

## CRIB MINERAL RESOURCES FILE 12

## RECORD IDENTIFICATION

RECORD NO..... M029030  
 RECORD TYPE..... XIM  
 COUNTRY/ORGANIZATION. USGS  
 DEPOSIT NO..... L2  
 MAP CODE NO. OF REC..

## REPORTER

NAME..... WALKER, GEORGE W.  
 DATE..... 78 01

## NAME AND LOCATION

DEPOSIT NAME..... LUCKY LASS MINE

COUNTRY CODE..... US  
 COUNTRY NAME: UNITED STATES

STATE CODE..... OR  
 STATE NAME: OREGON

COUNTY..... LAKE

QUAD SCALE            QUAD NO OR NAME  
 1: 24000            CDX FLAT

LATITUDE            LONGITUDE  
 42-20-07N            120-32-20W

UTM NORTHING        UTM EASTING        UTM ZONE NO  
 4689722.5            702761.4            +10

TWP..... 037S  
 RANGE..... 018E  
 SECTION.. 25  
 MERIDIAN. WILLAMETTE

## COMMODITY INFORMATION

COMMODITIES PRESENT..... U    HG

ORE MATERIALS (MINERALS, ROCKS, ETC.):  
 AUTUNITE, NOVACEKITE

## ANALYTICAL DATA (GENERAL)

0.42 - EU; 0.55 - U; 0.44 - EU; 0.67 - U

## DESCRIPTION OF DEPOSIT

## DEPOSIT TYPES:

DISSEMINATION - FRACTURE COATING

## PRODUCTION

YES

SMALL PRODUCTION

## GEOLOGY AND MINERALOGY

HOST ROCK TYPES..... TUFF AND AGGLOMERATE

## GENERAL REFERENCES

- 1) COHENDUR, 1960 , GEOL. AND URAN. OCCURRENCES...: USAEC RME-2070
- 2) MATTHEW, T.C., 1955 , OREGON RADIO. DISC.: ORE BIN
- 3) ERIKSON, E.H., AND CURRY, W.E., 1977 : U.S. D.O.E. REPT. GJBX-92 (77)

Tom W

## White King and Lucky Lass Uranium Mines Cleanup



### Update

It is time to provide an update on the cleanup of the White King and Lucky Lass uranium mines on the Fremont National Forest in Lake County, Oregon. Several factors have altered the process the Forest Service is using in the cleanup.

First of all, let's note some of the activities which have occurred or are occurring since the release of the DEIS-RI/FS (Draft Environmental Impact Statement-Remedial Investigation/Feasibility Study):

- The mines site was proposed for listing on the National Priorities List on June 23, 1993. Sites on the list, which is compiled by the U.S. Environmental Protection Agency (EPA), are priorities for long-term remedial evaluation and action due to uncontrolled releases of hazardous substances. Final listing is pending.
- A Memorandum of Agreement between the Forest Service, State of Oregon and EPA was executed in October 1994 to proceed with cleanup of the mines site. Roles of the agencies are still being defined.
- Forest Service contact with potentially responsible parties (PRPs) in an effort to obtain PRP funding and/or performance of cleanup at the site continues.
- Forest Service activities will follow laws and regulations specific to hazardous waste cleanup, more specifically, the amended Comprehensive Environmental Response, Compensation, and Liability Act and the National Contingency Plan. As these provide for a process which is the functional equivalent of the analysis required by the National Environmental Policy Act, including public participation, NEPA documents are not required.

### What Is Planned For 1995?

On the ground, the Forest Service's main focus will be conducting cleanup activities at the Lucky Lass Mine. On September 21, Forest Supervisor Chuck Graham authorized the completion of a document called an Engineering Evaluation/Cost Analysis (EE/CA) for a Non-time Critical Removal Action at the Lucky Lass. The Forest Service has contracted with Dames and Moore, Portland, to develop the document. Various approaches for treating the contaminated water and soil at the mine, including a preferred approach, will be included in the document. The document will be available for public review and comment sometime after the first of the year. A notice of availability will be published in local newspapers and will be mailed through the project mailing list.

01/20/17

The Forest Service anticipates additional site investigations will be conducted in order to complete a Remedial Investigation/Feasibility Study.

### **We Want To Hear From You**

The Forest Service is committed to ensuring that the public has input to decisions about cleanup activities and is well-informed about the progress of those activities. We are interested in your concerns and issues and information needs regarding the cleanup and invite your comments on how we can provide opportunities for public participation. We invite your comments by writing to Forest Supervisor, c/o Lakeview Ranger District, HC 64 Box 60, Lakeview, Oregon, 97630. For further information, please contact Norm Day, Acting Project Manager, R6 Regional Office, Portland, at 503-326-2921 or Janine Cannon, Environmental Coordinator, Lakeview Ranger District, at 503-947-3334.

## WHITE KING AND LUCKY LASS URANIUM MINES

### Background

The only commercial production of uranium ore in Oregon occurred about 15 miles northwest of the Lakeview community. The mines are located in the southern Fremont Mountains at about 6,300 feet in elevation. The White King mine is on the western edge of a large montane meadow through which Augur Creek flows. The Lucky Lass is about one mile northwest of the White King in a more heavily timbered area.

The ore bodies were mined from 1955 to about as late as 1965. The following excerpt from a 1969 Congressional Report on "Mineral and Water Resources of Oregon", gives a brief description of the ore deposits:

"The uranium mineralization at the White King appears to be geologically quite recent and is associated with a flow-banded rhyolite dike (?) that has intruded clayey tuffs, tuff breccias, agglomerates, and basaltic lava flows of Pliocene age. Black uranium oxides and associated realgar, stibnite, pyrite, cinnabar, ilsemanite, galena, and chalcedony indicate a relatively low-temperature hydrothermal origin for the deposit. Opalization and clay alteration are prominent in the ore bodies, which tend to be somewhat tabular and are displaced by numerous northwest and northeast-trending faults. Near the surface, concentrations of a rare, bright yellow-green, secondary uranium mineral, metaheinrichite (barium uranyl arsenate), vivid blue ilsemanite (hydrous molybdenum oxide), and the orange and yellow arsenic sulfides realgar and orpiment make a very colorful and interesting mineral deposit (Peterson, 1958, 1959b).

At the Lucky Lass just a mile to the west the same thin-layered clayey tuffs and volcanic breccias as those of the White King are hosts for both primary and secondary uranium minerals. The mineralization has been controlled by narrow northwest faults and is found in pods and irregular masses in and adjacent to the faults. None of the arsenic, molybdenum, or mercury minerals have so far been found at the Lucky Lass."

Underground development of the White King was attempted initially, with some 4,000 feet of tunnels excavated down to depths of about 260 feet. However, large volumes of water prevented further development of the deposit in this manner. Core drilling had shown the best deposits to apparently be located at a depth of 700 feet. This deeper ore body was never mined.

In the later years that the mine was worked, near-surface ore was mined by open pit methods. As best we can determine, just under 115,000 tons of ore were mined out of the White King by about 1959 and processed at the Lakeview mill.

Operators of the Lucky Lass also utilized open pit mining methods. Less than 5,000 tons of ore were produced from this mine between 1956-1958. Similar

water problems affected development of the Lass. After closure of the Lakeview mill in late 1960, small amounts of ore produced from both mines between 1961-65, were shipped to Salt Lake City for processing.

The grade of ore processed at the Lakeview mill from both mines averaged about 0.15%  $U_3O_8$ . The total production was about 200 tons of  $U_3O_8$  from the mill.

#### Present Conditions of the Mines

The Lucky Lass is situated entirely on U.S. Forest land. The White King is located on U.S. Forest and private lands. Mineral rights on both deposits remain active and this problem must be addressed early in the process. Neither mine has been worked after 1965, even though uranium mining and ore prices reached their peak in the late 70's and early 80's. It can be speculated that the low grade of the ore in the deposits, along with the associated environmental problems, did not warrant further investment. The near-term for uranium mining in the U.S. as a whole is now very bleak.

The White King open pit covers an area approximately 25 acres in size. During efforts to dewater the pit in 1978, the volume of water in the pit was estimated at about 90,000,000 gallons. There are two separate piles of mine over burden and low-grade ore that cover an additional 70 acres. In comparison, the Lucky Lass covers a much smaller area, about 30-40 acres total. The volume of water in the Lass pit is probably less than 5,000,000 gallons.

WHITE KING MINE DEWATER '78

DATA FROM WESTERN NUCLEAR

SAMPLING DATE

CONSTITUENT	8/31	9/21	10/19	11/9
pH	3.9	3.8	3.3	4.3
TDS (mg/l)	451	546	1044	665
Fe (mg/l)	2.0	3.4	99.7	43.6
Zn (mg/l)	0.33	0.36	0.92	0.52
As (mg/l)	0.11	1.11	33.5	10.3
Sulfates (mg/l)	210	260	650	400

Dewatering stopped 12/78

*Western Nuc dewatered about 90 million gallons of water during this time (Sept - Dec 1978)*

WHITE KING MINE PIT  
WESTERN NUCLEAR DATA--1979

CONSTITUENT	SAMPLING DATE				
	2/8	3/19	4/25	7/2	8/23
pH	6.8	6.4	6.5	5.6	4.5
TDS (mg/l)	<i>as the pit fills up, pH drops</i> →				
Fe (mg/l)	0.23	0.95	0.58	0.23	2.21
Zn (mg/l)	0.08	0.63	0.11	0.17	0.24
As (mg/l)	0.43	0.24	0.08	0.21	0.11
Sulfates (mg/l)	82	92	110	152	227
Mo (mg/l)	0.29	<0.04	0.06	0.06	<0.04
	<i>moly is low, because it's soluble @ high pH's (10-11)</i>				
Mn (mg/l)	0.45	0.46	0.76	1.03	1.29
Gross Alpha (pCi/l)	2.3	29	13.7	26	61.6



Western Nuclear Data  
1979

Streambed analyses

	2/8	3/19		4/27		7/1	7/2
	#1	#1	#3	#1	#3	#1	#3
pH	7.1	7.1	6.7	7.2	7.0	7.4	7.2
Fe mg/l	.17	.13	1.49	.18	1.48	.066	.65
Zn mg/l	<.015	<.015	.024	<.015	<.015	<.015	<.015
As mg/l	.01	<.004	.020	.004	.034	<.004	.025
SO <sub>4</sub> mg/l	2.7	<1.0	35.7	3.0	32.5	1.6	8.0
Mo mg/l	<.04	<.04	<.04	<.04	<.04	<.04	<.04
Mn mg/l	<.003	<.003	<.003	.009	0.62	.004	.33
Gross Alpha pCi/l	.024	.052	21.12	.03	10.3	.25	20.3

#1 & #3 were dry on 8/28/78

#1 Auger Cr. above Mine (at Culvert)

#3 Auger Cr. below Mine (~1 mile south of pit)

CONCENTRATION OF RADIONUCLIDES IN  
 AUGER CREEK BED SEDIMENT SAMPLES  
 IN VICINITY OF WHITE KING OVERBURDEN PILES

1981

Concentrations Expressed in pCi/gram Dry Weight

STATION NO.	AUGER CREEK LOCATION	RADIUM-226	RADIUM-228	URANIUM PPM	POTASSIUM-40
1	Upstream of White King Mine	1.4±0.1	0.4±0.2	8.59	5.2±0.5
2	Adjacent to upper end of north overburden pile	0.5±0.1	0.5±0.1	1.68	12.8±0.7
3	Adjacent to lower end of north overburden pile	16.2±0.1	0.8±0.2	50.1	13.8±0.7
4	Between overburden piles	2.0±0.1	0.6±0.2	84.8	4.6±0.4
5	Adjacent to lower end of south overburden pile	13.7±0.1	0.7±0.2	345.3	9.3±0.6
6	Downstream of both overburden piles	0.7±0.1	0.5±0.2	26.8	6.7±0.2

SURFACE WATER COLLECTED FROM WHITE KING  
AND LUCKY LASS ENVIRONS BY U.S. FOREST SERVICE

Concentrations Expressed in pCi/liter

Date Collected	Gross Alpha	Gross Beta	Radium 226	Radium 228	Total Uranium	Thorium 230	Thorium 232
Oct 26'81	3.6±1.2	7.0±1.6	<0.5	<1	<4	0.2	0.1
Oct 26'81	10.2±2.0	12.5±1.8	<0.5	<1	22	0.2	<0.05
Oct 26'81	2.7±1.1	4.8±1.4	<0.5	<1	<4	0.4	<0.05
Oct 26'81	1.3±0.9	5.9±1.4	<0.5	<1	<4	0.4	<0.05
Oct 26'81	1.9±1.2	4.6±1.2	<0.5	<1	<4	0.5	0.1
Oct 26'81	<1	4.8±1.2	<0.5	<1	<4	1.1	0.2
(White King Mine Pit)							
Oct 22'81	43.0±6.5	45.7±6.0	0.7±0.1	<1	82	0.2	<0.05
Oct 22'81	63.5±8.9	43.7±6.0	0.9±0.1	<1	87	0.2	<0.05
Oct 22'81	29.7±6.2	31.8±6.2	1.1±0.1	<1	77	0.4	<0.05
(Lucky Lass Mine Pit)							
Oct 22'81	7.4±4.3	6.9±1.5	<0.5	<1	<4	0.4	<0.05

Part 7, #22 Continued

Major objectives and milestones for the proposed investigative studies and remedial action for the uranium mine waste sites to be completed under this position are:

1. Develop a work plan to provide for participation by forming a USFS/State/Local working group to incorporate appropriate concerns.
2. Conduct a characterization of the abandoned mines and waste sites:
  - a. Compile available data.
  - b. Submit "Request for Proposals" for bid to fill in gaps in available data.
  - c. Complete the characterization of the sites.
3. Determine corrective action alternatives and applicable substantive standards.
4. Prepare a draft EIS/EA and submit for appropriate review.
5. Conduct a public information process.
6. Preparation of the final EIS/EA.
7. Determination of compliance.
8. Submit recommendations to decision makers.
9. Prepare a record of decision.
10. Prepare and initiate a work plan and agreement for corrective actions.

*done*

*current activity*

*possibly spring '89 Problem w/out. lands*

*9/89*

*Preli. Ans.*

*late '89*

*Winter '89/90*

*Feasibility study*

*Summer '90*

MESSAGE SCAN

TO R.FUJIMOTO

From: Carlin B. Jackson  
Postmark: Apr 03,89 2:28 PM

Subject: Forwarded: 4/6/89 Meeting at RO

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Comments:

From Carlin B. Jackson:  
LETS TALK-DO WE NEED A LEGAL OPINION?

Previous comments:

From Dean Vineyard:  
BRIEFING AND BACKGROUND INFORMATION FOR MEETING THURSDAY....

Previous comments:

From MIERA, FELIX:R06F02D02A:

Dean:

Here is what we propose to present on Thursday. You can get in touch with me later today should you have questions or want to recommend some changes.

Thanks--Felix

-----X-----

## A G E N D A

- I. Background on the White King and Lucky Lass uranium mines
- II. Discussion to address private land issues at the White King mine site
  - A. No Action
  - B. Private land owners voluntarily assist in cleanup
  - C. Forest Service conducts characterization and cleanup--Recover costs from private land owners
  - D. Forest Service acquires title to private land
- III. Milestones for Project
- IV. Initiate EA/EIS process
- V. Funding Issues

## M I L E S T O N E S

- \* In July, 1988, a Forest Service/State/Local working group was formed for the abandoned White King and Lucky Lass uranium mines to:
  - 1. Obtain affected agency input and coordination
  - 2. Identify agency concerns that need to be addressed early in our process.
  - 3. Identify community concerns that need to be addressed.
- \* March, 1989, the Lakeview mine sites are listed on the Federal Facilities Docket
- \* Perform a Preliminary Assessment/Site Investigation (PA/SI) as required by the U.S. EPA to determine a site ranking:
  - 1. Compile available data--Completed fall 1988
  - 2. In October, 1988, collected soil and water samples from both mine sites--Analyses of samples to be completed by May, 1989.
  - 3. Compile information required to submit PA/SI to EPA.
- \* Conduct full site characterization of both mine sites:
  - 1. Submit "Request for Proposals" for bid to fill in gaps in available data--May, 1989.
  - 2. Completion report for site characterization due December, 1989.
  - 3. Determine applicable substantive standards.
  - 4. Determine corrective action alternatives.
- \* Prepare a draft EIS/EA and submit for appropriate review--March 30, 1990.
- \* Preparation of final EIS/EA
- \* Determination of Compliance
- \* Submit recommendations to decision makers.
- \* Prepare a record of decision.
- \* Prepare and initiate a work plan and agreement for corrective actions.

DECISION ANALYSIS--WHITE KING MINE PRIVATE LAND ISSUE

STATEMENT OF PROBLEM: The White King mine pit, uranium ore storage stockpile, and waste overburden stockpile, sit partially on National Forest lands and partially on private lands. Cleanup and stabilization of this site along property boundaries is not technically practical or feasible. Expenditure of Forest Service funds on the private lands has been questioned. The following alternatives for addressing this problem have been evaluated.

I. No Action

- 1986 amendments to CERCLA mandates Federal Agencies to comply with the hazardous waste requirements of the Act.
- The site has been listed on the Federal Facilities Docket.
- From data compiled on the site, some mitigative measures must be implemented.

II. Seek the voluntary participation of the private land owners in the site characterization and site cleanup efforts.

- A very "preliminary" estimate of costs leads us to believe that this will be a multi-million dollar project--perhaps in the neighborhood of \$12- to \$15-million.
- We must assess the ability of the two private land owners to participate--in reality, because of the magnitude of the project they may not be able to.

III. The Forest conducts the characterization and cleanup of the mine site lacking voluntary assistance and cooperation of the private land owners.

- Remediation on National Forest land only is not technically feasible nor practical. Any corrective action can not be separated on the basis of private vs. federal land ownership boundaries.
- CERCLA does provide that the FS, lacking voluntary participation, can conduct the cleanup and through legal avenues recover up to three times the cost of the cleanup.
- Need to balance pros and cons for using legal means to recover cleanup costs.
- Litigation could delay cleanup efforts indefinitely.



IV. Forest Service acquires title to private property and assumes responsibility for cleanup.

- All mining and sales of uranium during the time of operation of the mine were controlled by the Federal government for purposes of its weapons program.
- The two 80 acre parcels of private land are completely surrounded by National Forest.
- Characterization and cleanup could be started immediately.
- Federal ownership would facilitate long-term care and maintenance of the site as required under CERCLA
- Avoid adverse public relations from legal efforts to force financial participation of private parties that may not be able to afford it.

RECOMMENDATION: Pursue alternative IV as the most feasible method to cleanup the White King mine site and be in compliance with the requirements of CERCLA as amended in 1986.

## NEPA PROCESS FOR THE WHITE KING/LUCKY LASS URANIUM MINE PROJECT

To meet project milestones and objectives, the environmental analysis needs to be initiated within the next month. Therefore, a decision is required to determine whether an EIS or an EA will be performed. Our recommendation is to do an EIS based on the following:

1. The data collected for site characterization would be sufficient for either document.
2. The project because of its' nature may be controversial regionally. (The State has already introduced legislation to exclude the need for a redundant State licensing requirement.)
3. The projected impact in completion of the project would be about 120 days.
4. New and untried technology may be used.
5. Eliminate one point of challenge by potential opponents based on process.

The only real advantage to doing an EA, would be possible implementation of the project 120 days earlier. There would also be some cost savings by not having to review and respond to comments. However, one appeal, such as on process-not doing an EIS-would eliminate these savings.

If approved to initiate the EIS, the Forest Supervisor would need to be designated as "authorized officer" by the Regional Forester, unless the designation under FSM 2817.04 is determined sufficient.

# State Department of Geology and Mineral Industries

702 Woodlark Building  
Portland 5, Oregon

## LUCKY LASS URANIUM DEPOSIT

Lake County

Owners by location: Don Lindsay, Bob Adams, "Choc" Shelton, Clair Smith, all of Lakeview.

Location: T. 37 S., R. 18 E., sec. 25, 3/4-1 mile NW of White King.

Development work: (July 23, 1955): One trench dug by bulldozer into sloping ground. Trench 20' x 8' wide by 8' deep. Dozer scraping off overburden away from trench.

Geology: The deposit occurs in a series of tuffs in which a conspicuous bed contains fragments of vesicular lava. This bed is the most highly mineralized. The beds appear to be almost vertical and strike about N. 30° W. This strike was taken by comparing radioactivity on the two sides of the trench. This method assumes immediate lithologic control of the uranium mineral, which appears valid. A radioactive anomaly can be traced for about 100 feet on the surface. A light-green fluorescent uranium mineral is disseminated throughout the lithic tuff and fills fractures and vesicles. The mineral seems to be fairly evenly distributed across the 10-foot width of the lithic tuff beds.

Excellent crystals fill vesicles in the lithic fragments of the tuff. The mineral is platy, with a square outline.

The mineral is probably the same as that which appears in the main pit at the White King claim. The mineral resembles movacekite, a rare hydrous uraniferous arsenate.

A channel sample (P-18563) taken along 12 feet of the trench in the richest part of the ore assays 0.557% U<sub>3</sub>O<sub>8</sub>. This sample is not across the "vein" but at an angle. The true width should be about 9 feet.

Visited: July 20-23, 1955 by Max Schafer; F. W. Libbey & H. M. Dole  
July 23, 1955.

Report by: Max Schafer, Aug. 11, 1955.

Newspaper article - from: Lake County Examiner, December 6, 1973.  
Original copy sent to Portland office 12-10-73.

"Lucky Lass Mine Leased to Denver Organization"

The Lucky Lass uranium mine near Augur Creek has been leased by the owners to Western Nuclear, Inc., of Denver, Colo., according to a lease agreement filed November 14, 1973, with County Clerk Zane Gray. Signing for the Lucky Lass were the president, Clair Smith, and the secretary, Don Lindsey.

The agreement gives Western Nuclear the right to explore, develop, mine and market all minerals from the property except oil and gas, and covers the four unpatented uranium claims of the Lucky Lass group. The agreement is for 20 years and as long thereafter as minerals are being mined, processed or marketed.

The lease royalty payments and obligates Western Nuclear to expend \$25,000 per year during the first two years, plus a similar amount during the next two years, in exploration and development of the claims.

Western Nuclear also has an 11-year lease-purchase agreement on the 19 uranium claims of the White King group on Augur Creek, about one mile from the Lucky Lass. This agreement was signed July 17, 1966 and filed with the county clerk and since that time Western Nuclear has done extensive core drilling and other exploratory work on the King and several other properties that company has acquired in the same area. That agreement was given by the owners, John and Aleta Roush, Don and Erma Tracy, Walter H. Leehmann Jr. and Jean Leehmann, Wayland Roush, Erma Roush Schmid and the late Walter H. Leehmann Sr.

The White King was the first major uranium discovery here to be staked, in the summer of 1955, and by the time that announcement appeared in the press, the Lucky Lass group nearby had been staked and filed by Don Lindsey, Bob Adams, Choc Shelton and Clair Smith (the initials of their last names form the word Laws). It was mostly on the strength of these two discoveries that the Lakeview Mining Company built and operated the uranium plant north of Lakeview. The plant operated from late 1958 until near the end of 1961 when it was closed down. The plant is now owned by Atlantic-Richfield Oil Company (Arco).

Newspaper article - from: Lake County Examiner, December 6, 1973.  
Original copy sent to Portland office 12-10-73.

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80° N75°W  
Shear/fault

LUCK LASS Pit

↑  
250' long  
↓

150' deep

N75°W 80°

*all measurements  
estimated from space*

↔  
250' wide

*white to light gray pumice  
tuffs, full tuff accretion;  
thin to thick beds, 1 layer*

~~FOR OFFICIAL USE ONLY~~  
(UNTIL CASE CLOSED)

UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

2810 - MINING CLAIMS  
FREMONT N.F.  
LUCKY LASS, INC.  
P.L. 167  
Job No. 261

JAN 2 1968

REPORT OF MINERAL EXAMINATION



~~FOR OFFICIAL USE ONLY~~  
(UNTIL CASE CLOSED)

REPORT OF MINERAL EXAMINATION

Job No. 261  
Verified Statement  
No. Oregon-012510-C

Claimants: Lucky Lass, Inc.  
c/o Clair D. Smith, President  
940 South 4th Street  
Lakeview, Oregon

Reason for Examination: Determination of surface rights.

Subject: Validity of mining claims.

Lands Involved: Four lode mining claims in Section 25, T. 37 S.,  
R. 18 E., W.M., in Lake County, Oregon, within  
the Fremont National Forest.

Land Status: National Forest lands open to mineral entry.

Location Data: Lucky Lass No. 1, recorded in Book 7, page 122  
" " " 2, " " " 7, " 123  
" " " 3, " " " 7, " 124  
" " " 4, " " " 7, " 125

The following are locators and stockholders:

Clair D. Smith  
Audrey L. Smith  
Don Lindsey  
Doris Lindsey  
Robert S. Adams  
Lucille Adams  
L. F. Shelton  
Betty Rae Shelton

Mining District: None.

Mining Engineer and  
Dates of Examination: Raymond F. Shirley  
May 9, 1966, and October 10, 1967.



These claims are located near Augur Creek Road northwest of Lakeview, Oregon. The topography is rolling to moderately steep hills. The surface values include timber and water. The geology consists of tuffs and other Tertiary volcanics, which have been folded and faulted. The claims have produced uranium and are near other claims that have also produced uranium.

ABSTRACT

### Location and Topography

The property is 18.6 miles from Lakeview and may be reached by the Augur Creek Road.

The topography consists of hills which are rolling to moderately steep with some open meadows. Elevations range from 5,000 feet to 7,300 feet.

### General Geology

All of the rocks exposed in the area are Tertiary in age and encompass a wide suite of volcanics. These include acid to intermediate tuffs, breccias, welded tuffs, agglomerates, clayey tuffs, and tuffaceous lake beds. These have been intruded by a glassy rhyolite.

The bedrock has been fractured and offset by faulting which postdates the folding (see Picture 1).

### Mineral Deposits

The mineralization is considered to be related to the intrusive rhyolite and has been controlled by the faulting. Two stages of mineralization are indicated. The earlier period includes cinabar, realgar and orpiment, stibnite and opal. The later stage includes sooty pitchblende, coffinite, galena, pyrite and jordisite (a molybdenum sulphide).

### Production

This property has produced in excess of 5,000 tons of ore containing over 35,000 pounds of U<sub>3</sub>O<sub>8</sub>. The first shipment was made in the fall of 1955. The production from this property and the nearby White King mine supported a mill in Lakeview.

### Discovery

This property was located July 14, 1955, just prior to the Act of July 23, 1955. The writer, at that time employed as a mining engineer by the U. S. Atomic Energy Commission, made an examination of these claims in September 1955. The purpose of this examination was to determine if the property was a possible producer. As a result of his examination, the writer concluded that the claim group had an excellent potential for production and recommended an ore purchase contract be prepared. This was done. The property first shipped in October 1955.

The property continued to produce through Fiscal Year 1964. It is not operating presently, but may well produce again, because of the recent upsurge in the uranium market.

The records of the A.E.C. do not break down the production by individual claims, but the writer recalls that the exposures he examined in 1955 indicated uranium on all four of the claims. Subsequently the main operation, an open pit, was confined to claims Nos. 1 and 3 (see Pictures 2 and 3). But as of July 23, 1955, the writer is of the opinion that the requirement for discovery had been met for all four claims. It was possible to obtain substantial geiger readings all over the general pit area.

#### Pertinent Data

In connection with the operation of these claims, the operators cut most of the timber (see Picture 4) from the claims for their own account. Although the Forest Service at first permitted this, they later changed and demanded payment for this timber, since this was in a sustained yield unit.

The claimants, on advice from counsel, refused, and so the Forest Service recommended legal action to recover.

The Forest Service later dropped the legal action.

#### Summary and Conclusions

The subject claims were located just prior to July 23, 1955. They were examined in September 1955 by the writer who concluded that the production potential was good. They began producing in October of 1955 and produced a total of 5,000 tons of uranium ore. They may produce in the future.

It is concluded that the four claims had a discovery on July 23, 1955.

JAN 2 1968

Date \_\_\_\_\_

RAYMOND F. SHIRLEY

\_\_\_\_\_  
RAYMOND F. SHIRLEY, Mining Engineer

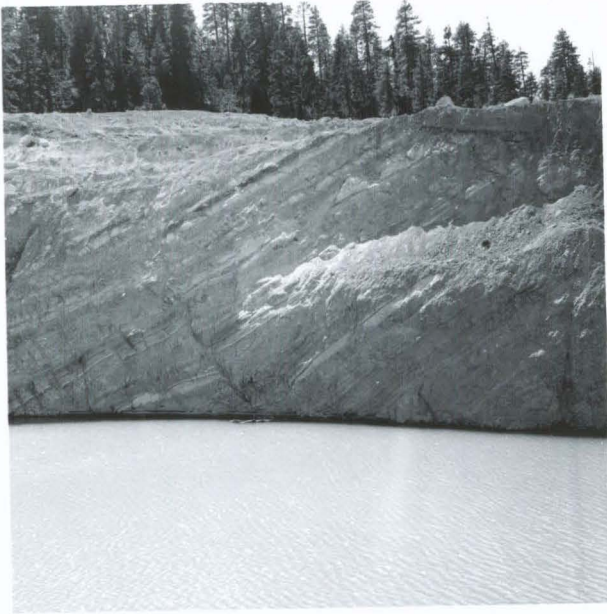
APPROVED:

FEB 26 1968

Date \_\_\_\_\_

W. E. BATES

\_\_\_\_\_  
Acting Assistant Regional Forester



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