



**SIERRA
CLUB**
FOUNDED 1892

Heart of Illinois Group *[Signature]* P.O. Box 3593, Peoria, IL 61614

ORIGINAL

RECEIVED
CLERK'S OFFICE

MAY 07 2008

STATE OF ILLINOIS
Pollution Control Board

2419 E. Reservoir
Peoria, IL 61614-8029
May 7, 2008

DC 175

Illinois Pollution Control Board
RE: PCB 08-42
100 W. Randolph St., Suite 11-500
Chicago, IL 60601

To the Illinois Pollution Control Board Regarding Case PCB 08-42:

This letter is being sent on behalf of Heart of Illinois Group Sierra Club (HOI), which has nearly 900 members in central Illinois and approximately 600 members in the Peoria metropolitan area. Our members drink Peoria water and breathe Peoria air. We want a safe environment for our families and for our future, and we contend that the currently issued IEPA Operating Permit for PDC is lacking in critical factors to protect the public health and safety and that the issue of this landfill capacity must be reviewed.

On behalf of HOI, I supplied comments and questions at the IEPA Public Hearing, February 28, 2007, in Peoria, as did other HOI members who spoke regarding the Operating Permit for Peoria Disposal Company Hazardous Waste Landfill. HOI has concerns related to petitioner Tom Edward's issues regarding this hazardous waste landfill and the currently issued operating permit.

We ask the Illinois Pollution Control Board to review the following:

I. Landfill Capacity

We question the capacity of this landfill and how PDC obtained an increase in total landfill capacity from the 1,847,200 cubic yards printed on Page V-1, Section V Landfills, of the 1987 permit¹, to the capacity of 2,638,580 cubic yards currently listed as capacity on Page V-1, Revised October 2007 of the permit application².

In a December 16, 2002, IEPA Bureau of Land File Memorandum³, the following is stated:

"The new total capacity is calculated to be 2,638,580 cubic yards. This is less than current calculations of the previously permitted total capacity of 2,638,983 cubic yards. The capacity previously listed in the permit is incorrect because of calculation errors made in the original permit application. This issue had been raised previously, but the actual number in the permit had never been revised to reflect the accurate volume.

1 Exhibit 1, page V-1, Section V Landfills, 1987 permit
2 Exhibit 2, page V-1, Revised October 2007, permit renewal application
3 Exhibit 3, December 16, 2002, IEPA Bureau of Land File Memorandum

[bold added/HOI] This error has been corrected in the modified permit. The submittal does not contain a breakdown of the new capacities of Cells C-1 through C-4. I have contacted Ron Welk of PDC to obtain these values, which will be included in the modified permit.”

The modified permit being referred to is the Class 2 Permit Modification Dated December 18, 2002. We specifically ask the IPCB to look at the Agency (IEPA) public notice regarding this specific year 2002 permit modification⁴, which gives this 'Description of Project':

“1. Use municipal wastewater treatment plant sludge as part of the final cover topsoil component.

2. Reconfigure landfill units with no increase in capacity.” [bold added/HOI]

Without significant investigation studying the permits, the public could not know that in this permit modification the Agency changed the printed permitted capacity of the PDC Hazardous Waste Landfill from 1,847,200 cubic yards to 2,638,580 cubic yards (in the year 2002 permit modification). This change should have at least merited an accurate mention in the public notice wording. We question if this should not also have required a public hearing.

Please also note the comment from above that “The submittal does not contain a breakdown of the new capacities of Cells C-1 through C-4,”³ yet the recalculation of permitted cubic yards in total is accepted. The recalculation, “... is done by adjusting final contours of Cells C-1 through C-4. Calculations showing that the units will be able to support the additional loading are included in the appendicies of the application.”³

HOI asks the IPCB to review the “calculated redesign” of the landfill height, weight, and slopes over Cell C1 in particular, and over Cells C2-C4 to verify that the additional load and increased slopes are protective of the public health and safety. The steepest slopes with 4 to 1 raise are at the south edge of the landfill closest to Pottstown, and in proximity above the Peoria Dog Obedience Training Club on Southport Road.

The capacity of the C Cells show huge increases from the originally permitted levels:

From Page V-1, ILD000805812, Section V Landfills (1987 permit)¹:

<u>Landfill Cell Designation</u>	<u>Approximate Total Capacity (c.y.)</u>	<u>Surface Area Dimensions of Landfill Cell (Acres)</u>
Trench C-1	303,700	7.9
Trench C-2	252,700	6.8
Trench C-3	346,700	7.7
Trench C-4	409,500	11.8
Trench C-5	303,100	7.9

4 Exhibit 4, “Notice of Application for Permit to Manage Waste (LPC-PA16)

From Page V-1, ILD00085812, Section V Landfills Revised: October 2007 ²:

<u>Landfill Cell Designation</u>	<u>Approximate Total Capacity (c.y.)</u>	<u>Surface Area Dimensions of Landfill Cell (Acres)</u>
Trench C-1	425,929	7.3
Trench C-2	453,846	6.4
Trench C-3	775,939	7.3
Trench C-4	982,865	11.0

The changing capacity figures are one reason HOI views the capacity of this site with complete discomfiture. The wording of the Agency public notice for the Class 2 Permit Modification of 2002, stated "no increase in capacity" yet the capacity change of total cubic yards from 1.8 million to 2.6 million was in this document. This is another reason we sincerely request the IPCB review capacity issues with this site.

We question if this landfill should not already be considered at capacity, and we request that a date certain for closure of March, 2009, be required in the Operating Permit.

While we respect that the Agency has a great many important duties and demands, the fact that this operating permit was for ten years from 1987 to 1997, and the ten year renewal was actually issued by the Agency in 2007, ten years after the renewal date, does not help in the public perception of the priority, level of attention, and scrutiny being given to this hazardous waste landfill. It also seems to indicate that perhaps due to lack of staff, or other issues, that timely evaluation and issuing of this RCRA operating permit was delayed ten years, which gives those of us in Peoria great cause for concerns with the Agency ability to give adequate oversight to the huge details of this facility.

II. Monitoring Should Not Be Reduced

On Page VI-5, Revised October 2007 of the RCRA Part B Permit, letter E, Monitoring Parameters,⁵ the newly issued operating permit allows a change to semi-annual detection monitoring of up-gradient and point of compliance wells. This is not protective of public health and safety. We ask that monitoring be required quarterly, as in the previous operating permit.

Page 3

Aquifer level sands below the PDC waste site link to the Sankoty aquifer, which supplies water for Peoria and outlying communities. It is well documented that sand lenses occur on the east side of the landfill,⁶ and that two large sand lenses were encountered in the excavation of Cell C-1.⁷

The change to semi-annual monitoring is particularly of concern because of the time it would then take for any constituent detected which exhibits a progressive increase over four consecutive sampling events. Those must be identified (in letter b. below F. Detection Monitoring on page VI-9 of

5 Exhibit 5, page VI-5, Revised: October 2007, ILD000805812

6 Exhibit 6, Herzog et al, Evaluation of Groundwater Monitoring Programs at Hazardous Waste Disposal Facilities in Illinois (1988), Figure 25, "Cross-section B-B' along east side of Peoria Disposal Company site"

7 Exhibit 7, Trench C-1, "Sand Seam Overexcavated ..." trench drawing

the permit)⁸ and it appears to indicate that two years would elapse before a progressive increase would be given critical consideration, and that is only if there were four consecutive increases.

There are known problems with the Cell C liners. In his letter to the Peoria County Board, dated March 27, 2006, Charles Norris, Geo-Hydro, Inc., has an entire section regarding "Leaking from the Liner Systems Under Section C,"⁹ where he states:

"The operating record and the monitoring data for leachate production from Section C demonstrates that the primary basal liners of trenches C1 through C4 leak, and that the primary basal liner of trench C-1 shows the worst leakage. Further, the data from trench C1 shows that the secondary liner also leaks."

Mr. Norris goes on to provide supporting details for his conclusion, including the following:

"By 1988 it was recognized that the integrity of the basal liner for trench C1 was compromised. The leak detection system was producing fluid far in excess of what could be expected from an intact liner and the chemistry of the fluid was similar to the leachate from trench C1 with respect to the constituents present and their relative concentrations. Effective 21-Sep-88, a new permit condition required PDC to document production rates from the leak detection system daily, analyze the composition of the fluid from the leak detection system twice monthly, and report that documentation to IEPA monthly (reduced to annual reporting in 1993)."

Mr. Norris goes on with his discussion that there is already contamination under the PDC waste disposal complex.⁹

"It is undisputed that the water under and adjacent to the PDC waste disposal complex is contaminated with synthetic chemicals. It is undisputed that inorganic contaminants such as chloride are anomalously high and, in many cases, are known to have risen above original base line levels. PDC's consultants hold that none of the contamination that is found under the site is from the PDC waste disposal complex or the result of PDC operations. In every case, the water beneath the PDC waste disposal complex has been the victim of migration from some off-site source or migration upward from the earth beneath the site. Unknown, unproven, and speculative off-site sources are rationalized as the cause of all on-site contamination. Simple, downward migration from historic and current waste disposal units and operations are rejected as possible causes."

A specific example of contamination that HOI asks the IPCB to review, is the nickel exceedances in five monitoring wells, allowed by the Agency to be due to leaching of nickel from the monitoring well stainless steel screens. In October, 1993, the Agency accepted PDC's April, 1993, explanation of nickel exceedances in wells R121, A126, R128, R129, and G136 to leaching of nickel in the stainless steel screens in the monitoring wells.¹⁰ This exemption appears to be continued in the newly issued operating permit. HOI asks the IPCB to consider our dismay that since 1993, five monitoring wells have been exempted from nickel exceedances and that there is no evidence that the Agency has required new monitoring wells for these locations, PVC, or other corrections to the existing

⁸ Exhibit 8, page VI-9, Revised: October 2007, ILD000805812

⁹ Exhibit 9, Norris, Charles, March 27, 2006, letter to the Peoria County Board Siting Committee, page s 1-8

¹⁰ Exhibit 10, Vol. 14, Section 3, Page 6, 1997 permit application draft

wells to insure that adequate and responsible monitoring for nickel, as required and regulated, is being done. This is not in the interests of public health and safety and what would appear to be the requirements of the regulations.

III. Testing for Mercury Should Be Required

HOI asks specifically, as Mr. Edwards does, that monitoring and testing for mercury pollution be required. The current Operating Permit states in several locations¹¹ that wastes cannot be accepted with over 2% of mercury by weight, yet there is no monitoring well testing for mercury. Considering that up to 2% of weight of wastes can be mercury, testing should be required. The lack of mercury testing seems to be a distinct disconnect between hazardous waste going into the landfill, and adequate monitoring to protect the public health and safety.

IV. Additional Down-Gradient Monitoring Wells Should be Required for Older Parts of Landfill

While five upgradient monitoring wells exist for the Barrel Trench Area, and older parts of the landfill outside the C-Cells, there are not adequate downgradient monitoring wells for the older parts of the landfill. HOI is concerned that the Agency has not required as many downgradient monitoring wells for the older sections as up gradient monitoring wells. Additional downgradient test wells should be required to monitor the Barrel Trench, Part A, Part B, and the additional pre-regulation waste area on the west side of the site.

V. Air Monitoring for this Site Is Not Adequate and Permit Provisions Are Not Monitored

Page V- 5 of the RCRA Permit Revised October 2007 states at #18¹² that:

“No person shall cause or allow operation of the landfill so as to cause or threaten or allow discharge or emission of any contaminant into the environment in any state so as to cause or tend to cause air pollution in Illinois, either done or in combination with contaminants from other sources, or so violate regulations or standards adopted by the Board under the Act.”

In spite of this permit directive, there is no air monitoring for this hazardous waste landfill except for the Waste Stabilization Plant baghouse processes. This landfill permit does not have restrictions on landfill operations regarding wind speeds or direction. The landfill is upwind of the preponderance of the city of Peoria, with residences within less than 300 feet from the landfill boundary. Prevailing south westerly winds go over the landfill to the city of Peoria, with over 53,000 people within 3 miles of the landfill site. Fine particulates, P.M. 2.5 can travel miles. About 113,000 people live in Peoria, and having an active hazardous waste landfill immediately next to a large city population without ambient air monitoring at the perimeter of the landfill and in adjacent neighborhoods is not protective of the public health and safety. Low-income housing, senior citizen residences, private homes, and children's playgrounds are all within close proximity to the landfill and are subject to prevailing winds. The fact that the landfill has been granted a reconfiguration of the site, adding height over the previous plans, adds to our concerns regarding wind carrying pollutants to adjacent residential areas. Some parts

11 Exhibit 11 #1: Letter B. Waste Identification, #4., Page III-1, Section III Containment Building, Revised: October 2007, ILD000805812, Hazardous Waste Management RCRA Permit Part B (effective January 1, 2008);

#2: Letter Letter E: Stabilization Facility, #1., Page X-3, Section X Additional Special Conditions, Revised: October 2007, ILD000805812, Hazardous Waste Management RCRA Permit Part B (effective January 1, 2008)

12 Exhibit 12, Page V-5, C. Design and operating requirements, #18, Revised: October 2007, ILD000805812, Hazardous Waste Management RCRA Permit Part B (effective January 1, 2008)

of the landfill will be an additional ten to twenty feet higher for the open landfill face, than in the original permit.

HOI requests, as does Mr. Edwards, that the IPCB direct the Agency to require additional air monitoring. We ask that air monitoring be done at the perimeter of the landfill, and in adjacent neighborhoods. We would like to see regular reporting, and constant monitoring during winds. We ask that restrictions on dumping during high wind conditions be added. Without additional air monitoring beyond the baghouse testing, the provision of the current permit quoted above has no means of being adequately monitored and is actually not being monitored.

VI. Hazardous Waste Processing Next to Large Municipality and Over Aquifer

The 2002 Permit Revisions for this landfill stated that the expected date for landfill closure was in 2005¹³. The current permit states that the anticipated landfill closure is to be in March, 2009. The current permit application has a table with closure plans and post-closure plans (Section I, "Closure Plans, Post-Closure Plans and Financial Requirements," Table I-1, in Application Volume 17, Revised November 2006)¹⁴ for other units of the landfill, including the Waste Stabilization Building and Waste Storage Silos and Tanks, however, there is nothing required by the Agency that appears to trigger closure of the Waste Stabilization Plant and related waste silos and storage areas. PDC owns numerous municipal waste landfills and trucking, and has been sending lead and PCB wastes to their Indian Creek Municipal Waste Landfill near Hopedale, in Tazewell County, since 2007 (that we know of). The citizens of Peoria are faced with the continued trucking of toxic wastes into PDC #1 with the processing and handling of the wastes upwind of family residences, senior citizen homes, playgrounds, and public streets.

We ask the Illinois Pollution Control Board's consideration for stronger protections for our community and our aquifer, and that the Agency be required to set a date certain for closure of the Waste Stabilization Plant, waste storage silos, and other temporary storage areas, within two years after the final landfill waste cell closure.

The current permit has sections allowing the construction of a solids storage building with nine hazardous waste storage tanks, construction of two proposed storage silos and concrete vault, and the option for storing up to ten roll-off containers in the container storage/staging area (page iv, of the permit and I-1) remain in the permit. Since this landfill is expected and requested to close in March, 2009, there is no need for these additional features to be in the newly issued Operating Permit and we ask that the Agency be directed to remove permission for any additional facilities not currently in operation. It is obviously our concern that these facilities will be added to expand the Waste Stabilization Plant operations, which could mean more hazardous waste trucks traveling in and out of the site and over our county roadways and highways. We think it is essential that the permit be clarified that the Waste Stabilization Plant is part of the RCRA landfill, and that it must close in connection to the closure of the landfill.

Closing Comment:

PDC attempted a site expansion, which was soundly turned down by the Peoria County Board vote of 12 to 6, in May, 2006. In 2007, the Agency denied PDC's attempt for a Class 3 Operating Permit expansion. Both of these denials were affirmed by the Illinois Pollution Control Board .

While the explanation is given that the capacity is not yet at the allowable limit, and the maximum height limit is still met by the "landfill reconfiguration", HOI asks the IPCB:

¹³ Page V-1, Section V Landfills, Part A Summary, Revised: December, 2002, ILD000805812, Permit Modification

¹⁴ Page V-1, Section V Landfills, Part A Summary, Revised: October, 2007, ILD 000805812, Hazardous Waste Management RCRA Permit Part B (effective January 1, 2008)

How much hazardous waste should be allowed to be squeezed in effect, on the existing cells? The additional height will be added over cells with compromised liners. The waste will be added at higher levels, putting the adjacent neighborhoods at greater risk from air-born particulates that are transported by the prevailing winds from the southwest going over the landfill toward residential areas. The working areas of the landfill are not covered during the day when work is underway. The landfill is in operation on days with strong winds. Children play outside in neighborhood playgrounds within easy view of the landfill. There is a popular dog obedience training school below the edge of the landfill property at Pottstown on Southport Road, and their facility and parking lot is in easy view of a raw dirt edge looming above in close proximity. There is no air monitoring at the perimeter or in the adjacent neighborhoods. There are known sand lenses, in particular on the east side of the landfill, where Cell C-1 is located.

We are concerned that the continued operation of this landfill further compromises the functional capabilities of the C – Cells and means greater pollution risks for our community and the Sankoty Aquifer. We do not want Peoria and the people of our community treated as a sacrifice zone for the continued operations of this privately owned and for-profit hazardous waste landfill.

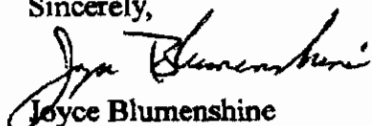
We question how the capacity limit of 2,638,586 cubic yards was determined by PDC, and how the 1987 originally permitted capacity was changed. PDC has made it clear that they will push the limits in their every attempt to expand their landfill. We believe they are pushing the limits of the existing site, and that a date certain for closure of March, 2009, must be required.

On Page VIII – 1 of the Permit, the statement #1. Effect of Permit reads¹⁵:

Issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or infringement of state or local law or regulations.

HOI contends that the Peoria community and Peoria County has had enough toxic waste on behalf of Illinois and the 15 outside states with locations sending hazardous waste to this site. The continued operations of this site affect the the public health and safety of our community and for many individuals, our private rights to peace of mind have been invaded by this hazardous waste landfill.

Sincerely,



Joyce Blumenshine
volunteer Heart of IL Group Sierra Club

¹⁵ Page VIII-1, ILD 000805812, Hazardous Waste Management RCRA Permit Part B (effective January 1, 2008)

EXHIBIT #1, p.1



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 - (217) 782-3397
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601 - (312) 814-6026

ROD R. BLAGOJEVICH, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

April 28, 2008

Phone: 217/782-9878
Fax: 217/782-9290
www.epa.state.il.us/foia

Heart of IL Group Sierra Club
Attn: Ms. Joyce Blumenshine
2419 E Reservoir
Peoria, IL 61614-8029

Re: Freedom of Information Act

Dear Ms. Blumenshine:

The FOIA Sector, Bureau of Land, has processed your request dated April 17, 2008 and received on April 17, 2008 for public records pursuant to the Freedom of Information Act (FOIA) (5 ILCS 140/1 et. seq.). The information you requested from the below listed Site is enclosed.

Bureau of Land Site	Imaged Documents	No. of Images	Inches of Paper	Pages of Microfiche
1438120001 PEORIA DISPOSAL CO INC 4349 SOUTHPORT RD, PEORIA	0	0	0.10	0
Total Image/Page Counts:	0	0	3	0

In order to obtain more detailed information, you would need to review the permit application at our office here in Springfield. Please contact me by telephone at 217/557-2482 or by email at Jan.Ogden@illinois.gov to schedule a file review if you are interested.

Sincerely,

Jan Ogden, FOIA Coordinator
Records Management Unit
Bureau of Land

ID: 53067

ROCKFORD - 4302 North Main Street, Rockford, IL 61103 - (815) 987-7760 • DES PLAINES - 9511 W. Harrison St., Des Plaines, IL 60016 - (847) 294-4000
ELGIN - 595 South State, Elgin, IL 60123 - (847) 608-3131 • PEORIA - 5415 N. University St., Peoria, IL 61614 - (309) 693-5463
BUREAU OF LAND - PEORIA - 7620 N. University St., Peoria, IL 61614 - (309) 693-5462 • CHAMPAIGN - 2125 South First Street, Champaign, IL 61820 - (217) 278-5800
SPRINGFIELD - 4500 S. Sixth Street Rd., Springfield, IL 62706 - (217) 786-6892 • COLLINSVILLE - 2009 Mall Street, Collinsville, IL 62234 - (618) 346-5120
MARION - 2309 W. Main St., Suite 116, Marion, IL 62959 - (618) 993-7200

PRINTED ON RECYCLED PAPER

Section V LANDFILLS

A. SUMMARY

Peoria Disposal Company operates a ninety (90) acre facility, seventy-four (74) of which are approved for disposal units. The total waste capacity is approximately 1,847,200 cubic yards. Industries served by the site include earthmoving and agricultural equipment manufacturers, chemical and steel companies, and breweries. Some wastes are to be treated at the Stabilization Unit at the facility prior to disposal in a landfill cell.

The landfill is to be operated so as one landfill unit is nearing final capacity and closure, the next unit is prepared for disposal activity. The final landfill unit is scheduled to close in the year 2005.

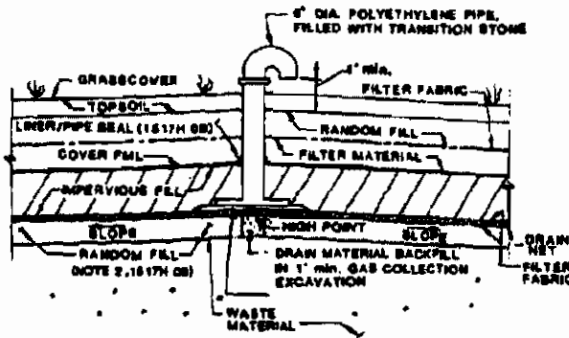
This section presents permit conditions for the landfill according to the regulatory requirements of 35 IAC 724 Subparts N (Landfills) and G (Closure).

B. WASTE IDENTIFICATION

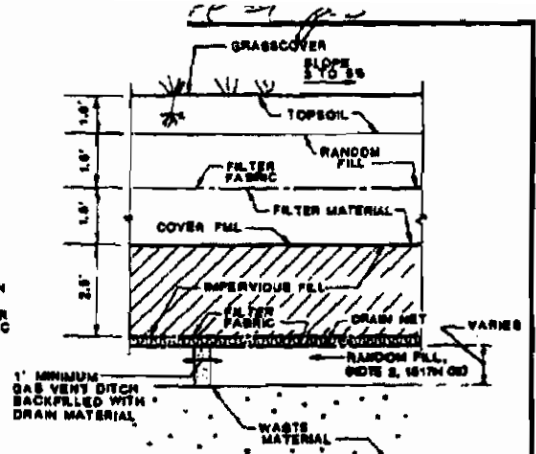
1. The landfill disposal units are, or are to be, located as shown in Attachment F to this permit.
2. The Permittee may dispose the following wastes in landfill cells, subject to the terms of this permit:

<u>Landfill Cell Designation</u>	<u>Capacity (c.y.)</u>	<u>Surface Area Dimensions of Landfill Cell</u>	<u>Description of Waste</u>	<u>Hazardous Waste No.</u>
Barrel Trench Area	35,000	14	See Attachment C for Waste List and Hazardous Waste Nos. and	
Section A	6,500	8		
Section B	190,000	10	Non-hazardous waste approved by IEPA special waste stream permit	
Trench C-1	303,700	7.9		
Trench C-2	252,700	6.8		
Trench C-3	346,700	7.7		
Trench C-4	409,500	11.8		
Trench C-5	303,100	7.9		

3. The Permittee is prohibited from disposing any waste in the permitted units not included in Condition B. 2. of this Section.



SECTION A-A (TYP)
NOT TO SCALE



COVER SYSTEM TYPICAL SECTION

SCALE 0 2 FEET

FINAL COVER GEOMETRY

POINT	ELEVATION		ELEVATION
	EMERGENCY	FINAL	
201	E 31.303	F 12.175	620
202	E 30.320	F 12.175	625
203	E 8.630	F 11.450	640
204	E 8.630	F 10.674	640
205	E 10.450	F 10.674	640
206	E 10.450	F 11.065	640
207	E 10.757	F 11.065	640
208	E 11.143	F 11.100	640
209	E 11.143	F 11.175	640
210	E 10.810	F 11.450	656
211	E 10.480	F 11.420	657
212	E 10.480	F 11.420	657
213	E 10.320	F 13.385	657
214	E 10.055	F 13.740	657
215	E 10.055	F 11.200	657

LEGEND:

- GAS VENT
- GAS VENT DITCH
- EXCAVATION SLOPE
- FILL SLOPE
- COVER CONTOURS
- FLEXIBLE MEMBRANE LINER (FML)
- DRAIN NET
- FILTER FABRIC
- MANHOLE COVER

NOTES:

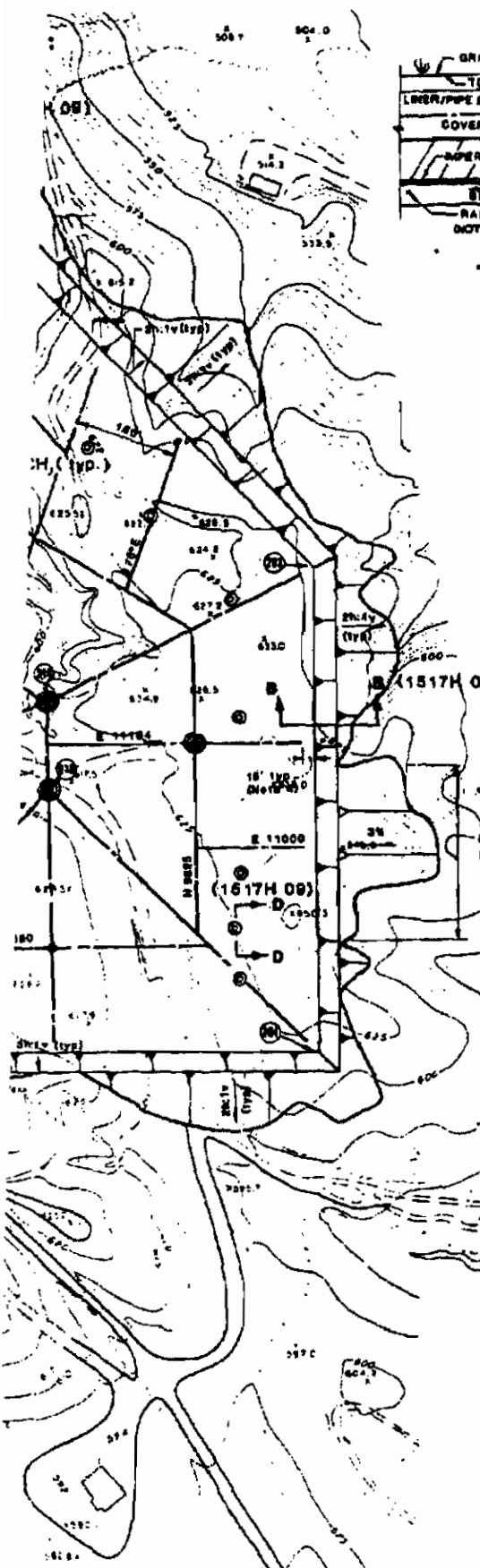
1. TOPOGRAPHY TAKEN FROM MAPPING PREPARED FOR AUSTIN ENGINEERING CO., INC. BY AERIO-METRIC ENGINEERING INC. DATE OF PHOTOGRAPHY: 5/28/85.
2. LEGAL BOUNDARIES, STRUCTURES, AND ALL EXPLORATION BOTH WITHIN AND BEYOND THE LIMITS OF THIS DRAWING ARE SHOWN IN DRAWING 1517H 11.
3. FOR PERIMETER COORDINATES, SEAMING DETAILS, AND MANHOLE DETAILS SEE DRAWINGS 1517H 02, 1517H 04, AND 1517H 05 RESPECTIVELY.
4. VENT DITCHES SHOULD NOT BE ANY CLOSER THAN 15' TO THE TOP OF THE 3:1 V SLOPE ABOVE THE PERIMETER BERM CREST.



SCALE 0 100 200 FEET
EXCEPT AS NOTED

PEORIA DISPOSAL COMPANY PEORIA, ILLINOIS	
DEVELOPMENT PERMIT APPLICATION	AREA C
FINAL COVER PLAN	
HARZA ENVIRONMENTAL SERVICES, INC. APPROVED: <i>[Signature]</i>	
CHICAGO, ILLINOIS	DATE: MAR 1986 DRAWING NO.: 1517H 08

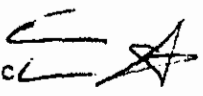
NO.	DATE	BY	CHKD	APPD.	NATURE OF REVISION
1					SECTION A-A LOWER / PIPE SEAL REFERENCED TO 1517H 02.



Section V LANDFILLS

A. SUMMARY

Peoria Disposal Company operates a ninety (90) acre facility, seventy-four (74) of which are approved for disposal units. The total waste capacity is approximately 2,638,580 cubic yards. Industries served by the site include earthmoving and agricultural equipment manufacturers, chemical and steel companies, and breweries. Some wastes are to be treated at the Stabilization Unit at the facility prior to disposal in a landfill cell. The final landfill unit is scheduled to close in the year 2009.



This section presents permit conditions for the landfill according to the regulatory requirements of 35 Ill. Adm. Code 724 Subparts N (Landfills) and G (Closure).

B. WASTE IDENTIFICATION

1. The landfill disposal units are located as shown on the site topographic map contained in Appendix B-2 of the approved permit application.
2. The Permittee may dispose the following wastes in landfill cells, subject to the terms of this permit:

<u>Landfill Cell Designation</u>	<u>Approximate Total Capacity (c.y.)</u>	<u>Surface Area Dimensions of Landfill Cell (Acres)</u>	<u>Description of Hazardous Waste</u>
Barrel Trench Area	35,000	14	See Attachment C for Waste List and Hazardous Waste Nos. and
Section A	6,500	8	
Section B	190,000	10	Non-hazardous wastes identified in Condition X.H.2
Trench C-1	425,929	7.3	
Trench C-2	453,846	6.4	
Trench C-3	775,939	7.3	
Trench C-4	982,865	11.0	

Handwritten note: "No one from [unclear]" with an arrow pointing to the table.

3. The Permittee is prohibited from disposing any waste in the permitted units not included in Condition B. 2. of this Section.

Exhibit #3

MEMORANDUM

Date: December 16, 2002

To: BOL File

From: Mark L. Crites, RCRA Permits

Re: Class 2 Permit Modification – Reconfiguration of Landfill Cells

1438120003 – Peoria County

ILD000805812

Log No. B-24-M-56

Discussion

In this submittal, 2 modifications are requested to the Part B Permit for the above – referenced facility. These modifications are discussed below:

1. Allow the use of municipal wastewater treatment plant sludge as a soil amendment in final cover soils.

According to Imran Sayed, of the Solid Waste unit, this is currently done in solid waste landfill permits. The main concern is that the sludge be applied at agronomic rates (20 tons per acre per year) so that a state permit is not required. I have incorporated language used by the Solid Waste unit in permits where MWTPS is used as a soil amendment. The specific language I have used is drawn from the permit for Harbor View landfill (Permit No. 1995-0600LFM). A copy of the page containing the applicable condition is attached.

2. Reconfigure the existing landfill units to eliminate the proposed Cell C-5, and increase capacity in cells C-1 through C-4 without increasing overall capacity, or final permitted elevations.

This is done by adjusting final contours of Cells C-1 through C-4. Calculations showing that the units will be able to support the additional loading are included in the appendices of the application. The new total capacity is calculated to be 2,638,985 cubic yards.

This is less than current calculations of the previously permitted total capacity of 2,638,983 cubic yards. The capacity previously listed in the permit is incorrect because of calculation errors made in the original permit application. This issue had been raised previously, but the actual number in the permit had never been revised to reflect the accurate volume. This error has been corrected in the modified permit. The submittal does not contain a breakdown of the new capacities of Cells C-1 through C-4. I have contacted Ron Welk of PDC to obtain these values, which will be included in the modified permit.



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276

THOMAS V. SKINNER, DIRECTOR

NOTICE OF APPLICATION FOR PERMIT TO MANAGE WASTE (LPC-PA16)

Date: August 13, 2002

To Elected Officials and Concerned Citizens:

The purpose of this notice is to inform you that a permit application has been submitted to the IEPA, Bureau of Land, for a solid waste project described below. You are not obligated to respond to this notice, however, if you have any comments, please submit them in writing to the address below, or call the Permit Section at 217/524-3300, within twenty-one (21) days.

Peoria Journal Star
News Room
1 News Plaza
Peoria, IL 61643

Illinois Environmental Protection Agency
Bureau of Land, Permit Section (#33)
1021 North Grand Avenue East, Post Office Box 19276
Springfield, Illinois 62794-9276

The permit application, which is identified below, is for a project described at the bottom of this page.

SITE IDENTIFICATION

Site Name: Peoria Disposal Company Staff (IEPA): 1438120003
Address: 4349 Southport Road
City: Peoria County: Peoria

TYPE PERMIT SUBMISSION:

New Landfill _____
Landfill Expansion _____
First Significant Modification _____
Significant Modification to Operate _____
Other Significant Modification _____
Renewal of Landfill Development _____
Operating Supplemental Transfer _____
Name Change _____
Generic _____
SARA Part B X

TYPE FACILITY:

Landfill X
Land Treatment _____
Transfer Station _____
Treatment Facility X
Storage X
Incinerator _____
Composting _____
Recycling/Reclamation _____
Other _____

TYPE WASTE:

General Municipal Refuse _____
Hazardous X
Special (Non-Hazardous) X
Chemical Only (excl. putrescible) _____
Inert Only (excl. chem. & putrescible) _____
Used Oil _____
Solvents _____
Landscape/Yard Waste _____
Other (Specify _____) _____

DESCRIPTION OF PROJECT:

1. Use municipal wastewater treatment plant sludge as part of the final cover topsoil component. ✓

2. Reconfigure landfill units with no increase in capacity. ✓

RECEIVED

AUG 20 2002

IEPA-BOL
PERMIT SECTION

Please retain a copy for your own use.

IL 532 0334

Rev 01-99

p. 13

309 688-0950

Feb 01 2004 10:30AM Reservoir

Exhibit 5
A1

Revised: October 2007
ILD000805812
Page VI-5

4. Should any well become consistently dry or unserviceable; a replacement well shall be provided within ten (10) feet of the existing well. This well shall monitor the same geologic zone as the existing well and be constructed in accordance with the current Illinois EPA groundwater monitoring well construction standards at the time that the well is replaced. A replacement well which is more than ten (10) feet from the existing well or does not monitor the same geologic zone must be approved by the Illinois EPA and designated as a new well.
5. The Permittee shall submit boring logs, construction diagrams and data sheets from installation and development of a new or replacement well to the Illinois EPA at the address below with thirty (30) days of the date that installation of the well is completed. In addition, the Permittee shall submit certification that plugging and abandonment of a well was carried out in accordance with the approved procedures to the Illinois EPA at the address below within thirty (30) days of the date that the well is plugged and abandoned. All information should be submitted to the appropriate State Agencies.

Illinois Environmental Protection Agency
Bureau of Land - #33
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

6. All wells/piezometers shall be equipped with protective caps and locks. Monitoring wells or piezometers located in high traffic areas must be protected with bumper guards.
7. All groundwater monitoring wells and piezometers not utilized in the groundwater monitoring system, but retained by the facility, must be constructed and maintained in accordance with 77 Ill. Adm. Code 920 regulations. Monitoring wells and piezometers that are improperly constructed must be abandoned in accordance with Conditions VI.D.3.

E. MONITORING PARAMETERS

1. The Permittee shall determine groundwater quality at groundwater monitoring wells identified in Condition IV.D.1, at both the upgradient and point of compliance locations, semi-annually during the active life (including closure and post-closure care period) of the landfill. Samples collected during the semi-

Exhibit 45
p2

Revised: October 2007
ILD000805812
Page VI-6

annual events of each year shall be analyzed for the field parameters and hazardous waste constituents below. ✓

List G1 - Semi-Annual Groundwater Sampling

<u>Field Parameters</u>	<u>Storet Number</u>	<u>Reporting Units</u>
pH	00400	
Specific Conductance	00094	micromhos/cm
Temperature of Water Sample	00011	(°F)
Turbidity	45626	Ntus
Depth to Water (below land surface)	72019	Feet
Depth to Water (below measuring point)	72109	Feet
Elevation of Bottom of Well#	72020	Ft-MSL
Elevation of Groundwater Surface	71993	Ft-MSL
Elevation of Measuring Point (top of casing)##	72110	Ft-MSL

Shall be determined during the second sampling event each year.

Shall be surveyed once every five (5) years, or at the request of the Illinois EPA, or whenever the elevation changes as required by Condition VI.G.2.

<u>Hazardous Waste Constituents</u>	<u>Storet Number</u>	<u>Reporting Units</u>
<u>Inorganics</u>		
Barium, Ba (dissolved)	01005	ug/l
Cadmium, Cd (dissolved)	01025	ug/l
Chromium (dissolved)	01030	ug/l
Iron, Fe (dissolved)	01046	ug/l
Lead, Pb (dissolved)	01049	ug/l
Manganese, Mn (dissolved)	01056	ug/l
Nickel, Ni (dissolved)	01065	ug/l
Zinc, Zn (dissolved)	01090	ug/l
Calcium, Ca (dissolved)	00915	mg/l
Chloride, Cl (dissolved)	00941	mg/l
Cyanide, CN (total)	00720	ug/l
Sodium, Na (dissolved)	00930	mg/l
Sulfate, SO ₄ (dissolved)	00946	mg/l

Department of Energy and Natural Resources
ILLINOIS STATE GEOLOGICAL SURVEY

ENVIRONMENTAL GEOLOGY NOTES 129

1998



Beverly L. Herzog, Bruce R. Hense, Edward Mehnert,
Jerry R. Miller, and Thomas M. Johnson

EVALUATION OF GROUNDWATER MONITORING PROGRAMS AT HAZARDOUS WASTE DISPOSAL FACILITIES IN ILLINOIS



ENVIRONMENTAL

IL
NR 6.151
129

EON 129

Exhibit # 6

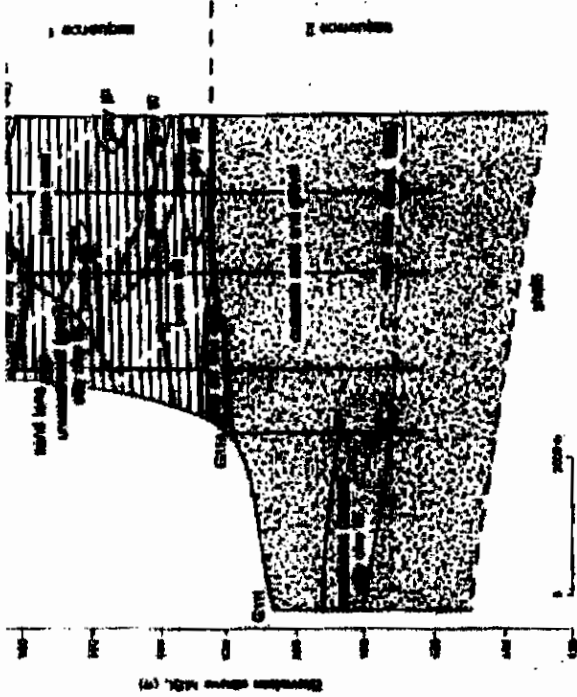


Figure 24 Cross-section A-A' along north side of Peoria Disposal Company site.

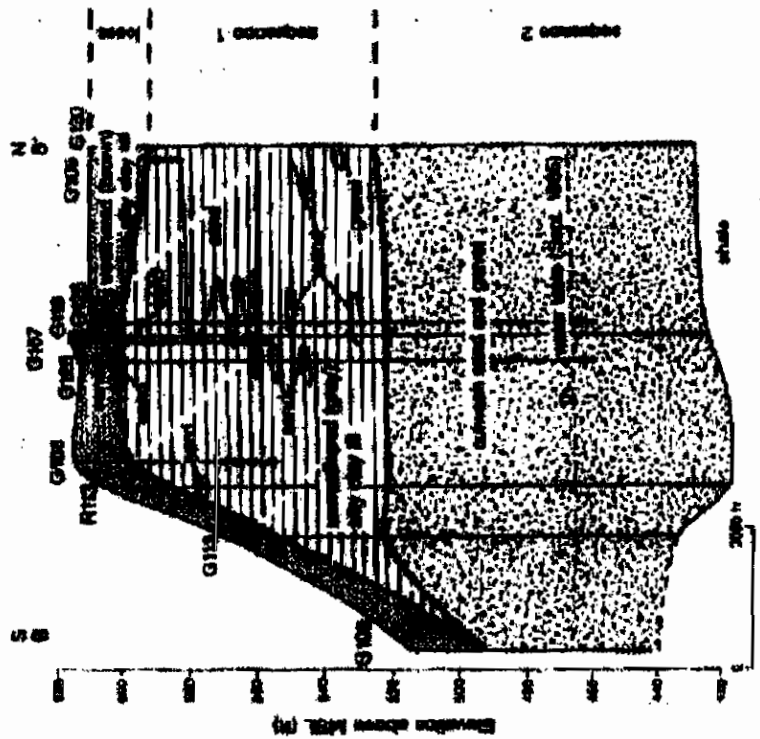


Figure 25 Cross-section B-B' along east side of Peoria Disposal Company site.

Exhibit #6
p. 2



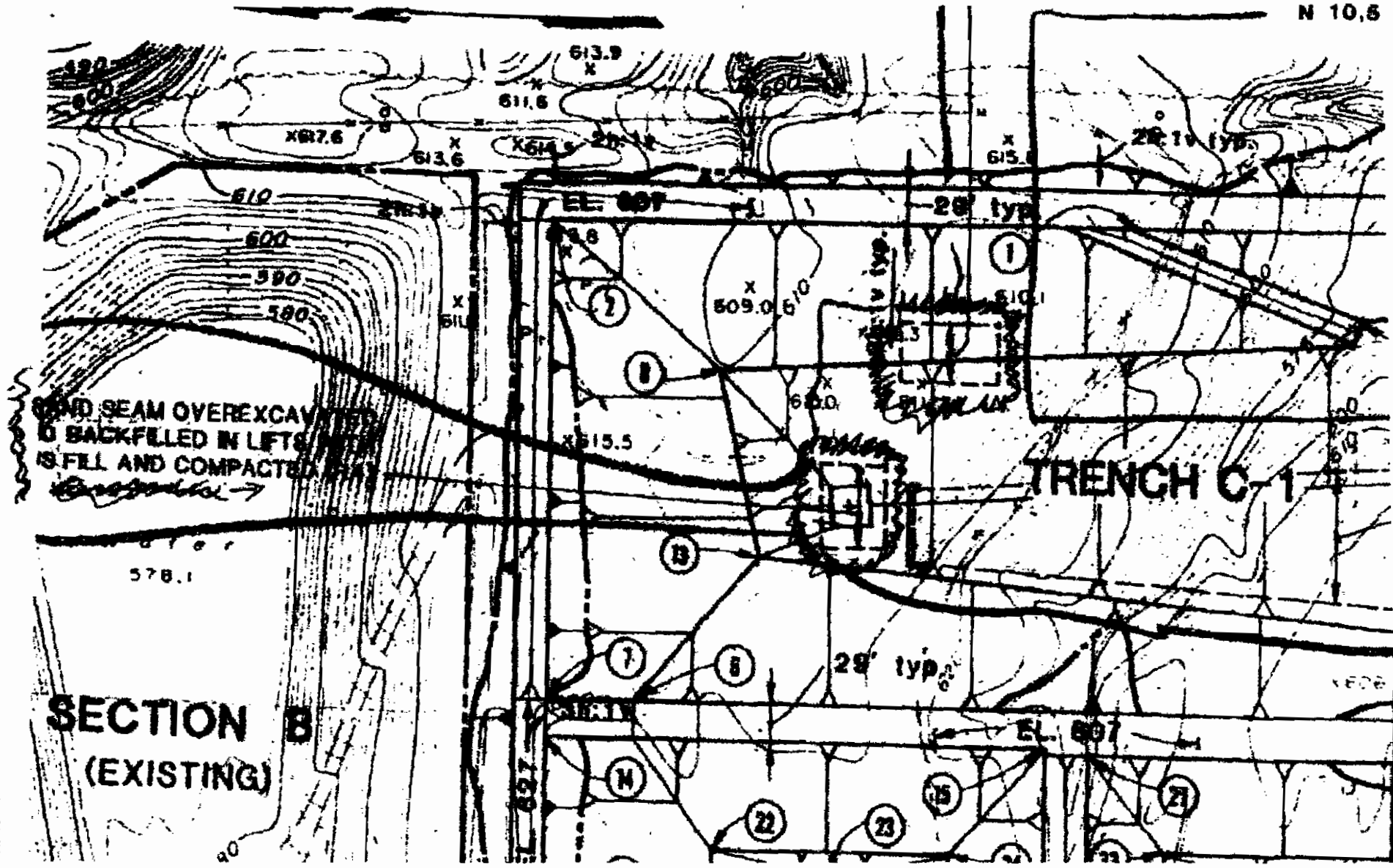


Exhibit #7

- b. In developing the data base used to determine a background value for each parameter or constituent, the Permittee shall take a minimum of four replicate samples from each upgradient well during each of the four quarterly background sampling events. An equal number of replicate samples will be taken from each upgradient well to ensure equal weightings in statistics.
- c. For those monitoring parameters or constituents not detected above the practical quantitation limit (PQL) during background gathering, the PQL shall be the established background value.

F. DETECTION MONITORING PROGRAM

1. The Permittee shall determine groundwater quality at each monitoring well at the compliance point identified in Condition VI.D.1 semi-annually during the active life of the regulated unit (including the closure and post-closure care periods). The Permittee shall express the groundwater quality at each monitoring well in a form necessary for the determination of statistically significant changes (i.e. means, variances, etc.).
2. The Permittee shall determine the groundwater flow rate and direction in the uppermost aquifer semi-annually and reported to the Illinois EPA, at least annually, from monitoring wells identified in Condition IV.D.1
3. The Permittee shall evaluate the results of the analysis required by Condition VI.E.1 above and identify:
 - a. The concentration of any constituent detected which was not detected in the previous sampling event.
 - b. The concentration of any constituent detected which exhibits a progressive increase over four (4) consecutive sampling events.
4. The Permittee shall determine whether there is a statistically significant increase, (or decrease in the case of pH) over the background values established for each parameter identified in Condition VI.E.1 each time groundwater quality is determined at the point of compliance. In determining whether such a change has occurred, the Permittee must compare the groundwater quality at each monitoring well identified in Condition IV.D.1 to the background value derived in accordance with the statistical procedures specified in Section E of the approved Permit Renewal Application.

Exhibit #9

Charles H. Norris
Geo-Hydro, Inc.
1928 East 14th Avenue
Denver CO 80206

(303) 322-3171
cnorris@geo-hydro.com

March 27, 2006

Peoria County Board, Siting Committee
324 Main Street
Peoria IL 614

Dear Board Members:

I would like to thank you for the opportunity to participate in your decision regarding the possible expansion of the PDC hazardous waste disposal facility and for your attention during my testimony at the hearings. I admire your determination to understand. You have a difficult task – determining what is, in final analysis, most protective of the citizens of Peoria County.

This final analysis, the Board's analysis, properly includes every site technical issue one can imagine; traffic patterns and truck counts of hazardous waste entering the facility, statistics and opinions on real estate values, computer-generated "pictures" of the final landform and opinions on its compatibility, detailed (and often conflicting) interpretations of the geology and hydrogeology data, complex engineering designs and operations, differences between historic and anticipated waste streams and characteristics of the wastes, decades of monitoring data, and computer model projections of conditions 100s of years in the future.

The Board's analysis also properly includes subjective issues beyond the site's technical issues. It includes social, psychological, justice, and economical issues – those elements of public welfare that lie beyond the equations of ground water flow, regulatory language of the permit, applicable ground water quality standards, statistically significant increases, and various performance criteria. Collectively these constitute what some call the "quality of life" issues.

The Board's analysis is final in two other, important ways. The analysis by Peoria County is the final, indeed the only, analysis that will consider any of these issues, including the subjective issues, with respect to the suitability of the site. There is no backup process, no over-writing authority that will confirm, double-check, or revise your decision of site suitability.

The Board's analysis is also the final opportunity for someone to link all of the disposal areas (closed, existing and proposed) and consider the site as a single entity that, as an entity, impacts the public health, safety, and welfare of the citizens of Peoria County. The Illinois Environmental Protection Agency will issue a permit for the expanded facility; perhaps without or perhaps with modifications to the application you are reviewing. But, it will eventually issue

a permit if you find the site suitable for hazardous waste disposal. That permit will consider the proposed expansion as a facility that is independent of the existing closed units at the PDC waste disposal complex. There will be no integration or linkage of the proposed expansion to the remediation of, or risk reduction from, the barrel trench, Section A, Section B, or the old municipal solid waste unit. That linkage can only come from Peoria County.

Your task is unquestionably made more difficult by the narrow circle of experts upon whom you must rely. Landfill design and siting hearings almost constitute a cottage industry. At one proposed site, Company A designs the landfill for an applicant and Company B reviews the design on behalf of the siting authority. Company B's fees may be paid by Company A. At another proposed site, Company B designs the landfill for the applicant and Company A reviews the design on behalf of the siting authority. Lawyer X may represent intervenors in some cases, but Corporation Z for its applications. Lawyer X may also represent the siting authority in other cases and serve as the hearing officer in yet others. Consultant R may work only for intervenors, but in doing so may be working with or opposing the same limited set of lawyers and consultants. Consultant S, representing an applicant, may have previously been the Regulator passing judgement on that same applicant's facilities. In this musical chairs of consultants, corporations, lawyers, and roles, it is difficult to avoid a vague feeling of something between potential conflicts of interest and outright chicanery.

The above observations and comments are made personally, as a citizen who has observed and participated in many of these siting hearings. They are non-expert in nature and are offered without reliance on any professional or scientific training or expertise I may hold.

Below are a number of observations that I offer to supplement my expert testimony. They are technical and scientific in nature and do rely on my professional expertise. To the extent that these comments fall within the rubric and scope of the Illinois professional practices statutes and regulations, I mention that I hold a license in Illinois as a Professional Geologist. My license number is 196-001082 and it will expire March 31, 2007. I personally developed these comments and interpretations, they are made, as the lawyers would say, "to a reasonable degree of scientific certainty"; and I impress my seal upon them.

Copies of figures shown during testimony

Attachment 1 to this letter contains 4 figures which I showed and discussed during my testimony.



Leaking from the liner systems under Section C

In the four weeks since I testified, I have continued to review the materials filed by PDC with the County, specifically the scanned data from the 43 boxes that represent the operating record, Exhibit A. As a result of that continued review, I must modify the opinions I expressed in

testimony.

I am no longer confident that wastes disposed in Section C are significantly more isolated by virtue of the double liner technology than the wastes in the older disposal areas. The further review of the operating system shows that at least the primary basal liners in Section C leak. The review also shows that the secondary basal liner of trench C1 also leaks. The evidence for the leaking, and its implications for ability of the most modern units to isolate the wastes in Section C, are discussed below.

In my testimony, I stated that the continuing and most immediate threat to the aquifer under the site comes from the older disposal facilities at the site; the municipal solid waste unit, the barrel trench disposal area, Section A and Section B. I expressed the opinion that wastes disposed in the various Section C units, due to the modern technology and construction techniques for these areas, would likely be isolated effectively for some time to come. I testified that wastes in the older units, without the benefit of the double composite liners were more likely to leak in the near future and more likely to contaminate the underlying aquifer. I further testified that contamination of the aquifer with chlorinated organic compounds, *i.e.*, man-made compounds, had already occurred and was ongoing. When I testified, I considered the likeliest source for this contamination to be the older facilities and operations at the site, even though some of the contamination was observed adjacent to parts of Section C. I no longer believe that solely to be the case.

The operating record and the monitoring data for leachate production from Section C demonstrates that the primary basal liners of trenches C1 through C4 leak, and that the primary basal liner of trench C-1 shows the worst leakage. Further, the data from trench C1 shows that the secondary liner also leaks. It is unclear why this information was not specifically discussed and made explicitly clear to the Board by PDC when the double composite liner systems were being discussed in testimony.

As discussed in testimony on behalf of PDC, the primary basal liner system is designed to contain the leachate that is or may be produced from waste disposed in a particular cell. Leachate that forms sinks to the primary basal liner and flows along that liner to a sump, where it is pumped from the landfill cell to keep it from building up. Unlike a municipal landfill in Illinois, the PDC hazardous waste landfill has a second composite basal liner, as a back-up to the first. Between the two liners is a permeable layer that flows to its own sumps, a leak detection layer. If the primary liner is built to the level of integrity specified in this application, the leak detection system remains virtually dry.

(The qualifier "virtually" is necessary because there are times and conditions under which some fluid that is not related to leaking leachate may be produced and some leaking is expected. These production rates are small and dominantly occur early in the history of a cell. For this facility, built in unsaturated sediments, the principle non-leachate source of water is consolidation water that is pressed out of the clay liner during and shortly after disposal, as the weight of waste is added on the liner. Once the liner has fully compacted, discharge from

consolidation stops. In addition, some leachate leakage is expected. It is recognized that a perfect liner is not possible, and there is a rate leachate leaking that is accepted into the design. According to documents developed by PDC consultants that are in the operating record (Exhibit A), the production rate for consolidation water from a young clay liner would be around 3-6 gallons per acre per day (gpad), and the expected rate of leachate leaking from a properly constructed liner would be up to 1 gpad. For a landfill cell of 5 acres, roughly comparable to trench C1, this represents an initial rate of production from the leak detection system of 20 to 35 gallons per day (gpd), and an eventual rate of 5 gpd, so long as leachate is produced from the overlying waste. More details can be reviewed by going to the operating record and reading "Response Action Plan for Landfill Trenches C-3, C-4, and C-5" developed by GeoSyntec. It can be found beginning on page 513 of file

B 1 5 PERMIT MODIFICATIONS-CLASS 1 ('90-1996) PEORIA DISOSA.pdf

of scanned the documents from the operating record found on the disk or in the directory 412 05 0044 Box 2 of 3.)

A quantity of the fluid from the leak detection system that exceeds what is expected by liner consolidation and design-accepted leaking suggests that the integrity of the primary basal liner system has been compromised. A quality of the fluid from the leak detection system that is similar to, or characteristic of, the leachate of the overlying cell similarly suggests that the integrity of the primary basal liner system has been compromised.

By 1988 it was recognized that the integrity of the basal liner for trench C1 was compromised. The leak detection system was producing fluid far in excess of what could be expected from an intact liner and the chemistry of that fluid was similar to the leachate from trench C1 with respect to the constituents present and their relative concentrations. Effective 21-Sep-88, a new permit condition required PDC to document production rates from the leak detection system daily, analyze the composition of the fluid from the leak detection system twice monthly, and report that documentation to IEPA monthly (reduced to annual reporting in 1993). Many of the reports from 1991-93 are contained in

B 1 2 SECIX-CONDITION E RESPONSES('91-) PEORIA DISPOSAL COM.pdf

found in

412 05 0044 Box 2 of 3.

These reports provide Board members an opportunity to review directly the quantity and quality of the fluid from the leak detection system.

During the early 1990s, before the top liner was installed, over 40,000 gallons of leachate was pumped some months from the leak detection system for trench C1. In May and June, 1991, 84,648 gallons were reported to have been pulled from the leak detection system. Some of this pumpage, 40,250 gallons, was taken from accumulated storage in the leak detection layer. The total net leakage during these months was 44,398 gallons or 728 gpd, a rate that is more than 145 times the design-expected leak rate. It is important to note that this is a net rate of leaking. That is, it represents the rate of leachate leaking through the primary liner minus leachate leaking through the secondary liner.

There is no direct way to measure the rate of leachate leakage through the lower liner, since there is no leak detection system below it to intercept it. However, one can investigate the integrity of the lower liner qualitatively by considering the rates withdrawn from the leak detection system under the variety of conditions that are observed over the years of record. For example, during the May and June, 1991, the period above, when there was declining storage (and declining heads across the bottom liner) in the leak detection system, the net production rate for that system (pumped leachate less leachate withdrawn from storage) was 728 gpd. During the previous five months (December, 1990, through April, 1991), with a higher level of storage in the leak detection layer (and, therefore, a higher head across the bottom liner), the average daily net production from the leak detection layer was 614 gpd. The difference of 114 gpd represents an increase in (but, not total of) leaking across the lower liner due to leachate build-up within the leak collection layer.

During a 71 day period within the December, 1990, through April, 1991, interval, when there was a higher and constant storage volume of leachate of 50,000 gallons within the leak detection system, the net production rate was only 325 gpd, with the balance of 403 gpd leaking through the secondary liner system. Further, for periods with no extraction from the leak detection layer, there was no increase in storage, indicating that everything leaking through the upper liner into the leak detection system was also leaking from the leak detection system through the lower liner and into the subsurface environment. The data indicate that, unless leachate is continually pumped from the landfill and from the leak detection system, the integrity of the lower liner is no better than that of the upper liner once 50,000 gallons or more of leachate is allowed to build up in the leak detection system. *I. e.*, everything leaking through the primary liner is also leaking past the secondary liner.


The quantity of water produced from the leak detection system for C1 has declined substantially from the rates that were produced during the early 1990s, but the quality still reflects leaking leachate from the cell above. The reduced flow does not represent "healing" of the compromised liners. Rather, it represents a reduction in the rate of leachate produced from the waste in the cell as a result of the installation of the top liner closing the cell and preventing new water from entering the cell. During 1995, after installation of the top liner, the average daily amount pumped from the leak detection system had declined to 19 gpd, only about 4 times the design-accepted rate for a leaking liner. Lower current rates of leachate production generate lower current rates of leaking leachate. The trend of the downgradient wells toward lower chloride contamination probably reflects the current reduced leachate production. As the top liners degrade, or are removed as part of the expansion, the leaking of leachate, and associated contamination, can be expected to increase again.

The leaking that is documented through the primary bottom liners for trenches C2, C3, and C4 is very convincing from a standpoint of the water quality pumped from the leak detection systems; in each case there is a match even to minor constituents with the composition of the leachate of that cell. The data that have been reviewed to date shed less information on the quantity of the leachate that is leaking, however. In 1995, after at least partial installation of the top liner, the average fluid removed from the leak detection system for C2 was about 8 gpd, and for C3 was

about 5 gpd. These rates could represent consolidation water from the clay liner. However, for each of the cells, there is a strong correlation between the leachate water quality from the leachate collection system and the fluid pumped from the respective leak collection systems. Sufficient data have been reviewed for trenches C2 and C3 to suggest that the potential magnitude of leaking through the C2 and C3 primary bottom liners are probably less than that of the C1 primary bottom liner. In none of the other cases have the necessary data been identified to evaluate leakage through the secondary bottom liners.



Contamination Under the PDC Waste Disposal Complex



It is undisputed that the water under and adjacent to the PDC waste disposal complex is contaminated with synthetic chemicals. It is undisputed that inorganic contaminants such as chloride are anomalously high and, in many cases, are known to have risen above original base line levels. PDC's consultants hold that none of the contamination that is found under the site is from the PDC waste disposal complex or the result of PDC operations. In every case, the water beneath the PDC waste disposal complex has been the victim of migration from some off-site source or migration upward from the earth beneath the site. Unknown, unproven, and speculative off-site sources are rationalized as the cause of all on-site contamination. Simple, downward migration from historic and current waste disposal units and operations are rejected as possible causes.

Ockham's Razor is a scientific premise that states the explanation of a phenomenon should make as few assumptions as possible. The multitude of assumptions that are necessary to explain away all of the contamination under the PDC waste disposal complex definitely does not conform with that maxim. The presence of some contaminants are speculated as being the result of vapor-phase transport from unknown sources. Other contaminants are speculated as the result of surface water flows from unknown sources to topographically low areas where the aquifer is near the surface of the land, infiltration into the aquifer, and lateral migration in the aquifer to a location beneath the facilities. A given contaminant may need multiple sources to rationalize its distribution across the site. Such hypothetical complexities are not consistent with Ockham's Razor.



Chloride

Chloride is a contaminant that has received considerable discussion by PDC consultants in an attempt to conclude that the PDC waste disposal complex is not responsible for the increases and variations in chloride concentrations under the site. Off-site sources are postulated as a result of apparent inconsistencies within monitoring data that are perceived as precluding site sources. The chloride increases and variations are independent of sulfate concentrations, precluding leachate as a source since it contains both chloride and sulfate. Road salt contamination was one speculation. Migration upward from the underlying shale bedrock was another speculation. Each of these speculative off-site sources can be easily eliminated, and there is no inconsistency between chloride and sulfate patterns with respect to a leachate source.

Road salt began being generally used in Illinois around 1960 (PDC (Liss) 22-Mar-06 submittal reference: Panno, *et al.*, Ground Water, 2005.). The application indicates that the physical migration rate of water under the site, generally from northwest to southeast, is approximately 8 feet per day. Significant chloride contamination occurred in some wells as early as 1990. At the migration rate specified in the application, road salt, once it got into the aquifer, could have moved only 240 feet (30 years x 8 feet/year). There simply are no off-site sources of road salt that exist within 240 feet northwest of the each of the impacted wells. For the chloride-impacted wells along the east side of the PDC waste disposal complex, however, migration from 240 feet northwest of the wells does imply source locations in Sections A, B, and C. Further, as acknowledged by Liss in his testimony, there is a lack of similarity between sodium concentrations and variations and chloride concentrations and variations. Such similarity would be expected if road salt, predominantly sodium chloride, were the contamination source.

The bedrock underlying the site aquifer is Pennsylvanian-aged shale. This unit is described in the application as an aquitard, a unit that does not readily transmit water. In the site model, it is numerically considered a no-flow bottom to the aquifer. Although wells completed in sands or coals in the shale do have higher chloride, sodium, sulfate, and iron concentrations typically than do glacial sediments, the site description says that in the area of the PDC facility, there are no aquifers in the shale. If one accepts the contamination premise of upward flow from the underlying shale instead of the modeling premise of no-flow from the shale, one finds that the chloride contamination cannot be explained with that premise. As with dissolved road salt, such flow contains relatively high concentrations of sodium, yet sodium does not rise or vary with the chloride concentration. The speculation of water from shale as a source would also have to explain why such flow has increased over the last two decades, why such flow has varied greatly from season to season, year to year, and location to location, and why, at some wells, such flow has seemingly decreased in recent years. Finally, were the chloride contamination due to water from the shale, there would be corresponding increases and variations in sulfate as in chloride. The lack of these corresponding changes is the argument used by PDC for chloride not coming from leachate leaks. Although the argument is invalid for the issue of a leachate source, as discussed below, it is an appropriate argument against flow from the shale as a source of the chloride.

The dismissal of leachate as a possible source of chloride contamination on the basis of the lack of correspondence between sulfate and chloride, both of which are in the leachate of at least the C-area trenches, is inappropriate. First, with respect to wells east of Sections B and C (*e. g.*, wells G,R125, G,R,A126, G,R138) the chloride increases begin during the period when areas B and C were not yet capped and at least C-1 was known to be leaking. Subsequent to capping of these areas, the chloride levels in these down gradient wells stabilized and/or declined.

Second, for many of the wells, including "upgradient" wells, the chloride levels dropped to near nothing during the drought of 1989-90. Were the chloride from some off-site source at distance from the wells, there would not be a decline in chloride contamination contemporaneous with a dramatic drop in current precipitation and infiltration; the chloride at the wells would have been introduced to the aquifer years prior to the drought. The coincident drop in multiple wells at

widely varying locations reflects an event that is contemporaneous with on-site conditions.

Chloride/Bromide Ratios

PDC provided in 22-Mar-06 supplemental public comments a discussion of a "special" one-time sampling event to determine chloride/bromide ratios, in an attempt to further identify or eliminate potential sources of chloride contamination. Data were reported for the leachate collection system and the leak detection system of trench C-1 and for 8 of the monitoring wells. It was not reported whether these 8 wells and single source of leachate constituted the entirety of the "special" sampling event, or a subset. The underlying laboratory data and chains of custody were also not provided, so it is unknown when the sampling occurred, when the samples were analyzed, by whom the data were analyzed, or whether other analyses were performed that were not reported.

The chloride/bromide ratios at the level of the aquifer were largely similar across the site and had a ratio that the referenced literature indicates is within the range that is typical of municipal landfill leachates. The ratio that was measured for the C1 leachate was dissimilar from the ratios observed in the aquifer and showed a much higher bromide component than would be characteristic of a typical municipal landfill.

One reasonably-drawn conclusion from this data is that, in a 2006 (perhaps late 2005) sampling of water from the site aquifer, there is not evidence of a significant component of leachate from trench C1. This is to be expected since leaking from this trench has, for now, largely been controlled with the installation of the top liner a dozen years ago. The "special" sampling event provides no insight with respect to the chloride/bromide ratios that would have existed when trench C1 was actively leaking.

Another reasonably-drawn conclusion from this data is that the municipal solid waste unit, the original disposal area of the PDC waste disposal complex, is a likely source of much of the chloride contamination across the site. The chloride/bromide concentrations are consistent with leachates from a municipal landfill and the waste disposed in oldest unit on site probably is the closest to a traditional municipal solid waste landfill. Analyses of the leachate from several areas of this old unit would allow testing of this conclusion and could shed considerable light on other contaminant concentrations and distributions related to the PDC waste disposal complex as a whole.

Of the wells for which analyses are reported, well R129 has the lowest chloride/bromide concentration and one of the lower increases in chloride concentration. This is consistent with its being the closest to pristine conditions of the wells reported in the chloride/bromide study. Well R129 is also positioned off the south end of the municipal solid waste unit geographically and with respect to potentiometric map on Sheet 1 of the 22-Mar-06 supplemental comments. It is also the furthest removed from older disposal units Area 1, Sections A and B, and trench C1.

Tritium Data

Exhibit #10 p.1

bromine, or iodine) associated with dissolved organic substances. TOX does not measure specific compounds, and water quality standards have not been established for TOX. False positive TOX results are possible if the sample contains sediment, chloride, or inorganic halides such as common laboratory and industrial solvents. ASTM Method D 4744, *Standard Test Method for Organic Halides in Water by Carbon Adsorption-Microcoulometric Detection*, notes the possibility of interference with the chloride ion during the TOX analysis. If the inorganic halide concentration is greater than 20,000 times the concentration of organic halides, the TOX result may be affected significantly. The monitoring results of the facility groundwater program over the permitted life of the facility reflect these variations.

Several facility groundwater monitoring wells have been analyzed for the Appendix IX parameters in the past as a result of TOX results. No non-naturally occurring organic parameters have been detected in any sample analyzed for the Appendix IX parameters. Due to the non-presence of organics detected in the Appendix IX analyses, PDC believes that the TOX exceedances are caused by unreliability of the method.

Inclusion of All Previous Demonstrations

Provided as new Appendix E-9 are all groundwater demonstrations that were previously submitted to the Agency. Listed below is a summary of those exceedances.

- G220 – 1,1-Dichloroethane (See PDC letter dated February 12, 2004 and IEPA letter dated April 23, 2004)
- G243 – TOX and Total Organic Carbon (TOC) (see PDC letters dated May 1, 2000, October 4, 2002, and July 7, 2005)
- G208 – TOX (See PDC letters dated May 1, 2000, October 17, 2000, and January 2, 2001)
- G242 – TOC (See PDC letter dated October 4, 1999)
- G121, G125, G126, G128, G129, and G138 – Zinc (See PDC letter dated July 21, 1989 and September 6, 1989 and IEPA letter dated June 6, 1991)
- R121, A126, R128, R129, G136, and G138/R138 – Nickel (See PDC letter dated April 14, 1993 and IEPA letter dated October 13, 1993)



It should be noted that the nickel exceedances at R121, A126, R128, R129, and G136 are due to the leaching of nickel from stainless-steel well construction materials. This leaching effect was demonstrated by PDC in its April 14, 1993 letter to the IEPA. The IEPA agreed with PDC's demonstration in its letter dated October 13, 1993. Because wells R121, A126, R128, R129, and G136 are also constructed using stainless steel (screens), the nickel exceedances at these wells are likewise attributable to leaching of nickel from the stainless-steel screens.

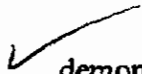
As seen in Appendix E-9, PDC has clearly demonstrated that the regulated unit is not the source of the parameter exceedances in each of the above wells. PDC is requesting that these

✓ Section 3 – Page 6

Vol. 14

Wells

Exhibit #10 p.2



demonstrations be included in the Part B Permit for the facility.

Request for Semi-Annual Monitoring

PDC proposed in the March 1997 Part B Permit Application to collect four quarters of background data in order to re-establish background groundwater quality at the facility. Furthermore, once background groundwater quality was re-established, PDC proposed in the March 1997 Part B Permit Application to sample the facility monitoring wells on a semi-annual basis (twice a year). No text has been changed since this was originally proposed in the March 1997 Part B Permit Application. However, PDC requests that the Part B Permit be modified to specify semi-annual detection monitoring.

Request to Remove Monitoring Well G141

Groundwater monitoring well G141 was intended to be a downgradient well for Trench C-5. Since Trench C-5 will not be constructed due to the site reconfiguration approved in Modification No. 56 (December 18, 2002), monitoring well G141 is no longer required. As seen on revised Table E-9 provided in this submittal, G141 is removed from the list of wells.

Request for Revised Monitoring of Wells G139 and G140

As discussed in the November 7, 2005 meeting, monitoring wells G139 and G140 are located near the center of the facility and are not compliance point wells. Therefore, PDC is requesting that monitoring data from these wells not be subject to either comparisons to the facility background, Groundwater Quality Standard or a PQL.

Well Numbering Amendments

The following monitoring wells should be added to the Part B permit:

Well G142 was added to the groundwater monitoring program in July 1997. In addition, shallow monitoring well G242 was also installed within 10 feet of well G142 in July 1997. The soil boring log and well construction for these wells were previously submitted to the Agency.

Monitoring well G135 was installed at the facility on October 3, 2005. The soil boring log and well construction report are provided as new Appendix E-2-A. No shallow well was installed near the well due to no water-bearing unit being encountered during drilling of well G135.

The following monitoring well should be re-designated in the Part B permit:

Shallow monitoring well G243 is incorrectly designated in the Part B as monitoring well G143. Since the well is a shallow monitoring well, it should be designated as well G243. The following monitoring wells should be deleted in the Part B permit:

Exhibit #11

Section III CONTAINMENT BUILDING

non / day for
contaminant

A. SUMMARY

A Waste Stabilization Facility is authorized for storage and treatment of hazardous and non-hazardous wastes that contain free liquids or require treatment. Four storage bays for incoming waste contain a maximum of eighty-eight (88) cubic yards. After treatment in a mixer (description in Section II of this permit), the waste is moved to the curing area, which can contain a maximum of 658 cubic yards of treated waste. The containment building is constructed with a liner system, leachate collection sumps, and a leak detection system. In addition, treatment using macro encapsulation in containers is allowed inside the containment building.

B. WASTE IDENTIFICATION

1. The Permittee may store the hazardous waste identified in Attachment C to this permit. The Permittee may store non-hazardous waste in these units if the wastes are managed in accordance with the conditions of this permit that apply to hazardous waste placed in the same unit.
2. The Permittee may store and treat the following wastes in the containment building, subject to the terms of this permit:

<u>Description of Units</u>	<u>Capacity (cubic yards)</u>
Receiving Bays	
B-1	22
B-2	22
B-3	22
B-4	22
Curing Area	658
Mix Cell A	168
Mix Cell B	56

3. The Permittee is prohibited from storing or treating waste in the permitted units not identified in ~~Condition B-2~~ of this Section.
4. The treatment (microencapsulation) unit(s) shall not accept wastes containing over 2% (by weight) of mercury.

A

Exhibit 4/1/052

Revised: October 2007
ILD000805812
Page X-3

Copies of all communications made during the annual review, including minutes and summaries of the meetings and telephone conversations shall be incorporated into the operating record for this facility.

B. Personnel Training

- 1. The Permittee shall ensure that employees shall not work unsupervised until they have completed the training program contained in the approved permit application.

C. Operating Hours

- 1. The Permittee may only accept waste for direct disposal at the facility during daylight hours.

D. Reporting

All certifications, logs, or reports which are required to be submitted to the Illinois EPA by the permittee should be mailed to the following address:

Illinois Environmental Protection Agency
Planning and Reporting Section
Bureau of Land -- #33
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276



E. Stabilization Facility



- 1. The Permittee cannot receive wastes at the stabilization facility if the waste contains over 2% (by weight) of mercury. *X*
- 2. The Permittee cannot receive wastes at the stabilization facility containing parameters above land ban restrictions whose BDAT as identified in the Federal Register is not based on stabilization (i.e., cyanide, organics, etc.).
- 3. The Permittee shall plug all the weepholes which allow liquid in the leachate collection system to discharge to the master sump, except when inspecting for liquids in the collection system. These plugs shall be removed once each day to determine if liquid is present in the leachate collection system. The Permittee shall include documentation of these inspections in the operating record for the facility. The Permittee shall submit an

13. All litter shall be collected from the landfill site by the end of each working day and either placed in the fill and compacted and covered that day, or stored in a covered container.
14. Salvage operations at the landfill are prohibited.
15. No person shall cause or allow any scavenging operations at the landfill site.
16. No person shall cause or allow feeding of farm or domestic animals upon the landfill site, or with waste delivered to the landfill site.
17. No person shall cause or allow open burning at the landfill site except in accordance with the provisions of 35 Ill. Adm. Code: Subtitle B (prior to codification: Chapter 2, Part V: Open Burning), of the Rules and Regulations of the Illinois Pollution Control Board.
18. No person shall cause or allow operation of the landfill so as to cause or threaten or allow the discharge or emission of any contaminant into the environment in any State so as to cause or tend to cause air pollution in Illinois, either alone or in combination with contaminants from other sources, or so as to violate regulations or standards adopted by the Board under the Act.
19. The Permittee shall design, construct, and operate a subsurface gas collection system in accordance with to the design plans and specifications contained in the Approved Permit Application.
20. Containers containing macro encapsulated wastes must not be placed in the landfill where the container will be subject to hydrostatic pressures.
21. The Permittee shall not place containers containing macro encapsulated wastes in the landfill at an elevation below 83 feet from the final permitted elevation of the final cover for the closed cell.
22. Leachate must be automatically pumped from the leachate manholes when the leachate level in the manhole exceeds 12 inches in depth.

D. SURVEYING AND RECORDKEEPING REQUIREMENTS

The Permittee shall maintain the following items in the operating record:

Section V LANDFILLS

A. SUMMARY

Peoria Disposal Company operates a ninety (90) acre facility, seventy-four (74) of which are approved for disposal units. The total waste capacity is approximately 2,638,580 cubic yards. Industries served by the site include earthmoving and agricultural equipment manufacturers, chemical and steel companies, and breweries. Some wastes are to be treated at the Stabilization Unit at the facility prior to disposal in a landfill cell.

The landfill is to be operated so as one landfill unit is nearing final capacity and closure, the next unit is prepared for disposal activity. The final landfill unit is scheduled to close in the year 2005.

This section presents permit conditions for the landfill according to the regulatory requirements of 35 IAC 724 Subparts N (Landfills) and G (Closure).

B. WASTE IDENTIFICATION

1. The landfill disposal units are, or are to be, located as shown in Attachment F to this permit.
2. The Permittee may dispose the following wastes in landfill cells, subject to the terms of this permit:

<u>Landfill Cell Designation</u>	<u>Total Capacity (c.y.)</u>	<u>Surface Area Dimensions of Landfill Cell (Acres)</u>	<u>Description of Hazardous Waste</u>
Barrel Trench Area	35,000	14	See Attachment C for Waste List and Hazardous Waste Nos. and
Section A	6,500	8	
Section B	190,000	10	Non-hazardous wastes identified in Special Condition H.H(2)
Trench C-1	425,929	7.3	
Trench C-2	453,846	6.4	
Trench C-3	775,939	7.3	
Trench C-4	982,865	11.0	

Exhibit #14

Section V LANDFILLS

A. SUMMARY

Peoria Disposal Company operates a ninety (90) acre facility, seventy-four (74) of which are approved for disposal units. The total waste capacity is approximately 2,638,580 cubic yards. Industries served by the site include earthmoving and agricultural equipment manufacturers, chemical and steel companies, and breweries. Some wastes are to be treated at the Stabilization Unit at the facility prior to disposal in a landfill cell. The final landfill unit is scheduled to close in the year 2009.

This section presents permit conditions for the landfill according to the regulatory requirements of 35 Ill. Adm. Code 724 Subparts N (Landfills) and G (Closure).

B. WASTE IDENTIFICATION

1. The landfill disposal units are located as shown on the site topographic map contained in Appendix B-2 of the approved permit application.
2. The Permittee may dispose the following wastes in landfill cells, subject to the terms of this permit:

<u>Landfill Cell Designation</u>	<u>Approximate Total Capacity (c.y.)</u>	<u>Surface Area Dimensions of Landfill Cell (Acres)</u>	<u>Description of Hazardous Waste</u>
Barrel Trench Area	35,000	14	See Attachment C for Waste List and Hazardous Waste Nos.
Section A	6,500	8	and
Section B	190,000	10	
Trench C-1	425,929	7.3	Non-hazardous
Trench C-2	453,846	6.4	wastes identified
Trench C-3	775,939	7.3	in Condition X.H.2
Trench C-4	982,865	11.0	

only one open cell ←

3. The Permittee is prohibited from disposing any waste in the permitted units not included in Condition B. 2. of this Section.

Section VIII STANDARD CONDITIONS

GENERAL REQUIREMENTS

1. **EFFECT OF PERMIT.** The existence of a RCRA permit shall not constitute a defense to a violation of the Environmental Protection Act or Subtitle G, except for development, modification or operation without a permit. Issuance of this permit does not convey property rights or any exclusive privilege. Issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or infringement of state or local law or regulations. (35 Ill. Adm. Code 702.181)
2. **PERMIT ACTIONS.** This permit may be modified, reissued or revoked for cause as specified in 35 Ill. Adm. Code 703.270 through 703.273 and Section 702.186. The filing of a request by the Permittee for a permit modification or revocation, or a notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition. (35 Ill. Adm. Code 702.146)
3. **SEVERABILITY.** The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby. (35 Ill. Adm. Code 700.107)
4. **PERMIT CONDITION CONFLICT.** In case of conflict between a special permit condition and a standard condition, the special condition will prevail. (35 Ill. Adm. Code 702.160)
5. **DUTY TO COMPLY.** The Permittee shall comply with all conditions of this permit except for the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance constitutes a violation of the Environmental Protection Act and is grounds for enforcement action; permit revocation or modification; or for denial of a permit renewal application. (35 Ill. Adm. Code 702.141 and 703.242)
6. **DUTY TO REAPPLY.** If the Permittee wishes to continue an activity allowed by this permit after the expiration date of this permit, the Permittee must apply for a new permit at least 180 days before this permit expires, unless permission for a later date has been granted by the EPA. (35 Ill. Adm. Code 702.142 and 703.125)
7. **PERMIT EXPIRATION.** This permit and all conditions herein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely, complete