demands become congested, the irrigation system is overtaxed, and the crops suffer by the consequent delay.

Engineering design and operation management are of primary importance, but for ultimate success they must be supplemented by the co-operation of the water users themselves, who must exercise foresight and skill in their own methods. Results are the measure of success. A loss of five dollars an acre more or less, in crop returns, either by not being able to deliver the water at the time it will do the most good, or by not properly handling it when it is delivered, is sufficient evidence that the machine is not properly doing its work.

THE MINERAL PRODUCTION OF ONTARIO IN 1914.

ACCORDING to the report for 1914 of Mr. Thos. W. Gibson, Deputy Minister of Mines for the Province of Ontario, the production of minerals in 1914 was less in value than for 1913 by $6,936,352, or 13 per cent. The falling off is considerable, yet the causes are not far to seek. Early in 1914 it became evident that a business depression was setting in, which in any event would have led to a lessened output of certain of the mineral products, notably pig iron and all materials of construction such as bricks, cement, etc. Other articles on the list would also have suffered from the same cause. In addition, it is recognized that the silver mines of Cobalt have passed their zenith, and in any circumstances—except possibly the occurrence of a very high price for silver—the output of silver would have been less than in 1913.

But all these causes were gathered up and given additional weight by the outbreak of hostilities in Europe. Silver mining was temporarily paralyzed, and the Canadian Copper Company shut down four of its six nickel-copper furnaces. Capital was frightened, and money could not be borrowed to carry on going concerns, to say nothing of opening up new enterprises. Prices of products dropped, and the cost of supplies went up. Some kinds, indeed, could not be had at all, or only in insufficient quantity. For a short time uncertainty prevailed, but ere long it became apparent that overseas commerce could still be conducted, although owing to the diversion of many passenger and merchant vessels, with some irregularity and at greater expense. By lowering the price of silver, which fell to 49 cents per ounce before the close of the year, the effect of the war was undoubtedly to lessen the activity of companies at Cobalt, some of whom preferred to allow their ore to remain in the mine rather than produce and market the metal at its reduced value. Nickel mining recovered from the shock caused by the outbreak of the war, and in November the Canadian Copper Company increased the number of their furnaces in blast to four; early in 1915 the whole six were again in operation, and the company was preparing to build a seventh. The Mond Nickel Company, on the other hand, whose matte is exported to Wales for refining, having got their new works at Coniston into going order, pushed production to the utmost limits. On the whole, considering the tremendous nature of the conflict and the unprecedented disturbances in finance and commerce to which it has given and is still giving rise, it must be admitted that the mining industry of Ontario has stood the strain very well. The wonder is, not that the diminution in the output was so great, but that it was not much greater.

The following table summarizes the mineral output for the year:—

Product.	Quantity.	Value.
Metallic:		
Gold, ounces	268,942	$ 5,529,767
Silver, ounces	25,217,994	12,795,214
Copper, tons	14,453	2,081,332
Nickel, tons	22,760	5,109,088
Iron ore, tons	240,059	531,379
Pig iron, tons	556,112	7,041,079
Cobalt ore, tons	97	27,743
Cobalt oxide, lbs.	643,891	518,736
Nickel oxide, lbs.	303,752	27,716
Cobalt and nickel oxides, lbs.	113,843	45,189
		$33,707,243
Less Ontario iron ore (163,779 tons) smelted into pig iron	.....	361,952
Total metallic production..	.....	$33,345,291
Non-metallic:		
Arsenic, refined, lbs.	4,059,868	$ 116,624
Brick, common, No.	294,400,000	2,336,207
Tile, drain, No.	14,710,000	277,530
Brick, paving, etc., No.	11,639,000	237,440
Brick, pressed, No.	61,934,000	656,944
Stone, building, etc.	.....	1,088,862
Calcium carbide, tons	2,381	142,883
Cement, Portland, bbls.	2,665,650	2,931,190
Corundum, tons	548	65,730
Feldspar, tons	18,062	55,686
Graphite, refined, tons	1,363	87,167
Gypsum, crude, tons	43,183	58,800
Gypsum products, tons	31,117	162,375
Iron pyrites, tons	107,258	264,722
Lime, bushels	2,075,228	333,407
Mica, tons	349	40,402
Natural gas, million cu. ft.	14,063	2,346,687
Peat, tons	600	2,100
Petroleum, Imp. gals.	7,437,356	337,867
Phosphate of lime, tons	450	3,150
Pottery	.....	25,720
Quartz, tons	52,947	82,544
Salt, tons	104,774	498,383
Sand and gravel, cu. yds.	359,100	151,909
Talc, crude, tons	1,269	3,807
Talc products, tons	8,866	70,776
Sewer pipe	.....	571,756
T'l non-metallic production	.....	$12,950,668
Add metallic	.....	33,345,291
Total	.....	$46,295,959

COBALT ORE SHIPMENTS.

The following are the shipments of ore, in pounds, from Cobalt Station for the week ended November 26th, 1915:—

Buffalo Mines, 60,681: Penn Canadian Mines, 70,725; La Rose Mines, 87,195; Mining Corporation of Canada (Cobalt Lake Mines), 184,573: Mining Corporation of Canada (Townsite City Mine), 159,631; Peterson Lake Silver Mining Company, 129,892; O'Brien Mines, 147,536; McKinley-Darragh-Savage Mines, 241,472; Dominion Reduction Company, 176,000. Total, 1,257,705 pounds, or 628.8 tons.

New Liskeard—

Casey Cobalt Mine, 84,620 pounds.

The total shipments since January 1st, 1915, are now 28,508,204 pounds, or 14,254.1 tons.