 3'01 feet above top of proposed dam in S.E. $\frac{1}{4}$ of Sec. 12, Tp. 17, Rge. 8, W. of 2nd Mer., and 24'89 feet below rail opposite C. P. R. station at Grenfell, above mentioned. The creek is marked Summerberry creek on maps, but is locally known as Patterson creek, a branch of Summerberry creek.
9	In mound at N. E. corner of N. E. $\frac{1}{4}$ of Sec. 5, Tp. 18, Range 8, W. of 2nd Mer.	Elevation 17'00 feet above top of proposed dam in S. W. $\frac{1}{4}$ of Sec. 4, Tp. 18, Rge. 8, W. of 2nd Mer.

The bench marks given above have been placed by party No. 3, at corners of the land surveys system close to the points where the practicability of building dams for the creation of reservoirs has been ascertained.

The elevations given are compared with other comparatively known points; a tie also has been effected, in each case, with the levels taken in connection with the reservoir sites, by levelling to the bench mark planted at the land surveys corner and obtaining the direction and distance by the use of the compass and chain.

The bench marks placed consist of the usual iron bars, marked with the letters "B. M.", and the broad arrow.

It is intended, when the topographical survey now being carried on in Alberta is extended to this section, to utilize these bench marks to incorporate the levels now taken for the reservoir sites with those subsequently taken for topographical representation of the surrounding country.

The bench marks have not been numbered pending the extension of the surveys. In the schedule they are numbered in the consecutive order in which they were planted.