BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

JOHNS MANVILLE, a Delaware corporation,	)	
	)	
Complainant,	)	
	)	
v.	)	PCB No. 14-3
	)	(Citizen Suit)
ILLINOIS DEPARTMENT OF TRANSPORTATION,	)	
	)	
	)	
Respondent.	)	

NOTICE OF FILING AND SERVICE

To: ALL PERSONS ON THE ATTACHED CERTIFICATE OF SERVICE

Please take note that today, October 4, 2019, I have filed with the Clerk of the Pollution Control Board the attached "IDOT'S Response to Complainant's Motion to Exclude Base Maps and Related Figure and Testimony at Hearing" and have served each person listed on the attached service list with a copy of the same.

Respectfully Submitted,

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CERTIFICATE OF SERVICE

***Johns Manville v. Illinois Department of Transportation*, PCB 14-3 (Citizens)**

I, EVAN J. McGINLEY, do hereby certify that, today, October 4, 2019, I caused to be served on the individuals listed below, by electronic mail, a true and correct copy of the attached "IDOT'S Response to Complainant's Motion to Exclude Base Maps and Related Figure and Testimony at Hearing" on each of the parties listed below:

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Evan J. McGinley

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	)	
	)	
Respondent.	)	

IDOT'S RESPONSE TO COMPLAINANT'S MOTION TO EXCLUDE BASE MAPS AND RELATED FIGURES AND TESTIMONY AT HEARING

NOW COMES RESPONDENT, the Illinois Department of Transportation ("IDOT"), through its attorney KWAME RAOUL, Attorney General of the State of Illinois, who herewith files its response to "Complainant's Motion to Exclude Base Maps and Related Figures and Testimony at Hearing" ("Motion to Exclude").

INTRODUCTION

The Hearing Officer should deny Johns Manville's Motion and allow Steven Gobelman to testify at hearing about all aspects of his cost attribution analysis work, including his base maps. The reason for this is clear: Mr. Gobelman meets the requirements for serving as an expert witness. He possesses extensive experience and knowledge that will aid the Board, as the trier of fact, when it conducts its final round of hearings, currently scheduled to begin the week of November 18th, 2019. Moreover, the Hearing Officer previously found him to be qualified to serve as an expert witness during the initial round of hearings in this matter on a variety of matters, including the "economic considerations of remediation projects."

Johns Manville seeks to exclude Mr. Gobelman by claiming, among other things, that Mr. Gobelman should have used a map that was previously admitted into evidence by the Board during

the initial round of hearings in this matter. But that claim falls flat, because the maps and figures that were admitted into evidence during the initial round of hearing in this matter were admitted for wholly different purposes, most particularly, with regard to determining whether IDOT had violated the Environmental Protection Act.

Mr. Gobelman started out trying to use some of these very same, previously-admitted and other figures when he started to work on developing his cost attribution analysis. However, he soon determined that the boundaries and dimensions of these maps were not in alignment. As a prudent expert, then, he took it upon himself to create a new base map, from which he could then start his cost attribution work.

Johns Manville makes much of the fact that in creating his base map, Mr. Gobelman used Figure 15 from the ELM Consulting, LLC's December 12, 1999 "Surface and Subsurface Characterization Site 2 and Site 3, Former Johns Manville Manufacturing Facility, Waukegan, Illinois" ("ELM Report"), asserting that the use of this report and its figures (which are marked "DRAFT") are not the sort of source material that reasonable experts use. The problem with this assertion is that the ELM Report and its figures were relied upon by the Board for determining the location of the Site 3 borings that the Board found IDOT liable for in its December 15, 2016 Interim Opinion and Order ("Interim Opinion"). But more problematically for Johns Manville, is the fact that despite the ELM Report being marked "Draft," it has been cited to by Mr. Dorgan, Johns Manville's environmental consultants, the United States Environmental Protection Agency and the Board. Therefore, given that the draft ELM Report has been relied upon as routinely as it has, it was not improper for Mr. Gobelman to use it as source material for his base maps.

Ultimately, Johns Manville is once again doing what it has always done, namely, to attempt to discredit Mr. Gobelman and his opinions. The Hearing Officer should deny Johns Manville's

Motion to Exclude and should allow Mr. Gobelman to testify as to all of his opinions at hearing. That way, the Board can then hear the testimony and, as it is empowered to do, decide what weight, if any, to give to his testimony.

STATEMENT OF FACTS

A. USEPA-Related Activities

On December 10, 1999, in response to direction from the United States Environmental Protection Agency ("USEPA"), Johns Manville's environmental consultant, ELM Consulting, LLC, issued its "Surface and Subsurface Characterization Site 2 and Site 3, Former Johns Manville Manufacturing Facility, Waukegan, Illinois" ("ELM Report"). The entire text and all figures created for the ELM Report, including maps of Site 3 soil borings, were marked as "DRAFT." (*See, generally,* Exhibit ("Exh.") 57, ELM Report.)[1] (Excerpts from the ELM Report are attached hereto as Exhibit A.) The "comprehensive" soil sampling work conducted by ELM and the results of that sampling work, are visually depicted in a series of figures in the ELM Report. (Exh. 57-536-546.) All of these figures are marked "Draft." (Id.)

The draft ELM Report is included in USEPA's administrative record for the Johns Manville Site. (The Administrative Record for the Johns-Manville Corp Site Removal Action can be found at (https://semspub.epa.gov/src/collection/05/AR63651, Documents 259720 and 25972.) The Administrative Record does not contain any entry for an alternate, "final" version of this report (i.e., a version of the report which is not marked "DRAFT").

On April 4, 2011, Arcadis, Johns Manville's environmental consultant submitted its "Engineering Evaluation\Cost Analysis Southwestern Sites Area, Sites 3, 4/5, and 6, Revision IV" ("EE\CA") (Exhibit 63) to USEPA, on behalf of Johns Manville. Figure 3 to the EE\CA depicted

[1] References to "Exh. __," etc. refer to documents previously received into evidence by the Board, such as Exhibit 57, the ELM Report.)

the locations of all sampling sites on Site 3. (Exh. 63-80.) (Excerpts from the EE\CA are attached hereto as Exhibit B.) The majority of the sampling locations depicted on this figure were based on sampling locations taken from the ELM Report. (Id.)

B. Initial Board Proceedings

On July 9, 2013, Johns Manville commenced the present action against IDOT before the Board.

On March 16, 2015, Johns Manville issued the "Expert Report of Douglas G. Dorgan, Jr" ("2015 Dorgan Report"). (Excerpts from the 2015 Dorgan Report are attached hereto as Exhibit C.) In his report, Mr. Dorgan recounted the history of the various environmental studies that Johns Manville had been required to conduct at Site 3 and 6. (Exh. 6-5 and 6, Dorgan Report, p.§2.3.1, pp.5-6.) Mr. Dorgan further noted that ELM conducted sampling for ACM at Site 3 and issued a report dated December 1999 ("ELM Report") and that the "[r]esults of the ELM sampling have been visually represented on the attached Figures **2,3,4 and 5**." (Exh. 6-8, Section 2.3.1, p. 5) (Emphasis in original.) Mr. Dorgan included the locations of all of the ELM boring locations on Figures 2 and 3 of his 2015 Dorgan Report. Mr. Dorgan also included the ELM Report as part of the bibliography to the 2015 Dorgan Report.

On February 16, 2016, Johns Manville filed a motion for leave to file its Second Amended Complaint in this matter. As part of the relief sought by Johns Manville through its complaint, Johns Manville sought an order from the Board that would "require Respondent (i.e., IDOT), to participate in the future response action on Site 3 and Site 6 . . ." (Second Amended Complaint, Prayer for Relief, ¶ C.)

C. 2016 Cross-Motions *in Limine*

On February 16, 2016, the parties filed cross motions *in limine,* each party moving to bar or otherwise limit testimony from their opponent's respective expert witness. On April 26, 2016, the Hearing Officer issued an order ruling on these motions. With respect to Johns Manville's motion, the Hearing Officer found that:

> While working for IDOT for over twenty years, Mr. Gobelman participated in the investigation and remediation of contaminated sites and also has examined the records of the project at issue in this case, along with the records of several other IDOT highway construction projects. IDOT has demonstrated that Mr. Gobelman has experience and knowledge of . . . **economic considerations of remediation projects** . . . Therefore, Mr. Gobelman may offer opinion testimony on these subjects as an expert witness.
>
> (Hearing Officer Order of April 26, 2016, at 5.)

D. First Round of Board Hearings

The first phase of hearings in this matter took place over five days in May and June, 2016. During the first day of hearing in this matter on May 24, 2016, IDOT's counsel asked Mr. Dorgan the following question and Mr. Dorgan gave the following answer regarding ELM's field work:

> (**Question by Mr. McGinley**)
> 17 Q: As I understand it, the subsurface
> 18 soil sampling that was done in conjunction with
> 19 the ELM report probably constituted the largest
> 20 sampling exercise that's taken place to date at
> 21 this site. Would you agree with that
> 22 characterization?
> 23 A. Yes. **It was certainly one of the**
> **24 more comprehensive investigations**.
> 1 Q. One of the more comprehensive
> 2 is the most comprehensive, wouldn't you agree with
> 3 that?
> 4 A. It was certainly very comprehensive,
> 5 whether -- it's the most comprehensive of those that
> 6 have been done, yes.
>
> (May 24, 2016 Transcript, pp. 268:17-269:6.)
> (Emphasis added.)

During Mr. Dorgan's testimony on June 24, 2016, he sought to advance a position that IDOT was responsible for ACM and asbestos waste found in borings 5S through 8S.[2] In particular, during this last day of hearing, Johns Manville's counsel asked him the following questions, to which he gave the following answers:

(**Question by Ms. Brice**)
17. Okay. And in the profile down
18 below -- for example, take a look at 5S and 6S.
19 There are lines here. Are those within the fill
20 material? Is that what you're trying to depict
21 here?
22 A. That's correct.
23 Q. And explain. Within the fill
24 material - -
1 A. That would have been placed during
2 construction project by IDOT.

(June 24, 2016 Transcript, pp. 188:17-189:2.)

E. Board's December 15th Interim Opinion and Order

On December 15, 2016, the Board issued its Interim Opinion, following the initial phase of hearings in this matter. In its Interim Opinion, the Board reviewed the underlying facts related to the history of Sites 3 and 6, as well as Johns Manville's various environmental studies of those Sites. (Interim Opinion, pp. 2-5.) In its review of the soil sampling work done at both Sites, the Board spent a significant amount of time reviewing the soil sampling results for Site 3 that were obtained through ELM's 1998 field work. (Interim Opinion, pp. 3-4.) The ELM Report is cited by the Board as factual support for the locations and results of soil boring taken at Site 3 and for its determination that the ACM found on Site 3 met the Environmental Protection Act's definition of "waste." (Id. p.4 and 6.) The Board's Interim Opinion specifically relied upon Figure 20 of the

[2] Johns Manville's counsel further questioned Mr. Dorgan regarding his opinions that IDOT was responsible for the ACM and asbestos found at borings 5S through 8S on Site 6. (June 24th Transcript, p. 198:6-24.)

ELM Report (i.e., Exhibit 57-541, entitled "Subsurface Boring Results" and marked "Draft") to help it discern where ACM had been found in the subsurface environment at Site 3.

The Board also considered the question of where on Greenwood Avenue (i.e., Site 6) IDOT's activities resulted in the placement of various forms of ACM. (Interim Opinion, at pp.8-9.) In its Interim Opinion, the Board reviewed testimony provided by Johns Manville's expert witness, Mr. Dorgan, in particular, his cross-sectional diagram of asbestos deposition at Site 6 (Id., p.9.) Based on its review of the evidence before the Board, the Board determined that: "[s]pecifically, IDOT is responsible for ACM waste found in samples 1S, 2S, 3S, and 4S." (Id.) The Board did not, however, choose to extend IDOT's liability to any soil borings in Site 6 east of S4, as Mr. Dorgan had argued for. (*See,* Interim Opinion, p.9.)

With regards to Parcel 0393, the Board found that IDOT "continues to control the Parcel" (Interim Opinion, p. 11), and "continues to allow ACM waste in the soil." (Id.) The Board then went on to find:

> [T]hat IDOT allowed open dumping through its control over Parcel 0393 at sample locations B3-25, B3-16, B3-15, B3-50, and B3-45 (to the extent sample B3-45 falls on Parcel 0393) on Site 3. *See* Exh. 57 at 97-110 (ELM report).[3]

Ultimately, the Board directed the parties to return to hearing on three specific issues:

1. The cleanup work performed by JM in the portions of Site 3 and Site 6 where the Board found IDOT responsible for ACM waste present in soil.

2. The amount and reasonableness of JM's costs for this work.

3. The share of JM's costs attributable to IDOT.[4]

(Interim Opinion, p.22.)

[3] The pages cited by the Board are also marked "DRAFT."
[4] As the result of stipulations entered into between Johns Manville and IDOT, only the third issue identified by the Board in its Interim Opinion remains to be tried before the Board.

F. Commencement of Current Expert Discovery – Initial Dorgan Report

On June 13, 2018, Johns Manville filed the "Expert Report of Douglas G. Dorgan Jr. on Damage Attributable to IDOT" ("Dorgan Expert Report"; a copy of this report is attached to Johns Manville's Motion to Exclude as Exhibit B), in which he set forth his opinions regarding the three issues identified by the Board for further hearing. He identified total cost of implementing the USEPA-ordered removal action as $5,579,794 (Dorgan Expert Report, §2.1, p.10.) He then apportioned this amount amongst a series of "task buckets" for things such as excavation and creation of clean corridors for utilities, etc., ultimately attributing $3,274,917 of Johns Manville's aforementioned total costs to IDOT. (Dorgan Expert Report, §3.3, p.33.) In reaching his conclusions regarding Johns Manville costs attributable to IDOT, Mr. Dorgan assumed certain things that went beyond the scope of the Board's liability rulings in the Interim Opinion. He attributed any costs incurred by Johns Manville for work performed in any portion of Parcel 0393 on IDOT. (Dorgan Expert Report, § 3.1.1.1, p.13.) He also attributed costs to IDOT for work done by Johns Manville on all JM work on Site 6 at boring locations 5S through 8S. (Dorgan Expert Report, § 3.1.1.2, pp.13-14.)

G. Initial Gobelman Report

On August 22, 2018, IDOT issued the report of its expert, Steven Gobelman ("Expert Rebuttal Report of Steven Gobelman on Damages Attributable to IDOT Based on IPCB Order of December 15, 2016") ("Initial Gobelman Report"). (A copy of the Initial Gobelman Report is attached to Johns Manville's Motion to Exclude as Exhibit D.) Discussing his qualifications to render opinions regarding this matter, Mr. Gobelman noted that he had been:

> IDOT's technical expert reviewer on Highway Authority Agreements (HAAs). I have reviewed over a thousand HAAs which included determining IDOT's acceptable extent of impacts on our right of way. As part of the HAAs review process and for executed HAAs, I reviewed completed IDOT construction projects

> that have an existing HAA or as part of a new HAA review and determined IDOT's environmental cost associated with the HAA area, and the allocation of cost involved proportioning costs to a single property from pay items that could involve multiple properties. Some of these HAA reviews required reviewing old construction projects to figure out what was constructed, how it was constructed, what the pay items and quantities were used on the construction project, and change orders associated with the project.
>
> (Initial Gobelman Report, §2, pp.1-2.)(Emphasis added.)

Mr. Gobelman then went on to describe how he had attempted to analyze the question of the costs attributed to IDOT as a result of the Board's Interim Opinion. (Id., §5, pp. 3-6.) He noted that as he began this work, he reviewed "the various figures showing the locations of Sites 3 and 6 [which] revealed that the locations of Sites 3 and 6 were not consistently located on the various figures. (Id., §5.1, p. 3.) Mr. Gobelman went on to note that he had "started with the assumption that Mr. Dorgan's Exhibit G Atwell Survey was a correct survey of Site 3." (Id.)

Mr. Gobelman found that based upon:

> My review of the various figures showing the location of Sites 3 and 6 revealed the location of Sites 3 and 6 were not consistently located on the various figures. For example, the Plat of Topographic Survey (Atwell Survey Exhibit G of Mr. Dorgan's Report) (1) does not match up with surveyed corners of Site 3 as presented on Figure 2 in the AECOM Final Report (3) or Mr. Dorgan's Figure 1 (1), as shown in Appendix C, Ex 1.
>
> (Initial Gobelman Report, §5.1, p.3.)

Mr. Gobelman then went on to overlay the lines in Figure 1 from the Dorgan Expert Report with the lines for Site 3 in the AECOM Final Report and the Atwell Survey and determined that these lines did not match up. (Id., p.4.)[5] As a result of this determination, Mr. Gobelman set out to "create [] a site map utilizing current existing conditions." (Id.) Based on this site map, and in consideration of the Board's findings in its Interim Opinion, Mr. Gobelman created his attribution

[5] A visual comparison of the three sets of lines is contained in Appendix C, Exhibit 1 of the Initial Gobelman Report.

analysis which resulted in a significantly smaller amount of Johns Manville's total costs being attributed to IDOT. (Id., §6, pp. 6-17.)[6] This, in no small part, was because Mr. Gobelman confined his attribution analysis to the areas of liability specified in the Board's Interim Opinion and, unlike Mr. Dorgan, did not exceed the boundaries of those areas.

H. Dorgan October Rebuttal Report

On October 25, 2018, Johns Manville released the "Expert Rebuttal Report of Douglas G. Dorgan Jr. on Damages Attributable to IDOT" ("October Rebuttal Report"). (A copy of the October Rebuttal Report is attached to Johns Manville's Motion to Exclude as Exhibit E.) In the October Rebuttal Report, Mr. Dorgan took issue with Mr. Gobelman's attribution approach, claiming that he did not "have a consistent methodology for attributing costs to IDOT and mixes various approaches throughout his . . . [r]eport." (October Rebuttal Report, §2.1, p.2.) Mr. Dorgan further asserted in his October Rebuttal Report that:

> Mr. Gobelman's Site 3 IDOT attribution calculations are based upon a flawed Base Map (Figure 1 of the Gobelman Report). Mr. Gobelman's Site 3 IDOT attribution calculations are based on this flawed figure, which contradicts the USEPA-approved figure the Board relied on in entering the IPCB order. (Id.)

Mr. Dorgan does not go on to specifically identify this "USEPA-approved figure" in his report.[7]

Mr. Dorgan also stated that: "Mr. Gobelman fail[s] to consider why certain cleanup activities were required and how the scope of the cleanup was driven by site conditions and where visible ACM was observed during earlier investigation activities." (Id.)

[6] Mr. Gobelman determined that IDOT was only responsible for $489,891 of Johns Manville total costs of 5,579,794.
[7] Notably, the Board does not cite any "USEPA-approved" figure in its Interim Opinion.

I. Gobelman Supplemental Report

On November 7, 2018, IDOT issued its "Expert Rebuttal Supplemental Report of Steven Gobelman on Damages Attributable to IDOT Based on IPCB Order of December 15, 2016" ("Gobelman Supplemental Report") (A copy of the Gobelman Supplemental Report is attached to Johns Manville's Motion to Exclude as Exhibit F.) As noted in the opening sentence of the Gobelman Supplemental Report, "[t]his supplement report was written to correct the location of the Parcel 0393 as shown on the base map [to the Gobelman Report]." (Gobelman Supplemental Report, §1, p.1.) As the result of this correction, Mr. Gobelman upwardly revised the share of Johns Manville's costs which he had attributed to IDOT from $489,891 to $600,050 (out of a total of $5,579,794). (Id., §5, p.8.)

J. Dorgan Rebuttal Supplemental Report

On April 30, 2019, Johns Manville issued its "Expert Rebuttal Supplemental Report of Douglas G. Dorgan, Jr. on Damages Attributable to IDOT" ("Supplemental Rebuttal Report"). (A copy of the Supplemental Rebuttal Report is attached to the Motion to Exclude as Exhibit G.) Mr. Dorgan continued to take issue with Mr. Gobelman's revised attribution analysis. (Supplemental Rebuttal Report, §2.1, p.3.) In particular, Mr. Dorgan opined that:

> [T]he correct location of the borings and test pits is not a function of how the northern boundary of Parcel 3 is moved but should be in a fixed location that is based on the mapping provided by AECOM and adopted by the parties as evidence in the first hearing.
> (Id.)

Much of what Mr. Dorgan states in his Supplemental Rebuttal Report amounts to the statements of one expert disagreeing with another expert, not facts. However, echoing prior statements made by Johns Manville castigating Mr. Gobelman and his apparent motives, Mr. Dorgan opines that: "it appears that his (i.e., Mr. Gobelman) decision to change the Base Map was

motivated out of a desire to influence the allocation amounts." (Id., §2.2, p.4.) Mr. Dorgan offers no factual support for this this conclusion.

On September 13, 2019, Johns Manville filed its Motion to Exclude. Among other contentions made in this motion, Johns Manville states that it was not "reasonable" for Mr. Gobelman to have relied on Figure 15 from the ELM Report in his Report, although Johns Manville provided no rational basis for its argument. (Mot. to Exclude, p. 18.)

ARGUMENT

A. Legal Standard for Expert Opinions

As the Illinois Supreme Court has noted, the decision as to whether or not to admit expert testimony is committed to the discretion of the trial court. *Snelson v. Kamm*, 204 Ill.2d 1, 23 (2003). Expert testimony may be admitted, where the subject matter of the expert's testimony will assist the trier of fact in the resolution of an issue presented for trial. Id. In order to provide such testimony, however, the expert must be properly qualified to offer the opinion. *O'Brien v. Meyer,* 196 Ill.App.3d 457, 461-2 (1st Dist. 1989). Furthermore, the expert's opinions must have an "adequate foundation establishing that the information on which the expert bases her opinion is reliable." *Fronabarger v. Burns*, 365 Ill.App.3d 560, 565 (5th Dist. 2008); See also, Cleary and Graham's Handbook of Illinois Evidence ("Cleary and Graham"), 9th Ed.., § 702.1 (1999) (noting that an expert opinion must be "supported by an adequate foundation of facts, data, or opinions . . .") Finally, any facts, data or opinions which an expert witness relies on in the formation of their opinions must be of the type which are reasonably relied upon by other experts in their respective field. *Wilson v. Clark*, 84 Ill.2d 186, 193 (1981) (citing Federal Rule of Evidence 703). The "reasonably relied upon" requirement serves as a check on the trustworthiness of potential

evidence being used by an expert witness. *In re Commitment of Hooker*, 2012 IL App (2d) 101007968, ¶ 51.

B. <u>Mr. Gobelman Indisputably Has the Requisite Experience to Offer Opinions on Cost Attribution</u>

Mr. Gobelman previously served as IDOT's expert witness during the first round of hearing in this matter, during May and June 2016. Prior to those hearings, Johns Manville filed a motion *in limine* where, like now, they sought to have Mr. Gobelman barred from testifying at hearing. In its 2016 motion *in limine*, Johns Manville argued that Mr. Gobelman lacked the knowledge and experience that would allow him to offer any opinions regarding "IDOT's historical, and utility practices, JM's economic motivations, and USEPA's remedial strategy and decision making processes." (Hearing Officer Order of April 26, 2016, p. 5.) The Hearing Officer denied Johns Manville's motion and in so doing, specifically found, among other things, that "IDOT has demonstrated that Mr. Gobelman has experience and knowledge of . . . [the] economic consideration of remediation projects . . . Therefore, Mr. Gobelman may offer opinion testimony on these subjects as an expert witness." (Id.)

In the "Qualifications" section of his Initial Gobelman Report, Mr. Gobelman discusses his experience related to the specific issues on which the parties are set to return to hearing on. (Initial Gobelman Report, §2, p.1.) Of particular relevance to the question of his expertise with respect to the third issue for hearing, identified in the Board's Interim Opinion, Mr. Gobelman states that:

> I was also IDOT's technical expert reviewer on Highway Authority Agreements (HAAs). I have reviewed over a thousand HAAs which included determining IDOT's acceptable extent of impacts on our right of way. As part of the HAAs review process and for executed HAAs, **I reviewed completed IDOT construction projects that have an existing HAA or as part of a new HAA review and determined IDOT's environmental cost associated with the HAA area, and the allocation of cost involved proportioning costs to a single property from pay items that could involve multiple properties.** Some of these HAA reviews required reviewing old construction projects to figure out what was

> constructed, how it was constructed, what the pay items and quantities were used on the construction project, and change orders associated with the project.
>
> (Id., pp.1-2.) (Emphasis added.)

Mr. Gobelman's vast experience and expertise is directly on point with the very question the parties will be returning to hearing on, specifically, "[t]he share of the (sic) JM's costs attributable to IDOT." Moreover, he has already been determined by the Board to be capable of serving as an expert witness in this matter, in part, based on his considerable experience dealing with the "economic considerations of remediation projects." Given his extensive and highly relevant experience, Mr. Gobelman's testimony at hearing will unquestionably be of benefit to the Board and will assist it in resolving questions of cost attribution that they will confront when this matter returns to hearing. *Snelson*, 204 Ill.2d at 23. Accordingly, Johns Manville motion to exclude any aspect of Mr. Gobelman's testimony at hearing should be denied.

C. It was Entirely Reasonable for Mr. Gobelman to Create His own Base Maps as a Starting Point for Conducting his Analysis of Johns Manville's Costs That Were Attributable to IDOT

As Mr. Gobelman clearly states in his Gobelman Report, when he started out to try to "assess the cost attributed to IDOT [he] started with the assumption that Mr. Dorgan's Exhibit G Atwell Survey was a correct survey of Site 3." (Gobelman Report, §5.1, p. 3.) However, Mr. Gobelman quickly determined that the survey's boundaries for Site 3 in the Atwell Survey did not align with the boundaries relied upon by the Board in its Interim Opinion for Site 3 contained in Figure 2 of the AECOM Final Report. (Id.) "Based on the inconsistent location of Site 3, I created a site map utilizing current existing conditions." (Id., p.4.) Mr. Gobelman's reason for creating a new map is entirely reasonable and evidences his goal of attempting to create an accurate and defensible cost allocation, in the face of the inaccurate Site 3 boundaries in the figures used by Mr.

Dorgan in his report. In light of these circumstances, and having previously qualified Mr. Gobelman as an expert in this matter, the Hearing Officer should "liberally allow" Mr. Gobelman's determination as to what maps would serve his purpose. *Donaldson v. Cent. Ill. Pub. Serv. Co.*, 313 Ill.App.3d 1061, 1076 (5th Dist. 2000).

1. There is no "USEPA-Approved Figure" of Site 3

Johns Manville attacks Mr. Gobelman's Base Maps, contending that he should have used the maps from Exhibits 6-26 and 16-18 as the basis for conducting his cost attributions. (Motion, pp.6-7.) Johns Manville contends that these exhibits are based on "underlying AECOM maps" which were "ultimately approved" by USEPA. (Id. p.7.) Johns Manville's "ultimate approval" contention is misleading. First, there is no map that USEPA has stated that it "ultimately approved." Certainly, if there had ever been such a map, Johns Manville would long since have produced it and Mr. Dorgan would have cited to it in his various expert reports. More importantly, and assuming only for the sake of argument, any maps approved by USEPA such as those in the EE/CA (Exhibit 63) or the Remedial Action Work Plan (Exhibit 66) would have been "approved" by USEPA for very different purposes than the maps created by Mr. Dorgan and Mr. Gobelman. These earlier styled "USEPA-approved" maps were most definitely **not** created to be used as a vehicle for conducting any sort of cost attribution exercise. This is particularly true here, because any such cost-sharing exercise was beyond USEPA's concerns regarding the development and implementation of conducting remedial action at Sites 3 and 6.

2. Even Assuming that USEPA had "approved" a figure, it has no bearing on how to attribute JM's remediation costs

The AECOM maps, including those in its March 20, 2018 Final Report to USEPA, were prepared to document Johns Manville's own investigation and removal activities at the Southwestern Sites. Moreover, the majority of the site investigation and planning work set forth

in Arcadis's Engineering Evaluation\Cost Analysis, Revision 4 (Exhibit 63) and the final USEPA-approved Remedial Action Work Plan (Exhibit 67) were produced before the Board issued its Interim Opinion. Thus, the figures that were prepared in these documents were never intended to support the very different issue that now confronts the parties and the Board, namely, how to specifically allocate a portion of Johns Manville's total costs for Site 3 and 6 work to IDOT, in line with the requirements of the Board's Interim Opinion. Accordingly, while these reports have figures that contain some relevant cost attribution information (e.g., EE\CA Revision 4, Figure 5, Exh. 63-80 "Sample Locations – Site 3," which also shows the placement of utility lines on Site 3), there is no single map that aggregates all information necessary for assessing cost attribution. This fact, in turn, supports Mr. Gobelman's decision to create a Base Map that could show all relevant physical features and Parcel 0393 boundaries and thus a logical and necessary starting point for the required cost allocation exercise.

3. The Board Did Not "Rely" on These Figures in Arriving at Their Determinations in at their Findings and Rulings in the Interim Opinion

In its Motion, Johns Manville mistakenly and misleadingly claims that the Board "relied" on Exhibits 06-26 and 16-18 "in reaching a decision in its Order." (Motion, p. 6.) First, this statement is mistaken, because the Board's Interim Opinion makes no reference to Exhibit 06-26 at all. Second, the statement is misleading because the Board's only two references to Exhibit 16-18 on page 10 of the Interim Opinion are discussed in the context of Mr. Dorgan's testimony and how that testimony did not support Johns Manville's claim that "ACM found in samples along the former detour road are attributable to IDOT's construction." (Interim Opinion, p.10.) For this reason, Johns Manville's claims about Exhibits 06-26 and 16-18 should be disregarded.

4. Mr. Gobelman's Supplemental Rebuttal Report was Written Simply to Correct an Error in his Original Rebuttal Report and Should not be Barred

Under Illinois law, an expert and the party presenting that expert, has a duty to seasonably supplement their opinions, should they come to change them. *IDOT v. White*, 264 Ill.App.3d 145, 159 (5th Dist. 1994) (discussing disclosure obligations under prior Illinois Supreme Court Rule 220.) That is precisely what Mr. Gobelman did here, when, on November 7, 2018, he issued his Supplemental Rebuttal Report.

As stated by Mr. Gobelman in Section 1 of his report, "This supplemental report was written to correct the location of the Parcel 0393 as shown on the base map created in the rebuttal cost report dated August 22, 2018." (Gobelman Supplemental Rebuttal Report, p.1.) It is important to understand that in correcting his base map, Mr. Gobelman did not change his attribution methodology; as such, his revised base map and the opinions in his supplemental expert report are admissible. *Luther v. Norfolk and Western Ry*., 272 Ill.App.3d 16, 26 (5th Dist. 1995) (discussing obligations under prior Supreme Court Rule 220). Moreover, by revising his base map, and using the same methodology, Mr. Gobelman ended up increasing the amount of Johns Manville's costs which he attributed to IDOT from $489,891 to $600,050. (*Compare*, Gobelman Rebuttal Report, § 7, p. 17, w*ith* Gobelman Supplemental Rebuttal Report, §4, p. 7.) This result demonstrates that Johns Manville would face no bias or unfair consequence form the admission of the information in Mr. Gobelman's Supplemental Rebuttal Report.

D. <u>Mr. Gobelman's Reliance on the "Draft" ELM Figure Was Entirely Reasonable</u>

Johns Manville contends that it was "unreasonable" for Mr. Gobelman to rely on a "draft" figure (i.e., Figure 15, Exh. 57-536), in the ELM report for the location of certain soil borings on Site 3 in his Base Map. (Motion, p.18), a contention they seek to bolster with support from an

affidavit given by Mr. Dorgan. (See, Exhibit J to Motion to Exclude, Affidavit of Douglas G. Dorgan, Jr., ¶5.) For a multitude of reasons, this contention simply has no merit.

Initially, it must be noted that the entire text and all figures of the ELM Report are stamped "DRAFT." (*See,* Exh. 57-1 through 49, 92-100, and 521-551.) In spite of being marked "Draft," USEPA made the ELM Report part of the final Administrative Record for the Johns-Manville Corp Site Removal Action (https://semspub.epa.gov/src/collection/05/AR63651). The inclusion of the ELM Report by USEPA is consistent with its obligations to establish a record of the "the documents that form the basis for the selection of a response action." 40 C.F.R. §300.800. Clearly, then, USEPA has relied on the Draft ELM Report to support its determinations regarding the selection of the response action for Site 3.[8]

The ELM Report was further relied upon by the USEPA as the sum of the factual support for its November 30, 2012 Enforcement Action Memorandum. (*See, e.g.,* Exh. 65-2, discussing ELM sampling result from 1998 field work.) Moreover, Johns Manville's own environmental consultants have relied upon this very same report as factual support for their subsequent work. (*See*, EE\CA, Revision 4, Exh. 63-15 noting that "[t]he extent of ACM-affected soil in Figure 8 for Site 3 was determined using field observations from test pits and laboratory data from ELM soil borings.")

Ironically, even Mr. Dorgan cited to and relied upon the ELM Report in his very first expert report rendered in this matter (i.e, Exh. 6, "Expert Report of Douglas Dorgan"), where refers to

[8] The Hearing Officer may take judicial notice of the fact that the draft ELM Report forms part of the Administrative Record for the Johns Manville Site. *Central Austin Neighborhood Ass'n v. City of Chicago*, 2013 IL App (1st) 123041 (2013), ¶13 ("[c]ourts may take judicial notice of facts proven by 'immediate and accurate demonstration by resort to easily accessible sources of indisputable accuracy.'"); *See also, Hill v. Capital One Bank (USA) N.A.*, 2015 WL 458878, *5 (N.D. Ill. Feb. 3, 2015) ("noting that contents of government websites are a proper item of which to take judicial notice[.]")

ELM's field work and discovery of ACM in the subsurface environment through its soil borings. (Exh. 6, Section 2.3.1, pp. 5-6 (Exh. 6-5 and 6).

Finally, and perhaps most importantly for purposes of Johns Manville's current motion is the fact that Board, in its December 15, 2016 Interim Opinion, cited to the ELM Report as factual support for its finding that the "ACM was found on Site 3 and Site 6 is waste." (Interim Opinion, p. 6.)

While Figure 15 in the draft ELM Report may not be of the best quality, it and other figures in the draft ELM Report provide the only record of the soil boring investigations which initially confirmed contamination at Site 3. Given the wide reliance and use of the draft ELM Report by USEPA, the Board, Johns Manville and its consultants and experts, there was nothing improper about Mr. Gobelman having used one figure (i.e., Figure 15) from this Report.

E. <u>To the Extent that Mr. Gobelman Relied on Mr. Nguyen's Work, that Reliance was also Reasonable</u>

Johns Manville claims that Mr. Gobelman's reliance on Mike Nguyen's work was unreasonable. (Motion, pp. 19-20.) IDOT agrees with Johns Manville that in order for Mr. Nguyen's work to be relied upon by Mr. Gobelman, it must be shown to be trustworthy. Mr. Nguyen more than satisfies that standard for his work. For the past 17 years, he has been employed by Andrews Engineering, in Springfield, Illinois, as a CAD technician with progressively increasing levels of responsibility and is now a CAD Manager for Andrews. (Deposition of Mike Nguyen, March 20, 2019, pp.7:9-8:14.) During his March 20th deposition, Mr. Nguyen talked about the need to be accurate in creating maps in his work. (Nguyen Dep. pp.26:24-27:2.) He also spoke about needing to create maps using the "best match," i.e., the best available data, but explained that event when using the best available data, CAD drawings may not be exact. (Nguyen Dep. p.40:8-13.) Mr. Nguyen further testified during his deposition that he took the figures, inputs

and data given to him by Mr. Gobelman and created the best possible maps based on this available information. (*See., e.g.,* Nguyen Dep., pp. 46:22-23.)

For reasons better known to Johns Manville, Johns Manville seems to believe that by doing this, it means that Mr. Gobelman's base maps lack an adequate foundation. (Motion, p.21.)

However, if this is true, then Mr. Dorgan's CAD drafter similarly lacks an adequate foundation, as his CAD drafter approached her work similarly to how Mr. Nguyen approached his work for Mr. Gobelman.

Riah Dunton, who worked with Dorgan and created many of the figures that he has used in this matter has been employed by Weaver Consultants Group for over 13 years. (Deposition of Riah Dunton, p.33:22-23.) During her deposition on July 24, 2019, she stated that she does not verify the work of outside consultants when it is being used as a source for CAD work she is doing on a project for Weaver. (pp. 66:20-67:8.) She also testified that she accepts that the information for a project as given to her as accurate and does not attempt to verify its accuracy. (p.48:3:10.) Finally, she testified that she does not recall how she went about creating the figure "Dorgan 1" – a foundational basis for part of Mr. Dorgan's opinions in this matter. (p.64:5-14.)

It is the height of hypocrisy for Johns Manville to seek to bar Mr. Gobelman from testifying about his opinions, based in part on Mr. Nguyen's work, while at the same time seeking to present the figures in Mr. Dorgan's report as some sort of gold standard. Either Mr. Nguyen's and Ms. Dunton's similar work practices both pass muster or they both do not. Johns Manville cannot be permitted to pick and choose how to apply a standard, based on how the company will benefit. Consequently, the Hearing Officer should find that there is no basis for finding Mr. Nguyen's work as being other than trustworthy and that Mr. Gobelman's reliance on his work was and is reasonable.

CONCLUSION

Having previously found Mr. Gobelman qualified to testify as an expert witness in the first phase of hearings in this matter, the Hearing Officer should correspondingly find that Mr. Gobelman is qualified to again serve as an expert witness. He possesses substantial professional experience that is clearly relevant to the issues that will confront the Board as it proceeds back to hearing in this case and will undoubtedly assist it in its role as a factfinder. He has used the same attribution methodology throughout his work on this matter. In short, he meets the criteria for serving as an expert witness and the Hearing Officer should permit him to testify as to all of his opinions – without restriction – at hearing. Accordingly, IDOT requests that the Hearing Officer reject Johns Manville's Motion to Exclude in its entirety.

WHEREFORE, Respondent, the Illinois Department of Transportation, requests that the Hearing Officer:

1. Deny Johns Manville's Motion to Exclude in its entirety; and,
2. Grant such other relief as the Hearing Officer shall deem appropriate and just.

Respectfully Submitted,

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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

JOHNS MANVILLE, a Delaware corporation,	)	
	)	
Complainant,	)	
	)	
v.	)	PCB No. 14-3
	)	(Citizen Suit)
ILLINOIS DEPARTMENT OF TRANSPORTATION,	)	
	)	
	)	
Respondent.	)	

IDOT'S RESPONSE TO COMPLAINANT'S MOTION TO EXCLUDE BASE MAPS AND RELATED FIGURES AND TESTIMONY AT HEARING

EXHIBIT A

EXCEPRTS FROM ELM REPORT

Surface and Subsurface Characterization
Site 2 and Site 3
Former Johns Manville Manufacturing Facility
Waukegan, Illinois
Volume 1, Appendix A – Appendix K

DRAFT

Former Johns Manville Manufacturing Facility

Site 2

Site 3

Prepared For:
Johns Manville

Prepared By:

ELM CONSULTING, L.L.C.

December 10, 1999

Exh. 57-1

DRAFT

SURFACE AND SUBSURFACE CHARACTERIZATION FOR SITE 2 AND SITE 3

FORMER JOHNS MANVILLE MANUFACTURING FACILITY
1871 NORTH PERSHING ROAD
WAUKEGAN, ILLINOIS 60087

VOLUME 1, APPENDIX A – APPENDIX K

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Project No. 98000701

December 1999

Exh. 57-2

DRAFT

SURFACE AND SUBSURFACE CHARACTERIZATION FOR SITE 2 AND SITE 3

FORMER JOHNS MANVILLE MANUFACTURING FACILITY
1871 NORTH PERSHING ROAD
WAUKEGAN, ILLINOIS 60087

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Exh. 57-3

APPENDICIES:

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LIST OF FIGURES (continued)

1.0 EXECUTIVE SUMMARY

1.1 Statement of Purpose and Scope of Work

Recent findings indicate the presence of asbestos containing material (ACM) at two sites (Site 2 and Site 3) located immediately adjacent to and south of the former JM Manufacturing Facility in Lake County, Waukegan, Illinois. In addition, it was reported that municipal waste and expended and unexpended small arms ammunition may be present at Site 2, which was used as a firing range during and after the 1959 Pan Am Games hosted by the City of Chicago. Concerns associated with the historic and present land use at these Sites necessitated the collection and analysis of soil samples to determine the presence of ACM, expended/unexpended lead shot and lead shavings and municipal waste at Site 2 and ACM at Site 3.

Per the attached letter, dated July 10, 1998 from Brad Bradley of the United States Environmental Protection Agency (USEPA), the USEPA, the Illinois Environmental Protection Agency (IEPA) and the Illinois Department of Natural Resources (IDNR) requested that conditions at these two Sites be characterized so that remediation options can be evaluated (Appendix A). The primary objective of the surface and subsurface characterization was to define the horizontal and vertical extent of ACM, lead shot and lead shavings and municipal waste on the surface and in the top three feet of soil of Site 2, and to define the horizontal and vertical extent of ACM on the surface and in the top three feet of soil of Site 3. These objectives were accomplished through a site surface inspection and grid-defined subsurface sampling and analysis plan. The purpose of the lead sampling was to determine the extent of lead in soil due to the accumulation of spent, and, perhaps unexpended small arms ammunition used at the firing range. Since there was evidence of a former municipal landfill located on Site 2, there was the possibility of finding municipal waste materials during subsurface sampling activities.

Additionally, a qualitative threatened and endangered plant species survey and a wetland delineation were performed within the boundaries of Site 2 and Site 3 to determine the presence of state-listed plant species and wetlands. This information will be useful in deciding which long-term management strategy will be best suited for both Sites from a natural resource perspective.

1.2 Surface and Subsurface Characterization Summary

Defoliating of Site 2 and Site 3 occurred so that all areas could be visually inspected. Subsequently, a surface inspection of both Sites occurred so that the horizontal extent of ACM could be delineated.

A total of 158 separate locations, encompassing both Sites 2 and 3, were found to contain surface ACM fragments or fragment clusters. A total of 84 separate locations contained ACM at Site 2, and a total of 74 separate locations contained ACM at Site 3. Each location was flagged and given a discreet surface ACM location identification number. All ACM fragments and fragment clusters were documented as to size and what type of material was found. Once the surface inspection was complete, a USEPA accredited/Illinois Department of Public Health (IDPH) Licensed Asbestos Worker properly handled and removed the surface ACM from Sites 2 and 3. The ACM was doubled bagged and deposited into an ACM secured containment area located on the property of the former Johns Manville (JM) Manufacturing Facility to

be disposed of at this facility at a later date according to all applicable rules and regulations.

Surveying activities began on December 9, 1998 and were completed on December 10, 1998. Activities included the creation of a 100'X100' grid to determine subsurface sampling locations at Site 2 and a 50'X50' grid to determine subsurface sampling locations at Site 3. These sampling points were then located by survey with respect to elevation and to North-South and East-West section lines. Additionally, all locations at which surface ACM was identified were located by survey with respect to elevation and to North-South and East-West section lines during this time period. A total of 75 subsurface sampling points were established after the creation of the grid at Site 2, and a total of 49 subsurface sampling points were established after the creation of the grid at Site 3.

On December 9, 1998, penetrating activities commenced on Sites 2 and 3 and concluded on December 14, 1998. Of the 75 sampling points established at Site 2, a total of 64 locations were penetrated to a depth of 4 feet to retrieve a representative core for soil core inspection. Also, of the 49 sampling points established at Site 3, a total of 48 locations were penetrated to a depth of four feet to retrieve a representative core for soil core inspection.

The soil core inspection process began on December 9, 1998 and concluded on December 15, 1998. At Site 2, a total of 206 one-foot soil core intervals (encompasses every one-foot interval inspected) were inspected for ACM, lead shot and lead shavings and municipal waste. There was visible evidence of ACM at a total of 36 one-foot intervals or 17.4%.

A total of 162 one-foot intervals were submitted for bulk asbestos analysis using the Polarized Light Microscopy (PLM) Method at Site 2. A total of 126 one-foot intervals were submitted for PLM analysis where no ACM was observed in the field during the soil core inspection. Of those 126 submitted intervals, 14 (or 11.1%) were positively identified as having some form of asbestos at a given quantity within the one-foot interval of soil. Of those 14, 1 (or 7.1%) contained an asbestos content greater than 1%. Additionally, at Site 2, a total of 36 one-foot intervals were submitted for PLM analysis where ACM was observed in the field during the soil core inspection for those intervals. Of those 36 submitted intervals, 35 or (97.2%) were identified as having some form of asbestos at a given quantity within the one-foot interval of soil. Of those 35, 22 (or 62.8%) contained an asbestos content greater than 1%.

At Site 3, a total of 168 one-foot soil core intervals (encompasses every one-foot interval inspected) were inspected for ACM. The inspection of soil for lead and municipal waste was not part of the scope of work for Site 3 and therefore no attempt was made to document this material. There was visible evidence of ACM at a total of 11 one-foot intervals or 6.5%.

A total of 154 one-foot intervals were submitted for bulk asbestos analysis using the PLM Method at Site 3. A total of 143 one-foot intervals were submitted for PLM analysis where no ACM was observed in the field during the soil core inspection. Of those 143 submitted intervals, 12 (or 8.3%) were positively identified as having some form of asbestos at a given quantity within the one-foot interval of soil. Of those 12, 1 (or 8.3%) contained an asbestos content greater than 1%. Additionally, at Site 3, a total of 11 one-foot intervals were submitted for PLM analysis where ACM was observed in the field during the soil core inspection for those intervals. Of those

11 submitted intervals, 11 or (100.0%) were identified as having some form of asbestos at a given quantity within the one-foot interval of soil. Of those 11, 8 (or 72.7%) contained an asbestos content greater than 1%.

During the subsurface characterization at Site 2, 71 soil samples were submitted for total lead analysis (Method 6010). Only one sample (B2-2a) exceeded the Tier 1 Soil Remediation Objective for Industrial/Commercial or Residential Properties for lead of 400 mg/kg. The total lead concentration of the sample at B2-2a was 831 mg/kg. The second highest total lead concentration at Site 2 was found at B2-16a, and the result was 149 mg/kg. The two samples with the highest total lead concentration (B2-2a and B2-16a) were submitted for TCLP Leachate Analysis (Method 1311/6010). B2-2a had a TCLP lead concentration of 2.7 mg/L and B2-16a had a TCLP lead concentration of 0.078 mg/L.

During the subsurface characterization, no municipal waste was identified beyond materials that would be expected in parking lots areas and vacant parcels.

1.3 Threatened and Endangered Plant Species Survey Summary

On August 2 and August 5, 1999, a qualitative threatened and endangered plant species survey was performed on Site 2 and Site 3. Three state-listed species were present within the boundaries of the surface and subsurface characterization at Site 2: *Ammophila breviligulata* (Marram Grass), *Chamaesyce polygonifolia* (Seaside Spurge), and *Cakile edentula* (Sea Rocket). The first two are currently Illinois State Endangered, while the third is Illinois State Threatened.

No state-listed plant species was found within the boundaries of the surface and subsurface characterization at Site 3.

1.4 Wetland Delineation Summary

On September 1, 1999, a wetland delineation was performed within the boundaries of Site 2 and Site 3. Five areas were delineated as "Man Induced" wetland and two areas were delineated as "Scrub-Shrub" wetland at Site 2. Additionally, a "Waters of the U.S." area was identified on the east side of Site 2 consisting of Lake Michigan and contiguous beachfront. Two areas were delineated as "emergent drainageways" on Site 3. It was estimated that there were approximately 3.5 total acres of wetland and "Waters of the U.S." within the boundaries of Site 2 and Site 3.

1.5 Conclusions

Surface ACM was located throughout Site 2 with the exception of the beachfront area east of the dune and on the southeast end of the Site (Figure 2 – Appendix L). This is consistent with reports that berms used during the Pam Am Games that consisted of ACM were leveled after the completion of the games. Visible ACM was removed from the Site during the surface characterization. However, ELM personnel have located small pieces of ACM on the Site since the completion of the surface inspection. As previously mentioned however, this ACM is in a non-friable form and is of little threat to human health or the environment.

There is little ACM at 0-3' bgs when the size of Site 2 and the number of soil sampling locations are taken into account. There is little to no ACM in the fishing

pier area and along the beach. Most of the ACM observed was located in the areas where the former berms were created and then subsequently leveled.

Surface ACM was located throughout Site 3 with the exception of the south-central portion of the Site. Historically, the former JM Administration Building parking lot was located on the northeast end of the Site. According to JM, the parking lot was constructed with materials containing ACM. Over a period of years during the use of the lot and during and after its demolition, ACM was distributed throughout the surrounding area. Visible ACM was removed from the Site during the surface characterization. However, ELM personnel have located small pieces of ACM on the Site since the completion of the surface inspection. As previously mentioned however, this ACM is in a non-friable form and is of little threat to human health or the environment.

There is little ACM at 0-3' bgs when the size of Site 3 and the number of soil sampling locations are taken into account. ACM in the subsurface was mostly concentrated in the area of the former parking lot. This is to be expected since the materials used to build the former parking lot contained ACM.

Of the 71 samples submitted for total lead analysis, one sample yielded at total lead concentration above The Tier 1 Soil Remediation Objective for Industrial/Commercial and Residential Properties for lead of 400 mg/kg. This concentration was 831 mg/kg at B2-2a. Since all of other samples were below the referenced threshold of 400 mg/kg, the distribution and potential impact of expended/unexpended lead shot and lead shavings at Site 2 were sufficiently addressed.

The soil samples from B2-2a and B2-16a (the two soil samples yielding the highest total lead concentration) were also submitted for TCLP analysis. The concentrations from the TCLP analysis were 2.7 mg/L and 0.078 mg/L, respectively. The soil sample from B2-2a exceeded the Soil Component of the Groundwater Ingestion Exposure Route Value for Class II groundwater of 0.1 mg/L. The concentration of 2.7 mg/L did exceed the established threshold. However, no remedial action is necessary as a result of this concentration because the drinking water source for the City of Waukegan is Lake Michigan. The City of Waukegan has entered into a Memorandum of Understanding with the IEPA that shows Waukegan has adopted an ordinance that effectively prohibits the installation or use of groundwater as a potable supply of water. Also, a concentration of 2.7 mg/L does not meet the characteristic of a hazardous waste based on the TCLP procedure. The criterion for lead to exhibit hazardous waste characteristics is 5.0 mg/L and is utilized for the purposes of removal and disposal of contaminated soil.

Three state-listed species were discovered within the boundaries of Site 2 (Marram Grass, Seaside Spurge and Sea Rocket). All sensitive species were concentrated on the east and southeast side of Site 2. All of the species are located in areas that are fences off to the public with the exception of Plots 1 – 4 (Figure 26 – Appendix L).

Results from the wetland delineation yielded seven separate wetlands within Site 2 and Site 3 with an approximate total acreage of 3.5. These wetlands are of low quality and most were more than likely created by the industrial activity that has taken place within the Sites over the course of the past 60 years (the "man-induced" wetlands of Site 2 and the emergent drainageways of Site 3.) Depressions, trenches and drainage ditches were created at these Sites while construction of various structures such as roads and buildings took place. As a result, evasive species, such

a common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*) and cattail (*Typha angustifolia*) were established in these impacted areas. Despite the poor quality of the wetlands, a permit to alter the wetlands in any way (fill, excavate, etc.) would more than likely require a permit.

2.0 INTRODUCTION

2.1 Introduction

Concerns associated with the historic and present land use at Site 2 and Site 3, located immediately adjacent to and south of the former JM Manufacturing Facility in Lake County, Waukegan, Illinois, prompted the collection and analysis of soil samples to determine whether or not ACM, lead and municipal waste were present. The presence of ACM has been reported at Site 2 and Site 3. In addition, it was reported that municipal waste and expended/unexpended small arms ammunition may be present at Site 2, which was used as a firing range during and after the 1959 Pan Am Games hosted by the City of Chicago.

A letter, dated July 10, 1998 from Brad Bradley of the USEPA, described that the USEPA, the IEPA and the IDNR requested that conditions at Site 2 and Site 3 be characterized (Appendix A). The purpose of the characterization was aid in the long-term management decision making process for the two Sites. The primary objective of the surface and subsurface characterization was to define the horizontal and vertical extent of ACM, lead shot and lead shavings and municipal waste on the surface and in the top three feet of soil of Site 2. Also, to define the horizontal and vertical extent of ACM on the surface and in the top three feet of soil of Site 3. These objectives were accomplished through a site surface inspection and grid-defined subsurface sampling and analysis plan. The purpose of the lead sampling was to determine the extent of lead in soil due to the accumulation of spent, and, perhaps unexpended small arms ammunition used at the firing range. Since there was evidence of a former municipal landfill located on Site 2, there was the possibility of finding municipal waste during subsurface sampling activities.

Additionally, a qualitative threatened and endangered plant species survey and a wetland delineation were performed within the boundary lines of Site 2 and Site 3 to determine the presence of state-listed plant species and wetlands. This information will be useful in deciding what long-term management strategy will be best suited for both Sites from a natural resource perspective.

A Work Plan was written, under a separate cover, to detail all surface and subsurface characterization activities to be performed at Sites 2 and 3 (*Surface and Subsurface Characterization for Site 2 and Site 3 – Work Plan*, ELM Consulting, L.L.C., 1998). The Work Plan specified each Task to be completed and associated field testing procedures, sampling procedures and general health and safety precautions were included. Prior to the initiation of fieldwork, a detailed project Health and Safety Plan (HASP) was written, under a separate cover, detailing all personal protective equipment to be utilized in the field (*Surface and Subsurface Characterization for Site 2 and Site 3 – Health and Safety Plan*, ELM Consulting, L.L.C., 1998). Additionally, the HASP outlined all safety procedures required during the field effort to assure a safe working environment.

2.2 ACM Definition and Standard

The criteria for defining ACM for this project is consistent with the definitions provided in the Code of Federal Regulations, the Illinois Administrative Code, and previous studies conducted near the former JM Manufacturing Facility. The list of references is as follows:

- Occupational Safety and Health Administration (OSHA) Regulations:
  29 CFR 1926.1101 (b) Definitions

  "Asbestos-Containing Material (ACM) means any material containing **more than one percent** asbestos".

- 40 CFR 61.141 – Definitions

  "*Friable Asbestos Material* means any material containing **more than 1 percent** asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy (PLM), verify the asbestos content by point counting using PLM".

  "*Nonfriable asbestos-containing material* means any material containing **more than 1 percent** asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure".

- Illinois Department of Public Health (IDPH)
  Asbestos Abatement for Public Schools and Private Schools and Commercial and Public Buildings in Illinois
  77 ILL. ADM. CODE 855.20 – Definitions

  "Asbestos Materials means any material or product that contains **more than 1%** asbestos".

This definition was utilized previously when, in 1998, it was discovered that asbestos-containing material was washing up on the shore of the Illinois Beach State Park (located north of the former JM Manufacturing Facility). In a news release by the IDPH (dated May 15, 1998), "Dr. John R. Lumpkin, state public health director, announced that, after a thorough analysis of Illinois Beach State Park air, water and sand for possible asbestos contamination, it has been determined the popular recreation area is safe for public use". An independent contractor collected approximately 200 air, water and sand samples in March, and results were reviewed by representatives of IDPH, IDNR and the IEPA (Appendix B).

According to the news release, "since no standards have been established for outdoor exposure to asbestos, strict federal indoor standards for schools were applied to the sand samples that were positive for asbestos. **The asbestos content of the positive samples was less than 1 percent, the level of concern for asbestos in an enclosed classroom. The USEPA states that only material containing greater than 1 percent asbestos is considered asbestos-containing material**" (Appendix B). Because this standard of less than or greater than one percent asbestos was used with this particular study and other studies related to asbestos contamination the region, the same standard was used for the surface and subsurface characterization at Site 2 and Site 3.

3.0 SITE DESCRIPTION

3.1 Regional Location

The JM Manufacturing Facility and Site 2 and Site 3 are located in northeast Illinois adjacent to Lake Michigan in Waukegan, Lake County, Illinois. The properties lie along an industrial corridor adjacent to Lake Michigan with a mixture of heavy and light industry and residential and commercial areas surrounding the sites. The Illinois Beach State Park is located to the north of the properties. The following sections describe the site boundaries, the physiography and former/current land use of each property.

3.2 Site Boundaries, Physiography and Land Use

3.2.1 Former JM Manufacturing Facility Description

The former JM Manufacturing Facility is located in Waukegan, Illinois (Waukegan Township; Section 10, Township 45N, Range 12E) along Lake Michigan in East-Central Lake County (Figure 1). According to Mr. Denny Clinton of JM, the facility operated as a manufacturing plant that produced shingles and roofing materials, transite pipe, piping insulation, gaskets and similar materials containing asbestos. The facility started manufacturing operations in the 1920's and ceased production in July of 1998. Currently, there are no operations being performed on the property and demolition of the facility is underway. The facility covers approximately 350 acres of land owned by JM (Figure 1). The facility is approximately 35 miles north of downtown Chicago, Illinois and is along an industrial corridor between the City of Waukegan and Lake Michigan. The Illinois Beach State Park is located north of the facility and a Commonwealth Edison coal burning plant is located to the south. To the east is Lake Michigan and to the west is mixed forest habitat, a residential area and Bowen Park. The mean sea level (msl) adjacent to the facility is 590 and the msl of Lake Michigan adjacent to the facility is also 590 (U.S.G.S. topographic map, Zion Quadrangle, 1993).

3.2.2 Site 2 Description

The area designated by the USEPA as Site 2 is an area located south of the southeast corner of the JM property (Waukegan Township; Section 15, Township 45N, Range 12E) (Figure 1). The Site is situated primarily on City of Waukegan property (easterly extension of Greenwood Avenue right-of-way), and is currently managed by the IDNR as an access to the Commonwealth Edison fishing pier. A shooting range was constructed on Site 2 in 1959, in conjunction with the Pan Am Games that were hosted by the City of Chicago in that year. Under the guidance of the U.S. Army, a series of berms were constructed on the Site to prevent fired rounds from leaving the range and traveling onto adjacent properties. Site 2 is oriented east to west, extends from the southern boundary of the JM property line in a southerly direction for a distance of approximately 250 to 400 feet, and from the Lake Michigan shoreline approximately 1,500 feet in a westerly direction (Figure 1). The msl adjacent to Site 2 is 590 (U.S.G.S. topographic map, Zion Quadrangle, 1993). Photographs of Site 2 were taken during the project and are located in Appendix C.

3.2.3 Site 3 Description

The area designated by the USEPA as Site 3 is located on the southeast corner of Greenwood Avenue and Pershing Road and aligned with the west end of the former JM Administration building at the southern end of the JM property (Waukegan Township; Section 15, Township 45N, Range 12E) (Figure 1). This area is approximately 200 feet in the north-south dimension and 400 to 500 feet in the east-west dimension, with the northern boundary of Site 3 beginning at the south edge of the pavement of Greenwood Avenue (Figure 1). The msl adjacent to Site 3 is 590 (U.S.G.S. topographic map, Zion Quadrangle, 1993). This property is currently owned by Commonwealth Edison and was formerly utilized as a parking area for the former JM Administration Building. Historical aerial photographs indicate that pipes were used in the parking area to aid in determining parking spaces. Additionally, various other potential ACM was identified on the Site according to the photographs. Photographs of Site 3 were taken during the project and are located in Appendix C.

4.0 REGULATORY ACTIVITIES

According to JM, prior to the commencement of fieldwork for this project, recent findings had indicated the presence of ACM at Site 2 and Site 3. While ongoing monitoring of the asbestos landfill is occurring within the boundaries of the former manufacturing facility, regulatory agencies also requested the characterization of additional sites outside the boundaries of the manufacturing facility. As a result, the USEPA, the IEPA and the IDNR ("the agencies") requested that conditions at Site 2 and Site 3 be characterized so that long term management strategies could be evaluated.

In a letter from Mr. Brad Bradley of the USEPA to Mr. Denny Clinton of JM, the agencies reported that they had "reviewed the April 3, 1998, 'Characterization Plan for Additional Sites' for the Johns-Manville Site in Waukegan, Illinois and hereby provide approval" with certain modifications described in the letter (Appendix A). Site 2 modifications included:

- The creation of a 100'X100' grid and soil sampling shall be conducted at the points of intersection of the grid;
- Borings shall be made at one foot depth intervals to a total depth of three feet at each sampling location;
- Soil samples shall be visually inspected;
- Bulk asbestos analysis shall be conducted on soil samples with no visible ACM;
- The top interval at each sampling location shall be analyzed for total lead and the two samples with the greatest quantity of lead debris shall be submitted for TCLP analysis.

Site 3 modifications included:

- The creation of a 50'X50' grid and soil sampling shall be conducted at the points of intersection of the grid;
- Borings shall be made at one foot depth intervals to a total depth of three feet at each sampling location;
- Soil samples shall be visually inspected;
- Bulk asbestos analysis shall be conducted on soil samples with no visible ACM.

The complete scope of work is described in Section 5 of this report. The JM scope of work for the surface and subsurface characterization was approved by the agencies and is described in detail in "Exhibit A-2, Specification for Surface and Subsurface Characterization of Site 2-Former Pan Am Games Shooting Range and Site 3 – Former JM Parking Area" (Appendix D).

Initially, the scope work for the surface and subsurface characterization was generated by JM excluding the threatened and endangered plant species survey and the wetland delineation of Sites 2 and 3. This scope of work is described in Appendix D under "Exhibit A-2, Specification for Surface and Subsurface Characterization of Site 2-Former Pan Am Games Shooting Range and Site 3 – Former JM Parking Area". Additionally, ELM drafted a work plan, under a separate cover, that detailed all activities excluding the threatened and endangered plant species survey and the wetland delineation of Sites 2 and 3 (*Surface and Subsurface Characterization for Site 2 and Site 3 – Work Plan*, ELM Consulting, L.L.C., 1998). The threatened and endangered plant species survey and the wetland delineation were added to the existing scope of work after the completion of the surface and subsurface characterization as volunteer action on the part of JM. A brief summary of each of the tasks involved in the surface and subsurface characterization, the qualitative threatened and endangered plant species survey and the wetland delineation of Sites 2 and 3 is provided below. An extensive summary and associated findings of each task are described in Section 6.

The scope of work for the surface and subsurface characterization, the qualitative threatened and endangered plant species survey and the wetland delineation of Sites 2 and 3 involved the following activities:

Task 1 - Defoliation of Site 2 and Site 3;

Task 2 - Inspection of Site 2 and Site 3 for Surface ACM;

Task 3 - Establish Grids for Sites 2 and 3 to Determine Subsurface Soil Sampling Points;

Task 4 – Subsurface Soil Sampling;

Task 5 – Soil Core Inspection of Site 2;

Task 6 – Soil Core Inspection of Site 3;

Task 7 – Qualitative Threatened and Endangered Plant Species Survey of Site 2 and Site 3; and

Task 8 – Wetland Delineation Performed on Site 2 and Site 3.

5.1 Defoliation of Site 2 and Site 3

To allow for the greatest accessibility to surface and subsurface areas, Site 2 and Site 3 were defoliated with mowers. As a result of the defoliation process, all areas of Site 2 and Site 3 that were accessible by a mower were exposed to allow field personnel to visually inspect the Sites.

5.2 Inspection of Site 2 and Site 3 for Surface ACM

To determine the spatial distribution of ACM on the surface of Sites 2 and 3, a visual inspection of all areas of the Sites was conducted. Once surface ACM was located, the material was documented as to the type of ACM, size, number of pieces of material and the location was flagged for survey purposes. Once the location was

flagged, the material was collected and transported to the former JM Manufacturing Facility for proper storage and disposal.

5.3 Establish Grids for Sites 2 and 3 to Determine Subsurface Soil Sampling Points

A 100'X100' grid was established on Site 2 so that random sampling points could be created at the intersection of the grid lines. Once the grid was established, each sampling point was surveyed as to elevation and location with regard to site boundaries.

A 50'X50' grid was established on Site 3 so that random sampling points could be created at the intersection of the grid lines. Once the grid was established, each sampling point was surveyed as to elevation and location with regard to site boundaries.

5.4 Subsurface Soil Sampling

To determine the presence of ACM in the subsurface, soil samples were collected along the established grid layout at Sites 2 and 3. Each soil boring was penetrated to a depth of four feet utilizing Geoprobe® equipment. Once a soil column was collected, it was taken to a laboratory room inside the former JM Manufacturing Facility for storage.

5.5 Soil Core Inspection of Site 2

Once soil samples were collected from Site 2, the four-foot soil column was divided into one-foot sections and visually inspected for ACM. Though there was a four-foot column of soil collected per sampling location, only the first three one-foot intervals were visually inspected as required by the USEPA. If ACM was visually identified within a one-foot section, the material was documented as to the type of ACM, size, number of pieces of material and from what location the soil sample was derived. If ACM was visually identified, then no one-foot interval was submitted for PLM analysis from that sampling location. If no ACM was identified within any of the three one-foot intervals, then all three one-foot intervals were submitted for PLM analysis from that sampling location. All ACM that was visually identified was submitted for PLM analysis to confirm the presence of asbestos within the material.

In addition to the visual inspection for ACM at Site 2, each soil interval was inspected for expended/unexpended lead shot and lead shavings as well as municipal waste. Also, a soil sample was collected from the uppermost interval (0-1') and submitted for total lead analysis (Method 6010). The two soil samples that recorded the highest total lead concentration were then submitted for TCLP lead analysis. The result from the TCLP lead analysis describes whether the lead concentration in the soil shows characteristics of a hazardous waste for the purposes of removal and disposal.

5.6 Soil Core Inspection of Site 3

Once soil samples were collected from Site 3, the four-foot soil column was divided into one-foot sections and visually inspected for ACM. Though there was a four-foot column of soil collected per sampling location, only the first three one-foot intervals

were visually inspected as required by the USEPA. If ACM was visually identified within a one-foot section, the material was documented as to the type of ACM, size, number of pieces of material and from what location the soil sample was derived. If ACM was visually identified, then no one-foot interval was submitted for PLM analysis from that sampling location. If no ACM was identified within any of the three one-foot intervals, then all three one-foot intervals were submitted for PLM analysis from that sampling location. All ACM that was visually identified was submitted for PLM analysis to confirm the presence of asbestos within the material.

5.7 Qualitative Threatened and Endangered Plant Species Survey of Site 2 and Site 3

To determine the presence of state-listed threatened and endangered plant species within the boundaries of Site 2 and Site 3, a qualitative plant species survey was conducted. All areas of Site 2 and Site 3 were visually inspected for Illinois listed threatened or endangered plants and associated indicator species.

5.8 Wetland Delineation of Site 2 and Site 3

To determine the presence of wetlands within the boundaries of Site 2 and Site 3, a wetland delineation was performed on both Sites. Field personnel visually inspected the Sites for hydrophytic vegetation, characteristics of Site hydrology and collected soil samples to determine the presence of hydric soils. Additionally, wetland inventory maps from several sources were reviewed to determine the historic presence of wetlands in the area.

5.9 Contractor Information

Table 1 summarizes the contractors that assisted ELM with the surface and subsurface characterization, qualitative threatened and endangered plant species survey and the wetland delineation. The contractors are listed in alphabetical order by company or proper name.

Table 1. List of Contractors

Name	Address and Telephone Number	Area of Assistance
Christopher B. Burke Engineering, LTD	9575 West Higgins Road Suite 600 Rosemont, Illinois 60018 847-823-0500	Wetland Delineation
Daniel Creaney Company	450 Skokie Blvd. Suite 105 Northbrook, Illinois 60062 847-480-5757	Creation of 100'X100' and 50'X50' subsurface sampling grids; surveying activities
Kindergarden Drawing, Inc.	1424 Yorkshire Dr. Streamwood, Illinois 60107 630-837-8851	CADD Drawings (Figure 1-Figure 30)
Ms. Margo Milde	847-724-4716	Field Ecologist-Threatened and Endangered Plant Species Survey
RCM Laboratories	5400 East Avenue Countryside, Illinois 60525 708-485-8600	Handling and disposal of surface ACM, inspection of soil for ACM, PLM analysis, on-site air sampling for friable asbestos
Severn Trent Laboratories (formerly RECRA LabNet)	2417 Bond Street University Park, Illinois 60466 708-534-5200	Total lead/TCLP lead analysis
Signature Landscaping	855 Skokie Valley Road Lake Bluff, Illinois 60044-1830 847-234-3333	Defoliating activities
Terra-Trace Environmental Services	15 Cornell Drive Lincolnshire, Illinois 60069 847-945-6118	Soil sample collection using Geoprobe® equipment

6.0 DOCUMENTATION OF FIELD ACTIVITES

The following subsections describe each task that was completed to fulfill the requirements under the scope of work for the surface and subsurface characterization, the qualitative threatened and endangered plant species survey and the wetland delineation performed with the boundaries of Site 2 and Site 3. A detailed explanation of the results of each task is also provided.

6.1 Defoliation of Site 2 and Site 3

To allow for the greatest accessibility to surface and subsurface areas, Site 2 and Site 3 were defoliated on December 2, 1998 through December 4, 1998 by Signature Landscaping of Lake Bluff, Illinois. The ground surface at Site 2 consisted of various types of features including asphalt and gravel paved roads, the concrete foundation to the former shooting range building, beach front sand, thick, woody vegetation, patches of hydrophytic vegetation, and areas with both tall and short grasses. The ground surface at Site 3 also consisted of various types of features including one dirt road and one gravel-paved parking area, thick, woody vegetation, patches of hydrophytic vegetation, and areas with both tall and short grasses. All areas within Sites 2 and 3, that were accessible by a mower, were mowed by a *Woods* Triple-Deck Mower and a five-foot flail mower. The grass/weed line was cut to a length of four to six inches above grade. Areas within Site 2 that were not mowed included all stands of hydrophytic vegetation (i.e., cattails – *Typha angustifolia*, purple loosestrife – *Lythrum salcaria* and common reed - *Phragmites australis*), heavy woody vegetation and along sensitive dune areas where at least one state-endangered dune plant species (Marram Grass – *Ammophila breviligulata*) was discovered during pre-surface and subsurface characterization due diligence activities. Areas within Site 3 that were not mowed included all stands of hydrophytic vegetation (i.e., cattails – *Typha* sp.) and heavy woody vegetation. Photographs showing the defoliating process of Site 2 and Site 3 are located in Appendix C (Photograph #1 and Photograph #2).

To verify that there was no friable asbestos in the breathing zone, an USEPA accredited/IDPH Licensed Air Sampling Professional from RCM Laboratories, Countryside, IL, was on-site for the first day of defoliating activities to evaluate the potential friability of asbestos. The Air Sampling Professional analyzed an air monitoring device (Gilian low volume personal sampling pump with mixed cellulose ester filter) that was attached to the tractor as defoliating activities occurred. After approximately two hours of field operations, the sample was analyzed on-site by Phase Contrast Microscopy, National Institute of Occupational Safety and Health (NIOSH) Method 7400, and the sample was below the Permissible Exposure Limit (PEL) of 0.1 fiber/cc. The Negative Exposure Assessment (which describes friable asbestos air monitoring activities), the result from the analysis of this air monitoring device and the Certificate of Accreditation of RCM Laboratories are located in Appendix E.

6.2 Inspection of Site 2 and Site 3 for Surface ACM

Concurrent with the defoliating activities on Sites 2 and 3, ELM began the inspection for surface ACM at both Sites. The inspection process started on December 2, 1998 and ended on December 4, 1998. Two ELM professionals and one USEPA accredited/IDPH Licensed Asbestos Worker conducted the surface inspection.

Despite the fact that both Sites were mowed and clippings were left on the ground surface, most areas of the Sites were exposed sufficiently enough to allow for thorough visual inspection. However, to aid in the inspection of surface ACM in areas where large accumulations of cut grasses and weeds occurred, workers from Signature Landscaping used blowers to clear the ground surface. All areas of Site 2 and Site 3 were inspected with the exception of the patches of hydrophytic vegetation located on Site 2 (cattails - *Typha angustifolia*, purple loosestrife – *Lythrum salcaria* and common reed - *Phragmites australis*) and the patches on Site 3 (*Typha* sp. cattails). As the three inspectors walked the Sites, all ACM fragments and fragment clusters found on the surface were flagged, marked, located by survey with respect to elevation and North-South and East-West section lines, and identified and recorded as to size and type of fragment by ELM professionals (Appendix F). In general, surface ACM included non-friable asbestos-cement board (transite), non-friable bituminous roofing materials and non-friable asbestos-ore type materials. Each location where surface ACM was discovered was given a unique identification number. As indicated in Appendix F, surface ACM location identification numbers show the Site from which the fragment or fragment cluster was found (i.e., Site 2 or Site 3) and a given number in sequence. For example, if an ACM fragment was found on Site 2 and it was the eleventh fragment/cluster discovered, then the location identification number read "2-11". All ACM fragments and fragment clusters were located by survey. The survey was performed by Daniel Creaney Company of Northbrook, Illinois. After all inspection and documentation activities were completed, the Licensed Asbestos Worker removed all surface ACM and deposited the material into double polyurethane bags. All surface ACM was properly handled and removed off of Sites 2 and 3. The bags were deposited into a secured containment area within the former JM Manufacturing Facility to be held for proper disposal according to all applicable laws and regulations at a future date to be determined. Photographs showing the inspection of Site 2 and Site 3 for surface ACM are located in Appendix C (Photograph #3 and Photograph #4).

A total of 158 separate locations, encompassing both Sites 2 and 3, contained surface ACM fragments or fragment clusters. A total of 84 locations were contained surface ACM at Site 2. Fragment and fragment clusters were distributed throughout most of the surface of Site 2 (Figure 2). Areas where little to no ACM was observed included the east end of the Site (beachfront and beach proper), the southeast end of the Site (not located within the Commonwealth Edison fishing pier area) and the parking area for the Commonwealth Edison fishing pier. A greater density of surface ACM was observed west of the parking lot and adjacent to the Commonwealth Edison outfall at the southeast corner of the Site (Figure 2).

A total of 74 locations were found to contain surface ACM at Site 3. Fragment and fragment clusters were distributed throughout the surface of Site 3 with the exception of the south central end of the property along the southern boundary line (Figure 14).

A USEPA accredited/IDPH Licensed Air Sampling Professional from RCM Laboratories assessed the operations of the surface ACM inspection process to determine whether personal protective equipment was necessary to perform inspection activities. Because the ACM being removed from the two Sites were not damaged so as to render the material non-intact, workers would not be exposed to asbestos fibers at or above the PEL of 0.1fiber/cc. Therefore, no respiratory protection was required. A Negative Exposure Assessment describing the Air Sampling Professional's assessment of the surface inspection process is located in Appendix E.

6.3 Establish Grids for Site 2 and Site 3 to Determine Sampling Points

For the purposes of determining subsurface sampling points, a 100' x 100' grid was established within Site 2. The grid was created by Daniel Creaney Company. Exact dimensions of the grid were adjusted in the field to reflect major site features (fences, trees, power poles, wet areas, etc.) and suspected concentrations of ACM. A total of 75 sampling locations were established using the 100' x 100' grid system (Figure 3).

Similarly, a 50' x 50' grid was established within Site 3. Exact dimensions of the grid were adjusted in the field to reflect major site features and suspected concentrations of ACM. A total of 49 sampling locations were established using 50' x 50' grid system (Figure 15). The layout of the respective grids was determined by JM to account for known or suspected areas of ACM. Sampling grids were surveyed on December 9 and 10, 1998. Photographs showing the creation of sampling grids at Site 2 and Site 3 are located in Appendix C (Photograph #5 and Photograph #6).

6.4 Subsurface Soil Sampling

Soil sampling was conducted on Sites 2 to determine the presence of ACM, expended/unexpended lead shot and lead shavings and municipal waste. The subsurface strata targeted for inspection included the zone from the ground surface to three feet below ground surface (bgs). Similarly, the top three feet of soil was targeted for ACM inspection at Site 3. Soil sampling was conducted on December 9 through December 14, 1998. All penetrating activities were preformed by Terra-Trace Environmental Services of Lincolnshire, Illinois using an ATV-mounted hydraulic soil probe (Geo-Probe® Method).

As the soil probe began to perform penetrating activities closer to the beach on the east side of Site 2, it was discovered that the Geo-Probe method was not allowing for full recovery of soil within the sampling core because of unconsolidated sandy soils that were the predominate soil type in the area. Multiple samples had only two feet or less of sample recovery. As a result, a split-spoon penetrating apparatus with a "catch-tube" was used near the beach to enhance recovery. However, this method was yielding low recovery as well. It was decided in the field that all four-foot sampling cores having two-feet or less of recovery would be re-penetrated to obtain at least a three-foot soil sample. When this was not accomplished, then the field operators penetrated the four foot sampling core to either five or six feet to recover at least a three foot sample. Therefore, several cores that were obtained during the subsurface characterization were a composite sample to five or six feet. This included several samples at Site 3 that yielded two-feet of soil or less. There were a total of 19 locations at Site 2 where a soil core was composted to either 5 or 6 feet. There were a total of 10 locations at Site 3 where a soil core was composted to either 5 or 6 feet (Appendix G). A photograph showing subsurface soil sampling is located in Appendix C (Photograph #7).

As indicated in Appendix G, the word "REDO" appears next to various boring identification numbers. This indicates that the initial sample core only had two feet of soil recovery or less. Those samples, with two feet of recovery or less, were re-penetrated to achieve at least three feet of soil. At Site 2, a total of 71 soil cores were penetrated for the inspection of ACM, expended/unexpended lead shot and lead shavings and municipal waste (regardless of the amount of recovery). At Site 3, a total of 60 soil cores were penetrated for inspection of ACM (regardless of the amount of recovery). A total of seven locations were re-penetrated (REDOs) to

achieve a better recovery at Site 2. A total of 12 locations were re-penetrated (REDOs) to achieve a better recovery at Site 3.

General observations were made while conducting the subsurface characterization including general soil types and descriptions. Refer to Appendix H for all boring logs. No groundwater was encountered at any sampling location during penetrating activities.

For health and safety purposes, a Licensed Asbestos Inspector from RCM Laboratories was on-site during penetrating activities to monitor the breathing zone for friable asbestos. The Licensed Asbestos Inspector analyzed an air monitoring device (Gilian low volume personal sampling pump with mixed cellulose ester filter) that was attached to the ATV-mounted soil probe as penetrating activities occurred. After 325 minutes of field operations, the sample was analyzed on-site by Phase Contrast Microscopy, NIOSH Method 7400, and a PEL of 0.11 fiber/cc was detected. However, it was the judgement of the Licensed Asbestos Inspector that workers operating the drilling rig were not exposed to asbestos fibers at or above the PEL of 0.1 fiber/cc due to the nature of the material present and wet conditions due to past weather events. The Negative Exposure Assessment (which describes friable asbestos air monitoring activities) and the result from the analysis of this air monitoring device are located in Appendix E.

6.5 Soil Core Inspection of Site 2

Concurrent with and after subsurface sampling activities, soil cores from Site 2 were inspected, at one-foot intervals, for the presence of ACM, expended/unexpended lead shot and lead shavings and municipal waste. As each four-foot, polybutyrate sample liner was removed from the subsurface, it was taken from Site 2 to a laboratory area within the former JM Manufacturing Facility. A portion of the liner was removed to expose the soil sample for inspection. The sample was then divided into one-foot intervals and visually inspected by hand physically sifting through sand or breaking apart silty clay.

To avoid creating dust particles while inspecting the cores, each sample interval was inspected by hand. As each liner was opened, the soil and breathing zone were monitored for Volatile Organic Compounds (VOCs) using an Organic Vapor Monitor (OVM). No readings of possible vapors were detected in the air adjacent to the soil or breathing zone in any of the samples inspected at Site 2. A photograph showing the soil core inspection process for Site 2 is located in Appendix C (Photograph #8). The following information details how ACM, expended/unexpended lead shot and lead shavings and municipal waste was sampled and analyzed.

6.5.1 Inspection of Soil Cores for Asbestos Containing Material

During the inspection of soil cores in the field, if any one-foot boring interval contained visible ACM, bulk asbestos analysis was conducted on those fragments suspected of being ACM for that boring interval. If no one-foot boring interval contained visible ACM, then all three boring intervals at that boring location were analyzed for bulk asbestos. All three intervals were submitted for PLM analysis under this scenario to verify that no ACM was missed by visual inspection. RCM Laboratories provided a USEPA accredited/IDPH Licensed Asbestos Inspector to perform a visual inspection and material sampling of suspect ACM along with ELM professionals during the inspection of all soil cores from Site 2. Samples that were

derived from a soil core where no boring interval contained visible ACM were placed in 50-gram plastic blood vials for transport to the laboratory. These samples were analyzed according to the USEPA recommended PLM method. Analyses were conducted at RCM's in-house National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory. For Certificates of Accreditation for RCM Laboratories, refer Appendix E. When visible ACM was identified at a given one-foot interval during the soil core inspection in the field, the suspect ACM was placed into a ziplock bag and properly labeled. Additionally, if no ACM was observed in any of the one-foot intervals, each one-foot interval was placed in a separate ziplock bag and properly labeled. All ziplock bags containing one-foot intervals of soil where no ACM was observed and one-foot intervals where ACM was observed were archived and placed in labeled coolers for storage. Once all final reports have been written and reviewed by all concerned parties and the project has been completed, JM will dispose of the one-foot soil intervals according to all applicable laws and regulations. Until the project is complete, ELM will maintain possession of the coolers. As a result of this method of sampling, archiving and sample storage, all soil collected during the subsurface characterization was deposited into ziplock bags and stored in coolers. No soil from the subsurface characterization remained at the former JM Manufacturing Facility that required disposal.

As indicated in Appendix E, asbestos content, non-asbestos fibrous components and non-fibrous components were estimated for each sample submitted for PLM analysis. Each sample was given a unique identification number. For example, B2-03 (0-1') represents:

- a sample retrieved from a soil boring ("B");
- at Site 2 ("2");
- at the third boring location penetrated (03);
- at the 0-1' soil core interval.

This type of description was used to describe a sample retrieved from a sampling location where visible ACM was observed and no visible ACM was observed in any of the one-foot interval. Additionally, AB2-01 (1-2') represents:

- a sample retrieved from a soil boring ('B");
- at Site 2 ("2");
- at the first boring location penetrated (01);
- at the 1-2' soil core interval;
- "A" denotes that this was a sample where visible ACM was observed at the 1-2' soil core interval and the ACM fragment/fragments were submitted for PLM analysis.

For a summary of the PLM analysis results from Site 2, refer to the summary table in Appendix E.

To confirm or deny the presence of friable asbestos in the breathing zone during soil core inspection, a Licensed Asbestos Inspector from RCM Laboratories analyzed a worker-monitoring device (Gilian low volume personal sampling pump with mixed cellulose ester filter) that was placed in the laboratory on the first day of soil core inspections. The sample was analyzed on-site by Phase Contrast Microscopy, NIOSH Method 7400, and the sample result was below the PEL of 0.1 fiber/cc. The result from the analysis of this air-monitoring device is located in Appendix E.

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A summary of data collected during the subsurface characterization at Site 2 is as follows:

SUBSURFACE PENETRATING ACTIVITY

Total number of soil boring locations where soil was collected for ACM inspection...	**64**
Total number of soil boring locations re-penetrated because of two or more feet of the sample core contained no recovery (i.e., REDOs) (B-54 was counted as a REDO twice)...	**7**
Total number of four-foot cores penetrated and inspected regardless of the amount of recovery...	**71**
Number of four-foot cores where ACM was visually identified at any interval (includes the initial cores where there were two feet of no recovery or less plus all accompanying REDOs which totals 71 cores)...	**28 or 39.4%**

FIELD INSPECTIONS

Total number of one-foot intervals field inspected for ACM (including all one-foot intervals where the four-foot soil core contained two feet of no recovery plus all REDOs)...	**206**
Total number of one-foot intervals where ACM was visually identified (including all one-foot intervals where the four-foot soil core contained two feet of no recovery plus all REDOs which yields a total of 206 one-foot intervals)...	**36 or 17.4%**

VISUAL ACM IDENTIFICATION AT EACH INTERVAL

Total number of times when ACM was visually identified in the field at the 0-1′ interval with a total of (71) 0-1′ intervals recovered and inspected including REDOs...	**4 or 5.6%**
Total number of times when ACM was visually identified in the field at the 1-2′ interval with a total of (71) 1-2′ intervals recovered and inspected including REDOs ...	**15 or 21.1%**
Total number of times when ACM was visually identified in the field at the 2-3′ interval with a total of (64) 2-3′ intervals recovered and inspected including REDOs ...	**17 or 26.5%**

NUMBER OF ONE-FOOT INTERVALS SUBMITTED FOR PLM ANAYLSIS

Total number of one-foot intervals submitted for PLM analysis (includes all REDOs and all one-foot intervals where ACM was visually identified in the field)...	**162**
Total number of one-foot intervals submitted for PLM analysis where no ACM was observed in the field during the soil core inspection (includes all REDOs)...	**126**
Of the total number of one-foot intervals submitted for PLM analysis where no ACM was observed in the field during the soil core inspection (which yields a total of 126 one-foot intervals), how many contained some form of asbestos at any quantity (includes all REDOs)...	**14 or 11.1%**

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Of the total number of one-foot intervals submitted for PLM analysis where no ACM was observed in the field during the soil core inspection and contained some form of asbestos at any quantity (which yields a total of 14 one-foot intervals), how many contained an asbestos content greater than 1%...	**1 or 7.1%**

PLM ANALYSIS CONFIRMATION

Total number of one-foot intervals submitted for PLM analysis where ACM was observed in the field during the soil core inspection (includes all REDOs)...	**36**
Of the total number of one-foot intervals submitted for PLM analysis where ACM was observed in the field during the soil core inspection (which yields a total of 36 one-foot intervals), how many contained some form of asbestos at any quantity (includes all REDOs)...	**35 or 97.2%**
Of the total number of one-foot intervals submitted for PLM analysis where ACM was observed in the field during the soil core inspection and contained some form of asbestos at any quantity (which yields a total of 35 one-foot intervals), how many contained an asbestos content greater than 1%...	**22 or 62.8%**

RESULTS OF PLM ANALYSIS OF THE 0-1' INTERVAL

Total number of times when ACM was identified at any quantity, during PLM analysis, at the 0-1' interval (includes all one-foot intervals submitted for analysis where ACM was observed in the field and not observed in the field during the soil core inspection plus REDOs which yields a total of [47] 0-1' intervals)...	**7 or 14.8%**
Of the total number of times when ACM was identified at any quantity, during PLM analysis, at the 0-1' interval (includes all one-foot intervals submitted for analysis where ACM was observed in the field and not observed in the field during the soil core inspection plus REDOs which yields a total of [7] 0-1' intervals), how many contained an asbestos content greater than 1%...	**4 or 57.1%**

RESULTS OF PLM ANALYSIS OF THE 1-2' INTERVAL

Total number of times when ACM was identified at any quantity, during PLM analysis, at the 1-2' interval (includes all one-foot intervals submitted for analysis where ACM was observed in the field and not observed in the field during the soil core inspection plus REDOs which yields a total of [59] 1-2' intervals)...	**20 or 33.8%**
Of the total number of times when ACM was identified at any quantity, during PLM analysis, at the 1-2' interval (includes all one-foot intervals submitted for analysis where ACM was observed in the field and not observed in the field during the soil core inspection plus REDOs which yields a total of [20] 1-2' intervals), how many contained an asbestos content greater than 1%...	**10 or 50.0%**

RESULTS OF PLM ANALYSIS OF THE 2-3' INTERVAL

Total number of times when ACM was identified at any quantity, during PLM analysis, at the 2-3' interval (includes all one-foot intervals submitted for analysis where ACM was observed in the field and not observed in the field during the soil core inspection plus REDOs which yields a total of [56] 2-3' intervals)...	**22 or 39.2%**

Exh. 57-28

Of the total number of times when ACM was identified at any quantity, during PLM analysis, at the 2-3' interval (includes all one-foot intervals submitted for analysis where ACM was observed in the field and not observed in the field during the soil core inspection plus REDOs which yields a total of [22] 2-3' intervals), how many contained an asbestos content greater than 1%...	**9 or 40.9%**

6.5.2 Description of Site 2 Figures

Figures 4,5,6,7 and 8 describe the spatial and vertical distribution of ACM and the associated asbestos content found at Site 2.

Figure 4 shows that of the 47 (0-1') soil sample intervals submitted for PLM analysis, seven contained some form of asbestos (four had an asbestos content greater than 1% and three had asbestos content less than 1%). No asbestos was detected in 40 of the 47 samples. Samples from the 0-1' interval containing some form of asbestos were distributed in limited areas throughout the Site with the exception of the southeast portion near the beach.

Figure 5 shows that of the 59 (1-2') soil sample intervals submitted for PLM analysis, 20 contained some form of asbestos (10 had an asbestos content greater than 1% and 10 had asbestos content less than 1%). No asbestos was detected in 39 of the 59 samples submitted for analysis. Samples from the 1-2' interval containing some form of asbestos were concentrated on the west side of Site 2 and along JM's north-south fence line on the east side of the Site while little to no asbestos was detected in samples from the fishing pier area or from the east/southeast portion of the Site.

Figure 6 shows that of the 56 (2-3') soil sample intervals submitted for PLM analysis, 22 contained some form of asbestos (9 had an asbestos content greater than 1% and 13 had asbestos content less than 1%). No asbestos was detected in 34 of the 56 samples submitted for analysis. Samples from the 2-3' interval containing some form of asbestos were concentrated on the west side of Site 2 and along JM's north-south fence line on the east side of the Site while no asbestos was detected in samples from the fishing pier area or from the east/southeast portion of the Site.

Figure 7 is a composite overlay of soil boring intervals 0-1' and 1-2' and Figure 8 is a composite overlay of soil boring intervals 0-1', 1-2' and 2-3'. These two figures give a visual summary of the spatial and vertical extent of asbestos found in all of the soil samples submitted for PLM analysis at Site 2. In general, these two figures show that ACM was detected at Site 2 above and below the 1% threshold and from the 0-3' soil interval on the west side of the Site and also along JM's north-south fence line on the east side of the Site. Little to no asbestos, at any content, was detected within the fishing pier area or along the east/southeast portion of the Site.

Figures 9, 10, 11, 12 and 13 summarize the inferred areas of ACM distribution at Site 2. If a sampling location yielded a soil interval (0-1', 1-2' or 2-3') with a detected amount of ACM, it was then inferred that the ACM was distributed, within that given interval, half the distance to the next nearest sampling location. For example, as shown in Figure 9, ACM was detected at a content of greater than 1% at the 0-1' soil interval at sampling location B2-9. As a result, it is inferred that there is ACM at a content of greater than 1% at the 0-1' soil interval approximately 50' to the north, south, east and west of B2-9 since each sampling location is 100' apart.

Figure 9 - Figure 13, showing the inferred areas of ACM distribution, describe the same distribution as those in Figure 4 - Figure 8. In general, Figure 9 shows that

some form of asbestos at the 0-1' soil interval was distributed in limited areas throughout the Site with the exception of the southeast side near the beach. Figure 10 shows that some form of asbestos at the 1-2' soil interval was concentrated on the west side of Site 2 and along JM's north-south fence line on the east side of the Site while little to no asbestos was detected in samples from the fishing pier area or from the east/southeast side of the Site. Figure 11 shows that some form of asbestos at the 2-3' soil interval was concentrated on the west side of Site 2 and along JM's north-south fence line on the east side of the Site while no asbestos was detected in samples from the fishing pier area or from the east/southeast portion of the Site.

Figure 12 and Figure 13 are composite overlay maps of the inferred of areas of ACM content in soil intervals 0-1' and 1-'2 and 0-1', 1-2' and 2-3', respectively. In general, these two figures show that ACM was detected at Site 2 above and below the 1% threshold and from the 0-3' soil interval on the west side of the Site and also along JM's north-south fence line on the east side of the Site. Little to no asbestos, at any content, was detected within the fishing pier area or along the east/southeast portion of the Site.

Refer to Appendix L for Figure 4 - Figure 13.

6.5.3 Inspection of Soil Cores for Expended/Unexpended Lead Shot and Lead Shavings

The top soil core interval (0-1') at each sampling location at Site 2 was analyzed for total lead (USEPA Method SW 6010) using a 7-day turn-around-time (TAT). A total of 71 soil samples, including all REDO's, were submitted for total lead analysis. Each soil sample was given a unique identification number for processing purposes. For example, B2-13a represents

- a boring location ("B");
- at Site 2 ("2");
- the thirteenth core penetrated ("13");
- "a" suggests that the soil sample was retrieved from the upper most soil core interval.

In this case, the upper most interval is (0-1'). The Tier 1 Soil Remediation Objective for Industrial/Commercial and Residential Properties for lead is 400 mg/kg (35 Illinois Administrative Code, Tiered Approach To Corrective Action Objectives [TACO] Regulations, Part 742, Appendix B, Table B). B2-2a yielded a total lead concentration of 831 mg/kg. It exceeded the remediation objective of 400 mg/kg (Appendix I). B2-2a and B2-16a (the sample with the second highest total lead concentration of 149 mg/kg) were the two soil samples with the highest total lead concentrations collected from the subsurface characterization at Site 2. Therefore, both samples were submitted for TCLP Leachate Analysis (Method 1311/6010) using a 7-day TAT. B2-2a yielded a TCLP lead concentration of 2.7 mg/L and B2-16a yielded a TCLP lead concentration of 0.078 mg/L. The Soil Component of the Groundwater Ingestion Exposure Route Value for Class II groundwater located in the TACO regulations is 0.1 mg/L. RECRA LabNet of University Park, Illinois completed

all total lead analyses and Severn Trent Laboratories completed the TCLP Leachate Analyses. Please note that between the time at which the total lead analyses and the TCLP Leachate Analyses were conducted, RECRA LabNet was sold to Severn Trent Laboratories. All personnel from RECRA LabNet that worked directly with ELM during the total lead analyses were the same personnel that conducted the TCLP Leachate Analyses. Additionally, both analyses (total lead and TCLP lead) were conducted at the University Park Laboratory. The results for the total lead analysis (Table 2) and the TCLP Leachate analysis (Table 3) are as follows:

Figure 15
Soil Boring Location Map - Site 3

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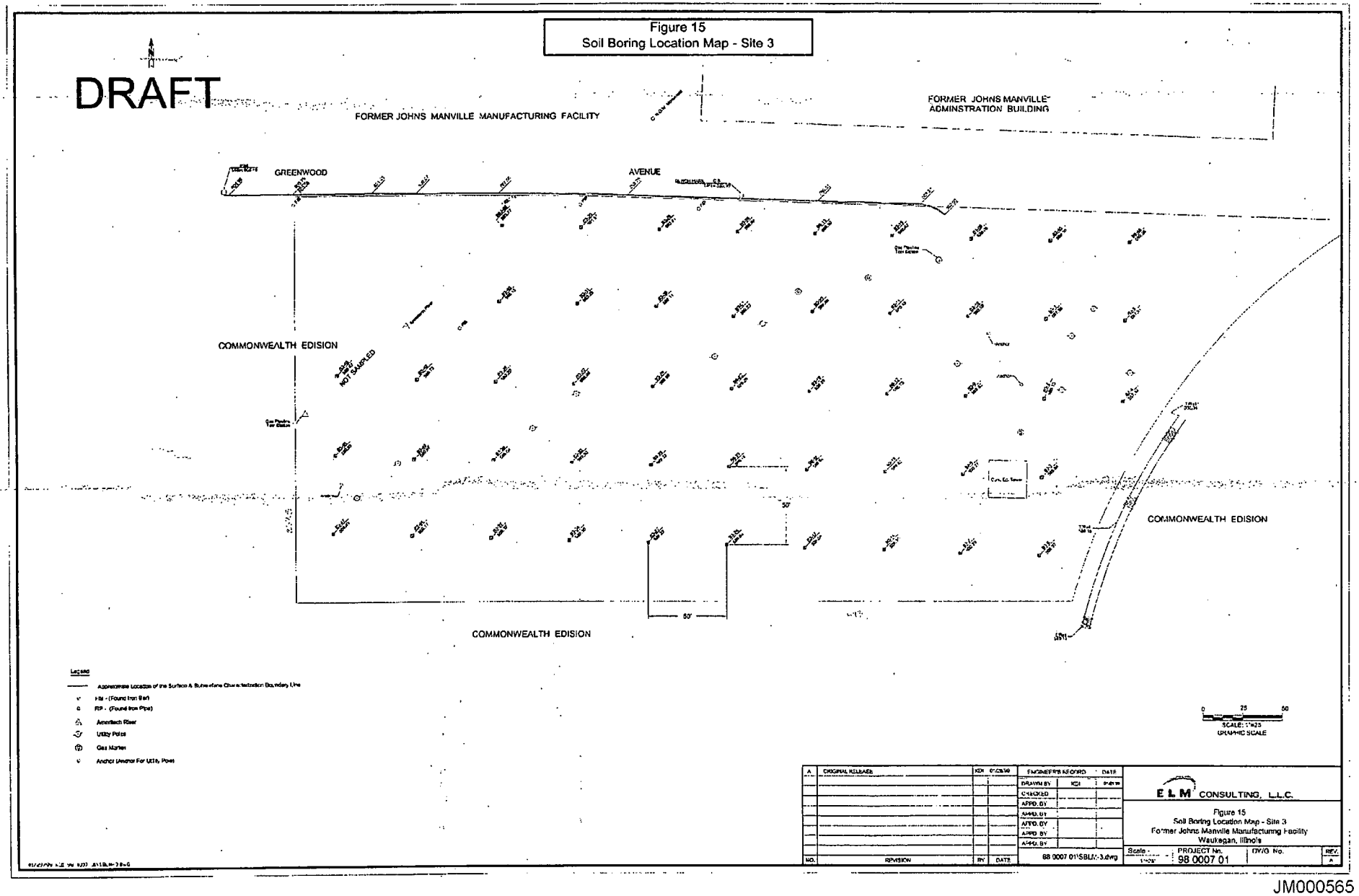

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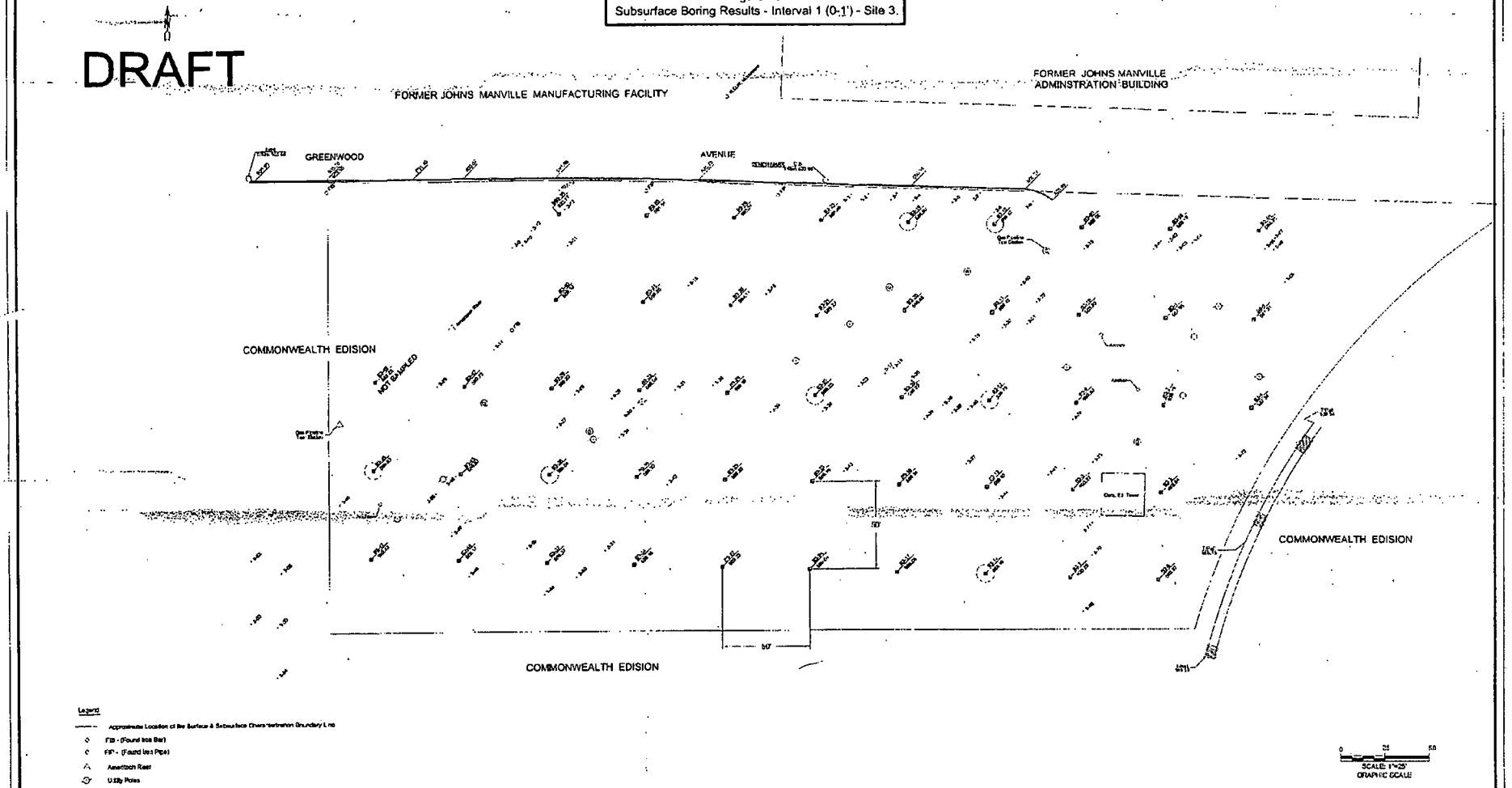
Figure 15
Soil Boring Location Map - Site 3
Former Johns Manville Manufacturing Facility
Waukegan, Illinois

Scale -	PROJECT No.	DWG No.	REV.
1"=50'	98 0007 01		A

Exh. 57-536

Figure 16
Subsurface Boring Results - Interval 1 (0-1') - Site 3.

DRAFT



Total Number of 0-1' Intervals Submitted for PLM Analysis: 54
Total Number of 0-1' Intervals Containing an Asbestos Content Greater Than 1%: 4
Total Number of 0-1' Intervals Containing an Asbestos Content Less Than 1%: 3
Total Number of 0-1' Intervals Submitted for PLM Analysis and the Result was Non-Detect: 47

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Figure 16
Asbestos Content Location Map - Soil Boring Interval 1 (0-1') - Site 3
Former Johns Manville Manufacturing Facility
Waukegan, Illinois

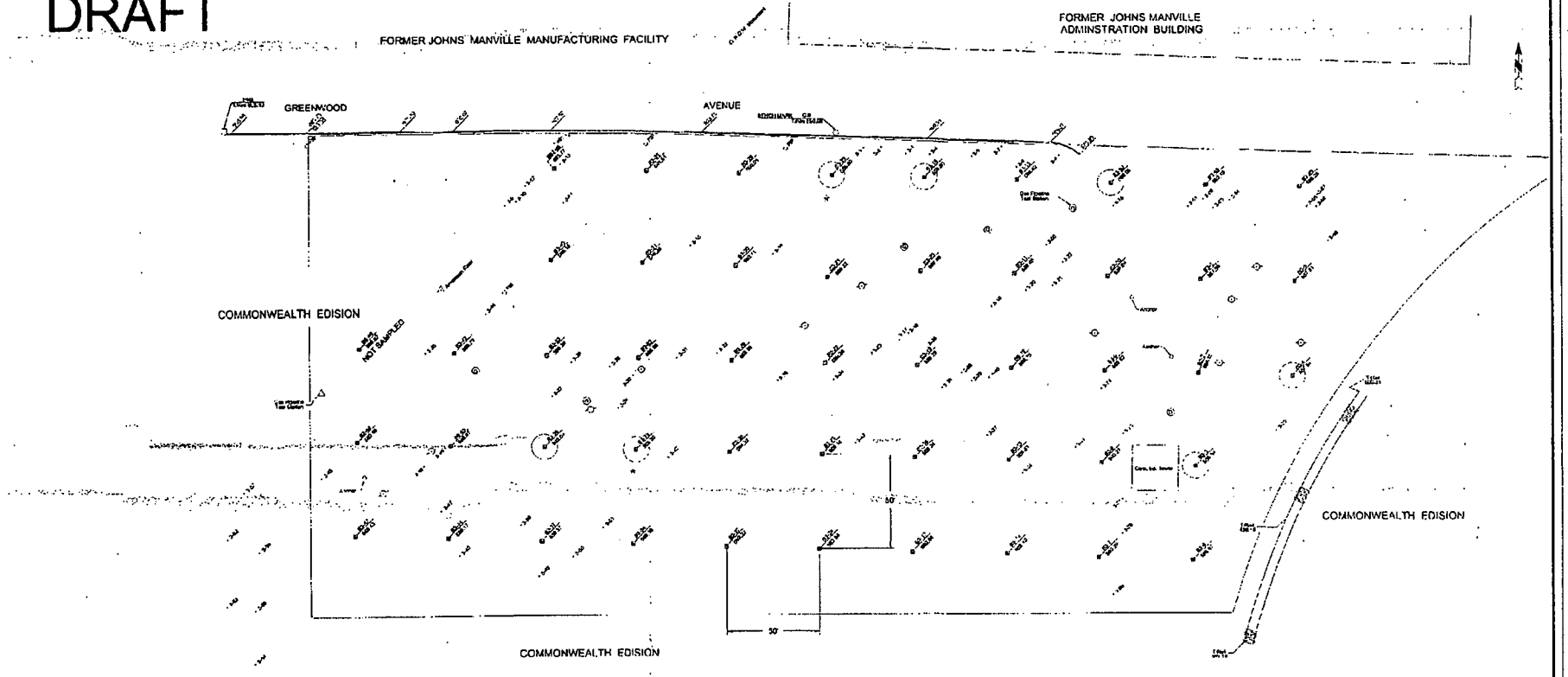
Scale -	PROJECT No	DWG. No.	REV
1"=25'	98 0007 01		A

JM000566

Exh. 57-537

Figure 17
Subsurface Boring Results - Interval 2.(1-2') - Site 3

DRAFT



Legend

- Approximate Location of the Surface & Subsurface Characterization Boundary Line
- FIB - (Found Iron Bar)
- FIP - (Found Iron Pipe)
- Monitoring Well
- Utility Poles
- Gas Marker
- Anchor (Anchor For Utility Pole)
- Asbestos Content Greater Than 1% (1-2' Interval)
- Asbestos Content Less Than 1% (1-2' Interval)

Total Number of 1-2' Intervals Submitted for PLM Analysis: 56
Total Number of 1-2' Intervals Containing an Asbestos Content Greater Than 1%: 2
Total Number of 1-2' Intervals Containing an Asbestos Content Less Than 1%: 7
Total Number of 1-2' Intervals Submitted for PLM Analysis and the Result was Non-Detect: 47

SCALE: 1"=25'
GRAPHIC SCALE

B3-2b yielded two feet of no recovery on the initial penetration. The two soil intervals (0-1') (1-2') were submitted for PLM analysis and the 1-2' interval yielded an asbestos content of less than 1%. The sampling location was reconstituted yielding three soil intervals (0-1'), (1-2') and (2-3'). All three soil intervals were submitted for PLM analysis and the 1-2' interval yielded a asbestos content of less than 1%. This is the reason for the discrepancy between the total number of 1-2' intervals containing asbestos in some form (9) versus the total number of hashed and solid circles located on the map (7).

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Figure 17
Asbestos Content Location Map - Soil Boring Interval 2 (1-2') - Site 3
Former Johns Manville Manufacturing Facility
Waukegan, Illinois

Scale - 1"=25' | PROJECT No. 98 0007 01 | DWG No. | REV. A

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Exh. 57-538

JM000567

Figure 18
Subsurface Boring Results - Interval 3 (2-3') - Site 3

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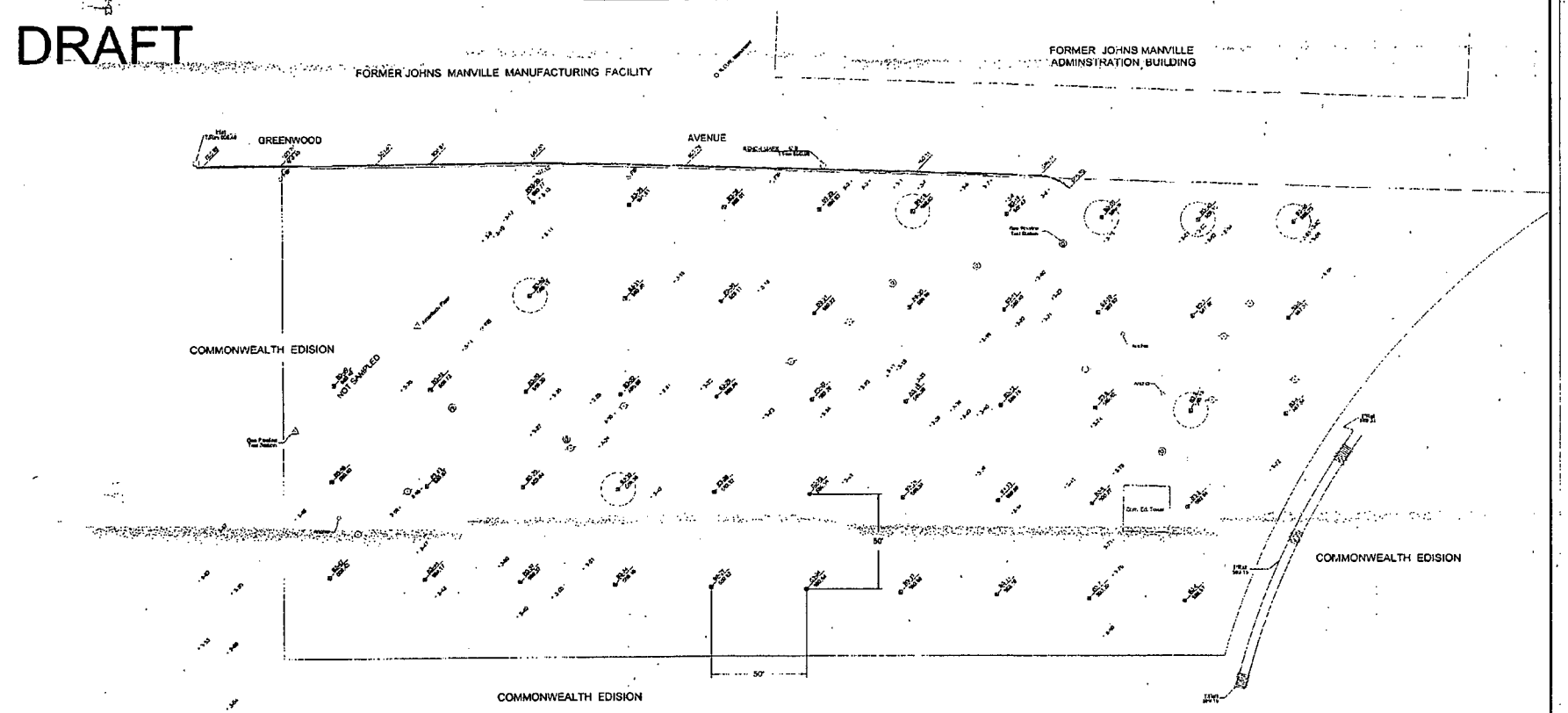

Total Number of 2-3' Intervals Submitted for PLM Analysis: 44
Total Number of 2-3' Intervals Containing an Asbestos Content Greater Than 1%: 3
Total Number of 2-3' Intervals Containing an Asbestos Content Less Than 1%: 4
Total Number of 2-3' Intervals Submitted for PLM Analysis and the Result was Non-Detect: 37

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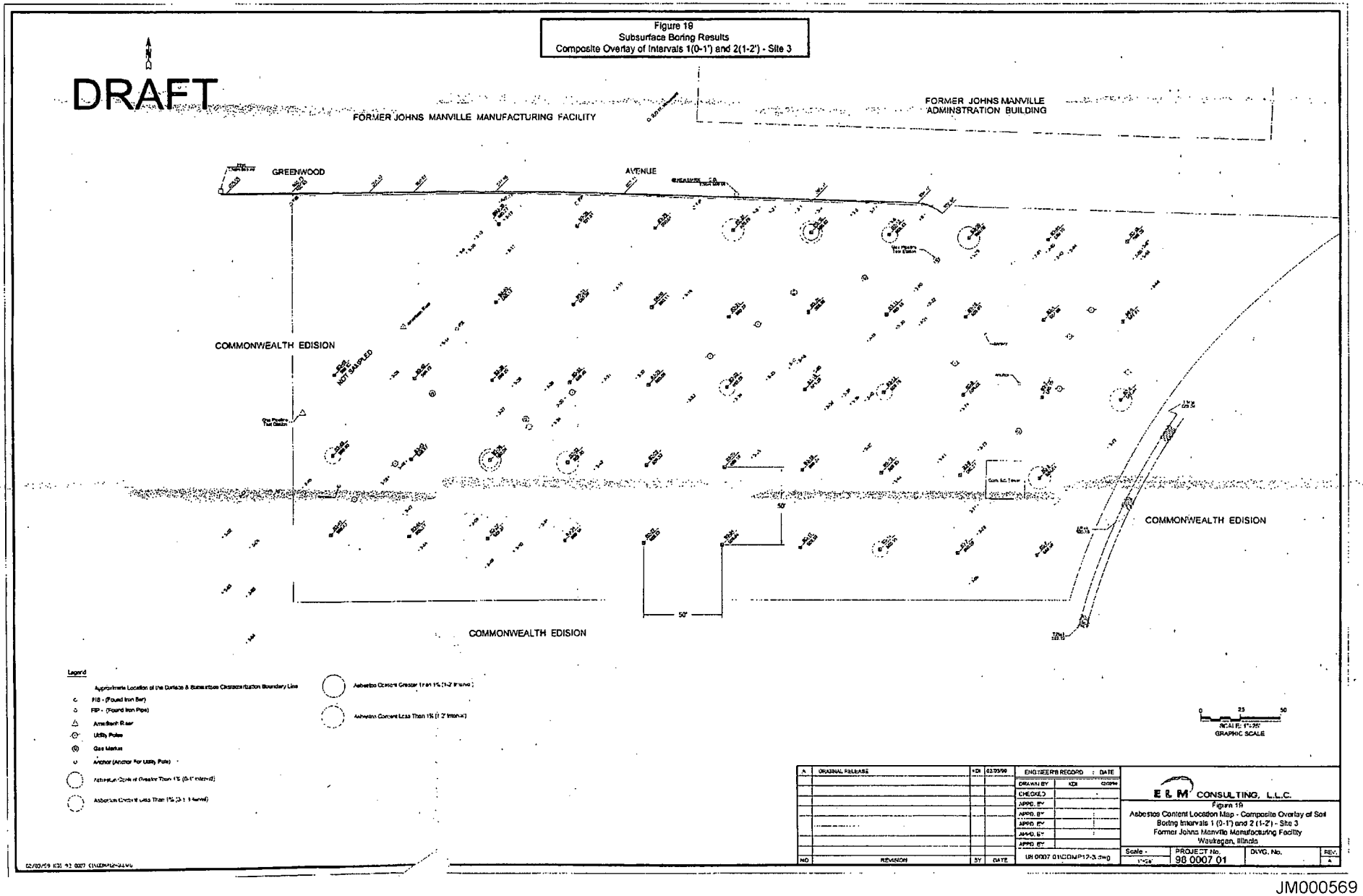
Figure 18
Asbestos Content Location Map - Soil Boring Interval 3 (2-3') - Site 3
Former Johns Manville Manufacturing Facility
Waukegan, Illinois

Scale - 1"=25'	PROJECT No. 98 0007.01	DWG. No.	REV. A

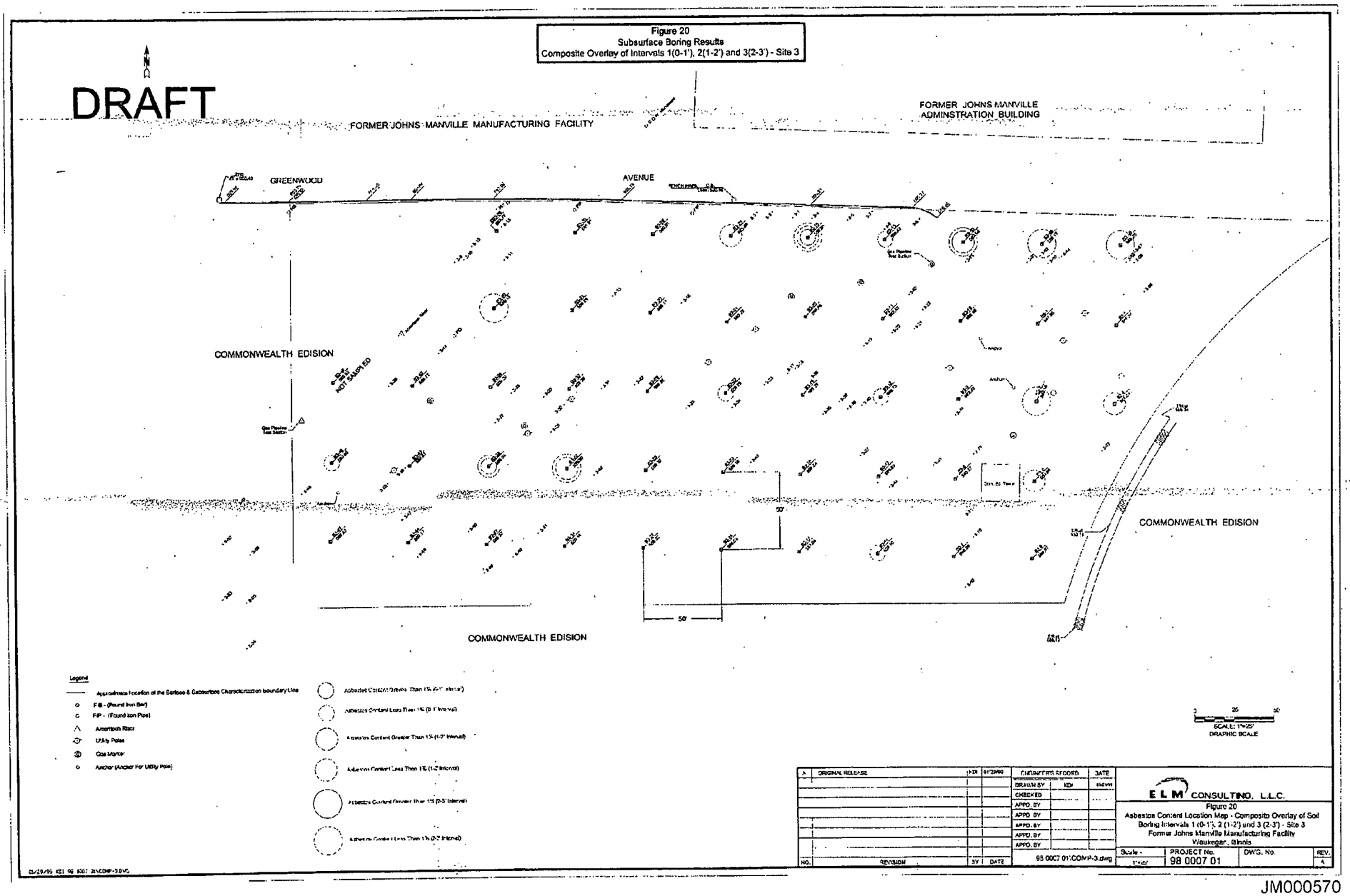
JM000568

Exh. 57-539

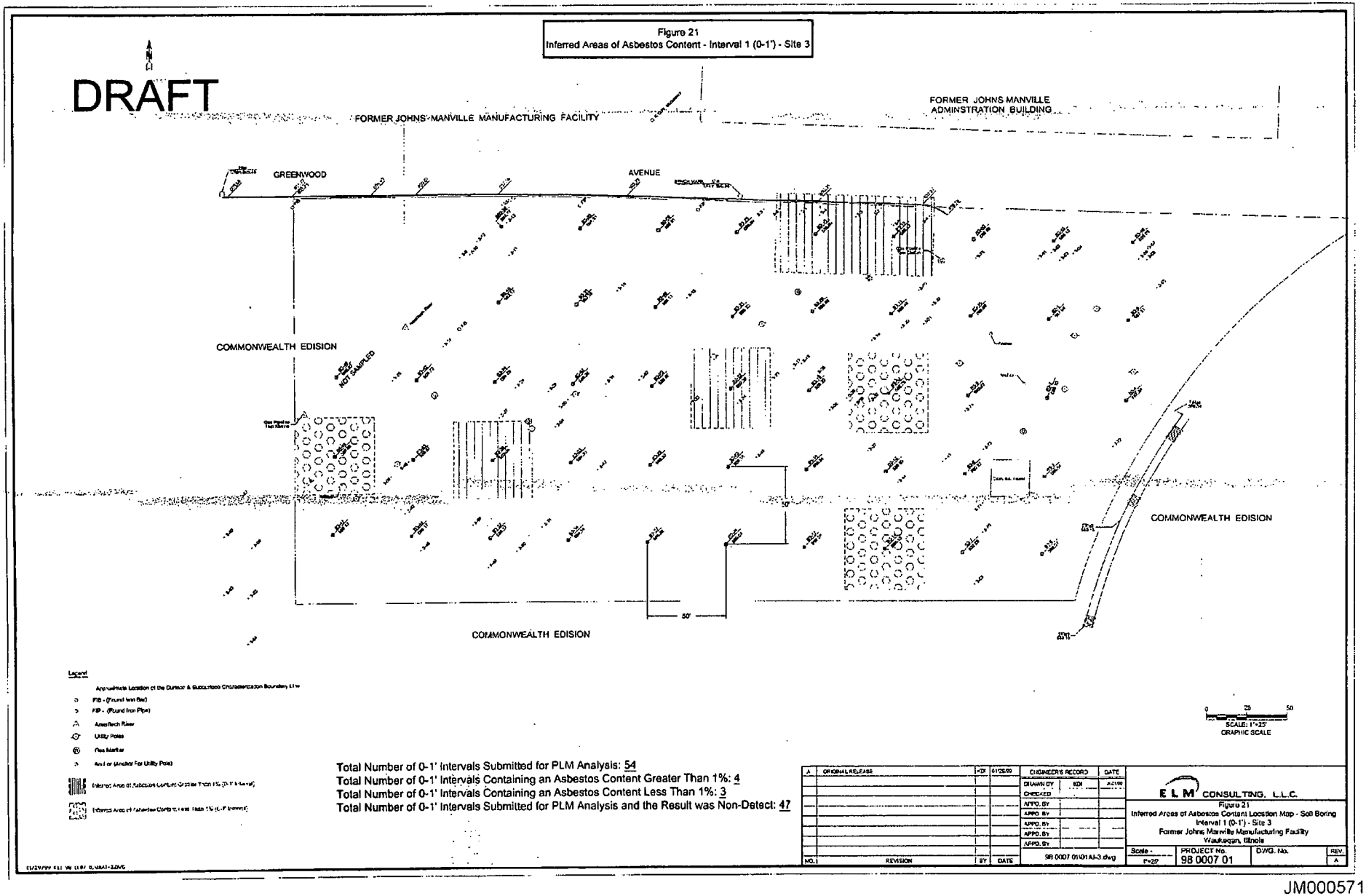


Exh. 57-540

JM000569



JM000570



JM000571

Exh. 57-542

Figure 22
Inferred Areas of Asbestos Content - Interval 2 (1-2') - Site 3

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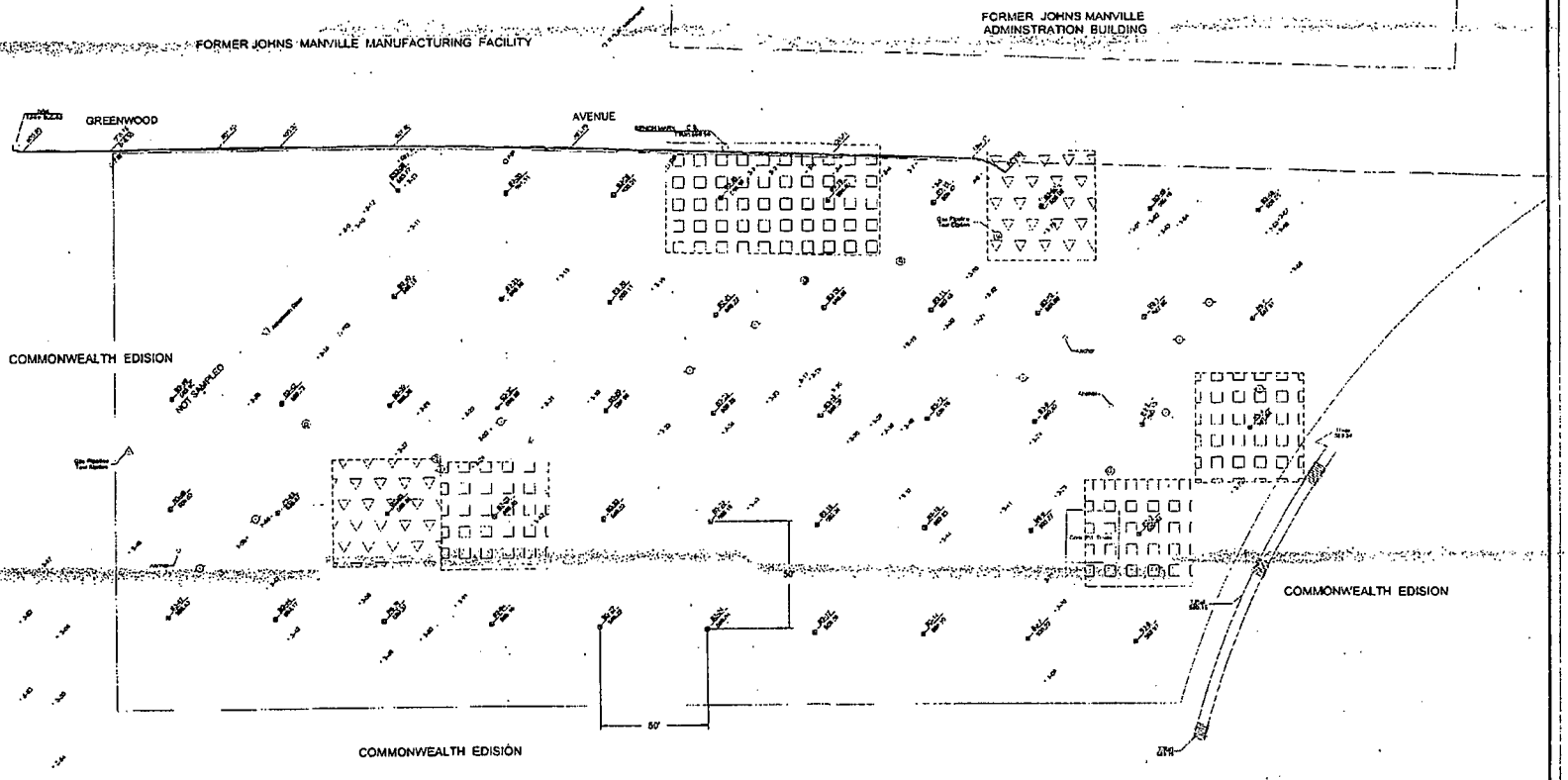

Legend

- Approximate Location of the Surface & Subsurface Characteristics Sun Boundary Line
- FIB - (Found Iron Bar)
- IRP - (Found Iron Pipe)
- Aeriatech Riser
- Utility Poles
- Gas Marker
- Anchor (Anchor For Utility Pole)
- Inferred Areas of Asbestos Content Greater Than 1% (1-2' Interval)
- Inferred Area of Asbestos Content Less Than 1% (1-2' Interval)

Total Number of 1-2' Intervals Submitted for PLM Analysis: 56
Total Number of 1-2' Intervals Containing an Asbestos Content Greater Than 1%: 2
Total Number of 1-2' Intervals Containing an Asbestos Content Less Than 1%: 7
Total Number of 1-2' Intervals Submitted for PLM Analysis and the Result was Non-Detect: 47

* B3-25 yielded two feet of recovery on the initial penetration. The two soil intervals (0-1') (1-2') were submitted for PLM analysis and the 1-2' interval yielded an asbestos content of 1%. The sampling location was reoccupied yielding three soil intervals (0-1'), (1-2') and (2-3'). All three soil intervals were submitted for PLM analysis and the 1-2' interval yielded an asbestos content of less than 1%.

B3-33 yielded two feet of no recovery on the initial penetration. The two soil intervals (0-1') (1-2') were submitted for PLM analysis and the 1-2' interval yielded an asbestos content of less than 1%. The sampling location was reoccupied yielding three soil intervals (0-1'), (1-2') and (2-3'). All three soil intervals were submitted for PLM analysis and the 1-2' interval yielded a asbestos content of less than 1%. This is the reason for the discrepancy between the total number of 1-2' intervals containing asbestos in some form (9) versus the total number of hashed and solid circles located on the map (7).

SCALE: 1"=25'
GRAPHIC SCALE

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Figure 22
Inferred Areas of Asbestos Content Location Map - Soil Boring
Interval 2 (1-2') - Site 3
Former Johns Manville Manufacturing Facility
Waukegan, Illinois

Scale - 1"=25' | PROJECT No. 98 0007 01 | DWG. No. | REV.

Exh. 57-543

JM000572

Figure 23
Inferred Areas of Asbestos Content - Interval 3 (2-3') - Site 3

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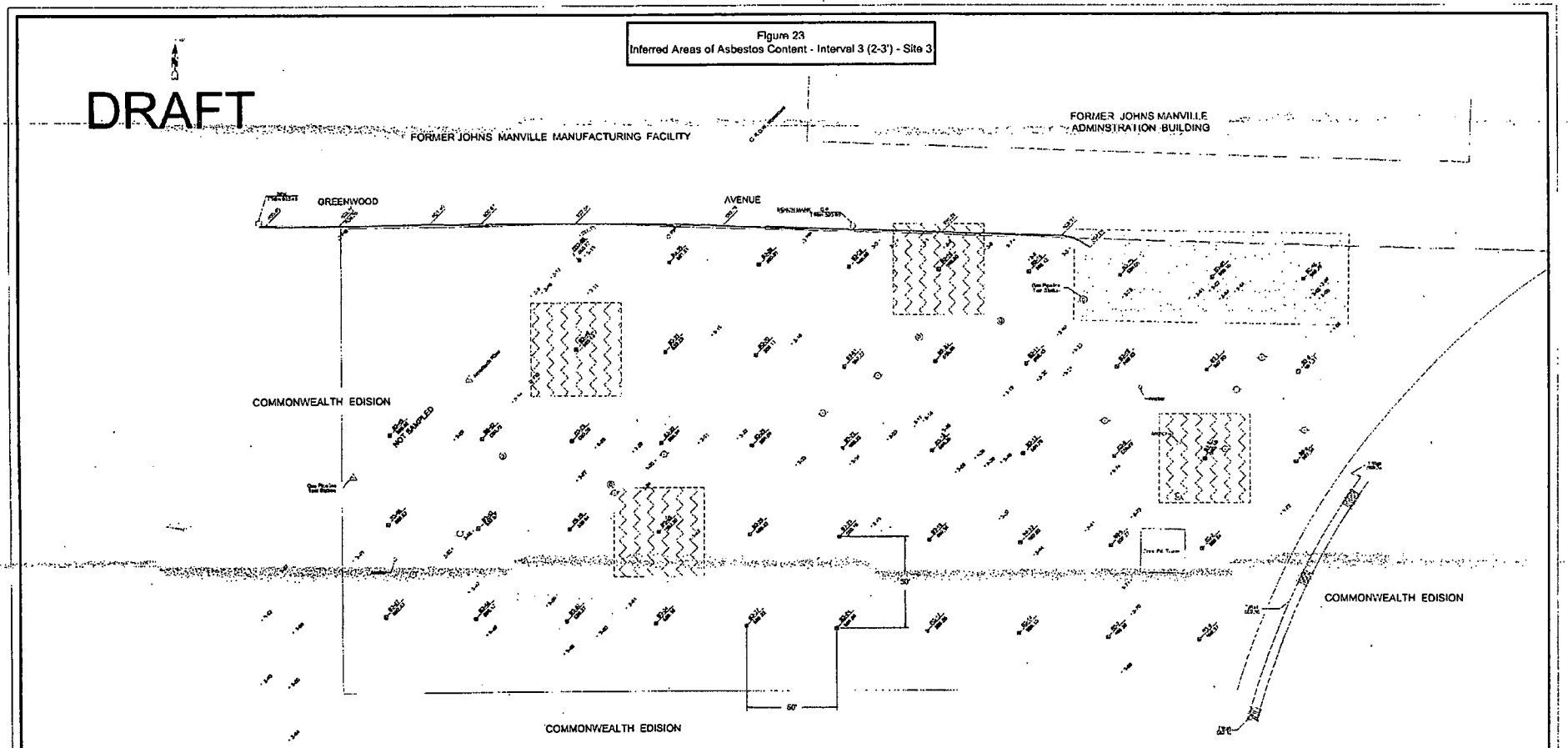

Total Number of 2-3' Intervals Submitted for PLM Analysis: 44
Total Number of 2-3' Intervals Containing an Asbestos Content Greater Than 1%: 3
Total Number of 2-3' Intervals Containing an Asbestos Content Less Than 1%: 4
Total Number of 2-3' Intervals Submitted for PLM Analysis and the Result was Non-Detect: 37

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Figure 23
Inferred Areas of Asbestos Content Location Map - Soil
Boring Interval 3 (2-3') - Site 3
Former Johns Manville Manufacturing Facility
Waukegan, Illinois

Scale -	PROJECT No.	DWG. No.	REV
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Exh. 57-544

JM000573

Figure 24
Inferred Areas of Asbestos Content
Composite Overlay of Intervals 1(0-1') and 2(1-2') - Site 3

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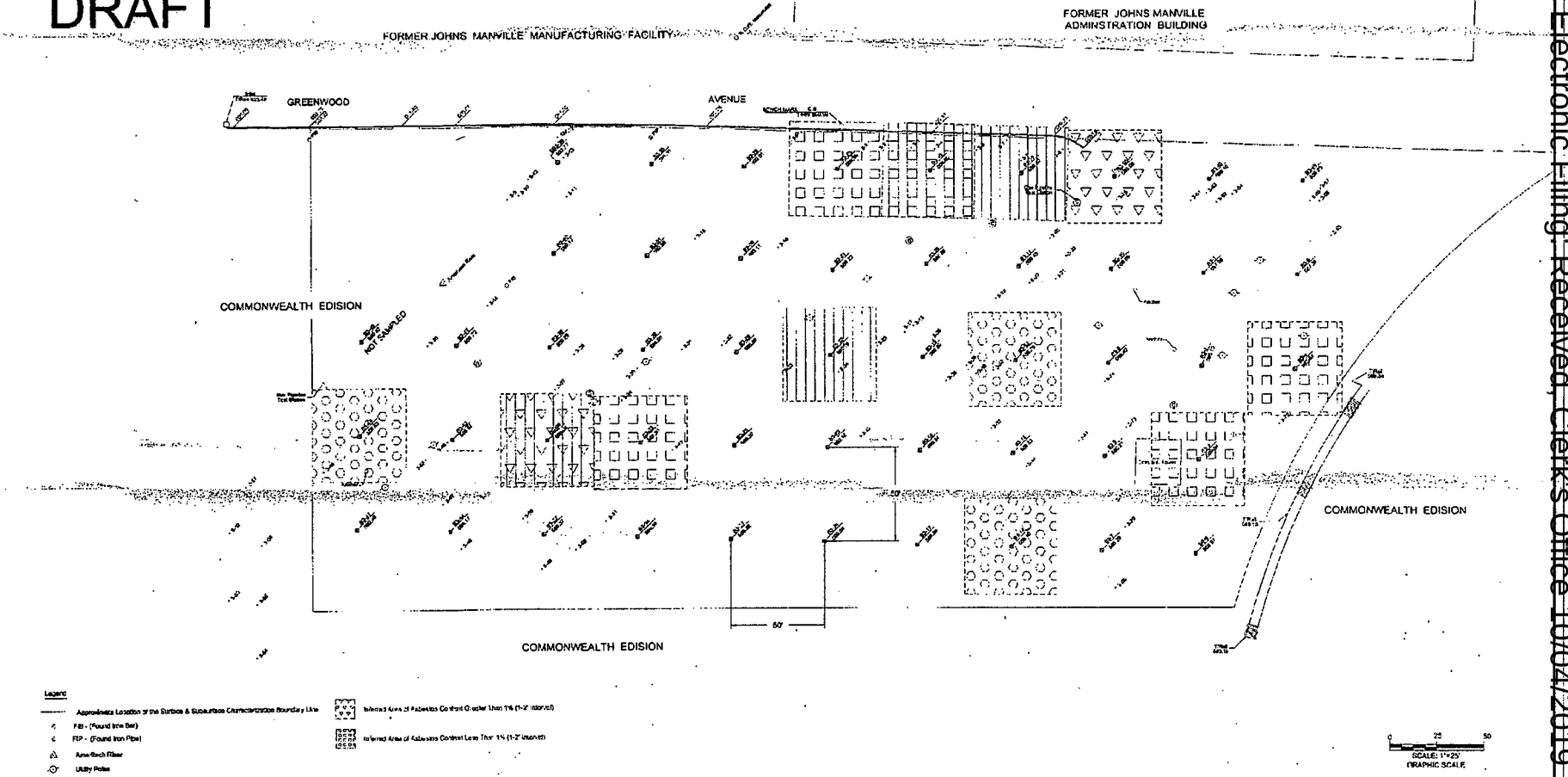

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Figure 24
Inferred Areas of Asbestos Content Location Map - Composite Overlay of Soil Boring Intervals 1 (0-1') and 2 (1-2') - Site 3
Former Johns Manville Manufacturing Facility
Waukegan, Illinois

Scale:	PROJECT No.	DWG. No.	REV.
1"=25'	98 0007 01		A

Figure 25
Inferred Areas of Asbestos Content
Composite Overlay of Intervals 1(0-1'), 2(1-2') and 3(2-3') - Site 3

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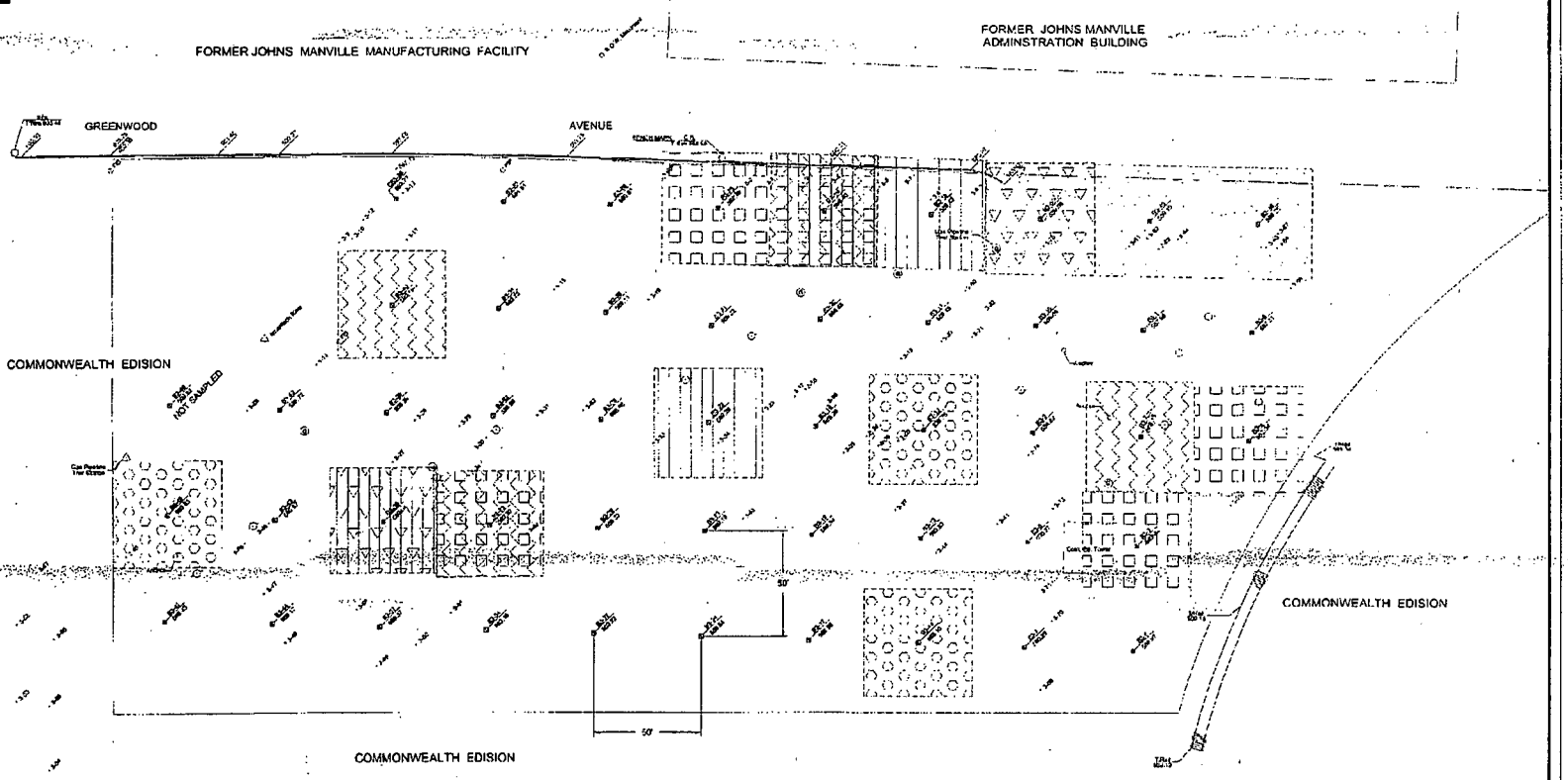

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Figure 25
Inferred Areas of Asbestos Content Location Map - Composite Overlay of Soil Boring Intervals 1 (0-1'), 2 (1-2') and 3 (2-3') - Site 3
Former Johns Manville Manufacturing Facility
Waukegan, Illinois

Scale	PROJECT No	DWG. No.	REV.
1"=25'	98 0007 01		A

Exh. 57-546

JM000575

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

JOHNS MANVILLE, a Delaware corporation,	)	
	)	
Complainant,	)	
	)	
v.	)	PCB No. 14-3
	)	(Citizen Suit)
ILLINOIS DEPARTMENT OF TRANSPORTATION,	)	
	)	
	)	
Respondent.	)	

IDOT'S RESPONSE TO COMPLAINANT'S MOTION TO EXCLUDE BASE MAPS AND RELATED FIGURES AND TESTIMONY AT HEARING

EXHIBIT B

EXCEPRTS FROM EE/CA REPORT

ARCADIS
Infrastructure · Water · Environment · Buildings

Imagine the result

Johns Manville and
Commonwealth Edison Company

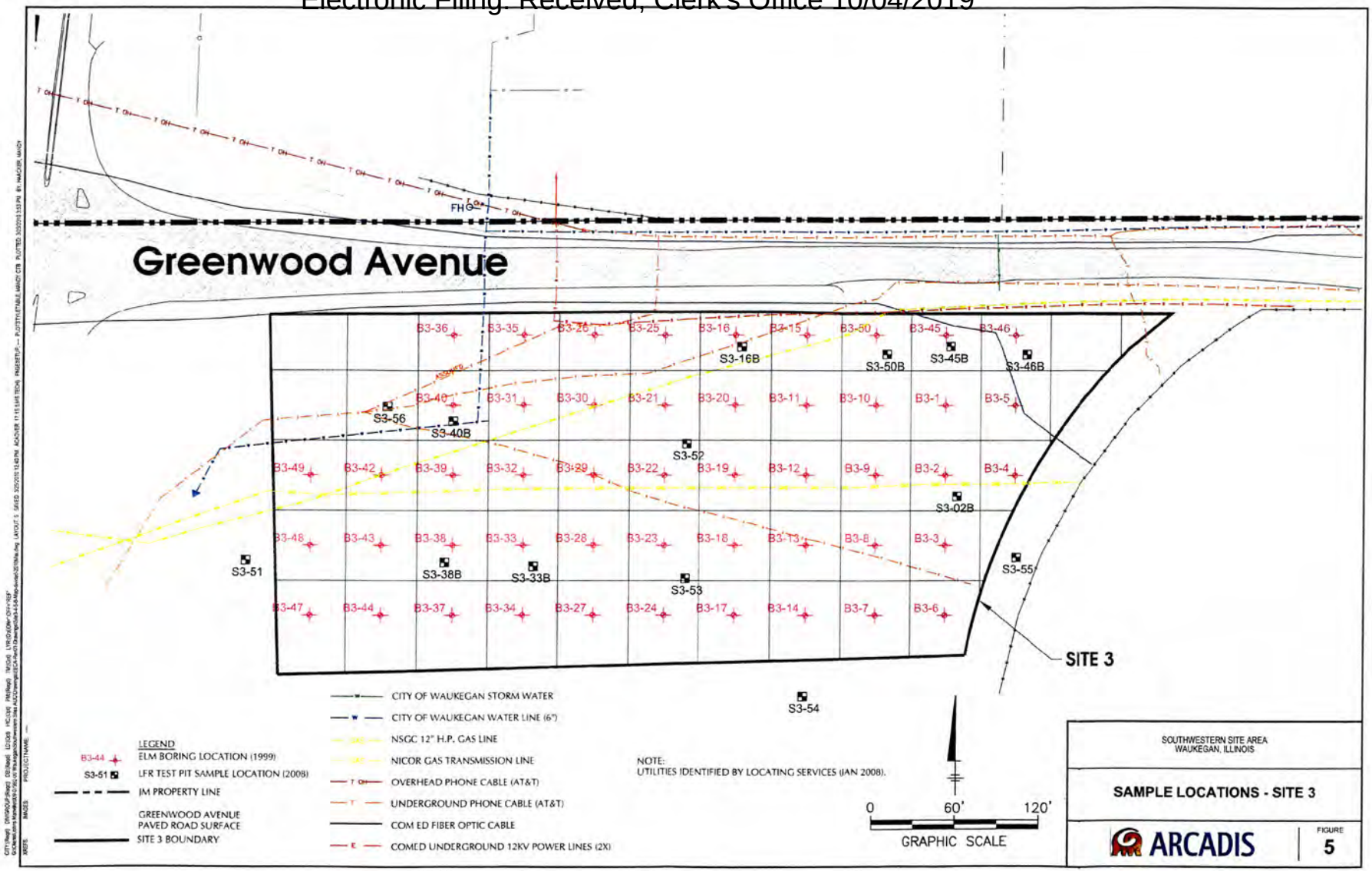
Engineering Evaluation/Cost Analysis

Southwestern Site Area Sites 3, 4/5, and 6

Revision 4

April 4, 2011

Exh. 63-1



JM001731

Exh. 63-80

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

JOHNS MANVILLE, a Delaware corporation,	)	
	)	
Complainant,	)	
	)	
v.	)	PCB No. 14-3
	)	(Citizen Suit)
ILLINOIS DEPARTMENT OF TRANSPORTATION,	)	
	)	
	)	
Respondent.	)	

IDOT'S RESPONSE TO COMPLAINANT'S MOTION TO EXCLUDE BASE MAPS AND RELATED FIGURES AND TESTIMONY AT HEARING

EXHIBIT C

EXPERT REPORT OF DOUGLAS G. DORGAN JR.
MARCH 16, 2015

March 16, 2015

EXPERT REPORT OF DOUGLAS G. DORGAN JR.

JOHNS MANVILLE VS ILLINOIS DEPARTMENT OF TRANSPORTATION

Former Johns Manville Facility
Site 3 and Site 6
Waukegan, Illinois

PREPARED BY

Weaver Consultants Group

Exh. 06-1

2. IDOT is responsible for the placement and dispersion of ACM waste currently found at the Site. IDOT, at a minimum used, spread, buried, placed and disposed of ACM waste, including Transite® pipe, throughout Site 3 and portions of Site 6 during its work on the Amstutz Project from 1971 to 1976. IDOT's activities associated with the Amstutz Project resulted in crushed Transite® pipe and asbestos material being spread across and buried at Site 3 and the western end of Site 6. IDOT left and never removed the Transite® pipe and asbestos material they spread across and buried at the Site.
3. As a result of IDOT using, spreading, burying, placing, and disposing of ACM waste in and around Site 3 and Site 6 as part of the Amstutz Project, the scope of the expected remedial activities are significantly more extensive than would have otherwise been required by USEPA.

Based on my experience, IEPA would more likely than not consider IDOT's actions in using, spreading, burying, placing, disposing of and leaving ACM waste on Site 3 and Site 6 to be a violation of Section 21 of the Act. Additional and more specific opinions are presented in the text to the following report, together with a discussion of the basis for each major opinion. I reserve the right to modify my opinions should my review of additional information warrant it. In particular, I understand that IDOT is planning to produce certain emails that relate to this case. I also understand that the scope of planned remedial activities, and the cost estimates for implementing the work, continue to evolve. Review of emails to be produced by IDOT, as well as changes to the scope of planned remedial measures and corresponding updates to the associated cost estimates, may influence the opinions presented herein.

1.2 Qualifications

My resume, together with the list of my publications is presented in **Appendix A**.

I have over 25 years of experience working as an environmental consultant. I received my Bachelors of Science in Earth Science, with a Minor in Geology, from Eastern Illinois University in 1986. I received my Masters of Science in Geography with a Concentration in Environmental Science from Northern Illinois University in 1994. I am a Licensed Professional Geologist in the states of Illinois and Indiana.

Since 1986 my practice has focused principally on providing consulting services and performing remedial investigation, planning, design and construction for a wide range of industrial, commercial and institutional properties. I have been qualified as an expert witness and supported litigation associated with projects involving environmental assessment, design, permitting, and construction related issues. I have implemented various projects involving compliance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Additionally, I am familiar with and have completed projects under various Illinois regulatory programs including, but not limited to, the Resource Recovery and Conservation Act (RCRA), Leaking Underground Storage

Tank (LUST) Program, and Site Remediation Program (SRP). I have regularly interfaced with both the USEPA and IEPA in many contexts, including CERCLA and violations of the Act.

Of particular relevance to this case, I have worked on numerous commercial and industrial properties exhibiting legacy environmental impacts. Such properties have included steel mills, foundries, landfills, glass manufacturing facilities, rail yards, and commercial shopping centers. I have experience assessing and remediating soils and fill material impacted by a wide range of materials including, but not necessarily limited to, petroleum, chlorinated solvents, metals, polychlorinated biphenyl's (PCBs), and asbestos. I am experienced in the design, permitting, construction and environmental monitoring of both solid and hazardous waste disposal facilities. I have experience supporting environmental investigation and restoration associated with Brownfield's redevelopment, with specific emphasis on evaluating and mitigating risks to future users associated with site environmental conditions. Furthermore, I have significant experience working on projects throughout the Chicago metropolitan area, having spent most of my professional career based in Chicago. Locally, Weaver Consultants Group has offices in Chicago and Naperville, Illinois.

1.3 Information Considered

WCG was provided access to and has reviewed the full document record, including documents produced by IDOT and JM, available for this matter. WCG also reviewed IDOT standard specifications, aerial photographs and recent changes to the scope of work and associated cost estimates provided by AECOM. A bibliography of documents cited in this Expert Report is presented in **Appendix B**. Citations to these references are shown in superscripts in the following text.

1.4 Report Organization

This Expert Report is organized into the following sections:

- Section 2 presents Site background information, factual and historical information related to the Site;
- Section 3 presents my expert opinions, along with discussion supporting my opinions.

IDOT engineering drawings for the Amstutz Project show that IDOT needed to excavate and fill areas on the Site because the underlying material was unsuitable. Prior to IDOT's work on Sites 3 and 6, the elevation of Site 3 was approximately 587.5 to 588.5 feet above mean sea level and Site 6 was approximately 588 feet above mean sea level. Part of IDOT's work involved raising the grade of Site 3 slightly in some areas, lowering the grade in other areas, and raising the grade of Greenwood Avenue substantially in some areas. For example, following construction, the elevation near the intersection of Greenwood and Pershing Road was approximately 600 feet above mean sea level. After construction, the record indicates that the contractor hired by IDOT was paid a "special excavation" fee to "remove and obliterate the Detour Roadways".[18]

Site 3 is currently vacant with the exception of one transmission tower located on the eastern portion of the Site. Site 6 generally comprises the shoulders of East Greenwood Avenue.

2.2.2 Environmental Aspects of Historical Operations

Documents indicate that asbestos-reinforced cement (Transite®) pipes were placed on the Site 3 parking lot and used for tire stops (i.e., to keep the cars from going too far and off the parking lot[11]) in approximately the 1950s. Beginning in approximately 1971, IDOT constructed Detour Road A on Site 3 for use during construction of the Amstutz Project. In their response to USEPA's request for information regarding Site 3, IDOT disclosed that their resident engineer on the project "recalled dealing with asbestos pipe during the project and burying some of it[13]". During the construction of the Amstutz Project approximately 262,000 cubic yards of structural borrow material[14] was required for construction of the bridge approach embankments. The source of this borrow material is unknown at this time. This material would have been brought on the Site and compacted by mechanical means. Some quantity of this 262,000 cubic yards was placed within the western limits of Site 6, and on the northwest portions of Site 3.

2.3 Site Environmental Conditions

In 1998, JM discovered asbestos containing materials (ACM) at the surface on Site 3. In accordance with a sampling protocol agreed upon with USEPA, JM catalogued and removed surficial ACM and conducted sampling of the area.

2.3.1 ELM Sampling

ELM Consulting LLC (ELM) conducted sampling for ACM at Site 3 and issued a report dated December 1999. The northwest and northeast portions of Site 3 were not sampled during the ELM grid-sampling event due to the presence of standing water. Results of the ELM sampling have been visually represented on the attached **Figures 2, 3, 4** and **5**. In general, the ELM sampling identified visual ACM (see **Figure 2**) across generally the north central and northeast portions of Site 3, generally aligned with the

location of former Detour Road A. As demonstrated on **Figures 2** and **3**, asbestos was detected in a number of boring locations, again, generally aligned with the location of former Detour Road A, and across the eastern portions of the northern boundary of Site 3.

Between 1999 and 2007, little activity occurred on the Southwestern Sites. On June 11, 2007, JM, Commonwealth Edison and USEPA signed an Administrative Settlement Agreement and Order on Consent for Removal Action (Agreement). The Agreement recognized that the proceedings under the Agreement were subject to various sections of CERCLA. USEPA declined to consider IDOT a Potentially Responsible Party (PRP) under CERCLA.

2.3.2 LFR Sampling

Pursuant to the above referenced Agreement, LFR Inc. (LFR) conducted an investigation that included Site 3 and Site 6. Results of this investigation were documented in an initial Engineering Evaluation/Cost Analysis (EE/CA) report.

2.3.2.1 Site 3

The investigation of Site 3 involved the excavation of 14 test pits (see **Figures 2** and **3** for test pit locations). The locations of the test pits were generally placed near borings completed during the 1999 ELM investigation. Visual ACM was observed in two of the fourteen (14) test pits. Pursuant to USEPA approved plans, no soil samples were collected and analyzed for asbestos as a component of the Site 3 investigation.

2.3.2.2 Site 6

The investigation of Site 6 involved advancing both test pits and soil borings along the length of and within the shoulder of both sides of East Greenwood Avenue. The investigation resulted in 209 soil samples being submitted for PLM analyses, and 21 soils samples submitted for TEM analyses. Various areas of asbestos impacted soil was observed along Site 6. One of these areas includes the shoulder of East Greenwood Avenue immediately adjacent to the northern boundary of Site 3.

2.3.3 LFR Investigation

LFR subsequently advanced an excavation within the southern shoulder of East Greenwood Avenue immediately adjacent to the northern boundary of Site 3 (see **Figure 2** for excavation location) for another entity, Exelon. [8] This excavation was performed to expose two direct-buried electric lines. In a July 8, 2008 letter report written to Exelon, LFR documented the excavation activities. The letter report documents that "[d]uring the excavation, several pieces of Transite® pipe, which is an asbestos containing material, were encountered within the clay fill material." The letter

Exh. 06-9

APPENDIX B

BIBLIOGRAPHY OF DOCUMENTS CITED

1. Removal Action Work Plan, Revision 2; Southwestern Site Area – Sites 3, 4/5, and 6, Johns Manville Site, Waukegan, Illinois dated March 31, 2014, prepared for United States Environmental Protection Agency (USEPA) Region 5 and prepared by AECOM Technical Services, Inc.
2. Engineering Evaluation/Cost Analysis (EE/CA) Southwestern Site Area Sites 3, 4/5, and 6: Revision 4 and Addendum dated April 4, 2011 and October 31, 2011, prepared for Johns Manville and Commonwealth Edison Company and prepared by ARCADIS U.S., Inc.
3. Surface and Subsurface Characterization Site 2 and Site 3 Former Johns Manville Manufacturing Facility: Waukegan, Illinois dated December 10, 1999, prepared for Johns Manville and prepared by ELM Consulting, LLC.
4. Johns Manville Southwestern Site Area, Waukegan, Lake County, Illinois: Administrative Order on Consent, V-W-07-C-870 dated February 1, 2012 (initial version dated June 11, 2007), prepared for Johns Manville and prepared by USEPA Region 5.
5. Fourth Five-Year Review Report for Johns-Manville Site dated April 30, 2013, prepared for USEPA Region 5 and prepared by USEPA Region 5.
6. Enforcement Action Memorandum dated November 30, 2012, prepared for Johns Manville and Commonwealth Edison Company and prepared by USEPA Region 5.
7. Standard Specifications for Road and Bridge Construction dated January 1, 2012, prepared for Illinois Department of Transportation and prepared by Illinois Department of Transportation.
8. Results of Power Line Excavation; Greenwood Avenue Ramp adjacent to Southwestern Site Area; Waukegan Illinois dated July 8, 2008, prepared for Commonwealth Edison Company and Exelon Corporation and prepared by LFR Inc.
9. Brad Bradley (USEPA) to Denny Clinton (Johns Manville) dated July 10, 1998, ***Exhibit C.***
10. Second Five-Year Review Report for Johns-Manville Site dated May 2, 2003, prepared for USEPA Region 5 and prepared by USEPA Region 5.
11. Bruce D. Ray (Johns Manville) to Margaret Herring (USEPA Region 5) dated July 1, 1999, ***Response to CERCLA Section 104(e) Request.***
12. Barnhardt, M.L, 2010, ***Surficial Geology of Waukegan Quadrangle, Lake County, Illinois: Illinois State Geological Society,*** USGS-STATEMAP contract report, 2 sheets, 1:24,000.
13. Respondents Response Document to Engineering Evaluation/Cost Analysis (EE/CA), Revision 4, as Modified and Approved by USEPA; Southwestern Site Area, Waukegan,

APPENDIX B

BIBLIOGRAPHY OF DOCUMENTS CITED

Illinois dated March 12, 2012, prepared for USEPA Region 5 and prepared by AECOM Technical Services, Inc.

14. Cali, S., Scheff, P., and Sokas, R., 2006, ***Illinois Beach State Park (IBSP): Determination of Asbestos Contamination in Beach Nourishment Sand Final Report of Findings,*** Great Lakes Centers for Occupational and Environmental Safety and Health.
15. AECOM Johns Manville Site 3 and Site 6 Draft Cost Estimate_11Mar15 dated March 12, 2015, prepared for Weaver Consultants Group and prepared by AECOM Technical Services, Inc.
16. Williams, E.G.; Von Aspern, K., ***Asbestos Cement Pipe: What if it Needs to be Replaced?,*** HDR Engineering, Inc.
17. Modifications to the Engineering Evaluation/Cost Analysis dated February 2012, prepared for Johns Manville and prepared by USEPA Region 5.
18. Complainant's Motion for Leave to File it's First Amended Complaint, In the Matter of: Johns Manville, a Delaware Corporation, Complainant, vs. Illinois Department of Transportation, Respondent, PCB No. 14-3 dated March 12, 2014