EMPIRE SOILS INVESTIGATIONS, INC.

MAIN OFFICE ☐
607-898-5881
105 Corona Avenue
Groton, N.Y. 13073

BUFFALO OFFICE ☐
716-649-8110
P.O. Box 229
Orchard Park, N.Y. 14127

ROCHESTER OFFICE ☐
716-342-5320
1164 Ridge Road East
Rochester, N.Y. 14621

SYRACUSE OFFICE ☐
315-476-0717
6309 Girden Road
E. Syracuse, N.Y. 13057

ALBANY OFFICE ☐
518-783-1555
585 Troy Schenectady Road
Latham, N.Y. 12110

WASHINGTON OFFICE ☐
202-423-2900
4400 Stamp Road
Temple Hills, Md. 20031

BRILLO SOLID WASTE MANAGEMENT FACILITY CATO, NEW YORK

FOR

Joseph Brillo

Skaneateles, New York

Job No. GD-81-11A
May 1981

SUBSURFACE EXPLORATION

MEMBER · AMERICAN SOCIETY FOR TESTING & MATERIALS

SOIL
AND
CONCRETE
TESTING

EMPIRE SOILS INVESTIGATIONS, INC.

GROTON ▪ BUFFALO ▪ ROCHESTER ▪ SYRACUSE ▪ ALBANY

105 CORONA AVENUE, GROTON, NEW YORK 13073

AREA CODE 607 898-5881

May 4, 1981

Mr. Joseph Brillo
P.O. Box 4
Skaneateles, NY 13152

Dear Mr. Brillo:

The attached data sheets represent the results of the permeability tests which we performed at your landfill in Cato, New York.

These tests were performed as a set of three individual determinations, each one being at a different depth, in each of the two proposed lagoon locations. The purpose of the three different depths was to cover the 5 foot zone below the proposed lagoon bottom elevation. A copy of the GENERAL PLAN prepared by Rowell and Associates to which the locations of these tests have been added is attached.

The procedure used in performing these tests was an adaptation of that described in the "Design Manual", DM-7, published by the U.S. Navy Department. It is depicted in the middle panel of Figure 4-3, a copy of which is also attached. The casing was advanced to the bottom of the zone dimensioned "L" in the figure, and which is depth described as the test zone depth on the data/computation sheets. This was accomplished by conventional soil boring techniques with one split-spoon sample being taken in the test zone. After the casing was cleaned of any soil trapped within; a graded sand was inserted to keep the hole open after which the casing was retracted 12 inches (which is the dimension "L" in the figure).

Since the static groundwater level is below the test zone in all cases, the test was performed by infiltration rather than exfiltration as depicted in the figure. Consequently, the dimension H_1 (the initial level) is above the ground surface which provided a standing head in the casing.

The calculated permeability for each test is given at the bottom of the individual data sheets.

We have appreciated the opportunity to assist with this project and are available to answer any questions regarding the procedures or results obtained.

Thank you.

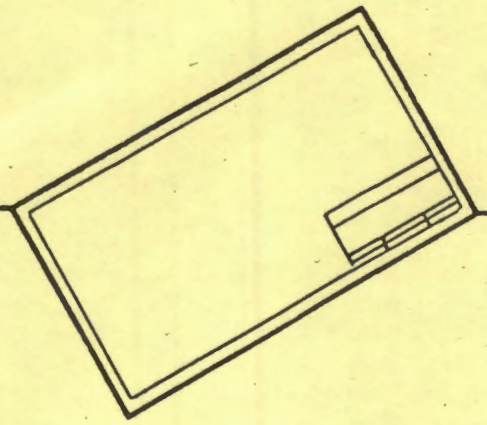
Very truly yours,

EMPIRE SOILS INVESTIGATIONS, INC.

Gary L. Wood, P.E.
Manager Central Division

GLW/dd
Enc.
cc: Mr. Sidney Kaine, Rowell & Associates (2)
File

DRAWINGS



APPENDIX A

SOIL MAP
SCALE 1 inch = 0.25 miles

Note: Soil map taken from Cayuga County soil survey as published by the U.S.D.A. Soil Conservation Service Nov. 87.

WETLANDS UNIT

WETLANDS

APPROXIMATE ℄ DRAINAGE SWALE

℄ ACCESS ROAD

PROPOSED WATER SPRINKLERS

PROPOSED OIL/WATER SEPARATOR AND MAINTENANCE BUILDING

PROPOSED STORAGE TANKS

TOWN LINE ROAD

TOWN OF CONQUEST

STATE ROUTE 370

LEGEND

- SOIL BORING
- SOIL BORING / MONITORING WELL
- ℄ ACCESS ROAD
- ℄ DRAINAGE SWALE
- EXISTING DRAINAGE CULVERT WITH SIZE
- PROPERTY LINE
- WETLANDS LIMITS AS ESTABLISHED BY THE D.E.C.
- SURVEYORS CONTROL POINT

SCALE 1" = 100'

⊙-PERCOLATION TESTS ADDED 5-1-81

ENGINEERING DRAWINGS

"It is a violation of the Education Law of the State of New York for any person unless he is acting under the direction of a Licensed Professional Engineer to alter any item on this drawing and/or in the specification in any way. If any such item is altered, the altering pro fessional engineer shall affix to the item his seal and the notation altered by followed by his signature and the date of such alteration together with a specific description of the alteration."

NOTE: Underground features, structures and utilities have been plotted from available surveys and records and therefore their locations must be considered approximate only. There may be others, the existence of which

No.	Date	Revision	Drawn	Checked	Approved
6					
5					
4					
3					
2					
1					

FOR REVIEW AND APPROVAL

BRILLO'S SOLID WASTE FACILITY
TOWN OF VICTORY, CAYUGA COUNTY, N.Y.

GENERAL PLAN

ROWELL AND ASSOCIATES P.C.

COMPUTATIONS

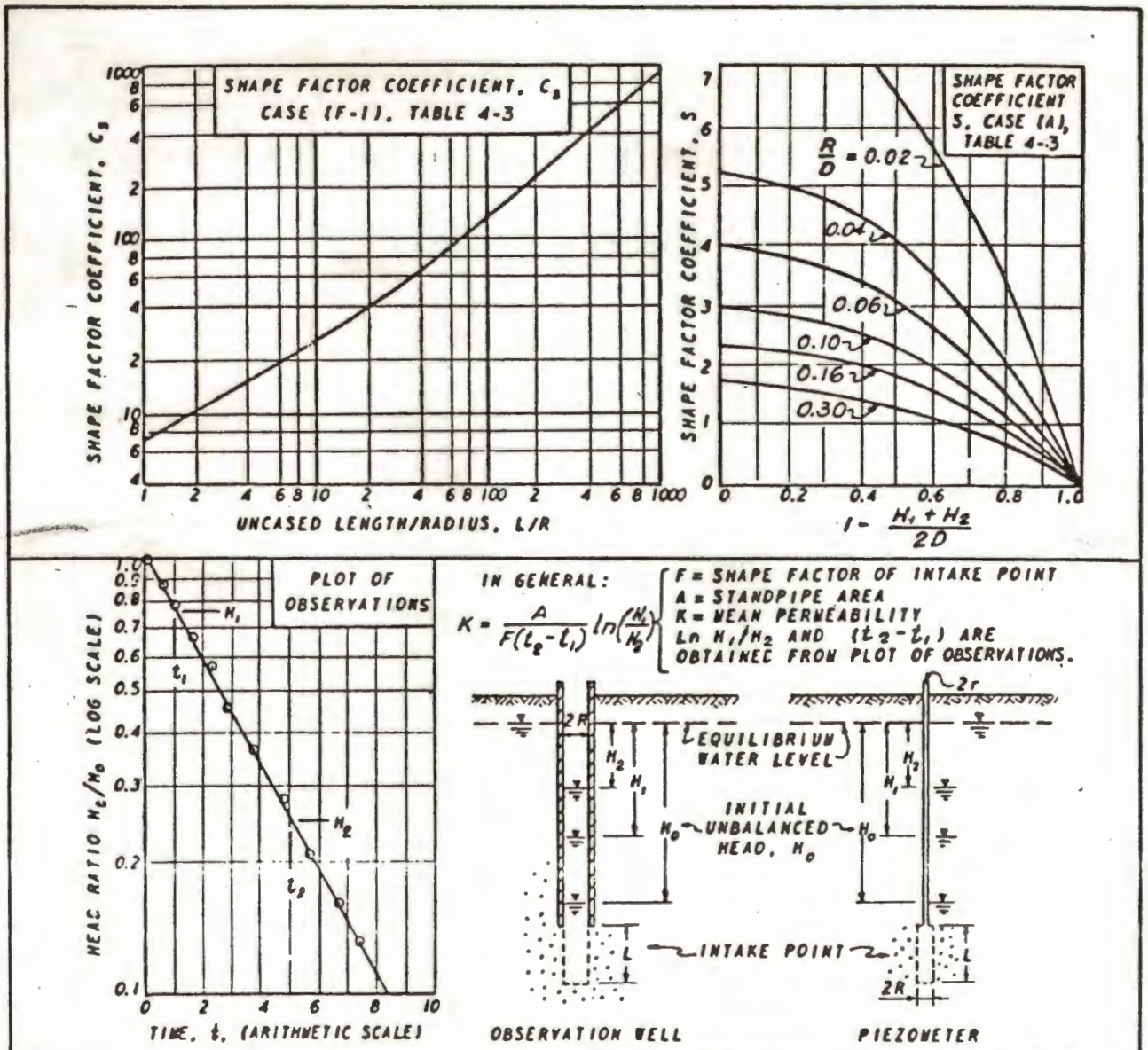


FIGURE 4-3
Analysis of Permeability by Variable Head Tests

THOMSEN ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS & GEOLOGISTS

SUBJECT BRILLO LANDFILL DOWN-HOLE PERCOLATION TEST PROJECT NUMBER GD-81-11A

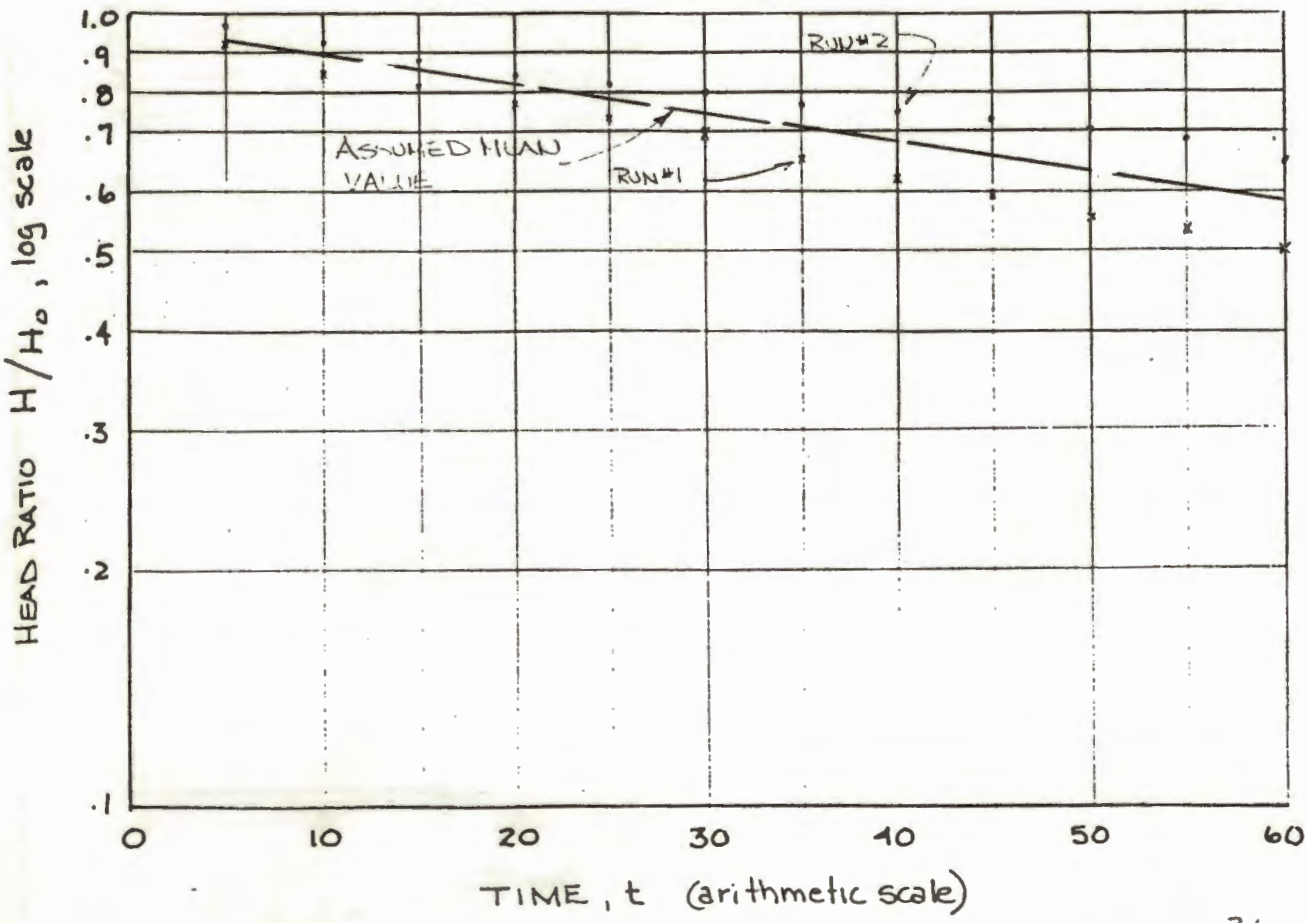
BY SMC DATE 5-4-81 CHECKED BY SM DATE 4 May 81 SHEET NUMBER 1 OF 6

TEST NO. 10

DEPTH TO TEST ZONE 9.0'

MATERIAL DESCRIPTION OF TEST ZONE

moist, brown, silt SAND & GRAVEL



$$K = \frac{R^2}{2L(t_2 - t_1)} \ln\left(\frac{L}{R}\right) \ln \frac{H_1}{H_2}$$

where $R = 2\ 3/4''$
$R^2 = .0525\ ft^2$
$L = 1.0\ ft$

$$= \frac{.0525}{(2)(1)((60-5)\times 60)} \ln\left(\frac{1}{.229}\right) \ln\left(\frac{.95 \times 126}{.58 \times 126}\right)$$

$$= 7.95 \times 10^{-6} \quad (1.47) \quad (.493)$$

$$= 5.8 \times 10^{-6}\ ft/sec^2$$

THOMSEN ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS & GEOLOGISTS

SUBJECT BRILLO LANDFILL DOWN-HOLE PERCOLATION TEST PROJECT NUMBER GD-81-11A

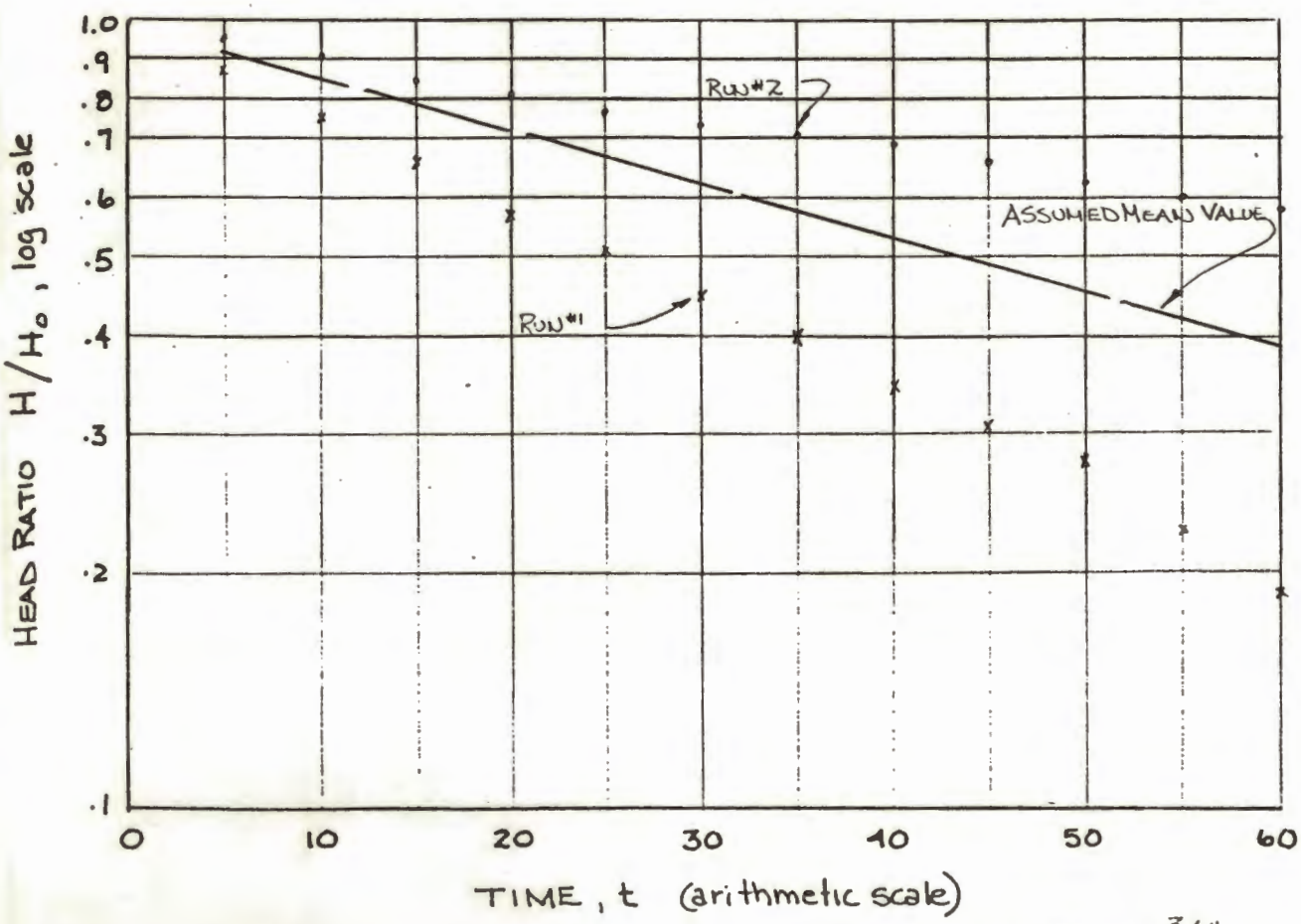
BY SMC DATE 5-4-81 CHECKED BY [illegible] DATE 4 May 81 SHEET NUMBER 2 OF 6

TEST NO. 11

DEPTH TO TEST ZONE 6.0'

MATERIAL DESCRIPTION OF TEST ZONE

moist, brown, silty SAND & GRAVEL



$$K = \frac{R^2}{2L(t_2 - t_1)} \ln\left(\frac{t}{R}\right) \ln\left(\frac{H_1}{H_2}\right)$$

where $R = 2\,3/4''$
$R^2 = .0525\ ft^2$
$L = 1.0\ ft.$

$$= \frac{.0525}{(2)(1)((60-5)\times 60)} \ln\left(\frac{1}{.229}\right) \ln\left(\frac{.92\times .74}{.38\times .74}\right)$$

$$= 7.95\times 10^{-6}\ (1.47)\ (.884)$$

$$= 1.04\times 10^{-5}\ ft/sec^2$$

SUBJECT BRILLO LANDFILL DOWN-HOLE PERCOLATION TEST PROJECT NUMBER GD-81-11A

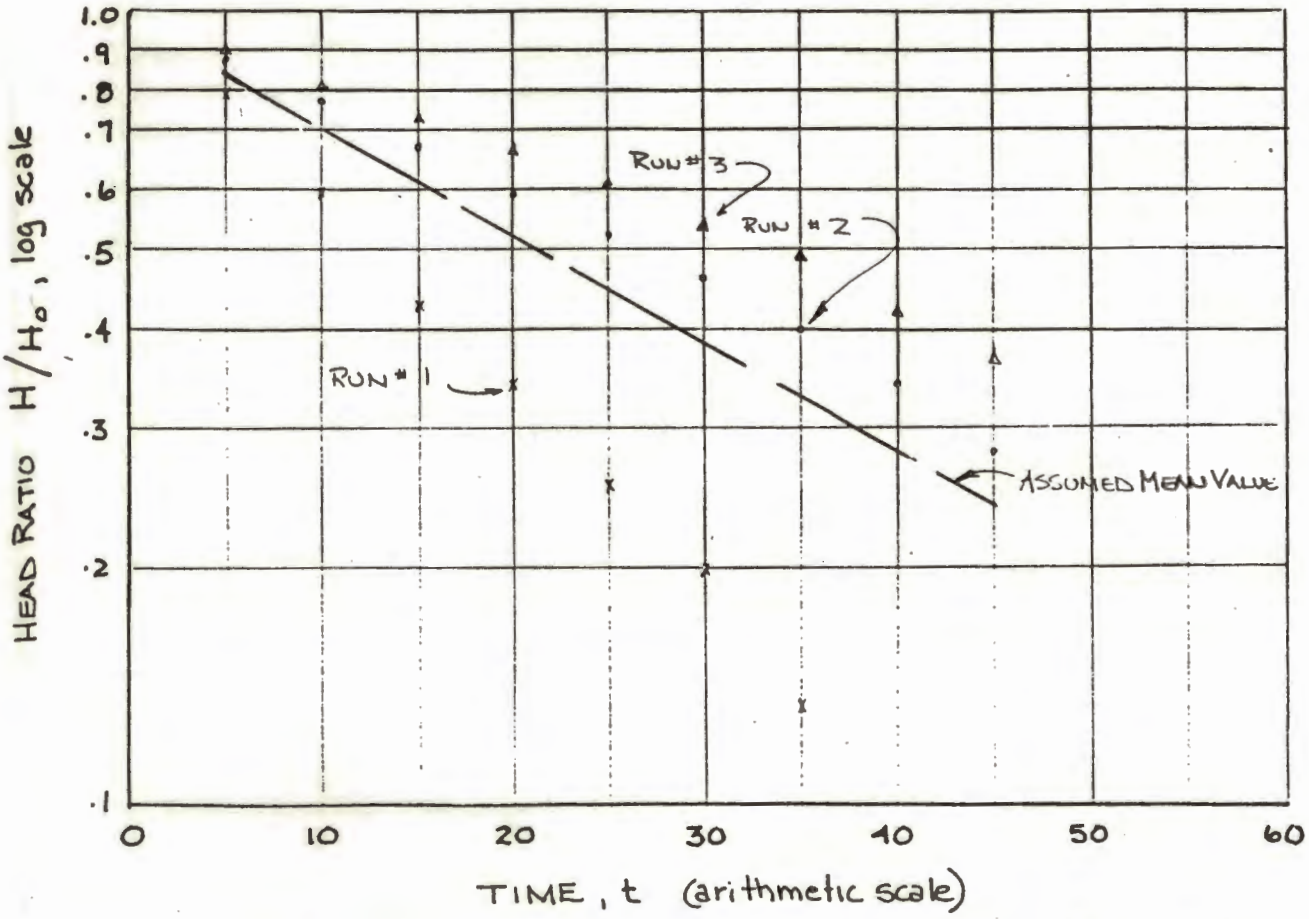
BY SMC DATE 5-4-81 CHECKED BY MM DATE 4 May 81 SHEET NUMBER 3 OF 6

TEST NO. 12

DEPTH TO TEST ZONE 3.0'

MATERIAL DESCRIPTION OF TEST ZONE

moist, brown, silty SAND & GRAVEL



where $R = 2\,3/4''$

$R^2 = .0525\ ft^2$

$L = 1.0\ ft$

$$K = \frac{R^2}{2L(t_2 - t_1)} \ln\left(\frac{L}{R}\right) \ln \frac{H_1}{H_2}$$

$$= \frac{.0525}{(2)(1)((45-5)\times 60)} \ln\left(\frac{1}{.229}\right) \ln\left(\frac{.85 \times 49}{.24 \times 49}\right)$$

$$= 10.94 \times 10^{-4} \ (1.47) \ (1.25)$$

$$= 2.0 \times 10^{-5}\ ft/sec^2$$

THOMSEN ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS & GEOLOGISTS

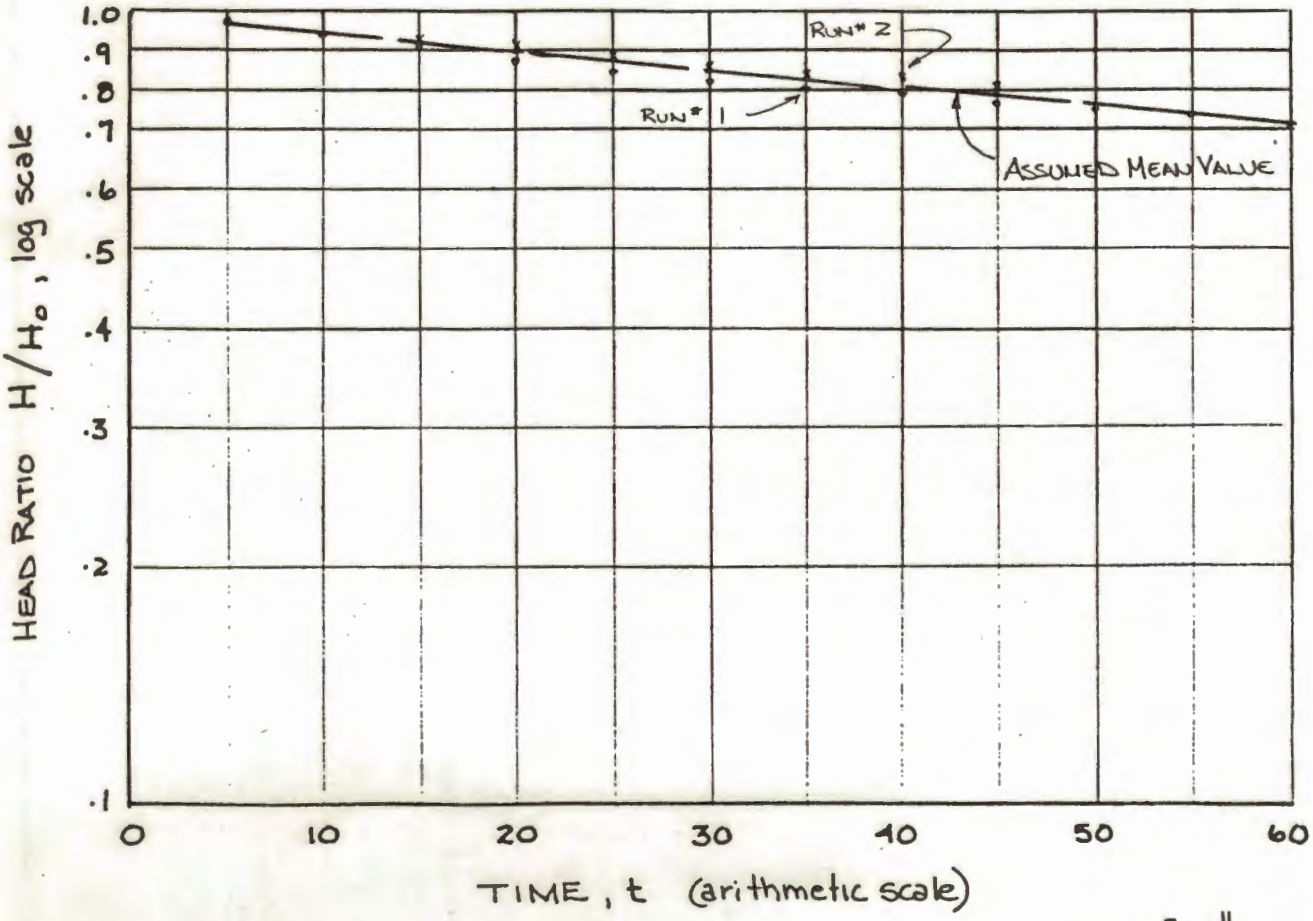
SUBJECT BRILLO LANDFILL DOWN-HOLE PERCOLATION TEST PROJECT NUMBER GD-81-11A

BY SMC DATE 5-4-81 CHECKED BY [illegible] DATE 4 May 81 SHEET NUMBER 4 OF 6

TEST NO. 20

DEPTH TO TEST ZONE 7.0'

MATERIAL DESCRIPTION OF TEST ZONE
moist, brown, silty SAND & GRAVEL



$$K = \frac{R^2}{2L(t_2 - t_1)} \ln\left(\frac{L}{R}\right) \ln\left(\frac{H_1}{H_2}\right)$$

where $R = 2\,3/4''$
$R^2 = .0525\ ft^2$
$L = 1.0\ ft$

$$= \frac{.0525}{(2)(1)((60-5)\times 60)} \ln\left(\frac{1}{.229}\right) \ln\left(\frac{.97 \times 119}{.72 \times 119}\right)$$

$$= 7.95 \times 10^{-6}\ (1.47)\ (.298)$$

$$= 3.5 \times 10^{-6}\ ft/sec^2$$

THOMSEN ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS & GEOLOGISTS

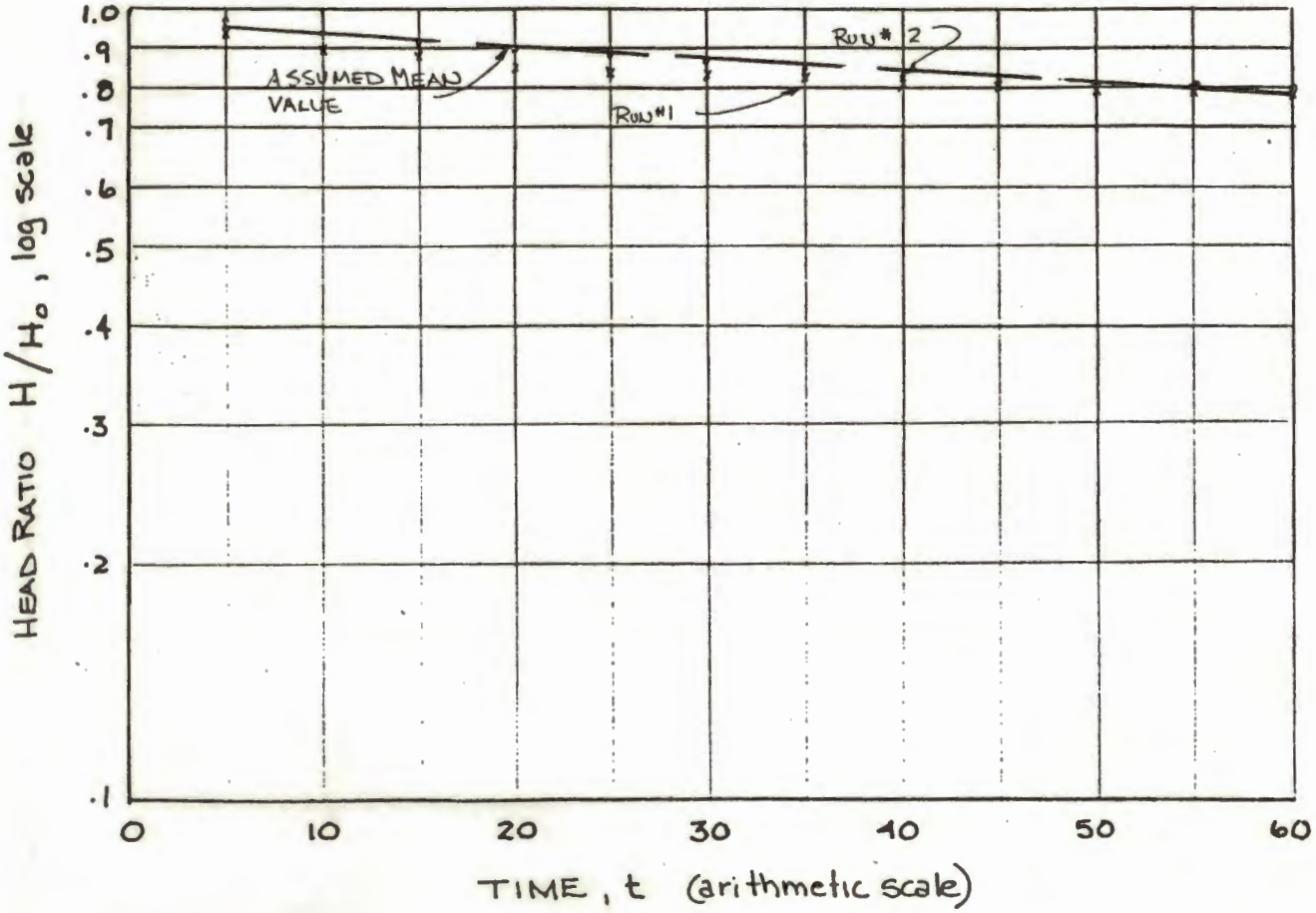
SUBJECT BRILLO LANDFILL DOWN-HOLE PERCOLATION TEST PROJECT NUMBER GD-81-11A

BY SMC DATE 5-4-81 CHECKED BY [illegible] DATE 4 May 81 SHEET NUMBER ..... OF 6

TEST NO. 21

DEPTH TO TEST ZONE 9.0'

MATERIAL DESCRIPTION OF TEST ZONE
moist, brown, silty SAND & GRAVEL



$$K = \frac{R^2}{2L(t_2 - t_1)} \ln\left(\frac{L}{R}\right) \ln\left(\frac{H_1}{H_2}\right)$$

where $R = 2\,3/4''$
$R^2 = .0525\ ft^2$
$L = 10\ ft$

$$= \frac{.0525}{(2)(1)((60-5)\times 60)} \ln \frac{1}{.229} \ln\left(\frac{.96 \times 124}{.78 \times 124}\right)$$

$$= 7.95 \times 10^{-6}\ (1.47)\ (.208)$$

$$= 2.2 \times 10^{-6}\ ft/sec^2$$

THOMSEN ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS & GEOLOGISTS

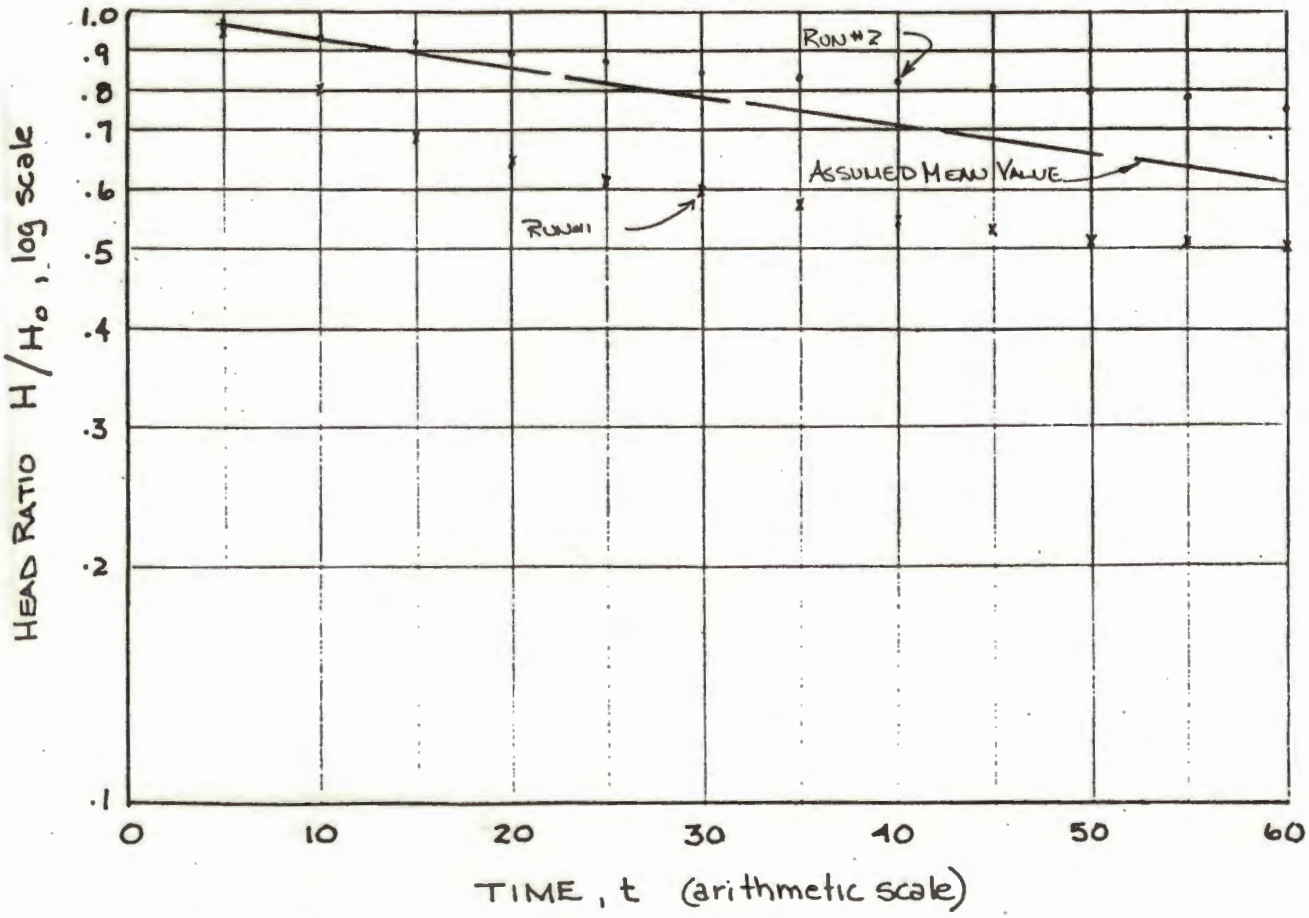
SUBJECT BRILLO LANDFILL DOWN-HOLE PERCOLATION TEST PROJECT NUMBER GD-81-11A

BY SMC DATE 5-4-81 CHECKED BY [illegible] DATE 4 May 81 SHEET NUMBER 6 OF 6

TEST NO. 22

DEPTH TO TEST ZONE 12.0'

MATERIAL DESCRIPTION OF TEST ZONE
moist, brown, SAND & GRAVEL, trace silt



$$K = \frac{R^2}{2L(t_2 - t_1)} \ln\left(\frac{L}{R}\right) \ln\left(\frac{H_1}{H_2}\right)$$

where $R = 2\,3/4''$
$R^2 = .0525\ ft^2$
$L = 1.0\ ft$

$$= \frac{.0525}{(2)(1)((60-5)\times 60)} \ln\left(\frac{1}{229}\right) \ln\left(\frac{.95 \times 144}{.62 \times 144}\right)$$

$$= 7.95 \times 10^{-6}\ (1.47)(.427)$$

$$= 5.0 \times 10^{-6}\ ft/sec^2$$

Harnish & Lookup Associates

615 Mason St., Newark, NY 14513 315-331-2800

January 26, 1982

The Honorable Walter E. Richardson, Supervisor
Town of Victory
Red Creek, New York 13143

RE: Town of Victory -
Brillo Landfill
H&L File No. 21075

Dear Supervisor Richardson:

We are enclosing, herewith, the original and four(4) copies of our letter report regarding the Brillo Landfill. We have completed our review of the engineering documents and are submitting this report to you. I plan to meet with you and your Board on Saturday morning at 10:00 at the Town Building. I am sending my Report to you at an early date so that you and the Board have an opportunity to review it prior to meeting with me.

Very truly yours,

HARNISH & LOOKUP, ASSOCIATES

Paul H. Russell, Jr., P.E.
Partner

Enc.

PHR:dw

Walter Richardson

Harnish & Lookup Associates

615 Mason St., Newark, NY 14513 315-331-2800

January 26, 1982

The Honorable Walter E. Richardson, Supervisor
Town of Victory
Red Creek, New York 13143

RE: Brillo Landfill
H&L File No. 21075

Dear Supervisor Richardson:

Pursuant to your request we have reviewed and evaluated the engineering documents prepared to support the application of Joseph Brillo for a permit to operate a sanitary landfill in the Town of Victory. Those documents include the Engineer's Report entitled "Solid Waste Management Facility" prepared by Rowell and Associates, P.C. of North Syracuse, New York and Construction Drawings entitled "Brillo's Solid Waste Management Facility" prepared by Rowell and Associates. We emphasize that our evaluation is based upon these two documents and that concerns expressed and suggestions made in this report may have to be modified if and when other information and documents that address the concerns and suggestions presented herein become available.

PROJECTED WASTES

The Report contemplates that the landfill facility will receive several types of waste including those of domestic and industrial origin. The landfill is proposed to be operated to receive wastes of a non-hazardous nature(with the exception of the oil/water combination). A landfill facility on the proposed site with proper design and construction can receive and dispose of non-hazardous wastes without deleterious impact upon the environment. We find as follows:

1) The projected waste load of septic sludge is developed from the Syracuse Metropolitan Waste Treatment Plant as well as private plants and septic systems. Wastes from the private septic systems are usually strictly domestic and should not require identification. However, the waste sludge from the Syracuse Metropolitan Waste Treatment Plant could easily contain heavy metals and potentially hazardous wastes. There is no analysis of those wastes presented in the Report to identify the nature of those wastes. We believe it essential that multiple analyses be prepared to provide reliable identification of those septic sludge wastes.

2) Polishing and grinding compounds are proposed for disposal in this landfill that originate from the Welch Allyn Company of Skaneateles Falls, New York. An analysis of those wastes show them not to contain problem metals or hazardous wastes. We believe that the potential for metals and hazardous wastes inclusion in those solid waste materials exists and consequently continuing and routine sampling and testing is necessary.

3) Waste grains from the International Multi-Food Operation in Baldwinsville are proposed for inclusion in the landfill. We suspect that these wastes do not contain hazardous materials. However, an analysis should be provided to confirm that judgement.

4) An oil/water mixture is proposed for future disposal in the landfill site. These wastes are potentially hazardous and consequently should either be eliminated from inclusion in the landfill or addressed as to a satisfactory method of handling the wastes. An analysis is not presented of these wastes to indicate that they do or do not contain hazardous materials other than petroleum products.

Recommendations

1) We believe that for those wastes that could contain heavy metals and/or hazardous materials(septic sludge, polishing and grinding compounds, and the oil/water mixture) should all be sampled and tested with data presented prior to granting of an operating permit. Further, monthly sampling and testing should continue to verify on a continuous basis the non-hazardous nature of those wastes.