

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

RECEIVED  
CLERK'S OFFICE  
SEP 21 2007  
STATE OF ILLINOIS  
Pollution Control Board

IN THE MATTER OF: )  
)  
PETITION OF THE CITY OF CHICAGO ) AS <sup>08-4</sup> 87  
HEIGHTS, an Illinois municipal corporation) (Adjusted Standard-1)  
FOR AN ADJUSTED STANDARD FROM )  
35 IAC 810.103, 814.102 and 814.501(c) )

PETITION FOR ADJUSTED STANDARD

The City of Chicago Heights would like to thank the Illinois Environmental Protection Agency and its staff for all of the help and encouragement it gave in reviewing this Adjusted Standard helping to formulate this approach to closing Fitz-mar landfill.

Petitioner, the City of Chicago Heights ("City"), an Illinois municipal corporation and the Illinois Environmental Protection Agency ("Agency" or ("IEPA")), pursuant to 415 ILCS 5/28.1, section 28.1 of the Illinois Environmental Protection Act, jointly presents this Petition for Adjusted Standard from 35 IAC 810. Pursuant to 35 Ill. Adm. Code 104.406, section 104.406, Petition Content Requirements of the Illinois Pollution Control Board Rules, petitioners state as follows:

**The History of the Landfill**

The Fitz-mar, Inc. Landfill ("landfill") began operations in 1981 pursuant to IEPA Permit No. 1981-47-OP on a parcel north of Chicago Heights Road and east of Union Avenue in the Steger Quadrangle. The permitted disposal area originally included 16 cells. However Cell 16, which had been excavated, was never used as a disposal unit. Cell 16 which is located in the northeast corner of the facility was disconnected from the rest of the landfill in a supplemental permit which was granted by the Illinois Environmental Protection Agency on September 8, 2005.

Actual operation of the landfill occurred during the years of 1981 through 1989 and then ceased. At this time, the Landfill was subject only to the requirements of 35 Ill.

Adm. Code 807.

During the period of operation the City did not operate or control the landfill. Fitz-mar, Inc., through a contractual agreement, became the signator to the operating permit and was the exclusive operator of the landfill during the entire period of its operation. During this period, Fitz-mar, Inc., ("Fitz-mar"), as an expert in landfill operations, assured the City that the landfill was being operated within the statues and rules of the State of Illinois. The City had no reason to believe otherwise since they felt that Fitz-mar's statements were backed up by what seem to Chicago Heights the State's tacit approval of the landfill's operations.

The City first became concerned with the landfill when on January 1, 1990, the City sent a letter to Fitz-mar requesting closure of the landfill pursuant to Illinois Pollution Control Board's rules. This letter was in response to Fitz-mar's ceasing operation of the landfill in December 1989. Fitz-mar simply stopped accepting sanitary waste and abandoned the landfill. Fitz-mar ignored its responsibility as permitted operator of the landfill. Among other things, the landfill was not closed properly and was left 21 feet above permitted height. Cell 16 was excavated but never used and left abandoned to allow it to be rapidly filled with storm water runoff. To make matters worse, Fitz-mar went out of business shortly thereafter. All though numerous attempts were made, the City of Chicago Heights could never get Fitz-mar to honor its contractual and regulatory obligations. The last attempt was made in 2005 when a after a two month

long investigation, it was determined that the dissolved Fitz-mar, Inc. was no more than a bed-ridden stroke patient with no money.

The City was left with an abandoned landfill with absolutely no expertise in landfill operation. Since the condition the landfill was so poor, no one was interested in being an operator and becoming jointly liable to a potentially huge environmental liability. Chicago Heights hired experts to help in its quest to close the landfill properly but were subjected to one scheme after another to close the landfill by companies that seemed to be more interested in continuing Fitz-mar's path than initiating a solution.

The City has spent years and great cost to determine the best manner in which to close the landfill. Since the owner of the landfill is a municipality, its funds are limited to its tax base. The City administration must find the most cost effective means to close the landfill within all applicable laws.

The best and most cost effective manner in which to close the landfill would include adjusting the maximum height of the landfill, using general construction and demolition debris in accordance with IAC 807.509, and amending the present landfill permit. The final cover will consist of grass covered vegetative/protective layer two feet thick overlying 24-inches of thick low permeability compacted clay. All of this can be done using the existing closure plan of the landfill. IAC 811 closures require the use of greater low permeability and protective soil layer thicknesses. Undertaking an IAC 811 closure for this existing unit would take away from the City's ability to use general C&D for the sub grade, and thus the disposal revenues for the C&D to help pay for the closure.

The reason for the height adjustment is because this is the most precise and cost effective manner to assure that stable gradients within the landfill conform to all applicable laws. A more in-depth explanation can be found later in this document.

New problems may arise when new fill is added to the present landfill. The Illinois Environmental Protection Agency has agreed with the technical approach provided in this Petition for the use of general C&D as part of the IAC 807 closure. However, the Illinois EPA believes that technical and risk evaluations should be provided in this Petition since C&D is currently sent to operating IAC 811 landfills. These comparisons are based on a hypothetical whereas Fitz-Mar would be closed using 35 IAC 811 rules because any height adjustment and added fill would constitute creating a “new unit” as defined in 35 IAC 814. If the City of Chicago Heights were to follow section 811 rules as a “new unit” rather than a facility undergoing section 807 closure, closure would be impossible. Many of the Standards within section 811 for a “new unit” cannot be met. To meet the groundwater regulations of Section 811, the landfill would need to be moved so that new leachate collection system could be put in place. The IEPA has warned the City not to move any of the contents of the landfill as to cause a further pollution. As stated earlier the landfill was miss used. A few of the public officials involved in Fitz-mar went to jail for using the landfill as their own private disposal. There is no way of knowing what was put in the landfill. Closing the landfill to meet 811 standards is not only near physically impossible but would cause a financial burden that the City of Chicago Heights could not bear.

The City of Chicago Heights is in financial distress and has been for the past 15 years. When the current administration took control of Chicago Heights, the city was

running with a 60 million dollar deficit. Through the hard work and tough decision making of the current administration that deficit is now down to 56 million dollars. Approximately one half of all revenues that are generated by the City go to pay the debt service on its huge debt. The current administration although saddled with this crushing debt is still 100% committed to closing Fitz-Mar for the protection of its residents.

### **REASON FOR PETITION**

The Petition before the Board is quite unique. In effect, we request that the Pollution Control Board recognize the situation that the Fitz-Mar landfill and the City of Chicago Heights is in. When Fitz-Mar abandoned the landfill in 1989, everything connected to the landfill came to a stop as though it was put into suspended animation. Therefore, no new material was place in the landfill since 1989 which is well before the IAC 814 effective date of October 9, 1993. All work concerning the landfill ceased. Nothing has changed at the landfill since 1989. Therefore, the governing IPCB Rules for closure is IAC 807 (i.e. the Permit). However, since General C&D will be needed to re-grading of the cap, IEPA has requested that a petition be filed. This petition requests an extension of the 814.501 closure date so that re-grading materials can be used in accordance with 807.509 and the Permit. The City requests the Illinois Pollution Control Board ("Board") to recognize the problems the City has had to resolve to get to the point that it's at right now which is to be in a position to close the landfill properly.

It took 16 years for the City of Chicago Heights to be in a position to close the landfill. The city spent years attempting to get Fitz-mar to fulfill its obligation. This

includes law suits, threats of law suits and numerous investigations to finally conclude that existed only on paper and was unable to honor any of its commitments. Fitz-mar ceased being a corporation in 2004.

The only way in which Landfill can close is for the City of Chicago Heights takes responsibility and closes the landfill as the Operator. This took place in 2005 when the Illinois Environmental Protection Agency recognized the City of Chicago Heights as the Landfill's Operator. Since that time the City has been working diligently securing the site and obtaining all information needed to close the landfill properly.

The most serious problem at the landfill and the problem that is causing the City to seek an Adjusted Standard is when the landfill was abandoned in 1989, it was left 21 feet above the permitted landfill height. The extra height caused the landfill's contours and gradients to be out of compliance with Board rules. The City's solution is to correct any contour problem by raising the height of the landfill in order to correct all stability and drainage issues and to have appropriate cover in order to close the landfill properly. This can best be accomplished by adding new fill of the type known as general C & D. The use of general C&D is the most cost effective material the City can use to close the landfill properly. C&D debris will be used to tie the new grades into the existing grades along the side slopes. This additional material will increase the height of the existing landfill to a final grade elevation of 766 MSL. It is the City's intent to provide a closure design that will meet IAC 807 regulations, provide a cap system that is free of erosion related issues and meets all applicable factors of safety with respect to slope stability. In order to accomplish this, the City has specific evaluation procedures that will be

presented in the final Basis of Design report, which will be used to develop the final design drawings and specifications.

The landfill went over its permitted height while it was active as an 807 landfill. Further heightening will be to provide suitable sub grade cover. The landfill has not received municipal waste since 1989, and has no plans to accept any waste material other than C&D in order to achieve the 807 closure. Currently, a 30% Basis of Design document has been submitted to the IEPA Permit Section. This report provides conceptual contours for the landfill closure and describes additional closure steps that will be taken. The 30% drawings have now been upgraded to 60% complete as provided here in Attachment A. These drawings will be provided to IEPA for any additional comments. A 90% Basis of Design Report and 90% Design Drawings will then be prepared incorporating any comments from the Agency. At this time, the City will have a hearing to obtain a vertical increase in elevation to 766 feet above mean sea level. A supplemental permit application will then be submitted to IEPA attaching required changes to the Approved Closure Plan including the Final Landfill Design, the vertical siting approval and the accepted Petition for Adjusted Standard. In terms of the technical merits in raising the landfill, the existing slope conditions are as steep as 33% (3H:1V). The City's 60% grading plan (Attachment A) limits the maximum slopes to 25% (4H:1V). Attachment A also includes cross sections along the centerline of the landfill. Existing conditions along with proposed contours are shown at representative stations across the landfill. Therefore, maximum slopes will actually be reduced.

For the Final Design, slope stability analyses will be conducted to calculate the factor of safety for the steep side slopes of the landfill. The most critical slopes, usually

the steepest and longest as well as slopes that contain significant C&D, will be evaluated. Stability will be evaluated for global failure as well as veneer or surficial failure. The City intends to utilize the slope stability software, SLOPE/W, developed by GEO-SLOPE International, Alberta, Canada in our analysis. This software uses several unit equilibrium techniques to calculate factors of safety for slope stability problems. Factor of safety is defined as the forces resisting sliding divided by the sliding forces. If a slope has a factor of safety greater than 1.0 then the slope is in a stable condition, i.e. forces resisting movement are greater than the forces promoting sliding. The minimum factors of safety to be used in the evaluation are:

Long term static	1.5
Long term seismic	1.0
Construction seismic	1.1

Infinite slope analyses will be conducted along the steep slopes and slopes that have significant C&D or cover materials. Infinite slope analysis is used to determine the factor of safety with regard to surficial failure along the slope. The infinite slope analysis assumes that the length of slope is much greater than the depth of cover soils or waste along the slope. It will also take into account the seepage forces and pore pressures on the stability of the slope.

Ultimately, the City is asking the Board to change the compliance date found in Section 814.501 of the Board Rules to a future date.

**Section 104.406(a) A statement describing the standard from which an adjusted standard is sought. This must include the Illinois Administrative**



**Code citation to the regulation of general applicability imposing the standard as well as the effective date of that regulation.**

The standard from which petitioner seeks an adjusted standard from can be found in Section 810.103 Definitions of the IPCB rules. The definition of a new facility is as follows:

"New facility" or "New unit" means a solid waste landfill facility or a unit at a facility, if

It is a landfill or unit exempt from permit requirements pursuant to Section 21(d) of the Act that has not yet accepted any waste as of September 18, 1990;

\* \* \*

It is a landfill with a unit whose maximum design capacity or lateral extent is increased after September 18, 1990.

BOARD NOTE: A new unit located in an existing facility will be considered a new unit subject to 35 Ill. Adm. Code 814, which references applicable requirements of 35 Ill. Adm. Code 811.

Section 814.102 Compliance Date, states:

Unless otherwise expressly provides in Section 814.108 and 814.107, all landfills with existing units shall comply with the requirements of this Part within six months of the effective date of this Part.

(effective January 13, 1994)

Section 814.501 c)

A new permit shall not be required for any facility at which all units will close within two years of the effective date of this Part.

The City is requesting an adjusted standard from Section 810.103, 814.102, and 814.501c of the Board Rules to June 13, 2007, which would allow the City to close the landfill under 807.509 Board Rules and the Permit.

**Section 104.406(b) A statement that indicates whether the regulation of general applicability was promulgated to implement, in whole or in part, the requirements of the CWA (33 USC 1251 et seq.), Safe Drinking Water Act**

**(42 USC 300(f) et seq.), Comprehensive Environmental Response, Compensation and Liability Act (42 USC 9601 et seq.), CAA (42 USC 7401 et seq.), or the State programs concerning RCRA, UIC, or NPDES [415 ILCS 5/28.1].**

The rules of general applicability were promulgated to conform to the above referenced federal Acts. If section 814.102 is adjusted as requested the regulations of general applicability become 35 IAC 807. It is the belief of the City of Chicago Heights that granting this adjusted standard will not cause the City to deviate from the above federal Acts

**Section 104.406(c) The level of justification as well as other information or requirements necessary for an adjusted standard as specified by the regulation of general applicability or a statement that the regulation of general applicability does not specify a level of justification or other requirements [415 ILCS 5/28.1] (See Section 104.426).**

The need for the adjusted standard is paramount. Without the requested adjusted standard the City can not close the landfill. Chicago Heights is under great financial strain. When the present administration took office in 2005, the City was approximately \$60,000,000.00 in debt. Since 2005 that debt has been lowered to approximately \$56,000,000.00. Chicago Heights has many depressed areas that require money so they may be rejuvenated. There simply isn't enough money available to reinvigorate Chicago Heights and close the landfill properly under any other regulations other than Sec. 807.

Chicago Heights' very unique situation is like no other in Illinois. Chicago Heights is still deeply in debt. It has large areas that require special financial attention. It is the owner of a landfill that was abandoned in 1990 and was not operated since. It's as if the landfill was put in suspended animation. Chicago Heights does not want to abrogate its responsibility to the State's environmental laws. It has put a unique plan together with the help of the IEPA using the City's meager resources and local business

to close the land fill using the original regulations, which are regulations it would have used if the landfill was not abandoned by Fitz Mar, Inc. Chicago Heights can not close its landfill unless it can follow Section 807 rules.

In order for the landfill to be closed properly the land fill will need to be higher and some of the grades will need to be steeper. The general reason for this is to make the landfill more stable.

C&D debris will be used as sub grade fill to aid in the development of minimum contours along the flat upper portion of the landfill. In addition, C&D debris will be used to tie the new grades into the existing grades along the side slopes. This additional material will increase the height of the existing landfill to a final grade elevation of 766 MSL. The intent is to provide a closure design that will meet IAC 807 regulations, provide a cap system that is free of erosion related issues and meets all applicable factors of safety with respect to slope stability. In order to accomplish this, the City has developed the following procedures as part of our Basis for Design, which will govern the final closure design.

### Erosion

The current erosion issues are believed to be a result of the landfill not being capped and having been neglected for a long period of time. Currently the landfill has a hummocky surface that allows stormwater to pool, which increases infiltration and leachate production within the landfill. The closure design will correct these erosion issues by designing a cover system that will include surface drainage components such as swales and diversion berms to promote proper drainage of the landfill. The installation of

along the centerline of the landfill. Existing conditions along with proposed contours are shown at representative stations across the landfill.

Slope stability analyses will be conducted to calculate the factor of safety for the steep side slopes of the landfill. The most critical slopes, usually the steepest and longest as well as slopes that contain significant C&D, will be evaluated. Stability will be evaluated for global failure as well as veneer or surficial failure. The City intends to utilize the slope stability software, SLOPE/W, developed by GEO-SLOPE International, Alberta, Canada in our analysis. This software uses several unit equilibrium techniques to calculate factors of safety for slope stability problems. Factor of safety is defined as the forces resisting sliding divided by the sliding forces. If a slope has a factor of safety greater than 1.0 then the slope is in a stable condition, i.e. forces resisting movement are greater than the forces promoting sliding. The minimum factors of safety to be used in the evaluation are:

Long term static	1.5
Long term seismic	1.0
Construction seismic	1.1

Infinite slope analyses will be conducted along the steep slopes and slopes that have significant C&D or cover materials. Infinite slope analysis is used to determine the factor of safety with regard to surficial failure along the slope. The infinite slope analysis assumes that the length of slope is much greater than the depth of cover soils or waste

along the slope. It will also take into account the seepage forces and pore pressures on the stability of the slope.

### Geotechnical Monitoring

During the construction phase of the project geotechnical monitoring will be conducted during placement of the C&D along the side slopes. Inclinator casings will be installed at various locations along the toe of the landfill slopes. Monitoring of these inclinometer casings will be conducted to determine if loading is creating strain or causing movement within the subsurface material. Often small subsurface movements or increased rates of movement shortly after fill placement in the vicinity of an inclinometer are precursors to failures. By monitoring movement, failures can often be avoided. Threshold limits for the rate of movement will be developed. During filling activities if a threshold value is reached, fill placement in that area will be suspended until rates of movement return to below threshold levels. This occurs as subsurface soils gain strength under an increased load.

### Summary

As part of our final design process, the City will be conducting the above mentioned settlement and stability analysis in order to accommodate the additional C&D and meet all required IAC 807 regulations for landfill closure. Existing erosion gullies will be repaired prior to capping, the flatter top slopes of the landfill will be designed with consideration of settlement and side slopes will be designed to meet all minimum factors of safety with regards to sliding and global failure. Geotechnical monitoring during construction will also be conducted. The City believes that placement of the C&D as sub

grade material will allow for the installation of proper cover and drainage systems without a substantial negative effect on the stability of the landfill.

**Section 104.406(d) A description of the nature of the petitioner's activity that is the subject of the proposed adjusted standard. The description must include the location of, and area affected by, the petitioner's activity. This description must also include the number of persons employed by the petitioner's facility at issue, age of that facility, relevant pollution control equipment already in use, and the qualitative and quantitative description of the nature of emissions, discharges or releases currently generated by the petitioner's activity.**

The cost of closing the landfill under Section 811 Rules would be in the tens of millions of dollars. Estimates for closing Fitz-Mar landfill using Section 807 Rules is \$7,000,000.00. Chicago Heights is a municipality. It requests the adjusted standard to service its residents the best it can.

Wastes known to have been accepted at the landfill include municipal refuse, construction debris, industrial waste and wastewater treatment sludge. Air samples have not been collected at the landfill for analyses. However, there have been residential complaints of odors emanating from the landfill. Landfill gas consisting mainly of methane and carbon dioxide likely diffuses from much of the uncapped portion of the landfill. As described in the 30% Design Basis Report, an appropriate number of passive gas vents will be installed through the cap into the underlying waste. This will allow for the controlled movement of the gas without damage to the cap and minimize human exposures. A general description of the steps to close the landfill was provided in the 30% Report. These steps will include the completions of the sub grade, final low permeability cover, protective soils and a vegetative cover. The City will maintain the cover in accordance with the approved Closure Plan.

**Section 104.406(e) A description of the efforts that would be necessary if the petitioner was to comply with the regulation of general applicability. All compliance alternatives, with the corresponding costs for each alternative, must be discussed. The discussion of costs must include the overall capital costs as well as the annualized capital and operating costs.**

For the City of Chicago Heights, there are no alternatives. Given that the landfill was not touched since January 1990 when it was governed by Section 807 Rules, it is appropriate for the same rules be used to close the landfill. Nothing has changed at the landfill except time.

As previously stated, Fitz-Mar was operated as an IAC 807 landfill and should be closed as such. If it was determined the landfill should close under IAC 811, many of those standards could not physically met. For example, the operating cells at Fitz-Mar are unlined, making it impractical to collect and monitor the leachate. The capping requirements under IAC 811 are more stringent than under IAC 807, which would necessitate the need for more vertical and lateral space or the use of a costly synthetic cap. The costs and space requirements associated with the use of an IAC 811 cap are unfeasible for the City. Furthermore, since the Fitz-Mar cells are unlined, an IAC 811 cap would not be accomplishing its objectives of having a fully enclosed impermeable system. Risk evaluations have shown the benefit of closing the landfill under IAC 807 as opposed to its current uncapped condition.

**Section 104.406(f) A narrative description of the proposed adjusted standard as well as proposed language for a Board order that would impose the standard. Efforts necessary to achieve this proposed standard and the corresponding costs must also be presented.**

The City will not be creating a “new unit” when conducting the closure at Fitz-mar. When the Board adopted rules 811 through 815, there were provisions for closure

under 807 if it was done within a certain time frame, closure of existing units using portions of the 811 standards provided it was done in a particular time frame for particular types of landfills, and provisions for opening new units that would require the full compliance with all provisions of IAC 811. For a landfill such as Fitz-Mar, the Board had adopted 814.501, which contemplates an 807 landfill completing closure within two years after the date of the new rules. Fitz-Mar did not meet that closure date, however, it had ceased operations in 1989, and therefore it met the technical requirements for closure. However, to conduct a comparison of 811 standards to 807, IAC 814.401 lists the applicable 811 requirements for an "existing unit" that will remain open for a period of time prior to closing. While Fitz-Mar did not exceed waste after 1989, and an extension to the 814.501 closure date (to close under 807) is the relief being sought in the petition, the most appropriate comparison to an 811 closure uses the guidelines from 814.401 as described below. Implicit here is that the planned 807 closure does not create a "new unit" and would not be considered a lateral expansion, as Fitz-Mar will be using C&D only for capping/closure purposes. The following 811 components not required under 814.402 are described below:

- a) All of the requirements for new units described in 35 Ill. Adm. Code 811 shall apply to units regulated under this Subpart except the following:
  - 1) The location standards in 35 Ill. Adm. Code 811.302(a), (c), (d), (e), and (f);
  - 2) The foundation and mass stability analysis standards in 35 Ill. Adm. Code 811.304 and 811.305;
  - 3) The liner and leachate drainage and collection requirements of 35 Ill. Adm. Code 811.306, 811.307 and 811.308;



- 4) The final cover requirements of 35 Ill. Adm. Code 811.314 shall not apply to units or parts of units closed, covered and vegetated prior to the effective date of this Part;
- 5) The hydrogeological site investigation requirements of 35 Ill. Adm. Code 811.315;
- 6) The groundwater impact assessment standards of 35 Ill. Adm. Code 811.317;
- 7) The groundwater monitoring program requirements of 35 Ill. Adm. Code 811.318(c); and
- 8) The groundwater quality standards of 35 Ill. Adm. Code 811.320(a), (b) and (c).

The IAC 811 standards that are applicable under 814.401 involve meeting groundwater standards at a compliance boundary, capping requirements for unclosed units (i.e. the Fitz-Mar cells), extending post closure care, meeting airport distance restrictions, etc. Therefore, using 814.401 and 814.501 as a basis for evaluation, the following is a comparison of closure under 811 versus 807.

IAC 807.305(c) requirements for the final cover require not less than two feet of suitable material over 12 inches of intermediate cover [807.305(b)]. IAC 811.314(b) requires the owner or operator to place a low permeability cover of not less than (A) 3 feet of low permeability soil compacted to achieve a permeability of  $1 \times 10^{-7}$  centimeters per second or (B) a geotextile membrane or (C) any other low permeability layer at least equivalent to (A) and (B) over the final intermediate layer [811.313(a)]. IAC 811.314(c) requires the final protective cover to be not less than 3 feet of soil material capable of supporting vegetation. Conforming to the greater low permeability and protective soil layer thicknesses under IAC 811 would subtract from the City's ability to use C&D for the sub grade, and thus the disposal revenues for the C&D to help pay for the closure

would not be available. Since the use of waste for closure is allowed under IAC 807.509, capping in this manner does not represent a departure from the Part 811 – 815 rules.

IAC 807.318(a) post closure regulations require the monitoring of gas, water and settling for a period of three years after closure and remedial action is required by IAC 807.318(b) for the same period of time. IAC 811.111(c)(1)(a) and(c) requires MSWLF units to perform inspections and monitoring for a period of up to 30 years after closure. Specific post closure care periods will be specified in the updated Closure Plan.

IAC 811.306 through 811.309 regulations require the installation of a leachate collection, monitoring and disposal system (for new units). These 811 design criteria would be impossible to retrofit to this existing landfill (that is why there is an 814.401 exclusion for existing units). For example, the entire volume of waste would have to be dug up and placed in an off-site storage area during the liner construction period.

In addition, the IAC 811.310 through 811.312 regulations require the construction of a gas collection, monitoring and management system and IAC 811.318 through 811.320 require the construction of a groundwater collection, monitoring and disposal system (for new units). Both of these systems would have to be monitored for 30 years after closure. These systems would significantly increase the closure and post closure costs originally provided for in the current closure plan utilizing IAC 807 regulations.

**Section 104.106(g) The quantitative and qualitative description of the impact of the petitioner's activity on the environment if the petitioner were to comply with the regulation of general applicability as compared to the quantitative and qualitative impact on the environment if the petitioner were to comply only with the proposed adjusted standard. To the extent applicable, cross-media impacts must be discussed. Also, the petitioner must compare the qualitative and quantitative nature of emissions, discharges or releases that would be expected from compliance with the regulation of**

**general applicability as opposed to that which would be expected from compliance with the proposed adjusted standard.**

Evaluations of human health and ecological risks have been performed through the preparation of screening level risk models (see Attachment B). These models incorporate laboratory data and observations from prior landfill inspections. A discussion on the protectiveness of an 811 closure is also described below. Granting the adjusted standard will allow for the closure of the uncapped landfill. As the landfill currently exists, rainwater is allowed to accumulate on its surface and then infiltrate into the waste. This results in the presence of leachate seeps that have been observed on the south and north sides of the landfill. An IEPA Violation Notice L-2002-0128 contained photos and a map of several leachate seeps, exposed garbage and algal growth in a puddle of water on top of the landfill. Some of the infiltrated water also ends up in the upper aquifer as indicated by elevated groundwater results from US EPA sampling. Precipitation that does not run-off from the landfill mixes with landfill waste and presents a pathway for contaminants to enter nearby surface water bodies including the creek located to the east. As an uncapped landfill, rats and other pests are likely to be feeding on garbage and are a vector for disease. Landfill gas likely diffuses into the air in an uncontrolled fashion. A Site Team Evaluation Prioritization (STEP) CERCLA Report was issued by IEPA in 1996. As indicated in the STEP Report, an earlier CERCLA Screening Site Inspection in 1988 had shown the presence of volatile organic compounds (VOCs) in groundwater and in on-site soils. The 1996 STEP described the Site as consisting of roughly 45 acres of which 38.5 acres were used for landfill operations. The area immediately surrounding the Site is a mixture of commercial and industrial properties. A densely populated

residential area located approximately 500 feet west of the Site. The inactive Chicago Heights Refuse Deport landfill is located immediately north of the Site across an access road which forms the northern border of the Site. Fitz-Mar is bordered on the east by a drainage ditch that contains numerous beaver dams and that eventually discharges to a stream north of the property. East End Avenue forms the border to the west and an engineered drainage ditch borders the landfill to the south. Wastes known to have been accepted at the landfill include municipal refuse, construction debris, industrial waste and wastewater treatment sludge. The Site topography is generally uneven with large mounded section occupying the center of the fill area. The mounded area slopes off at steep grades in all directions. Some portions of the landfill have good vegetative cover while other areas are completely bare. Run-off has eroded some of the cover material. The STEP sampled groundwater located at the base of the fill area along the northern border of the Site with a Geoprobe at a shallow depth of four feet. Dieldrin and Aroclor-1254 were detected in this sample. Iron and Aroclor-1254 were found to exceed the IAC 620 Class II groundwater standards in this sample. Four (4) soil samples were also collected using a Geoprobe at the surface and subsurface. These samples revealed the presence of semi-volatile, pesticide and polychlorinated biphenyl (PCB), and inorganic contaminants that meet the CERCLA criteria for an observed release.

The geology of the area is covered by a mantle of glacial drift composed of clay, sand, gravel and boulders ranging in thickness from 60 to 300 feet. The Niagaran dolomite is the underlying rock formation. Nearly all of the public wells left in the Chicago area draw water from the dolomite. The City of South Chicago Heights had reported VOC contamination problems in the past that could be attributed to the Site.

Laboratory analysis of samples collected from on site monitoring wells during the 1988 CERCLA investigation revealed VOC contamination. Similar contaminants have been observed in Chicago Heights Well #3, which is believed to be downgradient of the Site. Surface drainage of the Site is towards the south via an intermittent stream that originates on Site. Recent observations indicate that drainage also occurs to the former Cell 16 located at the northeast corner of the Site. Some surface drainage also occurs along rills on the steep slope of the eastern portion of the Site towards the eastern creek. The STEP indicates that landfill inspectors had reported complaints from area residents of odors emanating from the landfill. Given the fact that a proper final cover has never been applied, the potential for airborne particulate matter to migrate off site does exist. A review conducted by the Illinois Department of Natural Resources revealed no threatened or endangered species within a one-mile radius of the Site. According to U.S. Department of the Interior "National Wetlands Inventory" maps, there is a small wetland area on site. Access to the Site is partially restricted by a fence with a locked gate. There is evidence of recreational use as all wheel drive tire marks and spent rifle cartridges have been observed on site.

Based on the prior CERCLA and STEP evaluation data reviewed and recent observations by the City, the attached Site Risk Models (Attachment B) for the Current Unclosed Condition and for the future IAC 807 Closed Landfill Condition examines primary sources (landfill wastes), secondary sources (affected surface soils, subsurface soils, groundwater, surface water, landfill gas) transport mechanisms (wind erosion, volatilization, leaching and groundwater, surface water runoff), exposure pathways (dermal contact, ingestion, inhalation, drinking water, recreation use/sensitive habitat),

and receptors (trespassers, construction worker, visitors, ecological terrestrial and ecological aquatic). For the unclosed landfill, complete exposure pathways exist for ingestion of soil by trespassers, construction workers, terrestrial and aquatic organisms. Vapor or particulate inhalation pathways exist for trespassers, construction workers, visitors, aquatic and terrestrial biota. Potable groundwater exposures are incomplete since South Chicago Heights is now on Lake Michigan water. Finally, there are complete surface water/seep/sediment exposure pathways for ingestion, inhalation, dermal contact and aquatic from possible impacts to exposure at seeps and at intermittent streams. Under future closed IAC 807 conditions, the only complete exposure pathway that should remain will be human exposure through air vapors (i.e. landfill gas). Since the gas will be directed to above grade vents, current terrestrial and aquatic receptors that receive diffused gas into the overlying soils and surface ponds will be largely eliminated.

The screening level risk evaluations as described above indicate current potential risks to various receptors. Many of these risks will be eliminated or reduced once the landfill is properly closed. For example, capping the landfill will eliminate seep exposures as well as surface water impacts from rain in contact with wastes. Soil exposures will largely be eliminated. While drinking water exposure is shown to be an incomplete pathway under both current and future scenarios, reduction to contaminants reaching the water table will also be achieved through capping of the landfill. If the landfill were closed under Part 811 standards, the exposure pathways would be very similar to the 807 closure, except that the landfill would have an active gas collection system, which would eliminate the air exposure pathway.

As described in the risk evaluations, leachate will be reduced through the capping of the landfill. Landfill gas will be directed through passive vents.

**Section 104.406(h) A statement which explains how the petitioner seeks to justify, pursuant to the applicable level of justification, the proposed adjusted standard.**

By allowing the City of Chicago Heights the ability to close the Landfill using the Section 807 Rules, the landfill would be closed in the most efficient and safe manner possible. Trespassers that regularly use the landfill for unknown purposes over a decade would be safer since the landfill is closed properly. A blighted area could one day again become an area of natural beauty. Allowing a landfill conceived and operated under Section 807 Rules. to be closed under the same Rules is appropriate.

**Section 104.106(i) A statement with supporting reasons that the Board may grant the proposed adjusted standard consistent with federal law. The petitioner must also inform the Board of all procedural requirements applicable to the Board's decision on the petition that are imposed by federal law and not required by this Subpart. Relevant regulatory and statutory authorities must be cited.**

The landfill would have been properly closed under section 807 rules prior to the effective dates in 814.102 if there had not been inaction and fraud by Fitz-Mar, Inc. (i.e. the operator's signature could not be obtained for notifications to IEPA). This petition allows for the extension of the 814.501 closure date so that materials can be used in accordance with 807.509 and the landfill Permit. Once this petition granted, the City of Chicago Heights will provide IEPA a Supplemental IAC 807 permit application that requests the following changes to the existing permit: 1) a vertical expansion siting approval, and 2) new closure grading contours.

**Section 104.406(j)** A statement requesting or waiving a hearing on the petition (pursuant to Section 104.422(a)(4) of this Part a hearing will be held on all petitions for adjusted standards filed pursuant to 35 Ill. Adm. Code 212.126 (CAA)).

The City of Chicago Heights waives its right to a hearing pursuant to Section 104.422(a)(4).

**SUMMARY**

The City of Chicago Heights respectfully requests that Illinois Pollution Control Board grant the City of Chicago Heights an Adjusted Standard from 810.103, 814.102 and 814.501(c), of the Board Rules allowing Fitz-Mar landfill to be closed using 35 IAC 807.

Respectfully Submitted,



Joseph J. Annunzio  
One of the Attorneys for  
The City of Chicago Heights

Joseph J. Annunzio  
1880 Burton  
Park Ridge, Illinois 60068





# Current Site Risk Model

Page 1 of 1

DRAFT

