November 1, 1999

Mr. Lawrence J. Corte, Manager
Western Nuclear, Inc.
Union Plaza Suite 300
200 Union Boulevard
Lakewood, CO 80228

SUBJECT: MINUTES FROM THE GROUNDWATER CORRECTIVE ACTION PLAN MEETING ON SEPTEMBER 22, 1999

Dear Mr. Corte:

The purpose of this letter is to transmit the enclosed minutes from the meeting between the U.S. Nuclear Regulatory Commission staff and Western Nuclear, Inc. (WNI) on September 22, 1999, regarding submission of its groundwater corrective action plan. Attachment 1 is a list of attendees at the meeting. Attachment 2 is a copy of the slide presentation given by WNI during the meeting.

If you have any questions concerning this subject, please contact Mr. Robert Carlson of my staff at (301) 415-8165.

Sincerely,

Original signed by

John J. Surmeier, Chief
Uranium Recovery and
Low-Level Waste Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

Enclosure:
Minutes From September 22, 1999,
Groundwater CAP Meeting
Attachment 1: Meeting Attendance List
Attachment 2: Slide Presentation Copies

NRC FILE CENTER COPY

cc: R. Chancellor, WDEQ

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OFC	URLL	H	URLL	H	URLL					
NAME	RCarlson:cc		DGillen		JSurmeier					
DATE	10/28/1999	E	10/28/1999	E	10/28/1999					

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(Initials) (Date)

PDR ADOCK

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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cc: R. Chancellor, WDEQ

THE U.S. NUCLEAR REGULATORY COMMISSION STAFF AND WESTERN NUCLEAR, INC. ON SEPTEMBER 22, 1999

On September 22, 1999, Division of Waste Management (DWM) staff met with representatives from Western Nuclear, Inc. (WNI) to discuss submission of their Groundwater Corrective Action Plan (CAP) for the Split Rock, Wyoming, site. The Groundwater CAP submittal is part of WNI's overall site reclamation and groundwater restoration activities as required under its Source Materials License SUA-56. WNI presented an overview briefing of its proposed Groundwater CAP, which will be submitted to the NRC for review in October 1999.

Attachment 1 is a list of attendees at the meeting. Attachment 2 is a copy of the slide presentation given by WNI during the meeting.

In its overview briefing, WNI presented NRC staff with four alternatives that it plans to submit as part of its proposed groundwater CAP. WNI indicated that its CAP submittal contains over six linear feet of site characterization data and groundwater modeling and analyses in support of its proposed action. Additionally, WNI stated its modeling projections illustrate that groundwater contamination will impact water sources under privately held land within 100-200 years in the Red Mule area, which is a cluster of ranches/homes with domestic water wells located approximately 1-2 miles southeast of the Split Rock site.

In conducting its alternative development process, WNI said that it: considered the entire universe of technologies; screened each technology for areas of application/engineering objectives; selected the best technology for each area/objective; and developed the four site-wide potential corrective action alternatives from the best technologies available to industry. According to WNI, all alternatives eliminate human exposure pathways, and are protective of human health and safety.

In summary, the four potential alternatives developed by WNI consist of pathway elimination, hydraulic diversion, focused pumping, and perpetual containment. Each of WNI's potential scenarios involves use of some type of institutional controls. WNI briefly presented a cost/benefit synopsis for each of its four alternatives, and indicated that they ranged in cost from $114 thousand for its proposed alternative to over $100 million for the other three alternatives. WNI indicated that for these four alternatives, the environmental and safety impacts become greater as the cost of the alternative increases. Accordingly, WNI chose the pathway elimination alternative based on its lowest cost (i.e., $114 thousand and no worker safety/environmental/ groundwater use concerns) -- highest benefit (i.e., eliminates groundwater access areas and associated costs) analyses.

The NRC staff expressed its concern that the proposed alternative would not enable WNI to meet the current groundwater cleanup requirements of its license, and may not allow compliance with other standards in the regulations such as alternate concentration limits; whereas, according to WNI's modeling analyses, the other presented alternatives would allow WNI to achieve groundwater standards albeit at a much higher cost.

Enclosure

WNI's proposed alternative involves use of the 'alternative proposal' provision allowed under the Atomic Energy Act of 1954, Section 84c and 10 CFR Part 40, Appendix A. Specifically, use of this provision states that:

> Licensees or applicants may propose alternatives to the specific requirements in this Appendix ... if the alternatives will achieve a level of stabilization and containment of the sites concerned, and a level of protection for public health, safety, and the environment from radiological and nonradiological hazards associated with the sites, which is equivalent to, to the extent practicable, or more stringent than the level which would be achieved by the requirements of this Appendix and the standards promulgated by the Environmental Protection Agency in 40 CFR Part 192, Subparts D and E.

In summary, WNI said its proposed alternative involves: developing and implementing institutional and engineering controls (e.g., restrictive covenants, deed annotations, alternate water supply, long-term monitoring, etc.); transfer of existing WNI-owned surrounding properties and restrictive drinking water covenants to the Department of Energy (DOE) for long-term care; and establishing an escrow to cover costs associated with future construction of an alternate water supply. WNI reiterated that its proposed alternative is least detrimental to the environment and to worker safety of any of its presented alternatives. WNI further noted it was unsuccessful at attempting to purchase all potentially affected private properties in the area, but that it did purchase covenants on all private deeds restricting future use of groundwater for human consumption. Other groundwater uses, durability of control, and rights of easement for DOE were either unknown or not discussed at the meeting.

The NRC staff expressed some reservation over the viability of WNI's proposed alternative considering the number of variables or 'unknowns' at this juncture (e.g., WNI's inability to purchase all potentially affected private properties around the site, water rights ownership, durability of control and enforcement of restrictive covenants for all future groundwater uses, and perpetual access rights to private properties for the long-term custodian to monitor and/or implement corrective action measures for the groundwater contamination plume). The NRC staff also mentioned that WNI's proposed alternative would be the "first of its kind" submitted by a licensee for review under the NRC's Title II Uranium Recovery Program, and could require Commission review. The NRC staff articulated the need for WNI's groundwater CAP submittal to contain detailed, high quality information normally found in a typical licensee/applicant Environmental Report. Furthermore, the NRC staff indicated that based on its acceptance review of WNI's groundwater CAP submittal, it would make a determination as to whether an Environmental Assessment or an Environmental Impact Statement would be required in conjunction with its safety review.

ATTACHMENT 1

MEETING BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION STAFF AND WESTERN NUCLEAR, INC.

SEPTEMBER 22, 1999

SUBJECT: DISCUSSION OF PROPOSED GROUNDWATER CORRECTIVE ACTION PLAN SUBMITTAL

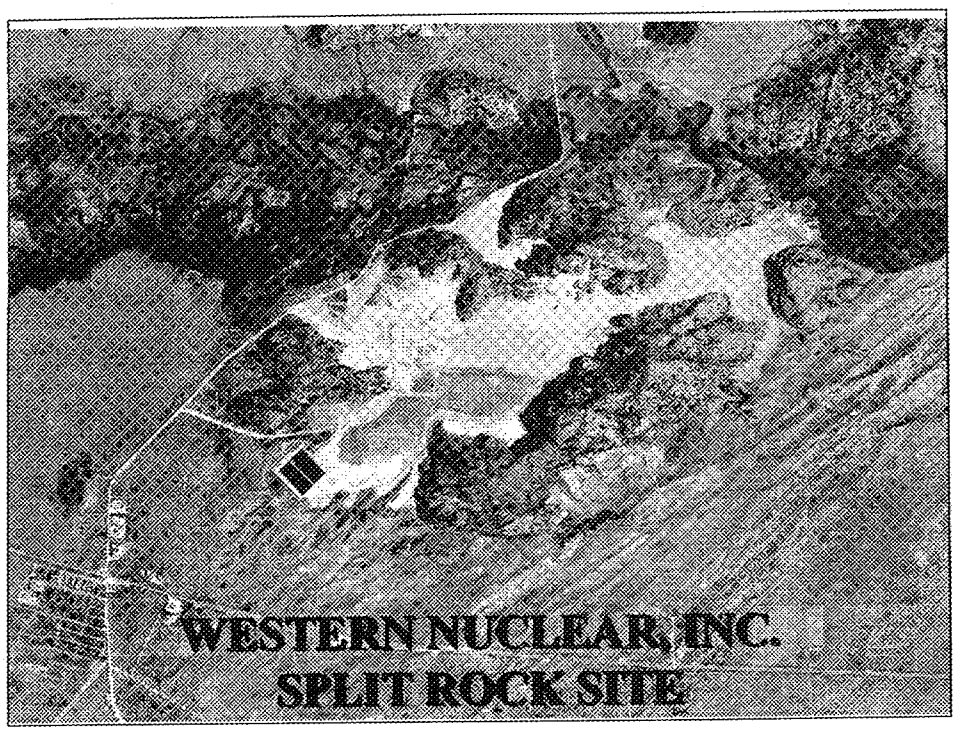
LOCATION: NRC Headquarters, Rockville, MD (Conf. Room: T-03C1)

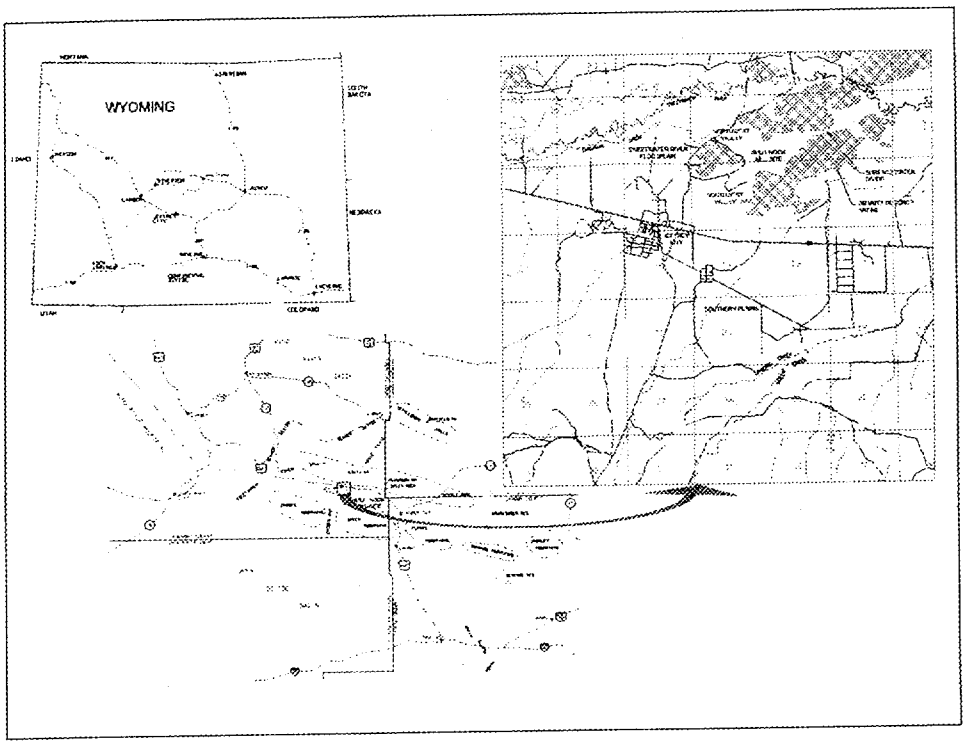
TIME: 3:00 - 4:30 P.M.

MEETING ATTENDEES

Name	Organization/Title	Phone
1) Robert Carlson	NRC / Project Mgr.	(301) 415-8165
2) Kay Davies	Phelps Dodge - Washington DC	(202) 789-1745
3) Lou Miller	Shepherd-Miller consult for WNI	(970) 223-9600
4) Harley W. Shaver	Shaver & Licht for WNI	(303) 757 7500
5) E. Michael Schern	Western Nuclear	(520) 428 0205
6) Dan Gillen	NRC / DWM/URLL	301 415-7295
7) Mike Layton	NRC/DWM/URLL	301.415.6676
8) Bill von Till	NRC/DWM/URLL	301-415-6251
9) LAWRENCE J. CORTE	WESTERN NUCLEAR - MANAGER	(602) 234-8094
10) ~~LOUIS MILLER~~		
11) ANTHONY J. THOMPSON	SHAW PITTMAN	(202) 663-9198
JOHN SURMEIER	NRC/DWM/URLL	301-415-7823

ATTACHMENT 2


WESTERN NUCLEAR, INC.
SPLIT ROCK SITE


WYOMING

SITE CLOSURE

- Mill Decommissioning
- Surface Reclamation
- Soil Cleanup
- Groundwater

HISTORY

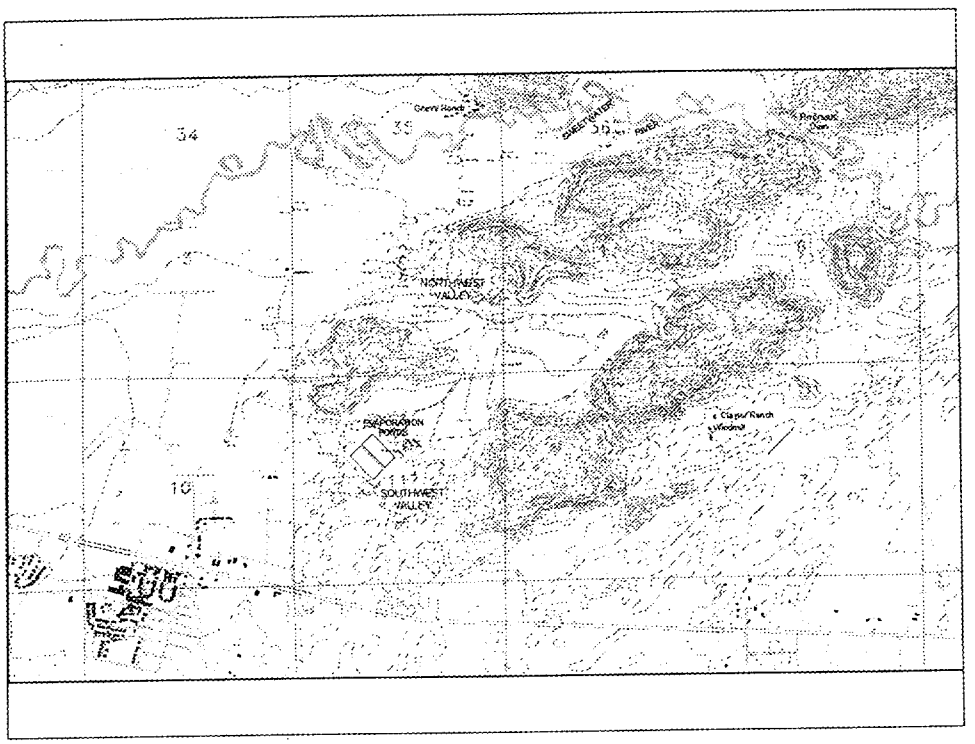
- '57- '81 Operations
- '81- '86 Standby
- '86 Begin Reclamation & Closure
  - '88-'90 Mill Decommissioning (***done***)
  - '94-'98 Surface Reclamation ***(done)***
  - '90-'97 Soil Cleanup, Verification (***done)***
  - '90-present - Groundwater CAP

SITE CLOSURE PLAN

- Will Submit Site Closure Plan on 10/31/99
- Will address ***all*** remaining license conditions
  - Mill Decommissioning ***(done - approved)***
  - Soil Cleanup, Verification ***(done - approved)***
  - Surface Reclamation ***(done - approval pending)***
  - Groundwater
- License Condition No. 74 - Groundwater

GROUND WATER PROGRAM

- 94 - Issues with old site model
- 95 - Comprehensive plan
- 95-98 - Field program
- 97-99 - Evaluation & Alternatives
  - Public Participation (meetings, comment)
- 10/99 - Submittal to NRC


34
35
NORTH-WEST VALLEY
EVAPORATION PONDS
SOUTH-WEST VALLEY
16

FIELD PROGRAM SUMMARY

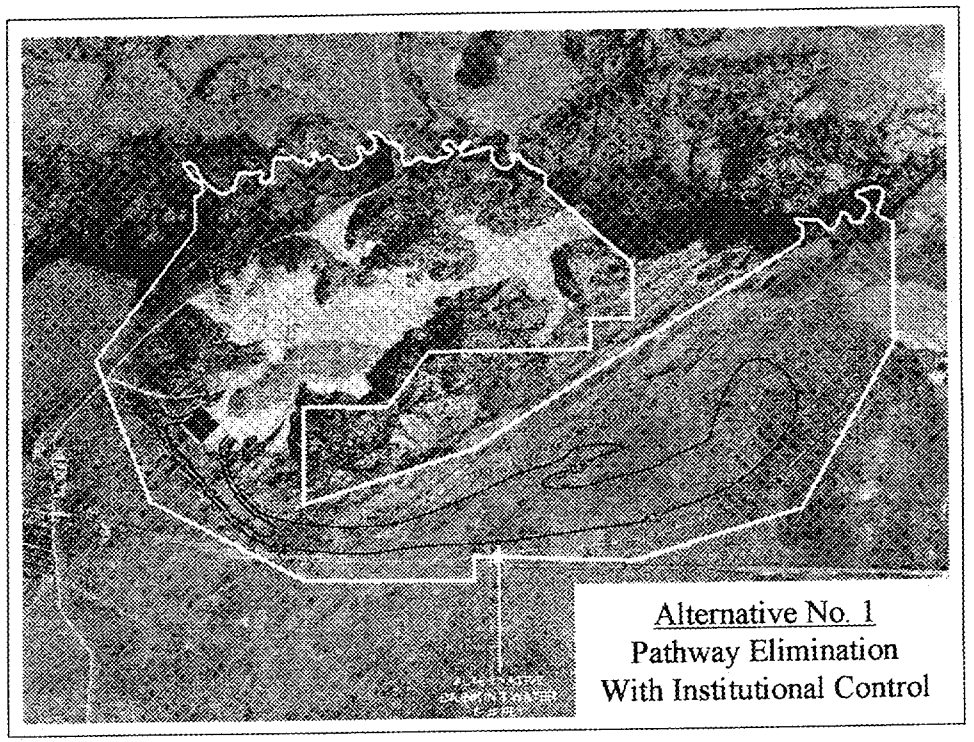
- No current environmental impacts
- No potential future environmental impacts
- No current human health risks
- Drinking water pathway - only potential future impact
- Developed alternatives to provide future protection

ALTERNATIVES DEVELOPMENT PROCESS

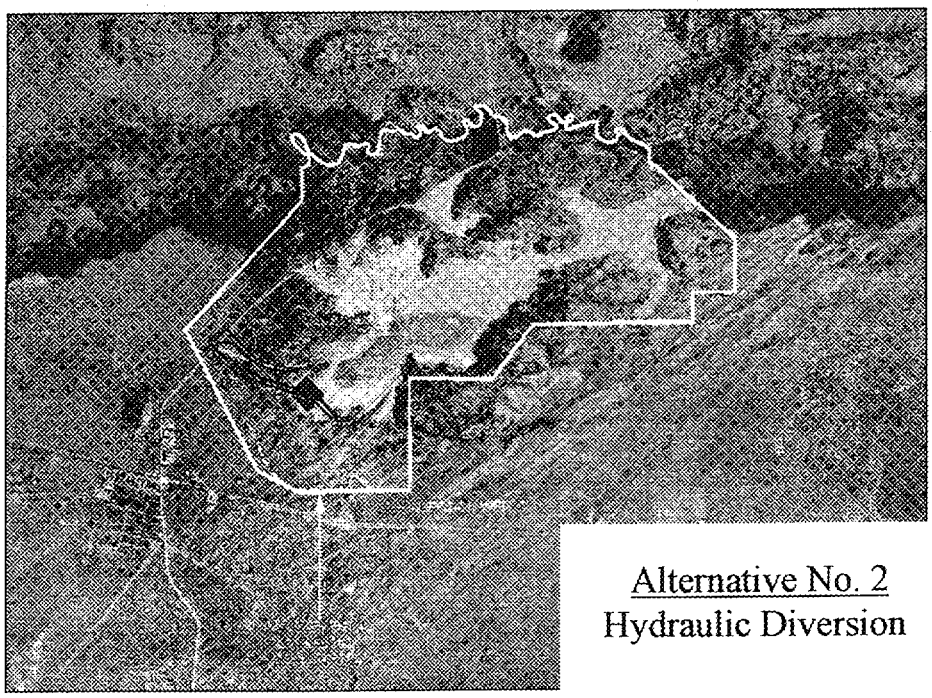
- Considered entire universe of technologies
- Screened each technology for areas of application/engineering objectives
- Picked best technology for each area/objective
- Developed four site-wide potential corrective action alternatives from best technologies

CORRECTIVE ACTION ALTERNATIVES

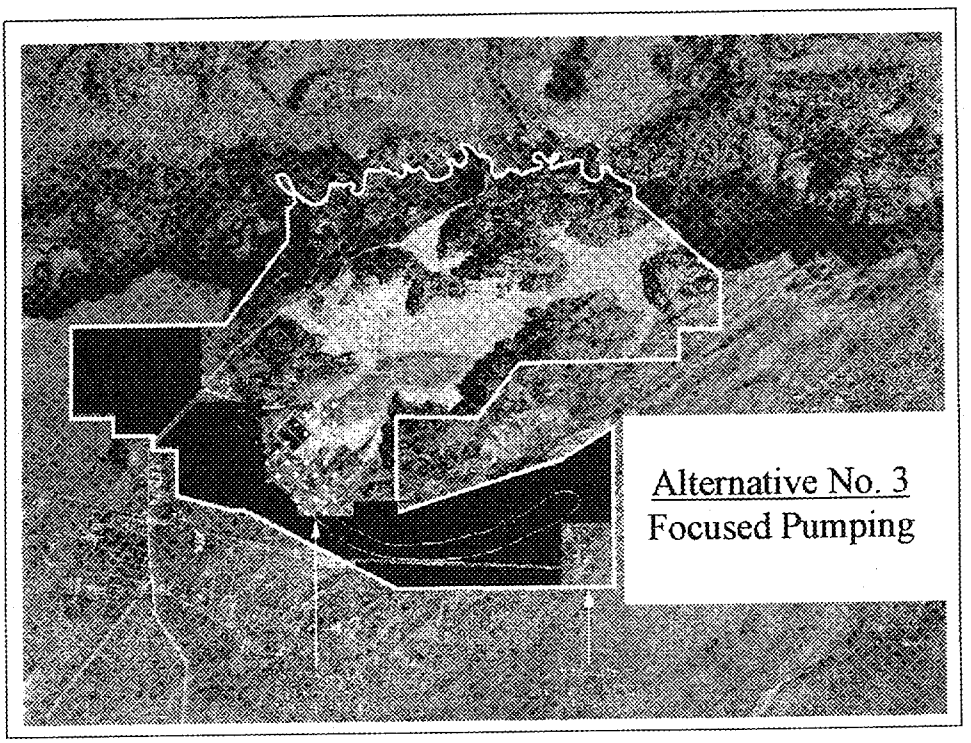
- All alternatives eliminate human exposure pathway
- Four potential alternatives developed:
  - Pathway Elimination + Institutional controls
  - Hydraulic Diversion + Institutional controls
  - Focused Pumping + Institutional controls
  - Perpetual Containment + Institutional controls

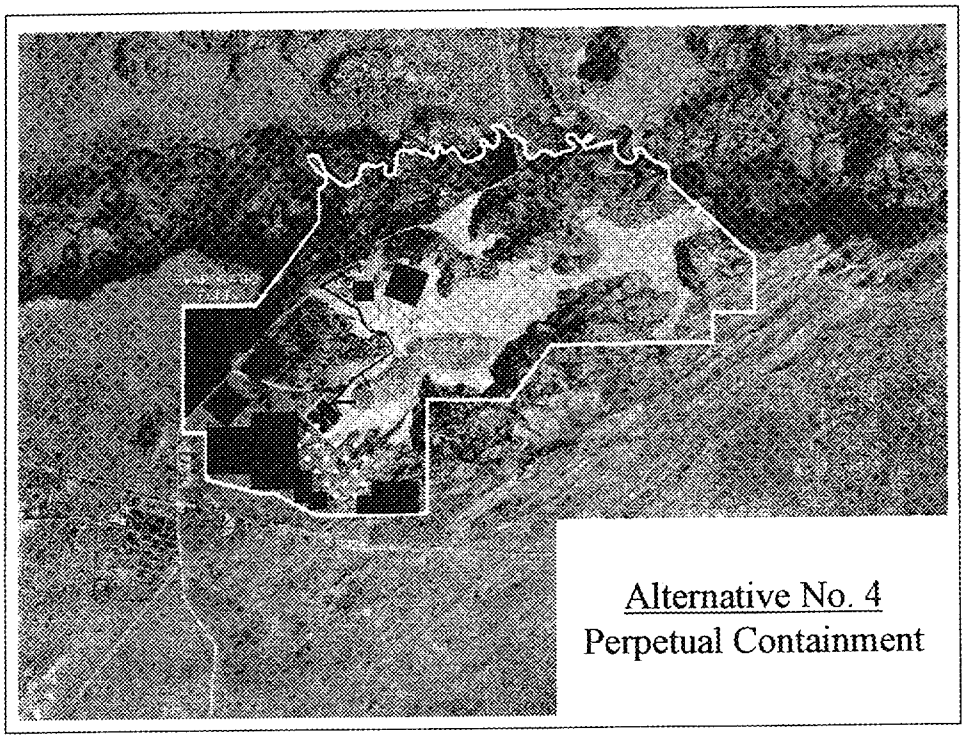


Alternative No. 1
Pathway Elimination
With Institutional Control



Alternative No. 2
Hydraulic Diversion


Alternative No. 3
Focused Pumping



Alternative No. 4
Perpetual Containment

CORRECTIVE ACTION ALTERNATIVES SUMMARY

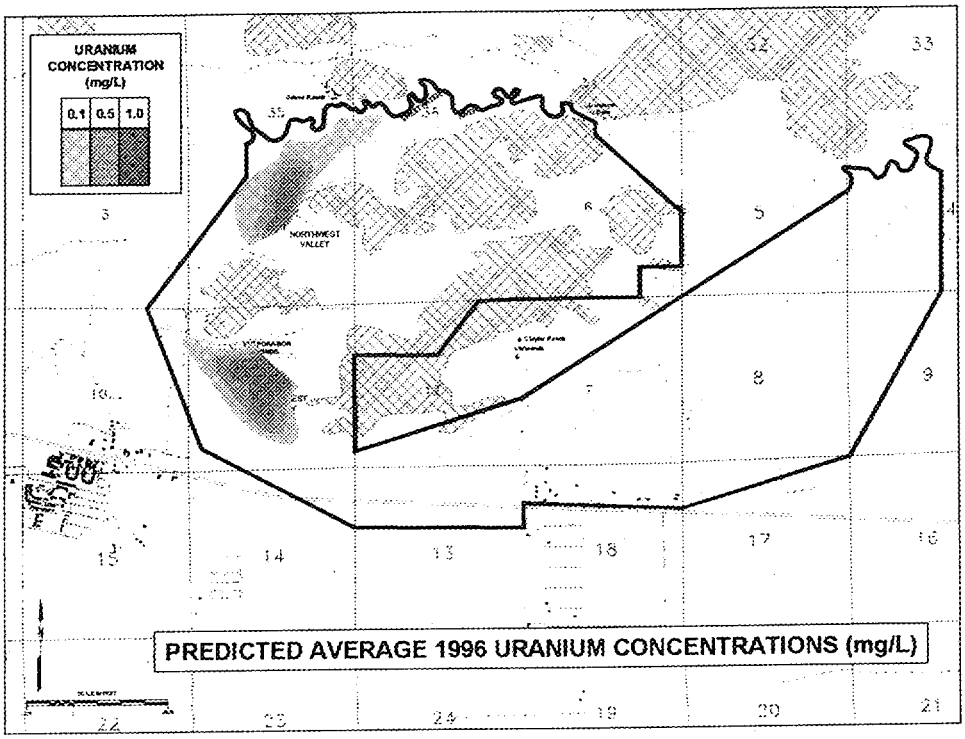
	Pathway Elimination	Hydraulic Diversion	Focused Pumping	Perpetual Containment
Protective	YES	YES	YES	YES
COSTS				
$ Costs	$114,000	$17,910,000	$107,850,000	$117,350,000
Non-$ Costs Worker safety/ Environmental/Aesthetic	NONE	Low	Med –Hi	Med–V.Hi
GW Use	NONE	250 gpm (1,000 yrs)	1,876 gpm (25 yrs.)	265 gpm (25 yrs) 35 gpm (1,000 yrs)
BENEFITS				
GW Access Area	0	2,480 acres	1,457 acres	2,310 acres
GW Access Area Value	$0	$37,200	$21,855	$34,650

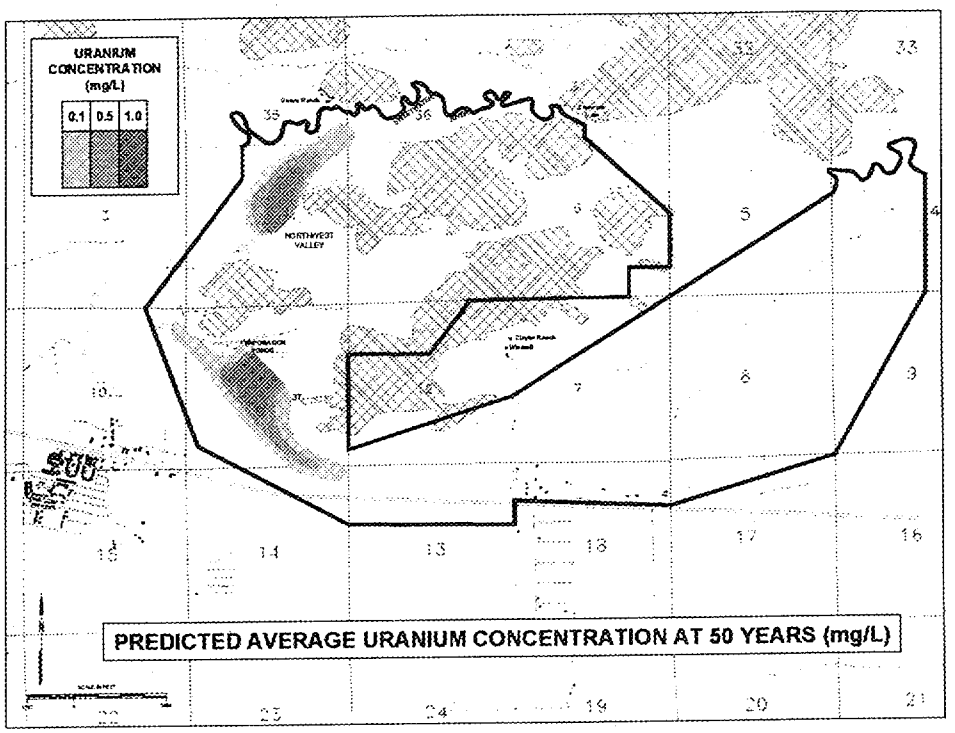
PUBLIC COMMENT

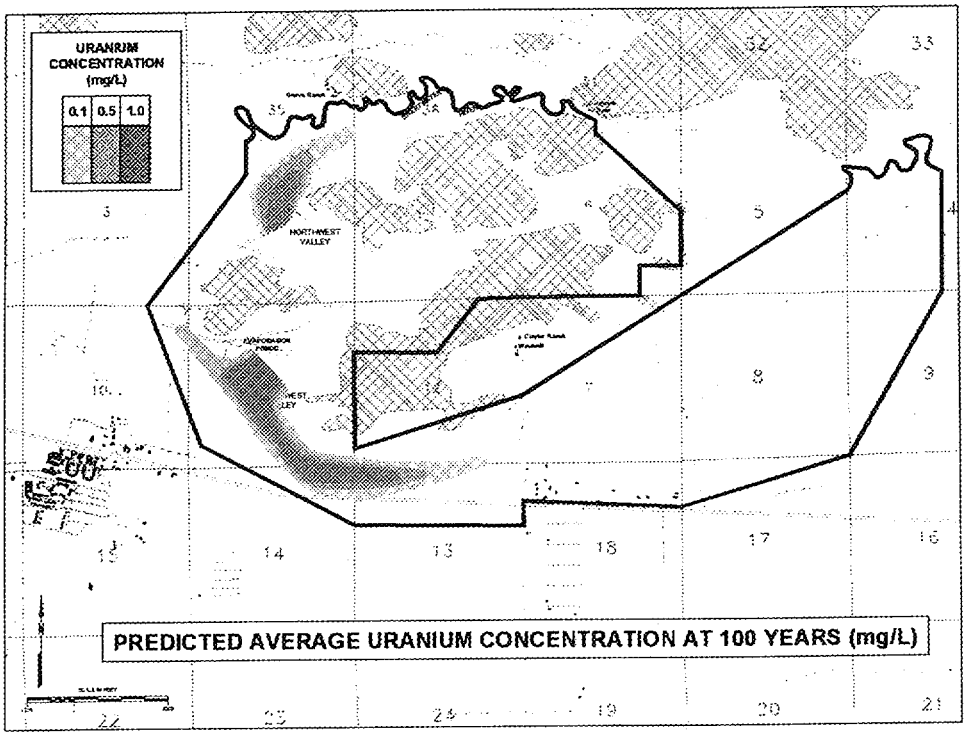
- Approximately 50 attendees
- No written comments received from general public
- Comments from WDEQ
  - Responded via letter
  - No changes resulting from comment

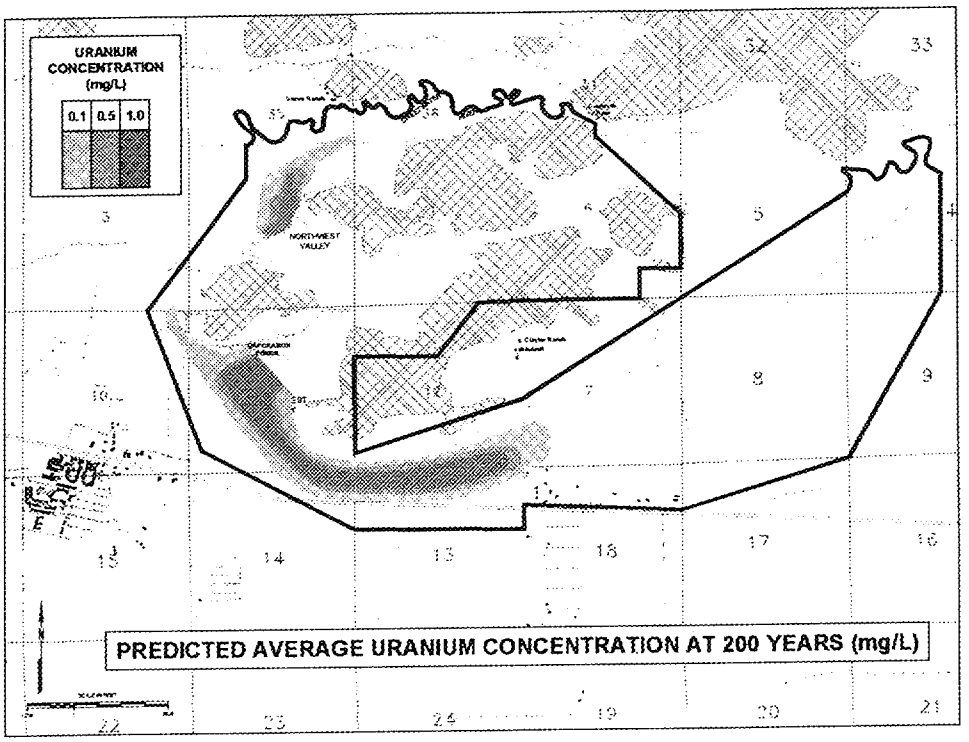
PROPOSED ALTERNATIVE

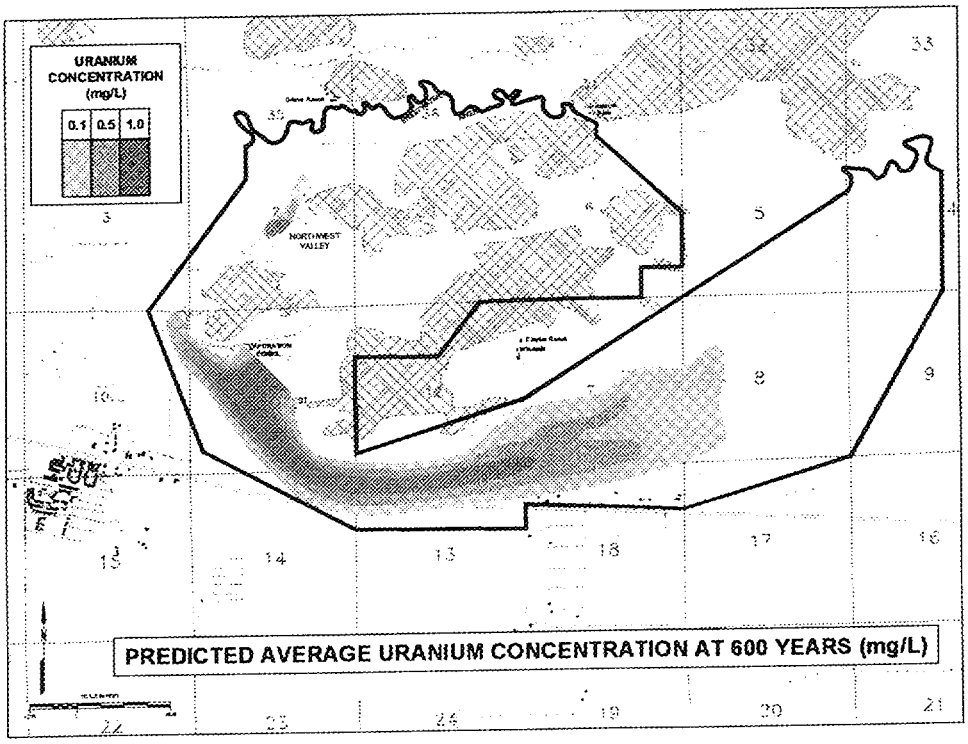
- Pathway Elimination + Institutional Control
- Covers 5,275 acres of by-product disposal area
  - 1,640 acres required for tailing stabilization
  - 3,635 acres eliminate access to groundwater for domestic drinking supply
  - all other water uses OK

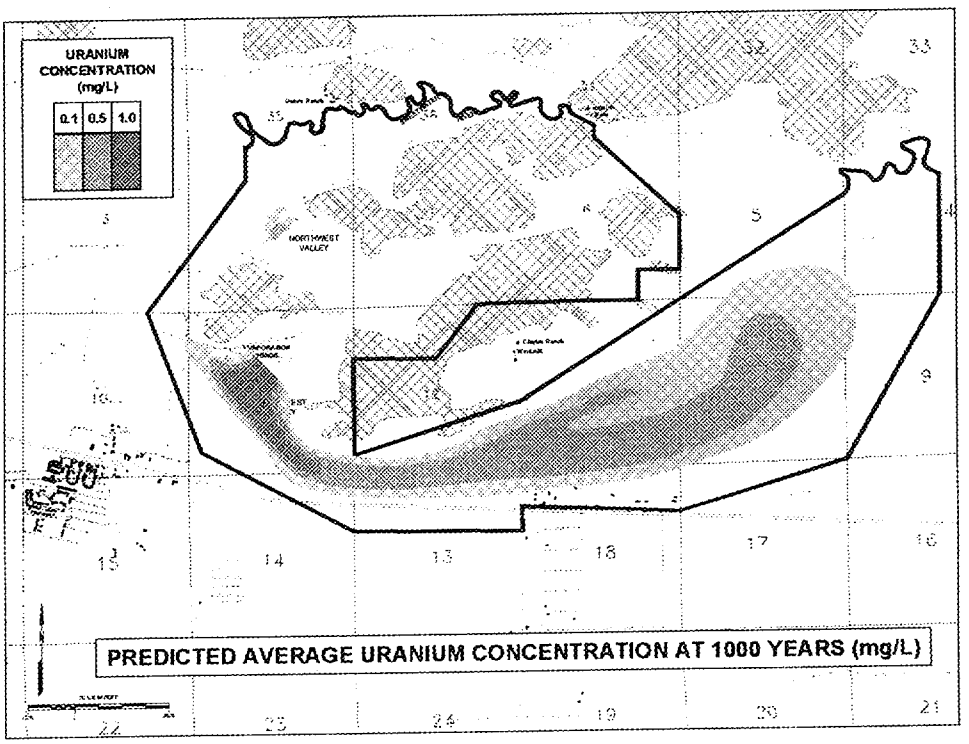

URANIUM CONCENTRATION (mg/L)
0.1
0.5
1.0
NORTHWEST VALLEY
PREDICTED AVERAGE 1996 URANIUM CONCENTRATIONS (mg/L)


URANIUM CONCENTRATION (mg/L)
0.1
0.5
1.0
NORTHWEST VALLEY
PREDICTED AVERAGE URANIUM CONCENTRATION AT 50 YEARS (mg/L)


URANIUM CONCENTRATION (mg/L)
0.1
0.5
1.0
NORTHWEST VALLEY
PREDICTED AVERAGE URANIUM CONCENTRATION AT 100 YEARS (mg/L)

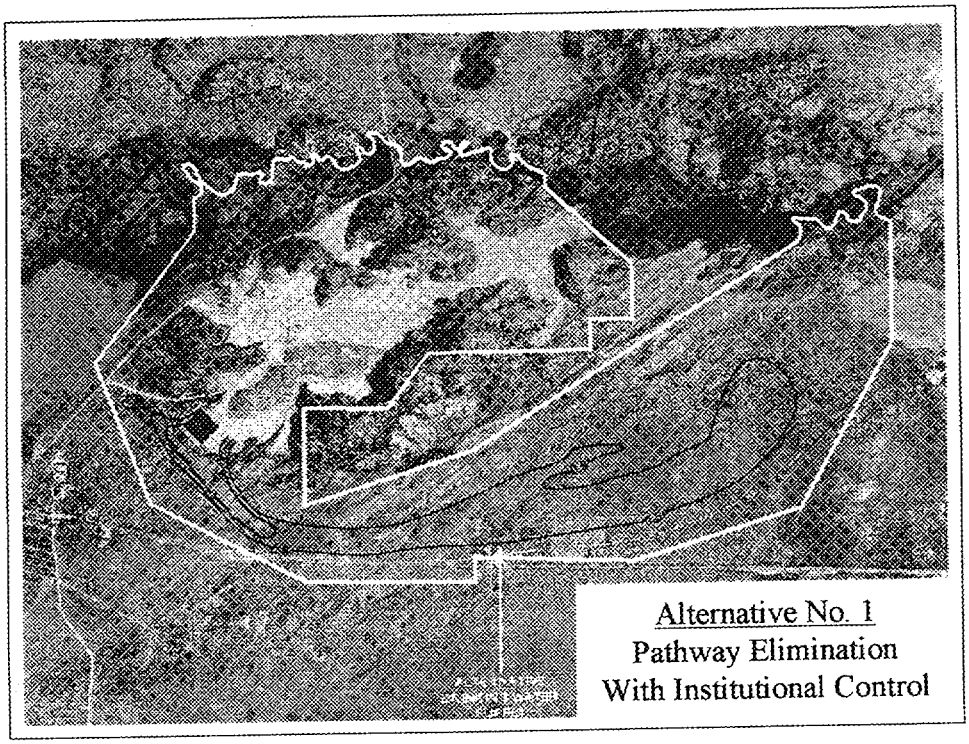

URANIUM CONCENTRATION (mg/L)
0.1
0.5
1.0
NORTHWEST VALLEY
PREDICTED AVERAGE URANIUM CONCENTRATION AT 200 YEARS (mg/L)


URANIUM CONCENTRATION (mg/L)
0.1
0.5
1.0
NORTHWEST VALLEY
PREDICTED AVERAGE URANIUM CONCENTRATION AT 600 YEARS (mg/L)


URANIUM CONCENTRATION (mg/L)
0.1
0.5
1.0
PREDICTED AVERAGE URANIUM CONCENTRATION AT 1000 YEARS (mg/L)

PROPOSED ALTERNATIVE

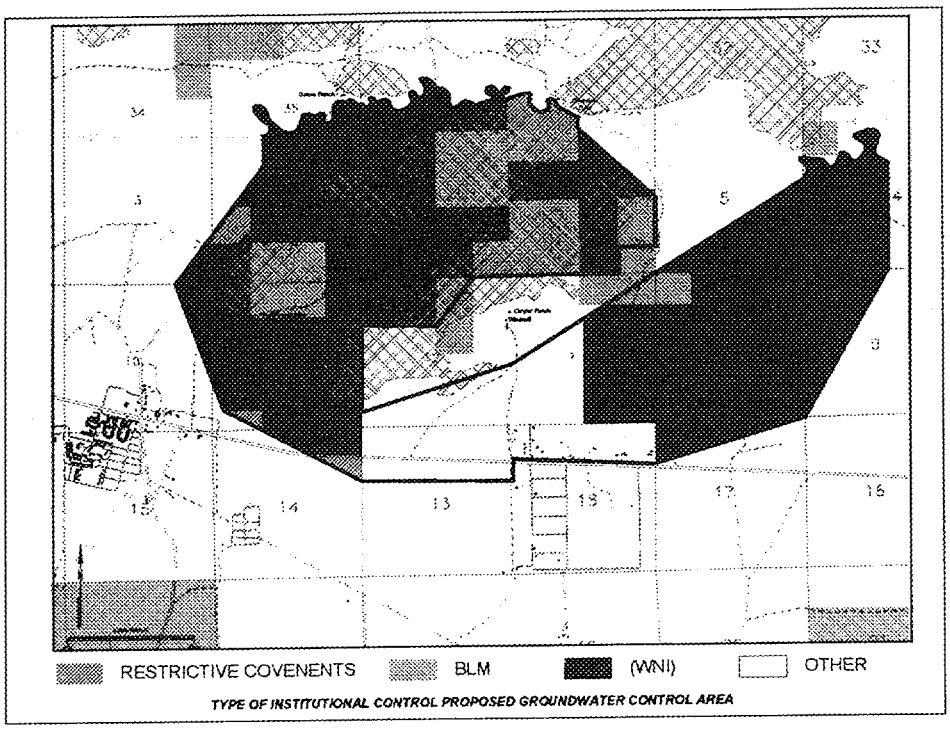
- Alternate drinking water supply will be provided for existing residents, if needed
  - won't be needed for approximately 150 years
  - monitoring up gradient to detect future arrival of site constituents
  - could use deeper wells or water softeners
  - propose to install new well and pipe to each resident if or when needed
  - operation and maintenance of alternate water supply will be funded by WNI at time of license termination



Alternative No. 1
Pathway Elimination
With Institutional Control

PROPOSED ALTERNATIVE

- Institutional controls to include:
  - Ownership and title transfer of WNI lands to L-T Custodian
  - Ownership and title transfer of BLM lands to L-T Custodian
  - Restrictive covenants that run with the land
  - Deed annotations
  - State Engineers Office?



TYPE OF INSTITUTIONAL CONTROL PROPOSED GROUNDWATER CONTROL AREA

PROPOSED ALTERNATIVE

- Protective of public health and the environment
  - » Provides background water to any/all human receptors
  - » No environmental impacts
- ALARA
  - » No aesthetic, environmental or water use impacts
  - » No impacts to worker safety
  - » Best cost-benefit

QUESTIONS & ISSUES

- Nomenclature of proposed alternative
- Proposal to change monitoring program
- Proposal to stop groundwater CAP and reclaim CAP ponds
- Wyoming custodian
- *Others????*