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Atlas Minerals

Division of Atlas Corporation

Post Office Box 1207

Moab, Utah 84532 1207

Phone (801) 259 5131

February 23, 1984

Mr. R. Dale Smith, Chief
Uranium Recovery Licensing Branch
Lakewood Office Plaza
730 Simms Street, Suite 100-A
Golden, Colorado 80401

RE: Source Material License SUA-917
Docket No. 40-3453

Dear Mr. Smith:

This correspondence transmits the second half of 1983 sampling and analysis results of the environmental monitoring program as required by License Condition 42 and 43 of Source Material License SUA-917.

The groundwater analysis are also submitted to partially satisfy License Condition 53.

If additional information or clarification is needed relative to the material herewith enclosed, please contact me at your convenience.

Sincerely,

Dale L. Edwards

Dale L. Edwards
Radiation Control Coordinator

cc: Mr. Glen Brown
R. E. Blubaugh

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ISOKINETIC STACK SAMPLING RESULTS

U308 SCRUBBER

AND

U308 DUST COLLECTOR

3rd Qtr. 1983

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

YC STACKS

3rd Quarter 1983

YC Scrubber

Date Sample was Taken 9-14-83

Name of Sample Collector D. Edwards/J. Johnson

Radionuclide	Date of Sample Assay	Concentration UCI/ML	Error Estimate	L.L.D. UCI/ML	Name of Assayer
U-Nat	10-20-83	505.0×10^{-11}	4.76	3.0×10^{-13}	ANL
Th-230	10-20-83	1.79×10^{-12}	.30	3.0×10^{-13}	ANL
RA-226	10-24-83	$.069 \times 10^{-11}$	.021	3.0×10^{-13}	ANL

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

YC STACKS

3rd Quarter 1983

YC Dust Collector

Date Sample was Taken 9-9-83

Name of Sample Collector D. Edwards/J. Johnson

Radionuclide	Date of Sample Assay	Concentration UCI/ML	Error Estimate	L.L.D. UCI/ML	Name of Assayer
U-Nat	10-20-83	6.05×10^{-11}	.24	3.0×10^{-13}	ANL
Th-230	10-20-83	2.17×10^{-12}	.67	3.0×10^{-13}	ANL
RA-226	10-24-83	$.09 \times 10^{-11}$	.022	3.0×10^{-13}	ANL

ISOKINETIC STACK SAMPLING RESULTS

U308 SCRUBBER

AND

U308 DUST COLLECTOR

4th Qtr. 1983

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

YC STACKS

4th Quarter 1983

YC Scrubber

Date Sample was Taken 10-19-83

Name of Sample Collector Dale Edwards-Jay Johnson

Radionuclide	Date of Sample Assay	Concentration UCI/ML	Error Estimate	L.L.D. UCI/ML	Name of Assayer
U-Nat	11-29	99.7×10^{-11}	3.08	.013	ANL
Th-230	11-29	4.44×10^{-12}	.52	.22	ANL
RA-226	11-28	$.013 \times 10^{-11}$	.009	.013	ANL

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

YC STACKS

4th Quarter 1983

YC Dust Collector

Date Sample was Taken 10-21-83

Name of Sample Collector Dale Edwards-Jay Johnson

Radionuclide	Date of Sample Assay	Concentration UCI/ML	Error Estimate	L.L.D. UCI/ML	Name of Assayer
U-Nat	11-29	6.5×10^{-11}	.11	.016	ANL
Th-230	11-29	3.21×10^{-12}	.38	.22	ANL
RA-226	11-28	$.057 \times 10^{-11}$	.017	.016	ANL

CONTINUOUS AIR SAMPLES

3rd Qtr 1983

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: July 1983

Sample Number #1

Date of Collection July 1983

Location of Sampler Nt OF Mill

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date of Assaye
U-Nat	5×10^{-12} uci/ml	$.011 \times 10^{-12}$	.0002	1×10^{-16} uci/ml	.22	ANL
RN^{222}	30×10^{-10} uci/ml	$.7 \times 10^{-10}$	.20	2×10^{-10} uci/ml	2.33	Eberli
Pb^{210}	4×10^{-12} uci/ml	$.024 \times 10^{-12}$	.002	1×10^{-15} uci/ml	.60	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml			1×10^{-16} uci/ml		
Ra-226	3×10^{-12} uci/ml			1×10^{-16} uci/ml		

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: July 1983

Sample Number #2

Date of Collection July 1983

Location of Sampler Mill Salvage Yard

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date of Assaye
U-Nat	$5x10^{-12}$ uci/ml	$.015x10^{-12}$	.0004	$1x10^{-16}$ uci/ml	.30	ANL
Rn^{222}	$30x10^{-10}$ uci/ml	$.50x10^{-10}$	.20	$2x10^{-10}$ uci/ml	1.66	Eberli
Pb^{210}	$4x10^{-12}$ uci/ml	$.032x10^{-12}$	.003	$1x10^{-15}$ uci/ml	.8	ANL
	Quarter:					
Th-230	$8x10^{-14}$ uci/ml			$1x10^{-16}$ uci/ml		
Ra-226	$3x10^{-12}$ uci/ml			$1x10^{-16}$ uci/ml		

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

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Month: July 1983

Sample Number #3

Date of Collection July 1983

Location of Sampler NW Mill Tails Pond

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name Date Assay
U-Nat	5×10^{-12} uci/ml	$.010\times10^{-12}$	.0004	1×10^{-16} uci/ml	.20	ANL
RN^{222}	30×10^{-10} uci/ml	1.0×10^{-10}	.20	2×10^{-10} uci/ml	3.33	Eberli
Pb^{210}	4×10^{-12} uci/ml	$.19\times10^{-12}$	.008	1×10^{-15} uci/ml	4.75	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml			1×10^{-16} uci/ml		
Ra-226	3×10^{-12} uci/ml			1×10^{-16} uci/ml		

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: July 1983

Sample Number #4

Date of Collection July 1983

Location of Sampler Arches Headquarters

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date o Assaye
U-Nat	5×10^{-12} uci/ml	$.004 \times 10^{-12}$	.0001	1×10^{-16} uci/ml	.08	ANL
Rn^{222}	30×10^{-10} uci/ml	$.10 \times 10^{-10}$	.20	2×10^{-10} uci/ml	.33	Eberlin
Pb^{210}	4×10^{-12} uci/ml	$.021 \times 10^{-12}$	.002	1×10^{-15} uci/ml	.53	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml			1×10^{-16} uci/ml		
Ra-226	3×10^{-12} uci/ml			1×10^{-16} uci/ml		

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: July 1983

Sample Number #5

Date of Collection July 1983

Location of Sampler Moab Sewer Plant

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date of Assaye
U-Nat	$5x10^{-12}$ uci/ml	$.002x10^{-12}$	.0001	$1x10^{-16}$ uci/ml	.04	ANL
RN^{222}	$30x10^{-10}$ uci/ml	$-.10x10^{-10}$	.20	$2x10^{-10}$ uci/ml	-.33	Eberli
Pb^{210}	$4x10^{-12}$ uci/ml	$.016x10^{-12}$	.002	$1x10^{-15}$ uci/ml	.40	ANL
	Quarter:					
Th-230	$8x10^{-14}$ uci/ml			$1x10^{-16}$ uci/ml		
Ra-226	$3x10^{-12}$ uci/ml			$1x10^{-16}$ uci/ml		

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: July 1983

Sample Number #6

Date of Collection July 1983

Location of Sampler Approx 2 mi S of Mill

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date o Assaye
U-Nat	$5x10^{-12}$uci/ml	$.002x10^{-12}$	.0001	$1x10^{-16}$uci/ml	.04	ANL
RN^{222}	$30x10^{-10}$uci/ml	$.40x10^{-10}$	.10	$2x10^{-10}$uci/ml	.12	Eberli
Pb^{210}	$4x10^{-12}$uci/ml	$.018x10^{-12}$	.003	$1x10^{-15}$uci/ml	.45	ANL
	Quarter:					
Th-230	$8x10^{-14}$uci/ml			$1x10^{-16}$uci/ml		
Ra-226	$3x10^{-12}$uci/ml			$1x10^{-16}$uci/ml		

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: August 1983

Sample Number #1

Date of Collection August 1983

Location of Sampler NE of Mill

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date o Assaye
U-Nat	$5x10^{-12}$ uci/ml	$.023x10^{-12}$	.0008	$1x10^{-16}$ uci/ml	.58	ANL
RN^{222}	$30x10^{-10}$ uci/ml	$2.2x10^{-10}$	.70	$2x10^{-10}$ uci/ml	7.33	Eberli
Pb^{210}	$4x10^{-12}$ uci/ml	$.035x10^{-12}$	.002	$1x10^{-15}$ uci/ml	.88	ANL
	Quarter:					
Th-230	$8x10^{-14}$ uci/ml			$1x10^{-16}$ uci/ml		
Ra-226	$3x10^{-12}$ uci/ml			$1x10^{-16}$ uci/ml		

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: August 1983

Sample Number #2

Date of Collection August 1983

Location of Sampler Mill Salvage Yard

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date o[f] Assaye[r]
U-Nat	$5x10^{-12}$uci/ml	$.013x10^{-12}$	.0003	$1x10^{-16}$uci/ml	.26	ANL
RN^{222}	$30x10^{-10}$uci/ml	$1.10x10^{-10}$	.30	$2x10^{-10}$uci/ml	3.66	Eberli[ne]
Pb^{210}	$4x10^{-12}$uci/ml	$.024x10^{-12}$	.0017	$1x10^{-15}$uci/ml	.85	ANL

	Quarter:					
Th-230	$8x10^{-14}$uci/ml			$1x10^{-16}$uci/ml		
Ra-226	$3x10^{-12}$uci/ml			$1x10^{-16}$uci/ml		

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: August 1983

Sample Number #3

Date of Collection August 1983

Location of Sampler NW OF TAILS POND

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date of Assay
U-Nat	5×10^{-12} uci/ml	$.014 \times 10^{-12}$	.0002	1×10^{-16} uci/ml	.28	ANL
RN^{222}	30×10^{-10} uci/ml	3.1×10^{-10}	1.0	2×10^{-10} uci/ml	10.3	Eberli
Pb^{210}	4×10^{-12} uci/ml	$.10 \times 10^{-12}$	.0004	1×10^{-15} uci/ml	2.5	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml			1×10^{-16} uci/ml		
Ra-226	3×10^{-12} uci/ml			1×10^{-16} uci/ml		

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: August 1983

Sample Number #4

Date of Collection August 1983

Location of Sampler Arches Headquarters

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date of Assaye
U-Nat	5×10^{-12} uci/ml	$.011\times10^{-12}$	.0003	1×10^{-16} uci/ml	.22	ANL
RN^{222}	30×10^{-10} uci/ml	$.80\times10^{-10}$	.30	2×10^{-10} uci/ml	2.66	Eberli
Pb^{210}	4×10^{-12} uci/ml	$.033\times10^{-12}$	.002	1×10^{-15} uci/ml	.83	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml			1×10^{-16} uci/ml		
Ra-226	3×10^{-12} uci/ml			1×10^{-16} uci/ml		

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: August 1983

Sample Number #5

Date of Collection August 1983

Location of Sampler Moab Sewer Plant

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name Date Assay
U-Nat	5×10^{-12} uci/ml	$.0016 \times 10^{-12}$	.00014	1×10^{-16} uci/ml	.032	ANL
RN^{222}	30×10^{-10} uci/ml	1.30×10^{-10}	.40	2×10^{-10} uci/ml	4.3	Eberli
Pb^{210}	4×10^{-12} uci/ml	$.018 \times 10^{-12}$	.0014	1×10^{-15} uci/ml	.45	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml			1×10^{-16} uci/ml		
Ra-226	3×10^{-12} uci/ml			1×10^{-16} uci/ml		

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

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Month: August 1983

Sample Number #6

Date of Collection August 1983

Location of Sampler Approx 2 mi S of Mill

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date o Assaye
U-Nat	5×10^{-12} uci/ml	$.0017\times10^{-12}$	.000009	1×10^{-16} uci/ml	.034	ANL
RN^{222}	30×10^{-10} uci/ml	1.7×10^{-10}	.50	2×10^{-10} uci/ml	5.66	Eberli
Pb^{210}	4×10^{-12} uci/ml	$.017\times10^{-12}$	.0015	1×10^{-15} uci/ml	.43	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml			1×10^{-16} uci/ml		
Ra-226	3×10^{-12} uci/ml			1×10^{-16} uci/ml		

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: September 1983

Sample Number #1

Date of Collection September 1983

Location of Sampler Northeast of Mill

Name of Sampler Collector J. Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date of Assaye
U-Nat	$5x10^{-12}$ uci/ml	$.0039x10^{-12}$	.0001	$1x10^{-16}$ uci/ml	.078	ANL
RN^{222}	$30x10^{-10}$ uci/ml	$3.2x10^{-10}$	.30	$2x10^{-10}$ uci/ml	10.66	JAJ
Pb^{210}	$4x10^{-12}$ uci/ml	$.052x10^{-12}$	.0053	$1x10^{-15}$ uci/ml	1.3	ANL
	Quarter:					
Th-230	$8x10^{-14}$ uci/ml	$.39x10^{-14}$	.15	$1x10^{-16}$ uci/ml	4.88	ANL
Ra-226	$3x10^{-12}$ uci/ml	$.0038x10^{-12}$	.00049	$1x10^{-16}$ uci/ml	.13	ANL

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: September 1983

Sample Number #2

Date of Collection September 1983

Location of Sampler Mill Salvage Yard

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date of Assaye
U-Nat	5×10^{-12} uci/ml	$.018 \times 10^{-12}$	.0003	1×10^{-16} uci/ml	.36	ANL
RN^{222}	30×10^{-10} uci/ml	3.6×10^{-10}	.41	2×10^{-10} uci/ml	12.0	JAJ
Pb^{210}	4×10^{-12} uci/ml	$.075 \times 10^{-12}$	.005	1×10^{-15} uci/ml	1.88	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml	$.47 \times 10^{-14}$	.065	1×10^{-16} uci/ml	5.88	ANL
Ra-226	3×10^{-12} uci/ml	$.004 \times 10^{-12}$	.0005	1×10^{-16} uci/ml	.13	ANL

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: September 1983

Sample Number #3

Date of Collection September 1983

Location of Sampler Northwest of Tails Pond

p Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date o Assaye
U-Nat	$5x10^{-12}$ uci/ml	$.022x10^{-12}$	.00018	$1x10^{-16}$ uci/ml	.44	ANL
RN^{222}	$30x10^{-10}$ uci/ml	$23.1x10^{-10}$	.70	$2x10^{-10}$ uci/ml	77.0	JAJ
Pb^{210}	$4x10^{-12}$ uci/ml	$.51x10^{-12}$	.022	$1x10^{-15}$ uci/ml	12.75	ANL
	Quarter:					
Th-230	$8x10^{-14}$ uci/ml	$8.19x10^{-14}$	.31	$1x10^{-16}$ uci/ml	102.4	ANL
Ra-226	$3x10^{-12}$ uci/ml	$.21x10^{-12}$	.038	$1x10^{-16}$ uci/ml	7.0	ANL

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: September 1983

Sample Number #4

Date of Collection September 1983

Location of Sampler Arches Headquarters

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date of Assay
U-Nat	5×10^{-12} uci/ml	$.021\times10^{-12}$	.00025	1×10^{-16} uci/ml	.42	ANL
RN^{222}	30×10^{-10} uci/ml	1.6×10^{-10}	.34	2×10^{-10} uci/ml	5.33	JAJ
Pb^{210}	4×10^{-12} uci/ml	$.041\times10^{-12}$	.0039	1×10^{-15} uci/ml	1.03	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml	$.22\times10^{-14}$	.038	1×10^{-16} uci/ml	2.75	ANL
Ra-226	3×10^{-12} uci/ml	$.0036\times10^{-12}$	.00048	1×10^{-16} uci/ml	.12	ANL

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: September 1983

Sample Number #5

Date of Collection September 1983

Location of Sampler Moab Sewer Plant

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date of Assaye
U-Nat	5×10^{-12} uci/ml	$.0021\times10^{-12}$	.00002	1×10^{-16} uci/ml	.042	ANL
RN^{222}	30×10^{-10} uci/ml	2.5×10^{-10}	.34	2×10^{-10} uci/ml	8.33	JAJ
Pb^{210}	4×10^{-12} uci/ml	$.055\times10^{-12}$	.0048	1×10^{-15} uci/ml	1.38	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml	$.066\times10^{-14}$	.021	1×10^{-16} uci/ml	.83	ANL
Ra-226	3×10^{-12} uci/ml	$.0012\times10^{-12}$	.0003	1×10^{-16} uci/ml	.04	ANL

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MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: September 1983

Sample Number #6

Date of Collection September 1983

Location of Sampler Approx, 2 mi S of Mill

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name Date Assay
U-Nat	5×10^{-12} uci/ml	$.0013\times10^{-12}$	.00006	1×10^{-16} uci/ml	.026	ANL
RN^{222}	30×10^{-10} uci/ml	$.99\times10^{-10}$	.38	2×10^{-10} uci/ml	3.30	JAJ
Pb^{210}	4×10^{-12} uci/ml	$.027\times10^{-12}$	.0043	1×10^{-15} uci/ml	.68	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml	0.00	.064	1×10^{-16} uci/ml	0	ANL
Ra-226	3×10^{-12} uci/ml	.00047	.00022	1×10^{-16} uci/ml	.016	ANL

CONTINUOUS AIR SAMPLES

4th Qtr 1983

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: October 1983

Sample Number #1

Date of Collection October 1983

Location of Sampler NE Corner of Mill

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name Date Assay
U-Nat	5×10^{-12} uci/ml	$.028 \times 10^{-12}$	.0002	1×10^{-16} uci/ml	.56	ANL
Rn^{222}	30×10^{-10} uci/ml	3.6×10^{-10}	.38	2×10^{-10} uci/ml	12	JAJ
Pb^{210}	4×10^{-12} uci/ml	$.002 \times 10^{-12}$	.0001	1×10^{-15} uci/ml	.05	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml			1×10^{-16} uci/ml		
Ra-226	3×10^{-12} uci/ml			1×10^{-16} uci/ml		

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MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: October 1983

Sample Number #2

Date of Collection October 1983

Location of Sampler Mill Salvage Yard

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date of Assaye
U-Nat	5×10^{-12} uci/ml	$.039 \times 10^{-12}$	.002	1×10^{-16} uci/ml	.78	ANL
RN^{222}	30×10^{-10} uci/ml	3.30×10^{-10}	.32	2×10^{-10} uci/ml	11	JAJ
Pb^{210}	4×10^{-12} uci/ml	$.047 \times 10^{-12}$	.004	1×10^{-15} uci/ml	1.18	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml			1×10^{-16} uci/ml		
Ra-226	3×10^{-12} uci/ml			1×10^{-16} uci/ml		

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: October 1983

Sample Number #3

Date of Collection October 1983

Location of Sampler NW of Tails Pond

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name Date Assay
U-Nat	5×10^{-12} uci/ml	$.035 \times 10^{-12}$	.02	1×10^{-16} uci/ml	.70	ANL
RN^{222}	30×10^{-10} uci/ml	5.50×10^{-10}	.43	2×10^{-10} uci/ml	18.3	JAJ
Pb^{210}	4×10^{-12} uci/ml	$.048 \times 10^{-12}$	.003	1×10^{-15} uci/ml	1.2	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml			1×10^{-16} uci/ml		
Ra-226	3×10^{-12} uci/ml			1×10^{-16} uci/ml		

JAJ
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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: October 1983

Sample Number #4

Date of Collection Oct. 1983

Location of Sampler Arches Headquarters

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name Date Assay
U-Nat	5×10^{-12} uci/ml	$.033 \times 10^{-12}$	.002	1×10^{-16} uci/ml	.66	ANL
Rn^{222}	30×10^{-10} uci/ml	$.42 \times 10^{-10}$	.29	2×10^{-10} uci/ml	1.4	JAJ
Pb^{210}	4×10^{-12} uci/ml	$.048 \times 10^{-12}$	.003	1×10^{-15} uci/ml	1.2	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml			1×10^{-16} uci/ml		
Ra-226	3×10^{-12} uci/ml			1×10^{-16} uci/ml		

JAJ
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RF3

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: October 1983

Sample Number #5

Date of Collection October 1983

Location of Sampler Moab Sewer Plant

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name Date Assay
U-Nat	5×10^{-12} uci/ml	$.004 \times 10^{-12}$	.0002	1×10^{-16} uci/ml	.08	ANL
RN^{222}	30×10^{-10} uci/ml	$.74 \times 10^{-10}$	.24	2×10^{-10} uci/ml	2.47	JAJ
Pb^{210}	4×10^{-12} uci/ml	$.027 \times 10^{-12}$	.003	1×10^{-15} uci/ml	.68	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml			1×10^{-16} uci/ml		
Ra-226	3×10^{-12} uci/ml			1×10^{-16} uci/ml		

JHJ
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RSB

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: October 1983

Sample Number #6

Date of Collection October 1983

Location of Sampler Approx 2 mi S of Mill

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date of Assaye
U-Nat	5×10^{-12} uci/ml	$.006 \times 10^{-12}$	.0001	1×10^{-16} uci/ml	.12	ANL
RN^{222}	30×10^{-10} uci/ml	$.36 \times 10^{-10}$	.29	2×10^{-10} uci/ml	1.2	JAJ
Pb^{210}	4×10^{-12} uci/ml	$.026 \times 10^{-12}$	.002	1×10^{-15} uci/ml	.65	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml			1×10^{-16} uci/ml		
Ra-226	3×10^{-12} uci/ml			1×10^{-16} uci/ml		

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: Nov. 1983

Sample Number #1

Date of Collection Nov. 1983

Location of Sampler Northeast of Mill

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date o Assaye
U-Nat	5×10^{-12} uci/ml	$.028 \times 10^{-12}$	.003	1×10^{-16} uci/ml	.56	ANL
Rn^{222}	30×10^{-10} uci/ml	4.0×10^{-10}	.45	2×10^{-10} uci/ml	13.3	JAJ
Pb^{210}	4×10^{-12} uci/ml	$.038 \times 10^{-12}$	.002	1×10^{-15} uci/ml	.95	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml			1×10^{-16} uci/ml		
Ra-226	3×10^{-12} uci/ml			1×10^{-16} uci/ml		

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: Nov. 1983

Sample Number #2

Date of Collection Nov. 1983

Location of Sampler Mill Salvage Yard

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date of Assaye
U-Nat	5×10^{-12} uci/ml	$.042 \times 10^{-12}$	.0013	1×10^{-16} uci/ml	.84	ANL
Rn^{222}	30×10^{-10} uci/ml	4.80×10^{-10}	.41	2×10^{-10} uci/ml	.16	JAJ
Pb^{210}	4×10^{-12} uci/ml	$.029 \times 10^{-12}$	.002	1×10^{-15} uci/ml	.73	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml			1×10^{-16} uci/ml		
Ra-226	3×10^{-12} uci/ml			1×10^{-16} uci/ml		

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: November 1983

Sample Number #3

Date of Collection Nov. 1983

Location of Sampler Northwest of tails pond

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name Date Assay
U-Nat	5×10^{-12} uci/ml	$.025 \times 10^{-12}$	.002	1×10^{-16} uci/ml	.50	ANL
Rn^{222}	30×10^{-10} uci/ml	6.70×10^{-10}	.54	2×10^{-10} uci/ml	22.3	JAJ
Pb^{210}	4×10^{-12} uci/ml	$.03 \times 10^{-12}$	.002	1×10^{-15} uci/ml	.75	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml			1×10^{-16} uci/ml		
Ra-226	3×10^{-12} uci/ml			1×10^{-16} uci/ml		

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: November 1983

Sample Number #4

Date of Collection Nov. 1983

Location of Sampler Arches Headquarters

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date of Assaye
U-Nat	5×10^{-12} uci/ml	$.017 \times 10^{-12}$	.002	1×10^{-16} uci/ml	.34	ANL
Rn^{222}	30×10^{-10} uci/ml	$.60 \times 10^{-10}$	.40	2×10^{-10} uci/ml	2.0	JAJ
Pb^{210}	4×10^{-12} uci/ml	$.023 \times 10^{-12}$	.001	1×10^{-15} uci/ml	.58	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml			1×10^{-16} uci/ml		
Ra-226	3×10^{-12} uci/ml			1×10^{-16} uci/ml		

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: Nov. 1983

Sample Number #5

Date of Collection Nov. 1983

Location of Sampler Moab Sewer Dept.

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name Date Assay
U-Nat	5×10^{-12} uci/ml	$.011 \times 10^{-12}$	.002	1×10^{-16} uci/ml	.22	ANL
Rn^{222}	30×10^{-10} uci/ml	$.80 \times 10^{-10}$	.31	2×10^{-10} uci/ml	2.7	JAJ
Pb^{210}	4×10^{-12} uci/ml	$.02 \times 10^{-12}$	.002	1×10^{-15} uci/ml	.50	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml			1×10^{-16} uci/ml		
Ra-226	3×10^{-12} uci/ml			1×10^{-16} uci/ml		

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: November 1983

Sample Number #6

Date of Collection Nov. 83

Location of Sampler Approx. 2 miles south of mill

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name Date Assay
U-Nat	5×10^{-12} uci/ml	$.013 \times 10^{-12}$	.002	1×10^{-16} uci/ml	.26	ANL
RN^{222}	30×10^{-10} uci/ml	$.80 \times 10^{-10}$	.4	2×10^{-10} uci/ml	2.7	JAJ
Pb^{210}	4×10^{-12} uci/ml	$.017 \times 10^{-12}$	.002	1×10^{-15} uci/ml	.43	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml			1×10^{-16} uci/ml		
Ra-226	3×10^{-12} uci/ml			1×10^{-16} uci/ml		

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: Dec. 1983

Sample Number #1

Date of Collection Dec. 1983

Location of Sampler Northeast of Mill

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name Date Assay
U-Nat	5×10^{-12} uci/ml	$.0097 \times 10^{-12}$	.0009	1×10^{-16} uci/ml	.19	ANL
RN^{222}	30×10^{-10} uci/ml	5.0×10^{-10}	.55	2×10^{-10} uci/ml	16.7	JAJ
Pb^{210}	4×10^{-12} uci/ml	$.075 \times 10^{-12}$	.007	1×10^{-15} uci/ml	1.88	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml	1.63×10^{-14}	.13	1×10^{-16} uci/ml	20.4	ANL
Ra-226	3×10^{-12} uci/ml	$.012 \times 10^{-12}$	.0016	1×10^{-16} uci/ml	.40	ANL

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: Dec. 1983

Sample Number #3

Date of Collection Dec. 83

Location of Sampler Northwest of tails pond

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name / Date / Assay
U-Nat	5×10^{-12} uci/ml	$.006 \times 10^{-12}$	.0007	1×10^{-16} uci/ml	.13	ANL
RN^{222}	30×10^{-10} uci/ml	4.0×10^{-10}	.53	2×10^{-10} uci/ml	13.	JAJ
Pb^{210}	4×10^{-12} uci/ml	$.058 \times 10^{-12}$	.008	1×10^{-15} uci/ml	1.44	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml	2.13×10^{-14}	.36	1×10^{-16} uci/ml	.27	ANL
Ra-226	3×10^{-12} uci/ml	$.057 \times 10^{-12}$	.003	1×10^{-16} uci/ml	1.9	ANL

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: Dec. 1983

Sample Number #4

Date of Collection Dec. 83

Location of Sampler Arches Headquarters

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date o Assaye
U-Nat	5×10^{-12} uci/ml	$.008 \times 10^{-12}$	.0008	1×10^{-16} uci/ml	.16	ANL
Rn^{222}	30×10^{-10} uci/ml	1.70×10^{-10}	.47	2×10^{-10} uci/ml	5.7	JAJ
Pb^{210}	4×10^{-12} uci/ml	$.072 \times 10^{-12}$	.006	1×10^{-15} uci/ml	1.79	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml	$.31 \times 10^{-14}$	.20	1×10^{-16} uci/ml	3.9	ANL
Ra-226	3×10^{-12} uci/ml	$.003 \times 10^{-12}$	.0009	1×10^{-16} uci/ml	.10	ANL

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: Dec. 1983

Sample Number #5

Date of Collection Dec. 83

Location of Sampler Moab Sewer Plant

Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name & Date of Assaye
U-Nat	5×10^{-12} uci/ml	$.021 \times 10^{-12}$	.002	1×10^{-16} uci/ml	.41	ANL
RN^{222}	30×10^{-10} uci/ml	1.30×10^{-10}	.30	2×10^{-10} uci/ml	4.3	JAJ
Pb^{210}	4×10^{-12} uci/ml	$.057 \times 10^{-12}$	.006	1×10^{-15} uci/ml	1.42	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml	$.09 \times 10^{-14}$	.28	1×10^{-16} uci/ml	1.1	ANL
Ra-226	3×10^{-12} uci/ml	$.001 \times 10^{-12}$	.0008	1×10^{-16} uci/ml	.04	ANL

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

CONTINUOUS AIR SAMPLES

Month: Dec. 1983

Sample Number #6

Date of Collection Dec. 83

Location of Sampler Approx. 2 miles south of mill

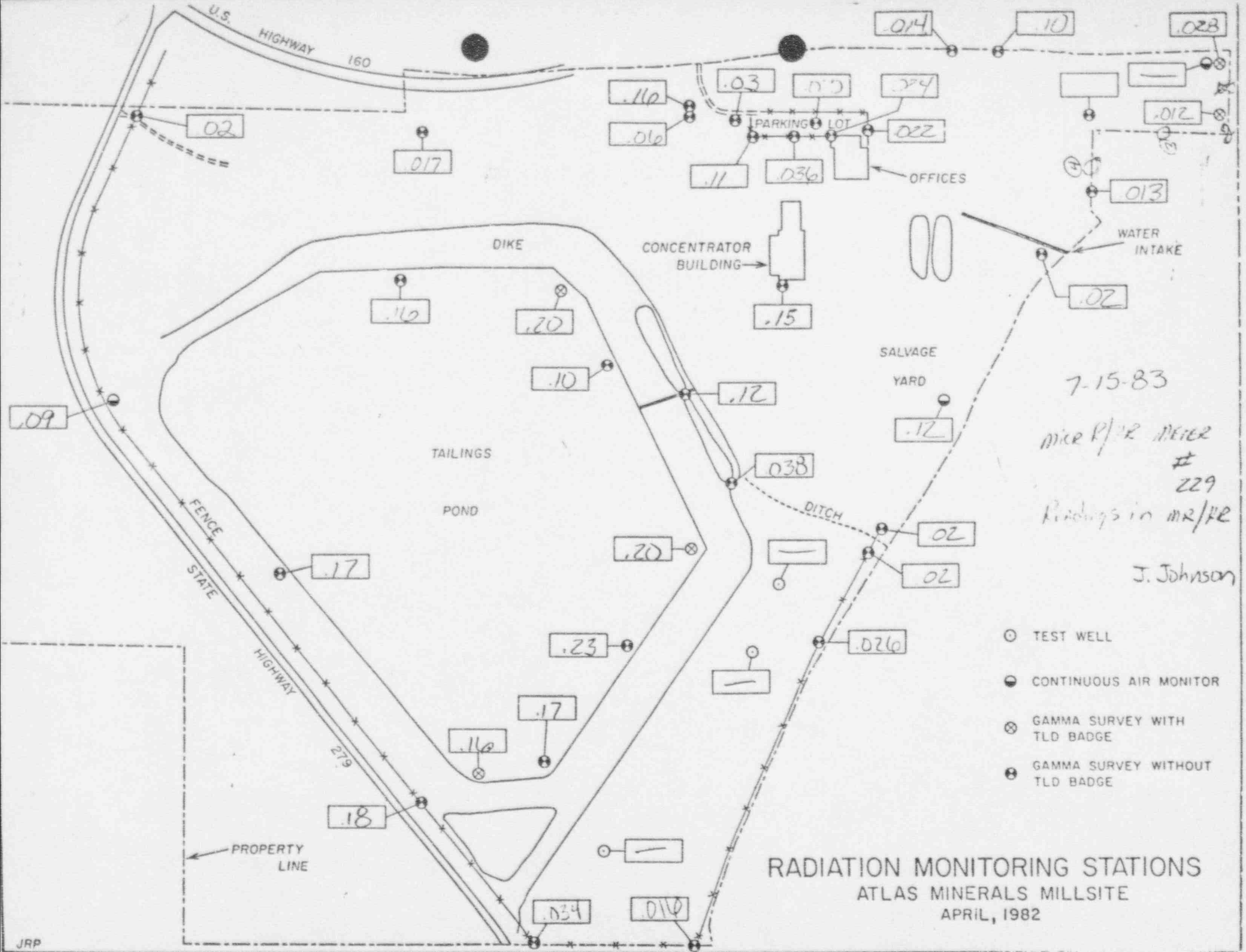
Name of Sampler Collector Jay Johnson

Radionuclide	MPC	Concentration uci/ml	Error Estimate	LLD uci/ml	%MPC	Name / Date / Assay
U-Nat	5×10^{-12} uci/ml	$.009 \times 10^{-12}$	.0009	1×10^{-16} uci/ml	.19	ANL
Rn^{222}	30×10^{-10} uci/ml	$.70 \times 10^{-10}$	.40	2×10^{-10} uci/ml	2.3	JAJ
Pb^{210}	4×10^{-12} uci/ml	$.044 \times 10^{-12}$	.005	1×10^{-15} uci/ml	1.09	ANL
	Quarter:					
Th-230	8×10^{-14} uci/ml	0	.28	1×10^{-16} uci/ml	0	ANL
Ra-226	3×10^{-12} uci/ml	$.002 \times 10^{-12}$	.0008	1×10^{-16} uci/ml	.07	ANL

GAMMA SURVEY OF THE

TAILINGS POND AND PERIMETER

3rd Qtr 1983

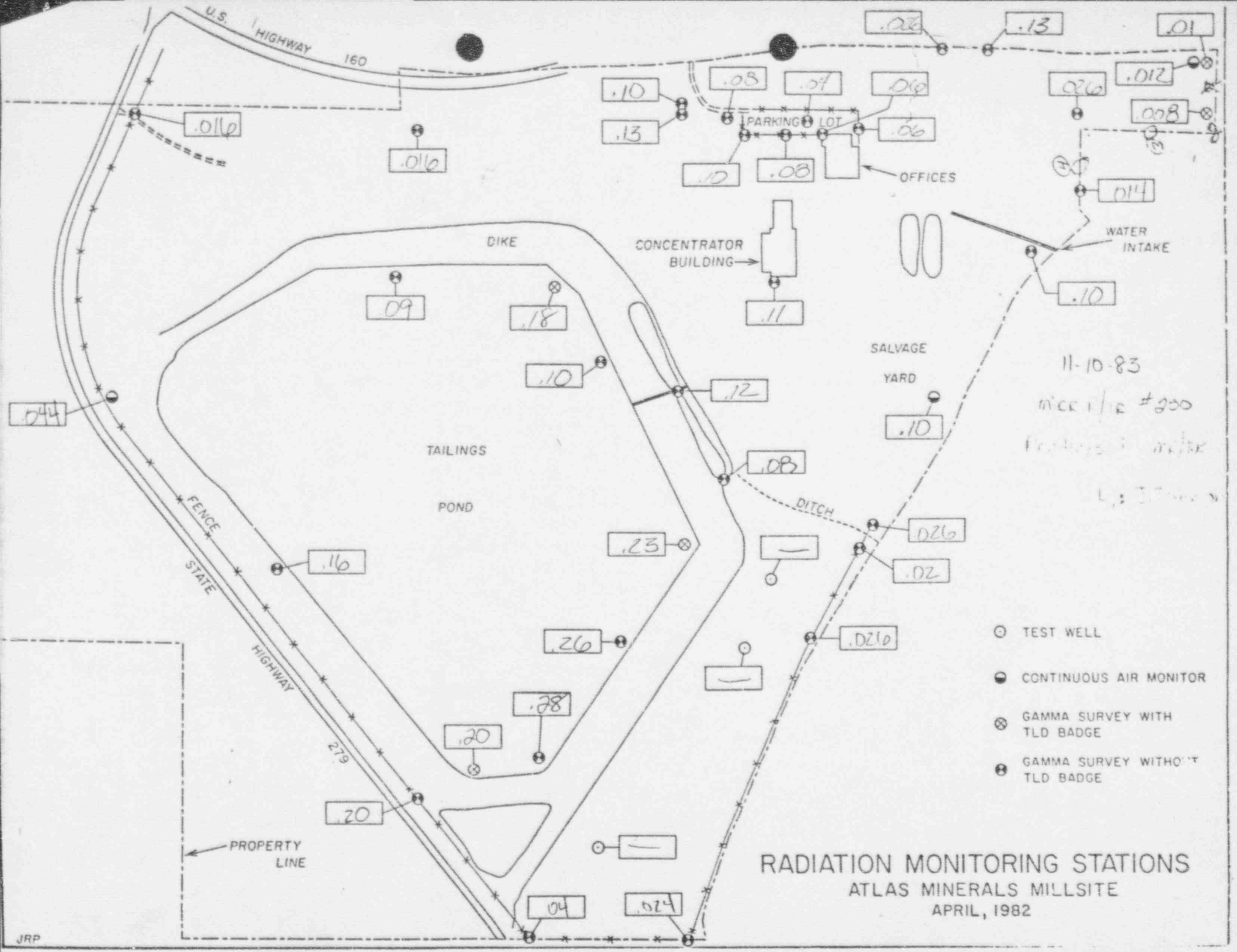


RADIATION MONITORING STATIONS
ATLAS MINERALS MILLSITE
APRIL, 1982

GAMMA SURVEY OF THE

TAILINGS POND AND PERIMETER

4th Qtr 1983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.022
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PARKING LOT
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OFFICES
.0116
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WATER INTAKE
.10
DIKE
CONCENTRATOR BUILDING
.11
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SALVAGE YARD
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TAILINGS POND
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DITCH
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.23
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FENCE
STATE HIGHWAY 279
.26
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.20
.020
.20
PROPERTY LINE
.04
.024
TEST WELL
CONTINUOUS AIR MONITOR
GAMMA SURVEY WITH TLD BADGE
GAMMA SURVEY WITHOUT TLD BADGE
RADIATION MONITORING STATIONS
ATLAS MINERALS MILLSITE
APRIL, 1982
JRP

11-10-83

SURFACE WATER RESULTS

FOR THE COLORADO RIVER

3rd Qtr 1983

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

Month July

JAS
OLE
[illegible]
11-22-83

Name of Sampler River above mill
Date and Time Sample Was Collected July 21, 1983 1429 hrs.
Location of Sample Above mill
Sampling Method Used (Bailed - Pumped) Bailed
The Amount of Water to be Removed Prior to Sampling -
Name of Sampler J. Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	L.L.D.	Name of Assayer
Gross Beta-Gamma		8-15-83	1×10^{-8}	6×10^{-9}	------	ANL
U-nat	3×10^{-5} uci/ml	9-7-83	2.80×10^{-8}	2×10^{-9}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	8-30-83	1.93×10^{-9}	2.9×10^{-10}	1×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	9-9-83	1.1×10^{-11}	1.38×10^{-10}	1×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml					ANL
Po-210	7×10^{-7} uci/ml					ANL

Common Ion and Trace Metals

	Date of Analysis	Concentration	Error Estimate	L.L.D.	Name of Assayer
K+				.001 PPM	ANL
Na+				.001 PPM	ANL
Cl-				.40 PPM	ANL
SO_4				.21 PPM	ANL
NO_3				.01 PPM	ANL
Fe				.001 PPM	ANL
Mn				.01 PPM	ANL
As				.10 PPM	ANL
Se				.50 PPM	ANL
Cu				.01 PPM	ANL
TDS				1.0 PPM	ANL
pH				.10 units	ANL
Conductivity				10 umhos	ANL

ATLAS MINERALS

JAJ
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H2283

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

Month July

Name of Sampler River 1/4 below
Date and Time Sample Was Collected July 21, 1983 1438 hrs
Location of Sample 1/4 mile below
Sampling Method Used (Bailed - Pumped) Bailed
The Amount of Water to be Removed Prior to Sampling -
Name of Sampler J. Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	(uCi/ml) L.L.D.	Name of Assayer
Gross Beta-Gamma		8-15-83	8×10^{-9}	6×10^{-9}	-------	ANL
U-nat	3×10^{-5} uci/ml	9-7-83	8.80×10^{-9}	1.14×10^{-9}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	8-30-83	2.51×10^{-9}	3.6×10^{-10}	7×10^{-11}	ANL
Th-230	2×10^{-6} uci/ml	9-9-83	7.42×10^{-10}	1.23×10^{-10}	7×10^{-11}	ANL
Pb-210	1×10^{-7} uci/ml					ANL
Po-210	7×10^{-7} uci/ml					ANL

Common Ion and Trace Metals

	Date of Analysis	Concentration	Error Estimate	L.L.D.	Name of Assayer
K+				.001 PPM	ANL
Na+				.001 PPM	ANL
Cl-				.40 PPM	ANL
SO_4				.21 PPM	ANL
NO_3				.01 PPM	ANL
Fe				.001 PPM	ANL
Mn				.01 PPM	ANL
As				.10 PPM	ANL
Se				.50 PPM	ANL
Cu				.01 PPM	ANL
TDS				1.0 PPM	ANL
pH				.10 units	ANL
Conductivity				10 umhos	ANL

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

Month July

JAJ
Reg.
H2283

Name of Sampler . River 1/2 below
Date and Time Sample Was Collected July 21, 1983
Location of Sample 1/2 mile below
Sampling Method Used (Bailed - Pumped) bailed
The Amount of Water to be Removed Prior to Sampling -
Name of Sampler J. Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	(uCi/ml) L.L.D.	Name of Assayer
Gross Beta-Gamma		8-15-83	1.0×10^{-8}	6×10^{-9}	------	ANL
U-nat	3×10^{-5} uci/ml	9-7-83	1.00×10^{-8}	1.3×10^{-9}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	8-30-83	2.29×10^{-9}	3.4×10^{-10}	3×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	9-9-83	4.84×10^{-10}	9.3×10^{-11}	4.9×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml					ANL
Po-210	7×10^{-7} uci/ml					ANL

Common Ion and Trace Metals

	Date of Analysis	Concentration	Error Estimate	L.L.D.	Name of Assayer
K+				.001 PPM	ANL
Na+				.001 PPM	ANL
Cl-				.40 PPM	ANL
SO_4				.21 PPM	ANL
NO_3				.01 PPM	ANL
Fe				.001 PPM	ANL
Mn				.01 PPM	ANL
As				.10 PPM	ANL
Se				.50 PPM	ANL
Cu				.01 PPM	ANL
TDS				1.0 PPM	ANL
pH				.10 units	ANL
Conductivity				10 umhos	ANL

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

Month July

JAS
REG
112283

Name of Sampler River 1 below
Date and Time Sample Was Collected July 21, 1983 1510 hrs
Location of Sample 1 mile below
Sampling Method Used (Bailed - Pumped) bailed
The Amount of Water to be Removed Prior to Sampling
Name of Sampler J. Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	uCi/ml L.L.D.	Name of Assayer
Gross Beta-Gamma		8-15-83	3×10^{-7}	1×10^{-8}	--------	ANL
U-nat	3×10^{-5} uci/ml	9-7-83	6.49×10^{-9}	8.9×10^{-10}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	8-30-83	1.69×10^{-9}	2.6×10^{-10}	2×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	9-9-83	3.35×10^{-10}	8.8×10^{-11}	1×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml					ANL
Po-210	7×10^{-7} uci/ml					ANL

Common Ion and Trace Metals

	Date of Analysis	Concentration	Error Estimate	L.L.D.	Name of Assayer
K+				.001 PPM	ANL
Na+				.001 PPM	ANL
Cl-				.40 PPM	ANL
SO_4				.21 PPM	ANL
NO_3				.01 PPM	ANL
Fe				.001 PPM	ANL
Mn				.01 PPM	ANL
As				.10 PPM	ANL
Se				.50 PPM	ANL
Cu				.01 PPM	ANL
TDS				1.0 PPM	ANL
pH				.10 units	ANL
Conductivity				10 umhos	ANL

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

Month July

JAJ
RF3
1/2283

Name of Sampler .River 5 below
Date and Time Sample Was Collected July 21, 1983 1505 hrs
Location of Sample 5 miles below
Sampling Method Used (Bailed - Pumped) bailed
The Amount of Water to be Removed Prior to Sampling
Name of Sampler J. Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	L.L.D.	Name of Assayer
Gross Beta-Gamma		8-15-83	4×10^{-9}	5×10^{-9}	------	ANL
U-nat	3×10^{-5} uci/ml	9-7-83	5.66×10^{-9}	8.5×10^{-10}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	8-30-83	1.65×10^{-9}	3.4×10^{-10}	3×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	9-9-83	1.38×10^{-10}	8.2×10^{-11}	1×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml					ANL
Po-210	7×10^{-7} uci/ml					ANL

Common Ion and Trace Metals

	Date of Analysis	Concentration	Error Estimate	L.L.D.	Name of Assayer
K^+				.001 PPM	ANL
Na^+				.001 PPM	ANL
Cl^-				.40 PPM	ANL
SO_4				.21 PPM	ANL
NO_3				.01 PPM	ANL
Fe				.001 PPM	ANL
Mn				.01 PPM	ANL
As				.10 PPM	ANL
Se				.50 PPM	ANL
Cu				.01 PPM	ANL
TDS				1.0 PPM	ANL
pH				.10 units	ANL
Conductivity				10 umhos	ANL

MILES MINERALS

JAJ
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11283

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

Month July

Name of Sampler River 10 below
Date and Time Sample Was Collected July 21, 1983 1454 hrs
Location of Sample 10 miles below
Sampling Method Used (Bailed - Pumped) bailed
The Amount of Water to be Removed Prior to Sampling -
Name of Sampler J. Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	L.L.D.	Name of Assayer
Gross Beta-Gamma		8-15-83	1×10^{-8}	6×10^{-9}	-------	ANL
U-nat	3×10^{-5} uci/ml	9-7-83	8.50×10^{-9}	9.2×10^{-10}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	8-30-83	1.63×10^{-9}	2.9×10^{-10}	2×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	9-9-83	5.87×10^{-10}	8.0×10^{-11}	5×10^{-11}	ANL
Pb-210	1×10^{-7} uci/ml					ANL
Po-210	7×10^{-7} uci/ml					ANL

Common Ion and Trace Metals

	Date of Analysis	Concentration	Error Estimate	L.L.D.	Name of Assayer
K+				.001 PPM	ANL
Na+				.001 PPM	ANL
Cl-				.40 PPM	ANL
SO_4				.21 PPM	ANL
NO_3				.01 PPM	ANL
Fe				.001 PPM	ANL
Mn				.01 PPM	ANL
As				.10 PPM	ANL
Se				.50 PPM	ANL
Cu				.01 PPM	ANL
TDS				1.0 PPM	ANL
pH				.10 units	ANL
Conductivity				10 umhos	ANL

JAJ
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MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

MONTH August

Name of Sampler River Above Mill
Date and Time Sample Was Collected August 1983
Location of Sample · Above Mill
Sampling Method Used (Bailed - Pumped) Bailed
The Amount of Water to be Removed Prior to Sampling -------
The Name of Sampler Dale Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	(uCi/ml) Error Estimate	(uCi/ml) L.L.D.	Name of Assayer
Gross Beta-Gamma		9/2/83	1×10^{-8}	7×10^{-9}	1×10^{-8}	ANL
U-nat	3×10^{-5} uci/ml	9/16/83	0.00	3.39×10^{-9}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	9/6/83	1.25×10^{-9}	2.7×10^{-10}	2×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	9/23/83	6.79×10^{-10}	2.3×10^{-10}	2×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml	9/23/83	3.6×10^{-9}	1.5×10^{-9}	2×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	9/9/83	0.00	5.0×10^{-10}	1×10^{-9}	ANL

Common Ion and Trace Metals

	Date of Analysis	Concentration	Error Estimate	L.L.D.	Name of Assayer
K	9/26/83	19.8		.001 PPM	ANL
Na	9/27/83	68.0		.001 PPM	ANL
Fe	9/27/83	90.0		.001PPM	ANL
Mn	9/27/83	1.58		.01 PPM	ANL
As	10/11/83	0.006		.002PPM	ANL
Se	10/11/83	< 0.002		.002 PPM	ANL
Cu	9/27/83	0.10		.01 PPM	ANL
Cl	9/29/83	10.0		.4 PPM	ANL
SO_4	9/28/83	132		.21 PPM	ANL
NO_3	9/30/83	0.462		.01 PPM	ANL
TDS	9/27/83	611		1.0 PPM	ANL
PH	8/17/83	8.21			JAJ
Conductivity	8/17/83	800 umhos		10 umhos	JAJ

JAJ
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MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

MONTH August

Name of Sampler River 1/4 Below
Date and Time Sample Was Collected August 1983
Location of Sample ¼ mile below mill
Sampling Method Used (Bailed - Pumped) Bailed
The Amount of Water to be Removed Prior to Sampling ------
The Name of Sampler Dale Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	(uCi/ml) Error Estimate	(uCi/ml) L.L.D.	Name of Assayer
Gross Beta-Gamma		9/2/83	2×10^{-8}	8×10^{-8}	1×10^{-8}	ANL
U-nat	3×10^{-5} uci/ml	9/16/83	1.19×10^{-8}	4×10^{-10}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	9/6/83	1.34×10^{-9}	2.7×10^{-10}	2×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	9/23/83	1.20×10^{-9}	1.4×10^{-10}	9×10^{-11}	ANL
Pb-210	1×10^{-7} uci/ml	9/23/83	5.31×10^{-9}	1.16×10^{-9}	2×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	9/9/83	0.00	3.3×10^{-9}	6×10^{-10}	ANL

Common Ion and Trace Metals

	Date of Analysis	Concentration	Error Estimate	L.L.D.	Name of Assayer
K	9/26/83	15.4		.001 PPM	ANL
Na	9/27/83	76.0		.001 PPM	ANL
Fe	9/27/83	65.0		.001PPM	ANL
Mn	9/27/83	1.12		.01 PPM	ANL
As	10/11/83	0.006		.002PPM	ANL
Se	10/11/83	< 0.002		.002 PPM	ANL
Cu	9/27/83	0.07		.01 PPM	ANL
Cl	9/29/83	11.5		.4 PPM	ANL
SO_4	9/28/83	118		.21 PPM	ANL
NO_3	9/30/83	0.462		.01 PPM	ANL
TDS	9/27/83	647		1.0 PPM	ANL
PH	8-17-83	8.21			JAJ
Conductivity	8-17-83	800 umhos		10 umhos	JAJ

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MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

MONTH August

Name of Sampler River 1/2 Mile Below
Date and Time Sample Was Collected August 1983
Location of Sample ½ mile below mill
Sampling Method Used (Bailed - Pumped) Bailed
The Amount of Water to be Removed Prior to Sampling ------
The Name of Sampler Dale Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	(uCi/ml) Error Estimate	(uCi/ml) L.L.D.	Name of Assayer
Gross Beta-Gamma		9/2/83	2×10^{-8}	7×10^{-9}	1×10^{-8}	ANL
U-nat	3×10^{-5} uci/ml	9/16/83	0.00	3.39×10^{-9}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	9/6/83	1.19×10^{-9}	2.6×10^{-10}	2×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	9/23/83	2.56×10^{-10}	1.17×10^{-10}	1×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml	9/23/83	5.0×10^{-10}	1.1×10^{-9}	2×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	9/9/83	0.00	1.0×10^{-9}	6×10^{-10}	ANL

Common Ion and Trace Metals

	Date of Analysis	Concentration	Error Estimate	L.L.D.	Name of Assayer
K	9/26/83	16.5		.001 PPM	ANL
Na	9/27/83	71		.001 PPM	ANL
Fe	9/27/83	50.0		.001PPM	ANL
Mn	9/27/83	0.89		.01 PPM	ANL
As	10/11/83	0.006		.002PPM	ANL
Se	10/11/83	< 0.002		.002 PPM	ANL
Cu	9/27/83	0.06		.01 PPM	ANL
Cl	9/29/83	42.5		.4 PPM	ANL
SO_4	9/28/83	108		.21 PPM	ANL
NO_3	9/30/83	0.287		.01 PPM	ANL
TDS	9/27/83	681		1.0 PPM	ANL
PH	8/17/83	8.31			JAJ
Conductivity	8/17/83	900 umhos		10 umhos	JAJ

JAJ OCC RMA 111483

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

MONTH August

Name of Sampler River 1 below
Date and Time Sample Was Collected August 1983
Location of Sample 1 mile below mill
Sampling Method Used (Bailed - Pumped) Bailed
The Amount of Water to be Removed Prior to Sampling -------
The Name of Sampler Dale Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	(uCi/ml) Error Estimate	(uCi/ml) L.L.D.	Name of Assayer
Gross Beta-Gamma		9/2/83	2×10^{-8}	$8x10^{-9}$	$1x10^{-8}$	ANL
U-nat	3×10^{-5} uci/ml	9/16/83	4.74×10^{-9}	$3.0x10^{-10}$	$3x10^{-9}$	ANL
Ra-226	3×10^{-8} uci/ml	9/6/83	1.09×10^{-9}	$2.7x10^{-10}$	$3x10^{-10}$	ANL
Th-230	2×10^{-6} uci/ml	9/23/83	3.61×10^{-10}	$9.7x10^{-11}$	$1x10^{-10}$	ANL
Pb-210	1×10^{-7} uci/ml	9/23/83	4.5×10^{-9}	$1.3x10^{-9}$	$2x10^{-9}$	ANL
Po-210	7×10^{-7} uci/ml	9/9/83	0.00	$6.9x10^{-10}$	$1x10^{-9}$	ANL

Common Ion and Trace Metals

	Date of Analysis	Concentration	Error Estimate	L.L.D.	Name of Assayer
K	9/26/83	14.3		.001 PPM	ANL
Na	9/27/83	68.0		.001 PPM	ANL
Fe	9/27/83	55.0		.001PPM	ANL
Mn	9/27/83	1.03		.01 PPM	ANL
As	10/11/83	0.005		.002PPM	ANL
Se	10/11/83	< 0.002		.002 PPM	ANL
Cu	9/27/83	0.06		.01 PPM	ANL
Cl	9/29/83	111		.4 PPM	ANL
SO_4	9/28/83	154		.21 PPM	ANL
NO_3	9/30/83	0.238		.01 PPM	ANL
TDS	9/27/83	675		1.0 PPM	ANL
PH	8/17/83	8.23			JAJ
Conductivity	8/17/83	800 umhos		10 umhos	JAJ

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

MONTH August

JAJ
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11-14-83

Name of Sampler River 5 Below
Date and Time Sample Was Collected August 1983
Location of Sample 5 miles below mill
Sampling Method Used (Bailed - Pumped) Bailed
The Amount of Water to be Removed Prior to Sampling -----
The Name of Sampler Dale Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	(uCi/ml) Error Estimate	(uCi/ml) L.L.D.	Name of Assayer
Gross Beta-Gamma		9/2/83	1×10^{-8}	7×10^{-9}	1×10^{-8}	ANL
U-nat	3×10^{-5} uci/ml	9/16/83	4.74×10^{-9}	3.0×10^{-10}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	9/6/83	9.26×10^{-10}	2.46×10^{-10}	2×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	9/23/83	1.29×10^{-9}	1.7×10^{-10}	1×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml	9/23/83	3.7×10^{-9}	1.3×10^{-9}	2×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	9/9/83	0.00	8.8×10^{-10}	2×10^{-9}	ANL

Common Ion and Trace Metals

	Date of Analysis	Concentration	Error Estimate	L.L.D.	Name of Assayer
K	9/26/83	14.3		.001 PPM	ANL
Na	9/27/83	64.0		.001 PPM	ANL
Fe	9/27/83	55.0		.001PPM	ANL
Mn	9/27/83	1.04		.01 PPM	ANL
As	10/11/83	0.005		.002PPM	ANL
Se	10/11/83	< 0.002		.002 PPM	ANL
Cu	9/27/83	0.06		.01 PPM	ANL
Cl	9/29/83	9.5		.4 PPM	ANL
SO_4	9/28/83	88.5		.21 PPM	ANL
NO_3	9/30/83	0.251		.01 PPM	ANL
TDS	9/27/83	657		1.0 PPM	ANL
PH	8/17/83	8.26			JAJ
Conductivity	8/17/83	800 umhos		10 umhos	JAJ

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MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

MONTH August

Name of Sampler River 10 below
Date and Time Sample Was Collected August 1983
Location of Sample 10 miles below mill
Sampling Method Used (Bailed - Pumped) Bailed
The Amount of Water to be Removed Prior to Sampling ------
The Name of Sampler Dale Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	(uCi/ml) Error Estimate	(uCi/ml) L.L.D.	Name of Assayer
Gross Beta-Gamma		9/2/83	1×10^{-8}	7×10^{-9}	1×10^{-8}	ANL
U-nat	3×10^{-5} uci/ml	9/16/83	4.06×10^{-9}	2.7×10^{-10}	3×10^{-9}	ANL
Ra-226	$3 \ 10^{-8}$ uci/ml	9/6/83	1.22×10^{-9}	2.7×10^{-10}	2×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	9/23/83	3.31×10^{-10}	1.2×10^{-10}	2×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml	9/23/83	2.3×10^{-9}	1.1×10^{-9}	2×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	9/9/83	Lost in Process			ANL

Common Ion and Trace Metals

	Date of Analysis	Concentration	Error Estimate	L.L.D.	Name of Assayer
K	9/26/83	11.0		.001 PPM	ANL
Na	9/27/83	60.0		.001 PPM	ANL
Fe	9/27/83	35.0		.001PPM	ANL
Mn	9/27/83	0.76		.01 PPM	ANL
As	10/11/83	0.004		.002PPM	ANL
Se	10/11/83	< 0.002		.002 PPM	ANL
Cu	9/27/83	0.04		.01 PPM	ANL
Cl	9/29/83	114		.4 PPM	ANL
SO_4	9/28/83	31.8		.21 PPM	ANL
NO_3	9/30/83	0.225		.01 PPM	ANL
TDS	9/27/83	649		1.0 PPM	ANL
PH	8/17/83	8.21			JAJ
Conductivity	8/17/83	800 umhos		10 umhos	JAJ

ATLAS MINERALS

JAJ
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MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

MONTH September

Name of Sampler River Above Mill
Date and Time Sample Was Collected September 1983
Location of Sample Above Mill
Sampling Method Used (Bailed - ~~Pumped~~) Bailed
The Amount of Water to be Removed Prior to Sampling -------
The Name of Sampler D. Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	(uCi/ml) Error Estimate	L.L.D.	Name of Assayer
Gross Beta-Gamma		10-5-83	7.6×10^{-8}	9.1×10^{-9}	N.A.	ANL
U-nat	3×10^{-5} uci/ml	10-13-83	3.39×10^{-9}	1.7×10^{-10}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	10-10-83	9.15×10^{-10}	2.63×10^{-10}	3×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	10-16-83	2.50×10^{-10}	1.03×10^{-10}	1×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml					ANL
Po-210	7×10^{-7} uci/ml					ANL

Common Ion and Trace Metals

	Date of Analysis	Concentration	Error Estimate	L.L.D.	Name of Assayer
K+				.001 PPM	ANL
Na+				.001 PPM	ANL
Cl-				.40 PPM	ANL
SO_4				.21 PPM	ANL
NO_3				.01 PPM	ANL
Fe				.001 PPM	ANL
Mn				.01 PPM	ANL
As				.10 PPM	ANL
Se				.50 PPM	ANL
Cu				.01 PPM	ANL
TDS				1.0 PPM	ANL
pH				.10 units	ANL
Conductivity				10 umhos	ANL

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

MONTH September

JAS DCE RF 111483

Name of Sampler River 1/4 Below
Date and Time Sample Was Collected September 1983
Location of Sample ½ mile below mill
Sampling Method Used (Bailed - ~~Pumped~~) Bailed
The Amount of Water to be Removed Prior to Sampling ------
The Name of Sampler D. Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	(uCi/ml) Error Estimate	L.L.D.	Name of Assayer
Gross Beta-Gamma		10-5-83	4.3×10^{-9}	5.4×10^{-9}	N.A.	ANL
U-nat	3×10^{-5} uci/ml	10-13-83	1.56×10^{-8}	5×10^{-10}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	10-10-83	5.43×10^{-10}	1.93×10^{-10}	3×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	10-16-83	2.01×10^{-10}	1.76×10^{-10}	2×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml					ANL
Po-210	7×10^{-7} uci/ml					ANL

Common Ion and Trace Metals

	Date of Analysis	Concentration	Error Estimate	L.L.D.	Name of Assayer
K^+				.001 PPM	ANL
Na^+				.001 PPM	ANL
Cl^-				.40 PPM	ANL
SO_4				.21 PPM	ANL
NO_3				.01 PPM	ANL
Fe				.001 PPM	ANL
Mn				.01 PPM	ANL
As				.10 PPM	ANL
Se				.50 PPM	ANL
Cu				.01 PPM	ANL
TDS				1.0 PPM	ANL
pH				.10 units	ANL
Conductivity				10 umhos	ANL

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

MONTH September

JAS DLE R&B 111483

Name of Sampler River 1/2 below
Date and Time Sample Was Collected September 1983
Location of Sample ½ mile below mill
Sampling Method Used (Bailed - Pumped) Bailed
The Amount of Water to be Removed Prior to Sampling ------
The Name of Sampler D. Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	(uCi/ml) Error Estimate	L.L.D.	Name of Assayer
Gross Beta-Gamma		10-5-83	4.7×10^{-9}	5.4×10^{-9}	N.A.	ANL
U-nat	3×10^{-5} uci/ml	10-13-83	9.48×10^{-9}	4.1×10^{-10}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	10-10-83	5.60×10^{-10}	2.25×10^{-10}	3×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	10-16-83	1.60×10^{-10}	7.60×10^{-11}	2×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml					ANL
Po-210	7×10^{-7} uci/ml					ANL

Common Ion and Trace Metals

	Date of Analysis	Concentration	Error Estimate	L.L.D.	Name of Assayer
K+				.001 PPM	ANL
Na+				.001 PPM	ANL
Cl-				.40 PPM	ANL
SO_4				.21 PPM	ANL
NO_3				.01 PPM	ANL
Fe				.001 PPM	ANL
Mn				.01 PPM	ANL
As				.10 PPM	ANL
Se				.50 PPM	ANL
Cu				.01 PPM	ANL
TDS				1.0 PPM	ANL
pH				.10 units	ANL
Conductivity				10 umhos	ANL

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

MONTH September

JAJ DLE RFS 11483

Name of Sampler River 1 Below
Date and Time Sample Was Collected September 1983
Location of Sample 1 mile below mill
Sampling Method Used (Bailed - ~~Pumped~~) Bailed
The Amount of Water to be Removed Prior to Sampling ------
The Name of Sampler D. Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	(uCi/ml) Error Estimate	L.L.D.	Name of Assayer
Gross Beta-Gamma		10-5-83	7.6×10^{-9}	5.6×10^{-9}	N.A.	ANL
U-nat	3×10^{-5} uci/ml	10-13-83	5.42×10^{-9}	2.7×10^{-10}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	10-10-83	2.26×10^{-10}	2.00×10^{-10}	3×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	10-16-83	1.02×10^{-10}	7.6×10^{-10}	2×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml					ANL
Po-210	7×10^{-7} uci/ml					ANL

Common Ion and Trace Metals

	Date of Analysis	Concentration	Error Estimate	L.L.D.	Name of Assayer
K+				.001 PPM	ANL
Na+				.001 PPM	ANL
Cl-				.40 PPM	ANL
SO_4				.21 PPM	ANL
NO_3				.01 PPM	ANL
Fe				.001 PPM	ANL
Mn				.01 PPM	ANL
As				.10 PPM	ANL
Se				.50 PPM	ANL
Cu				.01 PPM	ANL
TDS				1.0 PPM	ANL
pH				.10 units	ANL
Conductivity				10 umhos	ANL

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

MONTH September

JAJ
DLE
RS3
111483

Name of Sampler River 5 below
Date and Time Sample Was Collected September 1983
Location of Sample 5 miles below mill
Sampling Method Used (Bailed - ~~Pumped~~) Bailed
The Amount of Water to be Removed Prior to Sampling------
The Name of Sampler D. Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	(uCi/ml) Error Estimate	L.L.D.	Name of Assayer
Gross Beta-Gamma		10-5-83	6.6×10^{-9}	5.5×10^{-9}	N.A.	ANL
U-nat	3×10^{-5} uci/ml	10-13-83	5.42×10^{-9}	2.7×10^{-10}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	10-10-83	5.04×10^{-10}	2.05×10^{-10}	3×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	10-16-83	1.7×10^{-10}	8.3×10^{-11}	1×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml					ANL
Po-210	7×10^{-7} uci/ml					ANL

Common Ion and Trace Metals

	Date of Analysis	Concentration	Error Estimate	L.L.D.	Name of Assayer
K+				.001 PPM	ANL
Na+				.001 PPM	ANL
Cl-				.40 PPM	ANL
SO_4				.21 PPM	ANL
NO_3				.01 PPM	ANL
Fe				.001 PPM	ANL
Mn				.01 PPM	ANL
As				.10 PPM	ANL
Se				.50 PPM	ANL
Cu				.01 PPM	ANL
TDS				1.0 PPM	ANL
pH				.10 units	ANL
Conductivity				10 umhos	ANL

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

MONTH September

JAJ
DLE
R44
1148J

Name of Sampler River 10 below
Date and Time Sample Was Collected September 1983
Location of Sample 10 miles below mill
Sampling Method Used (Bailed - ~~Pumped~~) bailed
The Amount of Water to be Removed Prior to Sampling --------
The Name of Sampler D. Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	(uCi/ml) Error Estimate	L.L.D.	Name of Assayer
Gross Beta-Gamma		10-5-83	7.5×10^{-9}	5.5×10^{-9}	N.A.	ANL
U-nat	3×10^{-5} uci/ml	10-13-83	5.42×10^{-9}	2.7×10^{-10}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	10-10-83	4.38×10^{-10}	2.32×10^{-10}	3×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	10-16-83	1.62×10^{-10}	9.0×10^{-11}	1×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml					ANL
Po-210	7×10^{-7} uci/ml					ANL

Common Ion and Trace Metals

	Date of Analysis	Concentration	Error Estimate	L.L.D.	Name of Assayer
K+				.001 PPM	ANL
Na+				.001 PPM	ANL
Cl-				.40 PPM	ANL
SO_4				.21 PPM	ANL
NO_3				.01 PPM	ANL
Fe				.001 PPM	ANL
Mn				.01 PPM	ANL
As				.10 PPM	ANL
Se				.50 PPM	ANL
Cu				.01 PPM	ANL
TDS				1.0 PPM	ANL
pH				.10 units	ANL
Conductivity				10 umhos	ANL

SURFACE WATER RESULTS

FOR THE COLORADO RIVER

4TH Qtr. 1983

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

Month October

JAJ
OLE
RK
2-3-84

Name of Sample Above Mill
Date and Time Sample was collected
Location of Sample Above Mill
Sampling Method Used (Bailed - Pumped) Bailed
The Amount of Water to be Removed Prior to Sampling -----
Name of Sampler Dale Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	uCi/ml L.L.D.	Name of Assayer
Gross Beta-Gamma		10-31-83	$1X10^{-8}$	$6X10^{-9}$		
U-Nat	$3x10^{-5}$ uci/ml	11-16-83	$2.18X10^{-8}$	$0.04x10^{-8}$	$3x10^{-9}$ uci/ml	AN
Ra-226	$3x10^{-8}$uci/ml	11-9-83	1.02×10^{-9}	0.22×10^{-9}	$2x10^{-10}$uci/ml	AN
Th-230	$2x10^{-6}$uci/ml	11-14-83	4.20×10^{-10}	$0.97x10^{-10}$	$7x10^{-11}$uci/ml	AN
Pb-210	$1x10^{-7}$uci/ml	11-23-83	0	$1.71x10^{-9}$	$3x10^{-9}$uci/ml	AN
Po-210	$7x10^{-7}$ uci/ml	11-7-83	$3.22x10^{-10}$	$7.41x10^{-10}$	$1x10^{-9}$uci/ml	AN

Common Ion and Trace Metals

	Date of Analysis	mg/l Concentration	Error Estimate	L.L.D.	Name of Assayer
As	1-16-84	0.002		0.002 PPM	ANL
Cu	11-30-83	0.02		0.01 PPM	ANL
Fe	11-30-83	4.1		0.001 PPM	ANL
K	12-7-83	5		0.001 PPM	ANL
Mn	11-30-83	0.09		0.01 PPM	ANL
Na	12-7-83	115		0.001 PPM	ANL
Se	1-17-84	< 0.005		0.005 PPM	ANL
Cl	12-9-83	128		0.4 PPM	ANL
NO_3	12-15-83	1.47		0.01 PPM	ANL
SO_4	12-13-83	300		0.21 PPM	ANL
TDS	11-30-83	906		1.0 PPM	ANL
Conductivity	10-19-83	1000 umhos		Units	JAJ
Ph	10-19-83	8.13			JAJ

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

Month October

JAJ DLE RSB 2-3-84

Name of Sample 1/4 Below
Date and Time Sample was collected
Location of Sample ¼ Mile below mill
Sampling Method Used (Bailed - Pumped) Bailed
The Amount of Water to be Removed Prior to Sampling ---
Name of Sampler Dale Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	uCi/ml L.L.D.	Name of Assayer
Gross Beta-Gamma		10-31-83	2×10^{-8}	7×10^{-9}	3×10^{-9}	ANL
U-Nat	3×10^{-5} uci/ml	11-16-83	1.90×10^{-8}	0.05×10^{-8}	2×10^{-10}	ANL
Ra-226	3×10^{-8} uci/ml	11-9-83	5.91×10^{-10}	2.14×10^{-10}	3×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	11-14-83	1.76×10^{-10}	1.59×10^{-10}	4×10^{-9}	ANL
Pb-210	1×10^{-7} uci/ml	11-23-83	0	2.24×10^{-9}	1×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	11-7-83	0	7.87×10^{-10}		ANL

Common Ion and Trace Metals

	Date of Analysis	mg/l Concentration	Error Estimate	L.L.D.	Name of Assayer
As	1-16-84	0.003		0.002 PPM	ANL
Cu	11-30-83	0.02		0.01 PPM	ANL
Fe	11-30-83	6.8		0.001 PPM	ANL
K	12-7-83	6		0.001 PPM	ANL
Mn	11-30-83	0.14		0.01 PPM	ANL
Na	12-7-83	118		0.001 PPM	ANL
Se	1-17-84	< 0.005		0.005 PPM	ANL
Cl	12-9-83	123		0.4 PPM	ANL
NO_3	12-15-83	0.90		0.01 PPM	ANL
SO_4	12-13-83	281		0.21 PPM	ANL
TDS	11-30-83	1128		1.0 PPM	ANL
Conductivity	10-19-83	1100 umhos			JAJ
Ph	10-19-83	8.21 umhos			JAJ

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

Month October

Name of Sample 1/2 below
Date and Time Sample was collected
Location of Sample ½ mile below mill
Sampling Method Used (Bailed - Pumped) Bailed
The Amount of Water to be Removed Prior to Sampling ----
Name of Sampler Dale Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	uCi/ml L.L.D.	Name of Assayer
Gross Beta-Gamma		10-31-83	3×10^{-8}	7×10^{-9}		ANL
U-Nat	3×10^{-5} uci/ml	11-16-83	1.37×10^{-8}	0.04×10^{-8}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	11-9-83	6.31×10^{-10}	1.89×10^{-10}	2×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	11-14-83	2.58×10^{-10}	1.28×10^{-10}	1×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml	11-23-83	0	1.66×10^{-9}	3×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	11-7-83	3.3×10^{-10}	6.21×10^{-10}	9×10^{-10}	ANL

Common Ion and Trace Metals

	Date of Analysis	mg/l Concentration	Error Estimate	L.L.D.	Name of Assayer
As	1-16-84	0.004		0.002 PPM	ANL
Cu	11-30-83	0.02		0.01 PPM	ANL
Fe	11-30-83	4.4		0.001 PPM	ANL
K	12-7-83	5		0.001 PPM	ANL
Mn	11-30-83	0.10		0.01 PPM	ANL
Na	12-7-83	112		0.001 PPM	ANL
Se	1-17-84	< 0.005		0.005PPM	ANL
Cl	12-9-83	123		0.4 PPM	ANL
NO_3	12-15-83	1.02		0.01 PPM	ANL
SO_4	12-13-83	276		0.21 PPM	ANL
TDS	11-30-83	843		1.0 PPM	ANL
Conductivity	10-19-83	1000			JAJ
Ph	10-19-83	8.21			JAJ

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

Month October

Name of Sample 1 below
Date and Time Sample was collected
Location of Sample 1 mile below mill
Sampling Method Used (Bailed - Pumped) Bailed
The Amount of Water to be Removed Prior to Sampling -----
Name of Sampler Dale Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	uCi/ml L.L.D.	Name of Assayer
Gross Beta-Gamma		10-31-83	1×10^{-8}	6×10^{-9}		
U-Nat	3×10^{-5} uci/ml	11-16-83	2.57×10^{-8}	0.04×10^{-8}	3×10^{-9} uci/ml	A
Ra-226	3×10^{-8} uci/ml	11-9-83	7.51×10^{-10}	2.23×10^{-10}	2×10^{-10} uci/ml	A
Th-230	2×10^{-6} uci/ml	11-14-83	1.81×10^{-10}	0.62×10^{-10}	6×10^{-11} uci/ml	A
Pb-210	1×10^{-7} uci/ml	11-23-83	0	1.60×10^{-9}	3×10^{-9} uci/ml	A
Po-210	7×10^{-7} uci/ml	11- 7-83	1.01×10^{-9}	0.85×10^{-9}	1×10^{-9} uxi/ml	A

Common Ion and Trace Metals

	Date of Analysis	mg/l Concentration	Error Estimate	L.L.D.	Name of Assayer
As	1-16-84	0.002		0.002 PPM	ANL
Cu	11-30-83	0.02		0.01 PPM	ANL
Fe	11-30-83	6.2		0.001 PPM	ANL
K	12-7-83	5		0.001 PPM	ANL
Mn	11-30-83	0.11		0.01 PPM	ANL
Na	12-7-83	113		0.001 PPM	ANL
Se	1-17-84	<0.005		0.005 PPM	ANL
Cl	12-9-83	118		0.4 PPM	ANL
NO_3	12-15-83	0.96		0.01 PPM	ANL
SO_4	12-13-83	299		0.21 PPM	ANL
TDS	11-30-83	900		1.0 PPM	ANL
Conductivity	10-19-83	1000 umhos		Units	JAJ
Ph	10-19-83	8.23			JAJ

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

Month October

Name of Sample 5 below
Date and Time Sample was collected
Location of Sample 5 miles below mill
Sampling Method Used (Bailed - Pumped) Bailed
The Amount of Water to be Removed Prior to Sampling ----
Name of Sampler Dale Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	uCi/ml L.L.D.	Name of Assayer
Gross Beta-Gamma		10-31-83	1×10^{-8}	6×10^{-9}	3×10^{-9}	ANL
U-Nat	3×10^{-5} uci/ml	11-16-83	1.52×10^{-8}	0.04×10^{-8}	2×10^{-10}	ANL
Ra-226	3×10^{-8} uci/ml	11-9-83	4.59×10^{-10}	1.76×10^{-10}	6×10^{-11}	ANL
Th-230	2×10^{-6} uci/ml	11-14-83	1.26×10^{-10}	0.72×10^{-10}	3×10^{-9}	ANL
Pb-210	1×10^{-7} uci/ml	11-23-83	0	1.81×10^{-9}	1×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	11-7-83	1.61×10^{-10}	7.04×10^{-10}		ANL

Common Ion and Trace Metals

	Date of Analysis	mg/l Concentration	Error Estimate	L.L.D.	Name of Assayer
As	1-16-84	< 0.002		0.002 PPM	ANL
Cu	11-30-83	0.02		0.01 PPM	ANL
Fe	11-30-83	4.9		0.001 PPM	ANL
K	12-7-83	6		0.001 PPM	ANL
Mn	11-30-83	0.10		0.01 PPM	ANL
Na	12-7-83	118		0.001 PPM	ANL
Se	1-17-84	< 0.005		0.005 PPM	ANL
Cl	12-9-83	123		0.4 PPM	ANL
NO_3	12-15-83	0.87		0.01 PPM	ANL
SO_4	12-13-83	317		0.21 PPM	ANL
TDS	11-30-83	826		1.0 PPM	ANL
Conductivity	10-19-83	1000 umhos			JAJ
Ph	10-19-83	8.21			JAJ

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

Month October

Name of Sample 10 below
Date and Time Sample was collected
Location of Sample 10 miles below mill
Sampling Method Used (Bailed - Pumped) Bailed
The Amount of Water to be Removed Prior to Sampling -----
Name of Sampler Dale Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	uCi/ml L.L.D.	Name of Assayer
Gross Beta-Gamma		10-31-83	1×10^{-8}	6×10^{-9}		ANL
U-Nat	3×10^{-5} uci/ml	11-16-83	1.54×10^{-8}	0.04×10^{-8}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	11-9-83	5.36×10^{-10}	1.95×10^{-10}	2×10^{-11}	ANL
Th-230	2×10^{-6} uci/ml	11-14-83	2.24×10^{-10}	0.87×10^{-10}	6×10^{-11}	ANL
Pb-210	1×10^{-7} uci/ml	11-23-83	0	1.49×10^{-9}	3×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	11-7-83	0	5.27×10^{-10}	9×10^{-10}	ANL

Common Ion and Trace Metals

	Date of Analysis	mg/l Concentration	Error Estimate	L.L.D.	Name of Assayer
As	1-16-84	0.003		0.002 PPM	ANL
Cu	11-30-83	0.02		0.011 PPM	ANL
Fe	11-30-83	6.6		0.001 PPM	ANL
K	12-7-83	18		0.001 PPM	ANL
Mn	11-30-83	0.14		0.01 PPM	ANL
Na	12-7-83	660		0.001 PPM	ANL
Se	1-17-84	< 0.005		0.005 PPM	ANL
Cl	12-9-83	118		0.4 PPM	ANL
NO_3	12-15-83	0.90		0.01 PPM	ANL
SO_4	12-13-83	293		0.21 PPM	ANL
TDS	11-30-83	838		1.0 PPM	ANL
Conductivity	10-19-83	1000 umhos			JAJ
Ph	10-19-83	8.26			JAJ

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

MONTH November

JAJ
DLC
R58
1-23

Name of Sampler River Above
Date and Time Sample was Collected 11-11-83
Location of Sample Above Mill
Sampling Method used (Bailed - ~~Pumped~~) Bailed
The Amount of Water to be Removed Prior to Sampling -------
Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uCi/ml	Error Estimate	uCi/ml L.L.D.	Name of Ass
Gross Beta-Gamma		11/30/83	8×10^{-9}	7×10^{-9}	1×10^{-8}	ANL
U-nat	3×10^{-5} uCi/ml	12/9/83	6.07×10^{-9}	0.32×10^{-9}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uCi/ml	12/13/83	1.26×10^{-9}	0.29×10^{-9}	2×10^{-9}	ANL
Th-230	2×10^{-6} uCi/ml	12/16/83	3.79×10^{-10}	0.78×10^{-10}	1×10^{-10}	ANL

JAJ
OLE
R33

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

MONTH November

Name of Sampler River 1/4 Below
Date and Time Sample was Collected 11-11-83
Location of Sample ¼ mile below mill
Sampling Method used (Bailed - ~~Pumped~~) Bailed
The Amount of Water to be Removed Prior to Sampling ------
Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uCi/ml	Error Estimate	uCi/ml L.L.D.	Name of Ass
Gross Beta-Gamma		11/30/83	5×10^{-9}	7×10^{-9}	1×10^{-8}	ANL
U-nat	3×10^{-5} uCi/ml	12/9/83	9.48×10^{-9}	0.57×10^{-9}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uCi/ml	12/13/83	1.44×10^{-9}	0.33×10^{-9}	3×10^{-9}	ANL
Th-230	2×10^{-6} uCi/ml	12/16/83	3.46×10^{-10}	1.59×10^{-10}	2×10^{-10}	ANL

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

MONTH November

JAJ
DLE
RDS

Name of Sampler River 1/2 Below
Date and Time Sample was Collected 11-11-83
Location of Sample ½ mile below mill
Sampling Method used (Bailed - ~~Pumped~~) Bailed
The Amount of Water to be Removed Prior to Sampling ----
Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uCi/ml	Error Estimate	uCi/ml L.L.D.	Name of Ass
Gross Beta-Gamma		11/30/83	9×10^{-9}	7×10^{-9}	1×10^{-8}	ANL
U-nat	3×10^{-5} uCi/ml	12/9/83	8.12×10^{-9}	0.51×10^{-9}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uCi/ml	12/13/83	1.66×10^{-9}	0.31×10^{-9}	2×10^{-10}	ANL
Th-230	2×10^{-6} uCi/ml	12/16/83	2.01×10^{-10}	0.65×10^{-10}	9×10^{-11}	ANL

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

MONTH November

JAS
DLG
RSH

Name of Sampler River 1 Below
Date and Time Sample was Collected 11-11-83
Location of Sample 1 mile below mill
Sampling Method used (Bailed - ~~Pumped~~) Bailed
The Amount of Water to be Removed Prior to ~~Sampling~~ ------
Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uCi/ml	Error Estimate	uCi/ml L.L.D.	Name of Ass
Gross Beta-Gamma		11/30/83	9×10^{-9}	7×10^{-9}	1×10^{-8}	ANL
U-nat	3×10^{-5} uCi/ml	12/9/83	1.22×10^{-8}	0.07×10^{-8}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uCi/ml	12/13/83	1.34×10^{-9}	0.28×10^{-9}	3×10^{-10}	ANL
Th-230	2×10^{-6} uCi/ml	12/16/83	2.26×10^{-10}	0.78×10^{-10}	1×10^{-10}	ANL

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

MONTH November

Name of Sampler River 5 below
Date and Time Sample was Collected 11-11-83
Location of Sample 5 miles below mill
Sampling Method used (Bailed - ~~Pumped~~) Bailed
The Amount of Water to be Removed Prior to Sampling -------
Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uCi/ml	Error Estimate	uCi/ml L.L.D.	Name of Ass
Gross Beta-Gamma		11/30/83	9×10^{-9}	7×10^{-9}	1×10^{-8}	ANL
U-nat	3×10^{-5} uCi/ml	12/9/83	5.37×10^{-9}	0.37×10^{-9}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uCi/ml	12/13/83	1.44×10^{-9}	0.29×10^{-9}	3×10^{-9}	ANL
Th-230	2×10^{-6} uCi/ml	12/16/83	7.09×10^{-10}	1.63×10^{-10}	1×10^{-10}	ANL

JAJ
OLG
REG

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

MONTH November

Name of Sampler River 10 Below
Date and Time Sample was Collected 11-11-83
Location of Sample 10 miles below mill
Sampling Method used (Bailed - ~~Pumped~~) Bailed
The Amount of Water to be Removed Prior to Sampling -------
Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uCi/ml	Error Estimate	uCi/ml L.L.D.	Name of Ass
Gross Beta-Gamma		11/30/83	4×10^{-9}	7×10^{-9}	1×10^{-8}	ANL
U-nat	3×10^{-5} uCi/ml	12/9/83	9.71×10^{-9}	0.61×10^{-9}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uCi/ml	12/13/83	1.38×10^{-9}	0.33×10^{-9}	3×10^{-10}	ANL
Th-230	2×10^{-6} uCi/ml	12/16/83	4.12×10^{-10}	0.53×10^{-10}	6×10^{-11}	ANL

ATLAS MINERALS

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

MONTH December

Name of Sampler River Above Mill
Date and Time Sample Was Collected Dec. 1983
Location of Sample Above Mill
Sampling Method Used (Bailed-Pumped) Bailed
The Amount of Water to be Removed prior to Sampling ----
The name of Sampler Dale Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uCi/ml	Error Estimate	L.L.D.	Name of Assaye
Gross Beta-Gamma		1-25-84	5×10^{-9}	7×10^{-9}	1×10^{-8}	ANL
U-nat	3×10^{-5} uCi/ml	2-7-84	1.02×10^{-8}	0.13×10^{-8}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uCi/ml	1-30-84	2.35×10^{-10}	0.65×10^{-10}	6×10^{-11}	ANL
Th-230	2×10^{-6} uCi/ml	2-7-84	2.90×10^{-10}	0.65×10^{-10}	4×10^{-11}	ANL

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

Month November

JAJ DLE 2-2-84

Name of Sampler ATP-1-S
Date and Time Sample was collected 11-1-83
Location of Sample ATP-1-S
Sampling Method Used (Bailed - Pumped) Pumped
The Amount of Water to be Removed Prior to Sampling 44.78 gal.
Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	uCi/ml L.L.D.	Name of Assayer
Gross Beta-Gamma		11-23-83	1.1×10^{-6}	0.47×10^{-6}		ANL
U-Nat	3×10^{-5} uci/ml	11-29-83	5.42×10^{-9}	0.23×10^{-9}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	12-13-83	1.03×10^{-9}	1.13×10^{-9}	2×10^{-9}	ANL
Th-230	2×10^{-6} uci/ml	12-13-83	3.70×10^{-10}	8.71×10^{-10}	1×10^{-9}	ANL
Pb-210	1×10^{-7} uci/ml	12-29-83	2.15×10^{-10}	7.88×10^{-10}	1×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	12-10-83	0	9.81×10^{-10}	2×10^{-9}	ANL

Common Ion and Trace Metals

	Date of Analysis	mg/l Concentration	Error Estimate	PPM L.L.D.	Name of Assayer
As	1-16-84	< 0.002		0.002	ANL
Se	1-17-84	< 0.005		0.005	ANL
Fe	11-30-83			0.001	ANL
Cu	12-7-83			0.01	ANL
Mn	11-30-83			0.001	ANL
K	12-7-83			0.001	ANL
Na	12-7-83			0.21	ANL
SO_4	12-13-83	4,233		0.21	ANL
TDS	11-30-83	109,772		0.21	ANL
NO_3	12-15-83	< 0.01		0.01	ANL
Cl	12-9-83	59,830		0.4	ANL
Conductivity	11-1-83	170,000 umhos			JAJ
Ph	11-1-83	7.41			JAJ

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

Month November

Name of Sampler ATP-3
Date and Time Sample was collected 11-1-83
Location of Sample ATP-3
Sampling Method Used (Bailed - Pumped) Pumped
The Amount of Water to be Removed Prior to Sampling 30.28 gal.
Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	uCi/ml L.L.D.	Name of Assayer
Gross Beta-Gamma		11-23-83	2.3×10^{-8}	0.53×10^{-8}		ANL
U-Nat	3×10^{-5} uci/ml	11-29-83	1.06×10^{-8}	0.04×10^{-8}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	12-13-83	3.95×10^{-10}	1.62×10^{-10}	2×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	12-13-83	3.12×10^{-10}	1.52×10^{-10}	2×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml	12-29-83	3.57×10^{-10}	8.99×10^{-10}	1×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	12-10-83	0	8.93×10^{-10}	2×10^{-9}	ANL

Common Ion and Trace Metals

	Date of Analysis	mg/l Concentration	Error Estimate	PPM L.L.D.	Name of Assayer
As	1-16-84	0.002		0.002	ANL
Se	1-17-84	< 0.005		0.005	ANL
Fe	11-30-83			0.001	ANL
Cu	12-7-83			0.01	ANL
Mn	11-30-83			0.01	ANL
K	12-7-83			0.001	ANL
Na	12-7-83			0.001	ANL
SO_4	12-13-83	224		0.21	ANL
TDS	11-30-83	1,629		0.21	ANL
NO_3	12-15-83	< 0.01		0.01	ANL
Cl	12-9-83	485		0.4	ANL
Conductivity	11-1-83	2300 umhos			~~JAJ~~
Ph	11-1-83	7.83			JAJ

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

Month November

JAJ DLC RCA 2-2-84

Name of Sampler Arches Well
Date and Time Sample was collected 11-1-83
Location of Sample Arches
Sampling Method Used (Bailed - Pumped) Pumped
The Amount of Water to be Removed Prior to Sampling cont.
Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	uCi/ml L.L.D.	Name of Assayer
Gross Beta-Gamma		11-23-83	1.2×10^{-8}	0.44×10^{-8}		ANL
U-Nat	3×10^{-5} uci/ml	11-29-83	0	1.52×10^{-10}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	12-13-83	2.42×10^{-10}	1.25×10^{-10}	1×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	12-13-83	6.98×10^{-10}	1.72×10^{-10}	1×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml	12-29-83	0.93×10^{-10}	8.34×10^{-10}	1×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	12-10-83	0	7.73×10^{-10}	1×10^{-9}	ANL

Common Ion and Trace Metals

	Date of Analysis	mg/l Concentration	Error Estimate	PPM L.L.D.	Name of Assayer
As	1-16-84	< 0.002		0.002	ANL
Se	1-17-84	< 0.005		0.005	ANL
Fe	11-30-83	1.1		0.001	ANL
Cu	12-7-83	0.07		0.01	ANL
Mn	11-30-83	< 0.01		0.01	ANL
K	12-7-83	4		0.001	ANL
Na	12-7-83	60		0.001	ANL
SO_4	12-13-83	158		0.21	ANL
TDS	11-30-83	660		0.21	ANL
NO_3	12-15-83	227		0.01	ANL
Cl	12-9-83	55		0.4	ANL
Conductivity	11-1-83	1000 umhos			JAJ
Ph	11-1-83	7.98			JAJ

ATLAS MINERALS

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

MONTH December

Name of Sampler River 1/4 Mile
Date and Time Sample Was Collected Dec. 1983
Location of Sample ¼ mile below mill
Sampling Method Used (Bailed-Pumped) Bailed
The Amount of Water to be Removed prior to Sampling ----
The name of Sampler Dale Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uCi/ml	Error Estimate	L.L.D.	Name of Assayer
Gross Beta-Gamma		1-25-84	0	7×10^{-9}	1×10^{-8}	ANL
U-nat	3×10^{-5} uCi/ml	2-7-84	1.26×10^{-8}	0.14×10^{-8}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uCi/ml	1-30-84	7.62×10^{-10}	2.30×10^{-10}	2×10^{-10}	ANL
Th-230	2×10^{-6} uCi/ml	2-7-84	1.54×10^{-10}	0.56×10^{-10}	3×10^{-11}	ANL

VEGETATION SAMPLES

For 1983

JAJ
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Pkg
11483

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

Vegetation Report

Year: 1983

Date and Time Collected July 22, 1983

Location of Sample[1] Mill

Type of Sample Vegetation

Name of Sampler Jay Johnson

Radionuclide	Date of Analysis	uCi/kg Wft	Error Estimate	L.L.D.	Name of Assayer
Ra^{226}	9-12-83	9.70×10^{-5}	1.29×10^{-5}	8×10^{-9}	ANL
Pb^{210}	9-23-83	2.68×10^{-4}	4.0×10^{-5}	5×10^{-10}	ANL

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

Vegetation Report

Year: 1983

Date and Time Collected July 22, 1983

Location of Sample Background

Type of Sample Vegetation

Name of Sampler Jay Johnson

Radionuclide	Date of Analysis	uCi/kg Wft	Error Estimate	L.L.D. uCi/g	Name of Assayer
Ra^{226}	9-12-83	1.69×10^{-3}	6.8×10^{-5}	2×10^{-8}	ANL
Pb^{210}	9-23-83	2.17×10^{-3}	1.1×10^{-4}	8×10^{-8}	ANL

SOIL SAMPLES

For 1983

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

SOIL SAMPLE

YEAR 1983

Date of Collection July 22, 1983

Location of Sample Collection Soil #1

Type of Sample Soil

Name of Sampler Jay Johnson

Radionuclide	Date Sample Analyzed	Concentration uCi/g	Error Estimate	L.L.D.	Name of Assayer
U-Nat	9-14-83	2.15×10^{-6}	8×10^{-8}	3×10^{-8} uCi/g	ANL
Ra^{226}	9-8-83	2.41×10^{-6}	1.3×10^{-7}	5×10^{-8} uCi/ml	ANL
As	9-30-83	PPM < 2	N.A.	2.0 PPM	ANL

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

SOIL SAMPLE

YEAR 1983

Date of Collection July 22, 1983

Location of Sample Collection Soil #2

Type of Sample Soil

Name of Sampler Jay Johnson

Radionuclide	Date Sample Analyzed	Concentration uCi/g	Error Estimate	L.L.D.	Name of Assayer
U-Nat	9-14-83	7.11×10^{-5}	2.4×10^{-6}	3×10^{-8} uCi/g	ANL
Ra^{226}	9-8-83	2.32×10^{-5}	4×10^{-8}	5×10^{-8} uCi/ml	ANL
As	9-30-83	PPM < 2	N.A.	2.0 PPM	ANL

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

SOIL SAMPLE

YEAR 1983

Date of Collection July 22, 1983

Location of Sample Collection Soil # 3

Type of Sample Soil

Name of Sampler Jay Johnson

Radionuclide	Date Sample Analyzed	Concentration uCi/g	Error Estimate	L.L.D.	Name of Assayer
U-Nat	9-14-83	5.63×10^{-6}	2.9×10^{-7}	3×10^{-8} uCi/g	ANL
Ra^{226}	9-8-83	2.04×10^{-5}	4×10^{-8}	5×10^{-8} uCi/ml	ANL
As	9-30-83	PPM < 2	N.A.	2.0 PPM	ANL

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

SOIL SAMPLE

YEAR 1983

Date of Collection July 22, 1983

Location of Sample Collection Soil # 4

Type of Sample Soil

Name of Sampler Jay Johnson

Radionuclide	Date Sample Analyzed	Concentration uCi/g	Error Estimate	L.L.D.	Name of Assayer
U-Nat	9-14-83	4.53×10^{-7}	2.4×10^{-8}	3×10^{-8} uCi/g	ANL
Ra^{226}	9-8-83	1.66×10^{-6}	1.1×10^{-7}	5×10^{-8} uCi/ml	ANL
As	9-30-83	PPM < 2	N.A.	2.0 PPM	ANL

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

SOIL SAMPLE

YEAR 1983

Date of Collection July 22, 1983

Location of Sample Collection Soil #5

Type of Sample Soil

Name of Sampler Jay Johnson

Radionuclide	Date Sample Analyzed	Concentration uCi/g	Error Estimate	L.L.D.	Name of Assayer
U-Nat	9-14-83	1.29×10^{-6}	9.3×10^{-7}	3×10^{-8} uCi/g	ANL
Ra^{226}	9-8-83	1.67×10^{-6}	1.1×10^{-7}	5×10^{-8}	ANL
As	9-30-83	PPM < 2	N.A.	2.0 PPM	ANL

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ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

SOIL SAMPLE

YEAR 1983

Date of Collection July 22, 1983

Location of Sample Collection Soil #6

Type of Sample Soil

Name of Sampler Jay Johnson

Radionuclide	Date Sample Analyzed	Concentration uCi/g	Error Estimate	L.L.D.	Name of Assayer
U-Nat	9-14-83	7.45×10^{-7}	5.0×10^{-8}	3×10^{-8} uCi/g	ANL
Ra^{226}	9-8-83	3.77×10^{-7}	5.8×10^{-8}	5×10^{-8} uCi/ml	ANL
As	9-30-83	PPM < 2	N.A.	2.0 PPM	ANL

WIND SPEED AND DIRECTION

FOR RADON GAS SAMPLES

3rd Qtr 1983

WIND SPEED AND DIRECTION

FOR RADON GAS SAMPLES

4th Qtr 1983

RADON GAS SAMPLE

WIND SPEED AND DIRECTIONS

Date: 10-26-83 Time: 15:00

Speed: 1 MPH
Direction: Out of the S 180°

Date: 10-27-83 Time: 08:00

Speed: 1 MPH
Direction Out of the SE 140°

Date: 10-27-83 Time 15:00

Speed: 1 MPH
Direction: Out of the E 90°

Date: 10-28-83 Time: 08:00

Speed: 1 MPH
Direction: Out of the SE 140°

Date: 10-28-83 Time: 15:00

Speed: 1 MPH
Direction: Out of the E 90°

Date: 10-29-83 Time: 08:00

Speed: 1 MPH
Direction: Out of the S 180°

Date: 10-29-83 Time: 15:00

Speed: 1 MPH
Direction: Out of the S 180°

Date: 10-30-83 Time: 08:00

Speed: 1 MPH
Direction: Out of the SE 140°

Date: 10-30-83 Time: 15:00

Speed: 1 MPH
Direction: Out of the SE 140°

Date: 10-31-83 Time: 08:00

Speed: 1 MPH
Direction: Out of the S 180°

Date: 10-31-83 Time: 15:00

Speed: 3 MPH
Direction: Out of the N 0-360°

Date: Time:

Speed:
Direction:

Date Time:

Speed:
Direction:

RADON GAS SAMPLE

WIND SPEED AND DIRECTION

Date: 11/1/83 Time: 0800

Speed: 1 MPH
Direction: Out of the N 0-360°

Date: 11/1/83 Time: 1500

Speed: 2 MPH
Direction: Out of the N 0-360°

Date: 11/2/83 Time: 0800

Speed: 1 MPH
Direction: Out of the SE 104°

Date: 11/2/83 Time: 1500

Speed: 4 MPH
Direction: Out of the NW 320°

Date: 11/3/83 Time: 0800

Speed: 1 MPH
Direction: Out of the SE 140°

Date: 11/3/83 Time: 1500

Speed: 5 MPH
Direction: Out of the NW 320°

Date: 11/4/83 Time: 0800

Speed: 1 MPH
Direction: Out of the SE 140°

Date: 11/4/83 Time: 1500

Speed: 1 MPH
Direction: Out of the SE 140°

Date: 11/5/83 Time: 0800

Speed: 1 MPH
Direction: Out of the N 0-360°

Date: 11/5/83 Time: 1500

Speed: 4 MPH
Direction: Out of the N. 0-360°

Date: 11/6/83 Time: 0800

Speed: 1 MPH
Direction: Out of the SE 140°

Date: 11/6/83 Time: 1500

Speed: 1 MPH
Direction: Out of the S 180°

Date: 11/7/83 Time: 0800

Speed: 1 MPH
Direction: Out of the SE 140°

Date: 11/7/83 Time: 1500

Speed: 10 MPH
Direction: Out of the S 180°

Date: Time:

Speed:
Direction:

Date: Time:

Speed:
Direction:

Date: Time:

Speed:
Direction:

Date: Time:

Speed:
Direction:

RADON GAS SAMPLE

WIND SPEED AND DIRECTIONS

Date: 12/9/83 Time:

Speed:
Direction: Out of order

Date: 12/9/83 Time:

Speed:
Direction: Out of order

Date: 12/10/83Time:

Speed:
Direction: Out of order

Date: 12/10/83 Time:

Speed:
Direction: Out of order

Date: 12/11/83 Time:

Speed:
Direction: Out of order

Date: 12/11/83 Time:

Speed:
Direction: Out of order

Date: 12/12/83 Time: 08:00

Speed: 1 MPH
Direction: Out of the N 0-360°

Date: 12/12/83 Time: 15:00

Speed: 5 MPH
Direction: Out of the NW 300°

Date: 12/13/83 Time: 08:00

Speed: 1 MPH
Direction: Out of the N 0-360°

Date: 12/13/83 Time: 15:00

Speed: 1 MPH
Direction: Out of the N 0-360°

Date: 12/14/83 Time: 08:00

Speed: 1 MPH
Direction: Out of the S 180°

Date: 12/14/83 Time: 15:00

Speed: 2 MPH
Direction: Out of the S 180°

Date: 12/15/83 Time: 08:00

Speed: 1 MPH
Direction: Out of the N 0-360°

Date: 12/15/83 Time: 15:00

Speed: 1 MPH
Direction: Out of the N 0-360°

ATLAS MINERALS

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

MONTH December

Name of Sampler River 1/2 Below
Date and Time Sample Was Collected Dec. 1983
Location of Sample ½ mile below mill
Sampling Method Used (Bailed-Pumped) Bailed
The Amount of Water to be Removed prior to Sampling -----
The name of Sampler Dale Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uCi/ml	Error Estimate	L.L.D.	Name of Assayer
Gross Beta-Gamma		1-25-84	1×10^{-9}	7×10^{-9}	1×10^{-8}	ANL
U-nat	3×10^{-5} uCi/ml	2-7-84	9.82×10^{-9}	1.27×10^{-9}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uCi/ml	1-30-84	6.97×10^{-10}	2.03×10^{-10}	2×10^{-10}	ANL
Th-230	2×10^{-6} uCi/ml	2-7-84	1.61×10^{-10}	0.41×10^{-10}	4×10^{-11}	ANL

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ATLAS MINERALS

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

MONTH December

Name of Sampler River 1 Mile Below
Date and Time Sample Was Collected Dec. 1983
Location of Sample 1 mile below mill
Sampling Method Used (Bailed-Pumped) Bailed
The Amount of Water to be Removed prior to Sampling -----
The name of Sampler Dale Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uCi/ml	Error Estimate	L.L.D.	Name of Assayer
Gross Beta-Gamma		1-25-84	0	7×10^{-9}	1×10^{-8}	ANL
U-nat	3×10^{-5} uCi/ml	2-7-84	9.27×10^{-9}	1.20×10^{-9}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uCi/ml	1-30-83	6.16×10^{-10}	1.76×10^{-10}	2×10^{-10}	ANL
Th-230	2×10^{-6} uCi/ml	2-7-84	1.89×10^{-10}	1.33×10^{-10}	2×10^{-10}	ANL

ATLAS MINERALS

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

MONTH December

JAJ DLC RFS 2-21-84

Name of Sampler River 5 miles below
Date and Time Sample Was Collected Dec. 1983
Location of Sample 5 miles below mill
Sampling Method Used (Bailed-Pumped) Bailed
The Amount of Water to be Removed prior to Sampling ----
The name of Sampler Dale Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uCi/ml	Error Estimate	L.L.D.	Name of Assaye
Gross Beta-Gamma		1-25-84	3×10^{-9}	7×10^{-9}	1×10^{-8}	ANL
U-nat	3×10^{-5} uCi/ml	2-7-84	2.04×10^{-8}	0.16×10^{-8}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uCi/ml	1-30-84	2.91×10^{-9}	0.35×10^{-9}	2×10^{-10}	ANL
Th-230	2×10^{-6} uCi/ml	2-7-84	7.02×10^{-10}	0.81×10^{-10}	5×10^{-11}	ANL

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ATLAS MINERALS

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

MONTH December

Name of Sampler River 10 miles below
Date and Time Sample Was Collected Dec. 1983
Location of Sample 10 miles below
Sampling Method Used (Bailed-Pumped) Bailed
The Amount of Water to be Removed prior to Sampling -----
The name of Sampler Dale Edwards

Radionuclide	M.P.C.	Date of Analysis	Concentration uCi/ml	Error Estimate	L.L.D.	Name of Assaye
Gross Beta-Gamma		1-25-84	8×10^{-9}	7×10^{-9}	1×10^{-8}	ANL
U-nat	3×10^{-5} uCi/ml	2-7-84	1.37×10^{-8}	0.15×10^{-8}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uCi/ml	1-30-84	1.05×10^{-9}	0.21×10^{-9}	1×10^{-10}	ANL
Th-230	2×10^{-6} uCi/ml	2-7-84	3.90×10^{-10}	0.80×10^{-10}	4×10^{-11}	ANL

GROUND WATER RESULTS

3rd Qtr 1983

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

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12-5-83

Monitor Wells

MONTH September

Name of Sampler MW-1
Date and Time Sample Was Collected 9-27-83 1300
Location of Sample MW-1
Sampling Method Used (Bailed - ~~Pumped~~) Bailed
The Amount of Water to be Removed Prior to Sampling 4.80 gal
The Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	L.L.D.	Name of Assayer
Gross Beta-		10-12-83	3×10^{-6}	3×10^{-7}	N.A.	ANL
U-nat	3×10^{-5} uci/ml	10-20-83	2.82×10^{-6}	6×10^{-8}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	10-24-83	1.35×10^{-8}	8×10^{-10}	3×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	10-25-83	1.97×10^{-8}	3.06×10^{-9}	2×10^{-9}	ANL
Pb-210	1×10^{-7} uci/ml	10-29-83	4.3×10^{-8}	4×10^{-9}	4×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	10-17-83	4.6×10^{-8}	4×10^{-9}	1×10^{-9}	ANL

Common Ion and Trace Metals

	Date of Analysis	PPM Concentration	Error Estimate	L.L.D.	Name of Assayer
As	10-31-83	0.05		.001 PPM	ANL
Se	10-31-83	0.21		.001 PPM	ANL
Fe	10-25-83	11.1		.40 PPM	ANL
Mn	10-25-83	6.6		.21 PPM	ANL
Cu	10-25-83	1.05		.01 PPM	ANL
K	10-25-83	282		.001 PPM	ANL
Na	10-25-83	6000		.01 PPM	ANL
Cl	10-12-83	5,200		.10 PPM	ANL
SO_4	10-13-83	9890		.50 PPM	ANL
NO_3	10-29-83	1,160		.01 PPM	ANL
TDS	10-14-83	37,946		1.0 PPM	ANL
PH	9-27-83	7.55		.10 units	JAJ
Conductivity	9-27-83	31,500 umhos		10 umhos	JAJ

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

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12-5-83

Monitor Wells

MONTH September

Name of Sampler MW-1-R
Date and Time Sample Was Collected 9-27-83 1315
Location of Sample MW-1-R
Sampling Method Used (Bailed - ~~Pumped~~) Bailed
The Amount of Water to be Removed Prior to Sampling 11.02 gal
The Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	L.L.D.	Name of Assayer
Gross Beta-		10-12-83	2×10^{-6}	2×10^{-7}	N.A.	ANL
U-nat	3×10^{-5} uci/ml	10-20-83	9.57×10^{-7}	7.9×10^{-8}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	10-24-83	1.44×10^{-8}	9×10^{-10}	3×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	10-25-83	4.48×10^{-7}	8×10^{-9}	8×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml	10-29-83	2.49×10^{-7}	1.13×10^{-8}	6×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	10-17-83	7×10^{-9}	1×10^{-9}	1×10^{-9}	ANL

Common Ion and Trace Metals

	Date of Analysis	PPM Concentration	Error Estimate	L.L.D.	Name of Assayer
As	10-31-83	0.07		.001 PPM	ANL
Se	10-31-83	0.14		.001 PPM	ANL
Fe	10-25-83			.40 PPM	ANL
Mn	10-25-83			.21 PPM	ANL
Cu	10-25-83			.01 PPM	ANL
K	10-25-83			.001 PPM	ANL
Na	10-25-83			.01 PPM	ANL
Cl	10-12-83	2,500		.10 PPM	ANL
SO_4	10-13-83	11,120		.50 PPM	ANL
NO_3	10-29-83	301		.01 PPM	ANL
TDS	10-14-83	19,522		1.0 PPM	ANL
ph	9-27-83	7.33		.10 units	JAJ
Conductivity	9-27-83	20,500 umhos		10 umhos	JAJ

JAJ
DLE
R83
12-5-83

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

MONITOR WELL REPORTS

3rd Quarter 1983

Well # MW-2
Date and Time Sample Was Collected 9-27-83 11:15
Location of Sample South of Tails Pond
Sampling Method Used (Bailed - ~~Pumped~~) Bailed
The Amount of Water to be Removed Prior to Sampling 8.48 gal
Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	L.L.D.	Name of Assayer
Gross Beta-Gamma		10-12-83	$2x10^{-6}$	$2x10^{-7}$		ANL
U-Nat	$3x10^{-5}$ uci/ml	10-20-83	$1.19x10^{-5}$	$5x10^{-7}$	$8x10^{-10}$ uci/ml	ANL
Ra-226	$3x10^{-8}$ uci/ml	10-24-83	$1.08x10^{-8}$	$6x10^{-10}$	$4.9x10^{-10}$ uci/ml	ANL
Th-230	$2x10^{-6}$ uci/ml	10-25-83	$7.74x10^{-8}$	$3.6x10^{-8}$	$3.6x10^{-8}$ $4.9x10^{-10}$ uci/ml	ANL
Pb-210	$1x10^{-7}$ uci/ml	10-29-83	$6x10^{-8}$	$4x10^{-9}$	$3.7x10^{-9}$ uci/ml	ANL
Po-210	$7x10^{-7}$ uci/ml	10-17-83	$2x10^{-9}$	$1x10^{-9}$	$2.0x10^{-9}$ uci/ml	ANL

Common Ion and Trace Metals

	Date of Analysis	Concentration	Error Estimate	L.L.D.	Name of Assayer
K+	10-25-83	238 PPM		.001 PPM	ANL
Na+	10-25-83	4,920 PPM		.001 PPM	ANL
Cl-	10-12-83	2,400 PPM		.40 PPM	ANL
SO_4	10-13-83	11,355 PPM		.21 PPM	ANL
NO_3	10-29-83	540 PPM		.01 PPM	ANL
Fe	10-25-83	328 PPM		.001 PPM	ANL
Mn	10-25-83	27.5 PPM		.01 PPM	ANL
As	10-31-83	.03 PPM		.10 PPM	ANL
Se	10-31-83	.21 PPM		.50 PPM	ANL
Cu	10-25-83	.83 PPM		.01 PPM	ANL
TDS	10-14-83	11,623 PPM		1.0 PPM	ANL
PH	9-27-83	7.26		.10 Units	JAJ
Conductivity	9-27-83	24,500 umhos		10 umhos	JAJ

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

JAJ
DLE
RFT
12-58

Monitor Wells

MONTH September

Name of Sampler MW-2-R
Date and Time Sample Was Collected 9-27-83 1120
Location of Sample MW-2-R
Sampling Method Used (Bailed - ~~Pumped~~) Bailed
The Amount of Water to be Removed Prior to Sampling 3.26 gal
The Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	L.L.D.	Name of Assayer
Gross Beta-		10-12-83	2×10^{-6}	2×10^{-7}	N.A.	ANL
U-nat	3×10^{-5} uci/ml	10-20-83	3.61×10^{-6}	3.3×10^{-7}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	10-24-83	5.33×10^{-8}	1.5×10^{-9}	2×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	10-25-83	4.96×10^{-9}	1.66×10^{-9}	1×10^{-9}	ANL
Pb-210	1×10^{-7} uci/ml	10-29-83	5×10^{-9}	5×10^{-9}	9×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	10-17-83	5×10^{-9}	1×10^{-9}	1×10^{-9}	ANL

Common Ion and Trace Metals

	Date of Analysis	PPM Concentration	Error Estimate	L.L.D.	Name of Assayer
As	10-31-83	0.08		.001 PPM	ANL
Se	10-31-83	0.13		.001 PPM	ANL
Fe	10-25-83			.40 PPM	ANL
Mn	10-25-83			.21 PPM	ANL
Cu	10-25-83			.01 PPM	ANL
K	10-25-83			.001 PPM	ANL
Na	10-25-83			.01 PPM	ANL
Cl	10-12-83	2,100		.10 PPM	ANL
SO_4	10-13-83	8,059		.50 PPM	ANL
NO_3	10-29-83	473		.01 PPM	ANL
TDS	10-14-83	16,788		1.0 PPM	ANL
PH	9-27-83	7.47		.10 units	JAJ
Conductivity	9-27-83	18,000 umhos			JAJ

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

JAJ
DCE
12-5-83

Monitor Wells

MONTH September

Name of Sampler MW-3
Date and Time Sample Was Collected 9-27-83 1100
Location of Sample MW-3
Sampling Method Used (~~Bailed~~ - Pumped) Pumped
The Amount of Water to be Removed Prior to Sampling 17.46 gal
The Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	L.L.D.	Name of Assayer
Gross Beta-		10-12-83	2×10^{-6}	2×10^{-7}	N.A.	ANL
U-nat	3×10^{-5} uci/ml	10-20-83	3.33×10^{-6}	2.4×10^{-7}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	10-24-83	1.23×10^{-8}	8×10^{-10}	2×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	10-25-83	3.83×10^{-9}	6.8×10^{-9}	9×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml	10-29-83	1×10^{-9}	3×10^{-9}	5×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	10-17-83	2×10^{-9}	1×10^{-9}	1×10^{-9}	ANL

Common Ion and Trace Metals

	Date of Analysis	PPM Concentration	Error Estimate	L.L.D.	Name of Assayer
As	10-31-83	0.07		.001 PPM	ANL
Se	10-31-83	0.11		.001 PPM	ANL
Fe	10-25-83	14.6		.40 PPM	ANL
Mn	10-25-83	2.86		.21 PPM	ANL
Cu	10-25-83	0.11		.01 PPM	ANL
K	10-25-83	209		.001 PPM	ANL
Na	10-25-83	4,530		.01 PPM	ANL
Cl	10-12-83	3,000		.10 PPM	ANL
SO_4	10-13-83	11,622		.50 PPM	ANL
NO_3	10-29-83	101		.01 PPM	ANL
TDS	10-14-83	21,465		1.0 PPM	ANL
PH	9-27-83	7.28		.10 units	JAJ
Conductivity	9-27-83	23,000 umhos		10 umhos	JAJ

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

JAJ
OLC
12-5-83

Monitor Wells

MONTH September

Name of Sampler ATP-S-1
Date and Time Sample Was Collected 9-27-83 1030
Location of Sample ATP-S-1
Sampling Method Used (~~Bailed~~ - Pumped) Pumped
The Amount of Water to be Removed Prior to Sampling 44.86 gal.
The Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	L.L.D.	Name of Assayer
Gross Beta-		10-12-83	1×10^{-6}	4×10^{-7}	N.A.	ANL
U-nat	3×10^{-5} uci/ml	10-20-83	4.06×10^{-9}	4.1×10^{-10}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	10-24-83	2.11×10^{-9}	4.9×10^{-10}	4×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	10-25-83	1.48×10^{-10}	3.46×10^{-10}	7×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml	10-29-83	0.00	2×10^{-9}	3×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	10-17-83	0.00	1×10^{-9}	3×10^{-9}	ANL

Common Ion and Trace Metals

	Date of Analysis	PPM Concentration	Error Estimate	L.L.D.	Name of Assayer
As	10-31-83	0.10		.001 PPM	ANL
Se	10-31-83	0.24		.001 PPM	ANL
Fe	10-25-83			.40 PPM	ANL
Mn	10-25-83			.21 PPM	ANL
Cu	10-25-83			.01 PPM	ANL
K	10-25-83			.001 PPM	ANL
Na	10-25-83			.01 PPM	ANL
Cl	10-12-83	110,000		.10 PPM	ANL
SO_4	10-13-83	3,730		.50 PPM	ANL
NO_3	10-29-83	0.006		.01 PPM	ANL
TDS	10-14-83	111,860		1.0 PPM	ANL
PH	9-27-83	7.85		.10 units	JAJ
Conductivity	9-27-83	170,000 umhos		10 umhos	JAJ

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

JAJ
DLE
143
12-5-83

Monitor Wells

MONTH September

Name of Sampler ATP-2-S
Date and Time Sample Was Collected 9-27-83 1130
Location of Sample ATP-2-S
Sampling Method Used (Bailed - Pumped) Pumped
The Amount of Water to be Removed Prior to Sampling 9.89 gal.
The Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	L.L.D.	Name of Assayer
Gross Beta-		10-12-83	4×10^{-6}	4×10^{-7}	N.A.	ANL
U-nat	3×10^{-5} uci/ml	10-20-83	4.05×10^{-6}	2.8×10^{-7}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	10-24-83	1.10×10^{-9}	2.4×10^{-10}	2×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	10-25-83	2.15×10^{-10}	1.81×10^{-9}	3×10^{-9}	ANL
Pb-210	1×10^{-7} uci/ml	10-29-83	0.00	4×10^{-9}	6×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	10-17-83	0.00	1×10^{-9}	2×10^{-9}	ANL

Common Ion and Trace Metals

	Date of Analysis	PPM Concentration	Error Estimate	L.L.D.	Name of Assayer
As	10-31-83	0.07		.001 PPM	ANL
Se	10-31-83	0.23		.001 PPM	ANL
Fe	10-25-83			.40 PPM	ANL
Mn	10-25-83			.21 PPM	ANL
Cu	10-25-83			.01 PPM	ANL
K	10-25-83			.001 PPM	ANL
Na	10-25-83			.01 PPM	ANL
Cl	10-12-83	1,000		.10 PPM	ANL
SO_4	10-13-83	30,500		.50 PPM	ANL
NO_3	10-29-83	221		.01 PPM	ANL
TDS	10-14-83	49,053		1.0 PPM	ANL
PH	9-27-83	7.17		.10 units	JAJ
Conductivity	9-27-83	46,000 umhos		10 umhos	JAJ

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

JAJ
RTS
12,583

Monitor Wells

MONTH September

Name of Sampler ATP-2-D
Date and Time Sample Was Collected 9-27-83 1200
Location of Sample ATP-2-D
Sampling Method Used (~~Bailed~~ - Pumped) Pumped
The Amount of Water to be Removed Prior to Sampling 26.99 gal.
The Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	L.L.D.	Name of Assayer
Gross Beta-		10-12-83	5×10^{-7}	1×10^{-7}	N.A.	ANL
U-nat	3×10^{-5} uci/ml	10-20-83	5.89×10^{-7}	5.6×10^{-8}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	10-24-83	1.72×10^{-9}	3.0×10^{-10}	2×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	10-25-83	6.1×10^{-11}	8.1×10^{-10}	4×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml	10-29-83	3×10^{-9}	2×10^{-9}	3×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	10-17-83	2×10^{-9}	2×10^{-9}	3×10^{-9}	ANL

Common Ion and Trace Metals

	Date of Analysis	PPM Concentration	Error Estimate	L.L.D.	Name of Assayer
As	10-31-83	0.06		.001 PPM	ANL
Se	10-31-83	0.21		.001 PPM	ANL
Fe	10-25-83			.40 PPM	ANL
Mn	10-25-83			.21 PPM	ANL
Cu	10-25-83			.01 PPM	ANL
K	10-25-83			.001 PPM	ANL
Na	10-25-83			.01 PPM	ANL
Cl	10-12-83	1,400		.10 PPM	ANL
SO_4	10-13-83	12,987		.50 PPM	ANL
NO_3	10-29-83	63.7		.01 PPM	ANL
TDS	10-14-83	18,591		1.0 PPM	ANL
PH	9-27-83	7.90		.10 units	JAJ
Conductivity	9-27-83	21,000 umhos		10 umhos	JAJ

ATLAS MINERALS

JAJ
DCE
RFT
12-5-83

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

Monitor Wells

MONTH September

Name of Sampler ATP-3
Date and Time Sample Was Collected 9-27-83 1520
Location of Sample ATP-3
Sampling Method Used (~~Bailed~~ - Pumped) Pumped
The Amount of Water to be Removed Prior to Sampling 33.23 gal
The Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	L.L.D.	Name of Assayer
Gross Beta-		10-12-83	2.7×10^{-8}	8×10^{-9}	N.A.	ANL
U-nat	3×10^{-5} uci/ml	10-20-83	3.09×10^{-8}	7×10^{-10}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	10-24-83	2.92×10^{-9}	3.7×10^{-10}	2×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	10-25-83	2.36×10^{-9}	7.40×10^{-10}	6×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml	10-29-83	1×10^{-9}	1×10^{-9}	2×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	10-17-83	1×10^{-9}	1×10^{-9}	1×10^{-9}	ANL

Common Ion and Trace Metals

	Date of Analysis	PPM Concentration	Error Estimate	L.L.D.	Name of Assayer
As	10-31-83	0.03		.001 PPM	ANL
Se	10-31-83	0.21		.001 PPM	ANL
Fe	10-25-83			.40 PPM	ANL
Mn	10-25-83			.21 PPM	ANL
Cu	10-25-83			.01 PPM	ANL
K	10-25-83			.001 PPM	ANL
Na	10-25-83			.01 PPM	ANL
Cl	10-12-83	340		.10 PPM	ANL
SO_4	10-13-83	214		.50 PPM	ANL
NO_3	10-29-83	0.166		.01 PPM	ANL
TDS	10-14-83	7,440		1.0 PPM	ANL
PH	9-27-83	7.90		.10 units	JAJ
Conductivity	9-27-83	2500 umhos		10 umhos	JAJ

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

JAJ
DLE
1253
12-5-83

Monitor Wells

MONTH September

Name of Sampler Arches Well
Date and Time Sample Was Collected 9-27-83 1500
Location of Sample Arches Well
Sampling Method Used (~~Bailed~~ - Pumped) Pumped
The Amount of Water to be Removed Prior to Sampling Cont.
The Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	L.L.D.	Name of Assayer
Gross Beta-		10-12-83	7×10^{-9}	6×10^{-9}	N.A.	ANL
U-nat	3×10^{-5} uci/ml	10-20-83	0.00	3.39×10^{-9}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	10-24-83	1.24×10^{-10}	1.67×10^{-10}	3×10^{-9}	ANL
Th-230	2×10^{-6} uci/ml	10-25-83	3.24×10^{-10}	5.53×10^{-10}	8×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml	10-29-83	0.00	1×10^{-9}	2×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	10-17-83	0.00	3×10^{-9}	5×10^{-9}	ANL

Common Ion and Trace Metals

	Date of Analysis	PPM Concentration	Error Estimate	L.L.D.	Name of Assayer
As	10-31-83	0.09		.001 PPM	ANL
Se	10-31-83	0.25		.001 PPM	ANL
Fe	10-25-83	1.90		.40 PPM	ANL
Mn	10-25-83	0.07		.21 PPM	ANL
Cu	10-25-83	0.05		.01 PPM	ANL
K	10-25-83	7.5		.001 PPM	ANL
Na	10-25-83	73		.01 PPM	ANL
Cl	10-12-83	100		.10 PPM	ANL
SO_4	10-13-83	153		.50 PPM	ANL
NO_3	10-29-83	2.39		.01 PPM	ANL
TDS	10-14-83	536		1.0 PPM	ANL
PH	9-27-83	8.05		.10 units	JAJ
Conductivity	9-27-83	900 umhos		10 umhos	JAJ

GROUND WATER RESULTS

4th Qtr 1983

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

Month November

JAJ
OLE
FEB
2-2-84

Name of Sampler MW-1
Date and Time Sample was collected 11-1-83
Location of Sample MW-1
Sampling Method Used (Bailed - Pumped) Bailed
The Amount of Water to be Removed Prior to Sampling 3.15 gal.
Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	uCi/ml L.L.D.	Name of Assayer
Gross Beta-Gamma		11-23-83	1.2×10^{-6}	0.13×10^{-6}		ANL
U-Nat	3×10^{-5} uci/ml	11-29-83	2.57×10^{-6}	0.04×10^{-6}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	12-13-83	1.16×10^{-8}	0.08×10^{-8}	2×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	12-13-83	1.47×10^{-8}	0.09×10^{-8}	6×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml	12-29-83	4.75×10^{-8}	4.22×10^{-9}	5×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	12-10-83	2.36×10^{-8}	0.33×10^{-8}	2×10^{-9}	ANL

Common Ion and Trace Metals

	Date of Analysis	mg/l Concentration	Error Estimate	PPM L.L.D.	Name of Assayer
As	1-16-84	0.029		0.002	ANL
Se	1-17-84	0.009		0.005	ANL
Fe	11-30-83	4.0		0.001	ANL
Cu	12-7-83	0.97		0.01	ANL
Mn	11-30-83	5.0		0.01	ANL
K	12-7-83	196		0.001	ANL
Na	12-7-83	5,375		0.001	ANL
SO_4	12-13-83	10,899		0.21	ANL
TDS	11-30-83	31,672		0.21	ANL
NO_3	12-15-83	853		0.01	ANL
Cl	12-9-83	4,029		0.4	ANL
Conductivity	11-1-83	27,000 umhos			JAJ
Ph	11-1-83	7.52			JAJ

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

Month November

JAJ
DLE
RFG
2-2-84

Name of Sampler MW-1R
Date and Time Sample was collected 11-1-83
Location of Sample MW-1-R
Sampling Method Used (Bailed - Pumped) Bailed
The Amount of Water to be Removed Prior to Sampling 11.08 Gal.
Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	uCi/ml L.L.D.	Name of Assayer
Gross Beta-Gamma		11-23-83	8.9×10^{-7}	1.1×10^{-7}		ANL
U-Nat	3×10^{-5} uci/ml	11-29-83	1.32×10^{-6}	0.05×10^{-6}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	12-13-83	7.87×10^{-9}	0.55×10^{-9}	2×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	12-13-83	1.05×10^{-7}	0.03×10^{-7}	2×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml	12-29-83	7.91×10^{-8}	0.35×10^{-8}	2×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	12-10-83	8.56×10^{-9}	1.92×10^{-9}	1×10^{-9}	ANL

Common Ion and Trace Metals

	Date of Analysis	mg/l Concentration	Error Estimate	PPM L.L.D.	Name of Assayer
As	1-16-84	0.012		0.002	ANL
Se	1-17-84	0.006		0.005	ANL
Fe	11-30-83			0.001	ANL
Cu	12-7-83			0.01	ANL
Mn	11-30-83			0.01	ANL
K	12-7-83			0.001	ANL
Na	12-7-83			0.001	ANL
SO_4	12-13-83	8,066		0.21	ANL
TDS	11-30-83	18,622		0.21	ANL
NO_3	12-15-83	232		0.01	ANL
Cl	12-9-83	2,239		0.4	ANL
Conductivity	11-1-83	18,500 umhos			JAJ
Ph	11-1-83	7.35			JAJ

ATLAS MINERALS

MOAB MILL

REGULATORY AFFAIRS DEPARTMENT

RIVER WATER REPORTS

Month November

JAJ DLE 1-2-84

Name of Sampler MW-2
Date and Time Sample was collected 11-1-83
Location of Sample MW-2
Sampling Method Used (Bailed - Pumped) Bailed
The Amount of Water to be Removed Prior to Sampling 7.68 gal.
Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	uCi/ml L.L.D.	Name of Assayer
Gross Beta-Gamma		11-23-83	6.2×10^{-6}	0.29×10^{-6}		ANL
U-Nat	3×10^{-5} uci/ml	11-29-83	1.10×10^{-5}	0.02×10^{-5}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	12-13-83	1.21×10^{-8}	0.07×10^{-8}	2×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	12-13-83	3.25×10^{-7}	0.07×10^{-7}	4×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml	12-29-83	2.45×10^{-7}	1.06×10^{-8}	1×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	12-10-83	6.80×10^{-8}	0.64×10^{-8}	2×10^{-9}	ANL

Common Ion and Trace Metals

	Date of Analysis	mg/l Concentration	Error Estimate	PPM L.L.D.	Name of Assayer
As	1-16-84	0.051		0.002	ANL
Se	1-17-84	0.005		0.005	ANL
Fe	11-30-83	24.0		0.001	ANL
Cu	12-7-83	0.24		0.01	ANL
Mn	11-30-83	10.8		0.01	ANL
K	12-7-83	115		0.001	ANL
Na	12-7-83	4,250		0.001	ANL
SO_4	12-13-83	10,732		0.21	ANL
TDS	11-30-83	22,404		0.21	ANL
NO_3	12-15-83	398		0.01	ANL
Cl	12-9-83	2,017		0.4	ANL
Conductivity	11-1-83	18,500 µmhos			JAJ
Ph	11-1-83	7.24			JAJ

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JAJ
DLE
RCS
2-2-84

Name of Sampler MW-2R
Date and Time Sample was collected 11-1-83
Location of Sample MW-2R
Sampling Method Used (Bailed - Pumped) Bailed
The Amount of Water to be Removed Prior to Sampling 2.73 Gal.
Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	uCi/ml L.L.D.	Name of Assayer
Gross Beta-Gamma		11-23-83	2.7×10^{-6}	0.16×10^{-6}		ANL
U-Nat	3×10^{-5} uci/ml	11-29-83	5.75×10^{-6}	0.20×10^{-6}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	12-13-83	2.22×10^{-8}	0.09×10^{-8}	2×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	12-13-83	1.98×10^{-8}	0.14×10^{-8}	2×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml	12-29-83	9.49×10^{-8}	0.42×10^{-8}	2×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	12-10-83	7.20×10^{-9}	1.83×10^{-9}	2×10^{-9}	ANL

Common Ion and Trace Metals

	Date of Analysis	mg/l Concentration	Error Estimate	PPM L.L.D.	Name of Assayer
As	1-16-84	0.029		0.002	ANL
Se	1-17-84	0.007		0.005	ANL
Fe	11-30-83			0.001	ANL
Cu	12-7-83			0.01	ANL
Mn	11-30-83			0.01	ANL
K	12-7-83			0.001	ANL
Na	12-7-83			0.001	ANL
SO_4	12-13-83	5,199		0.21	ANL
TDS	11-30-83	10,752		0.21	ANL
NO_3	12-15-83	475		0.01	ANL
Cl	12-9-83	2,200		0.4	ANL
Conductivity	11-1-83	18,500 umhos			JAJ
Ph	11-1-83	7.40			JAJ

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JAJ DLE RES 2-2-84

Name of Sampler MW-3
Date and Time Sample was collected 11-1-83
Location of Sample MW-3
Sampling Method Used (Bailed - Pumped) Pumped
The Amount of Water to be Removed Prior to Sampling 17.02 gal.
Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	uCi/ml L.L.D.	Name of Assayer
Gross Beta-Gamma		11-23-83	1.5×10^{-6}	0.13×10^{-6}		ANL
U-Nat	3×10^{-5} uci/ml	11-29-83	1.97×10^{-6}	0.05×10^{-6}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	12-13-83	3.95×10^{-10}	1.57×10^{-10}	2×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	12-13-83	3.98×10^{-9}	0.83×10^{-9}	5×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml	12-29-83	2.41×10^{-9}	0.83×10^{-9}	1×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	12-10-83	9.92×10^{-10}	17.7×10^{-10}	3×10^{-9}	ANL

Common Ion and Trace Metals

	Date of Analysis	mg/l Concentration	Error Estimate	PPM L.L.D.	Name of Assayer
As	1-16-84	0.002		0.002	ANL
Se	1-17-84	0.017		0.005	ANL
Fe	11-30-83	1.3		0.001	ANL
Cu	12-7-83	0.14		0.01	ANL
Mn	11-30-83	1.25		0.01	ANL
K	12-7-83	1.85		0.001	ANL
Na	12-7-83	4,990		0.001	ANL
SO_4	12-13-83	11,799		0.21	ANL
TDS	11-30-83	22,080		0.21	ANL
NO_3	12-15-83	90		0.01	ANL
Cl	12-9-83	1,914		0.4	ANL
Conductivity	~~11-1-83~~	22,000 umhos			~~JAJ~~
Ph	11-1-83	7.22			JAJ

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Name of Sampler ATP-2S
Date and Time Sample was collected 11-1-83
Location of Sample ATP-2-5
Sampling Method Used (Bailed - Pumped) Pumped
The Amount of Water to be Removed Prior to Sampling 9.73 gal.
Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	uCi/ml L.L.D.	Name of Assayer
Gross Beta-Gamma		11-23-83	3.2×10^{-6}	0.31×10^{-6}		ANL
U-Nat	3×10^{-5} uci/ml	11-29-83	4.48×10^{-6}	0.13×10^{-6}	3×10^{-9}	ANL
Ra-226	3×10^{-8} uci/ml	12-13-83	8.33×10^{-10}	2.08×10^{-10}	2×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	12-13-83	1.17×10^{-9}	0.64×10^{-9}	9×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml	12-29-83	1.10×10^{-9}	1.34×10^{-9}	2×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	12-10-83	4.11×10^{-10}	10.7×10^{-10}	2×10^{-9}	ANL

Common Ion and Trace Metals

	Date of Analysis	mg/l Concentration	Error Estimate	PPM L.L.D.	Name of Assayer
As	1-16-84	< 0.002		0.002	ANL
Se	1-17-84	0.045		0.005	ANL
Fe	11-30-83			0.001	ANL
Cu	12-7-83			0.01	ANL
Mn	11-30-83			0.01	ANL
K	12-7-83			0.001	ANL
Na	12-7-83			0.001	ANL
SO_4	12-13-83	32,800		0.001	ANL
TDS	11-30-83	50,266		0.21	ANL
NO_3	12-15-83	315		0.01	ANL
Cl	12-9-83	468		0.4	ANL
Conductivity	11-1-83	44,000 umhos			JAJ
p h	11-1-83	7.13			JAJ

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JAJ
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2-2-84

Name of Sampler ATP-2D
Date and Time Sample was collected 11-1-83
Location of Sample ATP-2D
Sampling Method Used (Bailed - Pumped) Pumped
The Amount of Water to be Removed Prior to Sampling 26.69 gal.
Name of Sampler Jay Johnson

Radionuclide	M.P.C.	Date of Analysis	Concentration uci/ml	Error Estimate	uCi/ml L.L.D.	Name of Assayer
Gross Beta-Gamma		11-23-83	1.4×10^{-6}	0.14×10^{-6}		ANL
U-Nat	3×10^{-5} uci/ml	11-29-83	1.90×10^{-6}	0.05×10^{-6}	1×10^{-10}	ANL
Ra-226	3×10^{-8} uci/ml	12-13-83	1.12×10^{-9}	0.23×10^{-9}	2×10^{-10}	ANL
Th-230	2×10^{-6} uci/ml	12-13-83	1.92×10^{-10}	0.24×10^{-10}	1×10^{-10}	ANL
Pb-210	1×10^{-7} uci/ml	12-29-83	3.24×10^{-9}	1.12×10^{-9}	2×10^{-9}	ANL
Po-210	7×10^{-7} uci/ml	12-10-83	1.44×10^{-9}	1.24×10^{-9}	2×10^{-9}	ANL

Common Ion and Trace Metals

	Date of Analysis	mg/l Concentration	Error Estimate	PPM L.L.D.	Name of Assayer
As	1-16-84	< 0.002		0.002	ANL
Se	1-17-84	0.139		0.005	ANL
Fe	11-30-83			0.01	ANL
Cu	12-7-83			0.01	ANL
Mn	11-30-83			0.01	ANL
K	12-7-83			0.001	ANL
Na	12-7-83			0.001	ANL
SO_4	12-13-83	17,600		0.21	ANL
TDS	11-30-83	29,539		0.21	ANL
NO_3	12-15-83	165		0.01	ANL
Cl	12-9-83	1,650		0.4	ANL
Conductivity	~~11-1-83~~	29,000 umhos			~~JAJ~~
Ph	11-1-83	7.74			JAJ