ERM-EnviroClean-
North Central, Inc.

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March 13, 1997

Mr. David Werbach
Underground Injection Control
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, IL 60604-3590

ERM

RE: Pressure Fall-Off and Annulus Pressure Testing
Midco I Waste Disposal Well

Dear Mr. Werbach:

On behalf of Midco Remedial Corporation, ERM-EnvrioClean-North Central, Inc. (ERM-EnviroClean) is performing the necessary activities to continue to inject treated ground water into the Midco waste disposal well-1 (WDW-1). In accordance with the Midco Consent Decree and Sections 12 and 13 of the approved Underground Injection Well Application Package, ERM-EnviroClean is preparing to perform a pressure fall-off test and an annulus pressure test at WDW-1. This letter represents the required 30-day notification to the Underground Injection Control (UIC) section of the U.S. Environmental Protection Agency, Region V, prior to performing the tests. ERM-EnviroClean has arranged for Mr. Sam Williams (the contracted UIC inspector) to witness the tests beginning on April 15, 1997.

The need to perform a pressure fall-off test at the Midco I waste disposal well was discussed during a telephone conversation with you on March 11, 1997. The last annulus pressure and pressure fall-off test was performed on April 17 and 18, 1996. You may recall that due to the low injection rate, WDW-1 accepts fluid under vacuum conditions. Observations made in late 1995 indicated that WDW-1 accepted a continuous flow of fluid at an approximate rate of 15-20 gallons per minute. Continuous injection into WDW-1 began on February 22, 1996. As of the end of February, 1997, 7,871,816 gallons of injectate have been pumped into the well. Until recently, the only treated ground water delivered to WDW-1 for injection was from the Midco II remedial system. When operating at capacity, the Midco II system flow is 24 gallons per minute. The Midco I treatment system became fully operational on December 19, 1996 and has since added an additional 16 gpm for a combined flow rate total of 40 gpm.

The combined Midco I and II flow is delivered to a holding tank prior to injection. After the holding tank fills to a prescribed level, the deep well injection pumps start and operate at a rate of 100 gpm and empty the holding tank. The difference between the 40 gpm treatment system rate and the 100 gpm injection rate, results in an on/off cycling of flow into the WDW-1. During each cycle,the surface injection pressure observed during pumping rises from zero to an approximate maximum of 40 psi. When the injection pump cycles off, the water column in WDW-1 drops as the Mt. Simon reservoir accepts the fluid.

It is expected that because little change has been observed in injection pressures since last year that the upcoming fall-off test would be subject to the same transient conditions experienced during the 1995 pre-injection fall-off test. Therefore, on behalf of MRC, ERM-EnviroClean is recommending that the modified pressure fall-off testing procedures for the Midco I Waste Disposal Well 1 (WDW-1) utilized during the April 17, 1996 test episode be used again in 1997. Attachment A summarizes the modified pressure fall-off test procedures that will be used on April 15, 1997.

The current projected test schedule will be as follows:

- Sunday, April 13, 1997
  9:00 a.m.

Stop the injection into WDW-1 to allow the required minimum 48-hour pre-test stabilization.

- Tuesday, April 15, 1997
  9:00 a.m.

Perform the required 1-hour annulus pressure test, having Mr. Sam Williams the UIC inspector present.

10:00 a.m.

End the annulus pressure test.

10:30 a.m.

Begin the modified pressure fall-off test

2:30 p.m.

Evaluate the pressure data after 4 hours of recording for variation, if $\leq \pm$ 1%, terminate pressure recording; if $> \pm$ 1% continue recording for a total of 6 hours.

ERM-EnviroClean and MRC appreciates your efforts to address the pressure fall-off test situation at the Midco WDW-1. ERM-EnviroClean will continue to evaluate injection pressure to determine whether a build up in reservoir pressure occurs prior to the next 12-month testing so that appropriate test procedures can be selected.

Sincerely,

**ERM-NORTH CENTRAL, INC.**

John C. Roberts, P.G.
*Senior Project Manager*

cc: Richard E. Boice, USEPA
Mark Travers, P.G., de maximis
Ronald E. Hutchens, P.E., ERM-EnviroClean

## ATTACHMENT A

## ERM-ENVIROCLEAN-NORTH CENTRAL, INC.
## MIDCO I WDW No. 1
## 1996 MECHANICAL INTEGRITY TESTING (MIT) PROCEDURES

1. Submit procedures to the USEPA Region V for approval, thus assuring proper compliance with permit requirements.

2. Contact the USEPA UIC inspector to schedule the annular pressure test (APT) on WDW 1.

3. Suspend injection activities at Midco I WDW-1 at least 48 hours prior to initiating the downhole pressure recording.

4. Conduct the APT. Assure that WDW 1 has been inactive for 12 hours prior to conducting the APT. Pressurize the annulus to a minimum of 100 psi above the maximum permitted injection pressure utilizing the facility's annular pressure pump. Monitor the pressure for one 1 hour using a calibrated pressure gage. The maximum allowable pressure variation is 3 percent of the test pressure.

5. Conduct an ambient pressure test. Rig up the wireline equipment with bottom hole surface readout pressure gage. Position the pressure gage below the base of the casing at 2,625 feet and allow to stabilize.

6. Record the injection zone pressure for a minimum of 4 hours. Adjust the sample rate as conditions warrant.

7. Monitor the injection zone pressure by plotting pressure versus time. If the injection zone pressure varies $\leq \pm 1$ percent over a 4-hour period of time, the test will be terminated; if the injection zone pressure varies $> \pm 1$ percent, the test will be continued for an 2 additional hours (a total of 6 hours).