

PDR WA-33

DAWN MINING COMPANY  
PO BOX 25  
FORD WASHINGTON 99013

October 31, 1979



Mr. Lee Gronemeyer  
Health Services Division  
Radiation Control Program  
P.O. Box 1788  
Olympia, WA 98504

Dear Lee:

Attached you will find a memo to Mr. W. A. Humphrey outlining changes to the preoperational monitoring program for the proposed heap leach operation at our mine site. These changes are in response to a letter dated October 4, 1979 from the N.R.C. and are modifications to the original program submitted to the D.S.H.S. by Dawn on August 15, 1979. Copies of all three documents are enclosed.

It would be advantageous to Dawn to have the ground water monitoring wells drilled before winter conditions make access to the sites difficult. Therefore, Dawn respectfully requests that at least a partial approval of the preoperational monitoring program be granted (i.e. groundwater monitoring wells) as soon as possible. The remainder of the program can be easily modified whereas the wells can not be moved.

Yours truly,

DAWN MINING COMPANY

*J. E. Thompson*  
J. E. Thompson  
Resident Manager

JET:jc

Enc.

cc: Mr. Ross Scarano, NRC  
Mr. R. Mooney, DSHS - Seattle  
File

**FEE EXEMPT**

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DAWN MINING COMPANY  
PO BOX 25  
FORD WASHINGTON 99013

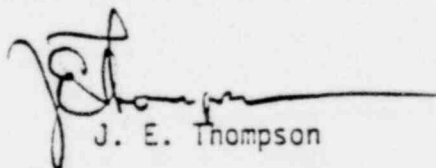
October 31, 1979

TO: W. A. Humphrey, Vice President Operations  
FROM: J. E. Thompson, Resident Manager  
Re: Preoperational Monitoring Program  
Heap Leach Plant Site

The original preoperational monitoring program proposed in my memo to you dated August 15, 1979 has been modified at the request of the N.R.C. and the D.S.H.S. Please note the following changes:

- 1) Two additional ground water monitoring wells have been added. (No's 27 and 28). In addition the suggestion was made to document trace metal (eg. selenium, molybdenum, arsenic, etc.) concentrations in ground waters. This will be done on a quarterly basis.
- 2) The vegetation sampling sites have been moved so that all are downwind from the proposed operation.
- 3) Radon flux measurements will be made by traditional methods (charcoal canisters). Dawn does not have the manpower to conduct a quality assurance program to validate the Polonium 210 method originally proposed.
- 4) Additional monitoring has been provided around the proposed Pit 4 tailings disposal site. A radon gas monitoring station and a ground water monitoring well have been added.

In addition to the above, a third possible tailings disposal site has been identified i.e. Adit Pit. This site will be adequately monitored. As it is in close proximity to Pit 3. The revised monitoring program is shown in Figures 1 through 13.








  
J. E. Thompson

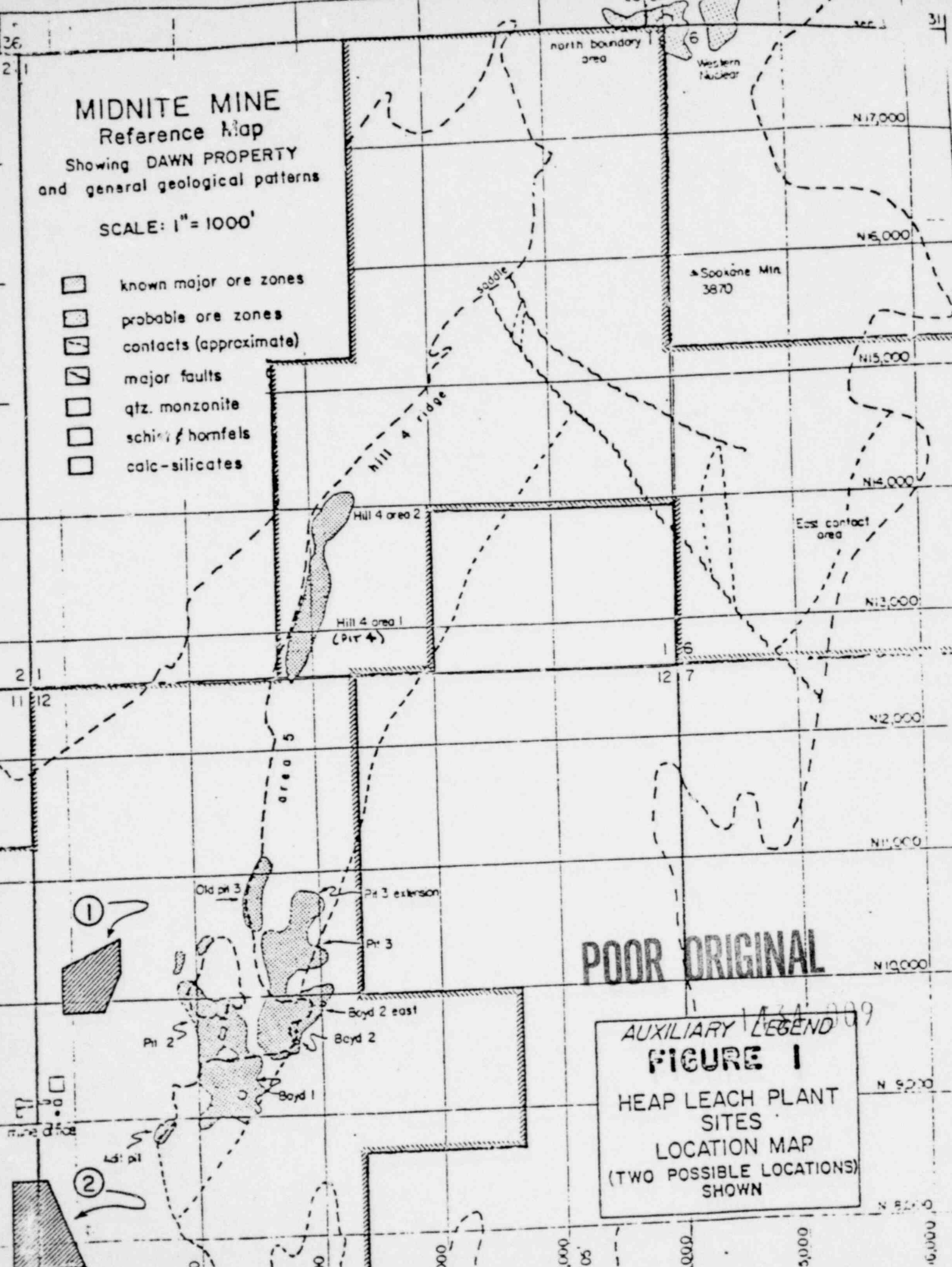
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cc: File

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**MIDNITE MINE**  
**Reference Map**  
 Showing DAWN PROPERTY  
 and general geological patterns

SCALE: 1" = 1000'

-  known major ore zones
-  probable ore zones
-  contacts (approximate)
-  major faults
-  qtz. monzonite
-  schist & hornfels
-  calc-silicates



**POOR ORIGINAL**

**AUXILIARY LEGEND**  
**FIGURE 1**  
 HEAP LEACH PLANT  
 SITES  
 LOCATION MAP  
 (TWO POSSIBLE LOCATIONS)  
 SHOWN

N 17,000

N 16,000

N 15,000

N 14,000

N 13,000

N 12,000

N 11,000

N 10,000

N 9,200

N 8,400

N 8,000

1734010

PREOPERATIONAL RADIOLOGICAL SITE SURVEY  
 PROPOSED HEAP LEACH PLANT  
 DAWN MINING COMPANY








Figure No. 2

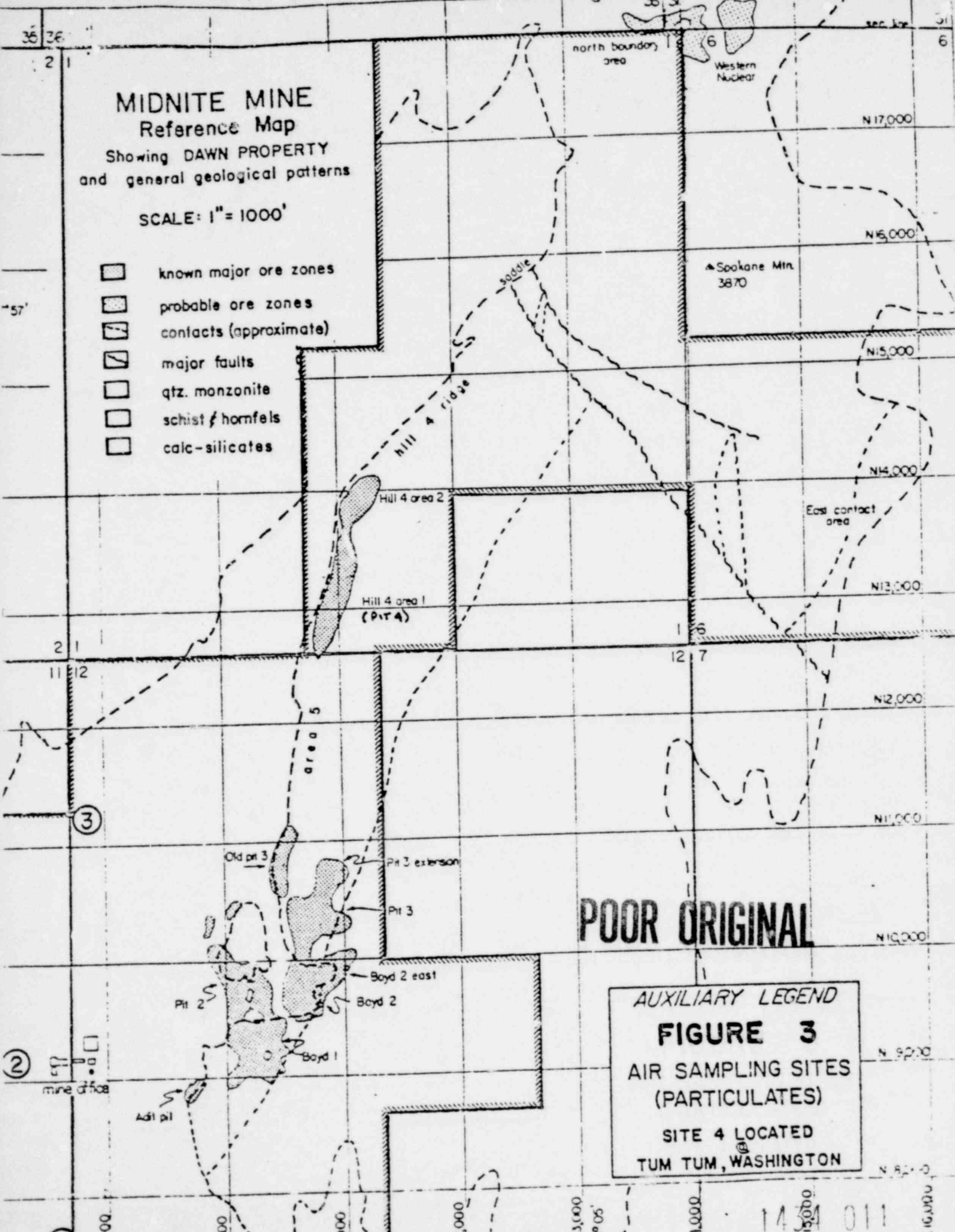
Type of Sample	Number	Sample Location		Type	Frequency	Sample Measurement		
		Location				Frequency	Type of Measurement	
Air - Particulates	Four	As shown in Figure #3		Low volume continuous	Weekly filter change or more frequently as required by dust loading	Quarterly composite by location of weekly samples	Natural uranium, Ra 226, Th 230, Pb 210	
Air - Radon Gas	Five	As shown in Figure #4		Continuous for one week per month representing about same period each Month	Samples collected for 48 hour intervals	Each 48 hour sample	Rn 222	
Water - Groundwater	Five	As shown in Figure #5 Wells No. 16, 19, 21, 22, 23, 27 and 28 (Monitor wells)		Grab - if applicable suspended material is found, Sample will be filtered and the filtrate acidified to 1% hydrochloric acid	Quarterly	Quarterly	Dissolved natural uranium, Ra 226, Th 230, Trace metals	
		Two	As shown in Figure #5 Wells No. 24 & 25 (potable & livestock water)		Same as above	Quarterly	Quarterly	Dissolved & suspended natural uranium, Ra 226, Th 230, Trace metals
		One	As shown in Figure #5 Well #26 (hydrologically upgradient from waste disposal area)		Same as above	Quarterly	Quarterly	Dissolved natural uranium, Ra 226, Th 230, Trace metals
Water - Surface water	Two	As shown in Figure #6		Grab - Sample will be filtered and the filtrate acidified to 1% hydrochloric acid	Quarterly	Quarterly	Dissolved & suspended natural uranium, Ra 226, Th 230, Trace metals	
						Semiannually	Pb 210, Po 210	
Vegetation - Forage	Three	As shown in Figure #7		Grab	Four times during grazing season	Quarterly	Natural uranium, Ra 226, Th 230, Pb 210, Po 210	
Fish	One	Site #8 on Figure #6		Grab	Semiannually	Twice	Natural uranium, Ra 226, Th 230, Po 210	

POOR ORIGINAL

**MIDNITE MINE**  
**Reference Map**  
 Showing DAWN PROPERTY  
 and general geological patterns

SCALE: 1" = 1000'

-  known major ore zones
-  probable ore zones
-  contacts (approximate)
-  major faults
-  qtz. monzonite
-  schist & hornfels
-  calc-silicates



**POOR ORIGINAL**








**AUXILIARY LEGEND**  
**FIGURE 3**  
 AIR SAMPLING SITES  
 (PARTICULATES)  
 SITE 4 LOCATED  
 TUM TUM, WASHINGTON

1434 011

# MIDNITE MINE Reference Map

Showing DAWN PROPERTY  
and general geological patterns

SCALE: 1" = 100'

-  known major ore zones
-  probable ore zones
-  contacts (approximate)
-  major faults
-  qtz. monzonite
-  schist & hornfels
-  calc-silicates

47°57'

north boundary  
area

Western  
Nuclear

N 17,000

N 16,000

▲ Spokane Mtn.  
3870

N 15,000

N 14,000

East contact  
area

N 13,000

Hill 4 area 2

Hill 4 area 1  
(Pit 4)

N 12,000

2 1

11 2

12 7

N 11,000

3

Old pit 3

Pit 3 extension

Pit 3

## POOR ORIGINAL

N 10,000

Pit 2

Boyd 2 east

Boyd 2

Boyd 1

Adit pit

AUXILIARY LEGEND

### FIGURE 4

#### RADON GAS SAMPLING SITES

SITE B LOCATED

TUM TUM, WASHINGTON

N 9,000

N 8,000

2

mine office

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000

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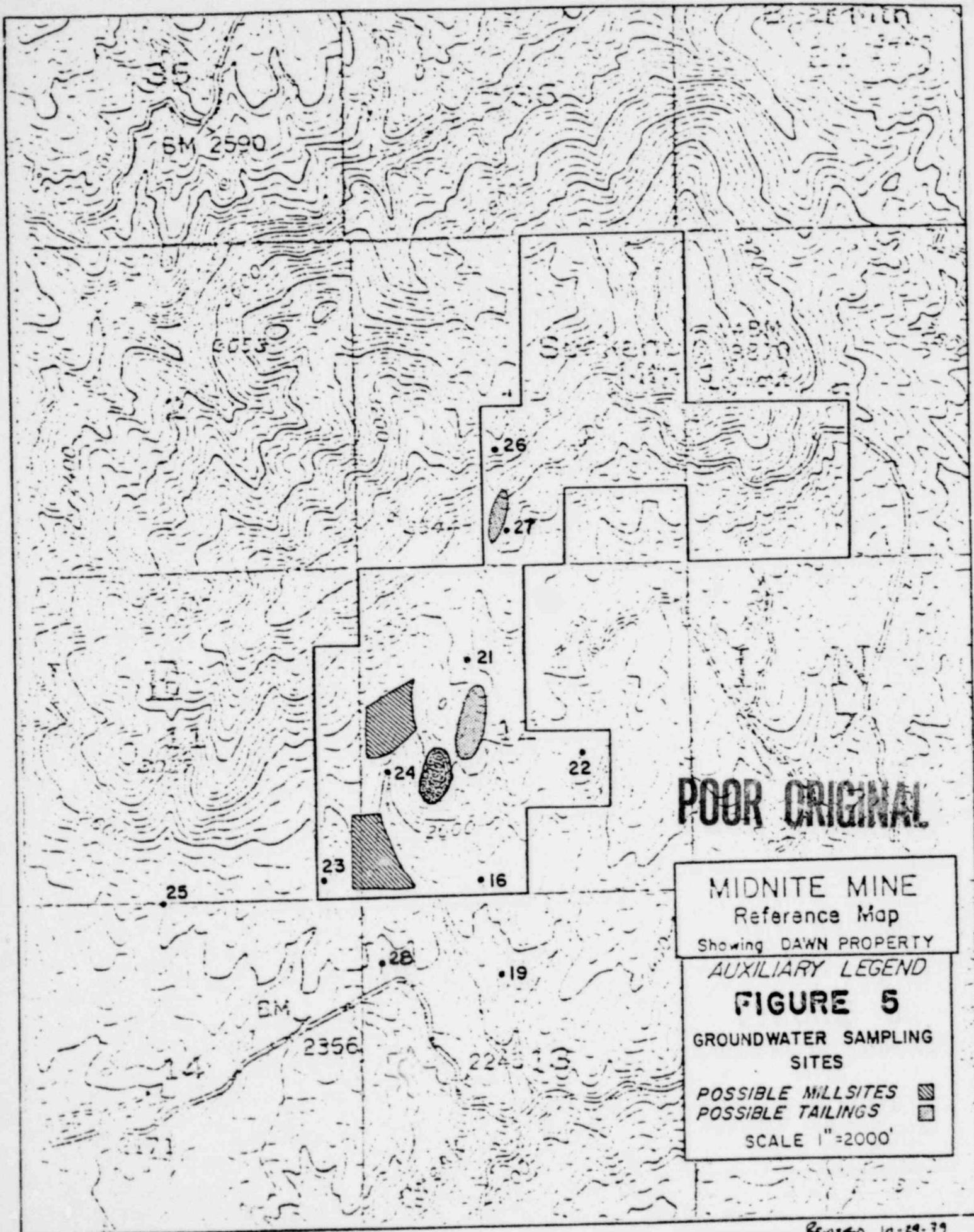
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REVISION 10-24-79

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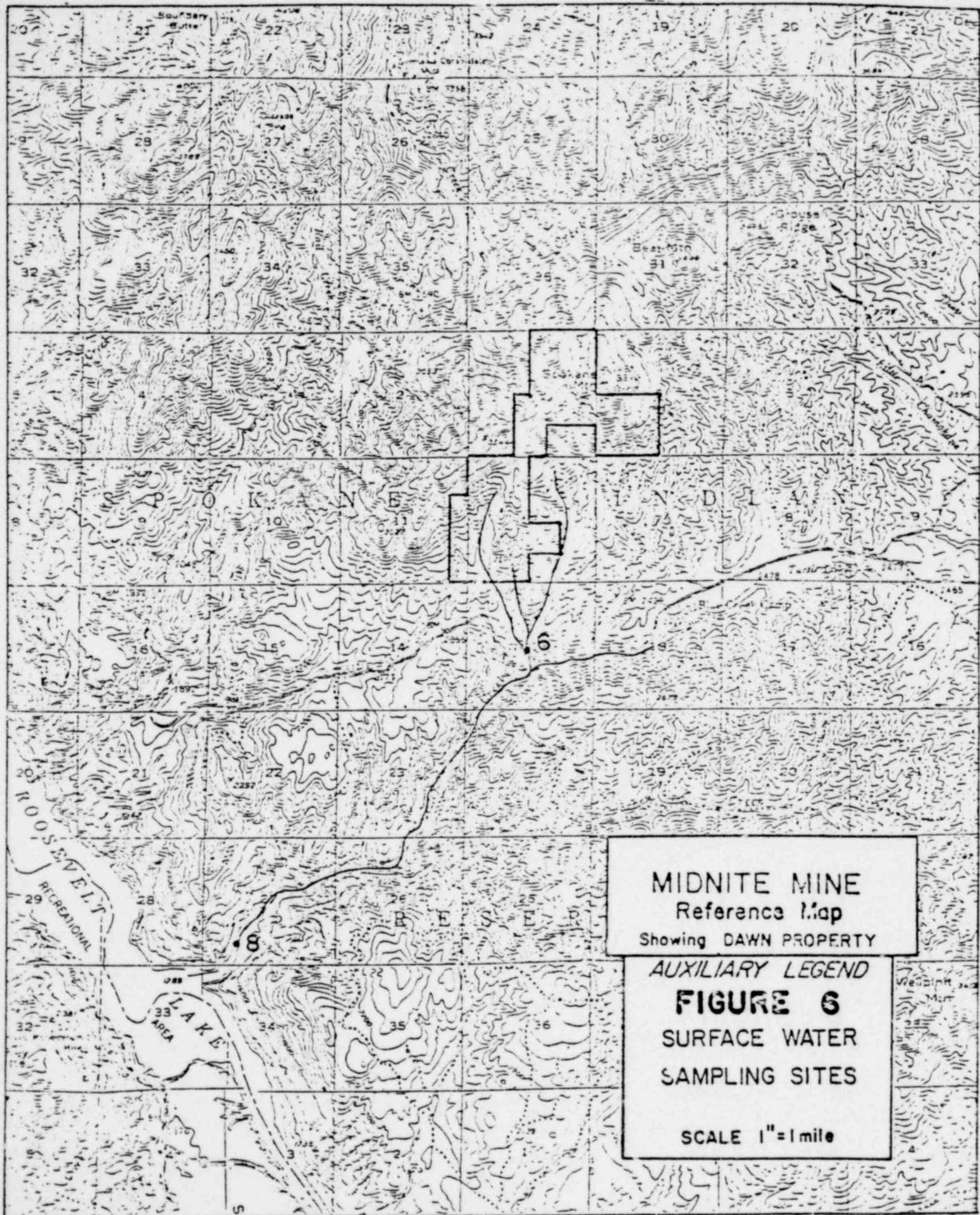


**POOR ORIGINAL**

MIDNITE MINE  
 Reference Map  
 Showing DAWN PROPERTY  
 AUXILIARY LEGEND  
**FIGURE 5**  
 GROUNDWATER SAMPLING  
 SITES  
 POSSIBLE MILLSITES   
 POSSIBLE TAILINGS   
 SCALE 1"=2000'

Revised 10-29-79

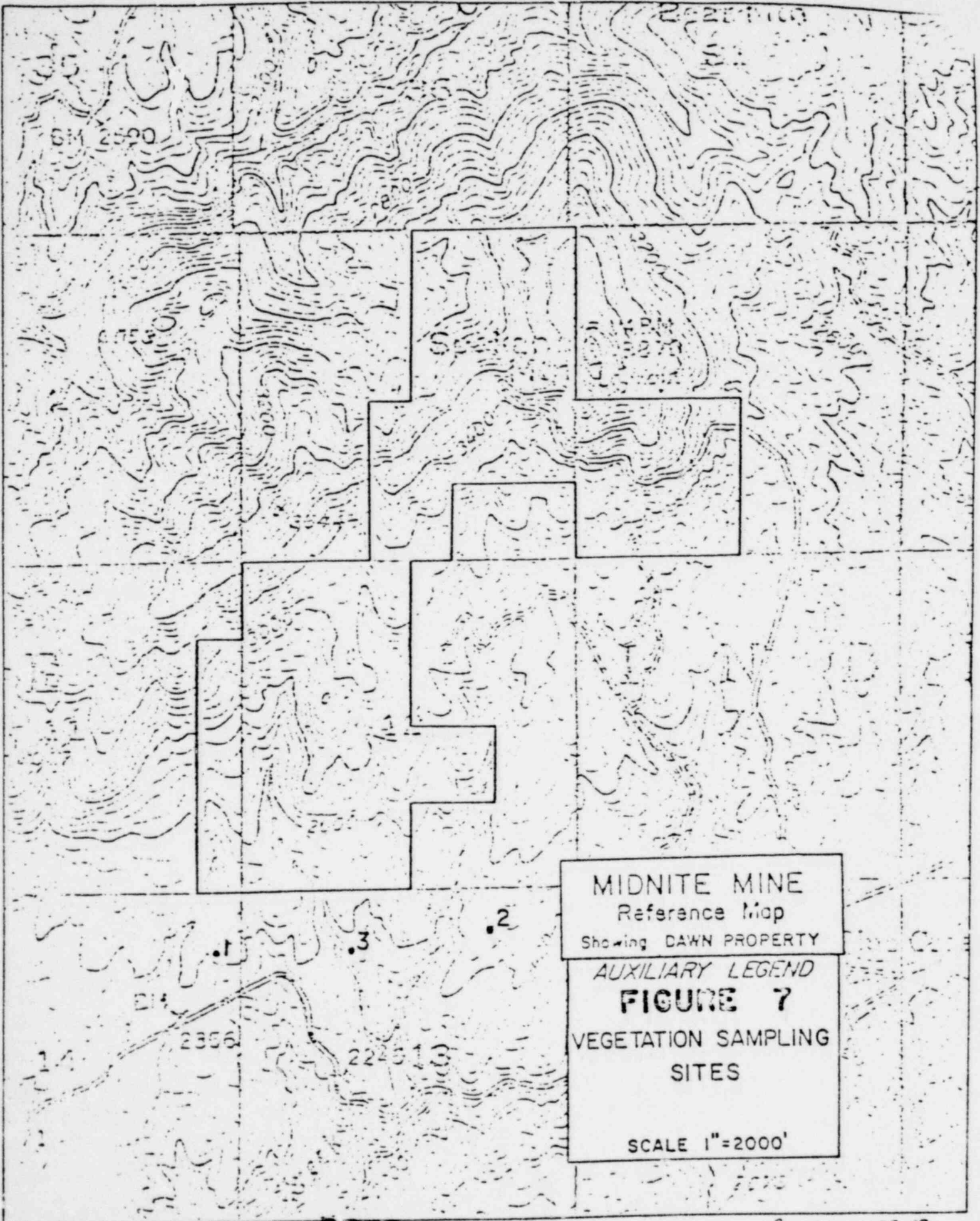
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POOR ORIGINAL

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MIDNITE MINE  
Reference Map  
Showing DAWN PROPERTY  
AUXILIARY LEGEND  
**FIGURE 7**  
VEGETATION SAMPLING  
SITES  
SCALE 1"=2000'

POOR ORIGINAL

REVISED 10-29-79

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FIGURE NO. B

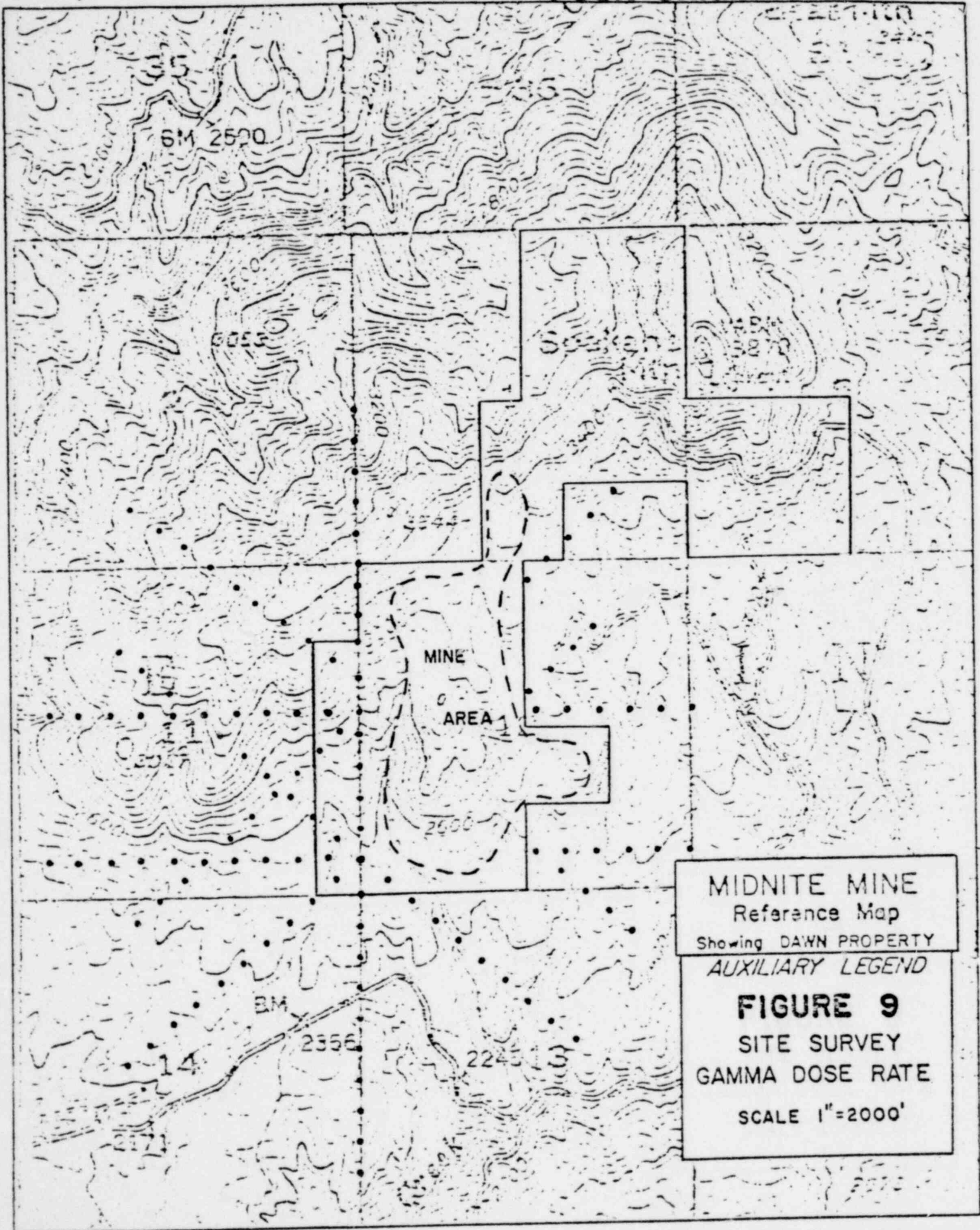
PREOPERATIONAL RADIOLOGICAL SITE SURVEY  
 PROPOSED HEAP LEACH PLANT  
 DAWN MINING COMPANY

Type of Sample	Number	Sample Location		Type	Frequency	Sample Measurement	
		Location				Frequency	Type of Measurement
Gamma Dose Rate	115	As shown in Figure #9		Direct reading	Once prior to construction	Once	Pressurized ionization chamber or properly calibrated portable survey instrument
	up to 115	Measurements repeated at each location disturbed by site excavation, leveling or contouring		Direct reading	Once following construction	Once	Same as above
	Four	As shown in Figure #3		Continuous	Quarterly	Quarterly	TLD
Surface Soil	55	As shown in Figure #10		Grab (collected to a depth of 5 cm)	Once prior to construction	Once	All Samples for Ra 226, Th 230, Pb 210
	up to 55	Measurements repeated at each location disturbed by site excavation, leveling or contouring		Grab (collected to a depth of 5cm)	Once following construction	Once	Same as above
	Four	As shown in Figure #3		Grab (collected to a depth of 5cm)	Once prior to construction	Once	Natural uranium, Ra 226, Th 230, Pb 210
Subsurface Soil Profile	Eight	As shown in Figure #11		Grab (collected to a depth of 3ft & samples divided into 1 ft sections for analysis)	Once prior to construction	Once	Ra 226 (all samples); Natural uranium, Th 230, Pb 210 (one set of samples)
	up to 8	Measurements repeated at each location disturbed by site excavation, leveling or contouring		Grab (collected to a depth of 3 ft & samples divided into 1 ft sections for analysis)	Once following construction	Once	Same as above
Sediment	Two	As shown in Figure #12 (Stations # 1 & 2)		Grab (Several at each location and composited)	Once following spring run off and late summer following period of extended low flow	Twice	Natural uranium, Ra 226, Th 230, Pb 210
	One	As shown in Figure #12 (Station #3)		Grab (Several at each location and composited)	Once prior to construction	Once	Same as above
Radon Flux	14	As shown in Figure #13		Two or three day period	Quarterly during spring through fall	Each sample	Rn-222 Flux by charcoal canister method

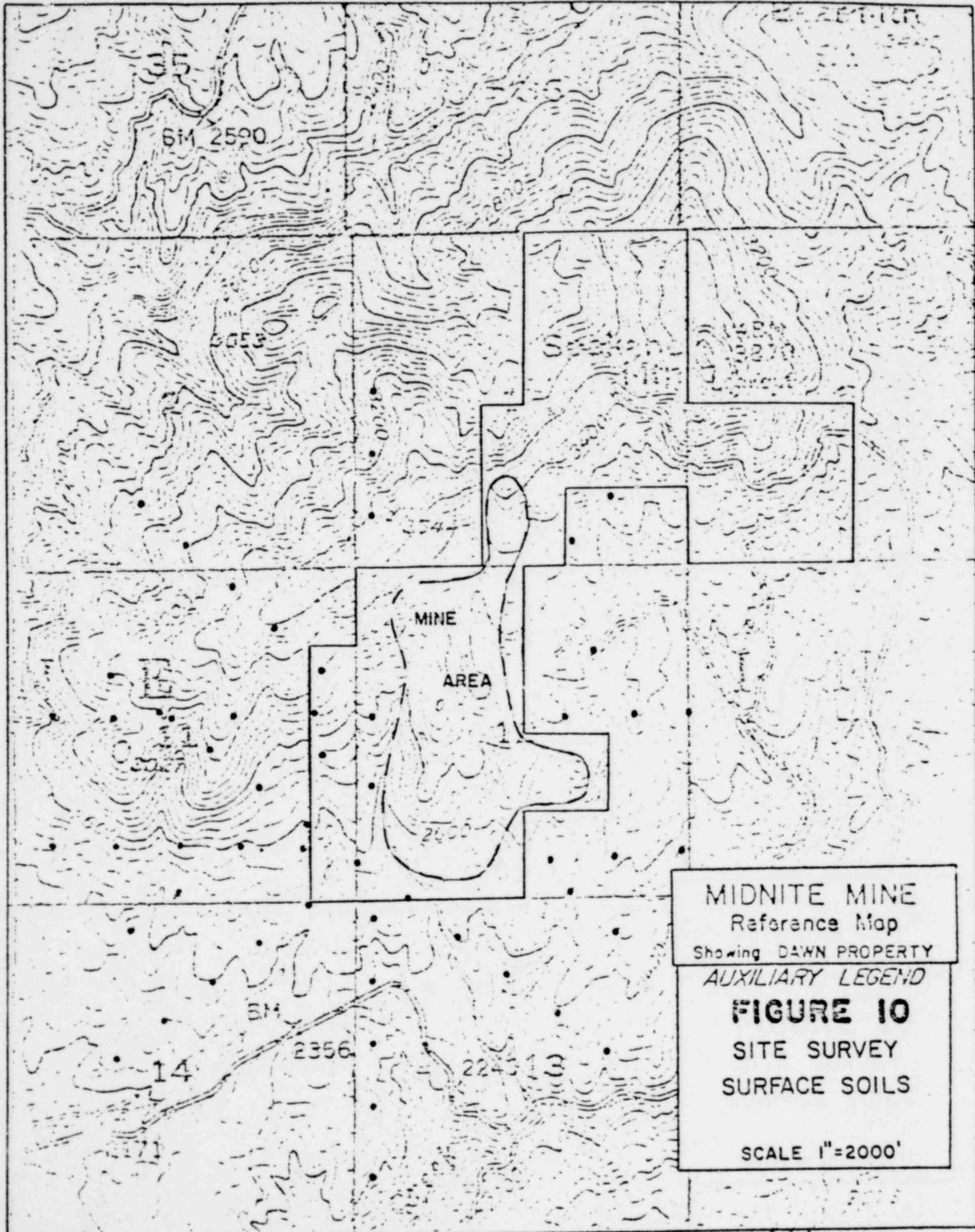
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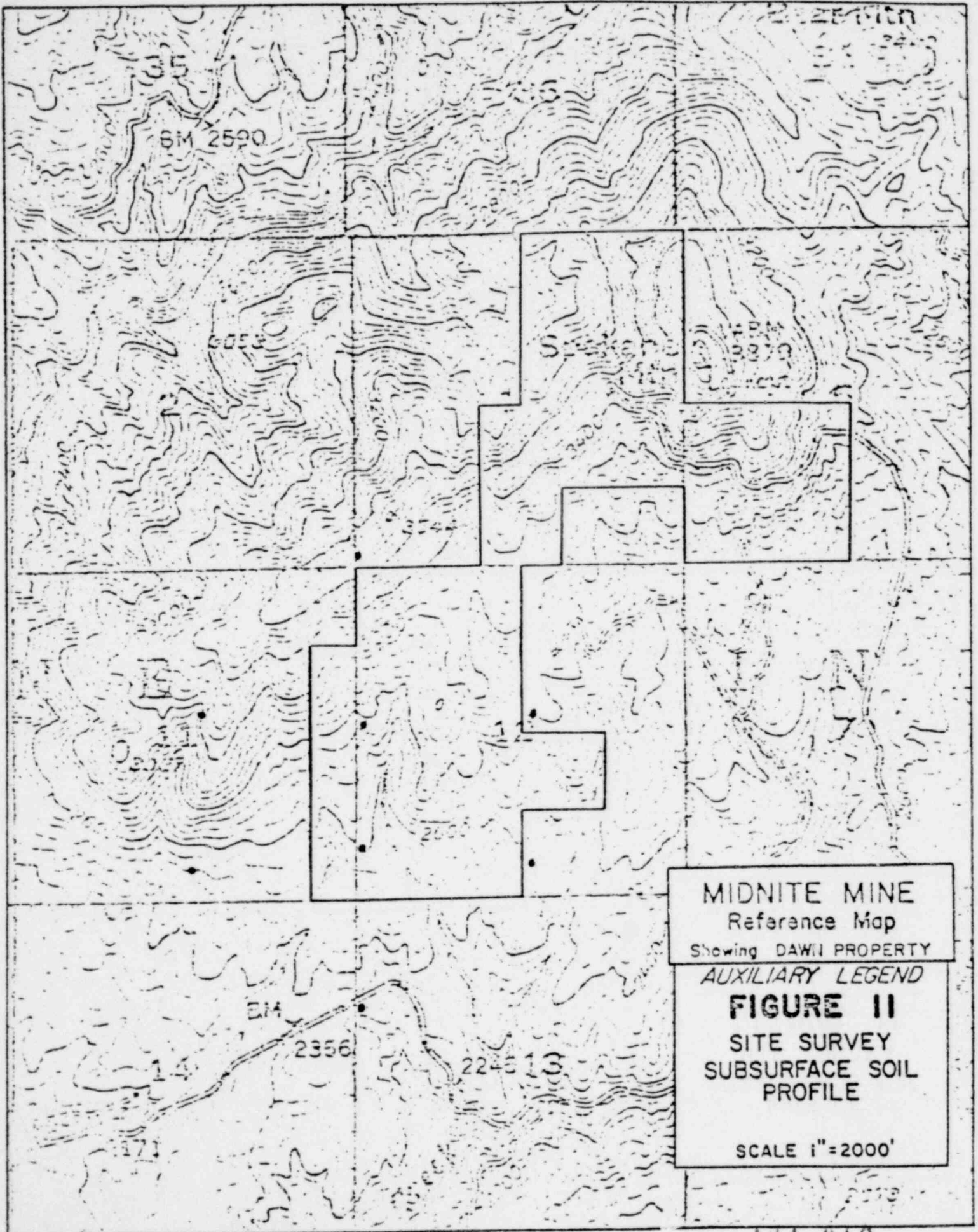
MIDNITE MINE  
Reference Map  
Showing DAWN PROPERTY  
AUXILIARY LEGEND  
**FIGURE 9**  
SITE SURVEY  
GAMMA DOSE RATE  
SCALE 1"=2000'



MIDNITE MINE  
Reference Map  
Showing DAWN PROPERTY  
*AUXILIARY LEGEND*  
**FIGURE 10**  
SITE SURVEY  
SURFACE SOILS  
SCALE 1"=2000'

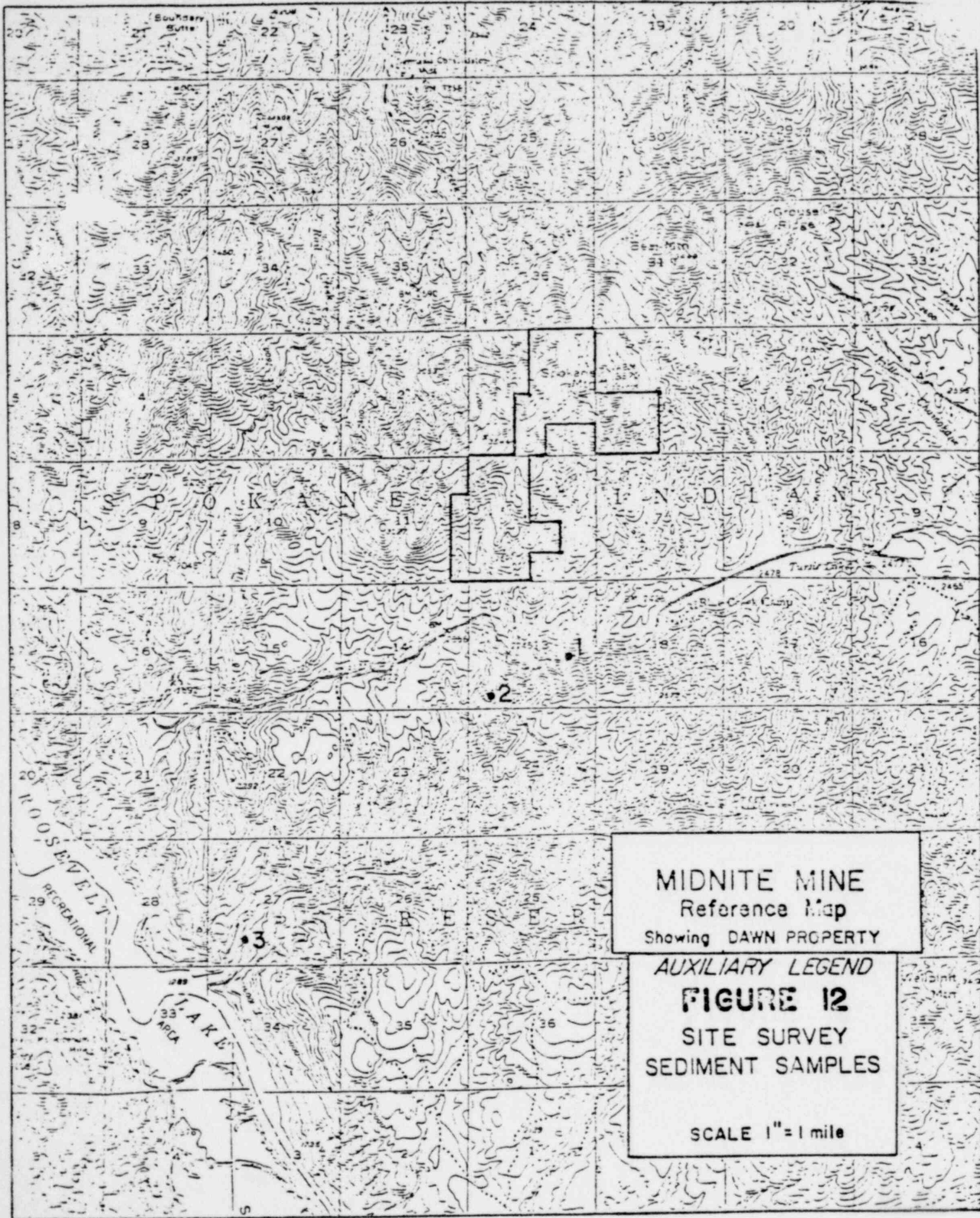
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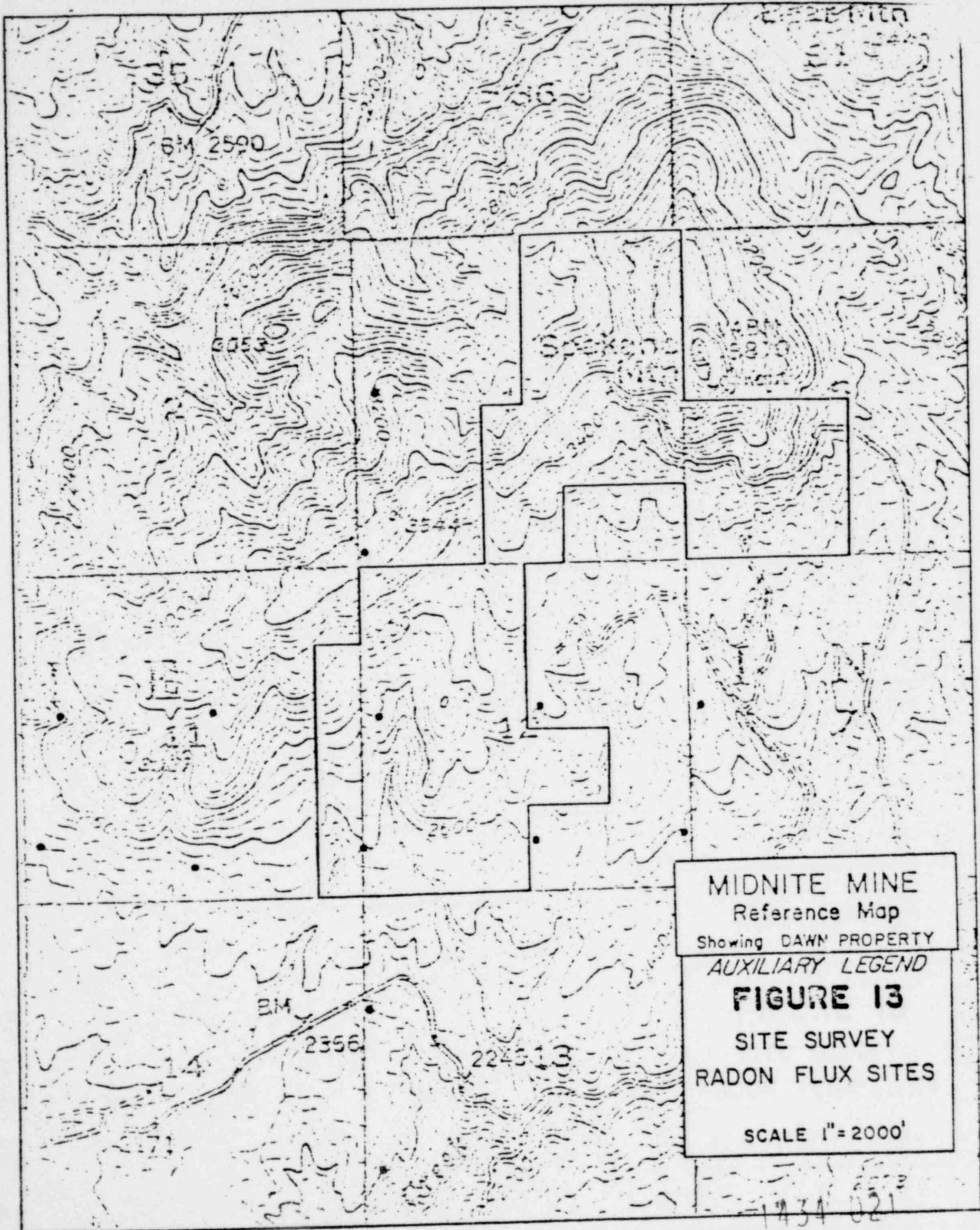
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POOR ORIGINAL



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

OCT 4 1979

Docket No. 40-8746

Dawn Mining Company  
ATTN: Mr. J. E. Thompson  
Resident Manager  
P. O. Box 25  
Ford, Washington 99013

Gentlemen:

In response to your August 16, 1979, letter requesting our review and comments on your proposed preoperational monitoring program for a proposed heap leach operation at your Midnite Mine, we are happy to provide you with the comments contained in the enclosure to this letter. In general, your proposed program contains all of the essential elements of a comprehensive preoperational monitoring program. If you have any questions on these comments, please do not hesitate to call Mr. Greg Eadie or Mr. John Linehan of my staff (Tel. No. 301/427-4103).

In addition, thank you for your August 9, 1979, letter enclosing a copy of your application to the State of Washington Department of Social and Health Services for amendment of your mill license to authorize a pilot-scale heap leach testing program. Please note that the NRC will not take any specific licensing action on any amendments to your mill license, issued by the State of Washington, until after your mill license is renewed and your general license for tailings has been converted to a specific license by the NRC. In the interim, we will provide technical assistance on licensing actions as requested by the State of Washington and will be happy to answer any questions on proposed licensing actions you may have.

Sincerely,

Ross A. Scarano, Chief  
Uranium Recovery Licensing Branch  
Division of Waste Management

Enclosure: As stated

cc: Mr. Lee Gronemeyer (w/ encl)  
State of Washington, Department  
of Social and Health Services

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DUPLICATE DOCUMENT

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No. of pages:

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