

State Department of Geology and Mineral Industries

1069 State Office Building
Portland 1, Oregon

HIGH GRADE DISTRICT - LAKE COUNTY

The High Grade District is at the southern end of what is probably the same thick rhyolite flow, which runs north from California at least as far as the Windy Hollow District. Here, as elsewhere, the rhyolites carry minute quantities of gold-bearing sulfides disseminated and in primary stringers. The rocks, due to the brittle character, have been much broken and fractured. Solution and the reconcentration of these sulfides and their values is marked to considerable depth, and here, as elsewhere, pockets of ore are found, and the oxide in the fractures between blocks also carries values. The rhyolite in the High Grade District overlies a thick bed of rhyolite - pumice tuff composed of angular fragments of rhyolite and pumice in a tuffaceous matrix. Gold and quartz veinlets apparently have been deposited along fractures which have cut both formations and some values are thus formed in the tuffs underlying the rhyolite. The quartz in these veinlets is colorless and glassy with numerous open cavities, contains no other visible minerals, The quartz veinlets have been broken and displaced within a gouge of limonitic and hematitic material. The quartz is probably per-gold mineralization.

John Eliot Allen: rh

STATE DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
 ASSAY LABORATORIES
 SAMPLE INFORMATION REQUESTED

Grants Pass

Baker

Wild Lily CLAIM
Signade Dist

The law passed by the Legislature, governing the free assaying and analyzing of samples sent to the State Assay Laboratories, provides that certain information be furnished the Laboratory regarding samples sent for assay, etc. A copy of this law will be found on the back of this blank. Please read the law carefully. Will you please fill in the information called for on the following blank, as far as possible and return the same to the nearest State Assay Laboratory along with your sample? If you have made out a blank, this copy is for your future use. Keep a copy of the information on each sample for your own reference.

Your name in full . . . Elmer C. Ahlstrom

Postoffice address . . . 425 Corbett Bldg.

Are you a citizen of Oregon? Yes . . Date on which sample is sent 9/11/46

Name (or names) of owners of the property. E. C. Ahlstrom

Name of particular claim and date of location. Wild Lily Claim

Location of property or source of sample (describe as accurately as possible below):

(1) County . . Lake (2) Mining district High Grade

(3) Township 41 . . (4) Range 22 . . (5) Section 18 . . (6) Quarter Section NW 1/4 . .

How far from passable road? . . . 6 miles

For what minerals or elements do you wish the sample analyzed? . . . Gold

(Unless other minerals or elements are specifically named this sample will be assayed for gold and silver only.)

Type of sampling: Channel (length) 40 in.: Grab Pipe

Report mailed Called for

IMPORTANT: A sample, to be of value, should be taken in an even channel across the vein from wall to wall. Its position in the workings should be marked and the width measured. Assays of unlocated samples, without widths, are of little value; they create little interest in the minds of experienced investors and engineers.

(signed) . . E. C. Ahlstrom

DO NOT WRITE BELOW THIS LINE--FOR OFFICE USE ONLY -- USE OTHER SIDE IF DESIRED

Description _____

Sample Number	GOLD		SILVER		Percent	Percent
	oz./ T	Value	oz./ T	Value		
P-5173	0.605	\$21.17				
P-5174	0.015	\$ 0.52				

Report issued() Card filed()

STATE OF OREGON DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
ASSAY LABORATORIES

REQUEST FOR SAMPLE INFORMATION

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Your name in full August G. Doring

Post-office address Box 96, New Pine Creek, Oregon

Are you a citizen of Oregon yes Date on which sample is sent Nov. 19, 1945

Name (or names) of owners of the property not located yet

Name of claim sample obtained from Just a prospect, surface sample

Location of property or source of sample (describe as accurately as possible below):

County Lake Mining district Highgrade

Township 41S Range 22E Section 21 Quarter section 21 N. W.

How far from passable road 1/4 mile

For what minerals or elements do you wish the sample(s) analyzed Gold & silver

Channel (length) Grab Pipe Description

Sample No. 1 outcrop

Sample No. 2

IMPORTANT: A vein sample should be taken in an even channel across the vein from wall to wall. Location of sample in the workings, together with the width measured, should be recorded.

(Signed) _____

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Description _____

Sample Number	GOLD		SILVER				
	oz./T.	Value	oz./T.	Value			
FB-190	0.025	\$0.88	Trace				
FB-191	9.65	\$337.75	4.35	\$3.09			

Report issued _____ Card filed _____ Gold @ \$35.00 per oz. Silver @ \$0.71 per oz.
Report mailed _____ Called for _____

STATE OF OREGON DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
ASSAY LABORATORY

REQUEST FOR SAMPLE INFORMATION

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Your name in full August C. Doring

Post office address New Pine Creek, Oregon, P. O. Box 96

Are you a citizen of Oregon yes Date on which sample is sent February 10, 1950

Name (or names) of owners of the property No one

Name of claim sample obtained from None

Location of property or source of sample (describe as accurately as possible below):
(If legal description is not known, give location with reference to known geographical point)

County Lake Mining district _____

Township 41 S Range 22 E Section 16 Quarter section _____

How far from passable road one mile

or what minerals or elements do you wish the sample(s) analyzed No. 1 Au, Ag
No. 2 Au, Ag
Channel (length) Grab Pipe Description

Sample no. 1 _____

Sample no. 2 _____

(Samples for assay should be at least 1 pound in weight; clay samples for ceramic testing, at least 5 pounds.)

IMPORTANT: A vein sample should be taken in an even channel across the vein from wall to wall. Location of sample in the workings, together with the width measured, should be recorded.

(Signed) A. C. Doring

DO NOT WRITE BELOW THIS LINE - FOR OFFICE USE ONLY - USE OTHER SIDE IF DESIRED

Description P-9620 - Sugar quartz

P-9627 - Iron-stained quartz

Samples both small for accurate assay

Sample number	GOLD		SILVER				
	oz./T.	Value	oz./T	Value			
P-9620	0.12	\$4.20	Trace				
P-9627	18.00	\$630.00	26.70	\$24.16			

Report issued _____ Card filed _____ Report mailed _____ Called for _____

KLAMATH Resource Area

No.	ROCK TYPE	STATUS	OWNERSHIP	T. R	Sec.
1	CINDERS	ACTIVE	WEYCO	38 5E	24
2	PLATY BASALT	ACTIVE	BLM	39 2E	13
3	ANDESITE	DEPLETED	BLM	38 06E	35
4		ACTIVE	MEDCO	37 3E	6
5	CINDERS	ACTIVE	WEYCO	39 6E	11
6	ANDESITE	ACTIVE	USFS	38 3E	3
7	BASALT TUFF	ACTIVE	BLM	40 5E	31
8	CINDERS	NON - BLM	NON BLM	40 6E	10
9	ANDESITE	PROSPECT	BLM	38 5E	26
10	ANDESITE	DEPLETED	BLM	39 5E	12
11	ANDESITE	EXPLORED NEGATIVE	BLM	39 5E	13
12	ANDESITE	DEPLETED	BLM	39 5E	11
13	ANDESITE	ACTIVE	BLM	39 5E	11
14	CINDERS -DIRT	EXPLORED NEGATIVE	BLM	38 5E	26
15	BASALT	ACTIVE	BLM	39 4E	7
16	ANDESITE	PROSPECT		39 4E	19
17	BASALT	EXPLORED POSTIVE	BLM EIGHTY ACRES	40 6E	1
18	BASALT	ACTIVE	STATE HIGHWAY	40 6E	1
19	ANDESITE	PROSPECT	BLM	40 6E	11
20	ANDESITE	PROSPECT	BLM	40 6E	11
21	BASALT	PROSPECT	BLM	40 7E	7
22	BASALT	PROSPECT	BLM	40 7E	5
23	BASALT	NON BLM ACTIVE	WEYCO	40 7E	16
24	BASALT	PROSPECT	BLM	40 7E	27
25	ANDESITE	ACTIVE	BLM	38 5E	19
26	ANDESITE	PROSPECT	BLM	38 5E	29
27	VESICULAR BASALT	PROSPECT	BLM	38 5E	28
28	ANDESITE	DEPLETED NEEDS RECLAIM	BLM	38 5E	25
29	CINDERS ANDESITE	EXPLORED NEGATIVE	USFS	38 5E	35
30	ANDESITE CINDERS	PROSPECT	BLM	38 5E	36
31	VESICULAR ANDESITE	PROSPECT	BLM	38 6E	22
32	ANDESITE	PROSPECT	BLM	38 6E	19
33	VOLCANIC	PROSPECT	BLM	39 6E	9
34	ANDESITE	NEGATIVE	BLM	39 6E	5
35	ANDESITE	PROSPECT	BLM	35 6E	15
36	BASALT	ACTIVE	TID	40 3E	4
37	BASALT	PROSPECT	BLM	40 3E	10
38	VOLCANIC	ACTIVE	BLM	40 3E	15
39	BASALT	ACTIVE	BLM	40 3E	24
40	BASALT TUFF	NON BLM ACTIVE	MTN FIR	40 4E	18
41	BASALT	PROSPECT	BLM	40 4E	19
42	ANDESITE	ACTIVE ACEC	BLM	40 3E	27
43	BASALT	ACTIVE	BLM	40 3E	31
44	BASALT	ACTIVE	BLM	40 4E	33
45	BASALT	ACTIVE	BLM	40 2E	25
46	BASALT	ACTIVE	BLM	41 2E	3
47	PLATY BASALT	ACTIVE	BLM	39 2E	3
48	BASALT	NON BLM	JACKSON COUNTY	38 2E	27
49	PYROCLASTICS	DEPLETED NEEDS RECLM	BLM	39 3E	7
50	ANDESITE	EXPLORED NEGATIVE	BLM	39 3E	7
51	BASALT	PROSPECT-ACTIVE	TL AND BLM	39 2E	2
52	BASALT	ACTIVE	BLM	37 2E	1
53	PYROCLASTICS	EXPLORED NEGATIVE	BLM	37 2E	1
54	BASALT OVER CINDERS	ACTIVE	BLM	37 1E	13
55	BASALT	ACTIVE	BLM	37 2E	23
56	GLASSY BASALT	DEPLETED	BLM	37 2E	23
57	PLATY ADDESITE	ACTIVE	BLM	37 3E	29

58	BASALT	ACTIVE	BLM	38 2E	3
59	BASALT	ACTIVE	BLM	38 3E	17
60	BASALT AND CINDERS	ACTIVE	BLM AND JACKS CO.	38 3E	18
61	ANDESITE CINDERS	ACTIVE	JACKSN Co.	38 3E	15
62	PYROCLASTICS	DEPLETED	BLM	38 3E	30
63	ANDESITE	ACTIVE TO DEPLETED	BLM	38 3E	27
64	ANDESITE	ACTIVE	BLM	38 3E	13
65	CINDERS	NON BLM ACTIVE	WEYCO	39 4E	35
66	CINDERS W DIKE	ACTIVE	WEYCO	39 6E	28
67	CINDERS ANDESITE	DEPLETED	BLM	39 4E	17
68	ANDESITE	DEPLETED INACTIVE	BLM	39 3E	35
69	BASALT	INACTIVE	BLM	39 3E	9
70		IN-ACTIVE	NON BLM	39 3E	32
71	BASALT	EXPLORED NEGATIVE	BLM	39 2E	3
72	ANDESITE	EXPLORED NEGATIVE		39 6E	6
73	PLATY ANDESITE	PROSPECT	BLM	38 5E	27
74	PLATY BASALT	PROSPECT	BLM	37 1E	17
75	BASALT	ACTIVE	BLM	40 4E	7
76	BASALT	PROSPECT	BLM	40 4E	21
77	BASALT	PROSPECT	BLM	39 3E	17
78	ANDESITE	PROSPECT	BLM	39 4E	23
79	CINDERS	ACTIVE	BLM	38 6E	24
80	CINDERS	PROSPECT	BLM	38 6E	24
81	CINDERS	EXPLORED NEGATIVE		38 6E	29
82	ANDESITE DIORITE	PROSPECT	BLM	38 5E	15
83	CINDERS	ACTIVE NON BLM	PRIVATE	38 5E	6
84	ANDESITE	PROSPECT	BLM	38 5E	25
85		DEPLETED	USFS	37 3E	26
86		ACTIVE	USFS	37 3E	26
87	ANDESITE BASALT	PROSPECT	BLM	38 5E	29
88		PROSPECT	USFS	37 3E	27
89	ANDESITE	PROSPECT	BLM	38 4E	26
90	ANDESITE	ACTIVE	USFS	38 4E	10
91	ANDESITE	DEPLETED	BLM	38 4E	26
92	ANDESITE	PROSPECT	BLM	38 4E	32
93	ANDESITE	PROSPECT	BLM	38 4E	35
94	ANDESITE	ACTIVE	BLM	38 4E	35
95			NOT BLM	40 5E	3
96		PROSPECT	BLM	38 2E	18
97	ANDESITE	PROSPECT	BLM	38 3E	11
98	ANDESITE	PROSPECT	BLM	38 3E	22
99	ANDESITE	PROSPECT	BLM	38 3E	33
100	BASALT	EXPLORED NEGATIVE	BLM	40 4E	7
101	ANDESITE RUBBLE	PROSPECT	BLM	39 3E	23
102	BASALT	EXPLORED POTENTIAL	BLM	38 2E	7
103	CINDERS	EXPLORED NEGATIVE	BLM	40 7E	29
104	ANDESITE	EXPLORED PROBABLE	BLM	37 3E	17
105	BASALT-ANDESITE	PROSPECT SOON ACTIVE	BLM	39 4E	6
106	BASALT	PROSPECT	BLM	39 4E	6
107		PROSPECT		38 5E	20
108		ACTIVE	WEYCO CINDER PIT	40 5E	23
109	ANDESITE BASALT	IN ACTIVE QUARRY	BLM	38 3E	4
110		PROSPECT	NOT BLM	39 5E	35
620	META VOLCANIC	P LINE PROSPECT	BLM	37 3W	8

GRANTS PASS Resource Area

No.	ROCK TYPE	STATUS	OWNERSHIP	T. R	Sec.
1	DIORITE	EXPLORED NEGATIVE	BLM	39 6W	25
2	ARGILLITE SHALE	PROSPECT	BLM	39 6W	23
3	ARGILLITE	ACTIVE	BLM	39 6W	11
4	ARGILLITE SLATEY	DEPLETED	BLM	39 6W	13
5	GREENSTONE	INACTIVE	BLM	34 5W	27
6	SHALE	ACTIVE	BLM	37 5W	13
7	GREENSTONE	DEPLETED	BLM	34 7W	15
8	GREENSTONE	PROSPECT	BLM	35 5W	35
9	SERPENTINE	PROSPECT	BLM	35 5	23
10	GRANITIC CRSE GRND	PROSPECT	BLM	35 5W	35
11	METAGABBRO GRNSTONE	ACTIVE	BLM	35 5W	33
12	METAGABBRO	LOW POTENTIAL PROSPECT	BLM	34 6W	23
13	DIABASE	ACTIVE	BLM	38 7W	23
14	SHALE	DEPLETED NON BLM	BLM	34 4W	7
15	GRANITE	ACTIVE	BLM	35 5W	1
16	GRNSTNE GABBRO SERP	ACTIVE	BLM	34 4W	29
17	GRANITIC	PROSPECT		30 6W	26
18	SHALE ARGILLITE	PROSPECT	BLM	34 7	13
19	METAGABBRO GRNSTONE	NON BLM SOURCE	ARANT	35 5W	36
20	GRANITE GABBRO	ACTIVE	BLM	38 6W	14
21	SERPENTINE	EXPLORED NEGATIVE		38 6W	13
22	SHALE AND SANDSTONE	DEPLETED	BLM	37 7W	34
23	SILTSTONE BROWN	DEPLETED	BLM	37 7W	35
24	SHALE	NON BLM SOURCE	COUNTY	39 6W	1
25	GREENSTONE	ACTIVE	BLM	40 7W	4
26	QUARTZITE SERPENTINE	DEPLETED	BLM	39 6W	3
27	METAGABBRO	ACTIVE	BLM	39 6W	4
28	METAGABBRO	DEPLETED	BLM	39 6W	9
29	SLATE SANDSTONE	DEPLETED	PRIVATE	38 8W	26
30	SLATE AND SANDSTONE	ACTIVE	BLM	38 8W	25
32	METAVOLCANIC	EXPLORED POTENTIAL	BLM	38 7W	23
33	SERPENTINE	NON BLM PROSPECT	SISKIYOU NATIONAL F	37 8W	15
34	SERPENTINE	NON BLM PROSPECT	SISKIYOU NF	37 8W	22
35	GREENSTONE	ACTIVE	BLM	33 6W	35
36	DIABASE	ACTIVE	BLM	39 7W	3
43	SHALE	PROSPECT	BLM	34 4W	7
44	DIORITE	ACTIVE		39 5	31
45	METAGABBRO DIABASE	ACTIVE LIL BOULDER		33 4	9
46	RIBBON CHERT	ACTIVE	BLM	39 7W	35
48	GREENST AND SLATE	ACTIVE	BLM	39 5	14
49	META GABBRO	PROSPECT		38 7	1
50	GREENSTONE	ACTIVE	BLM	39 7W	1
51	GREENSTONE	PROSPECT		38 7	11
52	GREENSTONE	PROSPECT		34 5	15
53	GREENSTONE	COUNTY PIT	COUNTY LAND	34 5	14
54	META GABBRO	ACTIVE		34 5	5
55	SANDSTONE SHALE	PROSPECT	BLM	33 9W	32
56	GREENSTONE	PROSPECT	BLM	35 05W	15
57	GABBRO	PROSPECT	BLM	35 05W	3
58	DIORITE	ACTIVE	BLM	35 5W	23
59	METAGABBRO GREENST	ACTIVE	BLM	35 05W	13
60	DECOMPOSED DIABASE	NON BLM ACTIVE PITRUN		39 07W	26
61	SILICIC GREENSTONE	PROSPECT		39 6W	23
62	GREENSTONE AND SERP.	ACTIVE		34 7	27
63	SHALE	ACTIVE		35 5W	25
64	GREENSTONE	PROSPECT-	CHECK	35 5W	10
65	GREENSTONE	PROSPECT	BLM	35 5W	9

66	GABBRO	PROSPECT	BLM	35	5W	8
67	MICA AMPHIBOLITE	ACTIVE	BLM	34	8W	28
68	SILICIC SHALE SANDS	ACTIVE	BLM	34	9W	6
69	QTZ. RICH SANDSTONE	ACTIVE	BLM	34	10W	12
70	SANDSTONE	ACTIVE	BLM	34	9W	34
71	SILICIC GREENSTONE	ACTIVE	BLM	34	7W	23
72	GREENSTONE	ACTIVE	BLM	34	7W	11
73	DIORITE	PROSPECT	BLM	35	9W	15
74	QUARTZ SANDSTONE	EXPLORED POTENTIAL	BLM	34	9W	18
75	GREENSTONE	ACTIVE	BLM	35	7W	29
76	SILICIC GREENSTONE	ACTIVE	BLM	35	7	29
77	RIBBON CHERT	ACTIVE	BLM	33	9W	30
78	SHALE ARGILLITE	PROSPECT	BLM	34	7W	13
79	ARGILLITE	DEPLETED	BLM	34	7W	13
80	DIABASE	EXPLORED NEGATIVE RES.	BLM	39	7W	25
81	SANDSTONE and SHALE	NON-BLM SOURCE	ROUGH AND READY	39	8W	12
82	GREENSTONE	ACTIVE	BLM	34	5W	28
83	DIABASE	PROSPECT	USFS SISKYOU	37	8W	1
84	SERPENTINE	PROSPECT NON BLM	USFS NEED TO CHECK	37	8W	1
85	META-SEDS	IN-ACTIVE	BLM	38	5W	30
86	META SEDS	ACTIVE	BLM	38	5	30
87	SERPENTINE	PROSPECT	BLM	34	5W	19
88	GREENSTONE	PROSPECT	BLM	34	5W	27
89		NON BLM ACTIVE		39	5	9
90		DESIGNATED SOURCE		35	7	27
91		PROSPECT		35	7W	29
92		PROSPECT		35	7W	31
93	SILICIC SANDSTONE	ACTIVE	BLM	38	6W	14
94	META DIABASE	NON-BLM ACTIVE	BOISE CACADE	35	5W	4
95	GREENSTONE	ACTIVE	BLM	34	7W	9
98	SANDSTONE SHALE	ACTIVE LIMITED ROCK	BLM	33	9	32
99	META VOLCANIC	IN ACTIVE	BLM	38	6W	26
100	AMPHIBOLITEK	<i>? new rock type!</i> PROSPECT	BLM	34	8W	22
101		PROSPECT	BLM	39	6W	3
102	SERPENTINE	PROSPECT ROAD CUTS	BLM	34	3	19
102	SANDSTONE MUDSTONE	PROSPECT	NOT BLM	37	7w	24
103	SILICA RICH GREENST	PROSPECT ON P LINE	BLM	37	7w	25
104	SANDSTONE GREENSTONE	PROSPECT	BLM	37	7w	25
105	ARGILITE	PROSPECT	BLM	38	6W	22
106	SERPENTINE INTRUSION	ACTIVE	USFS	36	7W	29
107	SHALE WITH QUARTZ VE	ACTIVE INACTIVE	BLM	37	7W	15
108	MUDST SHALE SANDST	INACTIVE	NEED TO CHECK	36	7W	32

JACKSONVILLE Resource Area

No.	ROCK TYPE	STATUS	OWNERSHIP	T. R	Sec.
0				0	0
0				0	0
1	BATTLE MNT	DEPLETED MAYBE	BLM	34 3W	7
2	SERP. SCHIST AMPHIB.	DEPLETED	BLM	34 4W	13
3	AMPHIBOLIT	ACTIVE TO DEPLETED	BLM	34 3W	1
4	MICA SCHIST	DEPLETED	BLM	34 3W	3
5	AMPHIBOLITE	PROSPECT	BLM	34 3W	3
6	SCHIST	PROSPECT NON BLM	T AND L	33 3	14
7	SCHIST	ACTIVE	BLM	33 3W	23
8	GREENSTONE	ACTIVE	BLM	37 3W	15
9	GREENSTONE	ACTIVE	BLM	35 4	7
10	META GABBRO	EXPLORED NEGATIVE		33 4	8
11	SHALE	ACTIVE	BLM	35 4	7
12	GREENSTONE SHALE	ACTIVE	BLM	34 4	29
13	SHALE	PROSPECT	BLM	34 4	13
14	CHLORITE SCHIST	ACTIVE	BLM	33 4	23
15	META GRABBRO	ACTIVE	BLM	33 4W	9
16	BLUE GRAY GNEISS AND	ACTIVE	BLM	34 4	1
17	SERPENTINE	DEPLETED	BLM	34 4	11
18	SERPENTINE	ACTIVE		34 4	11
19	GRANTIDOID	ACTIVE		35 3W	17
20	SERPENTINE	PROSPECT	BLM	33 3W	5
21	MICA SCHIST	ACTIVE	BLM	33 3W	8
22	GREENSTONE	EXPLORED NEGATIVE	BLM	37 4W	18
23	META VOLC.	PROSPECT	BLM	39 3W	8
24	GNEISS	ACTIVE	BLM	33 4W	1
25	BATTLE MNT	DEPLETED NON BLM	BLM	33 4W	27
26	GREENSTONE	EXPLORED NEGATIVE	BLM	33 4W	33
27	GREENSTONE	EXPLORED POTENTIAL	BLM	35 3	19
28	META SEDS AND VOLC.	ACTIVE	BLM	37 4W	5
29	META VOLC	ACTIVE	BLM	37 4W	27
30	META VOLCANIC	PROSPECT	BLM	39 3	8
31	SERP. META VOLCANIC	ACTIVE	BLM	34 4W	3
32	GREENSTONE	ACTIVE	BLM	37 4W	27
33		EXPLORED NEGATIVE		33 4	4
34	META VOLCANIC	DEPLETED	BLM	39 3	8
35	META VOLCANIC	ACTIVE	BLM	39 3	17
36	META VOLCANIC	ACTIVE	BLM	39 3	18
37	BATTLE MNT	ACTIVE	BLM	35 3W	15
38	META VOLCANIC	ACTIVE	BLM	39 3	8
39		ACTIVE	BLM	35 4W	19
40	QUART SCHIST	ACTIVE		34 3W	19
41	GREENSTONE	EXPLORED POTENTIAL	BLM	39 4W	32
42	META SEDIMENTS	PROSPECT NON BLM	NON BLM	35 3W	8
43	VOLCANIC	PROSPECTS ALONG ROAD	BLM	39 4	3
44	META SEDIMENTS	PROSPECT	NON BLM	34 3	10
45	METAMORPHIC	DEPLETED	BLM	34 3	17
46	META VOLCANIC	PROSPECT NON BLM	NON BLM	35 3W	21
47	SHALE SANDSTONE	ACTIVE SMALL RESERVES	BLM	34 4	7
48	META SEDIMENTS	NON BLM	O AND C LAND	34 4	33
49	GREEN SERPENTINE	ACTIVE	BLM	33 4	33
50	SERPENTINE GREENST.	PROSPECT		34 4	4
51	META SEDIMENTS	PROSPECT		33 4	31
52	META SEDIMENTS	ACTIVE DEPLETED	BLM	33 4	19
53	SANDSTONE SHALE SEAM	ACTIVE OR DEPLETED	BLM	33 4	19
54	META SEDIMENTS SLATE	ACTIVE LIMITED RESERVE	BLM	33 4	21
55	META SEDS SHALE	PROSPECT	NON BLM	34 4	2

56	AMPHIBOLITE	ACTIVE	BLM	33 4	35
57	SERPENTINE	ACTIVE	NON BLM	33 4	26
58	SERPENTINE AMPHIBOLE	DEPLETED MAYBE	BLM	33 4	23
59	AMPHIBOLITE APLITE	PROSPECT	BLM	33 4	23
60	AMPHIBOLITE	PROSPECT	UNKNOWN BLM	34 3	15
61	LAYERED AMPHIBOLITE	PROSPECT NON BLM	NON BLM	34 3	26
62	SCHISTS AMPHIBOLITE	DEPLETED	NON BLM	33 3	26
63	META SED	PROSPECT	BLM	34 4	7
64	META VOLCANIC	PROSPECT	BLM	39 3	18
65	SHALE	ACTIVE	ROUGE VALLEY ROCK	38 2	23
66	SHALE	PROSPECT ACTIVE	BLM	38 2	26
67	META SEDIMENTS	PROSPECT	BLM	39 2	2
68	SILICEOUS GREENSTONE	ACTIVE	BLM	39 2	2
69	GREENSTONE	EXPLORED POTENTIAL		39 2W	25
70	META VOLCANIC	PROSPECT	NEAR LINE	39 1W	5
71	META VOLCANICS	PROSPECT	BLM	39 1	19
72	META VOLCANICS	EXPLORED NEGATIVE	BLM	39 2	35
73	META SEDIMENTS	ACTIVE OR IN ACTIVE	BLM	39 2	35
74	META VOLCANIC	DEPLETED	BLM	39 2	34
75	META VOLCANIC	ACTIVE	BLM	37 3	21
76	META VOLCANIC	EXPLORED NEGATIVE	BLM	39 2	15
77	META VOLCANIC	EXPLORED NEGATIVE		39 2W	11
78	META VOLCANICS	DEPLETED	BLM	39 2	12
79		EXPLORED NEGATIVE	BLM	39 2W	36
80		ACTIVE	BLM	38 2	35
81	GREENSTONE	ACTIVE	BLM	38 3W	25
82	SHALE	DEPLETED	BLM	37 4	17
83	GREENSTONE	EXPLORED NEGATIVE	BLM	37 4W	17
84	META VOLCANIC	PROSPECT NON BLM	NON BLM	38 4W	28
85	GREEN STONE	ACTIVE	BLM	38 4	34
86	META VOLC ARGILLITE	EXPLORED NEGATIVE	BLM	39 3	7
87	META VOLCANIC	ACTYIVE	BLM	39 3	7
88	META SEDIMENTS	DEPLETED	BLM	39 4	32
89	GREENSTONE ARGILLITE	PROSPECT	BLM	39 4	32
90	META SEDIMENTS	ACTIVE NON BLM	USFS	40 3	14
91	META VOLCANIC	PROSPECT	BLM	40 2	5
92	META SED SERPENTINE	PROSPECT	BLM	39 4	1
93	SHALE	PROSPECT NON BLM	NON BLM	39 2W	6
94	COBBLES VOLCANIC	PROSPECT NON BLM MAYBE	CHECK	39 2W	0
95		EXPLORED POTENTIAL	BLM	39 3	30
96	META SEDS SLATE ETC	ACTIVE NON BLM	USFS	40 2	15
97	META SEDS SERPENTINE	ACTIVE TO INACTIVE		38 3	31
98	SEDS VOLC ETC	DEPLETED	NEAR LINE	38 3	15
99	GREENSTONE	EXPLORED POTENTIAL		39 3	6
100	META VOLCANIC	DEPLETED		39 3	6
101	VOLCANICS	PROSPECT		39 4	10
102	META VOLCANIC	ACTIVE	BLM	39 4W	21
103	DIORITE	ACTIVE TO INACTIVE		39 4	23
104	DOIRITE	DEPLETED		39 4	14
105	SHALE META SEDS	ACTIVE	USFS	40 2W	16
106		ACTOVE NON BLM	USFS	40 2	1
107	METASEDS SLATE ARGIL	ACTIVE		39 3	25
108	GRANITE	PROSPECT		39 2	30
109	GREENSTONE	ACTIVE	BLM	37 3	21
110	AMPHIBOLITE	ACTIVE BF RA	BLM	33 3	25
111	GREENSTONE	PROSPECT	BLM	39 5	1
112	META VOLCANIC	PROSPECT	BLM	38 4W	31
113	META VOLCANIC	ACTIVE	BLM	38 4W	31
114	GREENSTONE	ACTIVE	BLM	37 3W	31
115		PROSPECT	BLM	34 3	35

116 AMPHIBOLITE	EXPLORED NEGATIVE	BLM	34 3W	3
117 BLACK ARGILLITE	ACTIVE	BLM	39 3W	34
118 ARGILLITE	ACTIVE	BLM	39 3	26

GLENDALE

No.	ROCK.TYPE	STATUS	OWNERSHIP	T. R	Sec.
0				0	0
1	SANDSTONE SHALE	ACTIVE	BLM	32 9	25
22	GREENSTONE	ACTIVE	BLM	32 6	17
52	GREENST SHALE SERP	ACTIVE	BLM	32 4	33
99	GREENSTONE	PROSPECT	BLM	33 8W	3
100		PROSPECT UNKNOWN		31 8W	30
101	METAVOLCANIC	PROSPECT	BLM	33 5W	22
102	SERPENTINE	PROSPECT	BLM	33 5W	22
103	GREENSTONE	PROSPECT	BLM	32 4W	7
104	GREENSTONE	ACTIVE	BLM	31 4W	29
105	GREENSTONE	ACITVE		32 5W	1
106	CHLORITE ANDESITE	PROSPECT	BLM PD	33 7W	24
107	GREENSTONE	ACTIVE	BLM	33 7W	25
107	GREENSTONE	ACTIVE	BLM	33 7	25
108	GREENSTONE	PROSPECT TO BE USED	BLM	32 7W	29
109	HARD SANDSTONE GRAYW	IN ACTIVE	CHECK MOST BLM	0	0
110	SILIC GREENSTONE	PROSPECT ACTIVE	BLM	33 7	13
113	SANDSTONE SHALE	DEPLETED	BLM	32 4	21
118	META VOLCANIC	PROSPECT	BLM	33 7W	23
119	SANDSTONE GRAYW MUDS	PROSPECT	BLM	0	0
120	META VOLCANIC	PROSPECT	BLM	33 7	17
114	GREENSTONE	IN ACTIVE	BLM	32 5W	33
136	QTZ RICH GREENSTONE	PROSPECT	BLM	32 7W	27

BUTTE FALLS Resource Area

No.	ROCK TYPE	STATUS	OWNERSHIP	T. R	Sec.
1	COLUMNAR TUFF	IN ACTIVE	BLM	32 1E	8
2	BASALT	ACTIVE	BLM	32 1W	27
3	GREEN SILICIC TUFF	ACTIVE DEPLETED	BLM	32 1W	23
4	BASALT FINE GRAINED	ACTIVE DEPLETED	BLM	32 1W	21
5	BASALT	ACTIVE	BLM	33 1W	14
6	BASALT	ACTIVE	BLM AND USFS	33 1W	10
7	BASALT ASH SEAMS	DEPLETED	BLM	33 1W	10
8	RHYOLITIC TUFF	INACTIVE FOR T.S.	BLM	33 1W	31
9	RHYOLITIC TUFF	ACTIVE	BLM	34 2W	1
10	BASALT PLATY BLACK	NON BLM SOURCE	JERRY EHRLINGER	33 1W	30
11	BASALT			33 1W	20
12	BASALT TUFF	ACTIVE EXPLOSIVES	BLM	33 2W	23
13	BASALT	ACTIVE	BLM	33 2W	27
14	SILICIC TUFF	EXPLORED NEGATIVE	BLM	33 2W	21
15	AMPHIBOLITE	NON BLM PROSPECT	BOISE CASCADE	33 2W	18
16	MICA SCHIST	DEPLETED	BLM	33 2W	2
17	MICA SCHIST	DEPLETED OR PIT RUN	BLM	33 2W	7
18	DIORITE	NON BLM PROSPECT	BOISE CASCADE	33 2W	10
19	DIORITE	DEVELOPED NEEDS INVENT	BLM	33 2W	3
20	ASH BASALT	EXPLORED NEGATIVE	BLM	33 2W	9
21	MICA SCHIST	NON BLM SOURCE	TIMBER PRODUCTS	33 2W	8
22	AMPHIBOLITE	DEPLETED NON BLM		33 2W	8
23	BASALT	NON BLM ACTIVE SOURCE	USFS	32 2W	27
24	BASALT AGGLOMERATE	DEPLETED	BLM	33 2W	3
25	AMPHIBOLITE	ACTIVE	BLM	34 2W	7
26	BASALT	EXPLORED NEGATIVE		36 2E	13
27	ANDESITE	DEPLETED ACTIVE	MEDCO	36 3E	6
28	ANDESITE	DEPLETED	BLM	36 2E	1
29	BASALT	PROSPECT	USFS	35 3E	30
30	BASALT	UNKNOWN	MEDCO	35 3E	18
31	BASALT CINDERS	ACTIVE	BLM	36 2E	3
32	BASALT	ACTIVE	BLM	35 3E	2
33	CINDER AND BASALT	DEPLETED NON BLM	MEDCO	35 3E	3
34	BASALT AND PYROCLAST	NON BLM PROSPECT	MEDCO	35 3E	10
35	BASALT	PROSPECT	BLM	34 2E	26
36	BASALT AND CINDERS	DEPLETED	BLM	0 2E	26
37	BASALT	EXPLORED NEGATIVE		34 2E	26
38	BASALT	EXPLORED NEGATIVE	BLM	34 3E	9
39	BASALT	ACTIVE	BLM	34 3E	9
40	ANDESITE FN GRAINED	ACTIVE	BLM	34 3E	19
41	ANDESITE	NON BLM SOURCE	MEDCO	34 3E	20
42	COLUMNAR TUFF	ACTIVE	BLM	32 1W	28
43	BASALT FN GRAINED	ACTIVE	BLM	32 1W	24
44	TUFF	NON BLM SOURCE	BOISE CASCADE	32 1E	4
45	ANDESITE	ACTIVE	BLM	33 2E	29
46	ANDESITE	DEPLETED	BLM	33 2E	24
47	ANDESITE	DEPLETED	BLM	33 2E	35
48	BASALT	NON BLM SOURCE	MEDCO	34 1E	13
49	DECOMPOSED CINDERS	NON BLM DEPLETED	MEDCO	34 2E	8
50	BASALT	ACTIVE	MEDCO OR COUNTY BLM	34 1E	12
51	PLATY ANDESITE	ACTIVE	BLM	33 2E	25
52	BOULDERS	DEPLETED NEEDS INVENT		33 3E	30
53	ASH ANDESITE	DEPLETED PRIVATE	NON BLM	33 2E	36
54	ANDESITE OUTCROPS	PROSPECT		33 2E	36
55		DEPLETED		33 2E	36
56	ANDESITE ASH	ACTIVE	NON BLM	33 2E	36
57		ACTIVE	NON BLM	33 2E	32

58	CRUSHED	PROSPECT EXPLORED		34	2E	8
59	COLUMNAR BASALT	ACTIVE	NON BLM	33	3E	26
60	BASE COURCE	ACTIVE	NON BLM	33	3E	34
61	BASALT FN GRAINED	PROSPECT		32	1E	23
62	RHYOLITIC TUFF	NON BLM SOURCE	PRIVATE	32	1E	15
63	RHYOLITIC TUFF ASH	DEPLETED	BLM	32	1E	23
64	BASALT	PROSPECT	BLM	35	1E	13
66	SILICIC TUFF	ACTIVE	BLM	32	1E	3
67	BROWN TUFF	EXPLORED NEGATIVE	BLM	32	1E	8
68	BASALT	ACTIVE	BLM MEDCO CHECK	35	2E	9
69	BASALT	ACTIVE	BLM	34	1E	15
70		ACTIVE	MEDCO	35	2E	16
71	BASALT	NON BLM SOURCE	STATE	33	1W	8
72	MICA SCHIST	DEPLETED	BLM	34	3W	25
73	BASALT	NON BLM SOURCE	BOISE	33	1W	8
74	AMPHIBOLITE	DEPLETED	BLM	33	2W	17
75	LOW DENSITY ROCK	NEGATIVE		32	1E	13
76	BASALT PYROCLASTICS	ACTIVE	BLM	36	3E	19
77	PINK TO YELLOW TUFF	NEGATIVE RESULTS		34	2W	31
78	BASALT	ACTIVE	BLM	33	2E	33
79	TUFF	ACTIVE		32	1W	13
80	SCHIST	ACTIVE		33	2W	31
81	SCHIST	DEPLETED	BLM	33	2W	31
81	SCHIST	DEPLETED		33	2W	31
82	AMPHIBOLITE	EXPLORED NEGATIVE	BLM	34	2W	19
82	PEGMATITE AMPHIBOLIT	EXPLORED NEGATIVE		34	2W	19
83	TUFF	ACTIVE		32	1E	29
83	SILICIC TUFF	ACTIVE	BLM	32	1E	29
84	FINE GRAINED TUFF	DEPLETED	BLM	32	1E	29
84	GRAY FINE GRAIN TUFF	DEPLETED		32	1E	29
85	GLASSY BASALT	ACTIVE		32	1E	7
85	GLASSY BASALT	ACTIVE	BLM	32	1E	7
86	BASALT	ACTIVE		32	1W	13
87	YELLOW SOFT TUFF	DEPLETED	BLM	33	1E	7
88	AMPHIBOLITE	EXPLORED POTENTIAL	BLM	33	2W	31
89		EXPLORED NEGATIVE		33	2	19
90	QUARTZITE	EXPLORED NEGATIVE	BLM	34	2W	19
91	BLACK BASALT	PROSPECT	BLM	33	1W	29
92	BASALT	PROSPECT	BLM	33	1W	29
93	CINDERS DIRT	EXPLORED NEGATIVE	NON BLM	33	2E	24
94			NOT BLM	35	2E	26
95			BLM	32	1W	21
95			BLM	32	1W	21
95			BLM	32	1W	21
96			BLM	33	1W	5
97				36	3E	17
98	INDURATED TUFF AND	PROSPECT		33	1W	29
99	DACITE	PROSPECT	CHECK OWNERSHIP	32	2W	36
102	RHYOLITE	INACTIVE		33	1W	19
623	BASALT	ACTIVE NO ACCESS	MEDCO	33	3E	34

HIGHLIGHTS OF OREGON'S MINERAL
ACTIVITIES FOR 1977

by

Jerry J. Gray

Oregon Department of Geology
and Mineral Industries

Presented at the December, 1977
83rd Northwest Mining Association
Convention, Spokane, Washington

HIGHLIGHTS OF OREGON'S MINERAL ACTIVITIES FOR 1977

A Paper Presented at the Northwest Mining Convention
December 3, 1977, by Jerry J. Gray, Economic Geologist

This paper will begin with an overview of mineral production, then the non-metallic highlights will be given, followed by the metallic highlights, and last, the energy minerals highlights.

Overview

Mining in Oregon means the production of construction materials and the production of one metal, nickel. As slide one shows, sand and gravel and stone alone accounted for 66 percent of the total during 1975 and 68 percent during 1976.

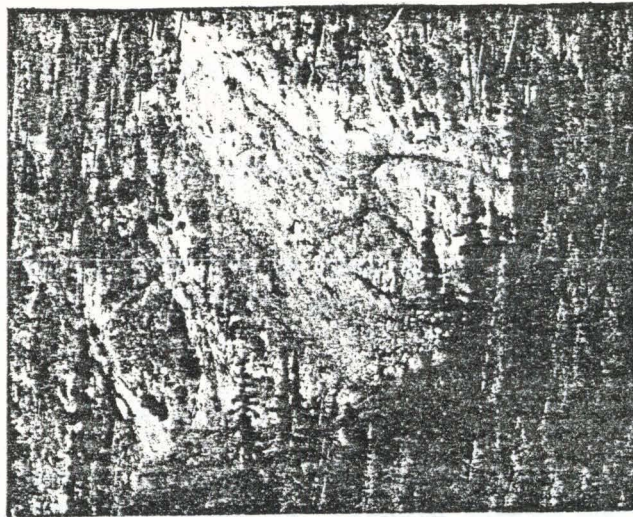
Slide 1. Oregon Mineral Production

Mineral Commodity	Value (thousands)	Percent	Value (thousands)	Percent
Stone	\$ 40,321	38%	\$ 42,686	38%
Sand & Gravel	<u>29,596</u>	<u>28</u>	<u>33,475</u>	<u>30</u>
Subtotal	\$ 69,917	66%	\$ 76,161	68%
Cement, Copper, Diatomite, Emery, Gold, Lead, Lime, Nickel, Silver, Talc, & Tungsten	28,155	26	33,202	29
Pumice	3,937	4	2,312	2
Lime	3,281	3	Combined	
Gemstones	500	.5	525	.5
Clays	214	.2	315	.3
Total	\$ 106,004	100%	\$ 112,515	100%

The commodities listed in Slide 1 are arranged in a descending order by value, except for those 11 commodities, cement through tungsten, which have been combined to protect individual company confidential data.

Cement and nickel account for the major portion of this value. Pumice, lime, gemstones, and clays are the other commodities that have publishable production.

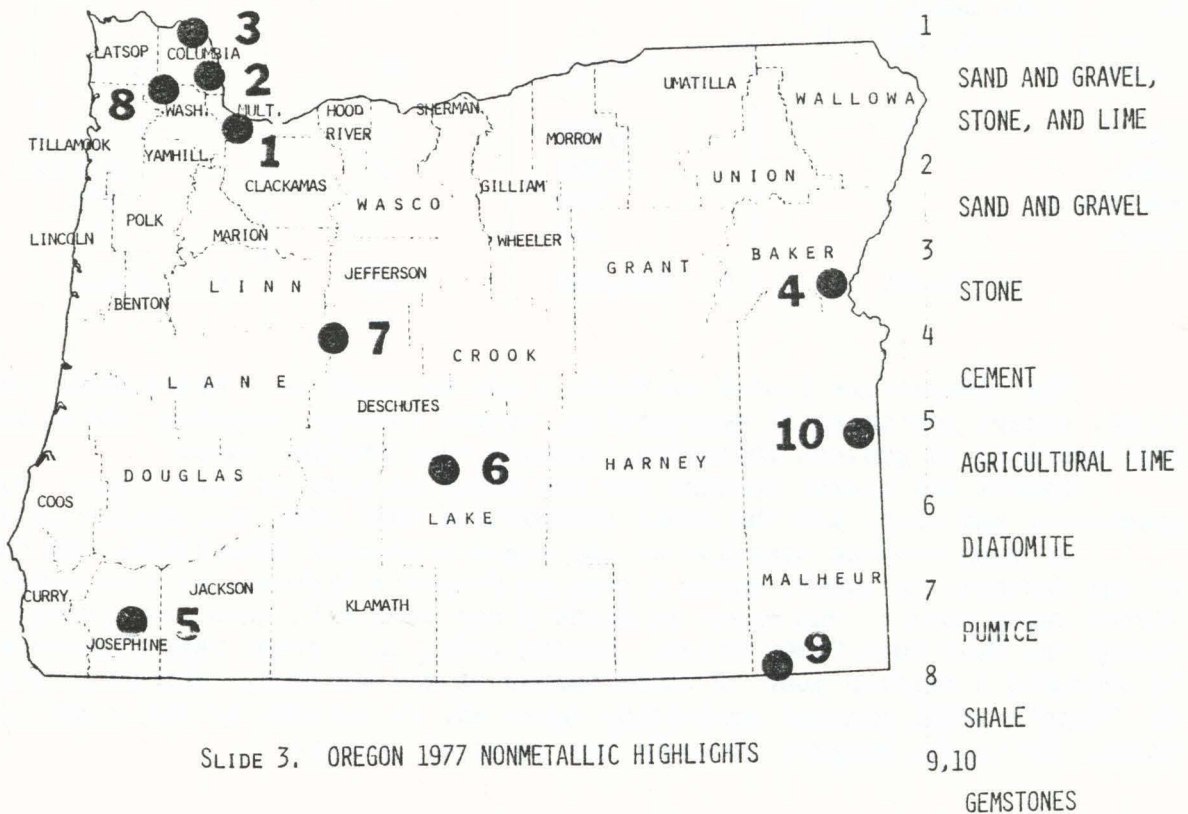
So much for the overview of the State's mineral production, now before we go any farther, we should sneak a peek at Oregon's typical, average miner. The shovel being held by the miner in Slide 2 has been well used for mining. In Oregon, Smokey the Bear owns 5,000 mines. During 1975, the latest year figures available, he produced 5 million tons of stone valued at \$11 million. This is 10 percent of the State's total mineral production value and 25 percent of the stone production value. He is the biggest miner in the State of Oregon.



SLIDE 2. OREGON 1977 TYPICAL MINER

Non-Metallic Highlights

The highlight locations to be noted under non-metallics are shown on Slide 3. A review of non-metallic mineral highlights should start with sand and gravel and stone. For sand and gravel and stone, 1977 was the year of the sell-out.



SLIDE 3. OREGON 1977 NONMETALLIC HIGHLIGHTS

The changing hands of several large sand and gravel and stone producers that have occurred in Oregon during the last year or so appears to be due to the phasing down of the large highway and dam construction projects and for environmental and regulatory reasons. The phase-down may be the reason Kaiser Industries sold the Pacific Building Material's Portland plant, point number 1 on Slide 3, to Willamette Hi-Grade and sold the Santosh pit and plant, point 2, to Cascade Aggregates.

Ross Island Sand and Gravel, also at point 1, conflicts with the Army Corps of Engineers over dredging permits and may be the reason the firm was sold to a private individual. The equipment at Rivergate Rock Products quarry, also at point 1, and the equipment in Columbia West Construction quarry at Rainier, point 3, was auctioned off. The Rainier pit is in conflict with MESA over highwalls. As stated before, these two commodities are the major sources of minerals for Oregon. These low value, high bulk materials often do not get the credit due. The Oregon Department of Geology and Mineral Industries is continuing it's program of sand and gravel and stone inventory studies. These County studies are needed to provide a data base for many of the actions taken and to be taken under the State's land planning laws.

Limestone is the source rock for the next three highlights. Oregon Portland Cement Company announced that a new cement plant would be built near Durkee, point 4, Baker County, to replace the one at Lime, 13 miles to the southeast. The new plant is to cost \$38 million and have a rated capacity of 500,000 tons per year. This is $2\frac{1}{2}$ times as large as the old plant. The new plant will be located at the present limestone source for the old plant. The cement is to be shipped into the Spokane area, eastern Oregon, and western Idaho. A farm cooperative is studying the feasibility of mining the Marble Mountain limestone deposit near Grants Pass, point 5, Josephine County. The limestone would be ground and shipped to the Willamette Valley for agricultural lime. Ash Grove Cement Company announced the doubling of output of lime from it's Portland lime plant, point 1. The construction, to be completed by late 1978, will raise daily output from 200 tons to 400 tons. The limestone source will continue to be imported from Texada Island, B. C.

American Fossil Company is mining diatomaceous earth, for use mainly as cat litter, in Christmas Valley, Lake County, point 6. Production through the crushing, screening, and bagging plant completed during early 1977, has been reported at about 20 tons per day. The firm hopes to have output up to 50 tons per day by the end of the year.

The pumice highlight news item for the year was the continuing battle between the U. S. Forest Service and the U. S. Pumice Company over the firm's mining claims on Rock Mesa, point 7, in the Three Sisters Wilderness. The U. S. Forest Service's last move has been to have the BLM file a formal complaint against the validity of the firm's claims. The firm answered the charges and a hearing will be held before an administrative law judge of the Department of the Interior.

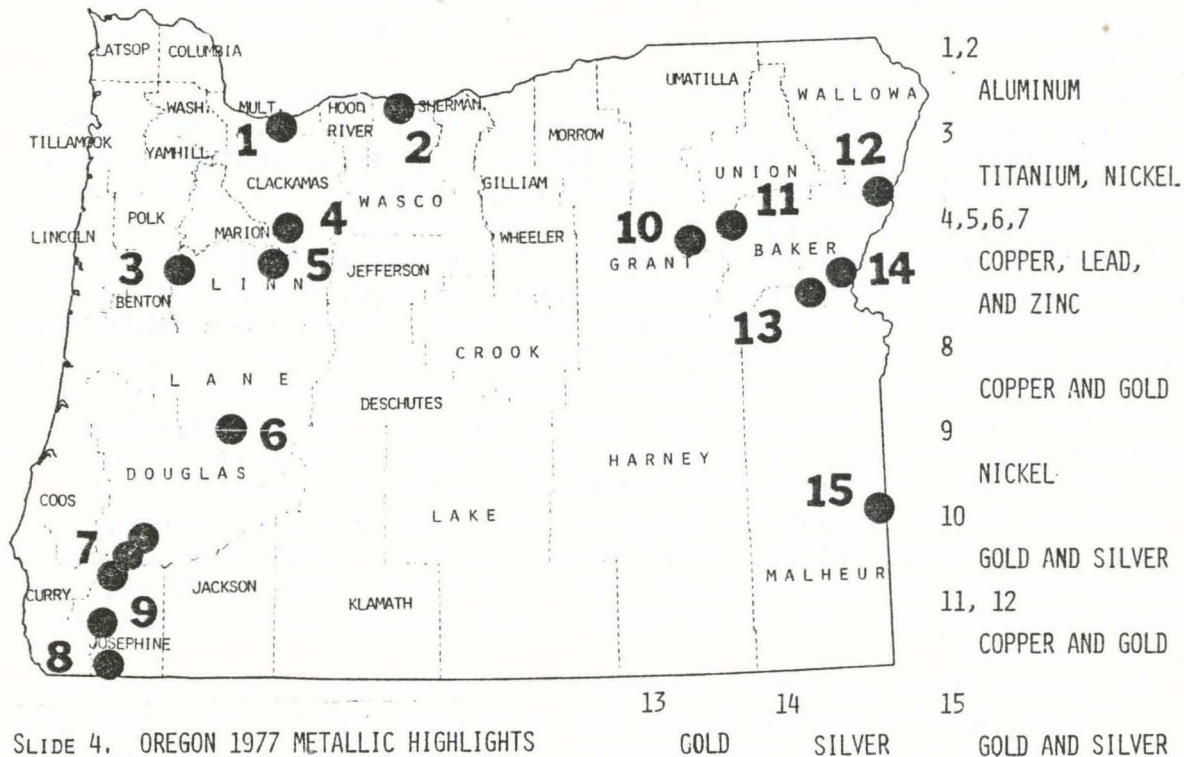
The clay and shale commodity highlight would be the construction-slow-down fatality of Oregon's only bloating shale operation, point 8. Since 1945, Empire Building Materials produced a bloated shale aggregate for use in light weight concrete products; the plant fines were sold as a pozzolan. During 1976, Empire sold the Washington County operation to GATX Leasing and early in November the new firm had the plant and other equipment auctioned off.

The last non-metallic I would like to talk about is gemstones. I feel that the \$525,000 value figure total published by the U. S. Bureau of Mines for the State of Oregon is low. From two areas, points 9 and 10, in Malheur County, the Department found almost that much gemstone is being mined and sold. A personal canvas of the picture-rock jasper producers showed 500 tons of picture rock jasper, valued at \$1.00 per pound mine run, has been produced during 1977. The next few slides are taken of the Lake Owyhee area, point 10. The Lake Owyhee deposits are vertical vein and pod like structures. I don't have any slides of the McDermitt deposits;

however, they appear to be bedded deposits which occur at past ground water interfaces.

Metallic Highlights

The metallic highlights will be discussed by areas starting with the Northwestern quarter of the State. The location of the highlights are shown on Slide 4.



Northwestern

A major highlight would be the effect the dry weather had on the production of aluminum. The low river flows caused low power output, which caused BPA to curtail power to the State's two primary aluminum plants, points 1 and 2, which caused the loss of production and the loss of jobs. In February, 200 to 300 Oregon workers were laid off and in April there were more.

Titanium made the news with a bang. In October, 1977, Oregon Metallurgical Albany, titanium sponge plant, point 3, which had been reopened in November, 1976, was severely damaged by an explosion when molten magnesium leaked from a sponge furnace and came in contact with water. This plant is one of nine in the free world and had an employment of about 50 workers.

Exploration activities for copper, lead, and zinc took place within the North Santiam, point 4, Quartzville, point 5, and Bohemia, point 6, mining districts.

Three large mining firms have gained land positions in these districts. These firms are mainly looking for copper-molybdenum porphyrys. Exploration has proceeded to the drilling stage in two of the districts. In the North Santiam district, point 4, during the past summer, a 25 ton per day pilot floatation mill was put into operation by Shiny Rock Corporation. The lead-zinc ore for the mill was obtained from the retimbered Ruth mine. Concentrates have been stockpiled waiting for the smelter strike to end.

The Department is publishing in its monthly publication, the ORE BIN, a four part series on mineralization in the Western Cascades. The articles will include an overview of all mineralized areas, which have been reported in the literature, and detailed looks at the mineralization in the Bohemia and Quartzville mining districts. The Quartzville road guide was published in June, 1977, issue of the ORE BIN. The overview will be published in the December, 1977, issue, the introduction to Bohemia mineralization, February, 1978, and the Bohemia road log in the March issue.

One highlight that does not quite fit into any one quarter of the State is the hunt by a firm looking for a site to locate a 2,000 to 10,000 ton per day plant to process manganese nodules from the sea floor. The nodules would be mined from the area between Hawaii and Mexico in 15,000 to 18,000 feet of water. The search for the plant site is not confined to Oregon.

Southeastern

The areas in southwest Oregon which have received the most attention by mining companies during the past year include the Silver Peak - Alameda Mine zone (Big Yank Lode), point 7, Douglas and Josephine Counties. Five or six mining companies have been geochemical sampling, geophysical surveying, claim staking, geologic mapping and some drilling along this zone. Three of the companies entered and completed a joint venture to drill 3,000 feet of core hole. This is the third year of extensive exploration activity on this zone. The zone contains volcanogenic sulfide mineralization with some massive barite gangue.

The Josephine County Queen of Bronze copper-gold mine, point 8, old workings have been reopened by Canadian Superior. These underground workings were still in fair condition. Company geologists are preparing a detailed geologic map of the old workings. Production from this mine totalled about 35,000 tons of ore with an approximate average copper content of 8 percent and 0.10 oz/ton gold. The mine was worked from 1903 to 1930.

Nickel laterite exploration activities were mainly those of the Inspiration Development Company at the Eight Dollar Mt. deposit, point 9, Josephine County. The work involved seismic, mapping, back-hoe sampling, and trommel processing of large bulk samples to test preliminary up-grading techniques. The U. S. Bureau of Mines did some reconnaissance sampling and some bulk sampling of southwestern Oregon laterites preliminary to setting a pilot plant size study of laterites. The plant will be located at the Metallurgical Research Center in Albany, point 3.

Northeastern

The areas in northeastern Oregon which have had metallic mineral activities would include the exploration and development work at the Dixie Meadows (Dixie Meadows Gold Mines, Ltd.) mines, point 10, Grant County. Because a gold ore heap leach cyanidation test was successful, application is now being made for a surface mining permit in preparation for a full scale mining operation.

W. A. Bowes and Associates continue to explore and develop the New York and Cougar-Independence gold mines, point 11, in Grant County. Johns-Manville at Meadow Lake, the same point 11, but in Baker County, is continuing to explore for a copper-molybdenum porphyry. From the same area, point 11, Baker County, Tony Brandenthaler shipped some gold ore to the Tacoma smelter from the Bald Mountain mine. During the past ten years, along with some ore being produced, several hundred feet of new drifting have been completed. Texas Gulf continued working at the old Iron Dyke copper-gold mine, point 12, Baker County, and Basin Creek Mines, Inc., point 13, Malheur County, sold its Basin Creek placer property to Lester Thompson. Delta Investors of Eugene leased the property and spent many months installing new equipment. Mining, held up because of low water, was to start by the end of September. Ibx Minerals, Inc., explored the Bay Horse silver mine at point 14, Baker County.

The State of Oregon, Department of Geology and Mineral Industries, continued to evaluate the nickel resources of Oregon, under a grant from the U. S. Bureau of Mines. Reconnaissance mapping and sampling of a few occurrences of nickel in northeastern Oregon disclosed that most of the prospects were zones of silica-carbonate replacement of serpentinite with no enrichment of the serpentinite's original nickel content. All of the northeastern Oregon occurrences, with the exception of the nickel-copper-cobalt sulfide deposits, appear to be too low grade to be of interest.

A report on all of Oregon's nickel deposits is presently being prepared by the Department of Geology and Mineral Industries. It is to be published in 1978 in the bulletin series.

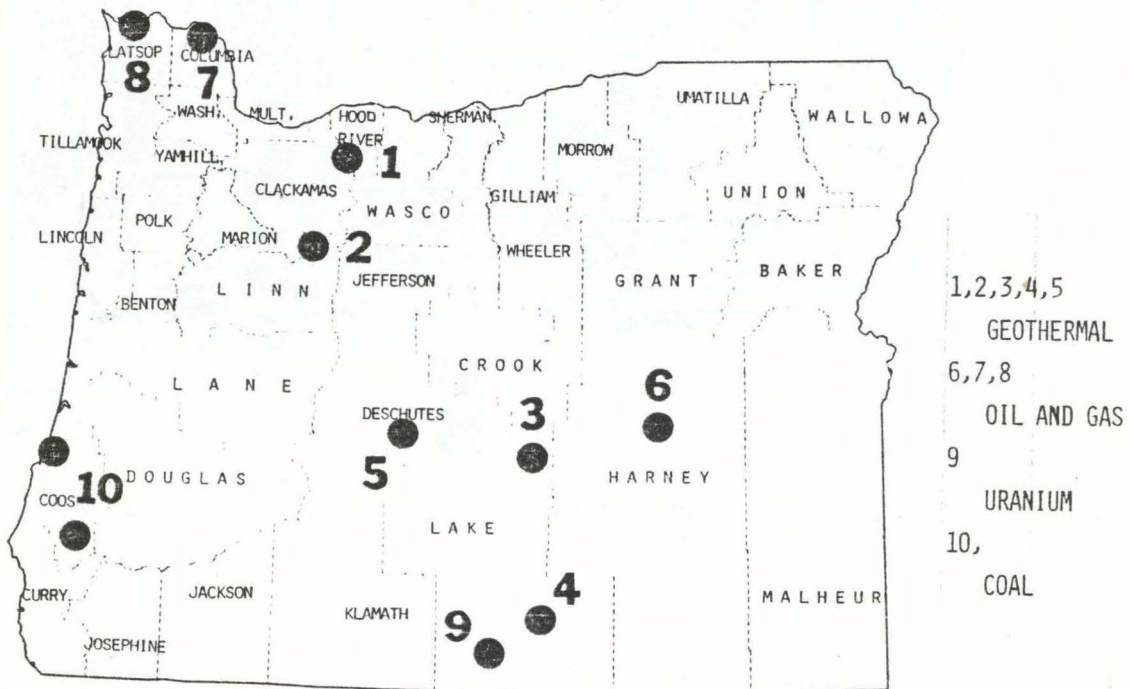
Southeastern

In southeastern Oregon, the effect of opening a gold-silver mine in Idaho had on a small town on the Oregon side of the line, made news.

The Oregon town of Jordan Valley, point 15, Malheur County, two miles from the Idaho line, has literally had a "bomb" explode on them and the effects are still not all in. The "bomb" was the opening of the DeLamar, Idaho, gold and silver mine. Jordan Valley had a population of about 200, it now has 600. Idaho is getting the tax dollars from the mine and Oregon is getting the school children. The life style and values of the original 200 residents will be modified by that of the newcomers. The original population, needless to say, is divided as to whether or not the mine is a good thing.

Energy Minerals

The four sources of energy, which are being studied during 1977, are geothermal, oil and gas, uranium, and coal, slide 5.



SLIDE 5. OREGON 1977 ENERGY MINERALS HIGHLIGHTS

Geothermal

The Oregon Geothermal Act was passed in 1971. Geothermal exploration activity has been building ever since as measured by the number of Federal leases issued and by drilling. A total of approximately 350 - 500 foot temperature-gradient holes have been drilled by the end of this past summer. Several deep gradient holes also have been drilled. Only four deep production tests have been drilled since the enactment of the Geothermal Law. Two of the holes were in Lake County, one each in Klamath and Union Counties. None of these found commercial quality of hot water or steam. Geothermal exploration highlights for 1977 include drilling deep holes to obtain temperature gradient. Both Northwest Natural Gas Company's Old Maid Flat drill hole (Slide 5a) and the Department of Geology and Mineral Industries' Mt. Hood drill hole, point 1, Clackamas County, are to be drilled to a depth of 2,000 feet. Both holes are on the flanks of a Pleistocene volcano and should give some interesting temperature data. SUNOCO Energy Development Company's Western Cascades drilling program includes six 1,500 foot gradient holes to be drilled near Breitenbush Hot Springs, point 2, Marion County. Sixty-six 500 foot gradient holes are also to be drilled in the Western Cascades during the 1977-78 period. Other deep gradient holes are to be drilled by Phillips Petroleum, one hole at Glass Buttes, point 3, Lake County, and by Chevron Oil, one or more holes in Warner Valley, point 4, also in Lake County.



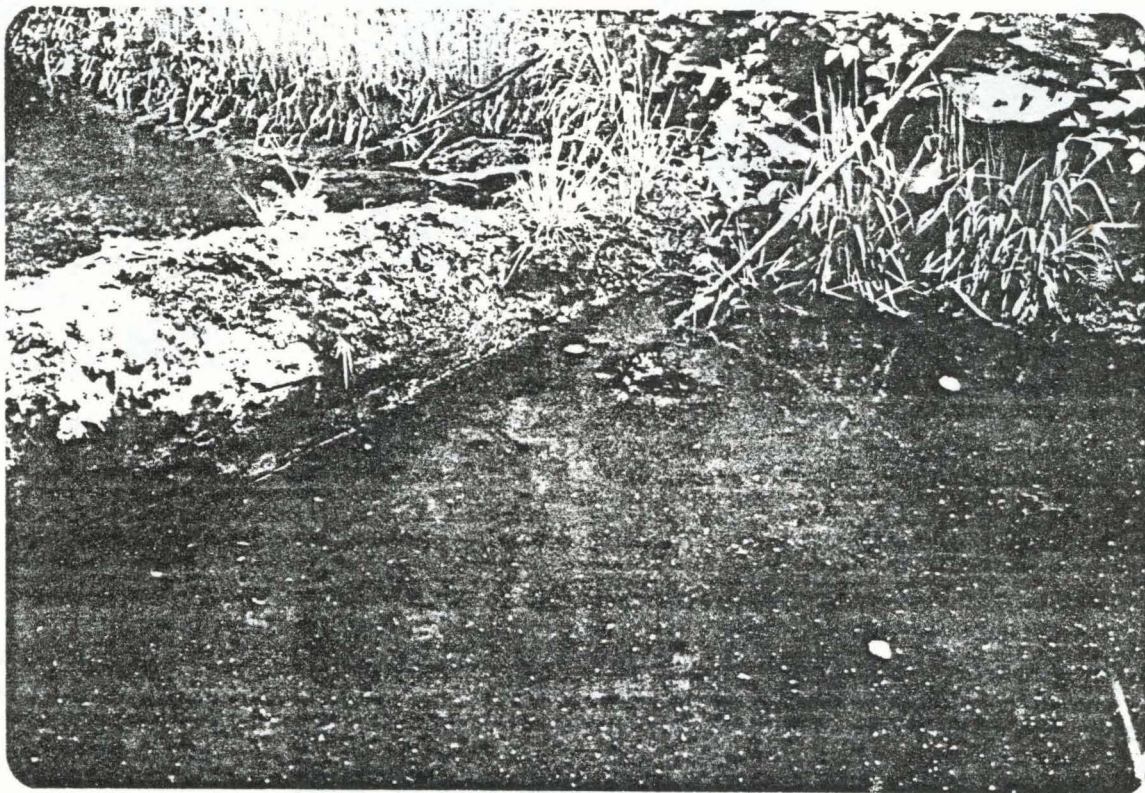
Slide 5a, Northwest Natural Gas Company's Drilling at Old Maid Flat

Shallower holes were drilled by several firms. AMAX Exploration Company completed a two-year drilling program in Malheur and Union Counties this spring which included nearly 100 temperature gradient holes drilled to depths ranging between 200 and 500 feet deep. Standard Oil Company of California drilled a total of 40 - 500 foot gradient holes in Lake and Malheur Counties this past summer. Less extensive gradient drilling projects have been conducted by Phillips Petroleum, Andadarko Oil, Union Oil, Gulf Resources, and Al Aquitaine. The USGS is putting down a very interesting hole on the east side of Newberry Caldera, point 5, in Deschutes County. Purpose of the test is to study the hydrology and to explore the geologic structure of the caldera.

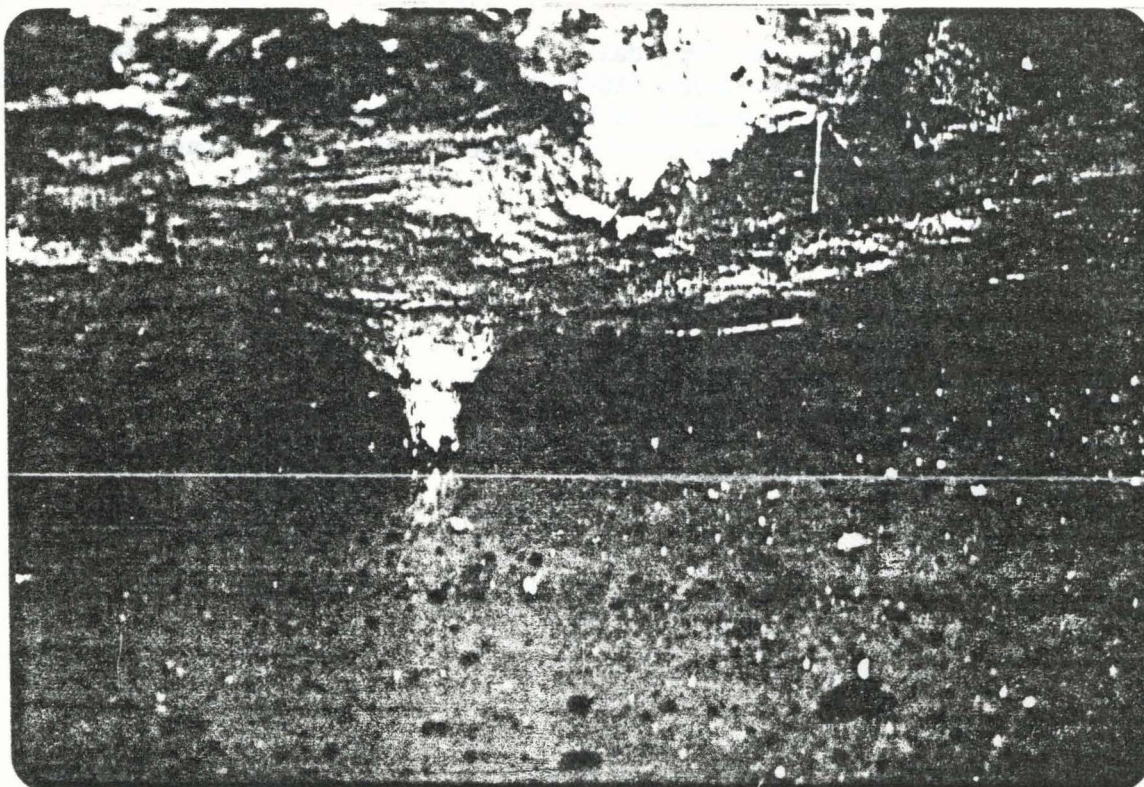
Oil and Gas

Oil and gas activity has revived in Oregon in the past three or four years. Two wells were being drilled as of September, 1977; Michel Halbouty "Federal No.1", located approximately 9 miles northwest of Burns, point 6, Harney County, and Reichold-Diamond Shamrock "Columbia County No. 1", point 7, Columbia County. Halbouty is drilling an 8,500 foot test on a "farmout" of Standard Oil Company leases. The Columbia County well is a 3,500 foot gas test of upper Eocene sands. The most extensive leasing and exploration in the State is being done by Mobil Company in western Oregon. Mobil now reportedly holds in excess of 700,000 acres of leases in the area. Two seismic crews and a geological field party have been mapping this summer. Texaco, Inc., and Standard of California, hold sizeable lease blocks in eastern Oregon. One highlight was the discovery of an oil seep near Olney, Clatsop County, point 8. Slide 5b shows the oil floating on top of a little pond. Slide 5c is a close-up shot of a log and the oil blobs. The oil is being brought to the surface by ground water. As the oil blobs lose some of the volatiles, they will sink and produce a tar cap. Slide 5d shows such a tar cap. Slide 5e shows a hole

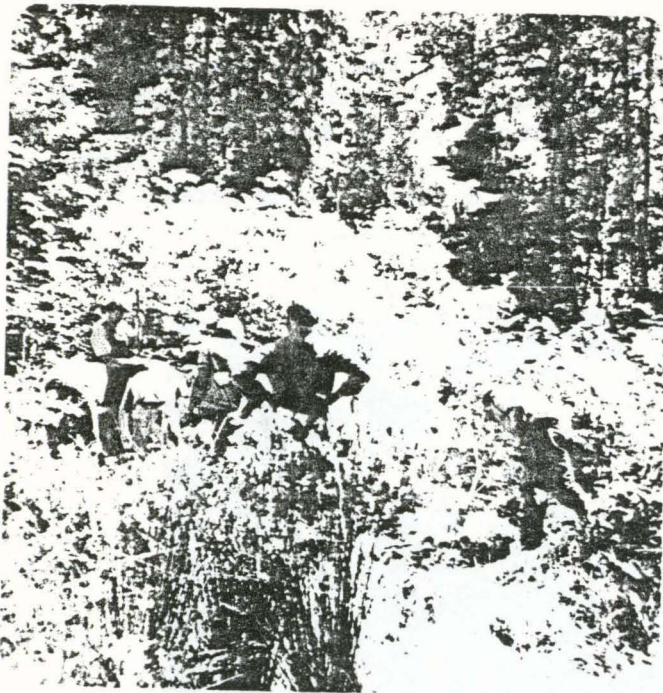
being dug into the cap. The paraffin to wax ratio indicates that oil has been leaking out at this spot for a very long time. Off-shore news was the exclusion of Oregon and Washington in the U. S. Interior Department OSC lease sale schedule, until after 1981. This was disappointing to many in the industry as the Northwest Pacific is looked upon favorably by several companies. However, those groups working to preserve the coastline were pleased with the omission.



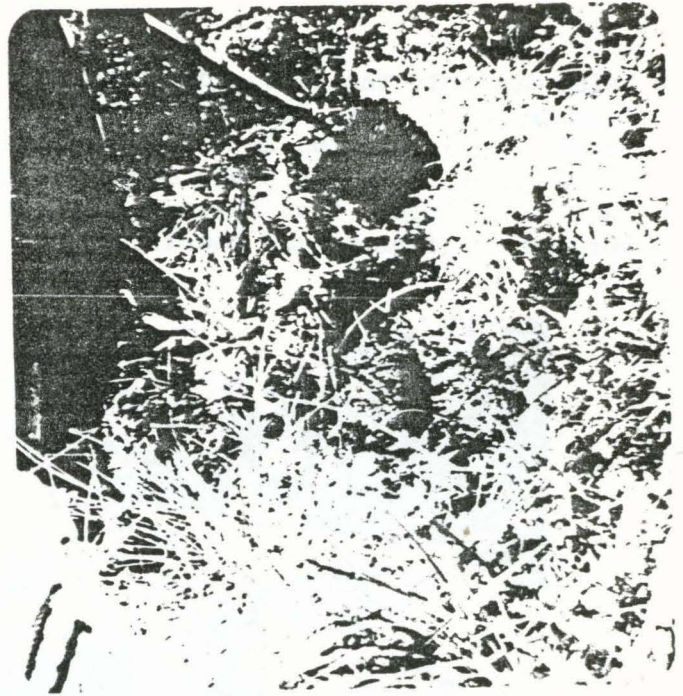
Slide 5b, Oil Blobs on a Pond at the Olney Oil Seep



Slide 5c. Close up of the Oil Blobs at the Olney Oil Seep



Slide 5d, Ground Cover Over the Tar Cap at the Olney Oil Seep



5e, Test Hole Being Dug Into the Tar Cap at the Olney Oil Seep

Uranium

In the Lakeview area, point 9, Lake County, several companies were active in looking for uranium. Lucky Mc Uranium explored on claims from Utah International. Polaris Resources, a consulting firm from Golden, Colorado, is doing an evaluation for Urania, Inc. Western Nuclear continues to hold the White King and Lucky Lass and has been somewhat actively exploring with some drilling. Exxon, who had staked a large group of claims in 1976, relinquished most of them.

Coal

A National push is on for coal. Coal resources occur in two areas of Coos County, point 10. The Department studied the County during 1975 and concluded that these coal beds were not economic to mine at the present time. However, one major oil company is taking a serious look at Oregon coal. Only time will tell how serious the look is.

OREGON EXPLORATION ACTIVITY, 1987

Map No.	Company, Contact Person	Mine or Area	Sec.	T.(S)	R.	Nature of Work
1.	(G.S.R.) Gold Resources, Inc. Jim Blair (604) 669-0389	Prairie Diggings	N $\frac{1}{2}$ 33	13	32E.	Application for mining permit from Mined Land Reclamation. 7,000 ft of drilling.
2.	American Copper Nickel Phil Rush (509) 928-6128	Bald Mountain-Ibex Project	3-4	9	36E.	Holding property.
3.	Freeport-McMoRan Gold Co. Winthrop A. Rowe (702) 826-3000	Shamrock Mine, Hull Mtn. Forest Creek & Squaw Creek areas. Jackson County	19	34 38 40-41	2W. 3W. 3W.	Reconnaissance, large claim blocks. Some drilling. 4 holes at Shamrock (holding). 7 holes at Forest Creek (dropped).
4.	Boise Cascade Ed Fields or Jerry Lewis (208) 384-6196 (Boise)	Cracker Oregon Gold Mine. (E and E)	32, 33	8	37E.	Dump sampling and evaluation. Reported leased and put out to bid for new 1,000 ft drift and crosscuts to vein.
5.	Beaver Resources, Ltd. Vancouver, B.C. Val Donovan, Vice President	Large area Nevada-Oregon border				7,000 square miles aerial thematic mapping. (World Investment News, Aug. 1987)
6.	AMSELCO Dick Moorehead, Reno, (702) 827-2270	Hungry Hill - Goff Mine area, Josephine County	20, 29,30	33	7W.	Renewed exploration permit with Josephine County.
7.	Galactic - Quartz Mtn. Gold (Will Rohtert) (503) 947-3692 Kevin Russell	Quartz Mountain Lake County	26,27 34,35	37	16E.	Drilling, trenching, metallurgical testing, permitting. 415 holes, 95% reverse circ., 5% core. Water monitor well, E.I.S.
8.	Savanna Resources, Ltd. Mike Strickler (503) 479-2153	Turner Albright, Massive sulfide	15,16	41	9W.	Drill core sample for metallurgical test. U.S. Bureau of Mines.
9.	Formosa Exploration, Inc. Hans Madeisky (503) 672-6753	Silver Peak Mine	23	31	4W.	Mapping, sampling, core drilling, evaluation.

OREGON EXPLORATION ACTIVITY, 1987 (Continued)

Map No.	Company, Contact Person	Mine or Area	Sec.	T.(S)	R.	Nature of Work
10.	U.N.C. Mining & Milling Corp. Larry Bush (503) 742-6606	Cornucopia Mine	27	6	45E.	Volume sampling, core drilling, mapping, geochem, drifting.
11.	Westley Mines-Nerco Joint Venture Clyde Smith (604) 689-3923, Robert Turner (604) 266-8178, Tim Harris (206) 892-1148	Palmer Creek area	35	39	4W.	Geochem, mapping, drilling, (Seven shallow holes).
12.	Supreme Perlite Portland (503) 286-4333	Dooley Mountain		11, 12	40E.	Work continued, evaluating perlite deposits.
13.	Kennecott Exploration Jay Hammitt (801) 322-8415	Almeda Mine	13	34	8W.	Completed evaluation in 1986 and turned back to owners Feb. 1987.
14.	North Lilly Mining Co. R.K. Perttu (503) 899-8036	Jones Marble (adjoining claims)	31	38	5W.	White marble drilling. (Jiggs Morris claims)
15.	Orbana Resources	Ochoco Mine	29-30	13	20E.	Core drilling.
16.	Inland Gold R.L. Redmond, Reno (702) 826-0417	Zinc Mine	23	29	1W.	Reconnaissance.
17.	Sawyer Consultants, Inc. Gordon House (604) 669-6363	Howard Creek area & others. Josephine & Curry Counties		34, 34, 35	8-9W. 12W.	Exploring large blocks of claims.
18.	Mount Emily Resources Nick Barr (503) 469-4335	Mount Emily Curry County	8	40	12W.	Geochem mapping, drilling.
19.	Golconda Resources, Ltd. Gunter Liedtke, Calgary, Alberta	Record Mine	1-2	14	36E.	Drilling
20.	Manville Corp. Joe Levay (503) 563-3987	Harper Basin Diatomite Grouse Spring Prospect	24-25	18-19 14	41-42E. 36E.	Drilling. Diamond drilling. (Copper & Silver)

OREGON EXPLORATION ACTIVITY, 1987 (Continued)

Map No.	Company, Contact Person	Mine or Area	Sec.	T.(S)	R.	Nature of Work
21.	Chevron Resources is exploring several areas optioned from Manville Corp. Mark Holzclaw (702) 323-3335	Meadow Lake	5	8	37E.	Trenching, surface sampling, mapping.
		Red Butte	26, 27, 34, 35	25	43E.	Hand trenching (Wilderness study area)
		Castle Rock	8 & 9	18	37E.	Surface sampling, mapping, "*****"
		Bannoc Project	11	26	45E.	Surface sampling, mapping.
		Hope Butte	21	17	43E.	Drilling.
		Quartz Mountain	6	25	43E.	Drilling.
		Mahogany Project	25-26	26	46E.	Surface sampling.
22.	Permian Resources Don Adair, Boise Consultant (208) 342-3328	Shell Rock Butte	18	21	45E.	Drilling.
		Lackey Prospect	22-27	15	45E.	Drilling.
23.	Morrison Knudsen Co. Dan Kunz (503) 386-6719	Gray Eagle Sb Mine Virtue Dist. Baker County	7	9	41E.	Surface sampling, mapping, planned drilling.
24.	Widman Brothers Ed Widman (503) 523-7594	Susanville Mine (Bull of Woods)	7-8	10	33E.	Surface work over 3,000 ft rotary- hammer drilling.
25.	Cable Cove Mining Bob Bowen (503) 523-6256	Baby McKee	11	8	36E.	Renovated portals and adits.
		Alpine & Davenport	14	8	36E.	Longhole drilling. Plan core drilling.
26.	Concord Gold Co. Ltd. (see #17, Sawyer Consultants, Inc.)					
27.	Cominco American Inc. Cameron Allen (509) 922-8787	Dolly Varden Mine Eagle Creek District	19-30	7	44E.	Mapping, surface sampling, drilling.
28.	U.S. Minerals Exploration John Cox (702) 825-2002	Miners Draw Coyote Hills	14, 15, 22, 23	35	23E.	Drilled 12 reverse circulation holes.
29.		Gold Ridge Mine	16-17	12	43E.	

ACTIVE MINES OREGON 1987

Industrial Minerals

Map No.

1. Ash Grove Cement West Baker County, Sec. 11, T. 12 S., R. 43 E. Continued production of crushed limestone (marble) for refining beet sugar and production of cement from marble and shale mined by the plant site along U.S. 1-84 near Durkee. Production about \$25 million per year.
2. Eagle-Picher Industries, Diatomite, Harney and Malheur Counties, T. 19 & 20 S., R. 35, 36, and 37 E.; mill near Vale. The diatomite is processed by air classification and flux calcining (partial fusion and agglomeration) and sold under the brand name of Celatom which is used as a filter aid for water, beverages (beer) syrups, juices, edible oils, fuels, and pharmaceuticals.
3. Teague Mineral Products, Bentonite and Zeolite, Malheur County, Secs. 8, 28 & 29, T. 23 S., R. 46 E. Bentonite is used in drilling muds, pet litter, binder for hay pelletizing, and as sealant for ponds, ditches and solid waste disposal. Also producing clinoptilolite (zeolite) from mine on Succor Creek, mostly for pet litter and several other uses; odor control products, fungicide carriers, ammonia absorbent in aquarium systems. Clinoptilolite also readily absorbs radioactive cesium and future usage is being tested.
4. Oil-Dri Production Company, Diatomite, Northern Lake County, Secs. 14, 21, 23, T. 27 S., R. 16 E., Christmas Valley. Continuing production of diatomite which is packaged as pet litter for several companies under various brand names.
5. Central Oregon Bentonite Co. and Oregon Sun Ranch Inc., Bentonite, Crook County, Sec. 4, T. 19 S., R. 21 E. Continued production of bentonite clay from adjacent properties near Clover Creek, a tributary of Camp Creek.
6. Cascade Pumice and Central Oregon Pumice, Bend area, Deschutes County. Continued production primarily for light-weight aggregate in concrete block manufacturing.
7. CooSand Corporation, Silica sand, Coos County, Sec. 34, T. 24 S., R. 13 W. Continued production of glass sand and abrasive sand from dunes. The sand is shipped by rail to a plant near Portland. Part is cleaned magnetically and used in the production of colored glass containers such as beverage bottles, and part is used as air blast sand and railroad traction sand.
8. Bristol Silica and Lime Company, Jackson County, Sec. 30, T. 36 S., R. 3 W. Continued production of silica rock for decorative granules, abrasives, poultry grit, and filtration media. Their adjacent dolomite deposit was explored and they are installing equipment to produce dolomite in the near future.

Map No.

9. Steatite of Southern Oregon, Soapstone, Jackson County, Secs. 10 and 11, T. 41 S., R. 3W. Continued production of block soapstone for carving. DOGAMI conducted a study of talc deposits in Oregon and prepared a map of this area. A special paper on Oregon talc deposits will be published in 1988.
10. D & D Ag Lime and Rock Co., Roseburg. Old Oregon Portland Lime Quarry, Douglas County, Sec. 20, T. 28 S., R. 5 W. produced a small amount of Ag lime during the year.

Lode Gold Mines

11. Greenback Mine, Josephine County, Sec. 33, T. 33 S., R. 5 W. Geo Gold and Silver and Josephine County Partners optioned the property, revamped the mill, opened up the lower workings, and produced some gold. Pumped out winze, layed tract on 900 level and did sampling. About 200 tons of ore from the Hammersley Mine dump were reportedly processed through the Greenback Mill.
12. Maid of the Mist Mine, Jackson County, Upper Applegate District, Sec. 4, T. 39 S., R. 4 W. Operated in a small way by 3 senior citizens Art Goss, Dudley Smith, and Lou Kula. They have cleaned out old adits; Started milling small quantities of ore in a small ball mill.
13. Gold Blanket Mine, Josephine County, Illinois River District, Sec. 14, T. 38 S., R. 9 W. Near surface pocket-type deposits consisting of several small quartz veins and flat-lying mineralized shears in altered siltstone and chert of a volcanoclastic unit of Late Jurassic age. Primitive operation. Poorly constructed mill, minor production by claim owners.
14. Oregon King Mine (gold and silver), Jefferson County, Ashwood District, Sec. 30, T. 9 S., R. 17 E. ORECO Enterprises conducted a successful heap leach operation. Plan winter shut down and continued production in 1988.
15. Lower Grandview Mine (Thomason), Baker County, Sec. 6, T. 14 S., R. 37 E. Operated in a small way by Art Cheethum, seasonal operation, three men, small mill, modest production.
6. Pyx Mine, Grant County, Greenhorn District, Sec. 1, T. 10 S., R. 35 E. Being worked on seasonal basis by Myron Woodley. Small production from near-surface pocket enrichment and underground vein. Ore is milled at Woodleys Mill in Sumpter.
17. Virtue Mine, Virtue District, Baker County, Sec. 21, T. 9 S., R. 41 E. Being worked by Keith Lyons and Jeff Young. Small production using Lyon's small custom mill in nearby Baker. The mine was an important early-day producer from small high-grade veins. \$2,200,000 total recorded production during 1862-1884; 1893-1899; 1906-1907.

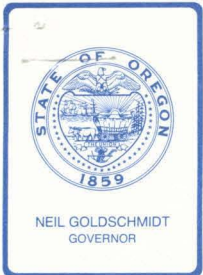
Map No.

18. Golden Eagle Mine (Eagle Group), Baker County, Lake Creek, Sec. 19, T. 9 S., R. 38 E. Woody Allstead working small high-grade deposit using closed-circuit portable mill; also shuts down during winter due to snow.
28. Iron Dike Mine

Placer Mines

19. Bonanza Placer, Baker County, Cornucopia District, Pine Creek. Sec. 3, T. 7 S., R. 45 E. Probably the States largest placer operation in 1987. Employs about 12 men and is doing a good job environmentally.
20. Goldwater Inc. Placer, Baker County, Pine Creek near Hereford, upstream from Highway, T. 12 S., R. 38 E. Small-scale trommel, backhoe-loader.
21. Broken Pick Placer, Baker County, on Clarks Creek, Sec. 12, T. 13 S., R. 41 E. Small-scale operation.
22. Josephine Creek and Tributaries, Josephine County, Three or four small operators T. 38 & 39 S., R. 9 W.
23. Sucker Creek Placers, Josephine County, T. 39 and 40 S., R. 6 and 7 W. Three or four seasonal operations.
24. Coffee Creek Placer, Douglas County, Sec. 7, T. 30 S., R. 2 W. Seasonal..
25. Coyote Creek Placers, Josephine County, Sec. 24, T. 33 S., R. 6 W. Jack Smith, Seasonal.
26. Lower Grave Creek, Josephine County, Secs. 31-32, T. 33 S., R. 7 W. Skipper's placer.
27. Galice area placers, Josephine County, T. 34 & 35 S., R. 8 W., Galice Creek, Rocky Gulch and Peavine. Small, seasonal operations.

File Copy



Department of Geology and Mineral Industries

312 SE "H" STREET, GRANTS PASS, OR 97526 PHONE (503) 476-2496

October 24, 1988

Ernest Soloman
Wahler Associates
P.O. Box 10023
Palo Alto, CA 94303

Freeport-McMoRan Gold Co.
P.O. Box 41330
Reno, Nevada 89504
(702) 826-3000

Dear Mr. Soloman:

American Copper & Nickel Co., Inc.
N. 2314 Cherry Road
Spokane, WA 99216
(509) 928-6128

Formosa Exploration, Inc.
Riddle, Oregon 97469
or
Roseburg, OR 97470

Atlas Precious Metals, Inc.
395 Freeport Blvd., Suite 12
Sparks, Nevada 89431
(702) 356-6086

Galactic Resources, Ltd.
Quartz Mtn. Gold Corp.
Lakeview, OR 97630
(503) 947-3692

Boise Cascade Corp.
P.O. Box 50
Boise, Idaho 83728
(208) 384-6196

Kennecott Minerals Co.
P.O. Box 11248
Salt Lake City, Utah 84147
(801) 322-8475

B.P. America (AMSELCO)
90 West Grove St., Suite 100
Reno, Nevada 89509
(702) 827-2270

Manville Corp.
P.O. Box 287
LaGrande, OR 97850
(503) 963-3987

Chevron Resources Co.
P.O. Box 7147
San Francisco, CA 94120
(415) 894-5496

Morrison Knudsen Co., Inc.
P.O. Box 7808
Boise, ID 83729
(208) 386-5757

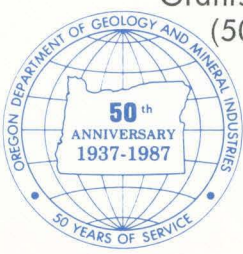
**

Cominco American Resources, Inc.
E. 15120 Euclid Avenue
Spokane, WA 99216
(509) 922-8787

Nerco Minerals, Co.
8100 N.E. Parkway Dr.
Vancouver, WA 98662
(206) 235-3294

** or Reno, NV (702) 323-3335

Savanna Resources, Ltd.
205 S.W. "G" Street
Grants Pass, OR 97526
(503) 479-9795



Page 2

Ernest Soloman
October 24, 1988

UNC Mining and Milling Corp.
Cornucopia Mine
Attn: Larry Bush
Halfway, OR 97834
(503) 742-6606

U. S. Minerals Exploration Co.
141 Union Blvd. Suite 100
Lakewood, CO 80228
(303) 985-4665

Sincerely,

A handwritten signature in cursive script that reads "Len Ramp". The signature is written in dark ink and is positioned above the typed name and title.

Len Ramp
Resident Geologist

LR:rep

EXPLORATION AND MINING ACTIVITY IN OREGON, 1987 *

Both Exploration activity and mining activity in Oregon increased in 1987 over 1986; but the total value of metal production is somewhat less due to the shut-down of Hanna's Nickel Mine and Smelter at Nickel Mountain near Riddle in August of 1986. We have learned of more than 35 exploration sites by 29 separate companies. There are also more than thirty active mines; most of them quite small and seasonal although some are important industrial minerals operations.

Several of the exploration projects are continuing from last year, however, a few are new.

The search has continued for epithermal gold often associated with mercury deposits and formed in areas latent volcanic activity where hot springs have deposited siliceous sinter and opalite in porous tuffs and other volcanic rocks as well as tuffaceous and lacustrine sediments. Most of the resulting mining claims are being held and exploration activity has been progressing. Some new claims have been located and considerable sampling done. The two principal areas of epithermal gold exploration activity include the areas surrounding Vale in northern Malheur County, near the eastern edge of the State, and the Lakeview area in southern Lake County, the south-central part of the State. A few of the other areas being explored may also be classified as epithermal gold deposition.

Volcanogenic sulfide deposits formed in submarine ophiolites and island-arc volcanics are still being held and explored in southwestern Oregon. One example is the Turner-Albright Mine in southern Josephine County held by Savana Resources who have drill-indicated reserves of complex polymetallic sulfide ore with gold, silver, copper, zinc, and cobalt values. Recent ore-dressing work has been done by the U.S. Bureau of Mines on drill core samples from this deposit.

* Prepared by Len Ramp, Resident Geologist, Grants Pass Field Office, DOGAMI

Other volcanogenic sulfides being explored are the Silver Peak Mine in southern Douglas County by Formosa Exploration, Inc. and the Goff Mine in northern Josephine County by AMSELCO (Now known as BP America).

Exploration in the Baker area of northeastern Oregon is focused mainly on quartz veins and mineralized shear zones. The gold mineralization is genetically related to granitic intrusive rocks. The principal host rocks are argillite and chert of the Permian-Triassic Elkhorn Ridge Formation. A few of the deposits are in fractured hydrothermally altered zones in the granitic intrusive rocks and narrow veins in gabbro and meta andesite.

Some attention is also still being paid to large areas of hydrothermal alteration in Tertiary volcanic rocks of the Western Cascades.

While private industry is involved almost exclusively with gold exploration, the Oregon Department of Geology and Mineral Industries (DOGAMI) has been studying industrial minerals potential in the State. A study of Oregon's talc deposits will be the first to be completed and published later this year. It will be followed by reports on limestone, silica, and bentonitic clay deposits.

ACTIVE MINES OREGON 1987

Industrial Minerals

Map No.

1. Ash Grove Cement West in Baker County, Sec. 11, T. 12 S., R. 43 E. Continued production of crushed limestone (marble) for refining beet sugar and production of cement from marble and shale mined by the plant site along U.S. 1-84 near Durkee. Production is valued at about \$25 million per year.
2. Eagle-Picher Industries (Diatomite) in Harney and Malheur Counties, T. 19 and 20 S., R. 35, 36, and 37 E. operate a mill near Vale. The diatomite is processed by air classification and flux calcining (partial fusion and agglomeration) and sold under the brand name of Celatom which is used as a filter aid for water, beverages (beer), syrups, juices, edible oils, fuels, and pharmaceuticals.
3. Teague Mineral Products Mines Bentonite and Zeolite in Malheur County, Secs. 8, 28 & 29, T. 23 S., R. 46 E. Bentonite is used in drilling muds, pet litter, binder for hay pelletizing, and as a sealant for ponds, ditches and solid waste disposal. Clinoptilolite (zeolite) is produced from a mine on Succor Creek, mostly for pet litter and several other uses including odor control products, fungicide carriers, and ammonia absorbent in aquarium systems. Clinoptilolite also readily absorbs radioactive cesium and future usage is being tested.
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5. Central Oregon Bentonite Co. and Oregon Sun Ranch, Inc. (Bentonite) are located in Crook County, Sec. 4, T. 19 S., R. 21 E. Both companies continued production of bentonite clay from adjacent properties near Clover Creek, a tributary of Camp Creek.
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Map No.

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Map No.

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18. Golden Eagle Mine (Eagle Group) is located in Baker County on Lake Creek, Sec. 19, T. 9 S., R. 38 E. Owner-operator Woody Allstead is working the small high-grade deposit using closed-circuit portable mill. This operation also shuts down during winter due to snow.
19. Iron Dyke Mine, Baker County is located on the Snake River, Sec. 21, T. 6 S., R. 48 E. Silver King Mines, Inc. produced 15,000 tons of ore average 3.5% Cu, 0.35 oz. Au, and 0.5 oz. Ag/ton which was processed in Silver King Mill at Copper Cliffs Mine near Cuprum, Idaho. Ore is trucked 22 miles; 11 people were employed. A drilling project was to start in December.
20. Gold Ridge Mine, Baker County, Secs. 16-17, T. 12 S., R. 43 E. Milton Mitchek, operator, had some production during year using a small mill at the mine.
21. Ruth Mine, Marion County, North Santiam District, Sec. 27, T. 8 S., R. 5 E. Shiny Rock Mining Co. milled ore and shipped floatation concentrates containing Au, Ag, Pb, Zn to China.

Placer Mines

22. Bonanza Mining Co. Placer in Baker County, Cornucopia District, Pine Creek, Sec. 3, T. 7 S., R. 45 E. was the States largest placer operation in 1987. The operation employs about 12 people and is doing a good job environmentally. Manager-operator is Tom Bonn, Mining Engineer, who designed the equipment and operating plan. A truck-mounted grizzly, trommel and sluice is used to wash the gold from the gravel.
23. Goldwater, Inc. Placer, Baker County on Pine Creek near Hereford, upstream from Highway, T. 12 S., R. 38 E. A small-scale trommel, backhoe-loader are used and the mine has been active for about 6 months each year for several years.
24. Broken Pick Placer, Baker County, on Clarks Creek, Sec. 12, T. 13 S., R. 41 E. This small-scale operation has also been active for several years.
25. Josephine Creek and tributaries, Josephine County. Three or four small operations T. 38 & 39 S., R. 9 W.

Map No.

26. Sucker Creek Placers, Josephine County, Ts. 39 and 40, Rs. 6 and 7 W.
Three or four seasonal operations.
27. Coffee Creek Placer, Douglas County, Sec. 7, T. 30 S., R. 2 W.
Seasonal operation has been worked for several years.
28. Coyote Creek Placers, Josephine County, Sec. 24, T. 33 S., R. 6 W.
Jack Smith operator. Seasonal.
29. Lower Grave Creek, Josephine County, Secs. 31-32, T. 33 S., R. 7 W.
Skipper's placer.
30. Galice area placers, Josephine County, Ts. 34 and 35 S., R. 8 W.,
Galice Creek, Rocky Gulch, Taylor Creek and Peavine. All small,
seasonal operations.

EXPLORATION AND MINING ACTIVITY IN OREGON, 1981

Presented At

NORTHWEST MINING ASSOCIATION CONVENTION

December 5, 1981

By

Len Ramp

Oregon Department of Geology and Mineral Industries

EXPLORATION AND MINING ACTIVITY IN OREGON, 1981

12/4/81

The following list summarizes active mines and exploration in Oregon during 1981.

MINES IN EASTERN OREGON

Map No.	Name	Sec.	Location		Description
			T.	R.	
1.	Iron Dyke Mine	21	6S	48E	Texas Gulf owner. Silver King operator. 150 T.P.D. trucked to Silver King floatation mill at Cuprum, Idaho. Massive sulfide ore contains Au, Ag, Cu. The mine employs 40 on a 5-day basis.
2.	Oregon Portland Cement		11S (Near Durkee)	43E	Continuing operation of new 500,000-ton coal-fired plant.
3.	Mormon Basin Placer	21	13S	42E	Dragline & washing plant reported 10 to 20 oz/day production. Mine was purchased by Vita Grande Corp. last spring.
4.	Pyx Mine	1 & 2	10S	35E	4 men; small production.
5.	Thomason Mine	6 & 7 (Bull Run Mtn)	14S	37E	Art Cheetam, operator. Unity area. 3 men. Gold in serpentine shear zone. 1-ton/hour mill. Good little operation.
6.	Adrian Bentonite	29 (Malhuer County)	23S	46E	Teague Mineral Products. Drying and bagging plant. Small production.
7.	Cascade Pumice and Central Oregon Pumice	Bend area Deschutes County (Two companies)			Continuing operation with increase in annual production.
8.	Christmas Valley Diatomite		27S	17E	Oil-Dri West pet litter & floor sweep. Continuing production.

MINES IN WESTERN OREGON

9.	Quartz Mtn. Silica	2	28S	1E	10,000 tons this year; down from normal production of 20 - 25 thousand.
10.	Nickel Mtn.	17	30S	6W	Continuing production at mine & smelter. Lower Ni price & increased energy cost pinching profits. 1980 production equals 16,117 tons; up about 7 percent over 1979 production of 15,065 tons.
11.	Old Channel Placer	35	34S	8W	Wes Pieren rip-up of bedrock; pump-slucice.
12.	Sucker Creek Placer	1	40S	7W	Gallagher's washing plant.
13.	Bristol Silica	30	36S	3W	Produced some "Dolomite".
14.	Steatite of Southern Oregon	10-11	41S	3W	Block soapstone for carving. Production small but increasing.
15.	Sylvanite-Lyman Mine	2	36S	3W	Small-scale mining high-grade from old workings.

EXPLORATION IN WESTERN OREGON

Map No.	Mine or area	Location			Company & nature of work
		Sec.	T.	R.	
1.	North Santiam Area Ruth Mine	27	8S	5W	AMOCO drilling and exploring surrounding area of Western Cascades Volcanics.
2.	Bohemia District Champion & Helena Mines	7,18, 12,13	23S	1 & 2E	Hanuman (Galactic Resources Ltd.) mapping and sampling. Reopened workings, surface & underground. Plan to drill.
	President (El Capitain)	23	23S	1E	Local group planning to build mill.
	N. Fairview Lead Crystal Elephant II Lizzie	2 & 11	23S	1E	Guy Leabo & Associates constructing small mill for both free milling & complex ore.
3.	Coos County Coal	Coos Bay & Eden Ridge			Several companies: Kennecott, Bear Creek, Amax, Canasia & others involved in exploration, leasing, mapping, etc. & some drilling.
4.	Glendale McCullough Creek	30	32S	6W	Exxon has done geophysical work, leasing, surface mapping & sampling and drilling sulfide mineralized zone.
5.	Goff Prospect	29	33S	7W	American Selco drilling segment of Big Yank ledge in barite area & abundant sulfides.
6.	Yankee Silver	25,26	34S	8W	Owner George Reynolds prospecting siliceous gold ore and plans mill test at Greenback Mill.
7.	Almeda (Big Yank)	13 (on Rogue River)	34S	8W	Comanche Petroleum & Blue Diamond Energy Resources. Optioned property & located claims & did geophysical survey this summer. Hope to develop Au, Ag, and Barite ores.
8.	Warner Mine	4	33S	4W	Galactic Resources opened workings. Mapped and sampled. Plan to drill geophysical anomaly.
9.	Yellowhorn	5	33S	5W	John Miller reopening & building small mill. 3 men employed.
10.	Oak Mine	4	35S	5W	Dennison has done a geophysical survey and plans to drill anomalies.
11.	Fall Creek Copper	4	38S	9W	Mining Enterprises of Arnold California has done a geophysical survey & plans to drill.
12.	Lightning Gulch Group		38 & 39S	9W	F.M.C. doing geophysical, geochem, claim staking, mapping, etc. Extensive area

EXPLORATION IN WESTERN OREGON (continued)

Map					Company & nature of work
No.	Mine or area	Sec.	T.	R.	
13.	Nickel Laterite	SW Oregon			Inspiration Development, U.S. Nickel, Hanna Mining all holding claims and are doing assessment work to extend reserves. Results of Pilot Plant Mill testing at UOP for U.S. Bureau of Mines has not as yet been reported.
14.	Turner-Albright Cu	15-16	41S	9W	Barretta recently completed extensive drilling, mapping, and sampling program.
15a.	Esterly Placer area	22	40S	8W	Cal Nickel exploring with tentative plans to set up an operation.
15b.	Queen of Bronze	36	40S	8W	Dennison continued mapping and sampling underground plus surface geophysical work.
16.	Iron Hat	17	37S	5W	Associated Geologists (Lloyd Frizzell) plans to drill EM anomaly in December.

EXPLORATION IN EASTERN OREGON

17.	Flora Coal	Northern Wallowa County			Utah International mapping, leasing, drilling lignite deposit up to 40-ft thick. Environmental concerns have impeded progress.
18.	Cornucopia Mine	27-28	6S	45E	United Nuclear Mining & Milling Services, Inc. reopening. Plans extensive exploration and testing. Rehabilitated old Coulter adit (2,000 ft level).
19.	Camp Carson Placer	28	6S	36E	Local group has moved in equipment to reactivate.
20.	Cougar Mine	27	8S	35½E	W.A. Bowes & Assoc. have been exploring for 5 years. Shut down late this summer and moved to S. Mtn. Idaho.
21a.	North Pole, E&E, and Columbia	32	8S	37E	Brooks Minerals & Amax driving 3,800 ft adit 400 ft below old adit on mineralized fracture zone 10-300 ft wide X 4½ mi long in argillite. Prior production from zone about \$9,000,000. Forty people employed. Plan \$1,000,000 mill near Borne, a ghost town below the mines on Cracker Creek.
21b.	Argonaut Mine	19	8S	37E	Baker Mines Ltd (Norvan Ltd) reopening and extending old workings and sampling.
22.	Sumpter Valley Placer		10S	37 & 38E	Noranda sampling dredge tailings. Application for permits, land acquisition. May redredge.

EXPLORATION IN EASTERN OREGON (continued)

Map No.	Mine or area	Location			Company and nature of work
		Sec.	T.	R.	
23.	Bald Mtn and Ibex Mines	4	9S	36E	Nerco, Inc (P.P.&L.) reopening old workings and sampling 5-25 ft wide quartz-calcite vein in argillite.
24.	Chambers Mine & others	13	14S	32E	American Chrome (Baretta) did some drilling of chromite deposits in Canyon Mtn area.
25.	Hope Butte	21	17S	43E	Homestake Mining Co exploring area of the old Jordan Hg prospect for gold in opalized tuffs and rhyolite flows with interbedded lake sediments. Work begun in 1979 and continuing.
26.	Trout Creek Mts. McDermitt Caldera	McDermitt Caldera			Anaconda & other major companies, Placer Amax continuing exploration for Uranium in Miocene ash-flow tuffs and lake sediments
27.	Grouse Springs (Unity)	24- 25	14S	36E	Johns Manville Cu Mo (?). Did some drilling for assessment work.

The above list of exploration activity is incomplete in part due to our lack of information and in part due to requests by private operators to keep information confidential.

GEOHERMAL EXPLORATION ACTIVITY

Geothermal activity can be divided into three categories - private, U.S.G.S. and DOGAMI.

PRIVATE

Private company activity (see table) has centered in the Vale area at Breitenbush and Belknap Hot Springs areas in the Cascades, Glass Buttes and in the Owyhee Lake area.

Prospect holes (less than 2,000') have been drilled by Hunt Energy, Butler and Butler, and by Union Oil near Vale (Malheur County); by Francana Resources near Glass Buttes in Lake County, and by Chevron near Belknap Hot Springs, Lane County.

Deep drilling is being done by SunOCO Energy Development Co. near Breitenbush Hot Springs following a series of shallow prospect holes drilled last year in the area. They plan a 9,000 ft test and are probably near 6,000 ft at this time.

U.S.G.S.

The U.S.G.S. projects include geologic mapping, a variety of geophysical surveys and drilling. Their major efforts and successes have been at Mount Hood and Newberry Crater. The 4,000 ft test well near Timberline Lodge at Mount Hood measured 80°C (176°F) and yielded hot water at a rate of 110 gpm. The U.S.G.S. test well at Newberry Volcano measured a temperature of 265°C (509°F) at 3,057 feet depth. This is the highest temperature yet encountered in any geothermal drilling as yet in Oregon and is an important find.

DOGAMI

Oregon Department of Geology and Mineral Industries geothermal research activities included completion of drilling temperature gradient holes at Powell Buttes and Harney Basin and starting a similar program near Corbett Warm Spring about 10 miles east of Portland along

the Columbia River. The Department has issued nine open-file geothermal reports on Lakeview, Alvord area, North Harney Basin, Snake River Plain, LaGrande (Hot Lake) and McKenzie Pass area. In addition ten reports have been issued on the Cascades including: aeromagnetic maps, gravity maps, and reports on tectonic rotation, geologic lineaments, Old Maid Flats drill logs, and a detailed map of the Breitenbush Hot Springs area. Field studies on the Cascades, Mount Hood, Burns and Vale areas are continuing and reports will be released in 1982.

OIL AND GAS ACTIVITY

Twenty wells have been drilled during the year resulting in 3 gas producers in the Mist area of Columbia County. Sixteen sites have been abandoned and drilling is continuing. A total of more than 94,000 feet have been drilled so the average depth of drilling has been about 5,000 feet. Twenty nine new permits have been issued this year.

A new gas reservoir was discovered at Mist which tested 2.6 million cubic feet per day. A small show of gas was discovered near Lebanon in the Willamette Valley by American Quasar. Although not commercial it is encouraging evidence that commercial quantities of gas may exist in the area.

Four drilling rigs operated in Oregon this year an all-time high for oil and gas exploration.

Mist gas production dropped from 20 million cf per day last winter to about 12 million in the summer. At a price of \$2.85/Mcf the production is valued at \$34,000 per day at the summer rate. Total 1981 production will be about \$11 million.

MINING ACTIVITY SW OREGON 1985

PLACER MINING

Several small placer operations (mainly small venturi-type, one-man under-water dredges) continued activity in Josephine County on streams such as Josephine Creek and its tributaries (Days Gulch, Fiddler Gulch, and Canyon Creek), Sucker Creek, Althouse Creek, Democrat Gulch, Briggs Creek and its tributaries (Red Dog, Swede, and Secret Creeks). The Illinois River at various sites between the Forest Service boundary at Eight Dollar Mountain and the mouth of Briggs Creek; but proposed rules for the Wild and Scenic Illinois River Management Plan would end the use of small dredges along it. In the Galice area small placer operations continued along Galice Creek, Taylor Creek and Rocky Gulch, where Bruce Crawford recovered a 4-ounce 2 pennyweight nugget this fall.

Some small-scale placer mining activity also continued along Grave Creek (in both Josephine and Jackson counties) and its tributaries Coyote and Wolf Creeks. Seasonal placer operations also continued on upper Jump Off Joe Creek.

Bill Smith continued operation of his Coffee Creek Placer in Douglas County and itinerant placer activity was also seen along Cow Creek.

In Jackson County the Rogue River between Gold Hill and Gold Ray Dam saw considerable dredging activity again this year.

LODE MINING

Greenback Mine which was being explored by Mega Gold Resources last year was turned back to the owners - Sunny Valley Mining and Development Co., who are currently mining high-grade ore from the Irish Girl vein and operating the mill part time.

Fall Creek Gold A new discovery of high-grade gold-bearing quartz vein exposed

in upper Fall Creek about a mile above the old Hall Cabin site was made this past year and some limited development work and mining is reported by owner Tim VonPinnon. Very little production has come from the vein thus far; but some coarse gold nuggets were recovered from placer work downstream from the vein. Further development and mining is planned.

Nickel Mountain Mine Hanna Nickel Mining & Smelting Company

The new wet screening plant has been installed and tested. It will undoubtedly be in operation by the time this report is made. The new plant enables rapid upgrading by washing the higher-grade soft fine material off the relatively unweathered rock. The water and fines slurry go through a 300-ft diameter thickener before being transported $2\frac{1}{2}$ miles down the mountain in 10-inch diameter steel pipe to the smelter where 5 centrifuges separate most of the water from the concentrate before smelting. A conveyor belt is being constructed to transport ore from the lower ore body up to the wet screening plant. A 12.2 cu yard Marion 191 electric shovel will be used for mining about 7 million tons per year. Now only about 10 percent of the material mined will be smelted. The new equipment will enable Hanna to produce nickel for about \$1.90 per pound. The minus 200 mesh wet screened concentrate contains about 2.1 percent Ni.

During 1985 the smelter operated until mid June using the remaining high-grade ore from the main ore body and some selected from the lower ore body. It was then shut down for construction of the wet-screening plant. Also during 1984 and 1985 some of the ferro nickel was poured as cone-shaped "nickel nuggets" each weighing about 1/2 pound instead of the traditional 28 to 30 pound bars or "pigs".

NON METALS

Bristol Silica & Limestone Co under new management has continued producing metallurgical-grade silica rock for Dow Corning, decorative silica granules, some abrasives, poultry grit, and fine-ground silica for filtration. Production is down somewhat from 1984 and no limestone has been shipped this year.

Steatite of Southern Oregon continued to produce block soapstone for carving from their mine on Elliott Creek Ridge in Southern Jackson County. Shipments are down slightly from 1984; but the deposit continues to produce quality carving material.

Quartz Mountain Silica Hanna Mining Company continued to use silica rock from Quartz Mountain deposit in eastern Douglas County but production has been lower in 1985 due to smelter shut down during construction of the new wet screening facility. The company is interested in finding another source of silica rock due to the high rate of U.S. Forest Service road maintenance charges for haulage of rock from this deposit.

EXPLORATION ACTIVITY

1. Turner Albright: Exploration activity continued on the volcanogenic massive sulfide deposit situated near the California line in southern Josephine County. Ray Rock did a pulse E.M. geophysical survey to determine down-dip extension of the ore. Ore-dressing research is being conducted on the complex sulfide ore by U.S. Bureau of Mines research center in Salt Lake City. The U.S. Geological Survey is also conducting a study of the deposit as an on-shore example of submarine black-smoker deposits.
2. Goff Mine: Amselco is conducting a drilling project in the Goff Mine stratabound sulfide deposit on lands leased from Josephine County for exploration. The deposit is located about two miles north of Grave Creek between Rock Creek and Reuben Creek. The deposit is in siliceous tuffs and contains massive sulfides capped by barite, similar to the Almeda deposit.
3. Fall Creek Copper: Seneca Exploration of Vancouver, B.C. is conducting a geologic mapping and sampling project on the Fall Creek massive sulfide deposit and vicinity. The work is being done under contract with Litho-Logic Resources of Grants Pass. The Fall Creek deposit is situated about 10 miles west of Selma along Fall Creek, a tributary of the Illinois River.

4. Gold Note Mine: Boise Cascade conducted an exploration project in the vicinity of the Gold Note stratabound sulfide deposit on the Josephine-Jackson County line upper Grave Creek area. Some drilling was reportedly done.
5. Foster Creek Sulfide Zone: Cascade Sulfur Company has been conducting an exploration of soil amendment material mined from an area of hydrothermal alteration of dacitic volcanic rocks in the Foster Creek drainage of northeastern Jackson County. The material is reportedly in large part bentonitic clays (montmorillonite) with some pyrophyllite, fine disseminated pyrite and secondary sulfates. Test results on application to both alkaline and acid soils appear to be very encouraging. More than 1,000 tons of material have been mined and applied to various sites including Klamath and Lake County alfalfa fields and on the BLM tree plantation near Provolt. The company plans further testing and development of their deposit.
6. Upper Grave Creek placer ground: Tom McMillan reportedly did some testing of placer ground on Boise Cascade property on upper Grave Creek above Pease Ranch.
7. Gold Bug Mine: GeoMining Company of Salt Lake City has reopened the old Gold Bug Mine located in the Mount Reuben Mining District, about 2 miles north of the Rogue River. Youngberg (1947) reported that ore has been stoped for 600 ft on the dip of the ore shoot. The mine reportedly produced about \$750,000 from ore having a gold content of \$50 per ton about the turn of the century. The ore shoot is at the junction of two mineralized shear zones in greenstone. Youngberg reported assays of about 0.60 ounces per ton. Work at the mine has stoped for the winter; but will probably be continued next summer.

8. John Hall Group: David Gaunt and Gene Lattimer of Sunny Valley have reopened the old John Hall Mine workings $1\frac{1}{2}$ miles southwest of Placer on Grave Creek. They have set up a small mill and are trying to develop some high-grade ore reported to remain on the property. Gaunt has been exploring the deposit on a part-time basis for several years.

Talk for Southern Oregon Miners Convention
Cave Junction April 22, 1983

Len Ramp

GEOLOGIC MAPPING FOR UNDERSTANDING
AND FINDING MINERAL DEPOSITS

Geologic mapping is a necessary tool in understanding and finding mineral deposits. Knowing that massive sulfide deposits such as the Turner-Albright occur in submarine basalts (pillow lavas) near the top of a sheeted diabasic dike complex of the Josephine Ophiolite gives geologists a guideline to find other similar deposits when the surrounding area has been mapped in fair detail. Mapping by Greg Harper in Northern California gives an excellent guide to prospecting for other similar sulfide deposits in the area.

The Josephine Ophiolite is part of the Western Jurassic belt of rocks while deposits such as the Queen of Bronze and the Babcock prospect occur in ophiolitic rocks of the Western Paleozoic and Triassic belt which has been mapped as the Applegate Group.

This designation of major geologic terrains separated by east-dipping thrust faults is an outgrowth of a fairly recent revolution in geologic thinking or understanding known as plate tectonics.

Oceanic plates (ophiolites) pushed by major spreading centers such as the East Pacific Rise and the Mid-Atlantic Ridge as well as by minor spreading fractures have apparently been active features on the earth's crust for considerable geologic time, at least since early Mesozoic when thrusting in the Klamath Mountains of Southwestern Oregon began. Where oceanic plates collide with continental margins the former is generally shoved under the continental margin along a fracture or subduction zone paralleling the coastline at or near the base of the continental slope. The east-dipping thrust faults which bound the Western Jurassic and Western Paleozoic and Triassic belts are probably former subduction zones.

The rocks of the Klamath Mountains Province of Southwestern Oregon west of the Western Cascades and south of the Coast Range have formed at or beneath the ocean floor. A normal section of oceanic crust from upper mantle (subcrusted rocks) up to the ocean floor volcanics and sediments make up a suite of rocks known as an ophiolite. The marine environment also usually has a few areas of island-forming volcanos referred to as island-arc terranes.

When you include the igneous plutons such as the Grayback, Grants Pass and other bodies of granitic to gabbroic rocks which are products of melting and subsurface crystallization you have a very general overall picture of the geology of the area.

In addition to massive sulfide deposits in ophiolites such as the Turner Albright and Queen of Bronze mines, we have important stratabound volcanogenic massive sulfide deposits formed in volcanic strata of island-arc environments such as the Almeda Mine and Silver Peak Mine. Perhaps the best reference to a general description of these sulfide deposits is an article by Koski and Derkey in the September 1981 issue of Oregon Geology (formerly Ore-Bin) entitled "Massive Sulfide Deposits in Oceanic-Crust and Island-Arc Terrances of Southwestern Oregon." Another important recent issue of Oregon Geology was January 1983 which contains Greg Harper's paper on the Josephine Ophiolite. With this background of relatively ^{new} ~~so~~ geologic thinking and understanding our area is in timely need of new geologic mapping on a larger scale and taking a closer look at the rock types; their origin and structures.

This work has been started by the U.S. Geological Survey in conjunction with their 1° x 2° Medford Quad, Wilderness area maps, preliminary maps of the Selma, Glendale, Wimer and parts of the Gold Hill, Ruch, Medford, and Talent Quads.

The Department (DOGAMI) has begun a series of $7\frac{1}{2}$ -minute, 1:24,000 scale geologic mapping in the area. The first to be completed will be the $SE\frac{1}{4}$ of the Pearsoll Peak Quadrangle to be followed by the $NW\frac{1}{4}$ of the Cave Junction Quadrangle. I am doing the work on these two quads.

We hope that this work and other geologic mapping in the area, perhaps by PhD Candidates will enhance the prospecting for and developing of valuable mineral deposits.

Particular attention is being paid to deposits of strategic minerals such as chromite, cobalt, platinum-group metals associated with chromite and ultramafic rocks, nickel in the form of native metal as well as volcanogenic sulfide deposits.

MINERAL RESOURCES AND WILDERNESS AREAS

(Testimony prepared for presentation at public hearing by Congressman James Weaver, Chairman Public Lands Sub Committee of the House, Forest, Family Farms, and Energy sub committee)

Certain basic facts regarding mineral resources need to be considered. A few are listed here.

1. Strategic and critical minerals and metals (those that are in short supply in the United States and we depend on outside sources for their production and availability). Metals such as cobalt, chromium, nickel, platinum-group metals, strontium, tantalum, aluminum, manganese, columbium and antimony are high on the strategic list. (See Figure 2, page 22, second annual report of Secretary of the Interior under the Mining and Minerals Policy Act of 1970).
2. Because of their strategic nature, the exploration and development of any potentially commercial deposits of these metals and minerals which could enhance our domestic supply should be encouraged by our government.
3. Public lands in the Western States managed by the Forest Service (U.S.D.A.) and Bureau of Land Management (U.S.D.I.) are the major source areas which remain available for exploration and mining in the United States.
4. Mineral deposits of sufficient size and grade to be economically feasible for mining are relatively rare and will be found to represent only a very small percent of the total public land acreage.
5. Withdrawals of various types and for various purposes, including wilderness areas and wild and scenic river corridors with scenic easements have drastically affected the total acreage available for mineral exploration.

6. No public land should be withdrawn from mineral entry by any method until it has been determined to be devoid of potential mineral resources by means of an adequate resource survey.
7. Mineral-bearing lands that have been withdrawn in previous years should by legislative process be re-opened to mineral exploration and development.
8. Federal and State resource agencies such as the U.S. Geological Survey, U.S. Bureau of Mines, and Oregon Department of Geology and Mineral Industries either have the data already available or the scientific capabilities of evaluating the mineral resource potential of lands being considered for withdrawal or re-opening. These agencies should be consulted prior to any action changing land status and their advice should be followed.
9. State and Federal mined land reclamation laws are adequate to protect our public lands from long-term environmental scars.
10. Federal mining regulations imposed by the U.S. Forest Service and Bureau of Land Management should be looked at critically with the purpose in mind of encouraging rather than preventing the development of our domestic mineral resources. If it is found that these regulations seriously hamper or prevent the development of private mining operations, the regulations should be changed.
11. Federal and State mining laws should be reviewed with the purpose in mind of preserving and enhancing the incentive for discovery by individual prospectors and streamlining and standardizing claim location procedures so as to bring order out of chaos.
12. The State of Oregon Department of Geology and Mineral Industries stands ready to supply information and advice on any subject related to geology and mineral resources in Oregon. You may feel free to call on them at any time.

Respectfully submitted by Len Ramp,
Resident Geologist