

## MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee

COPY

1. Plateau Resources limited

3. License number

SUA-1326, Amendment No. 11

2. 772 Horizon Drive  
Grand Junction, Colorado 81501

4. Expiration date

April 1, 1986

5. Docket or  
Reference No.

40-8674

6. Byproduct, source, and/or  
special nuclear material7. Chemical and/or physical  
form8. Maximum amount that licensee  
may possess at any one time  
under this license

Natural Uranium Ore

Unspecified

Residual contami-  
nation from previous  
operations.

9. Authorized place of use: The licensee's uranium ore buying station located near Blanding, Utah.
10. The Director of Regulatory Affairs shall direct and be responsible for the administration of an occupational radiation safety program in compliance with 10 CFR Part 20, "Standards for Protection Against Radiation." The Director of Regulatory Affairs shall ensure that the Environmental and Radiological Health Supervisor maintains the responsibilities and authorities outlined in Regulatory Guide 8.31.
11. Removal of equipment or packages from the restricted area shall be in accordance with the attached, "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material," dated September, 1974.
12. During operation, those employees in the crushing, receiving, sampling, and storage areas, shall be monitored to determine their exposure to beta and gamma radiation by the use of personnel monitoring devices such as film badges or TLD's. These measurement devices shall be read and the results documented on a quarterly basis. If the licensee determines that certain employees have the potential to receive doses in any calendar quarter exceeding 25 percent of the value specified in 10 CFR Part 20, the licensee may request an amendment to require monitoring of those employees only.

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13. The licensee is hereby exempted from the requirements of Section 20.203(e)(2) of 10 CFR Part 20 for areas within the ore buying station provided that all entrances to the ore buying station are conspicuously posted in accordance with Section 20.203(e)(2) and with the words, "ANY AREA WITHIN THIS ORE BUYING STATION MAY CONTAIN RADIOACTIVE MATERIAL."
14. Any changes in the ore buying station circuit, as illustrated and described in Subsection 6.2.3 and Figure 6.2-2 of the licensee's application (Docket Number 040-08674), shall require prior approval by the NRC in the form of a license amendment.
15. Operations shall be immediately suspended in the affected areas of the ore buying station if any of the emission control equipment for the ore buying station or sampling areas, as described in Section 6.2.3 of the licensee's application, fails to operate.
16. Each employee at the ore buying station shall have: (1) radiation safety training before beginning work, (2) have a refresher course yearly, and (3) participate in quarterly safety meetings. Written instructions, including an outline of Plateau Resources Limited's written safety operating instructions, shall be furnished to each employee. These instructions shall include procedures for wearing respiratory equipment and protective clothing, and other appropriate radiation protection practices.
17. During periods of operation (when receiving, crushing, sampling or shipping are taking place) or when maintenance activities which could pose radiation safety problems are undertaken, the licensee shall have a person onsite appointed as the Radiation Safety Officer (RSO) who has the following minimum qualifications: (1) a 2-year associate degree in the physical sciences or mathematics and 6 months training in radiation protection, or (2) 2 years equivalent experience in radiation safety practices. This must include experience in radiation detection instrumentation (survey meters), evaluation of employee exposure data, and experience in monitoring and analysis techniques.
18. During periods of operation involving receiving, crushing, sampling and shipping, or during maintenance or removal of equipment which could cause radiation health hazards, the implant airborne monitoring program committed to in Subsection 5.5 of the licensee's application shall be performed under conditions typical of employee exposures. Samples shall be taken monthly with a minimum duration of 60 minutes each. Records of airborne radioactivity and the state of operation of both process and effluent control equipment and ventilation conditions shall be maintained.
19. The licensee shall perform a radiation safety program to assure that operation of the ore buying station is in accordance with the ALARA philosophy. During

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inactive periods or when ore storage is the only operation taking place, the ERHS shall perform and document quarterly inspections of the facility. These inspections shall include work practices, noncompliance with operating procedures, assurance that license conditions are being met and work practices that affect radiological safety. During decommissioning of the ore buying station, the radiation protection and environmental programs specified in the approved decommissioning plan (Amendment No. 8) shall be implemented.

At least once during the decommissioning and reclamation of the ore buying station, the licensee shall perform a formal ALARA audit of the radiation protection program in accordance with Regulatory Guide 8.31, Section 2.3.3. The licensee shall submit a report detailing the results of the audit to the NRC, Uranium Recovery Field Office, within sixty (60) days after the audit. In addition to the 11 items outlined in Regulatory Guide 8.31, the report shall specifically address the following:

- (1) Explanation for any deviation from the principles of ALARA;
- (2) All unusual discharges or effluent releases;
- (3) An evaluation of all personnel and environmental monitoring data;
- (4) Items of regulatory noncompliance; and
- (5) Verification of all on-site inspections.

All reports and documentation shall be maintained by the licensee for at least five (5) years, unless otherwise specified in NRC regulations.

20. As a minimum, the licensee shall maintain a management control program which shall include written operating procedures, reviewed and approved by the Radiation Safety Officer, for all aspects of the ore buying station's operations, including the radiation safety program and the environmental monitoring and control program. Approval by the RSO will be indicated by the signature of the RSO on the procedure. The RSO shall have the authority to cancel, postpone or modify any operation or process which poses a radiological safety hazard.
21. The licensee shall implement the environmental monitoring program described in the attached Annex A.
22. The licensee shall provide an earthen berm around the storage pad which shall preclude offsite surface water contamination in the event of flooding.
23. The licensee shall have an archaeological and historical artifact survey of the ore buying station site conducted prior to any additional land disturbance,

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including any decommissioning activities which will disturb additional land surface and shall submit this survey to the NRC for review and approval by license amendment before proceeding with any land disturbance.

24. The licensee shall control fugitive dust by water spraying, the use of detergent or other equivalent methods as required to avoid dusting from the ore pile. This will include applying control measures when gusty winds exceeding 40 Km/hr (25 mph) are forecast, unless an analysis of moisture content and followup inspections show that no dusting is likely to occur.
25. Before engaging in any activity not reviewed by the NRC and evaluated for environmental impact, the licensee shall prepare and record an environmental evaluation of such activity. If the evaluation indicates that such activity may result in a significant adverse environmental impact that was not evaluated by the NRC or that is greater than that reviewed in the environmental appraisal, the licensee shall provide a written evaluation of the activity and obtain prior approval of the NRC for the activity.
26. The licensee shall provide for the reclamation and decommissioning of the ore buying station as described in the licensee's submittal, "Decommissioning and Reclamation Plan Blanding Ore Buying Station," submitted by letter dated August 29, 1984, subject to the following:
- A. The licensee shall at all times maintain NRC-approved financial surety arrangements covering the cost of decommissioning and site reclamation of the Blanding Ore Buying Station. Surety arrangements covering these costs shall be provided until April 15, 1986, by a letter of credit in the amount of \$191,176.00, issued by the National Bank of Detroit.
  - B. At least ninety (90) days prior to the above stated expiration date, or of any subsequent surety arrangements, the licensee shall submit a copy of the proposed new surety or surety revision to the U.S. Nuclear Regulatory Commission, Uranium Recovery Field Office, for review and approval. The submittal shall fully account for any and all revised costs and shall provide supporting documentation including an itemization of all site reclamation and decommissioning costs, as well as the basis for determining the revised costs.
  - C. The NRC will not terminate this license until it has been determined that final reclamation has satisfied all applicable NRC regulations.
27. During normal operation (when receiving, crushing, sampling and shipping has taken place), the licensee shall be required to conduct in vivo lung counts on all workers exposed to uranium ore dust at least once annually. These measurements shall be done with equipment capable of measuring 9 nanocuries or



less of uranium in the lung. The licensee shall take the actions as described in the table of the attached Annex B for the levels indicated.

28. The licensee shall implement an inspection and maintenance program for all inplant and environmental radiological monitoring equipment once every six (6) months or at the manufacturer's suggested interval. In addition, the licensee shall maintain a standardized source for checking radiation detection instrumentation prior to its use.
29. As of December 1, 1981, and as long as no uranium ore is stored on the Blanding Ore Buying Station (OBS) site, the licensee shall implement the interim environmental monitoring program (EMP) as described in the October 12, 1981 PRL submittal "SUA-1326, Docket No. 40-8674, Interim Environmental Monitoring Program for Blanding Ore Buying Station" During this interim period, no other environmental monitoring is required. All environmental monitoring data for each monitoring station shall be reported semi-annually to the NRC pursuant to 10 CFR 40.65, "Effluent Monitoring Reporting Requirements." Prior to the receipt and/or storage of uranium ore at the PRL Blanding OBS, the licensee shall re-establish the operational EMP required by License Condition No. 21 of this license.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Dated: OCT 10 1985

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R. Dale Smith, Director  
Uranium Recovery Field Office  
Region IV

OFC	URFO	URFO	URFO				
NAME	PHildenbrand	EHawkins	RDSmith				
DATE	85/10/10	10/10/85	10/10/85				

GUIDELINES FOR DECONTAMINATION OF FACILITIES AND EQUIPMENT

PRIOR TO RELEASE FOR UNRESTRICTED USE

OR TERMINATION OF LICENSES FOR

BYPRODUCT OR SOURCE MATERIALS

U. S. Nuclear Regulatory Commission  
Uranium Recovery Field Office  
Region IV  
Denver, Colorado 80225

SEPTEMBER 1984

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The instructions in this guide in conjunction with Table I specify the radioactivity and radiation exposure rate limits which should be used in accomplishing the decontamination and survey of surfaces or premises and equipment prior to abandonment or release for unrestricted use.

1. The licensee shall make a reasonable effort to eliminate residual contamination.
2. Radioactivity on equipment or surfaces shall not be covered by paint, plating, or other covering material unless contamination levels, as determined by a survey and documented, are below the limits specified in Table I prior to applying the covering. A reasonable effort must be made to minimize the contamination prior to use of any covering.
3. The radioactivity on the interior surfaces of pipes, drain lines, or ductwork shall be determined by making measurements at all traps, and other appropriate access points, provided that contamination at these locations is likely to be representative of contamination on the interior of the pipes, drain lines, or ductwork. Surfaces of premises, equipment, or scrap which are likely to be contaminated but are of such size, construction, or location as to make the surface inaccessible for purposes of measurement shall be presumed to be contaminated in excess of the limits.
4. Upon request, the Commission may authorize a licensee to relinquish possession or control of premises, equipment, or scrap having surfaces contaminated with materials in excess of the limits specified. This may include, but would not be limited to, special circumstances such as razing of buildings, transfer of premises to another organization continuing work with radioactive materials, or conversion of facilities to a long-term storage or standby status. Such requests must:
  - a. Provide detailed, specific information describing the premises, equipment or scrap, radioactive contaminants, and the nature extent, and degree of residual surface contamination.
  - b. Provide a detailed health and safety analysis which reflects that the residual amounts of materials on surface areas, together with other considerations such as prospective use of the premises, equipment or scrap, are unlikely to result in an unreasonable risk to the health and safety of the public.

5. Prior to release of premises for unrestricted use, the licensee shall make a comprehensive radiation survey which establishes that contamination is within the limits specified in Table I. A copy of the survey report shall be filed with the Uranium Recovery Field Office, Region IV, P.O. Box 25325, Denver, CO 80225. The survey report shall:
  - a. Identify the premises.
  - b. Show that reasonable effort has been made to eliminate residual contamination.
  - c. Describe the scope of the survey and general procedures followed.
  - d. State the findings of the survey in units specified in the instruction.

Following review of the report, the NRC will consider visiting the facilities to confirm the survey. The licensee shall not release the premises for unrestricted use without the written approval of the USNRC staff.



TABLE I

## ACCEPTABLE SURFACE CONTAMINATION LEVELS

NUCLIDES <sup>a</sup>	AVERAGE <sup>b c f</sup>	MAXIMUM <sup>b d f</sup>	REMOVABLE <sup>b e f</sup>
U-nat, U-235, U-238, and associated decay products	5,000 dpm /100 cm <sup>2</sup>	15,000 dpm /100 cm <sup>2</sup>	1,000 dpm /100 cm <sup>2</sup>
Transuranics, Ra-226, Ra-228, Th-230, Th-118, Pa-231, Ac-227, I-125, I-129	100 dpm/100 cm <sup>2</sup>	300 dpm/100 cm <sup>2</sup>	20 dpm/100 cm <sup>2</sup>
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	1,000 dpm/100 cm <sup>2</sup>	3,000 dpm/100 cm <sup>2</sup>	200 dpm/100 cm <sup>2</sup>
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except SR-90 and others noted above.	5,000 dpm /100 cm <sup>2</sup>	15,000 dpm /100 cm <sup>2</sup>	1,000 dpm /100 cm <sup>2</sup>

<sup>a</sup>Where surface contamination by both alpha- and beta-gamma-emitting nuclides exists, the limits established for alpha- and beta-gamma-emitting nuclides should apply independently.

<sup>b</sup>As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

<sup>c</sup>Measurements of average contaminant should not be averaged over more than 1 square meter. For objects of less surface area, the average should be derived for each such object.

<sup>d</sup>The maximum contamination level applies to an area of not more than 100 cm<sup>2</sup>.

TABLE I

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<sup>e</sup>The amount of removable radioactive material per 100 cm<sup>2</sup> of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.

<sup>f</sup>The average and maximum radiation levels associated with surface contamination resulting from beta-gamma emitters should not exceed 0.2 mrad/hr at 1 cm and 1.0 mrad/hr at 1 cm, respectively, measured through not more than 7 milligrams per square centimeter of total absorber.

# ANNEX A

Type of sample	Number	Sampling			Test frequency	Radiation or radionuclides
		Location <sup>a</sup>	Method	Frequency		
Ambient air (particulates)	3	2 locations along the principal wind vector (south to north) and 1 location perpendicular to this vector (directly east of the OBS near the site boundary)	Continuous	Filters changed weekly or as required by dust loading	Monthly composite	U <sub>nat</sub>
Ambient air (radon gas)	3	Same locations as airborne particulates	One week, continuous per quarter	Quarterly	Quarterly	Ra-226, Th-230 Rn-222
Direct radiation	13	Ten locations around or near the site boundary. Three locations - Blanding, foothills of Abajo Mts. and Santa Fe, N.Mex. - as controls	TLD	Quarterly	Quarterly	X-ray and gamma dose rate
Groundwater (well and springs)	3	Southeast corner of OBS site and 1.6 km (1 mile) south-southeast and OBS	Grab	Quarterly	Quarterly	Gross $\beta$ and $\gamma$ , U <sub>nat</sub> , Ra-226, Th-230
Surface water (pond and ditch)	3	Southeast corner of OBS property and drainage ditch of U.S. Highway 163 southeast of OBS	Grab	Quarterly	Quarterly	Gross $\beta$ and $\gamma$ , U <sub>nat</sub> , Ra-226, Th-230

## ANNEX B

### CORRECTIVE ACTIONS BASED ON IN VIVO RESULTS

<u>Amount of Uranium Detected</u>	<u>Interpretation</u>	<u>Actions</u>
Below 9 nCi of uranium	This result does not necessarily indicate that uranium confinement and air sampling capabilities are confirmed.	Rely on urinalysis results to determine corrective actions.
9 to 16 nCi	Confinement and air sampling capabilities unreliable.* Uranium activity in lungs undesirably high.	<ol style="list-style-type: none"> <li>1. Confirm result (repeat measurement).</li> <li>2. Determine why air samples were not representative and did not warn of excessive airborne uranium. Make corrections.</li> <li>3. Identify the cause of airborne uranium and initiate additional control measures.</li> <li>4. Determine whether other workers could have been exposed and perform bioassay measurements for them.</li> <li>5. Consider work assignment limitations that will permit the lung burden to be reduced through natural elimination; ensure that the lung burden does not exceed 16 nCi.</li> </ol>
More than 16 nCi	Confinement and air sampling not acceptable.*	<ol style="list-style-type: none"> <li>1. Take the actions listed above for 9 to 16 nCi.</li> <li>2. Establish work restrictions for affected workers. (Normally workers with a lung burden greater than 16 nCi are not allowed by their employer to resume work in airborne activity areas until the burden is reduced to less than 9 nCi.)</li> <li>3. Perform individual case studies (bioassays) for affected workers.</li> <li>4. Continue operations only when it is virtually certain no additional workers will exceed 16 nCi.</li> </ol>

\*Unless the result was anticipated and caused by conditions already corrected.