

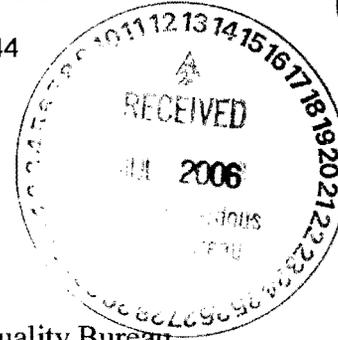
TA03



DEPARTMENT OF ENERGY
National Nuclear Security Administration
Los Alamos Site Office
Los Alamos, New Mexico 87544



JUL 12 2006



Mr. Christopher F. Vick
Ground Water Bureau
New Mexico Environment Department
Harold Runnels Building, Room N2250
1190 St. Francis Drive
PO Box 26110
Santa Fe, NM 87502

Mr. Bret Lucas
Surface Water Quality Bureau
New Mexico Environment Department
Harold Runnels Building, Room N2050
1190 St. Francis Drive
PO Box 26110
Santa Fe, NM 87502

Dear Messrs. Vick and Lucas:

SUBJECT: NOTICE OF INTENT (NOI) TO DISCHARGE MULTIPLE TRACERS FROM THE ROOF DRAINS AND DRAINAGE AREAS OF BUILDING SM-30, TECHNICAL AREA (TA)-3, LANL.

Several recharge pathways have been proposed for the fast-responding, shallow saturated zone (i.e., ~25-30' below ground surface) near the back (west) side of SM-30, TA-3, LANL. Four different tracers are proposed to help identify which pathways are actually recharging the saturated zone and to understand the relative importance of each. The four areas include the two drainage systems that drain the roof of SM-30, and the east-west and north-south drainages along SM-30.

1. Name and address of facility making the discharge.

Los Alamos National Laboratory
Building SM-30
PO Box 1663
Los Alamos, New Mexico 87545

2. Location of the discharge.

NE/4 SW/4 Section 17, T19N, R6E

3. The means of discharge.

For the two SM-30 roof tracers, concentrated tracer solutions (<50 gallons per tracer) will be poured directly down the roof drains (one tracer for each half of the roof). This will prevent loss of tracer from wind, and sorption of tracer on the roofing materials. The other two tracer solutions will be applied along the respective drainages using a sprayer.



4. The estimated concentration of tracer in the discharge

Location	Tracer	Maximum Concentration	Notes
Roof North	bromide	50,000 mg/L	as either NaBr or KBr (in a water solution)
Roof South	PFBA	50,000 mg/L	pentafluorobenzoate
EW Drain	2,6-DFBA	50,000 mg/L	2,6 difluorobenzoate
NS Drain	2,3-DFBA	50,000 mg/L	2,3 difluorobenzoate

All of these tracers have been used in environmental tracer studies in New Mexico and bromide has been used multiple times previously at LANL to examine vadose zone, spring and alluvial aquifer behaviors. The use of fluoroobenzoates as hydrological tracers has been described in several journal articles. They have similar transport characteristics as bromide, have benign effects (especially at our target concentrations) on the environment, and biodegrade over time.

5. The type of operation from which the discharge is derived.

Tracer test; direct application of tracer solution to the following areas:

- Building is 248 ft (N-S) by 452 ft (E-W) in size; a 6 inch diameter CMP culvert running parallel to the long axis of the building drains one half of the building area (20 roof drains flow to each culvert).
- E-W drainage along north side of SM-30: ~10 feet wide x 450 ft long.
- N-S drainage along west side of SM-30: ~40 ft wide x 250 ft long.

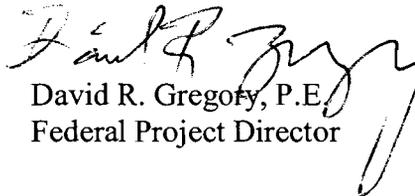
6. The estimated flow to be discharged per day.

Tracer masses were estimated to try and obtain approximately 100 mg/L peak concentrations in the SM-30 monitoring wells (i.e., B-13, B-10, and B-9) based on a 0.28 inch rainstorm. Precipitation events between 0.01-2.00 inches of rain will effectively deliver the tracer to the target zone.

7. The estimated depth to perched ground water (if available).

Approximately 25-30 feet below ground surface.

Sincerely,



David R. Gregory, P.E.
Federal Project Director

ES: 2BE-021

cc: See page 3

cc:

B. Enz, ES, LASO

Darlene Goering

Hazardous Waste Bureau

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