



State of New Jersey

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

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E.I. Dupont De Nemours & Co
Attn: David E. Epps, Project Manager
2000 Cannonball Road
Pompton Lakes, NJ 07442

June 10, 2011

Approval

Re: E. I. DuPont De Nemours & Co
Pompton Lakes, Passaic County, New Jersey
SRP PI# 007411

Dear Mr. Epps:

This New Jersey Pollutant Discharge Elimination System/Discharge to Ground Water (NJPDES/DGW) permit-by-rule discharge authorization is hereby issued under the authority of the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 *et seq.* and the implementing regulations, N.J.A.C. 7:14A-1 *et seq.* N.J.A.C. 7:14A-7.5(b)3iv authorizes discharges to ground waters associated with engineering design studies for a pilot test. Pursuant to N.J.A.C. 7:14A-22.4(b)5, a Treatment Works Approval is not required for discharges to ground water authorized pursuant to N.J.A.C. 7:14A-7.5(b). The discharge approved through this permit-by-rule authorization is to UIC Injection Wells and must be conducted in conformance with the following requirements.

This permit-by-rule discharge authorization is issued in order to facilitate the remedial activities conducted with oversight from the Site Remediation Program of the Department of Environmental Protection (Department). Pursuant to N.J.A.C. 7:14A-7.5(b)3iv, the discharge shall not exceed 180 days. The discharge proposal is found in DuPont's May 12, 2011 "Request for NJDEP Permit-by Rule for Hydraulic Testing Interim Remedial Measure Field Pilot Study near Well 128 DuPont Pompton Lakes Works Site".

Site Description

The location of the permit-by-rule is the DuPont Pompton Lakes Works Site, 2000 Cannonball Road, Pompton Lakes, Passaic County, NJ. The facility is a 570 acre property. The site is a former explosive manufacturing facility which closed in 1994. The ground water on-site and off-site is contaminated with volatile organic compounds. The off-site plume extends from the southern boundary of the DuPont property in the Eastern Manufacturing Area to Pompton Lake. The objective of this testing program is to collect engineering data on the hydraulic properties of the shallow and intermediate portions of the unconfined aquifer in the pilot study area near the MW 128 well cluster at the corner of Barbara Drive and Schuyler Avenue in the Borough of Pompton Lakes. If the engineering testing is successful, then an in-situ bioremediation pilot study will be proposed for this area. The overall goal is to determine a technology or technologies which can be used to remediate the off-site ground water plume.

Proposed Pilot Test

An evaluation of applicable hydraulic testing methods for the characterization of groundwater flow in the MW 128 area was conducted. Results of the evaluation indicated that indirect velocity measurements (slug tests and pump tests) and direct measurements (point velocity probes [PVPs], borehole dilution tests, and tracer tests) were best suited for this project. The discharge under this PBR will be conducted in two phases.

During the first phase, groundwater flow velocity in the pilot study area will be measured via a borehole dilution test completed in one of the injection wells. The test will proceed with the introduction of a conservative tracer, either potassium bromide with a target concentration of 500 milligrams per liter (mg/L) and maximum mass of 200 grams (g) or Brilliant Blue FCF with a target concentration of 200 mg/L and maximum mass of 200 g. The chosen tracer will be introduced across the entire borehole length followed by monitoring of the depletion of the tracer concentration at a number of levels. The test will provide vertical profiling data to determine groundwater velocity at predetermined depths across the aquifer.

For the second phase, a PVP will be installed to compare in-situ velocity results with the injection well borehole dilution test results. The PVP will provide a complementary in-situ velocity measurement point to the borehole dilution test, except that the measurement is in direct contact with the formation and not inferred via flow through an open well. Measurements of apparent groundwater velocity in the PVP will proceed by injecting a small volume of tracer to the injection point of the device followed by detection of the changes in electrical resistance at the PVP detectors. Approximately 10 milliliters (mL) of tracer (i.e. potassium bromide) will be injected per PVP detector. The target injection concentration of the potassium bromide will not exceed 500 mg/L per PVP detector and a maximum mass of 200 g of potassium bromide.

A recognized suite of hydraulic tests will also be conducted to determine hydraulic conductivity ranges and well efficiency (Q/s) including slug tests (falling or rising head), step drawdown tests, and constant rate abstraction (pumping) tests. The slug, step and pumping tests will provide design data to determine optimal pumping rates in the vicinity of the pilot study area.

Injection Well Construction Requirements

The permittee will comply with the provisions of the NJPDES regulations, N.J.A.C. 7:14A-8.16(b)1 when UIC-Class V injection wells are used.

All design plans and specifications for the injection wells shall be retained and made available to the Department upon request.

Injection Well Operation and Closure

UIC Class V injection wells shall be operated and maintained pursuant to N.J.A.C. 7:14A-8.16 (c). Upon termination of injection well operations, the UIC Class V injection wells will be properly closed and abandoned in accordance with N.J.A.C. 7:14A-8.16(d).

Site Monitoring Requirements

Well installation and construction methods will be pursuant to N.J.A.C. 7:D, N.J.A.C. 7:26E et. seq. and the current version of the NJDEP *Field Sampling Procedures Manual*.

All monitoring wells used to monitor the effectiveness of the injection events will be sampled in accordance with N.J.A.C. 7:26E et. seq. and the current version of the NJDEP *Field Sampling Procedures Manual*.

All groundwater samples will be handled in accordance with the current version of the NJDEP's *Field Sampling Procedures Manual*.

The 180 day PBR will begin on the day that the tracer is first introduced (discharged) and not on the date when the discharge approval letter is issued by NJDEP or received by DuPont. A record of the date discharging begins will be made in the field operation log and NJDEP will be notified within 24 hours of that first discharge day.

Pursuant to the schedule applicable to the site you shall submit the Hydraulic Testing Evaluation Technical Memorandum on August 31, 2011. Please submit the document by that date, or submit a written request for an extension at least 2 weeks prior to the due date. Failure to submit the document in accordance with the schedule may result in the initiation of enforcement action. For your convenience, the regulations concerning the Department's remediation requirements can be found at <http://www.state.nj.us/dep/srp/regs/>.

If you have any questions regarding this matter I may be contacted at (609) 633-1416.

Sincerely,



Anthony Cinque, Case Manager
Bureau of Case Management

c: Kathleen M. Cole, Mayor Pompton Lakes Borough
Mary Ann Orapello, Township of Wayne Health Department
Barry Tornick, USEPA Region II
Clifford Ng, USEPA Region II
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