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Economic Geology

Manganese

Rickreall Creek manganese deposit: Manganese dioxide staining is very abundant in the Siletz River basalts but so far only one small concentration of manganese minerals has been reported.

Tuffaceous sediments showing manganese crops out in the NW $\frac{1}{4}$ sec. 36, T. 7 S., R. 6 W., where it is exposed only in the bank and bed of Rickreall Creek. It was investigated by John Eliot Allen,* department geologist, from whose report the following is abstracted:

"The tuffs are intruded by dense fine-grained basalt whose contact is quite irregular. The basalt at the time of intrusion was greatly brecciated in places along the contact. Downstream from the locality the creek flows over basalt. Near the contact of the basalt and breccia with the tuff, the latter is cut by thin veinlets less than a half an inch of thick manganese mineral (probably hausmannite), which, when they penetrate to a coarse-grained bed of tuff spread out and disseminate into the interstices between the tuff grains to form the matrix between the angular fragments. The coarse beds contain 10 to 14 percent manganese. The deposit is exposed in a bed one foot thick and about 20 feet of its length is visible. Although it is too small to be of economic value better deposits may be present within the volcanic mass."

Oil and gas possibilities

There has been intermittent interest in oil and gas in the vicinity of Dallas and nearby points within the Willamette Valley for some time. The history of drilling is briefly outlined below. The writer is indebted to the late Mr. Cecil Riggs, who lived at Dallas, for much of the information concerning past oil and gas activity.

Whiteaker well: A well was drilled to a depth of approximately 2200 feet on the Whiteaker place southeast of Dallas overlooking the Middle Fork of Ash Creek in sec. 11, T. 8 S., R. 5 W. The well started in sediments presumably of upper Eocene age. Some gas was reportedly encountered as well as salt water.

McBee well: A well drilled on the McBee farm southwest of the Liberty School in the NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 7, T. 8 S., R. 5 W., is reported by the late C. B. S. Henry** to have reached a depth of 1450 feet. No well log is known to have been preserved. The well no doubt encountered the basal limestone of the nearby Dallas limestone member and then passed on into the middle Eocene basalt at a relatively shallow depth.

* Department report.

** Unpublished report.

Washburne (1914:89) refers to a well which seems to be in the same general position as the McBee well. He reported the following:

"A small flow of gas is reported to have been struck between 1,400 and 1,500 feet in a well drilled by the Oregon Oil and Pipe Line Co., 3 miles southwest of Dallas, Oreg. An accurate log is not available, but the drill is said to have passed through dark-colored shale with thin-bedded sandstone near the bottom, in which the gas was encountered. The flow is said to have been sufficient to maintain a flame 2 feet high out of a 10-inch casing for several days. No gas was escaping at the time the well was visited in 1910, but residents of the vicinity corroborate the report.

"The Dallas Oil Co. is preparing to drill in the same vicinity."

It might be that the company listed by Washburne was the one that drilled the well on the McBee place.

Salt springs occur in the small valley to the west of the McBee well. When visited by the writer, the well was an open hole without casing, emitting no gas.

Newman well: The Newman well is a short distance northeast of the Dallas quadrangle in the W $\frac{1}{2}$ sec. 7, T. 6 S., R. 4 W. It was drilled in 1917 to a depth of 2600 feet. Some gas was reportedly encountered.

Riggs gas well: Gas encountered when drilling a shallow well for water supply at the Riggs farm in SE $\frac{1}{4}$ sec. 6, T. 7 S., R. 4 W., north of Rickreall near Holmes Gap was utilized domestically for several years. Smith (1925:174) mentions the gas used at the Cass Riggs farm near Rickreall. He gives the following analysis of the gas:

Carbon dioxide	none
Oxygen	trace
Carbon monoxide	0.2 %
Hydrogen	none
Methane	67.0 %
Ethane	6.4 %
Nitrogen (by difference)	<u>26.4 %</u>
	100.0 %

The sediments in general dip easterly off the older middle Eocene basalt. Although there are minor folds in the Umpqua-Tyee sediments which do not conform with this trend, the overlying upper Eocene sediments dip generally eastward. The volcanic series probably underlies the sediments at a relatively shallow depth for a few miles east of the contact but along the eastern edge of the Dallas quadrangle there is probably a considerable thickness of Tertiary sediments.

The small yield of gas already encountered was probably coal gas from the abundant plant matter within the Eocene sediments. Many wells and natural springs yield salt water which is generally found beneath the oil in oil fields

and thus in this region salt water is interpreted as an unfavorable sign. At the present time, there is little to indicate the presence of oil and no verified showing is known. A small flow of gas might be developed but perhaps not on a commercial scale.

The Willamette Valley is largely covered by alluvium which obscures the geologic structure. Further exploration should include geophysical prospecting. Such exploration was done by the Amerada Petroleum Corporation, Texas Company, and Standard Oil Company of California during 1945 and 1946 but their results have not been released.