New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-0001

704013

April 4, 1985

Henry G. Williams
Commissioner

Conklin LF
Broome Co.

The Honorable John Guinan
Deputy County Executive
Broome County Office Building
Government Plaza, P.O. Box 1766
Binghamton, NY 13902

Dear Mr. Guinan:

This letter is a follow-up to my February 20, 1985 meeting with Mr. David Machlica, Broome County IDA, concerning the Conklin Landfills. At that meeting, it was agreed to evaluate the reclassification of the Conklin Landfills based on the Hydrogeologic Investigations, Proposed Broome County, Industrial Park prepared by O'Brien and Gere Engineers.

These reports generally exceed the scope of work of a Phase II study. A Phase II study is designed to determine if a significant threat to public health or the environment exists from the site. However, these studies are not usually sufficient to serve as the basis for the design of remedial actions or to determine the full extent of environmental contamination.

Based on our review of both the March 1984 and February 1985 Hydrogeologic Investigation Reports, we believe that sufficient data exists to conclude that the Conklin Landfills pose a significant threat to the environment and should be reclassified from a Class (2a) to a Class (2) site. This proposed classification is based on the contravention of groundwater standards; a preliminary HRS score of greater than 28.5, which may qualify this site for the National Priorities List (NPL); and a major leachate problem around the site.

Reclassification as a Class (2) site will require that remedial actions be undertaken. Proper design of remedial measures require the completion of a Remedial Investigation and Feasibility Study (RI/FS), which may incorporate information from the hydrogeologic studies conducted to date. The purpose of the RI/FS is to obtain sufficiently detailed data delineating the areal extent of waste disposal, character of hazardous waste disposal, the areal and vertical extent of groundwater contamination, extent of surface water contamination, air contamination, and detailed hydrogeological data throughout the site; and to perform a detailed evaluation of all viable remedial measures including an assessment of their costs and effectiveness. While the studies conducted to date provide some of this information, there are several items which require more detailed investigation; especially regarding geological characteristics between the upper/lower landfills, extent of waste disposal of the lower landfill, adequate definition of the extent of environmental contamination, and detailed evaluation of remedial alternatives. The landfilling of wastes below the groundwater table, leachate seeps to the south of the site, contamination of well 6 and well 18 and the mixed geology of the area also need to be further evaluated.

Enclosed are copies of detailed comments on the O'Brien and Gere reports from the New York State Department of Health (Syracuse Regional Office), the Bureau of Remedial Action, and the Bureau of Hazardous Site Control. These comments provide more specific guidance on items which need to be addressed in the RI/FS.

We would be pleased to meet with County representatives to discuss these issues in detail. Please contact Mr. Gross at (315) 428-4483 or me, at (518) 457-9538, to schedule a meeting.

Sincerely,

Raymond E. Lupe

Raymond E. Lupe, P.E.
Senior Sanitary Engineer
Western Investigation Section
Bureau of Hazardous Site Control
Division of Solid and Hazardous Waste

cc: Mr. Peter Kay, Broome County IDA
Mr. David Machlica, Broome County IDA
Ms. Pat Ingram, Commissioner of Planning, Broome Co.
Mr. Heerkens, NYSDOH, Syracuse Region

bcc: N. Nosenchuck
M. O'Toole
L. Gross
L. Lepak
D. O'Toole
D. King
C. Goddard
W. Demick
R. Lupe
file

REL:sab

New York State Department of Environmental Conservation

MEMORANDUM

TO: Raymond Lupe, Senior Sanitary Engineer
FROM: Brian Davidson, Senior Engineering Geologist BHD
SUBJECT: Proposed Broome County Industrial Park, Conklin, NY
DATE: March 22, 1985

As per our conversation on March 20, 1985, I have the following comments on the two (2) O'Brien and Gere Reports.

1. The coefficents given for permeability and flow velocity in the glacial till (less than 4×10^{-7} cm/sec and less than 2×10^{-4} ft/day) are indicative of a massive clay. Although lodgement till is generally considered an aquatard and probably does prevent leachate from the upper and lower landfills from reaching bedrock, till is poorly sorted. Therefore, the low permeability figures may not be truly representive. The methods used to arrive at these figures can only give estimates and may be off by one or two orders of magnitude. If the figures given for flow velocity and permeability are truly representive, it would take 100 years for groundwater to flow 3 feet in the glacial till.

2. The stratigraphic unit shown in cross-section to be directly down gradient from the upper landfill is silt. I would think that this is an extremely important unit to investigate because of its location and apparent connection with the sand and gravel outwash, yet no permeability ranges or flow velocities are given for the silt unit. Analysis of groundwater from Wells #11 and 3 shows contamination and the origin of contamination in Well #6 is reported as unknown. A test boring with a monitoring well in the central portion of the site between Well #3 and Well #6 is essential to define the stratigraphy, hydrology and extent of contamination at the site. You mentioned that there are visible leachate seeps on the south side of the site. These seeps should be sampled and one or two monitoring wells between Wells #3 and 6 may help determine the origin of these seeps.

3. Carlin Creek is shown on the site plan as an intermitant stream with headwaters originating from a designated wetland that extends between the upper and lower landfills. Surface water sampling should be expanded to include this wetland and Carlin Creek.

The surficial geology map shows alluvium extending from the upper landfill north along Carlin Creek. Well #18 shows high COD, TOC, iron, maganese, nitrate and sulfate. Well points in the alluvium and test borings with monitoring wells north of the site along Carlin Creek would help to determine the amount of contamination leaving the site to the north.

with some additional work such as: investigations in the Carlin Creek area; magnetometer surveys to define the areal extent of the landfills; additional well(s) in the central portion of the site; and permeability and flow tests in the silt (alluvium) unit; the Phase II hydrogeologic investigation could suffice as an acceptable remedial investigation. However, the two pages of recommendations in the March 1984 report do not constitute a satisfactory feasibility study.

Conducting topographic and magnetometer surveys and aerial photo evaluations as well as investigations and monitoring along Carlin Creek, should be part of the remedial investigation, not part of the remedial design as is recommended in the report.

An acceptable feasibility study should explore all appropriate feasible remediation techniques for the site. Remedial techniques such as pumping and treating and excavation of hot spots should be discussed.

If after a feasibility study is completed, the capping, down gradient municipal water, and monitoring remediation is selected, I would think that it would be unsuccessful without some kind of leachate collection and treatment.

If you would like to discuss my comments or if I can provide any additional assistance on this site, please contact me.

BHD:ks
cc: John Iannotti

STATE OF NEW YORK
DEPARTMENT OF HEALTH OFFICE OF PUBLIC HEALTH

SYRACUSE AREA OFFICE • 351 SOUTH WARREN STREET • SYRACUSE N.Y. 13202

DAVID AXELROD M.D
Commissioner

WILLIAM F. LEAVY
Executive Deputy Director

March 28, 1985

RECEIVED

Mr. Raymond E. Lupe, P.E.
Western Investigation Section
Bureau of Hazardous Site Control
NYS Dept. of Environmental Conservation
50 Wolf Rd.
Albany, NY 12233-0001

Dear Ray:

RE: Conklin Landfill
Reg. Site #704013
Conklin (T) Broome Co.

I have reviewed the Phase II Hydrogeologic Investigation prepared by O'Brien and Gere for the Broome County IDA.

The following items remain to be addressed:

1. Organics analysis specified in the report are limited to TOC. Past sampling within the landfill indicates the presence of a number of specific organic compounds such as vinyl chloride, 1,1-and 1,2-dichloroethane, methylene chloride, 1,2-dichloropropane, trichloroethylene, benzene and toluene in the upper and/or lower landfill. How does TOC relate to these contaminants in well #18 for example? Has any additional work been done to determine whether higher concentrations of the compounds exist in either landfill? Priority pollutants should be analyzed to accurately categorize the water quality.

2. The report mentions potential effects via Carlin Creek on Conklin Well #3. My information is that Conklin Well #2 would be possibly influenced by Carlin Creek while Well #3 is remote.

3. In regard to the Conklin wells, the report cautions about future uses of the site for industries handling or generating hazardous materials. What about potential effects from existing contaminants in and about Carlin Creek? This potential path of contamination should be further investigated.

4. The upper landfill is said to generate 1.8+ million gallons of leachate annually. If movement into groundwater is limited, where does the leachate go? Wouldn't this be a likely source of problems along Carlin Creek?

5. What consideration has been given to contamination of onsite basements from groundwater or gases? Are buildings with basements anticipated in the industrial park?

6. The uses of onsite groundwater for cooling water is mentioned. Assuming that some level of contamination is present as stated in the report and

given the potential for the levels to change, perhaps increasing, where would the discharge go?

In further investigating the site, these questions should be addressed.

Some additional recommendations are as follows:

1. In terms of migration of contaminants, high iron, and manganese results from a new home well across Rt. 7 should be evaluated. I have attached a copy of results from the Masler well for your information. We plan to follow up with samples from three potentially effected home wells shortly.

2. Monitoring of individual home wells along Rt. 7 should be carried out as long as there is a potential for contaminants to leave the landfill, not for 1 year as specified in the report. It would appear that some wells are already exhibiting low level contamination. Such monitoring should be required of the responsible party.

3. Remediation plans should include the extension of a water main along Rt. 7 regardless of whether or not the site is ultimately developed.

I would appreciate your sharing additional data on the site as it becomes available. I will see that you are copied on home water supply results as we receive them.

Very truly yours,

Ronald Heerkens

Ronald Heerkens
Program Research Specialist

cc: Dr. Gaffney
Mr. Denz
Mr. Gross
Mr. Tramontano
Mr. Bogden

H2M Environmental Engineers & Scientists
HOLZMACHER, McLENDON and MURRELL, P.C.
575 BROAD HOLLOW ROAD, MELVILLE, NEW YORK 11747 (516) 694-3040

WATER RESOURCES • WATER SUPPLY & TREATMENT • SEWERAGE & TREATMENT • ECOLOGICAL & IMPACT STUDIES
MODEL STUDIES • PILOT PLANT STUDIES • WATER/WASTE WATER LABORATORY AND ANALYTICAL SERVICES

LABORATORY REPORT

LAB NO. [illegible]
[illegible]

CLIENT'S NAME AND ADDRESS

[illegible]OOME COUNTY [illegible]ALTH DEPT.
[illegible] WALL ST[illegible]
[illegible]NGHAMPTON, [illegible] 13901

TYPE OF SAMPLE - POTABLE WAT[illegible] COLLECTED BY [illegible]
DATE COLLECTED - 11/13/84 DATE RECEIVED - [illegible]

[illegible] 11-13-84 [illegible]
GRAB SAMPLE
[illegible] RESIDENCE

Lot #2
Baumfield
Subdivision
Conklin Road

file
Town of
Conklin
Landfill

[illegible]	[illegible]	PARAM-[illegible]	RESULT
[illegible]	112.	[illegible] CARBON	[illegible]2.90
[illegible]	[illegible]	[illegible]	[illegible]2.00$
[illegible]	78.[illegible]	IRON	8.39
[illegible]	[illegible].20	MANGA-NESE	0.90
[illegible]	11[illegible].		
[illegible]	[illegible]0.10		
PH	7.40		
[illegible]ATE	25.0		
DISS [illegible]	167.		

RESULTS IN (MG/L) EXCEPT AS NOTED BY $ (UG/L) OR % (PERCENT) AND
T.COLI B[illegible], & FECAL COLI (MPN/100ML)
COLOR, ODOR, TURBIDITY & PH (UNITS)
APC & FECAL STREP (COUNTS/ML)
SPEC.COND. (UMHOS) SETT.SOLIDS(ML/L)

DATE REPORTED [illegible]

S. C. McLENDON, P.E., LABORATORY DIRECTOR

[illegible]E LIABILITY OF H2M CORP. SHALL BE LIMITED TO THE PRICE OF THE SERVICE RENDERED AND PAID.

New York State Department of Environmental Conservation

MEMORANDUM

TO: Mr. Walter E. Demick, Supervisor, Western Investigation Section
FROM: Mr. Raymond E. Lupe, Western Investigation Section R.E. Lupe
SUBJECT: Conklin Landfills, Broome County
DATE: April 4, 1985

The following comments summarize my concerns regarding the 1984 and 1985 hydrogeologic studies prepared by O'Brien and Gere engineers of the Conklin Landfills. These studies were prepared for Broome County, which plans to construct an industrial park at the site. The studies document serious groundwater contamination and leachate problems at these landfills requiring remediation and are sufficient to reclassify the site from a Class (2a) to a Class (2) site, based on a significant threat to the environment.

The major comments are as follows:

1. The areal and vertical extent of the landfills is based on a limited number of borings and assumptions/interviews. Additional test borings, magnetometer survey, aerial photos, etc., are needed to better define the limits of waste disposal as recommended in the 1984 hydrogeologic report.

2. A topographic map of the site with elevations of wetlands, contours, boring/monitoring points, etc., should be provided to better assess the interrelations of groundwater/surface water and waste disposal areas.

3. Existing monitoring wells provide some information on groundwater movement, flow direction, geology, etc. However, the existing wells do not fully define both the areal and vertical extent of groundwater contamination. Additional wells are needed in the central portion of the site, north-northeast of the lower landfill; and between the landfills and homeowners along Route 7. In addition, some nested wells to measure the vertical extent of contamination may be needed.

4. More permeability testing is needed on-site, particularly between the upper and lower landfill. Zones of colluvium (silt/sand) exist between the upper and lower landfill. This may have a radically higher permeability than the till located upgradient of the upper landfill, as evidenced by the permeabilities of wells 17 and 18.

5. The 1984 report indicates a potential northeast flow component from the area of the upper landfill versus the east flow direction discussed in the report. Clarification is needed.

6. The predicted groundwater movement of 0.03 ft/yr from the upper landfill is based on one boring located upgradient of the landfill. Field data indicates a higher rate because contamination has been measured further away than predicted possible. Permeabilities between upper/lower landfills need to be measured. This information is critical in assessing the volume of leachate generated and the potential extent of contaminant migration expected. The existing estimate of 1000 gal/yr of leachate may be very low.

7. No definite explanation has been provided regarding why well #6 has elevated contaminant levels. Potential explanations include migration from the upper landfill through discontinuous silt/sand lenses; groundwater mounding at lower landfill ; unknown zone of waste disposal, etc.

8. The reports indicate that the lower landfill may have an impact on homeowner wells along Route 7. Elevated levels of iron and manganese in these wells, much above background, have been linked to the landfill. In addition, three homeowner wells violate Part 703 and drinking water standards for arsenic. The elevated levels of iron and manganese indicate the potential for other contaminants to migrate through the highly permeable deposits to these wells. Additional monitoring wells between Route 7 and the lower landfill are needed and should be sampled for priority pollutants and heavy metals analyses.

9. The 1985 report indicates that well #18 by Carlin Creek has elevated contaminant levels; and concludes this is a result of the infiltration of contaminants in Carlin Creek into the groundwater. In addition, the report shows a zone of colluvium following the path of Carlin Creek from the upper landfill. This geology and Carlin Creek may provide a convenient conduit in which contaminants may migrate through from the upper landfill. Water and sediment samples should be collected from Carlin Creek and wetlands in this area. In addition, monitoring wells and samples are needed for priority pollutant and heavy metals analyses. A thorough study of this issue is needed because of the potential impact on the Conklin W.D. well.

10. A major leachate problem exists around the landfills. Where does the 1.8 million gallons of leachate from the upper landfill go? Also, why is leachate appearing to the south of the lower landfill?

11. Additional studies of the on-site wetlands are warranted. Water and sediment samples are needed, especially in the wetlands east of the lower landfill where leachate has been observed.

12. The evaluation of the remedial alternatives and their costs is based on preliminary data and is not done in sufficient detail to assess their effectiveness in properly remediating the site. Much more work in this task is needed, after additional data are obtained to complete the remedial investigation.

In conclusion, while the studies provide substantial amounts of data and allow reclassification of the site, they are not sufficient to serve as an RI/FS. Additional comments from the Bureau of Remedial Action and New York State Department of Health are attached.

If you have any questions, please see me.

New York State Department of Environmental Conservation

M E M O R A N D U M

TO: Larry Lepak, P.E., Region 7
FROM: Raymond Lupe, P.E., Western Site Investigation
SUBJECT: Conklin Town Landfill, Broome County
DATE: May 22, 1984

I have reviewed the report entitled "Hydrogeologic Investigation Proposed Broome County Industrial Park, Conklin Town" by O'Brien and Gere Engineers and several letters regarding the proposal to build an industrial park in Conklin Town, Broome County.

The proposed industrial park will be located on a tract of land which contains two closed landfills, formerly operated by the Town of Conklin. A variety of concerns regarding these landfills have recently been raised and include groundwater contamination; impact on private water supplies; and affects of construction on the landfills.

The following problems were noted in the O'Brien and Gere report and past correspondence, or were observed during our April 25, 1984 site visit:

1. The groundwater around the Conklin landfills has been contaminated with heavy metals and organic chemicals as evident by the presence of these contaminants in monitoring wells around both the upper and lower landfills. A major problem at both landfills is that wastes have been deposited below the groundwater table.

2. The landfill (s) have apparently impacted individual wells along Route 7 as evident by the high iron and manganese concentrations in water samples. In addition, arsenic and organic chemicals have been detected in some wells.

3. The presence of a variety of organic chemicals at elevated concentrations in samples taken from monitoring wells #11 and #14 indicates that industrial wastes may have been buried in the upper landfill. Lower concentrations of organic chemicals were also measured in samples from monitoring wells around the lower landfill.

4. Several leachate seeps were noted around both the upper and lower landfill during our April 25, 1984 site visit. The generation of leachate was especially heavy around the upper landfill because of the infiltration of groundwater.

Based on the above findings, I offer the following comments regarding the Conklin landfills:

1. The O'Brien and Gere report is not fully adequate for a final HRS scoring, but is sufficient for a preliminary score based on groundwater contamination. Additional data needed are depth

of private and municipal wells/aquifer of concern; population potentially affected; documentation of surface water contamination (Carlin Creek); documentation of wastes in the landfill; and better definition of the geology between the upper and lower landfill. This information should be included in the general scope of any proposed Phase II study of this site.

2. The Department should follow-up with County and Town officials to obtain correction of several problems at these landfills. The following measures are recommended:

   a. The Conklin Water District should be extended to residents along Route 7 and in neighboring sub-divisions. This should be given a high priority because of the impact of the landfills on the surrounding groundwaters. This recommendation is consistent with the recommendations of both the O'Brien and Gere report and the NYS Department of Health.

   b. The leachate problem should be corrected. Corrective measures that could be undertaken include; interception and diversion of the groundwater around the upper landfill via a trench or other means; capping of both landfills with impervious materials to reduce the infiltration of surface water into the wastes; and construction of a leachate collection and treatment system. However, measures to reduce the infiltration of water through the landfills should be implemented first.

3. The proposal to construct an industrial park at this site needs further consideration. As a minimum, construction should not be allowed directly over the landfills. Also, any construction which occurs should not cause additional drainage or groundwater to enter the wastes, resulting in further leachate problems; and should not disturb the wastes. Special consideration also needs to be given to the increased chance of human exposure to wastes, if this land is developed.

If you have any questions, please call me at (518) 457-9538.

cc: C. Goddard
W. Demick
E. Barcomb
S. Lackey
R. Heerkens - NYS Dept. Health; Syracuse Area Office
M. Sviatyla - Broome County Health Dept.

bcc: N. Nosenchuck
M. O'Toole
R. Lupe

RL;sjc

STATE OF NEW YORK
DEPARTMENT OF HEALTH OFFICE OF PUBLIC HEALTH

SYRACUSE AREA OFFICE • 351 SOUTH WARREN STREET • SYRACUSE, N.Y. 13202

DAVID AXELROD, M.D.
Commissioner

WILLIAM F. LEAVY
Executive Deputy Director

March 28, 1985

Mr. Raymond E. Lupe, P.E.
Western Investigation Section
Bureau of Hazardous Site Control
NYS Dept. of Environmental Conservation
50 Wolf Rd.
Albany, NY 12233-0001

Dear Ray:

RE: Conklin Landfill
Reg. Site #704013
Conklin (T) Broome Co.

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incorrect. Wells Numbered correctly in report.

2. The report mentions potential effects via Carlin Creek on Conklin Well #3. My information is that Conklin Well #2 would be possibly influenced by Carlin Creek while Well #3 is remote.

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I would appreciate your sharing additional data on the site as it becomes available. I will see that you are copied on home water supply results as we receive them.

Very truly yours,

Ronald Heerkens

Ronald Heerkens
Program Research Specialist

cc: Dr. Gaffney
Mr. Denz
Mr. Gross
Mr. Tramontano
Mr. Bogden

H2M Environmental Engineers & Scientists
HOLZMACHER, McLENDON and MURRELL, P.C.
575 BROAD HOLLOW ROAD, MELVILLE, NEW YORK 11747 (516) 694-3040

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MODEL STUDIES • PILOT PLANT STUDIES • WATER/WASTE WATER LABORATORY AND ANALYTICAL SERVICES

LABORATORY REPORT

LAB NO. [illegible]
PROJECT NO. [illegible]

CLIENT'S NAME AND ADDRESS

BROOME COUNTY HEALTH DEPT.
ONE HALL ST. [illegible]
BINGHAMTON, N.Y. 13901

TYPE OF SAMPLE - POTABLE WATER — COLLECTED BY CL
DATE COLLECTED - 11/13/84 — DATE RECEIVED - 11/14/84

[illegible] #001 11-13-84 [illegible]
GRAB SAMPLE
HASTER RESIDENCE

Lot #2
Baumfield
Subdivision
Conklin Road

file
Town of
Conklin
Landfill

PARAMETER	RESULT	PARAMETER	RESULT
TOTAL ALK.	112.	T. ORG. CARBON	<2.90
CHLORIDE	[illegible]	ARSENIC	<2.00*
COLOR	[illegible]	IRON	8.38
[illegible]	[illegible]	MANGANESE	0.90
HARDNESS	11[illegible]		
NITRATE (N3-N)	<0.10		
PH	7.30		
SULFATE	25.0		
TOTAL DISS SOLIDS	167.		

RESULTS IN (MG/L) EXCEPT AS NOTED BY * (UG/L) OR % (PERCENT) AND
T.COLI BACT. & FECAL COLI (MPN/100ML)
COLOR, ODOR, TURBIDITY & PH (UNITS)
APC & FECAL STREP (COUNTS/ML)
SPEC.COND. (UMHOS) SETT.SOLIDS(ML/L)

DATE REPORTED 1/ 4/85

S. C. McLENDON, P.E., LABORATORY DIRECTOR

File on eDOCs X Yes ____ No
Site Name Conklin
Site No. 704013
County Broome
Town Conklin
Foilable X Yes ____ No
File Name RAS-04-04 Sampling
...ined & eDOC ____