Volcanic Ash Occurrence near Arlington — NAME

OLD NAMES

Volcanic Ash — PRINCIPAL ORE

MINOR MINERALS

T	R	S
2N	20E	36
2N	21E	31

Gilliam ..... COUNTY

Unclassified ..... AREA

900 feet ..... ELEVATION

on County road to Rock Creek ..... ROAD OR HIGHWAY

10 miles to Arlington ..... DISTANCE TO SHIPPING POINT

PUBLISHED REFERENCES

Hodge: Geology of North Central Oregon, Studies in Geology No. 3, Oregon State College

MISCELLANEOUS RECORDS

PRESENT LEGAL OWNER (S) ..UPRR--.....

Wm. Merritt, lessee .....

.....

.....

OPERATOR .....

Address .....

1108 Hobart Building, 582 Market Street .....

San Francisco 4, California .....

.....

.....

Name of claims	Area	Pat.	Unpat.

Name of claims	Area	Pat.	Unpat.

EQUIPMENT ON PROPERTY

MI-21

State Department of Geology and Mineral Industries

702 Woodlark Building
Portland 5, Oregon

Merritt

Report by: N.S. Wagner

Volcanic Ash Occurrence near Arlington Gilliam County
Unclassified District

Forword: Deposits of ash of volcanic origin occur in several places in the lava plateau areas of Gilliam, Morrow and Umatilla Counties. The particular occurrence which is the subject of this report is of noteworthy thickness and purity, It is also comparatively well situated with reference to transportation facilities.

Location: The deposit is exposed for a distance of 0.6 miles on the flank of a valley wall situated in T 2N, R 20E, Sec 36, and T 2N, R 21E, Sec 31. This hillside slopes to the south and trends east-west. It is in the northern half of the traversed sections. If fact, the crest of the ridge practically coincides with the northern section line.

Both a county road and the Union Pacific Railroad pass within a few hundred yards of the occurrence which is otherwise 10 miles distant by road from Arlington. Six of these ten miles are paved (State Highway #19) and four miles (county road to Rock Creek) are unpaved.

Geology: Laboratory examination shows this ash to be composed of glass shards to the amount of 95% to 97%, mineral grains (probably mostly feldspar), 2 to 4%, and diatoms in amount less than 1%. The glass shards are mostly angular and show only slight devitrification and minor kaolinization. Spectrographic analysis is

as follows:

Over 10%	10%-1%	1%-0.1%	0.1%-.01%	.01%-.001%	Below 0.001%
silicon	aluminum	iron	magnesium	manganese	chromium
	potassium	calcium	titanium	vanadium	copper
			barium	gallium	beryllium
			strontium	boron	nickel

As already mentioned, the deposit is exposed for a distance of 0.6 miles on the flank of a valley wall. Even though the hillside is quite steep, soil and detrital material blanket it to the extent that exposures of the ash are comparitively few in number and small in size. Exposures do, however, occur at sufficiently frequent intervals to afford reasonable assurrance of unborken continuity of the deposit for the distance mentioned. Fortunately the two largest and most revealing exposures occur on opposite ends of the belt. One is a natural exposure revealed by erosion in the head of a sharp draw. The other (on eastern end of belt) is on a point which was cleaned during the course of an early and short-lived operational endeavor.

The full ash thickness was revealed in each of these exposures. This amounted to about 20 feet at the operational site and 16 in the draw. In each instance the ash appeared uniform in grain size throughout the entire section. This grain size could be classed in a fine to sugary bracket. No larger material was seen. Clay and sand partings were absent. The only readily visible foreign matter consisted of occasional horizons in which the ash exhibited an ever so slight soil-like discoloration with infrequent evidence of vegetation in the form of root casts. Whiter than average areas are to be seen in places on the

face of the exposure. While these afford a first-glance impression of diatomic interbeds, they are actually but surface coatings of an alkaline or caliche nature.

The ash is interbedded with a series of lakebed sediments and river spread gravels. In the instance of the old quarry site, the immediate overburden is a brown colored clayish material of some 8 or 10 feet in thickness. This is succeeded by a pebble deposit which contains highly washed and polished pebbles often 3 or 4 inches and sometimes greater, in diameter. The thickness of this strata was not determined as the ultimate thickness of the overburden obviously necessitates exploitation by means of a bench conforming with the trend of the outcrop along the ridge rather than by excavation any great distance into the hill.

The parent sedimentary formation is known as the Shutler formation. It is considered as of early Pliocene age. Its lakebed fraction is of course composed predominately of silts and sands and fine gravels, but both ash and diatomite interbeds are also present.

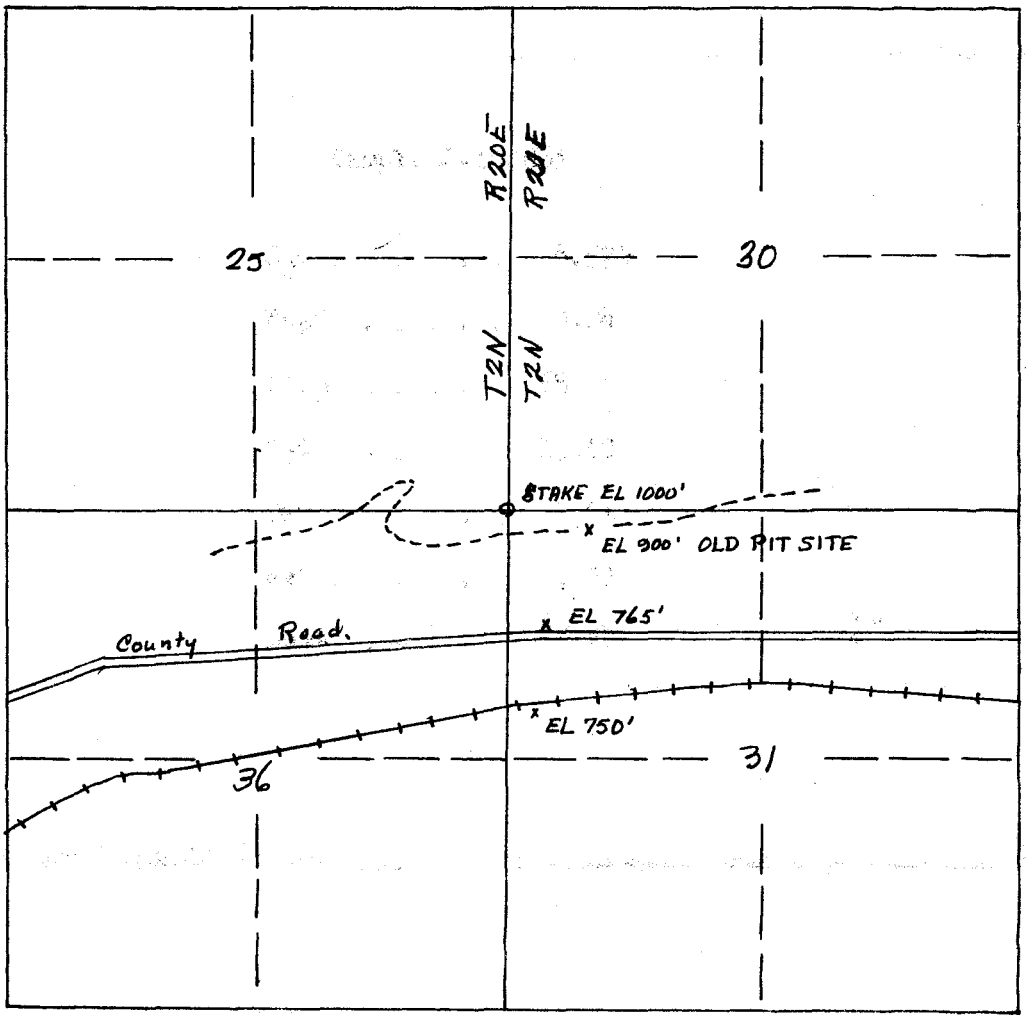
Hodge maps the Shutler as overlying the Columbia River basalts (Geology of North Central Oregon, Studies in Geology No. 3, Oregon State College). The formation is shown on the Hodge map as widespread in its occurrence in the northern part of Gilliam County, and from reconnaissance observations it is known to extend on eastward across the northern part of the lava plateau in Morrow and Umatilla Counties.

History: A company known as the Oregon Rock Products Company was interested in this occurrence in about 1924 and 1925. This company was a partnership between W.L. Merritt, the present lessee, and a Mr. W.W. Elmer. Small shipments were made to three different northwest soap manufacturers but no further market was then developed and the company was dissolved.

Owner and Lessee: Mineral rights to this deposit are owned by the Northern Pacific Railway. A Mr. H.L. Hoag, Arlington, is owner of the surface rights covering the bulk of the land occupied by the occurrence. The mineral rights are currently under lease to Mr. Wm. Merritt, 1108 Hobart Building, San Francisco, California.

Development: There is no development of recent date and the bench from which the original shipments were made constitutes the only development work ever done on the property.

Report by NSW
Date of examination: June 14, 1950
Informant: W.L. Merritt
References: Hodge as quoted
Analytical reference: KB-107
Report written: August 4, 1950



ARLINGTON ASH OCCURRENCE

Traced from a map prepared by Wm. Merritt, M.E.

State Department of Geology and Mineral Industries

702 Woodlark Building
Portland 5, Oregon

Analysis of volcanic ash from sec. 36, T. 2 N., R. 20 E., Gilliam County

Sample P-10006*

K_2O	8.57%
Na_2O	0.94
SiO_2	68.92
R_2O_3	13.50
CaO	1.01
MgO	1.57
Loss	5.70

*Analysis by L. L. Heagland