040-7604

BP CHEMICALS

BP Chemicals Inc.
Ft. Amanda Road
P.O. Box 628
Lima, Ohio 45802-0628
(419) 226-1200

VIA OVERNIGHT MAIL

Mr. Jim Ottarson
Ohio Environmental Protection Agency
Northwest District Office
347 North Dunbridge Road
Bowling Green, Ohio 43402

March 3, 1999

Subject: Supplemental In-Situ Permeability Testing of Brown Clay from Burn and Deepwell Ponds

Dear Mr. Ottarson:

In 1998 as a part of the Mixed Waste Pond Closure Project, Burn and Deepwell Ponds were remediated and the excavated contaminated soil was stockpiled at Celite Pond. Following the completion of release sampling, clean brown clay was then excavated from the bottom and sidewalls of Burn and Deepwell Ponds to shape the combined hole for construction of Cell No. 2. The brown clay was stockpiled for use as liner and winterization material for the cell. Laboratory testing of the excavated brown clay was conducted by Bowser-Morner to determine whether or not this material conformed to the specifications of the EOLM brown clay previously approved through Test Pad No. 2. Testing confirmed to the satisfaction of the project certification engineer that the material was equivalent to the EOLM brown clay. This information was provided to Ohio EPA in 1998, but the agency expressed a concern that no in situ permeability had been established for the clay to fully demonstrate its similarity to the EOLM brown clay.

BPCI then proceeded at its own risk to place and compact the brown clay in the bottom of southern half of the Cell No. 2 before the onset of winter in 1998. Placement was in accordance with the specifications established by Test Pad No. 2. Following placement, BPCI contracted with Bowser-Morner to have that company perform in situ permeability testing of the placed brown clay. Per BPCI's request, Bowser-Morner installed multiple Boutwell test devices in the bottom of Cell No. 2 and conducted in situ permeability testing in the autumn of 1998. Attached is a report prepared by Bowser-Morner providing the results of that testing. Also attached is a letter dated March 1, 1999 from the certification engineer, Robert Blickwedehl of Dames & Moore, summarizing his review of the Bowser-Morner work and the results achieved.

Both the attached Bowser-Morner report and the Dames & Moore letter conclude that the brown clay meets the project permeability requirements when installed as specified in the Test Fill No. 2 Report. Therefore, BPCI requests Ohio EPA approval to leave the placed brown clay as the permanent bottom liner for the south half of Cell No. 2.

061

BP-2793-A

NMSS/LLDP

If there are any questions, please give me a call at (419) 226-1299.

Sincerely,

William M. Rupert
Project Regulatory Specialist

cc: Sam Nalluswami, NRC
Ed Kulzer, NRC Region 3
Ruth Vandegrift, Ohio Dept. of Health

DAMES & MOORE
A DAMES & MOORE GROUP COMPANY

3065 Southwestern Boulevard
Suite 202
Orchard Park, New York 14127
716 675 7130 Tel
716 675 7136 Fax

March 1, 1999

BP Chemicals, Inc.
Ft. Amanda Road
Lima, OH 45803-0628

Att: Mr. William M. Rupert, P.E.
Technical Specialist, Environmental

Re: Use Brown Cohesive Soil from Deepwell/Burn Pond Excavation for Liner Construction
Mixed Waste Pond Closure Project
BP Chemicals, Inc.
Lima, Ohio

Dear Mr. Rupert:

We have reviewed the below referenced Bowser-Morner reports pertaining to the performance of brown cohesive soil excavated from the Deepwell and Burn Ponds as liner material. The results of the recently completed permeability testing supplement the results of Test Pad No. 2 constructed from brown clay from the ELOM borrow pit. This supplementary information confirms that the brown silty clay excavated from the Deepwell/Burn Pond site will meet or exceed the project specifications when the material is compacted in accordance with the procedures used to construct Test Pad 2. These are:

- Placement in lifts approximately 8 inches in loose thickness as determined by visual examination
- Compaction six or more passes of a CAT CP433B (or CP433C which is an updated version of the same device) vibratory sheepsfoot roller with the vibrator operating and a travel speed of approximately 6 to 7 feet per second.
- Control of moisture to meet specifications and assure a density of at least 90% of the optimum density determined by the Modified Proctor Method.

In consideration of these results, it is our opinion that this material can satisfactorily be used for construction of the liner for Cell 2 to meet the specifications set forth in the Closure Plan. We also believe that this material will meet or exceed the Closure Plan requirements for backfill in other areas to be remediated as long it is placed in accordance with project specifications for that purpose.

If you have any questions regarding this letter, please contact me.

Sincerely,

DAMES & MOORE

Robert R. Blickwedehl, P.E.
Principal

References: Test Pad No. 2 Construction and Testing; Mixed Waste Closure Project; BP Chemicals Inc., Fort Amanda Road, Lima, OH 45804, Bowser-Morner Report No. 101683-1094-425, November 1, 1994.

In-situ Permeability Testing of Brown Cohesive Soil Liner for Cell 2 of the BP Chemicals Mixed Waste Closure Project, for BP Chemicals Inc., Amanda & Adgate Roads, Lima, OH 45804, Bowser-Morner Report No. 114409-0299-047, February 25, 1999.

cc: Mr. L. Vonderembse -- BPCI
Mr. R. Hajer -- Dames & Moore
Mr. G. Armstrong -- Dames & Moore