

TA-36



Risk Reduction & Environmental Stewardship Division
PO Box 1663, MS M992
Los Alamos, New Mexico 87545
(505) 665-4681/Fax: (505) 667-9553

Date: July 16, 2002
Refer to: RRES-DO:02-041

Mr. John Young, Corrective Action Project Leader
Permits Management Program
NMED – Hazardous Waste Bureau
2905 Rodeo Park Drive East
Building 1
Santa Fe, NM 87505-6303



SUBJECT: SAMPLING NOTIFICATION FOR WELL R-20

Dear Mr. Young:

The Groundwater Protection Program will begin drilling borehole R-20 approximately 1350 feet deep, for the installation of a regional groundwater characterization well. R-20 will begin drilling approximately July 26, 2002. This well is located in Pajarito Canyon and is being installed as part of the Laboratory's Groundwater Protection Program (LAAME:6BK-010; ESH-18/WQH-97-0014).

Samples will be collected during drilling as shown in the enclosed tables. If you have any questions, please contact me at (505) 665-4681.

Sincerely,

A handwritten signature in cursive script that reads 'Charles Nylander'.

Charles Nylander, Program Manager
Groundwater Protection Program

CN/RB/th

Enclosure: Sampling Activities at R-20



Cy:

R. Bohn, RRES-R, MS M992
D. Broxton, EES-6, MS M992
H. Granzow, PM-DS, MS M992
T. Herrera, RRES-WQH, MS M992
D. Hickmott, EES-6, MS M992
M. Kirsch, RRES-ER, MS M992
P. Longmire, EES-6, WQH, MS M992
J. McCann, RRES-WQH, MS M992
C. Nylander, RRES-DO, MS M992
S. Pearson, RRES/WQH, MS M992
S. Rae, RRES/WQH, MS K497
L. King, US EPA (2 copies)
B. Enz, OLASO, MS A316
M. Johansen, OLASO, MS A316
E. Trollinger, OLASO, MS A316
M. Leavitt, NMED-GWQB
E. Frank/N. Dhawan, NMED-HWB
J. Keiling, NMED-HWB
V. Maranville, NMED-HWB
J. Young, NMED-HWB (1 extra copy of Attachment)
J. Parker, NMED-DOE OB
S. Yanicak, NMED-DOE OB, MS J993
J. Davis, NMED-SWQB
RRES/WQH File, MS M992
IM-5, MS A150
RPF, MS M707, (ER2002-0488)

Cy (w/o enc.):

B. Ramsey, RRES-DO, MS J591
T. Longo, DOE-HQ, EM 453
J. Bearzi, NMED-HWB
R. Dinwiddie, NMED-HWB
J. Keiling, NMED-HWB
RRES-DO, File MS J591

**Well R-20
Sampling of Cuttings and Core**

Sample Description	Test	Sample Frequency
Coring		
Core	Anions and moisture	Target depths: 10,20,30,40,50,75, 150,200,300 and 400 ft, but terminating after the top 50 ft of Cerros del Rio Basalt is penetrated
Core	Tritium	Target depths: 10,20,30,40,50,75, 150,200,300 and 400 ft, but terminating after the top 50 ft of Cerros del Rio Basalt is penetrated
Core	Radiological screening for gross alpha, beta, and gamma (for off-site transport of samples)	Every 50 ft
Core	Radionuclides	Target depths: 10,20,30,40,50,75, 150,200,300 and 400 ft, but terminating after the top 50 ft of Cerros del Rio Basalt is penetrated
Core	Metals	Target depths: 10,20,30,40,50,75, 150,200,300 and 400 ft, but terminating after the top 50 ft of Cerros del Rio Basalt is penetrated
Core	Stable Isotopes	Target depths: 10,20,30,40,50,75, 150,200,300 and 400 ft, but terminating after the top 50 ft of Cerros del Rio Basalt is penetrated
Drilling		
Cuttings	Bulk cuttings systematically collected for archival purposes and for supplemental sample needs	One sample every cuttings run (nominally every 5 ft), beginning at the bottom of the core hole
Cuttings	Sieved cuttings for lithology description, binocular microscope examination	One sample every cuttings run (nominally every 5 ft), including over drilling the core hole. Normally, an unsieved sample, a >10 mesh sample, and a > 30 mesh sample every cuttings run
Cuttings	Sieved cuttings for XRD, XRF, petrography	One >10-mesh sample every cuttings run (nominally every 5 ft); finer sizes or bulk split will be substituted where >10-mesh size can not be obtained
Cuttings	Radiological	Up to 5 samples for the entire borehole within water-bearing zones; Sample location to be determined by the geochemistry task leader
Cuttings	Metals and Anions	Up to 5 samples for the entire borehole within water-bearing zones; sample location to be determined by the Geochemistry Task Leader

Note: N/A = Not applicable

Well R-20
Sampling and Analysis of Groundwater

Estimated Number of Water Samples	Analysis	Filtered Through Acetate 0.45 Micrometer
Up to 3 perched and 2 regional	Metals (dissolved)	Yes
Up to 3 perched and 2 regional	Anions (dissolved)	Yes
Up to 3 perched and 2 regional	Tc-99	No
Up to 3 perched and 2 regional	γ spec, ²⁴¹ Am, ¹³⁷ Cs, ^{238,239,240} Pu, ^{234,235,238} U, ⁹⁰ Sr	No
Up to 3 perched and 2 regional	Stable isotopes (¹⁸ O/ ¹⁶ O, D/H)	No
Up to 3 perched and 2 regional	Stable isotopes (¹⁵ N/ ¹⁴ N)	No
Up to 3 perched and 2 regional	Tritium ⁽¹⁾	No
Up to 3 perched and 2 regional	Tritium (low level or direct counting) ⁽¹⁾	No
Up to 3 perched and 2 regional	Gross α, β, γ (for off-site shipping)	No
Up to 3 perched and 2 regional	TUICPMS ⁽²⁾	Yes
Up to 3 perched and 2 regional	TKN	No
Up to 3 perched and 2 regional	ClO ₄ ⁻	Yes
Up to 3 perched and 2 regional	VOC's	No

- (1) Initially analyze tritium using liquid scintillation. If activity is less than 300 pCi/l, analyze archival sample using direct counting or electrolytic enrichment at University of Miami.
- (2) TUICPMS = total uranium inductively coupled plasma mass spectrometry.
- (3) No preservation for ClO₄⁻; Br⁻, Cl⁻, F⁻, SO₄⁻²; and PO₄⁻³.

Well R-20
Parameters to be Measured in the Field When Sampling Groundwater

Measurement	Precision⁽¹⁾
pH	±0.02
Specific conductance	±1 µmho/cm (25 °C)
Temperature	±1 °C
Turbidity (nephelometric)	±1 NTU ⁽²⁾

(1) Precision with which measurement shall be recorded

(2) NTU = Nephelometric turbidity unit