### Appendix A

## Appendix A: Colorado Radiation Control Act, Uranium Recovery Requirements

(b) (I) No facility shall dispose of or receive for storage incident to disposal or processing at the facility classified material unless such facility has received a license, a five-year license renewal, or license amendment pertaining to the facility's receipt of classified material, in accordance with sections 24-4-104 and 24-4-105, C.R.S., for such receipt, storage, processing, or disposal of classified material and such license, license renewal, or license amendment approves that type of classified material.	The application meets the requirements of the RCA and the cited sections of the APA.
(II) Nothing in this paragraph (b) shall apply to a contract for the storage, processing, or disposal of less than the sum of one hundred ten tons of classified material per source or to a contract for a bench-scale or a pilot-scale testing project or a contract for less than a de minimis amount of classified material as determined by the department for storage, processing, or disposal.	May be applicable for processing of mine cake owned by Energy Fuels.
<ul> <li>(III) License amendments for the receipt of classified material at a facility are subject to subsections (2) and (3) of this section except when the material is from an approved source and such amendment would not result in a change in ownership, design, or operation of the facility. License amendments not subject to subsections (2) and (3) of this section are subject to subsection (4) of this section.</li> <li>(b) In addition to the requirements of paragraph (a) of this subsection (2), each proposed license, five-year license renewal, or license amendment pertaining to the facility's receipt of classified material shall include a written application to the department and information relevant to the pending application, including:</li> </ul>	Amendment not required for ore from local mines; an application would be required for any other matter.  The application satisfies this requirement.
(I) Transcripts of two public meetings hosted and presided over by a person selected upon agreement by the department, the board of county commissioners of the county where the facility is located, and the applicant. One or both of the meetings shall be a hearing conducted to comply with section 24-4-104 or 24-4-105, C.R.S. The reasonable, necessary, and documented expense of the meetings or hearing shall be paid by the facility. Such meetings shall not be held until the department determines that the application is substantially complete. The facility shall provide the public with:	These transcripts are available for review on the Department web site.
(A) Pursuant to part 1 of article <u>70</u> of title <u>24</u> , C.R.S., at least two weeks' written notice before the first meeting and an additional two weeks' written notice before the second meeting;	This was done.
(B) At both meetings, summaries of the facility's license to receive, store, process, or dispose of classified material and the nature of the classified material, and an opportunity to be heard; and	This was done.
(C) Access to make copies of a transcript of the meetings, and shall provide an electronic copy to the department in a manner that allows	This was done. The transcripts are

posting on the department's web site within ten days after receipt from the transcription service;	available on the Department's web site.
(II) An environmental assessment as defined in paragraph (c) of this subsection (2);	The ER submitted by EFR satisfies this requirement.
(III) A response, if any, to the environmental assessment written by the board of county commissioners of the county in which the classified material is proposed to be received for storage, processing, or disposal at a facility and provided to the facility within ninety days after the first public meeting. Upon request of and documentation of the expenditure by such board, the applicant shall provide the board with up to fifty thousand dollars, which shall be available to the board for the reasonable and necessary expenses during the pendency of the application to assist the board in responding to the application, including to pay for an independent environmental analysis by a disinterested party with appropriate environmental expertise to assist the board in preparing its response. The board's response may consider whether the approval of the license, five-year license renewal, or license amendment pertaining to the facility's receipt or disposal of the classified material will present any substantial adverse impact upon the safety or maintenance of transportation infrastructure or transportation facilities within the county.	This was received by the Department and considered during the review process. It is located on the Department's web site.
(c) As used in paragraph (b) of this subsection (2), "environmental assessment" means a report and assessment submitted to the department by a facility upon and in connection with application for a license, a five-year renewal, or license amendment pertaining to the facility's receipt of classified material, proposing to receive classified material for storage, processing, or disposal at a facility that addresses the impacts of the receipt for storage, processing, or disposal of such material. The environmental assessment shall contain all information deemed necessary by the department, and shall include, at a minimum:	The ER submitted by EFR and the subsequent deliverables based on technical review satisfies this requirement.
(I) The identification of the types of classified material to be received, stored, processed, or disposed of;	Native ores primarily, with filter cake from mine water processing.
(II) A representative presentation of the physical, chemical, and radiological properties of the type of classified material to be received, stored, processed, or disposed of;	Provided in the application.
(III) An evaluation of the short-term and long-range environmental impacts of such receipt, storage, processing, or disposal;  (IV) An assessment of the radiological and nonradiological impacts to	Provided in the application.  Provided in the
the public health from the application;  (V) Any facility-related impact on any waterway and ground water from the application;  (VI) An analysis of the environmental, economic, social, technical, and	application.  Provided in the application.  Provided in the

other benefits of the proposed application against environmental costs and social effects while considering available alternatives;	application.
(VII) A list of all material violations of local, state, or federal law at the facility since the submittal date of the previous license application or license renewal application;	Not applicable
(VIII) For an application for a license or license amendment pertaining to the facility's receipt of classified material for storage, processing, or disposal at the facility, a demonstration that:	Provided in the application.
(A) There are no outstanding material violations of any state or federal statutes, compliance orders, or court orders applicable to the facility, and any releases giving rise to any such violation have been remediated;	Not applicable
(B) The operator, after a good faith review of the facility and its operations, is not aware of any current license violation at the facility;	Not applicable
(C) There are no current releases to the air, ground, surface water, or groundwater that exceed permitted limits; and	Not applicable
(D) No conditions exist at the facility that would prevent the department of energy's receipt of title to the facility pursuant to the federal "Atomic Energy Act of 1954", 42 U.S.C. sec. 2113;	Not applicable
(IX) A list of all necessary permits and any changes to local land use ordinances that are needed to construct or operate the facility; and (3) (a) Upon receipt of an application or notice as provided in subsection	Provided in the application. This was done.
(2) of this section, the department of public health and environment shall notify the public and forward a copy of the application or notice to the governor and the general assembly, as appropriate.	Timo was done.
(c) (I) In deciding whether to approve a license, five-year license renewal, or license amendment pertaining to the facility's receipt of classified material, the department shall consider the transcripts of the public meetings held pursuant to subparagraph (I) of paragraph (b) of subsection (2) of this section, the facility's license, any environmental assessment or analysis performed pursuant to this section, the facility's compliance with financial assurance requirements of section 25-11-110, and the board of county commissioners' response to the environmental assessment prepared pursuant to subparagraph (III) of paragraph (b) of subsection (2) of this section. The department shall deny or approve the application as a whole.	This was done. The application, as amended is approved as a whole, with additional conditions.
(II) The department may order reasonable mitigation measures to address any substantial adverse impacts to public health or the environment or transportation infrastructure or transportation facilities within the county attributable solely to approval of the license, five-year renewal, or license amendment pertaining to the facility's receipt of classified material.	Mitigation is required as part of the license. See the EIA.
(III) The applicant shall demonstrate that if the license, five-year renewal, or license amendment pertaining to the facility's receipt of classified material is approved, then the receipt, storage, processing, and disposal of classified material shall:	Provided in the application.
(A) Be conducted such that the exposures to workers and the public are within the dose limits of part 4 of the department's rules pertaining to	Provided in the application.

radiation control for workers and the public;	D 11.11 d
(B) Not cause releases to the air, ground, or surface or ground water that	Provided in the
exceed permitted limits; and	application.
(C) Not prevent transfer of the facility to the United States in accordance	Provided in the
with 42 U.S.C. sec. 2113 upon completion of decontamination,	application.
decommissioning, and reclamation of the facility.	
(V) (A) The department shall publish a determination as to whether an application submitted pursuant to paragraph (b) of subsection (2) of this section is substantially complete within forty-five days after receipt of the	This was done.
application.	
(B) The first public meeting or hearing required by subparagraph (I) of paragraph (b) of subsection (2) of this section shall be convened within forty-five days after publication of its determination that the application is substantially complete. The second such public meeting or hearing shall be convened within thirty days after the first public meeting.	This was done.
(C) The department shall approve, approve with conditions, or deny the	The application is
application submitted under paragraph (b) of subsection (2) of this	approved with
section within three hundred sixty days after the second public meeting;	conditions.
except that, for an applicant that has completed the second public	
meeting on or before June 8, 2010, the department shall act upon the	
application within the time frame prescribed by this sub-subparagraph	
(C) as it existed as of the date of the application.	
(B) The material acceptance report that demonstrates that the classified	Not applicable to
material does not contain hazardous waste characteristics not found in uranium ore;	ore. May be required for filter cake.
(C) A detailed plan for transport, acceptance, storage, handling,	May be required for
processing, and disposal of the material;	filter cake.
(D) A demonstration that the material contains technically and	This was done.
economically recoverable uranium, without taking into account its value as disposal material;	This was done.
(E) The existing location of the classified material;	This was done.
(F) The history of the classified material;	This was done.
(G) A written statement by the applicant describing any pre-existing	May be required for
regulatory classification of the classified waste in the state of origin that	filter cake.
describes all steps taken by the applicant to identify such classification;	micer care.
(H) A written statement from the United States department of energy or	May be required for
successor agency that the receipt, storage, processing, or disposal of the	filter cake.
classified material at the facility will not adversely affect the department	inter care.
of energy's receipt of title to the facility pursuant to the federal "Atomic	
Energy Act of 1954", 42 U.S.C. sec. 2113;  (I) Documentation showing any pagessary approvals of the United States.	Danding for the
(I) Documentation showing any necessary approvals of the United States	Pending for the NESHAPS
environmental protection agency; and	
(J) An environmental assessment as defined in paragraph (c) of	This was done.
subsection (2) of this section, which may incorporate by reference	
relevant information contained in an environmental assessment	
previously submitted for the facility.	

(II) For classified material that would otherwise be subject to the "Low-	Not applicable for
level Radioactive Waste Act", part 22 of article <u>60</u> of title <u>24</u> , C.R.S., the	_
facility's notice shall also include written documentation that the rocky	required for filter
mountain low-level radioactive waste board has been notified that the	cake.
classified material is being considered for disposal in the subject facility.	
(b) Within thirty days after the department's receipt of notice pursuant to	This was done.
subparagraph (I) of paragraph (a) of this subsection (4), the department	
shall determine whether the notice is complete.	
(c) Once the department determines that the notice is complete, the	This was done.
department shall publish the notice on its web site and provide a sixty-	
day public comment period for the receipt of written comments	
concerning the notice. A public hearing may be held, at the department's	
discretion, at the operator's expense.	
(d) Within thirty days after the close of the written public comment	
period provided by paragraph (c) of this subsection (4), the department	
shall approve, approve with conditions, or deny the receipt, storage,	
processing, or disposal as described in the notice based on whether the	
material proposed for receipt, storage, processing, or disposal at the	
facility complies with the facility's license and meets the standards	
established pursuant to subparagraph (III) of paragraph (c) of subsection	
(3) of this section.	

### Appendix B

### Appendix B: Regulatory Guides and NUREG Documents Germane to the Energy Fuels Application

Regulatory Guides Germane to the Energy Fuels Application

	Pagulatory Guida Nama	Applicability	Comment
Regulatory	Regulatory Guide Name	Applicability	Comment
Guide (RG)			
Number			
Draft DG-	Standard Format and Content	Provides the basis	Used as a template
3024	of License Applications for	for application	for application by
	Conventional Uranium Mills,	content. It	EF. EF has
	May 2008	provides an	provided a cross-
		outline for the	walk that is very
		form and content	helpful in
		of the application.	negotiating the
		It is very helpful	application.
		in understanding	
		the scope of the	
		application.	
Draft DG-	Standard Format And	Used as guidance	Based on the
3039	Content For Emergency Plans	in evaluating the	revised guidance
	For Fuel Cycle And Materials	emergency plan in	and comments from
	Facilities, 2010	the application.	the Department in
			FRI #3, EF revised
			the emergency plan
			and resubmitted it.
			The revised plan
			meets the
			requirements and is
			acceptable.

RG 3.8	Preparation of Environmental Reports for Uranium Mills, 1982	Provides additional information on what should be in the ER. This is important since and EIS is not required, this report details what quantitative data are expected.	Since NUREG- 1748 provides more recent and more detailed input, EF used it as well as RG 3.8 in scoping and conducting the ER.
RG 3.11	Design, Construction, And Inspection Of Embankment Retention Systems At Uranium Recovery Facilities, 2008	This RG is a result of past practices where mill tailings were used to construct tailings dams (some of which failed). None of the embankments at EF will be of this type.	The embankments at Piñon Ridge are highly engineered and do not have the inherent weakness of earlier tailings dams. Used as a basis for QA/QC testing. Daily inspections are still required of the tailings systems, including the piping used to transfer tailings from the mill to the impoundments.
RG 3.51	Calculational Models For Estimating Radiation Doses To Man From Airborne Radioactive Materials Resulting From Uranium Milling Operations, 1982	Used to verify parameters in the MILDOSE-AREA model.	These formulas are incorporated into MILDOSE-AREA, which is used to calculate dose to the public. See Vol. 11, Radiation Doses to the Public

RG 3.56	General Guidance For Designing, Testing, Operating, And Maintaining Emission Control Devices At Uranium Mills, 1986	The earlier generation of uranium mills had numerous point source emissions that contributed to public dose. Many of those emission points have been removed at Piñon Ridge. Remaining points have bag houses or scrubbers.	Basic requirements for testing of bag houses and scrubbers is included. Technology has advanced since this RG was published. Current standards of care are used at Piñon Ridge for emissions control devices. See APCD APENS permit for additional information.
RG 3.59	Methods For Estimating Radioactive And Toxic Airborne Source Terms For Uranium Milling Operations, 1987	Used for setting some of the parameters in MILDOSE-AREA.	Reductions in source term for ore piles since dust suppression is used. See Vol. 11, Radiation Doses to the Public
RG 3.63	Onsite Meteorological Measurement Program For Uranium Recovery Facilities- Data Acquisition And Reporting, 1988	Used for scoping, siting, and instrument selection for met towers.	NRC has updated guidance in RG 1.23 and EPA also has more current guidance, both of which were used at Piñon Ridge in addition to RG 3.63. EF meets or exceeds the requirements and has two fully-instrumented met towers at the site.

RG 3.64	Calculation of Radon Flux Attenuation by Earthen Uranium Mill Tailings Covers, 1989	This is the basis for the RADON model used in calculating radon flux through the caps.	The model is now online. This RG provides the technical basis for use. EF application meets or exceeds this guidance.
RG 3.65	Standard Format and Content of Decommissioning Plans for Materials Licensees, 2008	Not specific to uranium recovery, but provides guidance of format and content. Takes the reader to the NUREG-1757 series.	Used in part to develop the draft plan in the application. See Vol. 13, Decommissioning Plan.
RG 3.66	Standard Format and Content of Financial Assurance Mechanisms, 2008	Describes what types of financial instruments are acceptable to NRC for surety.	Colorado has its own restrictions on instruments in Part 3.9.6 of the Regulations.
DG-4018	Constraint on Releases of Airborne Radioactive Materials to the Environment for Licensees other than Power Reactors, 2010	Provides methodology for showing compliance to dose constraint in Part 4.5.4. Updates old RG 4.20.	This constraint is also demonstrated through MILDOSE- AREA. See Vol. 11, Radiation Doses to the Public

RG 4.14	Radiological Effluent and Environmental Monitoring at Uranium Mills, 1980	Basic guidance for air, water and soil monitoring at uranium recovery sites.	EF has exceeded the basic requirements in this guide in the application for baseline measurements.  Operational measurements will also meet or exceed this guidance.
RG 4.15	Quality Assurance For Radiological Monitoring Programs (Inception Through Normal Operations To License Termination) - Effluent Streams And The Environment, 2006	Discusses QA/QC approaches and references the MARLAP. Good overview and reference list.	EF has extensive QA/QC programs planned for the mill. Their program will meet these requirements on data quality.
RG 4.21	Minimization of Contamination and Radioactive Waste Generation: Life-Cycle Planning, 2008	Provides a major shift in NRC guidance from past uranium operations where the subsurface was not characterized until near closure, which resulted in inadequate surety at many locations. See SECY-03-069 for more discussion.	Used in the design of the mill to mitigate leaks and monitor for chronic releases. This is a major advance over old uranium mills; facility designed with secondary containment and monitors. See Vol. 12, Operational Monitoring Plan and Material Containment Plan, as update by the RFIs.

DG-8035	Administrative Practices In Radiation Surveys And Monitoring, 2010	Gives very basic guidance on minimum requirements for administration of a radiation management program.	EF has adopted a comprehensive survey and monitoring program (based on Cotter Cañon City mill procedures) as part of the H&S procedures. It is acceptable to the Department.
RG 8.7	Instructions for Recording and Reporting Occupational Radiation Exposure Data, 2005	Discusses what measurements and forms to use. Basic requirements.	Reflected in H&S Procedures.
RG 8.9	Acceptable Concepts, Models, Equations, and Assumptions for a Bioassay Program, 1993	Bioassay is a qualitative process. This document provides basic assumptions that can be used as part of a bioassay program.	Used to compile the EF Bioassay procedure, which is based on Cotter Cañon City mill procedures.

RG 8.10	Operating Philosophy for Maintaining Occupational Radiation Exposures as Low as Is Reasonably Achievable, 1977	This RG predates the regulatory requirement for ALARA. Provides basic administrative requirements.	These requirements are fulfilled by the Admin procedures and the ALARA Program. Doses at uranium recovery facilities have come down considerably since the adoption of the ALARA concept. EF has an administrative dose limit of 100 mrem/y that they will strive to meet that is a fraction of the regulatory requirements.
RG 8.11	Applications of Bioassay for Uranium, 1974	Provides examples of how to calculate exposure and dose through bioassay.	Background document used to design the bioassay programs at UR facilities.
RG 8.13	Instruction Concerning Prenatal Radiation Exposure, 1999	Declared pregnant workers are subject to increased monitoring and lower dose during pregnancy.	EF procedures adopt this protocol. Reflected in H&S Procedures.
RG 8.15	Acceptable Programs for Respiratory Protection, 1999	Outlines basic requirements for a respiratory protection program, along with NUREG-1400.	EF procedures follow this protocol. Reflected in H&S Procedures.

RG 8.22	Bioassay at Uranium Mills, 1988	Provides specific information relative to uranium bioassay at mills.	EF procedures follow this protocol. Reflected in H&S Procedures.
RG 8.25	Air Sampling in the Workplace, 1992	Provides minimum requirements for general air samples as well as breathing zone samplers.	EF procedures follow this protocol. Reflected in H&S Procedures.
RG 8.29	Instruction Concerning Risks from Occupational Radiation Exposure, 1999	Provides basic guidance for a training program for radiation workers.	EF procedures follow this protocol. Reflected in H&S Procedures.
RG 8.30	Health Physics Surveys in Uranium Recovery Facilities, 2002	Provides basic requirements for radiation surveys at uranium recovery facilities. Scheduled to be updated in 2011.	EF procedures follow this protocol. Reflected in H&S Procedures. Note that EF goes beyond this guidance in tracking solubility of uranium.
RG 8.31	Information Relevant to Ensuring that Occupational Radiation Exposures at Uranium Recovery Facilities Will Be as Low as Is Reasonably Achievable, 2002	Used in putting together the ALARA program. Goes beyond general requirements in RG 8.10. Focus on airborne and whole body exposure.	EF procedures follow this protocol. Reflected in H&S Procedures.

RG 8.36	Radiation Dose to the	Declared pregnant	EF procedures
	Embryo/Fetus, 1992	workers are	follow this protocol.
		subject to	Reflected in H&S
		increased	Procedures.
		monitoring and	
		lower dose during	
		pregnancy.	
RG 8.37	ALARA Levels For Effluents	Basic guidance	EF procedures
	From Materials Facilities,	for liquid and	follow this protocol.
	1993	gaseous effluents.	Reflected in H&S
		Incorporates	Procedures. Also
		ALARA	see Vol. 12
		requirements.	
		1	Operational
			Monitoring
			Program

NUREG Documents Germane to the Energy Fuels Application

NUREG Number	NUREG Name	Applicability	Comment
NUREG-0706	Final Generic Environmental Impact Statement on Uranium Milling, 1980	Provided the technical basis for 10 CFR 40 regulations.	Portions of this NUREG are no longer relevant.
NUREG-0859	Compliance Determination Procedures for Environmental Radiation Protection Standards for Uranium Recovery Facilities, 40 CFR 190	Provided early guidance on how to meet compliance with the Part 190 standards. Predictive modeling used for new applications and references RG 3.51	Not available electronically anymore.  MILDOS-AREA used to show compliance with Part 190 limits.  See Vol. 11, Estimates of Radiation Doses to Members of the Public

NUREG-1400	Air Sampling in the Workplace	Technical basis for locating samplers and choosing types of samplers.	Used as a technical basis for SOPs.
NUREG-1507	Minimum Detectable Concentrations With Typical Survey Instruments for Various Field Contaminants and Field Conditions	Provides data and formulas for estimating and quantifying instrument and source efficiencies and conversion formulas.	Used as a technical basis for the SOPs.
NUREG-1757	Consolidated Decommissioning Guidance	Used as a basis for designing the reclamation plan. Also has guidance on financial assurance instruments.	Three Volumes. Used for review of the reclamation plan.
NUREG-1748	Environmental Review Guidance for Licensing Actions Associated with NMSS Programs	While not directly applicable at EF, it provides more detail than RG 3.8.	EF has provided a cross-walk list that is very helpful in finding the various components in the application.
NUREG-1736	Consolidated Guidance: 10 CFR Part 20 - Standards for Protection Against Radiation	Basic and generic information on license application requirements.	Used as part of technical review, e.g., qualification of authorized users.
NUREG-1620	Standard Review Plan for the Review of a Reclamation Plan for Mill Tailings Sites Under Title II of the Uranium Mill Tailings Radiation	Very important document relating to technical review of the liner and cap system.	Used extensively by CDPHE staff in its review.

	Control Act of 1978		
NUREG-1576	Multi-Agency Radiological Laboratory Analytical Protocols Manual	Provides guidance on selecting laboratories and analytical methods.	Considered in the application; will be used going forward.
NUREG-1575	Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)	Provides guidance on gathering information and conducting radiation surveys for cleanup and release at closure.	Will be used in the final reclamation plans at closure (as amended over time). Also includes a link to the MARSAME manual.
NUREG-1501	Background as a Residual Radioactivity Criterion for Decommissioning: Appendix A to the Draft Generic Environmental Impact Statement in Support of Rulemaking on Radiological Criteria for Decommissioning of NRC-Licensed Nuclear Facilities	Provides a good primer on background radioactivity in the environment.	Used as background information during the application review of the baseline radiation assessment in Vol. 9.
NUREG/CR-0041	Manual of Respiratory Protection Against Radioactive Material, 2001	Technical basis for choosing types of respiratory protection.	Used as a technical basis for SOPs.
NUREG/CR-1610	Alternative Conceptual Models for Assessing Food-	Provides background on pathway parameters	Background information only.

	Chain Pathways in Biosphere Models	used in modeling.	
NUREG/CR-3332	Radiological Assessment	Provides basis and description of radiological assessment of the environment and receptors. Industry standard document.	Used in evaluating the Estimating Radiation Doses to Members of the Public from the Piñon Ridge Mill, Radiological Pathways Report and Risk Assessment in Vol. 11 as amended by responses to the RFIs.
NUREG/CR-4088	Methods for Estimating Radioactive and Toxic Source Terms for Uranium Milling Operations	Provides historical and background information in support of RG 3.51 and MILDOSE. Somewhat outdated by newer technologies. Also note that EF has no crushers or calciners.	Used in the review of the MILDOSE modeling in Vol. 11 Estimating Radiation Doses to Members of the Public from the Piñon Ridge Mill
NUREG/CR-6705	Historical Case Assessment of Uranium Plume Attenuation	This series of NUREGs presents recent findings of research and was used as background in the review to verify that assumptions in the models are reasonable.	Used as background in the review of the modeling. Since there is no credible groundwater pathway and surface water is not released from the site, they are mostly informational.
NUREG/CR-6820	Application of Surface		

	Complexation Modeling to Describe Uranium (VI) Adsorption and Retardation at the Uranium Mill Tailings Site at Naturita, Colorado	
NUREG/CR-6821	Solubility and Leaching of Radionuclides in Site Decommissioning Management Plan (SDMP) Soil and Ponded Wastes	
NUREG/CR-6898	A Combined Analytical Study to Characterize Uranium Soil and Sediment Contamination: The Case of the Naturita UMTRA Site and the Role of Grain Coatings	
NUREG/CR-6911	Tests of Uranium (VI) Adsorption Models in a Field Setting	
NUREG/CR-6941	Soil-to-Plant Concentration Ratios for Assessing Food Chain Pathways in Biosphere Models	

### Appendix C

# Appendix C: Radiation Regulations Germane to the Application

Citation	Requirement	Locations in application	Comment
1.9.1	The Department may, by rule, regulation, or order, impose upon any licensee or registrant such requirements in addition to those established in these regulations, as it deems appropriate or necessary to minimize danger to public health and safety or property.	N/A	License conditions address site-specific requirements.
1.10.4	Submittal of false information shall be sufficient basis for rejecting or revoking any Department license, registration, certification or other acceptance, approval or permit.	N/A	All submittals appear to be based on good faith efforts and due diligence.
3.8.2	The Department may at any time after the filing of the original application, and before the expiration of the license, require further statements in order to enable the Department to determine whether the application should be granted or denied or whether a license should be modified or revoked.	Numerous	Four additional requests for information were made. They are posted on the Department web site.
3.8.7.1	An application for a license, or to amend or renew an existing	Environmental Report	Timely filed and the ER has been provided.

Citation	Requirement	Locations in application	Comment
3.8.7.2	license, for (1) source material milling shall be filed with the Department at least nine (9) months prior to the anticipated commencement of construction of the plant or facility in which the activity will be conducted and shall be accompanied by the environmental report required by 3.8.8, unless an exemption from the requirement of furnishing such a report has been obtained from the Department.  No construction shall be commenced until the license has been issued.	N/A (see 3.8.7.3 for further clarification)	NRC is reviewing this provision, no radioactive materials can be brought on site
			until the license has been issued (and the bond is in place).
3.8.8.1	In the case of an application for a license, or to amend or renew an existing license, for (1) source material milling the applicant shall submit all information required under these regulations and such other material as the Department may deem necessary.	Application and response to requests for additional information.	They are posted on the Department web site.
	(1) Such information shall include the environmental report and other information required by 3.8.8.2 to be	Environmental Report and response to requests for additional information.	They are posted on the Department web site.

Citation	Requirement	Locations in application	Comment
	submitted to assist the Department in the evaluation of the short-term and long-range environmental impact of the project and activity so that the Department may weigh environmental, economic, technical, and other benefits against environmental costs, while considering available alternatives.		
3.8.8.2	An environmental report shall be required of the applicant and shall contain all information deemed necessary by the Department as authorized by the Act.	Environmental Report	Can be viewed on the Department's web site.
	(1) Upon receipt of the environmental report or any amendment thereto, and of any other documents required, the Department shall determine the necessity to transmit and, if appropriate, shall transmit the same for review and comment to Federal, State, and local agencies having expertise in and jurisdiction over the proposed project and activity.	Environmental Report	CDPHE reached out to CDOW, CDOT, DOLA, CHP for comment. There is no federal nexus.
	(2) Written comments and reports of reviewing agencies shall be considered by the Department in its	N/A	Comments were considered and incorporated into the final EA.

Citation	Requirement	Locations in application	Comment
	decision-making review process on the license application request.		
	(4) The Department shall consider applicable regulations of Federal, State, and local regulatory agencies and permit requirements thereof.	N/A	No federal nexus, however the most conservative criteria are used when there is a conflict.
3.9	General Requirements for the Issuance of Specific Licenses. A license application will be approved if the Department determines that:		
3.9.1	The applicant is qualified by reason of training and experience to use the material in question for the purpose requested in accordance with these regulations in such a manner as to minimize danger to public health and safety or property;	Vol. 1 Revised Main application	Licensee has numerous staff with experience in uranium recovery.
3.9.2	The applicant's proposed equipment, facilities, and procedures are adequate to minimize danger to public health and safety or property;	Vol. 1 Revised Main application Vol. 11 Radiological Health and Safety Procedures. Revisions to SOPS	Facility design is state of the practice, design minimizes effluents, procedures partially based on update to Cotter Cañon City mill procedures.
3.9.3	The issuance of the license will not be inimical to the health and safety of the public;	This report.	The Department review of the application and additional information leads us to the conclusion that issuance will not be inimical to the health and safety of the public.

Citation	Requirement	Locations in	Comment
		application	
3.9.5	The applicant has established Department-approved financial assurance warranties in accordance with the following requirements.	Vol. 13 Decommissioning and Reclamation Cost Estimate	Licensee commits to surety, and must be in place prior to construction.
3.9.5.1	A signed executed original copy of each warranty required by this part shall be furnished to and approved by the Department prior to the issuance of a new license, or any amendment or renewal of an existing license.	Vol. 13 Decommissioning and Reclamation Cost Estimate	Licensee commits to surety, and must be in place prior to construction.
3.9.5.2	The Department may require any licensee to furnish a decommissioning warranty in a dollar amount determined by the agency as necessary to protect public health and safety, to ensure corrective action during operation, to ensure decontamination and decommissioning of a facility and disposal of radioactive materials in the event of abandonment, default or inability of the licensee to meet the requirements of the Act, these regulations, or the license.	Vol. 13 Decommissioning and Reclamation Cost Estimate	Licensee commits to surety, and must be in place prior to construction.
3.9.5.3	The following specific		
	licensees are required to furnish decommissioning warranties:		

Requirement	Locations in	Comment
(6) Source material milling licensees;	Vol. 13 Decommissioning and Reclamation Cost Estimate	Licensee commits to surety, and must be in place prior to construction.
The amount of funds to be provided by such decommissioning warranties shall be based on Department-approved cost estimates and shall:	Vol. 13 Decommissioning and Reclamation Cost Estimate	Licensee commits to surety, and must be in place prior to construction.
(1) Include the disposal of radioactive materials;	Vol. 13 Decommissioning and Reclamation Cost Estimate	Licensee commits to surety, and must be in place prior to construction.
(2) Include decontamination and decommissioning of buildings, facilities and the site to levels which would allow unrestricted use of these areas upon decommissioning;	Vol. 13 Decommissioning and Reclamation Cost Estimate	Licensee commits to surety, and must be in place prior to construction.
(3) Include the reclamation of tailings and/or waste disposal areas in accordance with technical criteria delineated in Parts 3, 4 and/or 18, as appropriate;	Vol. 13 Decommissioning and Reclamation Cost Estimate	Licensee commits to surety, and must be in place prior to construction.
(4) Take into account total costs that would be incurred if an independent contractor were hired to dispose of radioactive materials and perform decontamination, decommissioning, and reclamation work, including:	Vol. 13 Decommissioning and Reclamation Cost Estimate	Licensee commits to surety, and must be in place prior to construction.  Licensee commits to
	(6) Source material milling licensees;  The amount of funds to be provided by such decommissioning warranties shall be based on Department-approved cost estimates and shall:  (1) Include the disposal of radioactive materials;  (2) Include decontamination and decommissioning of buildings, facilities and the site to levels which would allow unrestricted use of these areas upon decommissioning;  (3) Include the reclamation of tailings and/or waste disposal areas in accordance with technical criteria delineated in Parts 3, 4 and/or 18, as appropriate;  (4) Take into account total costs that would be incurred if an independent contractor were hired to dispose of radioactive materials and perform decontamination, decommissioning, and reclamation work,	(6) Source material milling licensees;  The amount of funds to be provided by such decommissioning warranties shall be based on Department-approved cost estimates and shall:  (1) Include the disposal of radioactive materials;  (2) Include decontamination and decommissioning of buildings, facilities and the site to levels which would allow unrestricted use of these areas upon decommissioning;  (3) Include the reclamation of tailings and/or waste disposal areas in accordance with technical criteria delineated in Parts 3, 4 and/or 18, as appropriate;  (4) Take into account total costs that would be incurred if an independent contractor were hired to dispose of radioactive materials and perform decontamination, decommissioning, and reclamation work, including:

Citation	Requirement	Locations in	Comment
		application	
	and/or disposal of	Decommissioning and	surety, and must be in
	radioactive material, or	Reclamation Cost	place prior to
	a	<u>Estimate</u>	construction.
	radioactivity-inducing		
	machine, which is or		
	would be generated,		
	stored,		
	processed or otherwise		
	present at the facility or		
	site; and		
	(b) The probable extent	<u>Vol. 13</u>	Licensee commits to
	of contamination	Decommissioning and	surety, and must be in
	through the possession	Reclamation Cost	place prior to
	or use of	<u>Estimate</u>	construction.
	radioactive material, at		
	or adjacent to the		
	facility or site, and the		
	probable		
	cost of removal of such		
	contamination; and		
	(5) Include reasonable	<u>Vol. 13</u>	Licensee commits to
	administrative costs,	<b>Decommissioning and</b>	surety, and must be in
	including indirect costs,	Reclamation Cost	place prior to
	incurred by the	<u>Estimate</u>	construction.
	Department in		
	conducting or		
	overseeing the		
	decontamination,		
	decommissioning, and		
	disposal activities, and		
	to cover the		
	Department's reasonable		
	attorney costs that may		
	be incurred in		
	successfully revoking,		
	foreclosing, or realizing		
	the decommissioning		
	warranties established		
	by the licensee in		
	accordance with Part 3.		
3.9.5.10	In addition to the	<u>Vol. 13</u>	Licensee commits to
	decommissioning	Decommissioning and	surety, and must be in
	warranty required by	Reclamation Cost	place prior to
	3.9.5.2, the Department	Estimate	construction.

Citation	Requirement	Locations in application	Comment
	may require any licensee to provide a long-term care warranty if the licensed facility will remain a disposal site for radioactive materials subsequent to the termination of the license, or the license will be terminated using criteria in 4.61.3 or 4.61.4.		
	(1) Except as provided in 3.9.5.10(2), the following specific licensees are required to provide long-term care warranties:		Additional detail in the regulations pertaining to surety.
	(c) Source material milling licensees;		
3.9.6	Decommissioning Funding Plan Required.	Vol. 13 Decommissioning and Reclamation Cost Estimate	Licensee commits to surety, and must be in place prior to construction.
3.9.7	In the case of an application for a license for (1) source material milling the Department has concluded that the action called for is the issuance of the proposed license with any appropriate conditions to protect environmental values. Such determination shall be made before commencement of construction of the plant or facility in which the activity will be conducted and based on information filed and	This document	See license.

Citation	Requirement	Locations in	Comment
	1	application	
	evaluation made		
	pursuant to 3.8.8.		
3.9.8	Commencement of construction prior to the issuance of a license, or of an amendment or renewal thereof, or of an exemption under the requirements of 3.8.7, may be grounds for denial of such license, amendment or	N/A	No construction until license and surety are in place.
3.10	renewal; Additional Requirements for Issuance of Specific Licenses for Use Of Unsealed Radioactive Material. In addition to the requirements set forth in 3.9, applicants for licenses authorizing the possession and use of unsealed radioactive materials shall include in the application a description of the facility and procedures for operation which	Vol. 1 design. Vol. 12. Ops Plan	Adequate
3.10.1	Minimize to the extent practicable, contamination of the facility and environment;	Vol. 1 design Vol. 12, Material Containment Plan, SPCC Plan	Secondary containment and double-lined piping throughout.
3.10.2	Facilitate eventual decommissioning; and	Vol. 1 design	
3.10.3	Minimize, to the extent practicable, the generation of radioactive waste.	Vol. 1 design	Raffinate treatment and recycling
3.14	Upon a determination that an application meets the requirements	License	License

Citation	Requirement	Locations in application	Comment
	of the Act and the regulations of the Department, the Department will issue a specific license authorizing the proposed activity in such form and containing such conditions and limitations as it deems appropriate or necessary.	аррисанон	
3.14.2	The Department may incorporate in any license at the time of issuance, or thereafter by appropriate rule, regulation, or order, such additional requirements and conditions with respect to the licensee's receipt, possession, use, and transfer of radioactive material subject to this part, as it deems appropriate or necessary in order to:	N/A	License
3.14.2.1	Minimize danger to public health and safety or property;	N/A	License
3.14.2.2	Require such reports and the keeping of such records, and to provide for such inspections of activities under the license as may be appropriate or necessary; and	N/A	License
3.14.2.3	Prevent loss or theft of material subject to this part.	N/A	License
3.16.4	Decommissioning Plan.	Vol. 13	Living document that

Citation	Requirement	Locations in	Comment
		application Decommissioning Plan. Decommissioning cost estimate.	will be updated over time based on conditions and changes in regulatory requirements.
3.16.4.1	A licensee must submit a decommissioning plan: if the licensee intends to terminate the license using radiological criteria specified in 4.61.3 or 4.61.4 (the exemption of 4.61.1.1 applies); if required otherwise by these regulations; if required by license condition; or if the procedures and activities necessary to carry out decommissioning of the site or separate building or outdoor area have not been previously approved by the Department and these procedures could increase potential health and safety impacts to workers or to the public, such as in any of the following cases:	Vol. 13 Decommissioning Plan	Cleanup standards are in Part 18, but Decommissioning Plan still required per Part 18.
	(1) Procedures would involve techniques not applied routinely during cleanup or maintenance operations;		Not anticipated
	(2) Workers would be entering areas not normally occupied where surface contamination and radiation levels are		Confined spaces, etc.

Citation	Requirement	Locations in application	Comment
	significantly higher than routinely encountered during operation;		
	(3) Procedures could result in significantly greater airborne concentrations of radioactive materials than are present during operation; or		Dust suppression will be used throughout.
	(4) Procedures could result in significantly greater releases of radioactive material to the environment than those associated with operation.		Not anticipated.
3.16.4.2	Procedures such as those listed in 3.16.4.1 of this section with potential health and safety impacts may not be carried out prior to Department approval of the decommissioning plan.		H&S/ALARA evaluations integral part of plan review.
3.16.4.3	The decommissioning plan for the site or separate building or outdoor area must include:		
	(1) A description of the conditions of the site, separate buildings, and/or outdoor areas sufficient to evaluate the acceptability of the plan;	Vol. 13. Decommissioning Plan.	Makes conservative assumptions since the site not yet built.
	(2) A description of planned decommissioning activities and a schedule	Vol. 13. Decommissioning and Reclamation Cost Estimate	Cost estimate well documented.

Citation	Requirement	Locations in application	Comment
	for completion;		
	(3) A description of methods used to ensure protection of workers and the environment against radiation hazards during decommissioning;	Vol. 13. Decommissioning Plan.	Commits to safe and ALARA practices.
	(4) A description of the planned final radiation survey;	Vol. 13. Decommissioning Plan.	This is lacking, there is a general description, but not much on detail.
	(5) A current detailed cost estimate for decommissioning, comparison of that estimate with present funds set aside for decommissioning, and a plan for assuring the availability of adequate funds for completion of decommissioning; and	Vol. 13. Decommissioning and Reclamation Cost Estimate	Cost estimate well documented, application is lacking on decommissioning funding plan.
	(6) A description of the intended final condition of the site, separate buildings, and/or outdoor areas upon completion of decommissioning activities.	Decommissioning Plan.	Commits to restoration in plan
3.16.4.4	For decommissioning plans calling for completion of decommissioning later than 24 months after plan approval, the plan shall include a justification for the decommissioning schedule which addresses the following:	Vol. 13. Decommissioning and Reclamation Cost Estimate	Gantt chart shows more than 2 years due to settlement time.
	(1) Whether it is	Vol. 13.	Will depend on

Citation	Requirement	Locations in application	Comment
	technically feasible to complete decommissioning within a 24-month period;	Decommissioning and Reclamation Cost Estimate	dewatering/settlement of tailings cells.
	(5) Other site-specific factors which the Department may consider appropriate on a case-by-case basis, such as the regulatory requirements of other government agencies, lawsuits, ground-water treatment activities, monitored natural groundwater restoration, actions that could result in more environmental harm than deferred cleanup, and other factors beyond the control of the licensee.	Vol. 13. Decommissioning and Reclamation Cost Estimate	Department reserves this right.
3.16.5.2	Information considered important to decommissioning includes:		
	(1) Records of spills or other unusual occurrences involving the spread of contamination in and around the facility, equipment, or site.  These records may be limited to instances when contamination remains after any cleanup procedures or when there is reasonable likelihood that contaminants may have spread to inaccessible areas as in the case of possible seepage into	Vol. 12. Operational Monitoring Plan Vol. 13 SPCC	Records will be reviewed at least annually upon inspection.

Citation	Requirement	Locations in	Comment
	_	application	
	porous materials such as		
	concrete. These records		
	must include any known		
	information on		
	identification of		
	involved nuclides,		
	quantities, forms and		
	concentrations.		
		Vol. 1	Also will be in
	(2) As-built drawings		
	and modifications of	Basic Engineering	Department GIS data
	structures and	Report	system
	equipment in restricted	Vol. 2.	
	areas where radioactive	Ore Stockpile Pad	
	materials are used	Design.	
	and/or stored, and of	Vol. 3	
	locations of possible	Facility Operations	
	inaccessible	Plan	
	contamination such as		
	buried pipes which may		
	be subject to		
	contamination. If		
	required drawings are		
	referenced, each		
	relevant document		
	needs to be indexed		
	individually. If		
	drawings are not		
	available, the licensee		
	shall substitute		
	appropriate records of		
	available information		
	concerning these areas		
	and locations.		
3.17	Renewal of Licenses.		
3.17.2	In any case in which a	N/A	Describes "timely
2.17. <u>-</u>	licensee, not less than	1,112	renewal," which is often
	30 days prior to		the case for uranium
	expiration of his		recovery license
	existing license, has		renewals.
	filed an application in		
	proper form for renewal		
	or for a new license		
	authorizing the same		
	activities, such existing		
	activities, such existing		

Citation	Requirement	Locations in application	Comment
	license shall not expire until final action by the Department.		
3.18	Amendment of Licenses at Request of Licensee. Applications for amendment of a license shall be filed in accordance with 3.8 and shall specify the respects in which the licensee desires the license to be amended and the grounds for such amendment.	N/A	Process
3.23	Modification and Revocation of Licenses.		
3.23.1	The terms and conditions of all licenses shall be subject to amendment, revision, or modification or the license may be suspended or revoked by reason of amendments to the Act, or by reason of rules, regulations, and orders issued by the Department.	N/A	The Department has flexibility to react to new information or as a result of an incident.
3.23.2	Any license may be revoked, suspended, or modified, in whole or in part, for any material false statement in the application or any statement of fact required under provisions of the Act, or because of conditions revealed by such application or statement of fact or any report, record, or inspection or	N/A	All submittals appear truthful and due diligence appears to have been applied.

Citation	Requirement	Locations in application	Comment
	other means which would warrant the Department to refuse to grant a license on an original application, or for violation of, or failure to observe any of the terms and conditions of the Act, or of the license, or of any rule, regulation, or order of the Department.		
3.23.3	Except in cases of willfulness or those in which the public health, interest or safety requires otherwise, no license shall be modified, suspended, or revoked unless, prior to the institution of proceedings therefor, facts or conduct which may warrant such action shall have been called to the attention of the licensee in writing and the licensee shall have been accorded an opportunity to demonstrate or achieve compliance with all lawful requirements.	N/A	Process
4.5	Radiation Protection Programs.		
4.5.1	Each licensee or registrant shall develop, document, and implement a radiation protection program sufficient to ensure compliance with the provisions of Part 4. See	Vol. 11 Mill Health and Safety Plan Vol. 12 Operational Monitoring Plan	Living documents that will be updated over time.

Citation	Requirement	Locations in application	Comment
	4.41 for recordkeeping requirements relating to these programs.		
4.5.2	The licensee or registrant shall use, to the extent practical, procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to members of the public that are as low as is reasonably achievable (ALARA).	Vol. 11 Mill Health and Safety Plan Vol. 12 Operational Monitoring Plan	
4.5.3	The licensee or registrant shall, at intervals not to exceed 12 months, review the radiation protection program content and implementation.	Vol. 11 Mill Health and Safety Plan	This is a routine inspection item, the ALARA committee activities address this requirement.
4.5.4	To implement the ALARA requirements of 4.5.2 and notwithstanding the requirements in 4.14 of this part, a constraint on air emissions of radioactive material to the environment, excluding radon-222 and its decay products, shall be established by licensees, such that the individual member of the public likely to receive the highest dose will not be expected to receive a total effective dose equivalent in excess of 0.1 milliSievert (10	Vol. 11 Mill Health and Safety Plan Vol. 11 Estimates of Radiation Doses Vol. 12. Operational Monitoring Plan Vol. 12. Material Containment Plan	Dust control is imperative to meet this standard; tailings will have to be kept moist to avoid excursions.

Citation	Requirement	Locations in application	Comment
	mrem) per year from these emissions. If a licensee subject to this requirement exceeds this dose constraint, the licensee shall report such event as provided in 4.53.2 and promptly take appropriate corrective action to ensure against recurrence.		
4.6.1	Occupational Dose Limits for Adults. The licensee or registrant shall control the occupational dose to individual adults, except for planned special exposures pursuant to 4.11, to the following dose limits:	Vol. 11 Mill Health and Safety Plan	ALARA Program results in doses a fraction of annual limits.
4.6.1.1	An annual limit, which is the more limiting of:		
	(1) The total effective dose equivalent being equal to 0.05 Sv (5 rem); or	Vol. 11 Mill Health and Safety Plan	
	(2) The sum of the deep dose equivalent and the committed dose equivalent to any individual organ or tissue other than the lens of the eye being equal to 0.5 Sv (50 rem).	Vol. 11 Mill Health and Safety Plan	
4.6.4	Derived air concentration (DAC) and annual limit on intake (ALI) values are presented in Table 4B1 of Appendix 4B and may be used to	Vol. 11 Mill Health and Safety Plan	EFR has petitioned to use DCFs from ICRP 68, which is approved.

Citation	Requirement	Locations in application	Comment
	determine the individual's dose and to demonstrate compliance with the occupational dose limits. See 4.46.		
4.6.5	Notwithstanding the annual dose limits, the licensee shall limit the soluble uranium intake by an individual to 10 milligrams in a week in consideration of chemical toxicity. See footnote 3 of Appendix 4B.	Vol. 11 Mill Health and Safety Plan	Bioassay program used to monitor this parameter.
4.7.1	If the licensee or registrant is required to monitor pursuant to both 4.18.1 and 4.18.2, the licensee or registrant shall demonstrate compliance with the dose limits by summing external and internal doses The licensee or registrant may demonstrate compliance with the requirements for summation of external and internal doses pursuant to 4.7.2, 4.7.3 and 4.7.4.	Vol. 11 Mill Health and Safety Plan	Dose limits are total effective dose equivalent (TEDE) so internal and external must be monitored.
4.9.1	For purposes of assessing dose used to determine compliance with occupational dose equivalent limits, the licensee or registrant shall, when required pursuant to 4.18, take suitable and timely measurements of:	Vol. 11 Mill Health and Safety Plan	Licensee has a program that requires all pertinent measurements to be made.
4.9.1.1	Concentrations of	Vol. 11	Standard Operating

Citation	Requirement	Locations in application	Comment
	radioactive materials in air in work areas; or	Mill Health and Safety Plan	Procedures (SOPs) for general air and BZ samplers
4.9.1.2	Quantities of radionuclides in the body; or	Vol. 11 Mill Health and Safety Plan	SOP for whole body program
4.9.1.3	Quantities of radionuclides excreted from the body; or	Vol. 11 Mill Health and Safety Plan	SOP for bioassay program
4.9.1.4	Combinations of 4.9.1.1, 4.9.1.2 and 4.9.1.3.	Vol. 11 Mill Health and Safety Plan	Dose is calculated based primarily on direct gamma and inhalation and ingestion.
4.9.2	Unless respiratory protective equipment is used, as provided in 4.24, or the assessment of intake is based on bioassays, the licensee or registrant shall assume that an individual inhales radioactive material at the airborne concentration in which the individual is present.	Vol. 11 Mill Health and Safety Plan	Dose calculation procedure.
4.9.3	When specific information on the physical and biochemical properties of the radionuclides taken into the body or the behavior of the material in an individual is known, the licensee or registrant may:	In process. Vol.3 Ecological Screening of Raffinate Material Vol.1 License Application	This is common for uranium recovery projects where there is a known combination(s) of uranium series isotopes.
4.9.3.1	Use that information to calculate the committed effective dose equivalent, and, if used, the licensee or registrant shall document that information in the individual's record; and	Not specifically requested in application.	This is usually reserved for an incident or non-normal intake.

Citation	Requirement	Locations in application	Comment
4.9.3.2	Upon prior approval of the Department, adjust the DAC or ALI values to reflect the actual physical and chemical characteristics of airborne radioactive material, for example, aerosol size distribution or density; and	Vol. 11 Mill Health and Safety Plan	The applicant petitioned the Department in their response to RFI 2 that they would like to calculate a site-specific DAC.
4.9.3.3	Separately assess the contribution of fractional intakes of Class D, W, or Y compounds of a given radionuclide to the committed effective dose equivalent.	Vol. 11 Mill Health and Safety Plan	The procedures call for this even though the NRC guidance has not been updated yet.
4.13.1	The licensee or registrant shall ensure that the dose equivalent to an embryo/fetus during the entire pregnancy, due to the occupational exposure of a declared pregnant woman, does not exceed 5 mSv (0.5 rem). See 4.46 for recordkeeping requirements.	Vol. 11 Mill Health and Safety Plan	Standard
4.14	Dose Limits for Individual Members of the Public.		
4.14.1	Each licensee or registrant shall conduct operations so that:		
4.14.1.1	The total effective dose equivalent to individual members of the public from the licensed or registered operation does not exceed 1 milliSievert (0.1 rem) in a year,		

Citation	Requirement	Locations in	Comment
	ļ !	application	
	exclusive of the dose		
	contributions from		
	background radiation,		
	from any medical		
	administration the		
	individual has received,		
	from exposure to		
	individuals administered		
	radioactive material and		
	released in accordance		
	with 7.26, from		
	voluntary participation		
	in medical research		
	programs, and from the		
	dose contribution from		
	the licensee's or		
	registrant's disposal of		
	radioactive material into		
	sanitary sewerage in		
	accordance with 4.35,		
	and		
4.14.4	In addition to the	Vol. 12 Estimates of	These are the organ
7.17.7	requirements of Part 4, a	Radiation Doses to	doses that are also
	licensee or registrant	Members of the	required by Appendix A
	subject to the provisions	Public from the	of Part 18.
	of the U.S.	Piñon Ridge Mill.	011 att 18.
	Environmental	I mon kidge wim.	
	Protection Agency's		
	generally applicable environmental radiation		
	standards in 40 CFR		
	190 (July 1, 2004) shall comply with those		
	standards.		
4.15.1	The licensee or	Vol. 11	Air water and sail
4.13.1		Mill Health and	Air, water and soil
	registrant shall make or cause to be made	Safety Plan	samples collected on a regular basis.
	surveys of radiation	Vol.12	regular vasis.
	levels in unrestricted	Operational	
	areas and radioactive	-	
	materials in effluents	Monitoring Plan	
	released to unrestricted		
	areas to demonstrate		
l	compliance with the		

Citation	Requirement	Locations in application	Comment
	dose limits for individual members of the public in 4.14.		
4.17.1	Each licensee or registrant shall make, or cause to be made, surveys that:		
4.17.1.1	Are necessary for the licensee or registrant to comply with Part 4; and	Vol. 11 Mill Health and Safety Plan Vol.12 Operational Monitoring Plan	Surveys and measurements on an ongoing and routine basis.
4.17.1.2	Are necessary under the circumstances to evaluate:		
	(1) The magnitude and extent of radiation levels; and (2) Concentrations or quantities of radioactive material; and (3) The potential radiological hazards.	Vol. 11 Mill Health and Safety Plan Vol.12 Operational Monitoring Plan	This includes environmental sampling of biota, etc.
4.17.2	The licensee or registrant shall ensure that instruments and equipment used for quantitative radiation measurements, for example, dose rate and effluent monitoring, are calibrated at intervals not to exceed 12 months for the radiation measured unless otherwise noted in these regulations.	Vol. 1. License Application Vol. 12 Operational Monitoring Program	
4.22	The licensee shall use, to the extent practical, process or other engineering controls, such as containment,	Vol. 11 Mill Health and Safety Plan Vol. 12 Operational	Bag houses and scrubbers used to limit effluents.

Citation	Requirement	Locations in application	Comment
	decontamination or ventilation, to control the concentrations of radioactive material in air.	Monitoring Program	
10.3.1	All individuals who in the course of employment are likely to receive in a year an occupational dose (see also 10.3.2) in excess of 1 milliSievert (100 mrem) shall be:	Vol. 11 Mill Health and Safety Plan	These requirements are all elements of the training program.
10.3.1.1	Kept informed of the storage, transfer, or use of sources of radiation;	Vol. 11 Mill Health and Safety Plan	
10.3.1.2	Instructed in the health protection problems associated with exposure to radiation and/or radioactive material to the individual and potential offspring, in precautions or procedures to minimize exposure, and in the purposes and functions of protective devices employed;	Vol. 11 Mill Health and Safety Plan	
10.3.1.3	Instructed in, and required to observe, to the extent within the worker's control, the applicable provisions of these regulations and licenses for the protection of personnel from exposures to radiation or radioactive material;	Vol. 11 Mill Health and Safety Plan	
10.3.1.4	Instructed of their responsibility to report promptly to the licensee or registrant any	Vol. 11 Mill Health and Safety Plan	

Citation	Requirement	Locations in application	Comment
	condition which may constitute, lead to, or cause a violation of the Act, these regulations, and licenses or registrations, or unnecessary exposure to radiation and/or radioactive material;		
10.3.1.5	Instructed in the appropriate response to warnings made in the event of any unusual occurrence or malfunction that may involve exposure to radiation and/or radioactive material; and	Vol. 11 Mill Health and Safety Plan	
10.3.1.6	Advised as to the radiation exposure reports which workers shall be furnished pursuant to 10.4.	Vol. 11 Mill Health and Safety Plan	
10.5.1	Each licensee or registrant shall afford to the Department at all reasonable times opportunity to inspect materials, machines, activities, facilities, premises, and records pursuant to these regulations.	Not in application	Policy – this allows for the Department to make unannounced inspections.
17.5.1	Each licensee who transports licensed material outside the site of usage, as specified in the Department license, or where transport is on public highways, or who delivers licensed material to a carrier for transport, shall:	Vol. 11 Mill Health and Safety Plan	

Citation	Requirement	Locations in	Comment
	_	application	
17.5.1.1	Comply with the	Vol. 11	This section mostly
	applicable requirements,	Mill Health and	pertains to shipping of
	appropriate to the mode	Safety Plan	yellowcake from the
	of transport, of the		mill. The mines are
	regulations of the DOT,		responsible for shipping
	particularly the		the ore to the mill.
	regulations of the DOT		
	in the following areas:		
	(1) Packaging - 49 CFR		
	Part 173: Subparts A		
	and B and I.		
	(2) Marking and labeling - 49 CFR Part		
	172: Subpart D, §§		
	1		
	172.400 through		
	172.407, §§ 172.436		
	through 172.441, and		
	Subpart E.		
	(3) Placarding - 49 CFR		
	Part 172: Subpart F,		
	especially §§ 172.500		
	through 172.519,		
	172.556, and		
	Appendices B and C.		
	(4) Accident reporting -		
	49 CFR Part 171: §§		
	171.15 and 171.16.		
	(5) Shipping papers and		
	emergency information		
	- 49 CFR Part 172:		
	Subparts C and G.		
	(6) Hazardous material		
	employee training - 49		
	CFR Part 172: Subpart		
	H.		
	(7) Security plans - 49		
	CFR Part 172: Subpart		
	I.		
	(8) Hazardous material		
	shipper/carrier		
	registration - 49 CFR		
	Part 107: Subpart G.		
18.3	Special Requirements	The Application plus	The Department has
	for Issuance of Specific	the additional	determined that the

Citation	Requirement	Locations in	Comment
		application	
	Licenses For Source Material Milling. In addition to the requirements set forth in RH 3.8 and 3.9, a specific license for source material milling will be issued if the applicant submits to the Department a complete and accurate application that clearly demonstrates how objectives and requirements of this Part are met. Failure to clearly so demonstrate shall be grounds for refusing to	information requested.	application (with the additional submitted information) is adequate to meet these criteria.
18.3.1	accept an application.  An application for a license or to amend or renew an existing license to receive, possess, and use source material for milling or byproduct material as in definition (2) of RH 1.4 shall include all information required under these regulations and such other information as the Department may deem necessary, and shall address the following:	The Application plus the additional information requested.	The Department has determined that the application (with the additional submitted information) is adequate to meet these criteria.
18.3.1.1	Description of the	Environmental Report	
	proposed project or action;		
18.3.1.2	Area/site characteristics including geology, topography, hydrology and meteorology;	Environmental Report Vol. 4 Geologic Report Vol 5. Vol. 6	These reports plus additional submitted information in the responses to RFI's. The site is adequately

Citation	Requirement	Locations in application	Comment
		Baseline Surface Hydrology Report Hydrogeology Report Vol. 7 Meteorology/Climate Report	characterized.
18.3.1.3	Radiological and nonradiological impacts of the proposed project or action, including waterway and groundwater impacts;	Environmental Report Vol. 3 Ecological Screening of Raffinate Vol. 6 Baseline Surface Hydrology Modeling Vol. 11 Radiological Exposure Pathways Vol. 11 Accident and Risk Assessment Vol. 12 Operational Monitoring Plan	Effluents are kept to a minimum and offsite impacts are minimal
18.3.1.4	Environmental effects of accidents;	Vol. 11 Accident and Risk Assessment	The risk assessment evaluated a range of potential accidents and determined that environmental effects of accidents are manageable.
8.3.1.5	Tailings disposal and decommissioning;	Vol. 2 Tailings Cell Design Report Vol. 2 Evaporation Cell Design Vol. 3 Facility Operating Plan Vol. 12 Material Containment Plan Vol. 13	Tailings and evaporation cells state-of-the practice, designed to minimize windblown dusting.

Citation	Requirement	Locations in application	Comment
		Decommissioning Plan Amended Vol. 13 Tailings Cell Closure Design	
18.3.1.6	Site and project alternatives.	Environment Report	Augmented in Environmental Impact Analysis
18.3.2	The applicant shall provide procedures describing the means employed to meet the following requirements during the operational phase of any project.	Vol. 11 Mill Health & Safety Plan	
18.3.2.1	Milling operations shall be conducted so that all releases are reduced to as low as is reasonably achievable below the limits of Part 4.	Vol. 3 Facility Operational Plan Vol. 11 Mill Health & Safety Plan	
18.3.2.2	The mill operator shall conduct at least daily inspection of any tailings or waste retention systems. The inspection shall be performed by a person who is qualified and approved by the Department. Records of such inspections shall be maintained for review by the Department.	Vol. 11 Mill Health & Safety Plan	The evaporation ponds, tailings cells, and piping to the cells will be inspected daily.
18.3.3	During any one full year prior to any major site construction, the applicant/licensee shall conduct a preoperational	Environmental Report Vol. 3 Soil Survey Vegetation Survey Wildlife Survey Biological Survey Vol. 4	Preoperational monitoring exceeds basic requirements of Reg. Guide 4.14. Mill will have numerous sensors on

Citation	Requirement	Locations in	Comment
		application	
	monitoring program to	Phase 2 Geotechnical	tanks/systems.
	provide complete	Investigation	Secondary containment
	baseline data on a	Vol. 5	and dust suppression
	milling site and its	Hydrogeologic	practices will reduce
	environs.	Report	off-site effluents.
		Pump Test Report	Zero discharge surface
	Throughout the	Groundwater	water facility.
	construction and	Monitoring	Over 400 feet to
	operating phases of the	Summary	groundwater.
	mill, the	Vol. 6	groundwater.
	· /	Baseline Surface	
	applicant/licensee shall		
	conduct an operational	Hydrology Report	
	monitoring program to	Surface Water	
	measure or evaluate	Monitoring	
	compliance with	Summary	
	applicable standards and	Vol. 7	
	regulations, to evaluate	Meterological Air	
	performance of control	Climate Report	
	systems and procedures,	Vol. 9	
	to evaluate	Baseline	
	environmental impacts	Radiological	
	of operation, and to	Investigation	
	detect potential long-	Vol. 10	
	term effects.	Baseline Survey of	
		Radionuclides in	
		Animal Tissue	
		Vol. 15	
		Archaeological	
		Treatment	
		Vol. 12	
		Operational	
		Monitoring Program	
		Material	
		Containment Plan	
		SPCC Plan.	
18.3.4	The environmental	Environment Report,	Environmental Impact
	report required by RH	as augmented by the	Analysis
	3.8.8 shall contain all	responses to the	
	information deemed	RFIs.	
	necessary by the agency		
	to assist the agency in		
	the evaluation of the		
	short-term and long-		

range environmental impact of the project and activity so that the agency may weigh environmental, economic, technical, and other benefits against environmental costs, while considering available alternatives  18.3.6 An application for a license to receive, possess and use source material for milling or byproduct material as in definition (2) of RH 1.4 shall contain proposed specifications relating to the milling operations and the disposition of tailings or wastes resulting from such milling activities to achieve the requirements and relations and the disposition of tailings activities to achieve the requirements and relations and the disposition of Safety Plan  The Department has determined that the application and supporting information contains necessary information to evaluate the application against this criterion.  Additional discussion below relative to Appendix A.	Citation	Requirement	Locations in application	Comment
license to receive, possess and use source material for milling or byproduct material as in definition (2) of RH 1.4 shall contain proposed specifications relating to the milling operations and the disposition of tailings or wastes resulting from such milling activities to achieve the  Basic Engineering Drawings Vol. 2 Technical Specifications Vol. 3 Facility Operations Plan Additional discussion below relative to Appendix A.		impact of the project and activity so that the agency may weigh environmental, economic, technical, and other benefits against environmental costs, while considering	аррисанон	
objectives set forth in the criteria listed in Appendix A to this Part 18.  Each application for a new license or for license renewal must clearly demonstrate how the requirements and objectives set forth in Appendix A to this Part 18 have been addressed. Failure to clearly demonstrate how the requirements and objectives in	18.3.6	An application for a license to receive, possess and use source material for milling or byproduct material as in definition (2) of RH 1.4 shall contain proposed specifications relating to the milling operations and the disposition of tailings or wastes resulting from such milling activities to achieve the requirements and objectives set forth in the criteria listed in Appendix A to this Part 18.  Each application for a new license or for license renewal must clearly demonstrate how the requirements and objectives set forth in Appendix A to this Part 18 have been addressed. Failure to clearly demonstrate how the requirements and	Basic Engineering Drawings Vol. 2 Technical Specifications Vol. 3 Facility Operations Plan Vol. 8 Ambient Air Monitoring Plan Vol. 11 Mill Health and Safety Plan Vol. 12 Operational Monitoring Plan Material	determined that the application and supporting information contains necessary information to evaluate the application against this criterion.  Additional discussion below relative to

Citation	Requirement	Locations in application	Comment
	18 have been addressed shall be grounds for refusing to accept an application.		
18.4.1	For each license application or application to amend or renew an existing license to receive, possess, or use source material for uranium or thorium milling or byproduct material as in definition (2) of RH 1.4 which will have a significant impact on the environment, the Department shall prepare a written analysis of the impact of the licensed activity on the environment, which shall be available to the public and for review by the U.S. Nuclear Regulatory Commission at the time of public notice of hearing, which analysis shall include:	Environmental Report	Environmental Impact Analysis
18.4.1.1	An assessment of the radiological and nonradiological impacts to the public health;	Vol. 9 Baseline Radiological Investigation Vol. 11 Estimation of Radiation Doses Radiological Pathways Report Accident and Risk Assessment	As augmented by responses to RFIs
18.4.1.2	An assessment of any impact on any waterway and ground water;	Vol. 5 Hydrogeologic Report	

Citation	Requirement	Locations in application	Comment
		Pumping Test Report Groundwater Monitoring Summary Vol. 6 Baseline Surface Hydrology Surface Water Monitoring Summary Vol. 11 Radiological Exposures Pathways	
18.4.1.3	Consideration of alternatives to the activities to be conducted;	Report Environmental Report	
18.4.1.4	Consideration of the long-term impacts of the licensed activities.	Environmental Report Vol. 11 Estimate of Radiation Doses Radiological Exposures Pathways Report	
18.4.2	In preparing the environmental impact analysis, the Department may use and incorporate by reference the environmental report prepared by the applicant as required by RH 3.8.8 and environmental assessments prepared by Federal, State or local agencies.	Environmental Report Input from: DOW DOLA CDOT DPS	The Department hereby incorporates by reference the Environmental Report and augmented it in the Environmental Impact Analysis.
18.4.3	The environmental impact analysis, or any part thereof, shall be prepared directly by the Department or the	Environmental Report	The Department prepared the Environmental Impact Analysis, however it is noted that numerous

Citation	Requirement	Locations in application	Comment
	Department shall utilize the third party method set forth in RH 3.13.	иррпештоп	contractors contributed to the Environmental Report.
18.5	Prior to issuance of the license, the applicant shall (1) establish financial assurance arrangements, as provided by RH 3.9.5, to ensure decontamination and decommissioning of the facility and (2) provide a fund adequate to cover the payment of the cost for long-term care and monitoring as provided by RH 3.9.5.10. Such fund shall be sufficient to meet the requirements of RH 3.9.5.10.4. The Department will consider proposals to combine the two types of financial assurance. Financial assurance shall be provided prior to commencement of construction or operation.	Vol. 13 Decommissioning and Reclamation Cost Estimate	Funds will be deposited prior to site construction to cover site construction; full surety prior to receipt of radioactive material onsite.
18.7	Each licensee authorized to receive, possess or use source material for milling or byproduct material as in definition (2) of RH 1.4 shall:		
18.7.1	Operate in accordance with the requirements of this Part 18, in particular the procedures required by	Vol. 11. Mill Health and Safety Plan Vol. 12 Emergency Response	As augmented by the responses to RFIs.

Citation	Requirement	Locations in	Comment
	RH 18.3.2, monitoring required by 18.3.3, and the requirements and objectives of Appendix A to this Part 18.	application Plan Operational Monitoring Plan Material Containment Plan SPCC Plan Vol. 13 Stormwater Management Plan	
18.8.1	In addition to the information required under RH 3.16, each licensee authorized to receive, possess or use source material for milling or byproduct material as in definition (2) of RH 1.4 shall submit a plan for completion of decommissioning if the procedures necessary to carry out decommissioning:	Vol. 13 Decommissioning Plan Amended Vol. 13 Tailings Cell Closure Design Closure Specifications	Plans are preliminary at this early date; however they are adequate for licensing the mill. Contractors specialize in mill demo and are likely to be used at this site.
18.8.1.1	Have not been previously approved by the Department; and		Contractor plans will be approved by the Department.
18.8.1.2	Could increase potential health and safety impacts to workers or to the public, such as in any of the following cases:	Vol. 13 Decommissioning Plan Amended Vol. 13 Tailings Cell Closure Design Closure Specifications	•
18.8.1.2.1	Procedures would involve techniques not applied routinely during cleanup or maintenance operations; or	Vol. 13 Decommissioning Plan	Contractor plans will be approved by the Department.
18.8.1.2.2	Workers would be entering areas not normally occupied	Vol. 11 Health and Safety Plan	Radiation Work Permits used in these cases.

Citation	Requirement	Locations in application	Comment
	where surface contamination and radiation levels are significantly higher than routinely encountered; or		
18.8.1.2.3	Procedures could result in significantly greater airborne concentrations of radioactive materials than are present during operation; or	Vol. 13 Decommissioning Plan	Dust Suppression is a major requirement during decommissioning.
18.8.1.2.4	Procedures could result in significantly greater releases of radioactive material to the environment than those associated with operation.	Vol. 13 Decommissioning Plan	Dust Suppression is a major requirement during decommissioning. Increased monitoring is also required.
18.8.2	Procedures with potential health and safety impacts may not be carried out prior to approval of the decommissioning plan.	Vol. 13 Decommissioning Plan Amended Vol. 13 Tailings Cell Closure Design	Decommissioning cannot proceed without Department approval (usually through license conditions/amendments)
18.8.3	The proposed decommissioning plan, if required by RH 18.8.1 or by license condition, must include:	Vol. 13 Decommissioning Plan Amended Vol. 13 Tailings Cell Closure Design	
18.8.3.1	Description of planned decommissioning activities;	Vol. 13 Decommissioning Plan Amended Vol. 13 Tailings Cell Closure Design	Activities are spelled out in general terms, plan will be updated as closure approaches.
18.8.3.2	Description of methods used to assure protection of workers	Vol. 13 Decommissioning Plan	Commitment is made in the report.

Citation	Requirement	Locations in application	Comment
	and the environment against radiation hazards during decommissioning;		
18.8.3.3	A description of the planned final radiation survey; and	Vol. 13 Decommissioning Plan	Commitment is made in the report for a final status survey plan prior to decommissioning. It is not consistent with MARSSIM at this time.
18.8.3.4	An updated detailed cost estimate for decommissioning, comparison of that estimate with present funds set aside for decommissioning, and plan for assuring the availability of adequate funds for completion of decommissioning.	Vol. 13 Decommissioning and Reclamation Cost Estimate	Cost estimate is thorough and done by a reputable third party contractor.
18.8.4	The proposed decommissioning plan will be approved by the Department if the information therein demonstrates that the decommissioning will be completed as soon as is reasonable and that the health and safety of workers and the public will be adequately protected.	Vol. 13 Decommissioning Plan Amended Vol. 13 Tailings Cell Closure Design Decommissioning and Reclamation Cost Estimate	These are living documents and will be updated over time based on available information and standards of care in place at closure.
18.8.5	Upon approval of the decommissioning plan by the Department, the licensee shall complete decommissioning in accordance with the approved plan. As a final step in decommissioning, the	Vol. 13 Decommissioning Plan Amended Vol. 13 Tailings Cell Closure Design	Decommissioning is to be performed within 24 months after cessation of principal activities at the site.

Citation	Requirement	Locations in application	Comment
	licensee shall submit the information required in RH 3.16.4.1.5 and shall certify the disposition of accumulated wastes from decommissioning.	арричинон	
18.8.6	If the information submitted under RH 3.16.4.1.5 or 18.8 does not adequately demonstrate that the premises are suitable for release for unrestricted use, the Department will inform the licensee of the appropriate further actions required for termination of license.	Vol. 13 Decommissioning Plan Amended Vol. 13 Tailings Cell Closure Design	The Department will approve final conditions prior to license termination and transfer to long term stewardship.
Part 18 Appendix A	Criteria Relating To The Operation Of Mills And The Disposition Of The Tailings Or Wastes From These Operations	Throughout application	NOTE: The following sections are paraphrased for brevity. The performance specifications in the Appendix are not concise.
Introduction	This appendix establishes technical, ownership, and long-term site surveillance criteria relating to the siting, operation, decontamination, decommissioning, and reclamation of mills and tailings or waste systems and sites at which such mills and systems are located.		
	The specifications shall be developed considering the		Current application is for 500-tpd mill. A license amendment and

Citation	Requirement	Locations in application	Comment
	expected full capacity of tailings or waste systems and the lifetime of mill operations.  Where later expansions of systems or operations may be likely (for example, where large quantities of ore now marginally uneconomical may be stockpiled), the amenability of the disposal system to accommodate increased capacities without degradation in longterm stability and other performance factors shall be evaluated.		administrative process will be required to increase to 1,000 tpd. Tailings cells and evaporation cells are modular, and will be built as needed, if needed.
	Licensees or applicants may propose to the Department alternatives to meet the specific requirements in this Appendix. The alternative proposals may take into account local or regional conditions, including geology, topography, hydrology, and meteorology.	Amended Vol. 13 Tailings Cell Closure Design	Current state of the art design for cap is an example of an alternative design (water balance cover vs. highly engineered cover system).
Criterion 1A.	The general goal or broad objective in siting and design decisions is permanent isolation of tailings and associated contaminants by minimizing disturbance and dispersion by natural forces, and to do so without ongoing maintenance.	Amended Vol. 13 Tailings Cell Closure Design	Cells will be mostly below grade. Paradox Valley is a depositional environment, the cells would be covered over time if left alone.

Citation	Requirement	Locations in application	Comment
	The following site features which will contribute to such a goal or objective must be considered in selecting among alternative tailings disposal sites or judging the adequacy of existing tailings sites:	фрисалон	
	(1) Remoteness from populated areas;	Environmental Report	The site is remote, sparse population in the area. Groundwater and surface water pathways incomplete, only air pathway and it meets all limits
	(2) Hydrologic and other natural conditions as they contribute to continued immobilization and isolation of contaminants from ground-water sources; and	Environmental Report Vol. 11 Environmental Pathways Report	Over 400' to groundwater under the site. Cells have composite liner systems and cover design limits infiltration.
	(3) Potential for minimizing erosion, disturbance, and dispersion by natural forces over the long term.	Amended Vol. 13 Tailings Cell Closure Design	Water balance cover (ET cover). Paradox Valley is a depositional environment, site would be covered over time.
Criterion 1B.	The site selection process must be an optimization to the maximum extent reasonably achievable in terms of the features in Criterion 1A.	Environmental Report	Eight potential sites were evaluated prior to selection of the Piñon Ridge site.
Criterion 1C.	In the selection of disposal sites, primary emphasis must be given to isolation of tailings or	Environmental Report	Site meets long term criteria (depositional environment). The site is centrally located to

Citation	Requirement	Locations in application	Comment
	wastes, a matter having long-term impacts, as opposed to consideration only of short-term convenience or benefits, such as minimization of transportation or land acquisition costs. While isolation of tailings will be a function of both site and engineering design, overriding consideration must be given to siting features given the long-term nature of the tailings hazards.	фрисция	mines, however final location was chosen based on geotechnical, groundwater, and long-term requirements. Satisfied.
Criterion 1D.	Tailings should be disposed of in a manner that no active maintenance is required to preserve conditions of the site.	Amended Vol. 13 Tailings Cell Closure Design	Cap is state of the art, and will not require active maintenance, once vegetative cover established. Site will be under perpetual care of U.S. Department of Energy.
Criterion 2.	To avoid proliferation of small waste disposal sites and thereby reduce perpetual surveillance obligations, byproduct material as in definition (2) of RH 1.4, from in situ extraction operations, such as residues from solution evaporation or contaminated control processes, and wastes from small remote above ground extraction operations shall be disposed of at existing large mill tailings		Conditional Use Permit from MONTCO does not allow for direct disposal or alternate feed. Licensee has not sought authorization for alternate feed or direct disposal with the exception of their own water treatment residuals from their mines. The Department has evaluated this request. It will be considered if 1) MONTCO revises their CUP, 2) plans and procedures are provided

Citation	Requirement	Locations in	Comment
		application	
	disposal sites; unless		in more detail.
	considering the nature		
	of the wastes, such as		
	their volume and		
	specific activity and the		
	costs and environmental		
	impacts of transporting		
	the wastes to a large		
	disposal site, such		
	offsite disposal is		
	demonstrated to be		
	impracticable or the		
	advantages of onsite		
	burial clearly outweigh		
	the benefits of reducing		
	the perpetual		
	surveillance obligations.		
Criterion 3.	The "prime option" for	Vol. 2	Cells are excavated to ~
Cittorion 5.	disposal of tailings is	Tailings Cell Design	70' below grade. Final
	placement below grade,	Report	cap will be ~ 30' above
	either in mines or	Amended Vol. 13	grade. No dams will be
	specially excavated pits	Tailings Cell Closure	required.
	(that is, where the need	Design Design	required.
	for any specially		
	constructed retention		
	structure is eliminated).		
	Where full below grade	Vol. 2	Follows NRC guidance
	burial is not practicable,	Tailings Cell Design	in NUREG 1620.
	the size of retention	Report	III NOREG 1020.
		Amended Vol. 13	
	structures, and size and steepness of slopes	Tailings Cell Closure	
		Design	
	associated with exposed embankments must be	<del></del>	
	minimized by excavation to the		
	maximum extent		
	reasonably achievable		
	1		
	or appropriate given the		
	geologic and hydrologic		
Critorian	conditions at a site.	Environmental Report	Unstroom area relatively
Criterion	Upstream rainfall	Vol. 1	Upstream area relatively
4A.	catchment areas must be		small. Site is graded to
	minimized to decrease	Site Draining Plan Vol. 12	divert upstream surface
	erosion potential and the	V UI. 12	water. On-site surface

Citation	Requirement	Locations in application	Comment
	size of the floods, which could erode or wash out sections of the tailings disposal area.	Material Containment Plan	water captured; zero discharge facility.
Criterion 4B.	Topographic features should provide good wind protection.	Environmental Report Vol. 4 Geologic Report	Site is a depositional environment. Satisfied.
Criterion 4C.	Embankment and cover slopes must be relatively flat after final stabilization to minimize erosion potential and to provide conservative factors of safety assuring long-term stability. The broad objective should be to contour final slopes to grades which are as close as possible to those which would be provided if tailings were disposed of below grade: this could, for example, lead to slopes of about 10 horizontal to 1 vertical (10h:1v) or less steep.	Vol. 2 Tailings Cell Design Report Amended Vol. 13 Tailings Cell Closure Design	As amended by changes supplied to RFI #4. Final grade will be 10:1
Criterion 4D.	A full self-sustaining vegetative cover must be established or rock cover employed to reduce wind and water erosion to negligible levels.	Amended Vol. 13 Tailings Cell Closure Design	A vegetative cover is an integral part of the water balance cap.
	(1) Where a full vegetative cover is not likely to be self-sustaining due to climatic or other conditions, such as in semi-arid and arid regions, rock cover must be employed on	Amended Vol. 13 Tailings Cell Closure Design	A 1-foot rock blanket will be placed on the outslopes.

Citation	Requirement	Locations in application	Comment
	slopes of the impoundment system.		
	(2) The following factors must be considered in establishing the final rock cover design to avoid displacement of rock particles by human and animal traffic or by natural process, and to preclude undercutting and piping:	Amended Vol. 13 Tailings Cell Closure Design Revised Closure Specifications	All rock meets durability testing per specifications.
	impoundment surfaces must be contoured to avoid areas of concentrated surface runoff or abrupt or sharp changes in slope gradient. In addition to rock cover on slopes, areas toward which surface runoff might be directed must be well protected with substantial rock cover (rip rap). In addition to providing for stability of the impoundment system itself, overall stability, erosion potential, and geomorphology of surrounding terrain must be evaluated to assure that there are not ongoing or potential processes, such as gully erosion, which would lead to impoundment instability.	Amended Vol. 13 Tailings Cell Closure Design	All channels, including those between the disposal cells and runoff channels have durable rock that meets standards.
Criterion	The impoundment may	Environmental Report	Site was investigated
4E.	not be located near a	Vol. 4	thoroughly; site is

Citation	Requirement	Locations in application	Comment
	capable fault that could cause a maximum credible earthquake larger than that which the impoundment could reasonably be expected to withstand	Geological Report	designed to withstand maximum credible local event.
Criterion 4F	The impoundment, where feasible, should be designed to incorporate features, which will promote deposition. For example, design features, which promote deposition of sediment suspended in any runoff, which flows into the impoundment area, might be utilized; the object of such a design feature would be to enhance the thickness of cover over time.	Amended Vol. 13 Tailings Cell Closure Design	Paradox Valley is a depositional environment. The ET vegetative cover will promote deposition. Runoff channels are designed to trap sediment.
Criterion 5.	Criteria 5A-5D and Criterion 10 incorporate the basic ground-water protection standards imposed by the Environmental Protection Agency in 40 CFR Part 192, Subparts D and E (48 FR 45926; October 7, 1983) which apply during operations and prior to the end of closure.	Environmental Report	These are the same parameters found in Appendix A.
Criterion 5A.	(1) The primary ground-water protection standard is a design standard for surface impoundments used to manage byproduct material. Unless	Amended Vol. 13 Tailings Cell Closure Design	State of the art liner system. HDPE liners will remain in place after closure.

Citation	Requirement	Locations in application	Comment
	exempted under	аррисации	
	paragraph 5A(3) of this		
	criterion, surface		
	impoundments (except		
	for an existing portion) shall have a liner that is		
	designed, constructed,		
	and		
	installed to prevent any		
	migration of wastes out		
	of the impoundment to		
	the adjacent subsurface		
	soil, ground water, or		
	surface water at any		
	time during the active		
	life (including the		
	closure period) of the		
	impoundmentFor		
	impoundments that will		
	be closed with the liner		
	material left in place,		
	the liner must be		
	constructed of materials		
	that can prevent wastes		
	from migrating into the		
	liner during the active		
	life of the facility.		
	(2) The liner required		
	by paragraph 5A(1)		
	above shall be:		
	(a) Constructed of	Amended Vol. 13	
	materials that have	Tailings Cell Closure	
	appropriate chemical	Design	
	properties and sufficient	Vol. 2	
	strength and thickness	Technical	
	to prevent failure due to	Specifications	
	pressure gradients		
	(including static head		
	and external		
	hydrogeologic forces),		
	physical contact with		
	the waste or leachate to		
	which they are exposed,		
	climatic conditions, the		
	cillianc conditions, the		

Citation	Requirement	Locations in application	Comment
	stress of installation, and the stress of daily operation;		
	(b) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift; and	Amended Vol. 13 Tailings Cell Closure Design Vol. 2 Technical Specifications	
	(c) Installed to cover all surrounding earth likely to be in contact with the wastes or leachate.	Amended Vol. 13 Tailings Cell Closure Design	
	(4) A surface impoundment must be designed, constructed, maintained, and operated to prevent overtopping resulting from normal or abnormal operations, overfilling, wind and wave actions, rainfall, or run-on; from malfunctions of level controllers, alarms, and other equipment; and	Amended Vol. 13 Tailings Cell Closure Design	More than adequate freeboard in design.
	from human error.  (5) When dikes are used to form the surface impoundment, the dikes must be designed, constructed, and maintained with sufficient structural integrity to prevent massive failure of the	Amended Vol. 13 Tailings Cell Closure Design Closure Specifications	Dikes are not made of tailings, which historically had poor performance.

Citation	Requirement	Locations in application	Comment
	dikes. In ensuring structural integrity, it must not be presumed that the liner system will function without leakage during the active life of the impoundment.		
Criterion 5B.	(1) Uranium and thorium byproduct material in definition (2) of RH 1.4 shall be managed to conform to the following secondary ground-water protection standard: hazardous constituents entering the ground water from a licensed site must not exceed the specified concentration limits in the uppermost aquifer beyond the point of compliance during the compliance period	Vol. 5 Groundwater Monitoring Summary Vol. 12 Operational Monitoring Plan	Groundwater is very deep at the site. Monitoring shall be conducted. Additional groundwater monitoring wells likely to be required once impoundment constructed.
Criterion 5E.	In developing and conducting ground water protection programs, applicants and licensees shall also consider the following:		
	(1) Installation of bottom liners (Where synthetic liners are used, a leakage detection system must be installed immediately below the liner to ensure major failures are detected if they occur		A clay liner is NOT
	Where clay liners are proposed or relatively		A clay liner is NOT proposed; however

Citation	Requirement	Locations in application	Comment
	thin, in situ clay soils are to be relied upon for seepage control, tests must be conducted with representative tailings solutions and clay materials to confirm that no significant deterioration of permeability or stability properties will occur with continuous exposure of clay to tailings solutions.		since the GCL layer at the base of the liner system is composed partly of clay, the Department had the applicant conduct the appropriate tests.
	(2) Mill process designs which provide the maximum practicable recycle of solutions and conservation of water to reduce the net input of liquid to the tailings impoundment.	Vol. 13 Water and Wastewater Plan Revised Water Balance	The mill is designed to maximize reuse of water. Raffinate that cannot be reused is evaporated rather than left in the impoundments.
	(3) Dewatering of tailings by process devices and/or in situ drainage systems (At new sites, tailings must be dewatered by a drainage system installed at the bottom of the impoundment to lower the phreatic surface and reduce the driving head of seepage, unless tests show tailings are not amenable to such a system	Vol. 2 Tailings Cell Design	A dewatering system is specified.
	(4) Neutralization to promote immobilization of hazardous constituents.	Vol. 3 Ecological Screening of Raffinate Water	Neutralization was evaluated and not adopted because levels of selenium would still be toxic to wildlife. Rather, bird netting and

Citation	Requirement	Locations in application	Comment
		аррисанон	bird balls will be used on the evaporation ponds and tailings cells, respectively.
Criterion 5G.	In support of a tailings disposal system proposal, the applicant/operator shall supply information concerning the following:		
	(1) The chemical and radioactive characteristics of the waste solutions.	Environmental Report Vol. 3 Ecological Screening of Raffinate Water  Vol. 11 Radiological Pathways Report	EF based some of their data on White Mesa, which processes similar ores, in addition to sampling of various ores. Tailings radionuclide content based on calculation.
	(2) The characteristics of the underlying soil and geologic formations particularly as they will control transport of contaminants and solutions. This includes detailed information concerning extent, thickness, uniformity, shape, and orientation of underlying strata. Hydraulic gradients and conductivities of the various formations must be determined	Vol. 4 Geologic Report Phase-2 Geotechnical Investigation Vol. 5 Hydrogeologic Report	Geology of the site was thoroughly investigated and is suitable for location of the mill.
	(3) Location, extent, quality, capacity and current uses of any ground water at and near the site.	Environmental Report	Water use survey conducted out for 5-miles from mill.
Criterion 5H.	Steps must be taken during stockpiling of ore to minimize penetration of	Vol. 2 Ore Stockpile Design Report	Ore pads are designed with liners, compacted soils and concrete aprons to mitigate

Citation	Requirement	Locations in application	Comment
	radionuclides into underlying soils; suitable methods include lining and/or compaction of ore storage areas.		infiltration.
Criterion 6.	(1) In disposing of waste byproduct material, licensees shall place an earthen cover (or approved alternative) over tailings or wastes at the end of milling operations and shall close the waste disposal area in accordance with a design1 which provides reasonable assurance of control of radiological hazards to (i) be effective for 1,000 years, to the extent reasonably achievable, and, in any case, for at least 200 years, and (ii) limit releases of radon-222 from uranium byproduct materials, and radon-220 from thorium byproduct materials, to the atmosphere so as not to exceed an average2 release rate of 0.74 Becquerel per square meter per second (Bq/m2s), or 20 picocuries per square meter per second (pCi/m2s), to the extent practicable throughout the effective design life determined	Tailings Cell Closure Design Report, Rev. 1	Revised cap design also modeled to show compliance with radon flux requirements. Revised water balance cap more durable design that highly engineered barriers used earlier in UMTRA.

Citation	Requirement	Locations in application	Comment
	pursuant to (1)(i) of this criterion	фричин	
	(5) Near surface cover materials, i.e., within the top three meters (10 feet), may not include waste or rock that contains elevated levels of radium; soils used for near surface cover must be essentially the same, as far as radioactivity is concerned, as that of surrounding surface soils. This is to ensure that surface radon exhalation is not significantly above background because of	Vol. 2 Tailings Cell Design	Random fill layer will not contain radium contaminated soils, nor will the final cap materials.
	the cover material itself.  (6) The design requirements in this Criterion for longevity and control of radon releases apply to any portion of a licensed and/or disposal site unless such portion contains a concentration of radium in land, averaged over areas of 100 square meters, which as a result of byproduct material, does not exceed the background level by more than: (i) 0.18 Becquerels (5 picocuries) per gram of radium-226, or, in the case of thorium byproduct material, radium-228, averaged over the first 15	Vol. 13 Decommissioning Plan	These are the concentration-based soil cleanup standards in the UMTRA act.

Citation	Requirement	Locations in application	Comment
	centimeters (cm) below the surface, and (ii)0.56	фрисанон	
	Becquerels (15 pCi) of radium-226, or, in the		
	case of thorium byproduct material,		
	radium-228, averaged over 15-cm thick layers more than 15 cm below		
	the surface.	Vol. 12	This has yet to be
	Byproduct material containing concentrations of	Vol. 13 Mill Decommissioning Plan	This has yet to be calculated. It will be a requirement of the final
	radionuclides other than radium in soil, and		status survey plan when it is finalized.
	surface activity on remaining structures, must not result in a total		
	effective dose equivalent (TEDE)		
	exceeding the dose from cleanup of radium		
	contaminated soil to the above standard		
	(benchmark dose), and must be at levels which		
	are as low is reasonably achievable. If more than one residual		
	radionuclide is present in the		
	same 100 square-meter area, the sum of the		
	ratios for each radionuclide of		
	concentration present to the concentration limit will not exceed "1"		
	(unity). A calculation of the potential peak		
	annual TEDE within 1000 years to the		
	average member of the critical group that would		

Citation	Requirement	Locations in application	Comment
	result from applying the radium standard (not including radon) on the site must be submitted for approval.		
	(7) The licensee shall also address the nonradiological hazards associated with the wastes in planning and implementing closure. The licensee shall ensure that disposal areas are closed in a manner that minimizes the need for further maintenance. To the extent necessary to prevent threats to human health and the environment, the licensee shall control minimize, or eliminate post-closure escape of nonradiological hazardous constituents, leachate, contaminated rainwater, or waste decomposition products to the ground or surface waters or to the atmosphere.	Vol. 3 Ecological Screening of Raffinate Process Water Tailings Cell Closure Design Report, Rev. 1	Revised cap more durable over time, requires less maintenance.
Criterion 6A.	(1) For impoundments containing uranium byproduct materials, the final radon barrier must be completed as expeditiously as practicable considering technological feasibility after the pile or impoundment ceases operation in accordance with a written,	Vol. 13 Mill Decommissioning Plan	Current plans call for placement as soon as practical based on settlement calculations and dewatering.

Citation	Requirement	Locations in application	Comment
	Department-approved	иррпоилоп	
	reclamation plan.		
	(3) The Department	Vol. 3	EF would like to accept
	may authorize by	Facility Operations	water treatment
	license amendment,	Plan (Revised)	residuals from their own
	upon licensee report, a		mines to process
	portion of the		through the mill
	impoundment to accept		circuits. Little would
	uranium byproduct		report to tailings.
	material or such		No alternate feeds or
	materials that are		direct disposal from
	similar in physical,		non-EF sites is
	chemical, and		authorized.
	radiological		uutiloi12eu.
	characteristics to the		
	uranium mill tailings		
	and associated wastes		
	already in the		
	pile or impoundment		
	from other sources,		
	during the closure		
	process.		
Criterion 7.	The licensee shall	<u>Vol. 12</u>	Additional groundwater
	establish a detection	<u>Operational</u>	well likely to be
	monitoring program	Monitoring Plan	required once facility is
	needed for the		built.
	Department to set the		
	site-specific ground		
	water protection		
	standards in paragraph		
	5B(1) of this appendix.		
	For all monitoring		
	under this paragraph,		
	the licensee or applicant		
	will propose for		
	Department approval as		
	license conditions		
	which constituents are		
	to be monitored on a		
G :	site-specific basis.		NT 1 ' 1' '
Criterion 8.	Milling operations must		New design eliminates
	be conducted so that all		fine ore bins, crushers,
	airborne effluent		and yellowcake stack
	releases are reduced to		used in earlier mill

Citation	Requirement	Locations in application	Comment
	levels as low as is reasonably achievable.	application	design. Ore pads have year-round dust
	The primary means of		suppression system.
	accomplishing this must		Tailings will be kept
	be by means of		saturated. Tailings
	emission controls.		buried mostly below grade. All point sources have appropriate bag
			houses or scrubbers per the APENS application
			and pending air permit.
	To control dusting from		Tailings to remain
	tailings, that portion not		saturated until closure.
	covered by standing		Bird balls will also
	liquids must be wetted		cover the pond. Interior
	or chemically		grade on the cells is
	stabilized to prevent or		steep, the area for
	minimize blowing and dusting to the maximum		exposed beaches is reduced by design.
	extent reasonably		Dust suppression also
	achievable.		required for roads, etc.
	Milling operations	<u>Vol. 13</u>	Tailings must remain
	producing or involving	Revised Estimates of	saturated to meet these
	uranium and thorium	Radiation Doses to the	criteria.
	byproduct materials	<u>Public</u>	
	must be conducted in		
	such a manner as to		
	provide reasonable		
	assurance that the		
	annual dose equivalent does not exceed 0.25		
	milliSievert (25		
	millirem) to the whole		
	body, 0.75 milliSievert		
	(75 millirem) to the		
	thyroid, and 0.25		
	milliSievert (25		
	millirem) to any other		
	organ of any member of		
	the public as a result of		
	exposures to the		
	planned discharge of		
	radioactive material,		
	radon and its progeny		

Citation	Requirement	Locations in application	Comment
	excepted, to the general environment.		
Criterion 8A.	Inspections of tailings or waste retention systems must be conducted daily during operations, or at an alternate frequency approved by the Department for other conditions  The Department must be immediately notified of any failure in a tailings or waste retention system that results in a release of tailings or waste into unrestricted areas, or any unusual conditions (conditions not contemplated in the design of the retention system) that if not corrected could indicate the potential or lead to failure of the system and result in a release of tailings or waste into unrestricted areas.	Vol. 12 Revised Facility Operations Plan	This is a throwback to when tailings dams were made of tailings. Nonetheless, the daily inspections are still required, and include the piping system to the impoundments from the mill. This plant is designed with secondary containment such that leaks to the environment should be mitigated.
Criteria 9	Addresses ownership issues related to closure and transfer.		

# Appendix D

## Appendix D: Relationship of Environmental Impact Analysis Sections, the License Application and NUREG-1748

#### Cross Reference Checklist Reg. Guide 3.5 to Licensee Submittals

Draft Guide 3024 (proposed revision to Reg. Guide 3.5)		
Regulatory Guide		
Section	Location of Information in Licensee Submittal and Exhibit Number	
Geodon	1.0 Proposed Activities	
1.0 Proposed Activities	License Application, CDPHE Form OR-RH 12	
1.0 Proposed Activities	**	
	Basic Engineering Report Selected Drawings A1	
	Geotechnical Design Recommendations Mill and Infrastructure A2	
	Roadway Pavement Design Recommendations A3	
	Site Drainage Analysis and Design Report A4	
	Ore Stockpile Pad Design Report A5	
	Tailings Cell Design Report A6	
	Evaporation Pond Design Report A7	
	Technical Specifications A8	
	Construction Plan B1	
	Facility Operating Plan B2	
	Mine Operations Plan B3	
	Socio-Economic Baseline and Impact Analysis C1	
	Water Rights and Well Permits L1	
	Water and Wastewater Plan L2	
	Stormwater Management Plan L4	
	CDOT Access Permit and Traffic Study L5	
	CDOT Access Design and Notice to Proceed L6	
	Special Use Permit Application L7	
	Air Pollution Emission Notice for Permit to Construct L8	
	Security Plan M1	
	Piñon Ridge Project Environmental Report, Section 2.2	
	2.0 Site Characteristics	
2.1 Geography and Demog	eraphy	
2.1.1 Geography	Socio-Economic Baseline and Impact Analysis C1	
zani otograpa,	Special Use Permit Application L7	
	Piñon Ridge Project Environmental Report, Section 3.3.1	
2.1.2 Demography	Socio-Economic Baseline and Impact Analysis C1	
z.r.z Demograpuy	Estimates of Radiation Doses to Members of the Public J2	
	Special Use Permit Application L7	
	Piñon Ridge Project Environmental Report, Section 3.10 and 7	
2.3 Hardrolom:	Pillott Rudge Project Environmental Report, Section 5.10 and 7	
2.3 Hydrology 2.3.1 Ground Water	Carloria Bound E1	
2.3.1 Ground Water	Geologic Report E1	
	Hydrogeologic Report F1	
	Phase 3 Long-Term Pumping Test Data Report F2	
	Water Supply Evaluation F3	
	Groundwater Monitoring Summary Report F4	
	Water & Wastewater Systems L2	
	Piñon Ridge Project Environmental Report, Sections 3.4.2 and 3.4.3	
2.3.2 Surface Water	Site Drainage Analysis and Design Report A4	
	Baseline Surface Hydrology Modeling Report G1	
	Surface Water Monitoring - Summary Report G2	
l	Water Supply Evaluation F3	
l	Preliminary Wetland Delineation and Jurisdictional Determination L3	
l	Stormwater Management Plan L4	
	Piñon Ridge Project Environmental Report, Sections 3.4.1 and 3.4.3	

Draft Guide 3024 (proposed revision to Reg. Guide 3.5)			
Regulatory Guide			
Section	Location of Information in Licensee Submittal and Exhibit Number		
2.4 Geology and Seismold	DEV		
2.4.1 Geology	Geotechnical Design Recommendations Mill and Infrastructure A2		
	Soil Survey D1		
	Geologic Report E1		
	Phase 2-Geotechnical Field and Laboratory Test Program E2		
	Piñon Ridge Project Environmental Report, Sections 3.1.2.2 and 3.3.1		
2.4.2 Seismology	Geotechnical Design Recommendations Mill and Infrastructure A2		
	Tailings Cell Design Report A6		
	Evaporation Pord Design Report A7		
	Technical Specifications A8		
	Geologic Report E1		
	Piñon Ridge Project Environmental Report, Sections 3.1.2.2 and 3.3.1.3 3.0 Mill Process and Equipment		
3.1 Mill Process	Basic Engineering Report Selected Drawings Al		
3.1 Mill Process	Geotechnical Design Recommendations Mill and Infrastructure A2		
	Roadway Payement Design Recommendations A3		
	Site Dramage Analysis and Design Report A4		
	Ore Stockpile Pad Design Report A5		
	Tailings Cell Design Report A6		
	Evaporation Pord Design Report A7		
	Technical Specifications A8		
	Construction Plan B1		
	Facility Operating Plan B2		
	Mine Operations Plan B3		
	Piñon Ridge Project Environmental Report, Sections 2.2.1, 2.2.2 and 2.2.3		
3.2 Mill Building and	Basic Engineering Report Selected Drawings Al		
Equipment	Technical Specifications A8		
	Construction Plan B1		
	Facility Operating Plan B2		
	Piñon Ridge Project Environmental Report, Sections 2.2.2 and 2.2.3		
3.3 Instrumentation	Basic Ergineering Report Selected Drawings Al		
	Facility Operating Plan B2		
	4.0 Radioactive Waste Management Systems		
4.1 Gaseous and	Facility Operating Plan B2		
Airborne Particulate	Meteorology, Air Quality and Climatology Report H1		
Materials	Second Quarter 2009 Data Report for Ambient Air Monitoring H2		
	Work Plan for Ambient Air Monitoring H3		
	Mill Health and Safety Plan J1		
	Estimates of Radiation Doses to Members of the Public J2		
	Radiological Exposure Pathways Report J3		
	Accident and Risk Assessment Report J4		
	Operational Monitoring Plan J6 Material Containment Plan J7		
	Air Pollution Emission Notice for Permit to Construct L8		
	Piñon Ridge Project Environmental Report, Sections 2.2.3.3, 3.5.3, 3.11.4,		
	3.11.5, 4.6, 4.11 and 4.12		
	5.11.5, 4.0, 4.11 add 4.12		

Draft Guide 3024 (proposed revision to Reg. Guide 3.5)			
Regulatory Guide			
Section	Location of Information in Licensee Submittal and Exhibit Number		
4.2 Liquids and Solids	Ore Stockpile Pad Design Report A5		
4.2 Esquads and Jones	Tailings Cell Design Report A6		
	Evaporation Pond Design Report A7		
	Facility Operating Plan B2		
	Ecological Screening of Raffinate Process Water D5		
	Material Containment Plan J7		
	Spill Prevention, Convol. and Countermeasure Plan J8		
	Special Use Permit Application L.7		
	Piñon Ridge Project Environmental Report, Sections 2.2.3.3, 2.2.7.6, 3.3.2,		
	3.4, 4.3 and 4.12		
4.3 Contaminated	Facility Operating Plan B2		
Equipment	Mill Health and Safety Plan J1		
	Decommissioning Plan K1		
	Tailing Cell Closure Design Report K2		
	Specifications for Closure and Reclamation of Mill Facilities K3		
	Piñon Ridge Project Environmental Report, Sections 2.2.3.3 and 4.12		
	5.0 Operations		
5.1 Corporate	License Application, CDPHE Form OR-RH 12		
Organization	Piñon Ridge Project Environmental Report, Sections 1.1 and 2.2.5		
5.2 Management Control	Mill Health and Safety Plan J1		
Program	Decommissioning Plan K1		
	Piñon Ridge Project Environmental Report, Section 2.2		
5.3 Management Audit	Mill Health and Safety Plan J1		
and Inspection Program	Decommissioning Plan K1		
5.4 Qualifications	License Application, CDPHE Form OR-RH 12		
5.5 Training	Mill Health and Safety Plan J1		
	Emergency Response Plan J5		
	Material Containment Plan J7		
	Spill Prevention, Conrol, and Countenneasure Plan J8		
	Stormwater Management Plan L4		
5.6 Security	Security Plan M1		
	Piñon Ridge Project Environmental Report, Section 2.2.3.4		
5.7 Radiation Safety Contr			
5.7.1 Effluent Control	Dasic Engineering Report Selected Drawings A1		
Techniques	Ore Stockpile Pad Design Report A5		
	Tailings Cell Design Report A6		
	Evaporation Pond Design Report A7		
	Facility Operating Plan B2		
	Reological Screening of Raffinate Process Water D5		
	Accident and Risk Assessment Report J4		
	Material Containment Plan J7		
	Spill Prevention, Conrol, and Countermeasure Plan J8		
	Decommissioning Plan Kl		
	Tailing Cell Closure Design Report K2		
	Specifications for Closure and Reclamation of Mill Facilities K3		
	Water and Wastewater Plan L2		
	Stormwater Management Plan L4 Air Pollution Emission Notice for Permit to Construct L8		
	Piñon Ridge Project Environmental Report, Sections 2.2.3.3, 2.2.3.4, 4.3, 4.4,		
	4.6 and 4.12		
	4.V aux 4.12		

Draft	t Guide 3024 (proposed revision to Reg. Guide 3.5)
Regulatory Guide	
Section	Location of Information in Licensee Submittal and Exhibit Number
5.7.2 External Radiation	Work Plan for Ambient Air Monitoring II3
Exposure Monitoring	Baseline Radiological Investigation Report II
Program	Baseline Survey of Radionuclides in Animal Tissues 12
Flogram	Mill Health and Safety Plan J1
	Estimates of Radiation Doses to Members of the Public J2
	Radiological Exposure Pathways Report J3
	l
1	Operational Monitoring Plan J6 Piion Ridge Project Environmental Report, Section 4.11
5.7.3 Airborne Radiation	Work Plan for Ambient Air Monitoring H3
	Mill Health and Safety Plan J1
Monitoring Program	
	Radiological Exposure Pathways Report J3
1	Operational Monitoring Plan J6
	Piion Ridge Project Environmental Report, Section 4.6
5.7.4 Exposure	Mill Health and Safety Plan J1
Calculations	Estimates of Radiation Doses to Members of the Public J2
1	Accident and Risk Assessment Report J4
	Operational Monitoring Plan J6
5.7.5 Bioassay Program	Mill Health and Safety Plan J1
5.7.6 Contamination	Facility Operating Plan B2
Control Frogram	Mill Health and Safety Plan J1
	Operational Monitoring Plan J6
	Material Cortainment Plan J7
	Spill Prevention, Control, and Countermeasure Plan J8
1	Decommissioning Plan K1
	Tailing Cell Closure Design Report K2
1	Specifications for Closure and Reclamation of Mill Facilities K3
1	Stormwater Management Plan L4
	Prion Ridge Project Environmental Report, Section 2.2.3
5.7.7 Airborne Effluent	Metrology, Air Quality and Climstology Report H1
and Environmental	Second Quarter 2009 Data Report for Ambient Air Monitoring H2
Monitoring Program	Work Plan for Ambient Air Monitoring H3
	Operational Monitoring Plan J6
1	Piion Ridge Project Environmental Report, Sections 2.2.9 and 4.6
5.7.8 Ground Water and	Hydrogeologic Report F1
Surface Water	Phase 3 Long-Term Pumping Test Data Report F2
Monitoring Programs	Groundwater Monitoring Summary Report F4
	2008-2009 Surface Water Monitoring Summary Report G2
	Operational Monitoring Plan J6
	Stormwater Management Plan L4
	Piñon Ridge Project Environmental Report, Sections 2.2.9, 3.4.2.3 and 4.4
5.7.9 Control of Wind	Ore Stockpile Pad Design Report A5
Blown Tailings and Ore	Tailings Cell Design Report A6
Diowit Taimings and Ofe	Evaporation Pond Design Report A7
1	Facility Operating Plan B2
I	Mine Operations Plan B3
1	Air Pollution Emission Notice for Permit to Construct 18
I	Piñon Ridge Project Environmental Report, Sections 2.2.3 and 4.6
	Phon Rage Project Environmental Report, Sections 2.2.5 and 4.0

Draft Guide 3024 (proposed revision to Reg. Guide 3.5)		
	t duide 3024 (proposed revision to Reg. duide 3.3)	
Regulatory Guide	Landing of Information in Linears Colomittel and Entitle Number	
Section	Location of Information in Licensee Submittal and Exhibit Number	
	6.0 Accidents	
6.0 Accidents	Accident and Risk Assessment Report J4	
	Emergency Response Plan J5	
	Material Containment Plan J7	
	Spill Prevention, Control, and Countermeasure Plan J8	
	Piñon Ridge Project Environmental Report, Sections 3.2 and 4.2	
	7.0 Quality Assurance	
7.0 Quality Assurance	Technical Specifications A8	
	Operational Monitoring Plan J6	
	Decommissioning Plan K1	
	Specifications for Closure and Reclamation of Mill Facilities K3	
	8.0 Mill Decommissioning	
8.1 Mill	Decommissioning Plan K1	
Decommissioning	Tailing Cell Closure Design Report K2	
	Specifications for Closure and Reclamation of Mill Facilities K3	
Piñon Ridge Mill Decommissioning and Reclamation Cost Estimate K4		
	Piñon Ridge Project Environmental Report, Sections 2.2.7 and 4.1.1.3	
8.2 Site and Tailings	Decommissioning Plan Kl	
Reclamation	Tailing Cell Closure Design Report K2	
	Specifications for Closure and Reclamation of Mill Facilities K3	
	Piñon Ridge Mill Decommissioning and Reclamation Cost Estimate K4	
	Piñon Ridge Project Environmental Report, Sections 2.2.7, 4.1.1.3 and 4.12	
8.3 Financial Assurance	Piñon Ridge Mill Decommissioning and Reclamation Cost Estimate K4	
	9.0 Application References	
9.0 Application	List of Exhibits	
References	Piñon Ridge Project Environmental Report, Sections 8 and 9	

#### Cross Reference Checklist NUREG-1748 to Licensee Submittals

	NUREG-1748
Regulatory Guide	Location of Information in Licensee Submittal and Exhibit
Section	Number
	1.0 Proposed Activities
1.0 Proposed Activities	License Application, CDPHE Form OR-RH 12
	Basic Engineering Report Selected Drawings A1
	Geotechnical Design Recommendations Mill and Infrastructure A2
	Roadway Pavement Design Recommendations A3
	Site Drainage Analysis and Design Report A4
	Ore Stockpile Pad Design Report A5
	Tailings Cell Design Report A6
	Evaporation Pond Design Report A7
	Technical Specifications A8
	Construction Plan B1
	Facility Operating Plan B2
	Mine Operations Plan B3
	Socio-Economic Baseline and Impact Analysis C1
	Water Rights and Well Permits L1
	Water and Wastewater Plan L2
	Stormwater Management Plan L4
	CDOT Access Permit and Traffic Study L5
	CDOT Access Design and Notice to Proceed L6
	Special Use Permit Application L7
	Air Pollution Emission Notice for Permit to Construct L8
	Security Plan M1
	Piñon Ridge Project Environmental Report, Section 2.2
	2.0 The Site Affected Environment
2.1 Site Location and	Basic Engineering Report Selected Drawings A1
Layout	Roadway Pavement Design Recommendations A3
	Site Drainage Analysis and Design Report A4
	Ore Stockpile Pad Design Report A5
	Tailings Cell Design Report A6
	Evaporation Pond Design Report A7
	Facility Operating Plan B2
	Water and Wastewater Plan L2
	CDOT Access Permit and Traffic Study L5
	CDOT Access Design and Notice to Proceed L6
	Security Plan M1
	Piñon Ridge Project Environmental Report, Sections 2.2.1, 2.2.2, 2.2.3 and
2277 547	3.1.1
2.2 Uses of Adjacent	Hydrogeologic Report F1
Lands and Waters (table	Water and Wastewater Plan L2
of nearest users)	Piñon Ridge Project Environmental Report, Sections 2.2, 3.1, 3.5.1.4 and
	3.4
2.3 Population Density	Socio-Economic Baseline and Impact Analysis C1
	Piñon Ridge Project Environmental Report, Section 3.10

	NUREG-1748
B1-1 0::1-	
Regulatory Guide Section	Location of Information in Licensee Submittal and Exhibit Number
<ol><li>2.4 Regional, Historic,</li></ol>	Class III Cultural Resource Inventory and Evaluation Testing Results for
Archeological,	Piñon Mill Development Project M2
Architectural, Scenic,	Archaeological Treatment of Sites 5MN8269 and 5MN8270 M3
Cultural, and Natural	Class III Cultural Resource Inventory for Cooper Property M4
Landmarks	Piñon Ridge Project Environmental Report, Section 3.8
2.5 Geology and Soils	Geotechnical Design Recommendations Mill and Infrastructure A2
	Soil Survey D1
	Geologic Report E1
	Phase 2-Geotechnical Field and Laboratory Test Program E2
	Piñon Ridge Project Environmental Report, Sections 3.1.2.2 and 3.3
2.6 Seismology	Geotechnical Design Recommendations Mill and Infrastructure A2
	Tailings Cell Design Report A6
	Evaporation Pond Design Report A7
	Technical Specifications A8
	Geologic Report E1
	Piñon Ridge Project Environmental Report, Sections 3.3.1.3 and 3.4.3
2.7 Hydrology (Water Re	
2.7.1 Groundwater	Geologic Report E1
	Hydrogeologic Report F1
	Phase 3 Long-Term Pumping Test Data Report F2
	Water Supply Evaluation F3
	Groundwater Monitoring Summary Report F4
	Water & Wastewater Systems L2
	Piñon Ridge Project Environmental Report, Section 3.4.2 and 3.4.3
2.7.2 Surface Water	Site Drainage Analysis and Design Report A4
	Baseline Surface Hydrology Modeling Report G1
	Surface Water Monitoring – Summary Report G2
	Water Supply Evaluation F3
	Preliminary Wetland Delineation and Jurisdictional Determination L3
	Stormwater Management Plan L4
	Piñon Ridge Project Environmental Report, Sections 3.4.1 and 3.4.3
2.8 Meteorology,	Meteorology, Air Quality and Climatology Report H1
Climatology, and Air	Second Quarter 2009 Data Report for Ambient Air Monitoring H2
Quality	Piñon Ridge Project Environmental Report, Section 3.6
2.9 Ecology	Soil Survey D1
	Vegetation Survey D2
	Wildlife Survey D3
	Biological Survey Report D4
	Ecological Screening of Raffinate Water D5
	Piñon Ridge Project Environmental Report, Section 3.5
2.10 Background	Groundwater Monitoring Summary Report F4
Radiological	Surface Water Monitoring – Summary Report G2
Characteristics	Meteorology, Air Quality and Climatology Report H1
	Second Quarter 2009 Data Report for Ambient Air Monitoring H2
	Baseline Radiological Investigation Report II
	Baseline Survey of Radionuclides in Animal Tissues I2
	Piñon Ridge Project Environmental Report, Sections 3.3, 3.4, 3.5, 3.6, and
	3.11

	NUREG-1748
Regulatory Guide	Location of Information in Licensee Submittal and Exhibit
Section	Number
2.11 Background	Soil Survey D1
Nouradiological	Vegetation Survey D2
Characteristics	Wildlife Survey D3
Canacierisacs	Biological Survey Report D4
	Geologic Report E1
	Phase 2-Geotechnical Field and Laboratory Test Program E2
	Hydrogeologic Report F1
	Phase 3 Long-Term Pumping Test Data Report F2
	Water Supply Evaluation F3
	Groundwater Monitoring Summary Report F4
	Baseline Surface Hydrology Modeling Report G1
	Surface Water Monitoring – Summary Report G2
	Meteorology, Air Quality and Climatology Report H1
	Second Quarter 2009 Data Report for Ambient Air Monitoring H2
	Work Plan for Ambient Air Monitoring H3
	Piñon Ridge Project Environmental Report, Sections 3.3, 3.4 and 3.5
2.12 Other	Preliminary Wetland Delineation and Jurisdictional Determination L3
Environmental Features	Piñon Ridge Project Environmental Report, Sections 3.6, 3.7, 3.8 and 3.9
Environmental restures	3.0 Mill
2.1.60 4	
3.1 Site Area	License Application, CDPHE Form OR-RH 12
	Basic Engineering Report Selected Drawings A1
	Roadway Pavement Design Recommendations A3
	Site Drainage Analysis and Design Report A4
	Ore Stockpile Pad Design Report A5
	Tailings Cell Design Report A6
	Evaporation Pond Design Report A7
	Facility Operating Plan B2
	Piñon Ridge Project Environmental Report, Sections 2.2.1, 2.2.2, 2.2.3 and 3.1
3.2 External	Basic Engineering Report Selected Drawings A1
Appearance of Mill	Facility Operating Plan B2
Appearance of Min	Evaporation Pond Design Report A7
	Piñon Ridge Project Environmental Report, Section 3.9
3.3 Mill Circuit	Basic Engineering Report Selected Drawings A1
5.5 Mili Circuit	Facility Operating Plan B2
	Piñon Ridge Project Environmental Report, Section 2.2.3
3.4 Sources of Mill	Basic Engineering Report Selected Drawings A1
Wastes	Facility Operating Plan B2
wastes	Material Containment Plan J7
	Decommissioning Plan Kl
	Water and Wastewater Plan L2  Differ Bridge Project Project Project Section 2.2.2
2.5.Comballs - 63.63	Piñon Ridge Project Environmental Report, Section 2.2.3
3.5 Controls of Mill	Ore Stockpile Pad Design Report A5
Wastes and Effluents	Tailings Cell Design Report A6
	Evaporation Pond Design Report A7
	Facility Operating Plan B2
	Material Containment Plan J7
	Decommissioning Plan Kl
	Tailing Cell Closure Design Report K2
	Specifications for Closure and Reclamation of Mill Facilities K3
	Piñon Ridge Project Environmental Report, Section 2.2.3

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Regulatory Guide	Location of Information in Licensee Submittal and Exhibit
Section	Number
3.6 Sanitary and Other	Water and Wastewater Plan L2
Mill Waste Systems	Stormwater Management Plan L4
Train Waste Systems	Piñon Ridge Project Environmental Report, Section 2.2.3
3.7 Mining Activities	Mine Operations Plan B3
J. C. D. Lander	Piñon Ridge Project Environmental Report, Section 3.1.2
4.0 Environmental	Effects of Site Preparation, Mill Construction, and Mine Operation
4.1 Site Preparation and	Construction Plan B1
Construction	Piñon Ridge Project Environmental Report, Sections 4.1.1.2, 4.3.1.1 and 5
4.2 Resources	Socio-Economic Baseline and Impact Analysis C1
Committed	Piñon Ridge Project Environmental Report, Sections 3.10, 4.1.1.2, 4.10
	and 5
	5.0 Environmental Effects of Mill Operations
5.1 Radiological Impact of	m Biota Other than Humans
5.1.1 Exposure	Estimates of Radiation Doses to Members of the Public J2
Pathways	Radiological Exposure Pathways Report J3
1	Accident and Risk Assessment Report J4
	Piñon. Ridge Project Environmental Report, Sections 4.5 and 5
5.1.2 Effluents in the	Estimates of Radiation Doses to Members of the Public J2
Environment	Radiological Exposure Pathways Report J3
	Accident and Risk Assessment Report J4
	Air Pollution Emission Notice for Permit to Construct L8
	Piñon Ridge Project Environmental Report, Sections 4.6 and 5
5.2 Radiological Impact of	
5.2.1 Exposure	Radiological Exposure Pathways Report J3
Pathways	Accident and Risk Assessment Report J4
'	Piñon Ridge Project Environmental Report, Sections 4.11 and 5
5.2.2 Liquid Effluents	Radiological Exposure Pathways Report J3
	Accident and Risk Assessment Report J4
	Piñon. Ridge Project Environmental Report, Sections 4.4 and 5
5.2.3 Airborne Effluents	Estimates of Radiation Doses to Members of the Public J2
	Radiological Exposure Pathways Report J3
	Accident and Risk Assessment Report J4
	Piñon. Ridge Project Environmental Report, Sections 4.6 and 5
5.2.4 Direct Radiation	Estimates of Radiation Doses to Members of the Public J2
	Radiological Exposure Pathways Report J3
	Accident and Risk Assessment Report J4
	Piñon Ridge Project Environmental Report, Sections 4.11 and 5
5.2.5 Summary of	Estimates of Radiation Doses to Members of the Public J2
Annual Radiation Doses	Radiological Exposure Pathways Report J3
	Accident and Risk Assessment Report J4
	Piñon. Ridge Project Environmental Report, Sections 4.11 and 5
5.3 Chemical Impacts	Accident and Risk Assessment Report J4
on Humans	Piñon Ridge Project Environmental Report, Sections 4.11 and 5
5.4 Effects of Sanitary	Piñon. Ridge Project Environmental Report, Sections 4.11 and 5
and Other Waste	
Discharges	
5.5 Other Effects	Piñon. Ridge Project Environmental Report, Sections 4 and 5
5.6 Resources	Socio-Economic Baseline and Impact Analysis C1 Piñon Ridge Project Environmental Report, Sections 3.10 and 4.10

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Regulatory Guide	Location of Information in Licensee Submittal and Exhibit
Section	Number
	and Environmental Measurements and Monitoring Frograms
6.1 Preoperational Enviro	* *
6.1.1 Surface Water	Baseline Surface Hydrology Modeling Report G1
	Surface Water Monitoring – Summary Report G2
	Piñon Ridge Project Environmental Report, Sections 2.2.9 and 4.4.3
6.1.2 Groundwater	Hydrogeologic Report F1
	Phase 3 Long-Term Pumping Test Data Report F2
	Groundwater Monitoring Summary Report F4
	Piñon Ridge Project Environmental Report, Sections 2.2.9 and 4.4.3
6.1.3 Atr	Meteorology, Air Quality and Climatology Report H1
	Second Quarter 2009 Data Report for Ambient Air Monitoring H2
	Piñon Ridge Project Environmental Report, Sections 2.2.9 and 4.6
6.1.4 Land	Soil Survey D1
	Vegetation Survey D2
	Wildlife Survey D3
	Biological Survey Report D4
	Geologic Report E1
	Phase 2-Geotechnical Field and Laboratory Test Program E2
	Piñon Ridge Project Environmental Report, Sections 2.2.9, 4.1.3 and 4.3.3
6.1.5 Radiological	Meteorology, Air Quality and Climatology Report H1
Survey	Second Quarter 2009 Data Report for Ambient Air Monitoring H2
	Baseline Radiological Investigation Report II
	Baseline Survey of Radionuclides in Animal Tissues at the Proposed Pinion
	Ridge Mill Site I2
	Surface Water Monitoring – Summary Report G2
	Groundwater Monitoring Summary Report F4
6 2 D	Piñon Ridge Project Environmental Report, Sections 2.2.9 and 4.11
6.2 Proposed Operational	
6.2.1 Radiological	Mill Health and Safety Plan J1
Monitoring	Operational Monitoring Plan J6
	Piñon Ridge Project Environmental Report, Sections 2.2.9, 4.3.3, 4.4.3,
6.2.2 Chemical Effluent	4.5.3, 4.6.3 and 4.11
	Mill Health and Safety Plan J1
Monitoring	Operational Monttoring Plan J6 Piñon Ridge Project Environmental Report, Sections 2.2.9, 4.3.3 and 4.4.3
6.2.3 Ecological	Operational Montoring Plan J6
Monitoring	Operational Monitoring Plan Jo  Piñon Ridge Project Environmental Report, Sections 2.2.9 and 4.4.3
6.3 Related	Operational Monitoring Plan J6
Environmental	Piñon Ridge Project Environmental Report, Sections 2.2.9, 4.7.3, 4.8.3 and
Measurement and	4.9.3
Monitoring Programs	The sec
	7.0 Environmental Effects of Accidents
7.1 Mil Accidents	Accident and Risk Assessment Report J4
Involving Radioactivity	Emergency Response Plan J5
	Material Containment Plan J7
	Piñon Ridge Project Environmental Report, Sections 4.11 and 5
7.2 Transportation	Radiological Exposure Pathways Report J3
Accidents	Accident and Risk Assessment Report J4
	Piñon Ridge Project Environmental Report, Sections 4.2 and 5
7.3 Other Accidents	Accident and Risk Assessment Report J4

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Regulatory Guide	Location of Information in Licensee Submittal and Exhibit											
Section	Number											
8.0 Econo	omic and Social Effects of Mill Construction and Operation											
8.1 Benefits	Socio-Economic Baseline and Impact Analysis C1											
	Piñon Ridge Project Environmental Report, Sections 4.10, 5 and 7											
8.2 Costs	Socio-Economic Baseline and Impact Analysis C1											
	Piñon Ridge Project Environmental Report, Sections 4.10, 5 and 7											
	9.0 Decommissioning and Reclamation											
9.0 Decommissioning	Decommissioning Plan K1											
and Reclamation	Tailing Cell Closure Design Report K2											
	Specifications for Closure and Reclamation of Mill Facilities K3											
	Piñon Ridge Mill Decommissioning and Reclamation Cost Estimate K4											
	Piñon Ridge Project Environmental Report, Section 2.2.7											
	10.0 Alternatives to the Proposed Action											
10.0 Alternatives to the	Piñon Ridge Project Environmental Report, Sections 2.1 and 2.3											
Proposed Action												
	11.0 Benefit-Cost Analysis											
11.0 Benefit-Cost	Piñon Ridge Project Environmental Report, Section 7											
Analysis												
	2.0 Environmental Approvals and Consultations											
12.0 Environmental	Water Rights and Well Permits L1											
Approvals and	Preliminary Wetland Delineation and Jurisdictional Determination L3											
Consultations	Stormwater Management Plan. L4											
	CDOT Access Permit and Traffic Study L5											
	CDOT Access Design and Notice to Proceed L6											
	Special Use Permit Application L7											
	Air Pollution Emission Notice for Permit to Construct L8											
	Piñon Ridge Project Environmental Report, Section 3											
	13.0 References											
13.0 References	List of Exhibits											
	Piñon Ridge Project Environmental Report, Sections 8 and 9											

# Appendix E

## Appendix E: Water Radiologic Data

Table 2 Pinon Ridge Mill Site Surface Water Analytical Results

	A																					
	Sampler ID Date	2/12/08	9/29/08	10/6/08	1/27/09	5/3/09	5/27/09	6/22/09	8-1 6/30/09 I	7/13/09	7/28/09	21210	3/1/10	7/30/10	8/17/10	9/23/10	2/12/08	1/27/09	3/1/10	2 7/30/10	8/17/10	9/23/10
	Type of Event	SM	P-0.6*	P-0.7	SM		P - 1.4" (S)		P - 1.0°		P - 0.20*	SM	SM			P-04"	SM	SM	SM	P - 3.1"	P - 0.2"	P - 0.5°
Parameter	Unit	-										-	-						4			
Field Parameters																						
Temperature	deg C	NM	16,1	4.7	2.1	21.2	23.1	24.1	19.6	23.8	15.8	1.9	6.8	20,4	20.9	12.4	NM	2.3	5.1	21.2	20.8	13.6
cH	5.U.	NM	7.83	8.51	8.59	7.97	NM	7.52	7.24	7.75	8.18	7.82	7.62	7.93	8.12	7.78	NM	8,53	7,89	7.72	8.38	8.59
Specific Conductivity	uS/cm	NM	188	198	161	253	193	217	167	228	253	119	277	177	192	269	NM	120	185	318	119	102
Dissolved Oxygen	mg/L	NM	6.24	7.62	13.02	NM	NM	NM	NM	3.07	0.14	8.31	3.56	2.48	3.28	1.02	NM	12.41	9.23	4.17	2.87	3.48
Oxidation-reduction Potential	m\/	NM	148	191	143	148	149	NM	NM	116	79	169	101	126	144	145	NM	133	79	138	123	134
General Water Guality	ļ																					
Nitrate+Nitrite as N	mg/L	0.7	9.16	1.91	<2	1.14	0.4	2.00	0.12	0.66	<0.1	1.72	0.11	0.94	0.56	118	0.4	<2	0.04	1.04	0.58	0.47
Total Dissolved Solids (TDS)	mg/L	1240	4720	1170	910	270	1200	790	460	720	550	830	1580	400	240	740	930	870	2040	240	400	260
Total Suspended Solids (TSS)	mg/L	920	36000	3500	2700	3430	6400	2980	2960	2760	1270	2280	5320	19400	18600	12100	1600	610	6510	640	6200	2900
Fluoride	mg/L	0.1	<1	<1	<0.5	0.1	<4	0.2	0.2	0.2	<0.1	0.1	<0.5	<1	0.2	<1	<0.1	<0.5	<0.5	0.2	<0.1	51
Dissolved Metals																-						-
Aluminum	mg/L	0.08	<0.2	0.14	0.12	0.08	0.83	0.14	0.06	0.47	0.22	0.50	0.37	0.29	0.06	2.87	0.08	0.16	0.85	0.05	0.09	0.40
Antimony	mg/L	0.0005	<0.002	0.0012	0.0004	0.0008	0.0008	0.001	0.0015	0.0011	0.0011	0.0017	0.0011	0.0007	0.0005	<0.0004	<0.0004	0.0009	0.0010	0.0005	0.0004	<0.0004
Arsenic	mg/L	0.0062	0.0067	0.0120	0.0034	0.0075	0.0156	0.0104	0.0078	0.0068	0.0011	0.0236	0.0144	0.0106	0.0105	0.0083	0.0047	0.0058	0.015	0.0056	0.0111	0.0042
Barlum	mg/L	0.119	0.29	0.133	0.132	0.132	0.520	0.126	0.125	0.156	0.265	0.236	0.188	0.145	0.257	0.322	0.102	0.106	0.177	0.212	0.110	0.113
Bervillum	mg/L	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	mg/L	<0.0001	<0.0005	0.0002	<0.0001	0.0001	0.0005	0.0002	<0.0001	0.0002	0.0002	0.0002	0.0002	<0.0001	< 0.0001	0.0005	<0.0001	<0.0001	0.0003	<0.0001	<0.0001	<0.0001
Copper	mg/L	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.01	0.09	0.01	0.02	<0.01	0.01	0.07	<0.01	<0.01	<0.01	<0.01	0.01	<0.01
Iron	mg/L	NA.	0.14	0.09	0.07	1.20	0.22	0.07	0.18	0.20	0.28	0.12	0.27	0.13	0.07	1.77	NA.	0.03	0.19	0.02	0.05	0.26
Lead	mg/L	<0.0003	0.0009	0.0007	0.0002	0.0003	0.0017	0.0015	0.0001	0.0009	0.0085	0.001	0.0008	0.0003	0.0001	0.0080	0.0002	0.0002	0.0010	0.0001	0.0001	0.0010
Manpanese	mg/L	NA.	0.641	0.228	<0.005	0.226	0.553	0.205	0.074	0.426	0.601	0.154	0.431	0.156	0.010	0.768	NA	0.033	0.160	<0.005	0.083	0.184
Mercury	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	mg/L	NA.	0.0041	0.0017	0.0017	0.0028	0.0145	0.0054	0.0022	0.0066	0.0082	0.0016	0.0050	0.0025	0.0019	0.0084	NA.	0.0017	0.003	0.0013	0.0017	0.0018
Potassium	mg/L	17.5	17.0	15.0	17.1	16.5	19.5	20.3	17.1	24.1	29.4	8.9	28.6	20.6	18.6	33.6	9.1	6.5	25.0	13.8	6.1	5.4
Selenium	mg/L	<0.001	<0.0005	0.0003	0.0003	0.0004	0.0005	0.0008	0.0004	0.0007	0.0056	0.0003	0.0006	0.0006	0.0005	0.0004	<0.001	0.0002	0.0006	0.0011	0.0004	0.0005
Silver	mg/L	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thailium	mg/L	<0.0001	<0.0005	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001
Uranium	mg/L	0.0032	0.0005	0.0001	0.0005	0.0010	0.0005	0.0004	0.0009	0.0005	0.0006	0.0002	0.0007	0.0072	0.0090	0.0162	0.0020	0.0003	0.0004	0.0031	0.0012	0.0006
Vanadium	mg/L	0.023	<0.03	0.018	0.013	0.011	0.011	0.025	0.024	0.034	0.032	0.017	0.011	0.036	0.045	0.071	0.010	0.006	<0.005	0.035	0.020	0.013
Zinc	mg/L	NA.	0.003	0.010	0.007	0.011	0.020	0.028	0.003	0.026	0,494	0.011	0.009	0.004	0.009	0.098	NA.	0.003	0.008	0.004	<0.002	0.012
Total Metals		101	0.000	0.0.0	0.001	0.011	0.020	0.020	0.003	0.020	9,757	0.011	0.000	0.004	0.405	0.000		0.002	0.000	0.004	-0.000	0.012
Antimony	mg/L	<0.004	NA.	<0.002	NA.	<0.002	NA	NA	NA	NA	NA.	NA.	NA	NA.	NA	NA	<0.004	NA.	NA	NA	NA	NA.
Arsenic	mg/L	0.033	NA.	0.050	NA.	0.039	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	0.020	NA.	NA.	NA	NA.	NA.
Cadmium	mg/L	0.003	NA.	0.0045	NA.	0.0045	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	0.003	NA.	NA.	NA	NA.	NA.
Chromium	mo/L	0.12	0.6	0.08	0.07	0.14	0.15	0.09	0.08	<0.1	0.07	0.06	0.30	0.34	0.10	0.23	0.10	0.06	0.18	<0.01	0.10	0.07
Lead	mg/L	0.041	NA.	0.0891	NA.	0.0689	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	0.043	NA.	NA.	NA	NA.	NA.
Mercury	mg/L	<0.0002	NA.	<0.0002	NA.	<0.0002	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	<0.0002	NA.	NA.	NA.	NA.	NA.
Selenium	mg/L	0.0010	NA.	0.0024	0.0020	0.0015	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	<0.001	0.0019	NA.	NA.	NA.	NA.
Thailium	mg/L	0.003	NA.	0.0033	NA.	0.0026	NA.	NA.	NA.	NA NA	NA.	NA.	NA.	NA.	NA.	NA NA	<0.001	NA.	NA.	NA.	NA.	NA.
Radionuolides - Dissolved		2.002	1404	0000	100	2.2020	14.5	165			100	1414	10.4	101	10.5		2.001	193				
Gross Alpha	IpCl/L	73	2.3	0.26	1.6	1.6	2.6	2.7	2.8	3.3	3.6	0.0	-0.23	5.1	3.6	44	56	1.6	0.56	,al	3.1	24
Radium 226	pCI/L	NA.	NA.	0.23	0.16	0.68	0.33	0.77	0.68	0.58	1.2	0.11	0.23	1.6	1.2	3.1	NA.	0.0	0.50	0.95	0.21	0.21
Radium 228	pCI/L	NA.	NA.	0.6	0.10	0.5	2.1	0.71	1.1	0.50	0.64	0.2	2	0.92	0.42	0.56	NA.	0.99	0.97	0.82	0.32	0.97
Lead 210	pCI/L	NA.	NA.	NA.	NA.	NA.	0.0	0.0	0.0	1.3	-0.06	0.0	3.3	5.6	0.68	0.0	NA.	NA.	2.8	1.8	3.8	0.0
Thorium 228	pCI/L	NA.	NA.	0.12	0.05	-0.03	0.1	-0.02	-0.2	-0.05	0.18	0.12	-0.13	0.06	0.08	0.05	NA.	-0.02	-0.19	-0.06	0.21	0.0
Thorium 230	pCI/L	NA.	NA.	-0.12	-0.05	-0.02	-0.08	-0.07	-0.15	0.29	0.57	-0.13	-0.01	1.3	-0.08	0.19	NA.	0.03	-0.18	0.31	-0.06	-0.27
Thorlum 232	oCH.	NA.	NA.	0.04	-0.04	0.03	-0.02	0.0	-0.03	0.03	0.1	0.13	0.1	0.1	0.00	-0.15	NA.	0.07	0.05	0.11	0.13	0.0
Radionuolides - Total	,	101	10.0	0.54	5.54	0.02	0.02	0.0	0.00	2.23	0.1	5.54	4.1	4.1	0.2	0.10	1605	0.01	0.00	0.11	5.15	0.0
Radium 226	pCI/L	20	21	NA	171	62	45	20	30	35	21	20	35	180	591	100	9.4	10	25	5.8	39	8.2
Radium 228	pCI/L	7.8	2.5	NA.	3.7	5.5	16	7.3	5.2	4.8	4.8	0.15	30	5.5	4.5	100	3.4	27	5.7	3.6	8.8	7.2
Lead 210	pC/L	NA NA	NA.	NA NA	NA NA	NA.	0.49	0.0	14	7.0	40	0.15	29	220	4.5	120	NA.	NA.	25	7.3	38	/.3
Thorium 228	pC/L	1.8	4.9	NA NA	0.1	5.8	16	3.4	14	5.6	5.4	3.6	29	15	17	120	2.7	0.37	5.5	0.81	38 8.1	3.6
Thorium 228	pC/L	1.8	4.9	NA NA	0.01	28	83	17	23	3.6	30	3.5	18	280	230	230	5.2	0.05	5.5	6.8	8.1 52	3.6
Thorium 232	pC/L	1.98	3.83	NA NA	0.01	5.67	12.6	2.47	1.86	4.74	4.62	2 58	2.25	12.7	16.9	253	2.71	-0.05	4.57	1.07	8.71	2.46
HORUM 232	pone	1.95	3.83	NA.	0.0	5.67	12.6	2,41	1.85	4./4	4.62	258	2.25	12.7	16.9	14	2./1	-0.05	4.57	1.07	8./1	2.46

Page 1 of

Table 2 Pinon Ridge Mill Site Surface Water Analytical Results

	Sampler ID								8-											8-4		
	Date	2/12/08	9/29/08	10/5/08	1/27/09	5/27/09	6/22/09	6/30/09		728/09	915/09	9/21/09	2/9/10	3/1/10		8/16/10	9/23/10	7/28/09	3/9/10			3/23/10
	Type of Event	SM	P - 0.5'	P-0.8*	SM	P - 1.2"	P - 0.4"	P - 1.0"	P - 0.4"	P - 0.25*	P-0.4*	P-0.2"	81/	8N	P - 3.0°	P-03	P-0.6"	P-0.7°	SM	P - 3.1°	P - 0.3"	P - 0.5°
Farameter	Unil																					
Fleid Parameters																						
Temperature	deg C	NM	15.2	23	1.1	21.5	26.2	21.5	26.1	20.2	21.3	21.1	2.4	4.6	22.1	20.5	13.5	21.1	1.2	24.7	20.6	13.8
pH	5.U.	NM	7.72	8,48	8.37	NA.	7.42	7.41	7.24	8.19	7.68	7.77	7.91	7.96	774	8.55	7.98	7.69	6.67	5.58	8.31	7.87
Specific Conductivity	µ8/cm	NM	193	135	173	118	112	115	143	158	166	147	201	182	794	MM	145	194	10	333	184	28
Dissolved Oxygen	mg/L	NM	6.25	4,41	11.76	NM	NM	NM	2.63	2.81	1.54	1.34	3.52	8.28	423	5.03	1.63	1.3	7.95	5.42	1.65	0.0
Oxidation-reduction Potential	m/v	NM	138	165	168	153	NM	NM	103	94	94	104	96	72	131	139	124	123	146	80	120	14
General Water Guality																						
Nitrate+Nitrite as N	mg/L	0.4	60.2	0.79	Ŷ	0.5	0.65	0.10	0.20	<0.1	0.59	0.12	0.23	0.02	0.36	0.56	0.51	<0.1	0.20	0.31	0.47	0.0
Total Dissalved Salids (TDS)	mgil	1500	1230	4335	630	2510	1050	1252	930	520	260	420	160	*420	260	1030	190	240	20	250	250	29
Total Suspended Solds (TSS)	mg/L	700	1940	1800	7600	3400	3810	3950	4690	2740	1780	3570	24	11200	17600	3520	18500	570	106	18800	2300	48
Fluoride	mg/L	40.1	0.1	<	<b>9</b> 5	<4	0.2	0.1	0.2	0.1	0.2	0.2	0.1	<0.05	3.2	0.2	0.4	<b>Q</b> .1	<0.1	0.2	0.1	<
Dissolved Metals																						
Aluminum	mg/L	0.14	0.12	1.15	0.07	0.73	0.18	0.06	0.59	0.37	0.07	0.64	0.28	0.54	0.05	0.38	0.38	0.18	0.08	0.48	0.05	0.2
Antimuny	myd.	0.0005	0.0035	0.0015	0.0008	0.0005	0.0011	0.0014	10.004	0.0013	0.0006	0.0007	10.004	<b>~0.0006</b>	0.0006	0.0007	0.0007	0.0012	~0.0004	0.0005	~0.0004	<b>~0.000</b>
Arsenic	mg/L	0.0031	0.026	0.0231	0.0074	0.008	0.0096	0.0040	0.0062	0.0075	0.0080	0.0060	0,0029	0.006	0.0098	0.0071	0.0114	0.0051	<0.0005	0.0139	0.0104	0.003
Barium	mg/L	0.361	0.101	0.485	0.151	0.254	0.107	0.088	0.190	0.263	0.126	0.103	0.121	0.135	0.355	0.117	0.155	0.338	0.006	0.248	0.123	0.10
Beryllun	mgiL	<0.302	<0.012	<0.002	<0.002	<0.004	< 0.002	<0.002	<0.002	<0.002	<0.002	<0.002	< 0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00.
Cadmiun	mg/L	0.0002	+C:0031	0.0004	<0.0001	0.0003	<0.0001	<0.0001	0.0002	0.0002	<0.0001	<0.0001	0,0006	<0.0002	₹0.0001	+0.0001	40.0001	<0.0001	₹0.0001	<0.0001	<0.0001	<0.000
Copper	mg/L	0.02	<0.01	40.01	<0.01	<0.02	<0.01	<0.01	0.03	0.08	<0.01	<0.01	0.01	0.02	<001	40.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0
Iron	mg/L	NA.	1.69	0.13	0.05	2.04	0.09	0.04	0.24	0.30	0.15	0.21	0.1600	0.36	003	0.15	0.17	0.26	0.04	0.17	0.04	0.49
Lead	mg/L	0.0003	0.0012	0.0025	0.0002	0.0023	0.0003	<0.0001	0.002	0.0070	0.0014	0.0003	0.0004	0.0004	0.0002	0.0008	0.0005	0.0015	0.0004	0.0008	0.0003	0.0017
Manganese	mg/L	NA.	0.025	0.648	0.046	0.21	0.015	0.024	0.427	0.417	0.344	0.155	9.087	0.055	0.165	0.057	0.167	0.216	0.018	0.150	0.063	0.17
Mercury	mg/L	<0.0002	<0.0012	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	40.00002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	₹0.01	è	₽.	<0.01	<0.02	<0.01	<0.01	<0.01	<b>6</b> 0	<0.01	0.02	<0.01	<0.01	Ø01	0.31	å	<0.01	€.01	₹0.01	<0.01	<0.01
Nickel	mg/L	NA.	0.034	0.0034	0.0021	0.036	0.0034	0.0013	0.0028	0.0046	0.0032	0.0027	0.0022	0.008	0.0018	0.0010	0.0021	0.0019	<0.0006	0.0017	0.0014	0.0029
Potassium	mg/L	9.4	13.0	9.2	13.4	10.3	9.1	9.6	9.7	10.7	12.0	9.8	17.1	26.2	13.6	7.5	9.3	14.4	0.6	10.2	9.4	56.4
Selenium	mg/L	<0.301	0.0017	0.0002	0.0002	0.0004	0.0005	0.0003	0.001	0.0062	0.0004	0.0005	0,0010	0.0006	0.0010	0.0003	0.0005	0.0004	<0.0001	0.0019	0.0008	0.0004
Silver	mg/L	-0.01	40.31	-10.0F	-0.01	~0.02	-0.01	×0.01	-0.01	P0.01	-0.01	<b>~</b> 0.01	40.01	~0.D1	-001	-0.31	-0.0H	-0.01	-F0.01	P0.01	-0.01	×0.0
Thailiurr	mgiL	<0.0001	<0.0011	<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	40.0001	<0.0001	<0.0001	<0,0001	<0.0002	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000
Uranium	mg/L	0.0004	0.0013	0.0002	0.0018	<0.0002	<0.0001	0.0001	0.0003	0.0003	0.0005	0.0004	0,0009	0.0003	0.0030	0.0015	0.0018	0.0005	0.0002	0.0106	0.0045	0.0017
Vanadium	mg/L	0.310	0.015	0.019	0.014	<0.01	0.016	0.007	0.030	0.026	0.019	0.028	0.016	0.006	0.027	0.045	0.025	0.021	<0.005	0.088	0.050	0.037
Zinc	mg/L	NA.	0.02	0.025	0.005	0.042	0.021	0.003	0.015	0.085	0.023	0.021	0.105	0.028	0.002	0.039	0.004	0.055	0.046	0.002	0.003	0.028
Total Mitals																						
Antimony	mg/L	<0.304	NA.	<0.002	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	<0.0008	NA.	NA.	NA	N/A
Arsenic	mg/L	0.329	NA.	0.048	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA	NA.	N4	0.008	NA.	NA.	NA.	N <sup>2</sup>
Cadmiun	mg/L	0.303	NA.	0.0034	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA	NA.	N4	9,000.0	NA.	NA	NA	N/
Chromium	mg/L	0.11	0.12	0.13	0.09	0.09	0.09	0.10	<0.1	0.07	0.04	0.06	<0.01	0.28	0.14	0.37	0.25	<0.02	<0.01	0.37	0.06	<0.0
Lead	mg/L	0.352	NA.	0.0925	NA NA	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	0.0081	NA.	NA.	NA	N/
Mercury	mg/L	<0.0002	NA.	<0.0002		NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA	NA.	N/	<0.0002	NA.	NA.	NA.	N/
Selenium	mg/L	<0.301	NA.	0.0022	0.0033	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA	NA.	NA.	2000.0	NA.	NA.	NA.	N/
Thallium	mg/L	<0.301	NA.	0.0024	NA	NA.	NA	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	<0.0002	NA.	NA	NA	N <sup>a</sup>
Radionuolides - Dissolved																						
Gross Apha	pCI/L	75	190	0.0	4.9	0.05	0.6	2.1	2.7	1.1	2.9	0.74	0.66	1.9	2	0.72	2.3	2.6	7.2	10	7.8	69
Radium 226	pCI/L	NA.	NA.	0.52	0.21	0.17	0.31	0.13	0.3	0.58	0.85	0.39	0.3	0.34	063	0.35	0.38	1.5	0.11	3.3	2.8	3.7
Radium 228	pCI/L	NA.	NA.	23	1.1	0.66	1.6	0.51	1.2	1.1	0.26	0.13	0.5	0.75	0.46	0.57	0.47	0.6	0.75	0.95	0.58	
Lead 213	pCI/L	NA.	NA.	NA.	NA.	0.0	0.0	0.0	0.91	0.93	2.7	0.0	0.0	3.5	2.9	0.34	13	4.9	1.9	4.9	1.9	0.02
Thorium 220	pOIIL.	NA.	85		0.21	0.02	0.10	0.00	0.0	0.00	0.20	0.11	0.0	0.00	002	0.11	0.07	0.13	0.35	0.01	0.43	0.1
Thorium 230	pCI/L	NA.	NA.	-0.36	0.09	0.07	-0.01	0.09	-0.2	0.22	-0.27	-0.08	0.3	0.12	015	-0.14	0.28	0.6	-0.05	0.18	0.14	0.8
Thorium232	pCI/L	NA.	NA.	-0.15	0.03	0.02	0.0	0.03	-0.05	0.1	0.07	0.11	0.15	0.16	006	0.31	-0.09	0.03	-0.07	0.14	0.06	-0.1
Radionuolides - Total																						
Radium 226 Radium 228	pCI/L pCI/L	12 11	19 6	NA NA	3.7	15 12	22 18	28 4.6	27 10	29 5.1	23 8.8	22 7.3	1.1 0.26	42 10	43	28 C.D	38 5.5	13 3.8	0.87 0.46	240 6.7	110	0.2
Lead 211	pCI/L	NA.	NA.	NA.	NA.	1.4	7.3	0.0	6.8	6.1	74	19	0.20	37	56	17	55	0.0	5.5	180	74	8.5
Thorium228		2.3	- NA 5	NA NA	0.24	7.4	7.3	3.1	3.2	5.2			-0.29	6.3	3.4	4,4	50		0.18	190	-/1	-0.1
Thorium 228	pCI/L pCI/L	2.3	13	NA NA	0.24	7.4	13	3.1 12	18	17	8.1 27	3.7	0.29	24	5.4	18	- 68	0.61	0.18	400	6.2 160	
Thorium 230 Thorium 232	pCI/L pCI/L	299	4.93	NA NA	0.06	5.63	4.85	3.11	3.09	5.03	7.96	10	0.26	3.99	51	18	16.7	4.2	0.66	16.5	5.49	-0.11
TIMESTICANE	profits.	4.22	4.53	- 195	U. 14	0.63	4.05	2.11	3.05	3.03	/25		9.41	3,25	205	4.5	122	0.32	0.05		0.42	16.11

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Table 2 Pinon Ridge Mill Site Surface Water Analytical Results

							CDPHE		CDPHE	
		DUP-7	DUP-8	DUP-8	DUP-10	CIDPHE	Dolores	COPHE	Recreational	EPA 40 CFR
	Sampler ID	(8-2)	(8-1)	(2-4)	(8-3)	Agriculture	Segment Sa	Aquatio Class 2	Class E	Part 440
	Date	3/1/10	7/30/10	8/17/10	9/23/10					
B	Type of Event Unit	SM	P - 1.71	P - 0.31	P - D.6"					
Parameter	Unit									
Field Parameters Temperature	deg C	5.1	20.4	20.6	13.5					
i emperature aH	oeg C S.u.	7.85	7.53	8.31	7,58		6.5-9.0	6.5-9.0	8.5-9.0	6.0-9.0
Specific Conductivity	uš/cm	185	177	184	145		0.5*5.0	0.5*3.0	0.513.0	6.075.0
		9.23	2.48	1.65	1,63	3.0	5.0	6.0	3.0	
Dissolved Oxygen Oxidation-reduction Potential	mg/L m/v	9.23	126	1.65	1.63	3.0	5.0	6.0	3.0	
Control Water Quality	mv	/9	126	120	124					
		N. a	N/A		A14	100	400			
Nitrate+Nitrite as N Total Dissolved Solids (TDS)	mg/L	NA NA	NA NA	NA NA	NA NA	100	100			
Total Suspended Solids (TDS)  Total Suspended Solids (TSS)	mg/L mg/L	NA NA	NA NA	NA NA	NA NA					30(1);20(2)
Fluoride		NA NA	NA NA	NA NA	NA NA					30(1)(20(2)
	mgiL	NO.	IN/S	NA.	NA.					
Dissolved Metals Aluminum	1	0.55	0.10	0.09	0.37					
Antimony	mg/L mg/L	0.55	0.10	0.09	0.37					
Arsenic	mg/L	0.0078	0.0106	0.0110	0.0130			0.34(3):0.15(4)		1.0(max):0.5(1)
Barlum	mg/L	0.113	0.132	0.099	0.188			www.eyerta(4)		raginal/jul2(1)
Beryllum	mg/L	<0.002	<0.002	<d.002< td=""><td>&lt;0.002</td><td></td><td></td><td></td><td></td><td></td></d.002<>	<0.002					
Cadmium		0,0001	<0.002	<0.0001	<0.0001					
Copper	mg/L mg/L	0.0001	<0.0001 <0.01	<0.0001	<0.0001					
		0.02	0.05	0.03						
Iron Lead	mg/L	0.0003	0.002	0.0002	0.16					
Manganese	mg/L mg/L	0.0003	0.071	0.061	0.262					
Mercury	mg/L	<0.0002	<0.0002	0.0002	<0.0002			0.0014(3); 0.00001(4)		
								0.0014(3), 0.0000 1(4)		
Molybdenum	mg/L	≪0.01	<0.01	<0.01	<0.01					
Nickel Potassium	mg/L	0.0045 23.6	0.0023 20.8	0.0017 6.0	0.0035					
Selenium	mg/L mg/L	0,0006	0,0005	0,0004	0.0006			0.0184(3): 0.0046(4)		
Silver		<q.01< td=""><td>40.01</td><td>&lt;0.01</td><td>&lt;0.01</td><td></td><td></td><td>0.0184(3); 0.0048(4)</td><td></td><td></td></q.01<>	40.01	<0.01	<0.01			0.0184(3); 0.0048(4)		
Thailum	mg/L	<0.0001	<0.0001	<0.0001	<0.0001					
Uranium	mg/L mg/L	0,0003	0.0068	0.0012	0.0020					
Vanadium	mg/L	0.0003	0.035	0.019	D.031					
Zinc	mg/L	0.016	0.003	0.003	0.004				_	1.0(1)(0.5(2)
Total Metals	mgit	0.010	0.003	0.003	0.00*					Tree; Typerretyre)
	less 1									
Antimony Arsenic	mg/L	NA NA	NA NA	NA NA	NA NA	0.1(2)	0.1			
Cadmium	mg/L mg/L	NA NA	NA NA	NA NA	NA NA	0.01(2)	0.01			
Chromium		NA NA	NA NA	NA NA	NA NA	0.01(2)	0.01			
Lead	mg/L mg/L	NA NA	NA NA	NA NA	NA NA	0.1(2)	0.1			
Mercury	mg/L	NA NA	NA NA	NA NA	NA NA	G. ((2)	u.1			
Selenium	mg/L	NA NA	NA NA	NA.	NA NA	0.02(2)	0.02			
Thailum	mg/L	NA NA	NA NA	NA NA	NA NA	0.02(2)	0.02			
Radionuolides - Dissolved	mgru	NO.	N/A	N/A	NA.					
Gross Alpha	InCl/L	NA.	NA.	NA.	NA.					
	pCI/L	NA NA	NA NA	NA NA	NA NA					10(1):3.0(2)
Radium 226 Radium 228	pCI/L	NA NA	NA NA	NA NA	NA NA					10(1)(3:0(2)
Lead 210	pCI/L pCI/L	NA NA	NA NA	NA NA	NA NA					
Thorium 228	DCI/L	NA NA	NA NA	NA NA	NA NA					
Thorium 230	pCI/L	NA NA	NA NA	NA NA	NA NA					
Thorium 232	DG/L	NA.	NA.	NA.	NA NA					
Radionuolides - Total	POIL	101	147	167	767					
Radium 226	pCI/L	NAI	NAI	NA.	NA.					30(1):10(2)
Radium 226 Radium 228	pCI/L	NA NA	NA NA	NA NA	NA NA	5	5	5	5	30(1)(10(2)
Lead 210	nGH.	NA NA	NA.	NA.	NA NA					
L680 210 Thorium 228		NA NA		NA NA	NA NA					
	pCIIL	NA NA	NA.	NA NA	NA NA					
Thorium 230 Thorium 232	pCI/L pCI/L	NA NA	NA NA	NA NA	NA NA	60	60	60	60	
TRAINING AUG.	,	NO.	DIO.	NO.	N/V					

Note:
(1) - Modernum value
(2) - Acute symmaps value
(3) - Acute symmaps value
(4) - Chronic
(5) - Modernum od et if Met station - coxis dismaged gauge at 5-1
NA- Not Analysisch
NA- Not Analysisch
NA- Not Analysisch
SM - Showmett
SM - Showmett
Small gindere and intensity (in total inches)
SM - Showmett
Smalling indicates a concentration or activity sieve above of a surface water standard applicable to the Dickes River at segment 1a.

Regulatory References:
CEPHE WICCD Regulation No. 31 - The Basic Standards and Methodologies for Sufface
CEPHE WICCD Regulation No. 31 - The Basic Standards and Methodologies for Sufface
Water (semends of 1408)
SEPA CEPHE WICCD Regulation No. 35 - Classifications and Numeric Standards for Gunnison
and Louiser Colores Note: Resistant generated 211:007)
EPA CPHIO Part 440 Subpart G - Uranium, Radium and Varadium Cres Subcategory

Page

## T.ABLE 8A ANALYTICAL DATA FOR SAMPLES FROM MONITORING WELLS MW-6 AND MW-6

	CDPHE Domestic	CDPHE					MW-6										
Analyte	Water Supply	Agricultural				WW-5							161	¥-6			
Attages	Standards <sup>(1)</sup>	Standards <sup>(1)</sup>	1/31/06 <sup>(0)</sup>	4/30/08	8/7/08	11/14/08	2/19/09	4/30/09	7/31/00	10/16/07	1/29/08	4/29/08	8/7/08	11/14/08	2/18/09	4/20/09	7/28/09
Dissolved Metals																	
Aluminum (mg/L)	None	5	0.23	<0.03	0.04	0.04	0.32	0.05	0.05	40.1	<0.08	<0.06	40.06	<0.08	<0.08	<0.08	<0.06
Arsenic (mg/L)	0.01	0.1	0.0015	0.0021	0.0025	0.0028	0.0027	0.0032	0.0017	<0.001	<0.001	0.0008	0.001	<0.01	0.002	<0.03	0.008
Barlum (mg4.)	2.0	None	0.034	0.021	NA.	NA.	NA	NA.	NA.	<0.1	NA.	0.024	NA.	NA.	NA.	NA.	NA.
Boran (mg/L)	None	0.75	0.59	0.53	0.47	0.46	0.45	0.42	0.41	2.20	2.30	2.27	2.5	2.38	2.39	2.36	2.35
Cedmium (mg/L)	0.005	0.01	0.0002	< 0.0001	NA.	NA.	NA.	NA.	NA.	<0.005	NA.	0.0001	NA.	NA.	NA.	NA.	NA.
Calcium (mg/L)	None	None	69.8	76.6	69.1	69.5	70.2	72.0	69.5	109	123	121	133	132	137	131	131
Ceslum (mg/L)	None	None	<0.0002	< 0.0002	NA.	NA.	NA.	NA.	NA.	<0.1	NA.	<0.0002	NA.	NA.	NA.	NA.	NA.
Chromium (mg/L)	0.1	0.1	<0.01	< 0.01	NA.	NA	NA	NA	NA.	< 0.005	NA	<0.01	NA.	NA.	NA.	NA.	NA.
Copper (mg/L)	1	0.2	< 0.01	< 0.01	<0.01	<0.01	<0.01	<0.01	< 0.01	<0.01	<0.02	< 0.02	<0.02	<0.02	<0.02	<0.02	<0.01
Iron (mg/L)	0.3	5	0.19	<0.02	< 0.02	0.04	0.22	< 0.02	0.06	1.46	<0.04	<0.04	<0.04	<0.04	0.12	<0.04	<0.02
Leed (mg/L)	0.05	0.1	0.0020	< 0.0001	<0.0001	<0.0001	0.0006	<0.0001	0.0001	<0.001	<0.0004	<.0001	<0.0002	<0.002	<0.0002	<0.0002	<0.0002
Magnesium (mg/L)	None	None	54.5	61.2	60	57.4	58.7	59.3	58.4	261	284	288	309	295	304	299	312
Mongenese (mg4.)	0.05	0.2	0.042	0.012	0.028	0.025	0.053	0.015	0.021	0.060	0.010	0.01	<0.01	0.020	<0.01	<0.01	0.015
Mercury (mg/L)	0.002	0.01	< 0.0002	< 0.0002	NA	NA	NA.	NA	NA.	< 0.001	NA.	<0.0002	NA.	NA.	NA	NA.	NA.
Molybdenum (mg/L)	0.035	None	0.03	0.03	0.02	0.01	<0.01	0.02	<0.01	<0.1	<0.02	0.030	<0.02	<0.02	<0.02	<0.02	< 0.02
Nickel (mg/L)	0.1	0.2	<0.01	<0.01	NA.	NA.	NA.	NA.	NA.	0.05	NA.	<0.01	NA.	NA.	NA.	NA.	NA.
Potassium (mg.L.)	None	None	17.6	18.1	19.0	16.9	16.9	16.3	16.8	91.0	98.4	95.4	105	99.7	97.2	93.0	102
Selenium (mg/L)	0.05	0.02	0.0170	0.0358	0.0200	0.0231	0.0206	0.0231	0.0207	0.003	0.027	0.1650	0.0321	0.236	0.0478	0.0413	0.217
Sodium (mgA.)	None	None	136	127	109	95.0	89.9	88.2	88.8	172	205	190	219	208	206	190	200
Uranium (mp/L)	0.03	None	0.0760	0.0898	0.108	0.1100	0.1030	0.1070	0.0911	<0.0003	<0.0002	<0.0001	<0.003	<0.002	0.0003	<0.0002	<0.0002
Vanadium (mg.L.)	None	0.1	0.007	0.006	0.012	0.000	0.013	0.006	0.007	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc (mg/L)	5	2	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01
General Water Quality						-								7.12			
Alterinity as CaCO <sub>3</sub> (mg/L)	None	None	240	234	203	207	205	203	211	392	394	388	387	397	339	388	406
Carbonate as CaCO, (mgl.)	None	None	<2	<2	- 5	<2	13	42	<2	<1	<2	<2	42	<2	42	<2	<2
Bicarbonate as CaCO <sub>2</sub> (mg/L)	None	None	240	234	203	207	192	203	211	478	394	388	387	397	399	388	406
Chicride (mg/L)	250	None	21	22	33	24	24	21	21	142	170	160	170	160	170	160	170
Fluoride (mg/L)	4.0	2	0.4	0.5	0.6	0.6	0.5	0.7	0.5	0.3	0.3	0.4	0.4	0.4	0.3	0.4	0.3
Ammonia as N (mg/L)	None	None	0.08	0.23	0.06	0.10	<0.05	<0.05	<0.05	1.01	0.8	0.95	1.05	1.06	0.91	1.01	0.98
Nitrate/Nitrite as N(mg/L)	10.0	100	1.09	1.20	2.51	2.17	1.98	2.26	2.31	<0.1	<0.02	< 0.02	0.06	<0.02	0.03	0.02	0.05
Silice (mg/L)	None	None	17.7	17.4	17.5	14.4	16.1	14.2	15.4	10.3	10.7	10.7	11.4	9.8	10.0	9.5	10.7
Sulfate (mg/L)	250	None	390	370	390	370	370	360	380	1330	1400	1070	1490	1460	1490	1460	1560
Sulfide as S (mg/L)	None	None	0.04	<0.02	<0.02	<0.02	<0.08	<3	<0.2	NA.	13.4	10.3	11.9	11.5	12.4	13.2	11.6
Total Organic Carbon (mg/L.)	None	None	12	- 8	NA.	NA.	NA.	NA.	NA.	<1	NA.	12	NA.	NA.	NA.	NA.	NA.
Total Dissolved Solids (mg/L)	None	None	840	820	820	770	790	770	770	2400	2740	1140	2670	2750	2760	2800	2770
Total Suspended Solids (mg/L)	None	None	120	780	NA.	78	350	337	237	13.3	45	<5	NA.	13	<5	45	<5
Dissolved Radionuclides																	
Gross Alpha (pCAL) <sup>(1)</sup>	15(7)	None	50	85	48	40	41	44	58	11.1	17.0	12	9.7	<7.8	12	-88	- 11
Gross Beta (pCl/L)	4 mrsm/yr	None	32	41	32	30	27	24	31	92.8	140.0	91	110	99	98	81	93
Redium 228 (pCVL)		5 (Re 226 and	0.53	0.33	0.42	<0.35	0.3	0.37	0.34	1.6	2.2	1.9	3.3	1.9	2.1	2	1.6
Redium 228 (pCVL)	5 (Ra 226 and 228)	228)	NA.	NA.	NA.	NA.	NA.	NA.	1.9	NA.	NA.	NA.	NA.	NA.	NA.	NA.	4.4
Calculated Values				- 100	- ""		130		1.0	- ""		- 110		- 100	- 110		4.4
Charge Balance (%)	None	None	2.9	6.4	1.5	0.8	0.8	2.4	0.8	-3.5	-1.2	7.8	0.7	-0.6	-0.7	-1.2	-2.2
Field Parameters				-14	- 19	-19	2.4	274	2.00				-11	2.9			- 24
Temperature (°C)	None	None	12.4	17.7	16.3	15.8	14.5	18.8	16.9	17.9	18.0	18.8	19.0	18.8	17.9	18.7	19.6
pH (std. units)	65-8.5	6.5-8.5	10.3	7.5	7.5	7.9	8.0	7.8	7.8	7.7	5.3	7.0	6.9	7.0	7.1	6.9	7.1
Specific Conductivity (mS/cm)	None	None	2.34	1.19	1.23	1.10	1.04	1.09	1.16	3.17	5.32	3.14	3.43	3.29	3.51	3.29	3.27
Dissolved Oxygen (mg/L)	None	None	6.0	2.1	5.9	5.8	6.8	12.2	7.4	2.6	1.5	0.0	0.1	0.1	0.1	0.2	0.1
ORP (mV/f <sup>4</sup> )	None	None		-	203	150	88	72	108		-310	-373	-381	-331	-330	-355	-354
BATHE HILLS																	

TABLE 88 ANALYTICAL DATA FOR SAMPLES FROM MONITORING WELLS MW-7, MW-8B, AND MW-9

	CDPHE Domentic	CDPHE			MV	V-7					NW-88			MW-0 <sup>(2)</sup>
Analyte	Water Supply	Agricultural	6/7/08	9/9/08	11/13/08	2/18/0	4/20/00	7/31/00	7/21/08	1113/08	2/18/00	4/29/09	7/20/00	9/10/08 <sup>(2)</sup>
	Standards <sup>()</sup>	Standards <sup>71</sup>	6/7/00	2/2/70	11/13/02	2/10/10	4120/00	712:700	7721.00	1112/06	21000	42000	7120100	9/10/00
Dissolved Metals				- 0.00	-1.11	- 0.00	-1.11	-1.00	-0.00			-0.00	-1.44	4.47
Aluminum (mg/L)	None	5	0.05	<0.03	<0.03	< 0.00	<0.03	<003	<0.06	<0.08	0.09	<0.03	<0.06	0.07
Arsenic (mg/L)	0.01	0.1 None	0.0073	0.0046	0.0059	0.0062	<0.03	0.0054	0.002	<0.01	0.003	0.007	0.007	0.0111
Berum (mg/L) Baron (mg/L)	2.0 None	0.75	0.016	NA .	NA.	NA	NA.	NA.	0.038	NA.	NA.	NA.	NA.	0.044
	0.005	0.01	0.21 <0.0001	0.31	0.31 NA	0.35 NA	0.34 NA	0.33 NA	<0.0002	9.46 NA	0.52 NA	0.47 NA	0.46 NA	<0.0001
Camium (mg/L)	None	None		NA .										
Caldum (mgt.)	111111	170000	92.6	101.0	100	103	104	101	495	388	385	500	384	8.8
Cesum (mg/L)	None 0.1	None 0.1	<0.0002	NA	NA.	NA.	NA.	NA.	<0.0004	NA.	NA.	NA.	NA.	<0.0002
Chrimium (mg/L) Copper (mg/L)	0.1	0.1	<0.01	NA <0.01	NA <0.01	NA <0.01	NA <0.01	NA <001	<0.02 <0.02	NA <0.02	NA <0.02	NA <0.01	NA 0.02	<0.01 <0.01
iron(mgt.)	0.3	5	<0.02	<0.02	<0.02	<0.00	<0.02	<002	0.12	0.01	<0.04	1.48	1.43	0.03
Leed (mp/L)	0.05	0.1	0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.002	<0.0002	<0.0002	<0.0002	<0.0001
Magnesium (mg/L)	None	None	61.0	75.0	72.9	77.4	76.0	7E.0	230	217	228	254	218	4.8
Marganese (mg/L)	0.05	0.2	<0.005	<0.005	<0.005	40.005	<0.005	<0.005	0.33	1.43	0.81	0.937	1.15	0.019
Mercury (mgt.)	0.002	0.01	<0.0002	NA.	NA.	NA.	NA.	NA.	<0.0002	NA.	NA NA	NA.	NA.	<0.0002
Molybdenum (mg/L)	0.035	None	0.03	0.01	0.01	<0.01	0.02	<001	0.04	<0.02	<0.02	<0.01	<0.02	0.06
Nidel (mg/L)	0.1	0.2	<0.01	NA.	NA.	NA.	NA.	NA.	<0.02	NA.	MA	NA.	NA.	<0.01
Potessium (mg4.)	None	None	18.1	16.8	16.9	16.4	15.5	162	16.7	20.8	19.7	20.3	18.2	12.0
Seinium (mgt.)	0.05	0.02	0.0273	0.0279	0.0309	0.0280	0.0270	0.0138	0.079	0.010	0.0007	0.0002	0.0004	0.0017
Sodum (mg/L)	None	None	79.2	82.7	82.2	83.1	80.2	813	34.1	29.7	29.4	32.8	29.8	202
Unrium (mg.L.)	0.03	None	0.0775	0.1030	0.1080	0.0988	0.0952	0.0970	0.0578	0.033	0.0861	0.0164	0.0143	0.0245
Veradium (mg/L)	None	0.1	0.018	0.014	0.016	0.016	0.015	0.014	<0.01	< 0.01	<0.01	<0.005	< 0.01	0.025
Zinc (mg/L)	5	2	<0.01	<0.01	<0.01	<0.01	<0.01	<001	<0.02	<0.02	< 0.02	<0.01	0.02	<0.01
General Water Quality														
Alkshrity as CaCO <sub>3</sub> (mg/L)	None	None	154	198	218	223	222	226	428	436	389	449	474	243
Carronate as CaCO <sub>3</sub> (mg/L)	None	None	<2	42	<2	4	4	- 42	42	<2	42	<2	<2	11
Bicurbonate as CaCO <sub>3</sub> (mgt.)	None	None	154	198	218	218	218	228	428	436	389	449	474	232
Chicfde (mg/L)	250	None	25	28	30	32	31	30	48	37	40	42	41	19
Fluxide (mg/L)	4.0	2	0.7	0.6	0.6	0.5	0.5	0.5	0.7	3.6	0.5	0.6	0.5	1.0
Amnonia as N (mg4.)	None	None	< 0.05	<0.05	<0.05	< 0.06	<0.05	<005	0.06	0.12	< 0.05	0.09	0.05	<0.5
Nitrate/Nitrite as N(mg/L)	10.0	100	0.61	0.85	0.72	0.77	0.75	0.69	0.04	40.02	0.03	0.04	<0.02	10.2
Silica (mg/L)	None	None	15.8	19.7	17.5	19.3	17.4	183	11.7	17.3	18.5	20.2	16.9	11.8
Suitete (mg/L)	250	None	460	460	480	480	470	450	1810	1370	1450	1680	1540	190
Suite as S (mg/L)	None	None	<0.02	<0.02	<0.02	<0.00	<0.02	<002	1.9	0.61	0.19	0.05	0.44	0.10
Total Organic Carbon (mg/L)	None	None	9	NA	NA.	NA	NA.	NA.	29	NA.	NA	NA.	NA	18
Total Dissolved Solids (mg/L)	None	None	850	930	970	940	930	970	3040	2520	2560	2950	2850	610
Total Suspended Solids (mpl.)	None	None	<5	- 6	9	15	45	-5	833	18	15	45	<5	168
Dissolved Radionuclides					40			-	40					
Gross Alpha (pCIA.) <sup>(2)</sup>	15 <sup>(3)</sup>	None	36	58	42	45	51	70	42	23	7	11	15	26
Gross Beta (pCVL)	4 mountyr	None	34	33	40	29	33	38	23.0	34.0	23	20	22	20
Radum 228 (pCVL)	5 (Ra 228 and 228)	5 (Re 228 and 228)	<0.35	<0.25	<0.4	< 0.24	<0.17	0.17	12.0	0.54	0.49	0.89	0.33	<0.45
Radum 228 (pCkL)	-	220)	NA	NA.	NA.	NA	NA	0.19	NA	NA.	NA	NA.	1.5	NA.
Calculated Values	Nune	Mine	0.4	0.6	0.3	0.3	6.7	07	-2.5	-0.5	0.5	4.7	-4.9	3.1
Charge Balance (%)	None	None	0.4	3.0	0.3	0.5	0.7	0.7	-2.5	40.0	0.5	2.7	-4.9	3.1
Field Parameters Temperature (177)	None	None	44.7	46.0	15.0	11.6	46.7	46.0	40.4	-5.0	11.0	10.0	47.4	47.0
Tenperature (°C)	None	1.10110	18.7	15.8	15.6	14.6	15.7	15.9	18.4	15.3	14.6	16.0	17.4	17.6
pH std. units) Specific Conductivity (mS/on)	6.5-8.5 None	6.5-8.5 None	8.0	7.8 1.28	7.6	7.6 1.34	7.4	7.6	6.4 3.06	5.8	6.8 2.81	6.7 2.94	6.8	8.2 0.99
	None	None	1.08	1.28	1.25	1.34	1.29	1.39	8.1	3.00	0.3	0.7	3.02	2.1
Dissolved Oxygen (mg/L)	None None	None	22	161	138	4.5 88	62	169	-123	-154	-199	-203	-189	154
ORP (mVf <sup>q</sup>	NONE	PROVIDE	29	191	120	00	92	110	-122	-154	-199	-203	-109	109

- Eigne (my/17\* historie Nome 29 191 136 80 92 199 -123 -15 Normes (1) Colorado Department of Public Health and Environment, Water Quality Control Commission, 5 CDR, 1900-41, Regulation 41, The Bank Standards for Ground Water, Effective May 31, 2000 (2) Teacist for IRVP qualified by Stainheider due to downshape of MWPs; ground-after nample may contain different of the state (2) The Bank Standards for Ground Water, Effective May 31, 2000 (2) The gross subha standard does not include gross alpha from radion and warnium. However, the Materiatory results include the alpha contribution from radion and warnium.

  (4) 08Pt Outdation Reduction Potential

- Concentrations standard before the product quantitation limit are shown as the distance whose such concentrations are shown as less than the method delection limit.

  All the distance of Conference and the conference and trial areas to exclude a second conference and the conferen

	CD PHE Domestic	COPHE			PY	Y-11					PY	V-2					PY	V-3		
Analyte	Water Supply Standards <sup>(1)</sup>	Agricultural Standards <sup>(1)</sup>	0/112100 <sup>(2)</sup>	0/13/08	11/14/00	2/24109	4/30109	7/340/09	E19/00	011503	11/13/00	2/24/09	4/25/00	7/25/09	E/6/00	E/9/00	11/13/00	3/3/09	4/30/09	7/31/09
Dissolved Metals																				
Aluminum (max.)	None	5	~D.03	-0.03	-0.03	40.003	-0.03	<0.03	-0.03	-0.03	<0.03	-0.03	-0.03	45.003	<0.03	-0.03	<0.03	-0.03	-0.03	-0.03
Arsenic (mg/L)	0.01	0.1	0.0169	0.0177	0.0009	0.0007	0.0009	0.0007	0.0034	0.0024	0.0007	+0.0005	0.001-0	+0.00005	0.0135	0.03138	0.0118	0.0120	0.0118	0.0078
Datum (msf.)	2.0	None	0.013	0.027	NA	NA	NA	MA	0.013	0.009	NA	NA	NA	NA	0.002	0.032	INA	NA	NA	NA
Boron (rng4.)	None	0.75	0.30	0.30	0.29	0.29	0.31	0.29	0.47	0.45	0.47	0.47	0.51	0.48	0.39	0.37	0.42	0.43	0.43	0.41
Cedmium (mgA)	0.005	9.91	10,0001	-10.0001	NA.	NA.	195	MA	10.0001	10.0001	NA.	NA.	NA.	NA.	0.0001	10,0001	INA	195	NA.	NA.
Calche (reft.)	None	None	69.1	66.7	68.9	50.4	71.4	66.6	\$11.4	90.3	50.4	82.5	91.6	63.5	67.0	66.0	72.7	73.7	76.3	74.0
Cesium (mg/L)	None	None	<0.0002	-0.0002	NA.	NA.	NA.	NA.	<0.0002	<0.0002	NA.	NA.	NA.	NA.	<0.0002	<0.0002	INA	NA.	NA.	NA.
Chromium (mgst.)	0.1	0.1	×0.01	e0.01	NA.	NA.	NA.	NA.	eD.01	#0.01	NA.	NA.	NA.	NA.	40.01	4D.01	INA	NA.	NA.	NA.
Copper (Ingl.):	1	0.2	40.01	< 0.01	40.01	40.01	40.01	40.01	40.01	=0.01	40.01	40.01	40.01	40.01	<0.01	<0.01	10.01	+0.01	40.01	<0.01
Iron (mat.) <sup>(l)</sup>	0.3	5	0.02	0.02	2.88	3.42	4.04	2.39	0.12	0.12	4.15	21.20	16.30	24.30	0.02	0.02	0.05	<0.02	0.04	0.25
Leed (mg/L)	0.05	0.1			40,0001						40.0001			40.0001		40,0001				40.0001
Magnesium (mgf.)	None	Nove	85.8	0.0004 88.5	40.0001 84.3	40.00001 85.8	40.0001 84.5	40.0001 50.5	68.6	69.5	71.1	-0.0001 65.6	<0.0001 71.8	66.2	0.0002	82.4	40.0001 70.0	<0.0001 71.7	72.7	72.2
Magazian (mg/L/2)	0.05	0.2	40.005	40.005	0.179	0.182	0.1629	0.154	0.009	0.012	0.101	0.227	0.198	0.284	40.005	40.005	0.008	<0.005	72.7 ≪0.006	0.021
	0.002	0.01		+0.0002		NA:	NA.		+0.0002	40.0002	NA NA	NA.	U.1965	NA:	40.0002 40.0002	+0.0002	INA	NA.	NA.	
Marcury (rigit.)			<0.0002		NA.			MA												MA
Molybdenum (mg/L) Nickel (mg/L)	0.035	None 0.2	×0.01	<0.01	<0.01	40.01	<0.01	<0.01	0.02 <0.01	0.01	<0.01	<0.01 NA	0.02: NA	<0.01	<0.01	<0.01	0.01	<0.01	0.02	<0.01 NA
Polesskan (mp4.)	None	Nove	40.01	0.01	NA.	NA:	NA	MA		<0.01	NA			NA:	40.01	40.01	INA	NA.	NA.	
	0.05	0.02	9.50	10.0	10.7	10.7	10.1	10.0	17.4	18.3	18.1	17.1	18.0	17.0	12.7	123	14.3	14.3	14.3	14.6
Selenkim (mg/L)			0.0181	0.0168	0.008-9	0.0078	0.0081	0.0079	0.0167	0.0171	0.0126	0.0024	0.005-3	0.0006	0.0206	0.01203	0.0215	0.0209	0.0195	0.0176
Sodum (mg/L)	None 0.03	Norws	72.3	72.4 0.0953	73.91 0.025.0	74.7 0.0196	73.4 0.0253	69.9 0.0295	902	102 0.0538	102 0.0452	102 0.007B	102 0.0204	102	100 0.0826	948.9 0.03837	102 0.0797	0.0731	101	102 0.0005
Utenium (mg/L.)		Norwe																		
Visnadium (mg/L)	None	0.1	0.035	0.041	<0.005	<0.005	40.005	40,005	0.010	0.007	<0.005	40.005	40.005	<0.005	0.014	0.021	0.020	0.024	0.019	0.014
Zh: (ngt.) General Water Quality	5	2	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.06	-0.02	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Alkelinity as CeCO <sub>2</sub> (mg/L)	Nome	None	225	226	225	217	224	234	249	241	246	214	222	215	243	241	252	242	252	262
Carbonale as CaCO, (vol.)	None	Nove	-2	- 6	-2	-2	-2	+2	-2	-2	-2	-2	-2	- 2	9.	-2	- 2	-2	-2	-2
(Box bonste an CaCO <sub>3</sub> (mg/L)	None	None	225	223	225	217	224	234	249	241	246	214	222	215	240	241	252	242	252	262
Chicride (mpf)	250	None	35	36	36	38	36	36	38	36	34	38	39	62	35	35	35	37	36	35
Fluction (mp/L)	4.0	2	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.4	0.5	0.4	0.4i	0.5	0.4	0.5	0.5	0.5	0.4
Ammonia as M (mgt.)	None	None	≠0.05	31.2	0.3	0.15	0.99	0.09	<0.05	-0.3	0.05	40.5	10.05	<0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nikolečištie na Nimpč.)	10.0	100	1.80	1.47	0.36	0.37	0.42	0.51	0.05	0.65	0.29	0.03	0.15	<0.002	0.98	1.04	1.14	-0.77	0.68	0.67
Sike (mgl.)	None	None	19.2	19.4	10.2	11.1	11.5	12.9	167	152	12.5	11.2	11.6	9.7	18.7	16.9	152	15.6	153	15.6
Subje (mgL)	250	None	380	360	380	360	410	380	430	430	440	430	450	440	380	3.60	380	390	350	380
Suitce as S (mpt.)	None	Nores	×0.02	<0.02	<0.02	40.2	40.2	40.2	<0.02	0.03	<0.02	0.11	40.1	40.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Organic Carbon (mg/L)	None	None	10	9	NA.	NA.	NA.	NA.	A	11	NA.	NA.	NA.	NA.	7	7	INA	NA.	NA.	NA.
Total Dissolved Solds (mpf.)	None	None	810	810	NA 820	81D	820	830	940	930	920	910	940	94D	830	840	INA 860	850	860	870
Total Suspended Solids (mg/L)	None	None	-5	-8	156	24	18	25	38	43	55	65	43	93	-63	+3	18	-8	-8	14
Dissolved Radionuclides									.50	- 29	- 23	39	-79	33			.~	-7	-7	-
Gross Alpha (tvC) 5 1/51	15(1)	Nove	45	40	7.8	- 11	44	16	31	27	18	-6	21	2.6	40	35	32	33	23	25
Gross Riels (nCM)	A months	Nores	20	23	15	11	13	16	29	25	21	18	21	2.4	27	26	20	10	23	27
Rudum 225 (s-Cl.f.)		5 (Re 226 and	-0.23	-0.25	+0.27	0.04	40.25	8.11	40.27	40.16	-03	<0.19·	40.25	8.1	0.26	40.20	40.35	0.23	0.48	0.25
Redum 225 (p-CLL)	5 (Fix 226 and 226)	228)	NA.	NA.	NA.	NA.	NA.	0.95	NA.	NA.	NA.	NA.	NA.	0.08	NA.	MA	INA	NA.	NA.	1.4
Calculated Values																				
Charge Balance (%)	None	None	1.5	10.2	2.2	2.2	0.4	1.8	-0.7	1.0	1.0	4.0	4.2	3.6	3.2	3.5	0.7	1.1	1.0	1.0
Field Parameters			- 7.0	10.0			-77		- 22							2.5	-23			- 17
Temperature (°C)	None	None	18.0	17.5	15.4	15.0	15.8	17.9	16.5	20.0	14.5	15.0	16.2:	20.5	15.7	16.0	13.7	14.7	15.1	16.1
pH (Hd. units)	65-65	65-6.5	74	7.0	7.5	7.5	7.4	7.7	7.5	7.5	73	7.4	7.4	7.6	7.6	7.6	76	7.7	7.4	7.8
Specific Conductivity (mS/cm)	None	Nones	1.15	1.13	1.15	1.25	1.15	1.26	1.29	1.32	1.28	1.39	1.32	1.25	1.26	1.25	1.22	1,31	124	1.30
Dissolved Oragen (mgfL)	None	None	7.4	7.2	0.6	0.1	3.3	0.5	6.1	5.5	1.25	0.2	0.5	0.7	7.7	7.7	7.2	7.6	103	4.0
ORP (m/V) <sup>(1)</sup>	None	Nove	31	142	-154	-144	-162	-151	900	90	-124	-210	-204	-163	61	108	95	34	-20	9.0 -55
OKS-(MA)	nutie	PROFES	31	142	-156	-164	-102	-151	+00	,00	-129	~210	-206	-183	- 61	160	1/5	34	-20	-95

- | Copp age/off\* | Name | Name | Name | 21 | 1st | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156

TABLE 11
ANALYTICAL RESULTS FOR DUPLICATE SAMPLES, PARENT SAMPLES, AND EQUIPMENT RINSATE SAMPLES

Analyte	MW-6	(MW-6)	MW-6B	DUP1-72100 (MW-00)	MW-9	DUP091000 (MW-9)	PW-1	DUP-015408 (PW-1)	MW-7	MW-7 DUP (MW-7)	MW-5	MW-5 DUP (MW-5)
	4/29/2000	4/29/2008	7/21/2008	7/21/2008	9/10/2008	9/10/2008	11/14/2008	11/14/2003	2/10/2009	2/18/2009	2/15/2009	2/19/2009
Dissolved Metals												
Aluminum (mg4.)	<0.08	<0.03	<0.08	<0.03	0.07	0.08	<0.03	<0.03	<0.03	0.03	0.32	0.95
Arsenic (mg/L)	0.0006	< 0.0005	0.002	0.0020	0.0111	0.0110	0.0009	8000.0	0.0082	0.0062	0.0027	0.0028
Barium (mg/L)	0.024	0.025	0.038	0.040	0.044	0.046	NA.	0.008	NA.	0.013	NA.	0.065
Boron (mg/L)	2.27	2.39	0.36	0.37	2.63	2.65	0.29	0.30	0.36	0.36	0.45	0.44
Cadmium (mg/L)	0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	NA.	<0.0001	NA.	<0.0001	NA.	0.0004
Calcium (mg/L)	121	129	495	515	8.8	8.9	63.9	68.3	103	103	70.2	70.3
Cealum (mg/L)	<0.0002	<0.0002	<0.0004	< 0.0002	<0.0002	<0.0002	NA.	<0.0002	NA	<0.0002	NA.	< 0.0002
Chromium (mg/L)	<0.01	<0.01	<0.02	< 0.01	<0.01	<0.01	NA.	<0.01	NA.	<0.01	NA.	<0.01
Copper (mg/L)	<0.02	<0.01	<0.02	< 0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Iron (mg/L)	<0.04	<0.02	0.12	0.13	0.03	0.03	2.88	2.09	<0.02	<0.02	0.22	0.80
Lead (mg/L)	<.0001	< 0.0001	<0.0002	< 0.0001	<0.0001	<0.0001	< 0.0001	<0.0001	<0.0001	<0.0001	0.0008	0.0020
Magnesium (mg/L)	288	314	230	237	4.8	4.8	84.3	83.5	77.0	76.7	58.7	58.4
Manganese (mgl.)	0.01	0.012	0.33	0.344	0.019	0.042	0.179	0.160	<0.005	<0.005	0.053	0.172
Mercury (mg/L)	<0.0002	<0.0002	<0.0002	< 0.0002	<0.0002	<0.0002	NA.	<0.0002	NA.	<0.0002	NA.	<0.0002
Molybdenum (mg.L.)	0.030	0.02	0.04	0.01	0.06	0.08	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel (mg/L)	<0.01	<0.01	<0.02	< 0.01	<0.01	< 0.01	NA.	<0.01	NA	<0.01	NA.	<0.01
Potassium (mg/L)	95.4	107	16.7	17.0	12.0	12.2	10.7	10.4	16.4	16.5	16.9	16.8
Selenium (mg/L)	0.1660	0.1440	0.079	0.081	0.0017	0.0018	0.0089	0.0097	0.0280	0.0258	0.0206	0.0207
Sodium (mg/L)	190	209	34.1	34.7	202	202	73.9	73.2	83.1	83.5	89.9	89.5
Uranium (mg/L)	<0.0001	<0.0001	0.0578	0.0589	0.0245	0.0249	0.0250	0.0286	0.0986	0.0987	0.1030	0.1020
Vanadium (mg/L)	<0.01	<0.005	<0.01	<0.005	0.025	0.027	< 0.005	<0.005	0.010	<0.005	0.013	0.015
Zirc (mg/L)	<0.01	<0.01	< 0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
General Water Quality												
Alkalinity as CaCO <sub>2</sub> (mg/L)	386	NA.	428	NA.	243	NA.	225	NA.	223	NA.	205	NA NA
Carbonate as CaCO <sub>3</sub> (mg/L)	<2	NA.	<2	NA.	11	NA.	<2	NA.	4	NA NA	13	NA.
Bicarbonate as CaCO <sub>3</sub> (mg/L)	386	NA.	428	NA.	232	NA.	225	NA.	218	NA	192	NA.
Chloride (mg/L)	160	NA.	48	NA.	19	NA.	36	NA.	32	NA.	24	NA.
Fluoride (mg/L)	0.4	NA.	0.7	NA.	1.0	NA.	0.5	NA.	0.5	NA.	0.5	NA NA
Ammonia as N (mg/L)	0.95	NA.	0.06	NA.	<0.5	NA.	0.3	NA NA	<0.05	NA NA	<0.05	NA.
Nitrate/Nitrite as N(mg/L)	<0.02	NA.	0.04	NA.	10.2	NA.	0.36	NA.	0.77	NA NA	1.96	NA NA
Silice (mg/L)	10.7	11.5	11.7	11.6	11.8	12.0	10.2	10.4	19.3	19.2	18.1	18.6
Sulfate (mg/L)	1070	NA.	1810	NA.	190	NA.	380	NA.	480	NA.	370	NA.
Suffice as S (mg/L)	10.3	NA.	1.9	NA.	0.10	NA.	<0.02	NA.	<0.02	NA NA	<0.08	NA.
Total Organic Carbon (mg/L)	12	NA.	29	NA.	18	NA.	NA.	NA.	NA.	NA NA	NA.	NA.
Total Dissolved Solids (mg/L)	1140	NA.	3040	NA.	610	NA.	820	NA.	940	NA.	790	NA.
Total Suspended Solids (mg/L)	<5	NA.	833	NA.	168	NA.	106	NA.	<b>&lt;</b> 5	NA NA	350	NA.
Dissolved Radionuclides												
Gross Alpha (pCi/L) <sup>11</sup>	12	NA.	42	54	28	20	7.8	7.2	45	40	41	42
Gross Beta (pCif.)	91	NA.	23.0	8.5	20	31	15	11	29	31	27	38
Radium 228 (pCVL)	1.9	NA.	12.0	7.8	<0.45	0.18	<0.27	-0.07	<0.28	6.3	0.3	0.25
Radium 228 (pCVL)	NA.	NA.	NA NA	NA.	NA NA	NA.	NA.	NA.	NA.	NA.	NA.	NA.
Field Parameters												
Temperature (°C)	18.8	18.8	18.4	18.4	17.6	17.6	15.4	15.4	14.6	14.6	14.5	14.5
pH (std. units)	7.0	7.0	6.4	6.4	8.2	8.2	7.5	7.5	7.6	7.5	8.0	8.0
Specific Conductivity (mS/cm)	3.14	3.14	3.06	3.08	0.99	0.99	1.16	1.16	1.34	1.34	1.04	1.04
Dissolved Oxygen (mg/L)	0.0	0.0	6.1	6.1	2.1	2.1	0.8	0.8	4.8	4.8	6.8	6.8
ORP (mV) <sup>(2)</sup>	-373	-373	-123	-123	154	154	-154	-154	88	88	86	88

## TABLE 10 ANALYTICAL DATA FOR SAMPLES FROM EXPLORATORY HOLES, OFF-SITE WELLS, AND OFF-SITE SPRING

Analyte	CDPHE Domestic Water Supply	CDPHE Agricultural	EX-5	EX-6	EX-7	EX-10	EX-12	EX-15	EX-23	Hurdle Well	Davie Well	BLM Well	Boren Well	Stone Spring
	Standarde <sup>(1)</sup>	Standards <sup>(1)</sup>	4/22/2008	4/25/2008	4/24/2008	5/18/2006	5/17/2008	8/14/2008	721/2008	4/22/2006	7/29/2009	7/30/2000	7/31/2009	8/2/2009
Dissolved Netals														
Atuminum (ngt.)	None	5	0.09	< 0.03	0.03	< 0.03	<0.03	0.03	< 0.2	<0.03	<0.03	<0.03	<0.03	<0.03
Arsenic (mgf.)	0.01	0.1	0.0070	0.0110	0.0107	0.0054	0.0130	0.0047	0.01	0.0032	0.0066	0.0029	0.0112	0.0089
Beilum (mgL)	2.0	None	0.011	0.013	0.009	0.010	0.011	0.022	0.02	0.015	0.032	0.017	0.059	0.028
Baron (mg/L)	None	0.75	0.24	0.36	0.35	0.44	0.41	0.87	11.40	0.15	0.83	0.22	0.39	037
Codmium mg/L)	0.005	0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Caldium (mg/L)	None	None	102	68.7	88.7	98.8	68.5	49.5	558	82.6	40.0	112	64.1	51.8
Cesium (mpL)	None	None	<0.0002	<0.0002	<0.0502	<0.0002	<0.0002	<0.0002	<0.004	<0.0002	<0.0002	<0.0000	<0.0002	<0.0002
Chromium (ngl.)	0.1	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<c.01< td=""></c.01<>
Copper (mgfL)	1	0.2	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.05	0.02	<0.01	<0.01	<0.01	<c.01< td=""></c.01<>
fron (mg/L)	0.0	g1	<0.02 0.0004	<0.02 0.0011	+0.02 0.0012	-0.02 0.0001	<0.00 0.0001	<0.02 0.0040	0.0 <0.002	+0.02 0.0008	<0.02	+0.02	-0.02	+£.02
Lead (mg/L)			76.9	73.1	84.2	78.0	68.9	47.0	40.002 371	85.2	0.0002 46.2	<0.0001	<0.0001	<0.0001 68.5
Magnesium (mg/L) Manganese (mg/L)	None 0.05	None 02	76.9 <0.005	73.1 <0.005	\$4.2 <0.005	76.0 <0.005	<0.005	47.0	0.41	95.2 <0.005	46.2 <0.005	91.1 <0.005	112 <0.005	<0005
Mercury (mg/L)	0.002	0.01	<0.0002	<0.0002	<0.0002	<0.0002	<0.000	<0.0002	<0.0002	<0.0002	<0.0002	<0.0003	<0.0002	<0.0002
Malybdenum (mg/L)	0.002	None	<0.01	0.020	0.010	0.0002	<0.01	0.04	0.10	0.01	0.03	<0.0002	<0.01	002
Nickel (mg/L)	0.1	02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.04	<0.05	<0.01	<0.01	<0.01	40.01	4C.D1
Potessium (ngt.)	None	None	15.9	12.2	14.6	18.8	13.9	29.4	41	11.2	26.2	13.8	18.0	18.1
Selenium (ng/L)	0.05	0.02	0.0380	0.0165	0.0231	0.0196	0.0198	0.0575	3.020	0.0484	0.0474	0.0561	0.0181	0.0218
Sodium (mgL)	None	None	80.2	94.5	86.7	99.2	963	70.9	57	66.9	58.4	66.9	72.4	79.7
Uranium (mg/L)	0.03	None	0.0224	0.0722	0.1010	0.0562	0.0671	0.0306	0.008	0.0258	0.0352	0.0389	0.0416	0.0510
Venedium (not.)	None	0.1	0.012	0.011	0.025	0.013	0.011	0.013	<0.03	<0.005	0.007	0.010	0.020	0.018
Zinc (mgt.)	5	2	<0.01	<0.01	<0.01	<0.01	<0.01	0.04	<0.05	0.03	<0.01	<0.01	<0.01	<e.01< td=""></e.01<>
General Water Quality														
Alkalinity as CaCO <sub>3</sub> (mg/L)	None	None	176	235	216	235	235	250	316	198	284	235	422	271
Cerbonete se CeCO <sub>6</sub> (mgft.)	None	None	42	42	<2	42	42	10	42	42	- 6	-2	<2	-2
Bicarbonals as CaCO <sub>3</sub> (mg/L)	None	None	176	235	216	235	235	239	316	198	258	235	422	271
Chloride (mg/L)	250	None	28	38	24	24	31	18	71	35	16	21	87	59
Fluoride (mg/L)	4.0	2	0.6	0.4	0.5	0.4	0.4	0.6	1.6	0.5	0.5	0.5	0.4	C.4
Ammonia as N (mg/L)	None	None	0.12	< 0.05	<0.05	<0.05	<0.05	<0.05	0.58	<0.05	<0.05	< 0.05	<0.05	<0.05
Nitrate/Nitrite as N(mg/L)	10.0	100	0.62	3.72	1.78	0.75	1.00	21.6	0.09	15.4	18.2	17.2	7.58	1.71
Silice (mgt.)	None	None	17.7	17.8	18.8	17.0	16.9	12.0	13	16.0	12.0	15.4	16.1	14.3
Sulfate (mgl.)	250	None	480	410	500	520	390	170	2,720	310	90	440	220	220
Suitide as 5 (mg/L)	None	None	*0.02	*0.02	40.02	*0.02	10.02	*0.02	74	*0.02	40.02	*0.02	40.02	*C02
Total Organe Carbon (mg/L)	None	None	2	4	3	3	1	13	30	-	4	3	6	4
Total Dissolved Solids (mg/L) Total Suspended Solids (mg/L)	None None	None None	920 5	870 45	940 43	1030 53	833 100	590 <5	4,290 1,130	810 45	530	1020	910	630
Dissolved Radionuclides	None	NXX		*5	43	53	100	*0	1,130	45	<5	<5	<5	15
	16/71	None	53	29	58	42	40	21	NA.	17	- 44	40	46	-7
Gross Alphs (pCVL) (2) Gross Bets (pCVL)	4 mrsm/yr	None	42	35	39	31	35	35	NA.	19	15 30	16	16 25	25
Redum 22f (pCif.)	4 memyr	5 (Re 226 and	0.12	0.11	0.07	0.14	0.11	0.35	NA.	0.08	0.33	0.47	0.13	007
Redum 228 (pCAL)	5 (Re 220 and 220)	228)	NA NA	NA NA	NA.	NA NA	NA.	NA NA	NA NA	NA NA	1.6	0.47	2	054
Calculated Values		220)			-40.		-48.				1.0	0.90	-	554
Charge Bahnce (%)	None	None	4.4	-1.8	0.0	-0.90	0.0	6.3	-2.7	11	7.9	5.8	1.6	C.4
Field Parameters						2.72					1.7		1.0	
Temperature (°C)	None	None	17.3	16.8	17.3	16.6	152	16.9	26.9	NA.	16.3	17.2	18.9	21.1
pH (std. units)	6.5-8.5	6585	7.4	7.5	7.5	7.6	7.7	7.4	7.0	7.9	7.7	7.4	7.4	1.6
Specific Coeductivity (m5/cm)	None	None	1.26	1.39	1.29	1.48	1.28	1.55	4.15	1.24	.89	1.44	1.44	109
Dissolved Coppen (mg/L)	None	None	4.5	7.2	5.0	0.0	0.0	NA	2.0	0.9	0.7	2.5	4.0	4.5
ORP (mV) <sup>D</sup>	None	None	123	123	145	63	55	NA.	-314	108	76	-83	152	146
NOTES:	•													

TABLE 11
ANALYTICAL RESULTS FOR DUPLICATE SAMPLES, PARENT SAMPLES, AND EQUIPMENT RINSATE SAMPLES

Analyte	PW-2	DUP022409 (PW-2)	MW-6	DUP1-0409 (MW-6)	PW-3	DUP2-0409 (PW-3)	MW-88	DUPLICATE (MW-88)	PW-1	DUPLICATE (PW-1)	Equipment Rimsate - Sample Pump	Equipment Rinsate - Sample Pump
	2/24/2009	2/24/2009	4/28/2009	4/28/2009	4/90/2009	4/30/2009	7/29/2009	7/29/2009	7/30/2009	77/30/2009	10/16/2007	7/22/2008
Dissolved Metals												
Alluminum (mg/L)	<0.03	40.03	<0.06	<0.03	<0.05	<0.03	<0.06	40.03	40.03	40.03	NA.	<0.03
Amenic (mg/L)	<0.0005	<0.0005	<0.08	<0.03	0.0118	0.0124	0.007	0.0087	0.0007	0.0005	NA.	<0.0005
Barium (mg/L)	NA	0.008	NA	0.021	NA.	0.009	N.A.	0.024	NA	800.0	NA NA	<0.03
Boron (mg/L)	0.47	0.47	2.36	2.48	0.43	0.43	0.48	0.50	0.29	0.32	NA NA	<0.01
Cedmium (mg/L)	NA	<0.0001	NA	<0.0001	NA.	0.0001	NA.	<0.0001	NA	~0.0001	NA NA	<0.0001
Calcium (mg/L)	82.5	83.3	131	139	76.3	75.8	384	403	66.6	69.1	NA NA	0.7
Cesium (mgt.)	NA.	<0.0002	NA	<0.0002	NA.	< 0.0002	NA.	< 0.0002	NA	<0.0002	NA NA	<0.0002
Chromium (mg/L)	NA.	<0.01	NA.	<0.01	NA.	<0.01	NA.	<0.01	NA.	<0.01	NA.	<0.01
Copper (mg/L)	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	NA.	<0.01
Iron (mg/L)	21.20	21.40	<0.04	<0.02	0.04	0.03	1.43	1.49	2.39	2.80	NA.	0.03
Lead (mg/L)	< 0.0001	<0.0002	<0.0002	<0.0001	0.0010	0.0014	<0.0002	< 0.0001	< 0.0001	<0.0001	NA.	<0.0005
Magnesium (mg/L)	65.6	65.9	299	327	72.7	72.6	218	227	90.0	81.2	NA NA	<0.2
Manganese (mg/L)	0.227	0.227	<0.01	<0.005	< 0.005	< 0.005	1.15	1.040	0.154	0.150	NA NA	< 0.005
Mercury (mg/L)	NA	< 0.0002	NA	<0.0002	NA.	<0.0002	NA.	<0.0002	NA.	<0.0002	NA NA	<0.0002
Molybdenum (mg/L)	<0.01	<0.01	<0.02	0.01	0.02	0.02	<0.02	0.01	<0.01	<0.01	NA.	<0.01
Nickel (mg/L)	NA.	<0.01	NA	<0.01	NA.	<0.01	NA.	<0.01	NA	<0.01	NA NA	<0.01
Potassium (mg/L)	17.1	17.1	93.0	98.9	14.3	15.3	18.2	19.2	10.0	10.7	NA NA	<0.03
Selenium (mg/L)	0.0024	0.0025	0.0413	0.0288	0.0198	0.0195	0.0004	0.0008	0.0079	0.0078	NA NA	< 0.001
Sodium (mgt.)	102	103	190	198	101	100	29.8	28.8	69.9	73.7	NA NA	<0.3
Uranium (mg/L)	0.0078	0.0078	<0.0002	<0.0001	0.0771	0.0759	0.0143	0.0158	0.0296	0.0305	NA NA	<0.0001
Vanadium (mg/L)	<0.006	<0.006	<0.01	<0.005	0.019	0.020	<0.01	<0.006	<0.005	<0.006	NA NA	< 0.005
Zinc (mg/L)	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	NA NA	<0.01
General Water Quality												
Alkalinity as CaCO <sub>3</sub> (mg/L)	214	NA NA	388	NA.	252	NA.	474	NA.	294	NA NA	NA NA	NA.
Curbonate as CaCO <sub>1</sub> (mg/L)	√2	NA NA	<2	NA.	Ÿ	NA.	<2	NA.	Ÿ	NA NA	NA NA	NA.
Bicarbonate as CaCO <sub>3</sub> (mg/L)	214	NA	388	NA.	252	NA.	474	NA.	234	NA.	NA NA	NA.
Chloride (mg/L)	38	NA NA	160	NA.	36	NA.	41	NA.	38	NA NA	NA NA	NA.
Fluoride (mg/L)	0.5	NA.	0.4	NA.	0.5	NA.	0.5	NA.	0.5	NA NA	NA.	NA.
Ammonia as N (mg/L)	<0.5	NA	1.01	NA.	<0.06	NA.	0.06	NA.	0.00	NA.	NA NA	NA.
Nitrate/Nitrite as N(mg/L)	0.03	NA NA	0.02	NA.	0.68	NA.	<0.02	NA.	0.51	NA NA	NA NA	NA.
Silice (mg/L)	11.2	11.3	9.5	9.9	15.3	15.2	16.9	19.0	12.9	12.4	NA NA	0.5
Sulfete (mg/L)	430	NA NA	1460	NA.	390	NA.	1540	NA.	380	NA NA	NA NA	NA.
Sulfide as S (mgt.)	0.11	NA NA	13.2	NA.	<0.02	NA.	0.44	NA.	<0.2	NA NA	NA NA	NA.
Total Organic Carbon (mg/L)	NA	NA NA	NA NA	NA.	NA.	NA.	NA.	NA NA	NA NA	NA NA	NA NA	NA.
Total Dissovted Solids (mg/L)	910	NA NA	2800	NA.	880	NA.	2850	NA	830	NA NA	NA NA	NA.
Total Suspended Solids (mg/L)	68	NA NA	<5	NA.	≪5	NA.	<5	NA.	25	NA NA	NA NA	NA.
Déssotved Radionuctides												
Gross Alpha (pCi/L) <sup>(1)</sup>	<3	5.4	≪8.8	<8.6	23	30	15	16	16	12	1	NA.
Gross Bets (pCi/L)	18	15	81	110	20	28	22	26	16	15	<2.0	NA.
Radium 226 (pCit.)	<0.19	< 0.22	2	1.7	0.48	0.35	0.33	0.55	0.11	0.09	<0.2	NA.
Radium 228 (pCit.)	NA.	NA NA	NA	NA.	NA.	NA.	1.5	NA.	0.98	2	NA NA	NA.
Field Parameters												
Temperature (°C)	16.0	16.1	18.7	18.7	15.1	15.1	17.4	17.4	17.0	17.0	NA NA	NA.
pH (std. units)	7.4	7.4	6.9	6.9	7.4	7.5	8.9	6.8	7.7	7.7	NA NA	NA.
Specific Conductivity (mS/cm)	1.39	1.39	3.29	3.29	1.24	1.24	3.02	3.02	1.26	1.28	NA NA	NA.
Dissolved Oxygen (mg/L)	0.2	0.2	0.2	0.2	10.3	10.3	0.1	0.1	0.5	0.5	NA	NA.
ORP (mV) <sup>(2)</sup>	-210	-209	-365	-355	-20	-20	-189	-189	-151	-151	NA NA	NA.

<sup>(1)</sup> Laboratory results include the alpha contribution from raidon and uraniur

Concentrations detected below the practical quantitation limit are shown as the detected value. Undetected concentrations are shown as less than the method detection limit.